



Water supply annual report

For the year ended 30 June 2006

Quality for Life



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Cover

Heavy rainfall in the Orongorongo water catchment caused a large slip in May 2006, which broke our raw water pipeline. Pictured (clockwise from top left) are: excavating the broken pipe; slip damage to the pipe; damage to the valve key protection cage at the Orongorongo Weir; high flow in the Orongorongo River at the weir; the head of the slip.

Introduction

Reporting scope

This report covers the achievements of and challenges for Greater Wellington Regional Council's wholesale water supply activity, Greater Wellington Water, for the period 1 July 2005 to 30 June 2006.

Greater Wellington's statutory reporting requirements are met by its annual report. This report is supplementary to the annual report and is intended to provide our territorial authority customers and other stakeholders with a more detailed account of our wholesale water supply operation.

The commentary on pages 3-12 reflects our long-term performance indicators and is referenced to objectives and targets from our quality (QMS) and environmental (EMS) management systems. It covers financial, social and environmental results, consistent with a 'triple bottom line' approach, but is limited to the scope of our performance indicators and management systems.

Our purpose

We aim to provide enough high quality water each day to meet the reasonable needs of the people of greater Wellington, in a cost-effective and environmentally responsible way.

What we do

We collect and treat water, then distribute it to four city councils – Hutt, Porirua, Upper Hutt and Wellington – for their supply to consumers. This involves:

- operating four water treatment plants, 15 pumping stations and 183 km of pipeline
- supplying around 150 million litres of water daily on average – 1,730 litres every second – to meet the needs of about 370,000 people
- targeting at least an 'A' grade standard for our water treatment plants and distribution system, where consistent with customer requirements
- forecasting future water needs and planning to ensure they can be met
- carrying out our work with care for the environment
- managing \$286 million¹ of infrastructure assets.

Every week we supply enough water to completely fill Wellington's Westpac stadium.

Governance and organisation structure

Greater Wellington's wholesale water supply role is defined by the *Wellington Regional Water Board Act (1972)*. Regional councillors are responsible for setting policy; Greater Wellington's Utility Services Committee oversees the wholesale water supply work carried out by its Water Supply, Parks and Forests Division. Greater Wellington Water has five main functional areas: Operations (production and distribution); Engineering Services (forecasting and planning, asset management, management systems, and project design and management); Laboratory; Marketing and Support (financial, administrative and secretarial services).

Water Supply, Parks and Forests is a new division, formed from the former Utility Services Division (responsible for water supply) and part of the former Landcare Division, following restructuring.

Performance indicators

We have six long-term performance indicators (PIs) for wholesale water supply: water quality, security of supply, environmental management, customer service, business efficiency and health and safety. Each PI has related objectives and targets. Objectives for each PI and performance against short-term targets for 2005/06 start on page 25.

Greater Wellington's ten-year plan 2006-16 – *a sustainable region* – includes new targets for each PI for the next three years (to 30 June 2009). *A sustainable region*, incorporating the 2006/07 *Annual Plan*, is available on our web site or by contacting us (see outside back cover for details).

Management systems

Our quality management system is certified to the international standard ISO 9001:2000. Our environmental management system is certified to ISO 14001:2004. Our laboratory holds International Accreditation New Zealand (IANZ) accreditation to ISO 17025, a dedicated quality management standard for laboratories. These management systems are independently audited annually.

¹ At 30 June 2004, following the most recent independent valuation

Financial performance

- Water levy held despite higher operating costs
- Debt increased by \$1.3 million due to higher-than-budgeted capital programme
- Operating deficit \$0.7 million better than budget

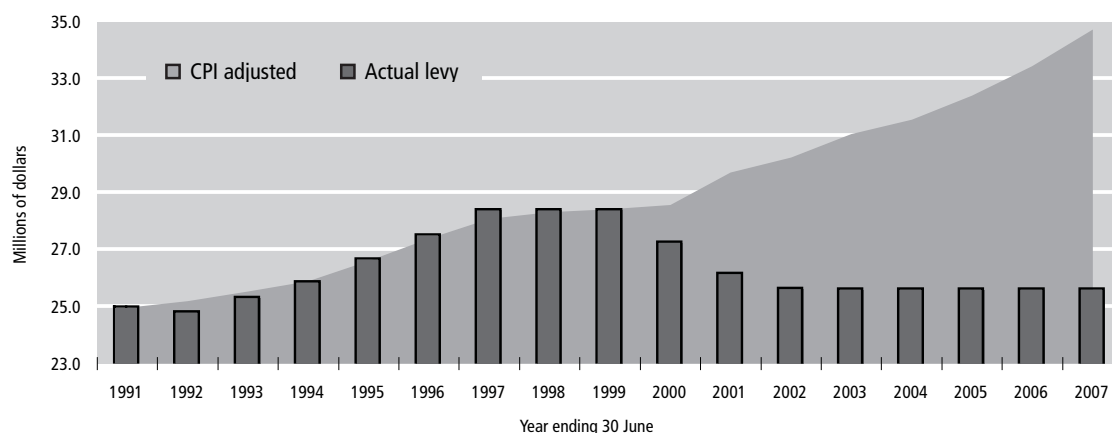
Total operating costs increased by 3.4 percent (\$0.8 million) compared to 2004/05. This was due mainly to increased contractor and consultant costs (up 19 percent on 2004/05), driven by new water source investigation work. Power and chemical costs also rose significantly, by 15 percent and 12 percent respectively, due in part to higher demand for water. However, net financing costs continue to fall, being eight percent lower than for 2004/05, as the increased debt level was offset by a similar increase in our self-insurance fund.

An operating deficit of \$0.1 million was recorded. This is the first time we have posted an operating deficit. The result is \$0.7 million ahead of the budgeted deficit of \$0.8 million. (QMS target 4.2.3, page 40)

Debt increased by \$1.3 million during the year. Our debt now stands at \$45.0 million. However, debt has still been cut by \$27.6 million since 30 June 1997². Capital expenditure of \$37.7 million has been funded and our self-insurance fund has grown to \$9.5 million over the same period. Greater Wellington's Treasury Management Policy specifies that target debt should not exceed 220 percent of the water levy. It is currently 198 percent, \$5.1 million less than our target limit. (QMS target 4.2.1, page 40)

The bulk water levy was held at \$25.6 million (including GST). The levy for 2006/07 has been set at the same level as for 2005/06. Greater Wellington has held or cut the wholesale water levy for ten years in succession. In actual dollars the levy is as low now as it has been at any time since 1992/93. (QMS objective 4.2, page 40)

Water levy versus inflation



The water levy for the year to 30 June 2007 has been held at just \$0.6 million more than the levy for the year to 30 June 1991, a net increase of only 2.4 percent over 16 years. In comparison, cumulative inflation (CPI) for the period has amounted to 33.9 percent. (CPI figures are 12 months to 31 December – year to December 2006 estimated. Source Bancorp)

² Prior to restructuring of Greater Wellington's water supply division.

Greater Wellington published its ten-year plan 2006-16 during the year in review. This includes provision for \$79 million to develop a major new water source from 2012/13. The water levy is set to be increased annually from 2007/08 to 2012/13, by between three and five percent (before inflation), in anticipation of this new source investment. As a result of the increasing capital expenditure, debt is forecast to peak at \$81.8 million in 2015/16.

Comparison with Watercare Services shows our total supply costs remain competitive. Watercare is the wholesale water supplier for greater Auckland. (See page 30, also QMS target 4.2.9, page 40)

Environmental performance

- Water take mainly within consented limits
- Production efficiency improved
- Possum numbers in the Wainuiomata/Orongorongo Water Collection Area substantially reduced
- Chemical use efficiency improved while energy use efficiency declined
- Discharges mainly within consented limits
- EMS certification upgraded to ISO 14001:2004

We are committed to operating in an environmentally responsible manner, consistent with the *Resource Management Act 1991* and the providing water at a reasonable price. The main impacts of our operations on natural and physical resources relate to water take, energy and chemical use, discharge and the disposal of waste. We operate an environmental management system to instil focus and discipline around these activities.

EMS certification was upgraded. During the year we moved to upgrade our environmental management system certification to ISO 14001:2004. The changes from ISO 14001:1996 do not represent a change in system philosophy. However, we carried out a thorough gap analysis, to ensure we continued to demonstrate an appropriate and consistent approach to environmental aspects across the functions of our business covered by our certification. We achieved ISO 14001:2004 certification in June 2006, following an audit by an accredited independent auditor. (QMS objective 7.1, page 41)

Water take (see also PIs, page 26)

Consent conditions were substantially met.

Eleven water take consents were held at 30 June 2006. Full compliance was achieved except for two minor events. We exceeded the consented maximum instantaneous abstraction rate at Kaitoke Weir on a single occasion. The consent manager noted conditions beyond our control and appropriate action to minimise the possibility of a repeat occurrence in giving a 'mainly complying' assessment. This event was assessed as being unlikely to have had an adverse environmental effect.

The maximum abstraction rate from the Wainuiomata water catchment area was also exceeded on a single occasion. We received a 'non-complying' assessment, as the fault was due to operator error. The incident has been reviewed and actions taken to improve our procedures. (EMS target 1.3.1, page 42)

Our total water-take was 61,983 million litres, 2.0 percent more than during 2004/05. Higher demand for water was the main reason for this increase. (See page 7 and EMS target 4.1.1, page 43)

Production efficiency was 96.1 percent.

Production efficiency shows the proportion of our metered water take that is either treated for supply to our customers or used to increase or refresh our reserve of untreated water held in the Stuart Macaskill Lakes.

The unaccounted-for water take (UFWT) was 3.9 percent of the total, compared with 5.7 percent during 2004/05. We reported last year that the UFWT result for 2004/05 had been adversely affected by a faulty abstraction meter at Kaitoke and a leak in the tunnel between Kaitoke Strainer House and Te Marua (repaired in May 2005). This year's UFWT result is markedly lower and supports that view. (EMS target 4.1.1, page 43)

Discharge from the Stuart Macaskill Lakes

increased. Discharge of untreated water from the lakes back to the Hutt River was 696 million litres, compared with 495 million litres during 2004/05. Some turnover of stored water is needed to maintain the quality of water in the lakes. This discharge is a permitted activity under the Regional Freshwater Plan. (EMS target 4.1.1, page 43)

We are investigating the impact of a change to our water take consent for the Hutt River at Kaitoke.

The consent requires the flow rate below the weir to be at least 600 litres per second at all times, for environmental reasons. Our modelling indicates that if the residual flow rate could be reduced without harm to the river ecosystem, we could provide for another four or five years of population growth without building new treatment or distribution assets³. A detailed habitat assessment methodology is being developed in consultation with stakeholders, to assist in establishing an appropriate low flow regime in the Hutt River. (EMS target 5.1.1, page 44)

Resource use

Electricity use averaged 356 kilowatt-hours per million litres of water treated – 5.9 percent more than for 2004/05.

While power use efficiency for production improved slightly year on year, that for distribution deteriorated by almost nine percent. This result has been strongly influenced by the need to conduct possum control in the Wainuiomata/Orongorongo Water Collection Area and the consequent greater reliance on pumping from the Waiwhetu Aquifer during 2005/06. (See below and EMS target 4.2.1, page 44)

Electricity for treating and distributing water to Wellington's four cities is roughly equivalent to that used by 2,500 average households and represents about eight percent of total operating costs. Around two-thirds of power use occurs at three sites: Waterloo Water Treatment Plant (40-45 percent of total kilowatt-hours), Waterloo well-field (about 10 percent) and Te Marua Pumping Station (about 16 percent). Power use efficiency – kilowatt hours per million litres treated (kWh/ML) – is therefore influenced largely by the share of total production from Waterloo and how much of the raw water treated at Te Marua must be pumped to the treatment plant from the Stuart Macaskill Lakes.

For the year in review, production from Waterloo and Gear Island was 3.5 percentage points higher than in 2004/05 (45.4 percent of total production, compared to 41.9 percent). Lake pumping also increased, from 11.3 percent of our total production volume in 2004/05 to 12.5 percent in 2005/06.

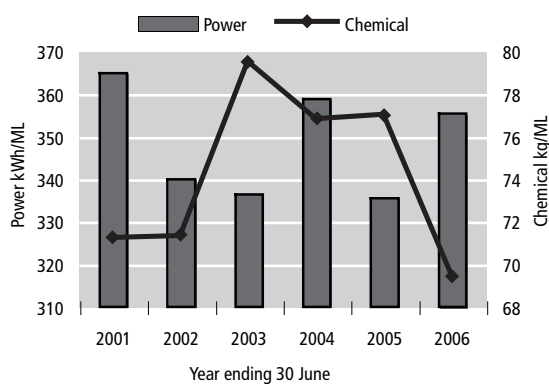
³ Apart from minor works and a proposal for a new reservoir near Wellington Hospital, which would be shared with Wellington City Council and, possibly, Capital and Coast District Health Board.

From an environmental perspective, we don't have the means to quantify the merits of production from rivers relative to aquifers. Aquifer water has a much higher direct power demand, for pumping. However, treating river water has a higher chemical demand, with associated impacts from chemical production and transportation. Treating river water also generates solid waste, which must be transported and put in a landfill. Given this uncertainty, our approach is to produce water at minimum marginal cost, subject to meeting our obligations under the *Resource Management Act 1991* and taking a conservative approach to security of supply.

Chemical use efficiency improved. Chemical use averaged 69.5 kilograms per million litres of water treated – down by 9.7 percent from 77 kilograms per million litres in 2004/05. This is consistent with a decrease in the share of production from surface water sources, from 58.1 percent of the total in 2004/05 to 54.6 percent in 2005/06.

We are hopeful a project started this year will deliver a useful reduction in chemical demand. Ultra-violet spectrometers were installed at our Wainuiomata treatment plant and initial trials were completed. This involved operating the treatment plant under stable conditions (of raw water quality, chemical dosing and plant throughput). The concentration of organic carbon compounds was measured at various stages of the treatment process to identify how these concentrations responded to changes in individual parameters such as pH. We hope the results will allow us to develop a control algorithm, which will be used to provide a 'feed forward' input to improve chemical dosing efficiency and water quality. This leading-edge trial work has been delayed slightly, as the company engaged to analyse the huge amount of data from the trials has found its computers are not up to the task. At year-end the data was being worked on by the instrument manufacturers, in Vienna.

Power and chemical demand



Emissions and waste

Full compliance was achieved with all but one of our 20 discharge consents. Discharge from Wainuiomata Water Treatment Plant to the Wainuiomata River was assessed as 'non-complying', due to higher-than-permitted instantaneous discharge and a reporting anomaly. We accept our error with the rate of discharge, but believe that the circumstances behind this incident warrant a review of the compliance rating. We intend to raise this with the consent manager. (EMS target 3.2.2, page 43)

Solid treatment waste (sludge) by volume of river water treated was lower by 7.2 percent compared with 2004/05. This result is consistent with our reduced use of river water sources and treatment chemicals year-on-year.

Sludge represents about three-quarters of the total waste (by weight) from our water treatment plants. Sludge by volume of production from river sources tends to increase when source water contains more organic solids – after rainfall in the water catchments for instance. A total of 1,642 tonnes of de-watered waste sludge was sent to a consented landfill (Silverstream): 52 kilograms per million litres of river water treated. (EMS targets 3.2.3, page 43)

Land use and biodiversity

(EMS objective 5.1, page 44)

Greater Wellington manages 16,500 hectares of active water catchment land in the Rimutaka and Tararua ranges, to ensure that it continues to yield high-quality raw water and to enhance biodiversity within the catchments. Several indicators of forest health are monitored on our behalf, including bird densities, pest animal numbers by species and vegetation health. Professional hunters are routinely employed to keep down the numbers of large pest animals, while possum control is undertaken when needed.

A possum cull in the Wainuiomata/Orongorongo Water Collection Area was very successful. Aerial possum control carried out in August 2005, using 1080 bait, resulted in possum numbers being cut by over 99 percent. A post-operation trapping survey found the equivalent of one possum per night per 1,000 traps. Before the operation the equivalent of 155 possums per night per 1,000 traps were caught. Fruit-fall analysis showed a dramatic fall in the number of eaten fruit, mirroring the trapping survey results.

Wainuiomata Water Treatment Plant was turned off on 3 August, before the bait drop, as a precaution. A three-week spell of dry weather followed, delaying the breakdown of the bait pellets. This contributed to the operation being very effective, but also held up clearance from the Medical Officer of Health to re-open the catchments for water supply. The plant remained off until late October. A co-ordinated publicity programme around the operation helped ensure the community was aware of it. There was no adverse publicity around this operation or reports of humans or domestic animals being poisoned. (QMS objective 5.1, page 40)

The final stage of fencing the Wainuiomata water catchment was finished. The fence along the northern and western boundaries is designed to prevent stock as well as wild deer, goats and pigs from infiltrating the water catchment from adjoining private land. This will help to protect vegetation and therefore improve raw water quality. Work to cull pest animals within the catchment is continuing. (EMS target 5.1.4, page 45)

Social performance

- All public demand for water was met
- 96-98 percent achievement of reservoir level targets
- Distribution efficiency effectively 100 percent
- Water supply quality target achieved
- Full compliance with drinking water standards
- New water source and demand management options under investigation
- Major earthquake strengthening work completed at Karori and Haywards

Our commitment to operating in a sustainable manner requires that we recognise our potential to meet social needs within the region. Supporting public health via a reliable, high quality water supply at a reasonable cost is our main contribution to meeting social needs. However, we also contribute through effective health and safety practices, risk mitigation and recovery planning, providing educational and recreational opportunities and supporting professional development of our staff.

Our system's design capacity may be reached by 2008. Our water supply system is expected to fully meet the needs of up to 377,000 people in all but the most severe conditions, based on our modelling of water use. A few years ago this population wasn't thought likely until around 2020. However, a change to population projections by Statistics New Zealand in 2005 now indicates we will reach that population threshold by 2008.

We are investigating a range of options to maintain the current level of water supply security well into the future. This could be done by developing new sources of water, using existing supplies more efficiently, or some combination of the two.

Water source development planning. The options to increase available water supply were set out in a strategy paper to our Utility Services Committee in September 2005. These range from short-term measures, which would increase our design population by a few thousand, to long-term options designed to provide for a population of 450,000 or more.

At current projections, a major new source will be needed from 2013. It is important that we identify the community's preferred source now, as planning and development of such projects can take eight to ten years. Provision has been made for \$79 million in our ten-year plan (2006-16) for a new dam. The water levy is set to be increased annually from 2007/08 to 2012/13 to fund this new source investment.

Three potential dam sites are under detailed technical investigation, with preliminary reports covering geology, hydrology, planning, environmental and landscape aspects – as well as engineering issues – already completed. Further studies around key issues were being initiated at our year-end. Stakeholder workshops have also been held on ecology, fish habitat, recreation issues and heritage assets.

Meanwhile, a second stage of investigations into the availability of water from the Upper Hutt aquifer has been started. The potential impacts on the Hutt River, other consent holders and the environment are being assessed. Two investigation wells are proposed, and tests on these will indicate the quantity and quality of water in the aquifer. The significance of contaminated sites in the vicinity and the availability of suitable land for a treatment plant are also being looked at.

We expect to complete our investigations and recommend a water source development strategy for public consultation in the latter half of 2007. Exactly when the community's preferred option will be needed will depend on the levels of water use and population growth that occur in the next few years and whether shorter-term measures under consideration prove viable. (QMS targets 1.1.1 and 1.1.2, page 38)

Demand management options. Twelve months ago we reported having started to develop a joint plan – with our four water supply customers – that would see greater co-ordination in managing down the demand for water. If successful, this would help

to defer the need to fund expansion of the water supply system. This initiative is based on a model adopted in Auckland.

We had envisaged having the plan ready for consideration by June 2006. However, the complexities of tailoring cost/benefit analysis for demand management options to Wellington and identifying a water saving target that is measurable in real time and, if achieved, would defer the need to invest in new capacity has proved more challenging than anticipated. We have now overcome this problem.

At our year-end, an independent review of the anticipated costs and benefits from adopting various water management tools was being commissioned. Once completed, the technical section of the plan will be presented to our customers for their consideration. (QMS objective 4.2, page 40, EMS objective 2.2, page 42)

Submissions to Greater Wellington's draft ten-year plan showed support for water conservation. Our ten-year plan consultation document, released in March 2006, outlined the need for new supply capacity or water saving measures – such as education or metering – over the next decade if our current levels of service are to be maintained. Of 101 submissions received, a majority supported conservation activity generally. A third of submitters indicated support for metering, while 20 percent opposed it. Opponents of a new water source being developed as a priority outnumbered those in support of that approach. While these submissions cannot be taken to represent the community as a whole, they do indicate an element of public support for the objective of the proposed water management plan.

The water management plan is being developed in parallel with our investigations of new sources. We expect to bring the results of these two strands of investigation together after March 2007, to consider the findings and agree a process for selecting a preferred future water supply strategy. The public will be consulted about its preferences before any final decision is taken.

If our communities are prepared to limit their total water use to current levels as the population grows, then the capital expenditure earmarked for the next major increase in supply capacity could be deferred. (QMS objective 4.2, page 40. EMS objective 2.2, page 42)

Our targets for maintaining reservoir levels and supply pressure were almost always achieved. Our twin targets for how often customer reservoirs were near-full⁴ were achieved 96 and 98 percent of

the time. Maintaining high water levels in customer reservoirs provides communities with the maximum available buffer to cope with peaks in water use – for fire fighting for instance – and short-term loss of supply to the reservoir. Similarly, twin targets for maintaining supply pressure⁵ at Thorndon, which feeds directly into the Wellington central business district's reticulation, were fully met on all but one occasion. For November 2005, pressure was greater than 85 metres head for 86 percent of the time: our target is for at least 90 percent of the time.

These supply pressure and reservoir level targets are self-imposed while we negotiate a formal service level agreement with our customers. (QMS targets 1.2.1 and 1.3.1, page 38)

We treated 57,959 million litres of water: 4.6 percent more than in 2004/05. Total metered supply to customer reservoirs was 4.9 percent more year-on-year, at 57,913 million litres.

Distribution efficiency was 99.9 percent. The difference between the metered volumes of water treated and water supplied was 0.1 percent of the treated volume. This is less than the margin of error for our meters (+/- 1.0 percent) and indicates that transmission losses continue to be negligible. (EMS target 4.1.1, page 43)

The peak day for water supply was 204 million litres, 29 percent higher than the average day (159 million litres). The maximum day supply during the last decade was 211 million litres (11 February 1999).

Wellington city was behind the rise in water supply. The increase in water supplied to our customers last year was much greater than in recent previous years and was driven by a much-increased supply to Wellington city. This was due mainly to leakage. An excessive level of supply to Thorndon became apparent in April 2006. Further analysis indicated the problem started several months earlier, but was masked by climate-related variability in water use, which is part and parcel of a typical summer.

We are concerned about the marginal cost we will incur in providing this extra supply volume – estimated to be somewhere between \$125,000 and \$150,000 a year. We are also concerned about the increased pressure this may place on our ability to meet all customer demand for water next summer, if the much-increased supply to Wellington continues. We are assisting Wellington City Council to identify the cause of the problem. (Customer Service PI, page 28)

⁴ See QMS target 1.2.1, page 38

⁵ See QMS target 1.3.1, page 38

(By 30 September 2006 a concerted programme of leak detection and repair in Wellington had seen its supply cut back to the same level as during September 2005.)

Summer water use remained at a manageable level. Six successive months of relatively low rainfall, between June and November 2005, saw record-low November water flows in the Hutt and Wainuiomata Rivers⁶. This raised the prospect of real difficulties in meeting unrestricted demand during late summer. However, our concern wasn't realised.

The summer period – December 2005 to February 2006 – was characterised by higher daily sunshine hours relative to recent past summers, but a fairly normal level of rainfall and, importantly, rainfall at regular intervals.

While the summer supply peak (204 million litres) and average daily supply per person (459 litres) were not extreme in absolute terms, they did appear to be higher than might have been expected given the weather conditions. The subsequent identification of unusually high supply to Thorndon – due to leakage within Wellington – supports this view (see above).

A major slip in the Orongorongo water catchment limited our use of that source. For a second year running our water supply assets in the Orongorongo Valley suffered significant damage by the elements.

A slip, measuring some 30 metres wide and 50 metres long, broke and buried our pipeline from the Orongorongo Weir, stopping all supply of water from the catchment area from 12 May 2006.

This incident together with closure of the catchment between August and October 2005, to carry out possum control, resulted in water from the Orongorongo Valley being unavailable for almost five months of the 2005/06 year.

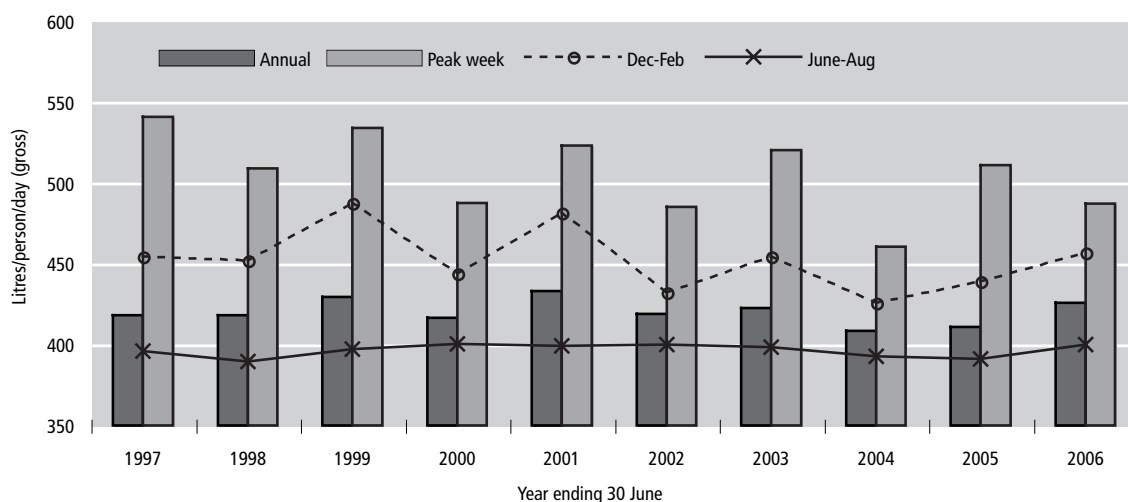
Difficult access for earth moving machinery, unstable material at the top of the slip and unfavourable weather conditions hampered our assessment and repair effort. At 30 June 2006 the resumption of supply was assessed as still being months away. The slip has not had a major impact on our ability to meet demand so far and we expect to have raw water supply from the Orongorongo Valley reinstated before next summer. (QMS objectives 1.1 – 1.3, page 38)

We made further progress towards improving the security of the distribution system against hazards. In line with the region's *Emergency Water Supply Mitigation and Preparedness Strategy and Action Plan (2003)*, we continued to develop physical mitigation and response measures, to reduce repair time for the wholesale water supply system in the event of a large-scale natural disaster, such as a movement of the Wellington Fault.

Work to improve the seismic resistance of the Kaitoke-Wellington water main at Haywards was completed. A duplicate section of pipe has been laid between State Highways 2 and 58, in more stable and accessible ground to the south of the former pipe route. This is expected to reduce the probability of damage to the pipes for any given earthquake magnitude and make it easier to carry out damage repairs.

Unexpected and unfavourable ground conditions encountered during excavation of the new pipe route required the route plan to be modified, at

Supply – average day



The ten-year trend in water supply per resident is gradually decreasing. This is despite the supply figures for 2005/06 being inflated by a major leak in Wellington, which we believe started around the end of January 2006 and had not been located by the end of June.

⁶ For the current gauging sites

greater cost than originally budgeted for. Total project expenditure was \$3.2 million, \$0.8 million above budget.

A new pumping station to serve Karori, Kelburn and Northland was completed in May 2006 and commissioning trials were under way at our year-end. The new pumping station meets modern earthquake resistance standards and is better placed to withstand a movement of the Wellington Fault than its 50-year-old predecessor. The original pumping station, next to the Karori Wildlife Sanctuary, will be decommissioned in the coming year.

Construction of a new pumping station at Seaview, to service the Eastbourne Bays area, started in January 2006. We expect the new station to be commissioned by the end of December. This facility will replace pumps sited at Randwick, which are vulnerable to flooding.

Following discussions with our customers about the provision of emergency connection points between the wholesale distribution system and their reticulation networks, preparations are well advanced to install a cross connection in Upper Hutt, at the junction of Fergusson Drive and Camp Streets. This will provide an alternative means to supply the southern end of Upper Hutt should our main to Trentham reservoir fail. (QMS objectives 1.1-1.3, page 38)

The proposal for a shared reservoir near Wellington Hospital remains some way from fruition. We continued to work with Wellington City Council and Capital and Coast District Health Board on the detail of a proposal to share the cost and use of a new reservoir. However, progress in the last 12 months has been disappointing. A suitable site has been identified, but negotiations over cost sharing have proved more difficult than we had hoped and it is unclear to us when an agreement might be reached. The proposed reservoir would provide the hospital with more emergency water storage, while giving increased operating storage and system yield for both Wellington City Council and Greater Wellington. It is an important component of our short-term plans to maintain water supply at agreed levels while accommodating population growth. We will continue to work with the city council and health board towards a positive outcome. (QMS target 1.1.2, page 38)

We are improving process flexibility at Te Marua Water Treatment Plant. Our Te Marua plant was built to treat water both direct from the Hutt River and from storage lakes, but not from both sources at the same time. Though the capacity of the plant is equivalent to 140 million litres daily, a maximum of 80 million litres daily can be treated from storage. This can result in Te Marua producing less treated

water than is desirable on some days during summer, if there isn't enough water available from the Hutt River.

During the year we made good progress on split-streaming the treatment process at Te Marua. Water direct from the Hutt River is typically fairly clean, so the first stage of physical separation for dirt and contaminants (clarification) isn't needed. Water is sent straight to the filters for cleaning. Split-streaming will allow us to treat water from the Hutt River and storage separately, but at the same time, with water from storage undergoing both physical separation processes.

The benefits from split-streaming are improved flexibility in source water selection. This will allow the plant to maintain production when river abstraction is restricted due to consent conditions and algae is present in lake water. It also provides opportunities to reduce operating costs, through maximising treatment in direct filtration mode.

At 30 June 2006 the final stages of commissioning were underway. We expect the split-streaming project to be complete by the end of July 2006. (QMS target 1.1.2, page 38)

Planning for continuation of water supply during a pandemic was advanced. The much-publicised threat of a bird flu pandemic has focussed our attention on preparing to maintain a water supply should it eventuate. As part of co-ordinated national preparation and response planning, critical functions and personnel have been identified. Provisions have been made to try to protect their health and ensure they can continue to do their jobs, including stockpiling emergency supplies. Presentations have been made to all staff on preparing for a pandemic and a web site accessible from home has been set up for activation if needed. This can be used to disseminate information and allow for some remote working.

Workshops were held for our Operations staff and contractors to develop plans for personal preparedness, social distancing and work priorities in the event of emergency conditions. Training exercises are planned for 2006/07.

While it is impractical to try and prepare for every conceivable consequence of a pandemic, we take the threat that it poses to our operation very seriously and believe our level of response is appropriate. (Customer Service and Health & Safety PIs, page 28 and 27)

Water quality

Microbiological and chemical compliance was achieved. We complied with the microbiological and chemical requirements of New Zealand's drinking

water standards, for water leaving our treatment plants and in our distribution system.

Confirmation of compliance to the 2000 edition of the standards was received from Regional Public Health for the September and December quarters of 2005. The 2005 edition of the standards applied from 31 December 2005. Our records show that we complied fully during the March and June quarters of 2006, but we had not received confirmation of compliance by our publication date. (QMS targets 2.1.1, 2.1.2, 2.2.1 and 2.2.2, page 39)

We maintained certification for our quality management system. A recertification audit by BVQI in November 2005 resulted in no significant issues being raised by the auditor. Certification was extended for three years. A full report of performance against our quality system targets appears from page 38.

Mandatory compliance with New Zealand's drinking water standards moved a step closer. In June 2006 the Government introduced the *Health (Drinking Water) Amendment Bill*, which amends the *Health Act 1956*. It is expected the bill will go to a select committee for consideration.

This bill has been anticipated for some time and, if passed, will require drinking water suppliers to take all practical steps to comply with the drinking water standards and to implement public health risk management plans. It is hoped that the Government reciprocates by requiring the Ministry of Health and the Public Health Service to take all practicable steps to ensure they have sufficient resources to administer the act once the bill is passed. We have concerns at present that a lack of experienced staff in these organisations is holding up the grading of water treatment plants and causing long delays to answering queries related to the standards.

Grading rules for water sources are again under consideration. The Ministry for the Environment has put forward a revised proposal to establish a national environmental standard for drinking water sources. This provides an enhanced role for water suppliers in the consideration of resource consent applications and permitted use rules that may impact on source water. The Ministry for the Environment was finalising the standard at our year-end in the light of submissions received.

We anticipate that this standard will have little impact on our operations, because our surface water catchments are fully owned by Greater Wellington.

The public health grading of three of our four treatment plants remains unresolved. Last year we reported our disappointment that the public health grading for two of our four treatment plants was 'U' (un-graded), because they had not been assessed

by health authorities since January 1998. However, we also noted that our Te Marua, Waterloo and Gear Island treatment plants would be assessed and graded by 31 December 2005.

Unfortunately those grading assessments were not completed by health authorities during 2005/06, and the Ministry of Health's 2006 edition of the *Register of Community Drinking Water Supplies in New Zealand* has our Waterloo and Gear Island treatment plants joined by Te Marua as un-graded, due to another grading-age deadline having passed.

The register is intended to provide the public with easily understood information about the health risk status of their water supply. We must reiterate our disappointment that the health authorities have not acted more swiftly to remove this lack of clarity about the health risk status of many supplies, including our own. We are now actively seeking a resolution to this problem, in relation to our treatment plants, with local public health officials. (QMS objectives 5.1-5.4, pages 40-41)

A service level agreement with our customers remains under development. At present we have no formal service level agreement with the four city councils that we supply with potable water. Last year we reported considerable work was still needed to strengthen the draft agreement. Much work has gone into improving the body of the agreement since then, in conjunction with Wellington Water Management (Capacity), the customers' representative for this project. At 30 June 2006 we were working on the schedules to the agreement. We expect to provide the draft agreement and schedules to the four customer councils for their consideration by the end of 2006.

In the meantime, our asset management continues to be based on assured levels of service, principally compliance with the drinking water standards, an agreed 1-in-50-year security of supply standard and maintaining customer reservoirs near full. (QMS objectives 1.1-2.2 with related targets, pages 38-39)

Activated-carbon plant planned to counter taste and odour problems. We received a number of taste complaints in early January 2006 concerning water supplied to Upper Hutt and Porirua. The source of supply to both areas at the time was the Hutt River, so production at our Te Marua treatment plant was immediately switched over to the Stuart Macaskill Lakes while we investigated the problem.

Our investigations found the cause was likely to have been an outbreak of blue-green algae in the Hutt River upstream of the Kaitoke Weir intake. A sustained period of low rainfall between June and November 2005 and the resulting low river flows are thought to have contributed to the outbreak. It was cleared by heavy rainfall within a

week of the blooms' effect becoming noticeable in the treated water.

Regional Public Health was informed of the problem and our response to it. The water supplied from Te Marua complied fully with the health requirements of the drinking water standards throughout the incident. However we are taking steps to avoid a repeat of the cause of the unpleasant taste and odour experienced.

Our investigation of the incident recommended installing a powdered activated-carbon dosing plant at Te Marua, for use when there is an increased risk of algal blooms in the river. Designs were being finalised at our year-end, with the project completion estimated for March 2007. (QMS objectives 2.1 and 2.2, page 39)

We are working with Hutt City Council to prevent sand build-up in supplies to central Lower Hutt.

Last year we reported on trials aimed at reducing the level of silica (sand) from treatment lime entering Lower Hutt's distribution pipes. This material would normally settle out in a service reservoir, but some parts of Lower Hutt are supplied directly from our main, rather than from a reservoir. The trial work indicated a substantial reduction in lime use was achievable by introducing aeration to our Waterloo plant, but it wouldn't eliminate the problem entirely.

During the year we have investigated pre-mixing the treatment lime with water and using a clarifier to settle out any insoluble material before dosing the lime solution. While this would remove the problem of sand entering the distribution network, the associated capital cost is estimated to be \$2 million.

Hutt City Council is now looking at minor changes to its distribution network, so all the water we supply passes through one of its reservoirs first. This would allow the sand to settle out of the water there. We expect the city council to report back on the feasibility and cost of doing so in 2007. We will review its findings before considering the pre-mixing option further.

In the meantime, we plan to modify the Waterloo Water Treatment Plant in the coming year, so the two treatment streams can be run in parallel rather than in duty/standby mode as at present. This will improve aeration effectiveness and reduce our need for dosing lime. (Customer Service PI, page 28, QMS targets 2.1.3 and 2.2.3, page 39)

We are looking at how to better manage the health risk from ducks on the Stuart Macaskill Lakes.

In recent years, developments in drinking water quality standards have included greater focus on a multi-barrier approach to risk management, rather than relying on treatment alone.

Ducks have been identified as a major contributor to nutrient build-up in the Stuart Macaskill Lakes, as well as increasing the risk of the introduction of unwanted organisms, such as bacteria, viruses and algae. We are investigating the specific impact that ducks are having on our lake water quality and the risk this poses to the water supply. If this is found to be significant, we will approach Fish and Game to seek its support for culling ducks that use the lakes. (QMS target 2.1.1, page 39)

Education and recreation

We hosted 700 visitors on educational tours of our facilities last year. Raising public awareness about our water supply system is necessary to foster more sustainable use of water resources: a goal at the heart of Greater Wellington's long-term plans. We welcome student and community groups to our treatment plants to demonstrate how water treatment and supply are managed and to raise awareness about the value of water. The feedback we received from visiting groups was very positive and has also provided several suggestions for improvements.

A booklet about the history of water supply to Wellington is being updated. In 1985 we published a history of water supply in Wellington and its surrounding communities since 1872. This work was researched and compiled under the direction of Neil MacDougall, the operations engineer of the day.

Some 20 years have passed since and several important developments to the area's water supply organisation and operation have occurred. With our engineering services manager, John Morrison, retiring in February 2006, after more than 40 years of distinguished service in local water supply, we felt it timely to record that first-hand knowledge and update the water supply history. The original brochure has been a useful reference document. We expect to publish the updated history of water supply to the region's cities later this year.

We again provided an opportunity for recreational hunting on water catchment land. Since 2001 an annual ballot has been used to allocate 40 hunting permits for the Wainuiomata/Orongorongo Water Collection Area during the autumn 'Roar'. The ballot hunt is offered primarily to accommodate demand from recreational hunters, but also makes a modest contribution to our pest management activity within the catchments. The 2006 ballot hunt resulted in just 12 animals killed and feedback from hunters was that this opportunity is now less attractive because of the effectiveness of our total pest-animal control programme. (QMS objective 5.2, page 40)

Health, safety and training

(Health and safety PI, page 27)

We see health and safety management as a crucial component of good business practice.

Our health and safety plan details our commitment – through leadership, training and the allocation of resources – to effective planning, implementation, measurement, evaluation and review. To support the principle of continual improvement, a major review of procedures is carried out at least every two years.

Trends in accident and injury rates over time provide one measure of effectiveness of safety management systems.

Accident and injury rates	Year to 30 June				
	2006	2005	2004	2003	2002
Staff numbers (year end)	55	56	58	56	56
Incidents (per 100 employees)	49.1	22.0	40.7	36.3	25.3
Frequency (Incidents per 10,000 hours worked)	2.7	1.3	2.2	2.1	1.3
Severity (Days lost per 10,000 hours worked)	2.5	3.8	1.2	5.2	0.9

While the incident and frequency rates for the last year are high relative to the past four years, the severity rate is the median value for the five year period. All 25 days lost to injury resulted from a vehicle accident in July 2005, involving two members of staff. They were not at fault for the accident and both have recovered fully from their injuries. Most incidents were minor, being cuts, bruises, strains and sprains that required no time off work.

The number of hours dedicated to staff training courses was 2,637 or 48 hours per full-time employee. The equivalent figures for the last three years were 43 hours (2004/05), 44 hours (2003/04) and 32 hours (2002/03).

Direct expenditure on training and professional development for 2005/06 was 2.8 percent of total personnel costs, compared with a budget allowance of 3.0 percent. (EMS targets 7.1.1 and 7.2.1, page 45)

Detailed financial and water supply performance

Financial overview

The financial results for the reporting period ended 30 June 2006 reflect a satisfactory year's operating performance for Greater Wellington Water. While an operating deficit – \$0.1 million – was posted for the first time in our management of wholesale water supply, this result is still \$0.7 million ahead of the budgeted deficit of \$0.8 million.

These results incorporate the June 2005 decision to maintain the wholesale water levy at \$22.8 million for the 2005/06 financial year, in spite of the continued upward pressure on our key direct operating costs, such as power and chemicals. This decision ensured that 2005/06 was the ninth financial year in succession that the water levy has either remained unchanged or been reduced. Our debt level at 30 June 2006 was \$45.0 million, an increase of \$1.3 million over the course of the financial year, primarily due to a higher than average capital expenditure programme. Nevertheless, debt has still been reduced by \$27.6 million since June 1997, as cash surpluses generated during the course of operational activities in previous years were applied to accelerating the ongoing rate of debt principle repayment. In addition, the self-insurance fund balance has grown to \$9.5 million.

Total operating expenditure increased by 3.4 percent in 2005/06, from \$23.4 million to \$24.2 million, compared with an increase of 2.6 percent for the period 2004/05. This was due mainly to total contractor and consultant costs increasing by 19.4 percent, driven by new water source investigation work, whilst power and chemical costs also rose by 14.6 percent and 12.4 percent respectively. However, net financial costs continue to fall, being 8.2 percent lower than for the corresponding reporting period last year, as the increased debt level was offset by a similar increase in the self-insurance fund balance.

The supply system continues to prove its reliability, meeting a markedly higher annual level of demand, which translated into a 4.3 percent increase in water produced for consumption during 2005/06, (57,913 million litres), compared to 2004/05, (55,552 million litres).

Finalised expenditure on the capital works programme totalled \$6.4 million. This was \$0.5 million higher than budgeted, due primarily to adverse ground conditions encountered during completion of two major projects within the financial year. These projects were the relocation of the Kaitoke-Wellington main between SH2 and SH58 at Haywards Hill and building a new Karori Pumping Station on a seismically more secure site. Otherwise, expenditure has been incurred on a wide range of less financially significant projects, which nevertheless contributed to maintaining the security and quality of water supply to our territorial local authority customers in an environmentally sustainable manner.

The information contained in the following eight pages detail the financial results for Greater Wellington Water. Audit New Zealand has reviewed the financial information of Greater Wellington Water, an operating unit of the Greater Wellington Regional Council. Audit New Zealand can provide assurance that the financial information has been correctly extracted from the financial systems of the Greater Wellington Regional Council and provides a true and fair representation of the activities of Greater Wellington Water for the year ended 30 June 2006.

The table below summarises financial performance since 2002.

Financial summary

	June 2002	June 2003	June 2004	June 2005	June 2006
	Actual \$000	Actual \$000	Actual \$000	Actual \$000	Actual \$000
Operating revenue	24,437	24,003	23,844	24,274	24,130
Depreciation	5,320	5,347	5,352	6,563	6,331
Financial costs	4,497	3,794	3,674	3,295	3,176
All other operating expenditure	11,481	12,861	13,785	13,543	14,682
Surplus before abnormal items	3,139	2,001	1,033	873	(59)
Abnormal items					
Wainui pipeline easement revenue	500	-	-	-	-
Infrastructure asset w/o – 1999/2002	(307)	-	-	-	-
Operating surplus	3,332	2,001	1,033	873	(59)

Financial statements

Statement of financial performance

For the year ended 30 June

		2006	2006	2005
	Notes	Actual \$000	Budget \$000	Actual \$000
Operating revenue				
Water supply levies		22,776	22,776	22,776
Internal revenue		345	243	257
Other revenue (interest & external)		1,009	1,033	1,241
Total operating revenue		24,130	24,052	24,274
Operating expenditure				
Personnel costs		3,901	4,019	3,820
Contractor & consultant costs		1,500	1,671	1,256
Internal consultant costs	2	492	664	582
Interest costs		3,176	3,178	3,295
Depreciation		6,331	6,707	6,563
Loss/(gain) on sale		420	(33)	155
Movement in doubtful debt provision		(1)	-	(1)
GWRC overhead charge		914	914	878
Operating expenditure	3	7,456	7,749	6,853
Total operating expenditure		24,189	24,869	23,401
Net surplus for the year		(59)	(817)	873

Statement of movements in equity

For the year ended 30 June

	2006	2006	2005
	Actual \$000	Budget \$000	Actual \$000
Equity as at 1 July	257,715	258,937	256,842
Net surplus for the year	(59)	(817)	873
Total recognised revenues and expenses for the year	(59)	(817)	873
Revaluation reserve movement	(494)	-	-
Other reserve and equity movements	472	-	-
Equity as at 30 June	257,634	258,120	257,715

The accompanying notes and accounting policies should be read in conjunction with these financial statements

Statement of financial position

As at 30 June

	Notes	2006 Actual \$'000	2006 Budget \$'000	2005 Actual \$'000
Equity				
Accumulated funds, including appropriations	4	71,324	71,316	70,911
Asset revaluation reserve		186,310	186,804	186,804
Departmental reserve	6	-	-	-
Total equity		257,634	258,120	257,715
Represented by:				
Non-current liabilities				
Public debt	7	44,983	44,374	43,647
Total non-current liabilities		44,983	44,374	43,647
Current liabilities				
Accounts payable		1,527	3,411	1,871
Employee entitlements		508	653	502
Treasury payables	5	1,654	-	1,631
Total current liabilities		3,689	4,064	4,004
Total liabilities		48,672	48,438	47,651
Non-current assets				
Fixed assets	8	293,145	293,085	293,253
Investments	9	9,472	9,409	8,109
Total non-current assets		302,617	302,494	301,362
Current assets				
Accounts receivable		2,190	2,525	2,466
Stocks	10	1,453	1,505	1,494
Accrued revenue		46	34	44
Total current assets		3,689	4,064	4,004
Total assets		306,306	306,558	305,366
Total net assets		257,634	258,120	257,715

The accompanying notes and accounting policies should be read in conjunction with these financial statements

Statement of funds

For the year ended 30 June

	Notes	2006 Actual \$000	2006 Budget \$000	2005 Actual \$000
Funds from operating activities				
Funds were provided from:				
Levies received		22,776	22,776	22,776
Interest received		618	581	508
Other revenue		736	695	990
		24,130	24,052	24,274
Funds were applied to:				
Payments to suppliers and employees		14,262	15,018	13,388
Interest paid on public debt		3,176	3,178	3,295
		17,438	18,196	16,683
Net funds from operating activities	11	6,692	5,856	7,591
Funds from investing activities				
Funds were provided from:				
Proceeds from sale of fixed assets		62	94	39
		62	94	39
Funds were applied to:				
Purchase of fixed assets		314	506	163
Capital projects		6,413	5,937	4,102
		6,727	6,443	4,265
Net funds from investing activities		(6,665)	(6,349)	(4,226)
Funds from financing activities				
Funds were provided from:				
Appropriations/new loans		6,413	5,937	4,102
Transfer from reserves		-	-	-
		6,413	5,937	4,102
Funds were applied to:				
Repayment of public debt		5,077	4,113	6,214
Transfer to reserves		-	-	-
Investment additions		1,363	1,331	1,253
		6,440	5,444	7,467
Net funds from financing activities		(27)	493	(3,365)
Net increase in funds held		-	-	-
Add opening funds brought forward		-	-	-
Ending funds carried forward		-	-	-

The accompanying notes and accounting policies should be read in conjunction with these financial statements

Notes to the financial statements

For the year ended 30 June

1. Statement of accounting policies

A Reporting entity

Greater Wellington (GW) Water operates within the Water Supply, Parks and Forests Division of Greater Wellington Regional Council. Its activities include collection, treatment and distribution of potable water to four territorial authority customers.

These financial statements exclude balances in respect of the forest investments managed by the Water Supply, Parks and Forests Division.

B Measurement basis

The financial statements have been prepared on a historical cost basis, modified by the revaluation of certain fixed assets.

C Particular accounting policies

The following particular accounting policies, which materially affect the measurement of results and financial position, have been applied:

Water supply levies

Levies represent charges to the Territorial Authorities for the collection, treatment and distribution of potable water. Levies are recognised in the period to which they relate.

Fixed assets

Fixed assets consist of:

Operational assets – these include land, buildings, improvements, plant and equipment and motor vehicles.

Infrastructure assets – these relate to the Region's water supply system. Each asset type includes all items that are required for the system to function.

Valuation

All assets are valued at historical cost, except for the following:

- a. infrastructure assets have been valued at depreciated replacement cost at 30 June 2004
- b. operational land has been valued at 2004 market rates.

Work in progress

Work in progress is not depreciated. The total cost of the project is transferred to the relevant asset on completion and then depreciated.

Stocks

Chemical stocks and spares used for maintenance and construction purposes are valued at the lower of cost and net realisable value. This valuation includes allowances for slow-moving and obsolete stocks.

Depreciation

Depreciation is provided on a straight-line basis on all fixed assets other than land, at rates which will write off the cost (or valuation) of the fixed assets to their estimated residual value over their useful lives. The useful lives have been estimated as follows:

Buildings	10 to 100 years
Pipelines, reservoirs, dams	50 to 150 years
Plant, vehicles, equipment	3 to 20 years

Accounts receivable

Accounts receivable are stated at estimated realisable value after providing against debts where collection is doubtful.

Goods and services tax

All items in the financial statements are stated net of GST, with the exception of receivables and payables, which are stated as GST inclusive.

Statement of funds

The following are the definitions of the terms used in the Statement of funds:

- a. For the purpose of the financial statements, cash is deemed to be the movement in Treasury payables and receivables, being the cash equivalent for GW Water.
- b. Investing activities are those activities relating to the acquisition, holding and disposal of non-current assets.
- c. Financing activities are those activities that result in changes in the size and composition of the capital structure of GW Water.
- d. Operating activities include all transactions and other events that are not investing or finance activities.

Changes in accounting policies

There have been no material changes to the accounting policies, and all policies have been applied on a consistent basis.

2. Internal consultant costs and revenue

Charges between departments of GW Water have been eliminated. These charges were \$3.0 million and \$2.7 million in 2005/06 and 2004/05 respectively. The reported internal consultant costs and revenue refers to charges to and from other Greater Wellington Regional Council divisions and the Forestry Department of the Water Supply, Parks and Forests Division.

3. Operating expenditure

Operating expenditure is made up of payments for transportation costs plus materials and supplies, such as chemicals and power.

4. Accumulated surplus, including appropriations

	2006	2005
	Actual \$000	Actual \$000
Balance at 1 July	71,383	70,038
Surplus for the year	(59)	873
Transfers to and from departmental reserves	-	-
Balance at 30 June	71,324	70,911

5. Balance sheet – presentation of working capital

GW Water does not have its own bank account. All transactions are processed through the Greater Wellington Regional Council accounts. The net balance of these transactions is represented by the Treasury Payables figure within the accounts as at 30 June.

6. Departmental reserve

	2006	2005
	Actual \$000	Actual \$000
Balance at 1 July	-	-
Transfer to reserves	-	-
Transfer from reserves	-	-
Balance at 30 June	-	-

7. Long-term public debt

	2006	2005
	Actual \$000	Actual \$000
Balance at 1 July	43,647	45,759
New loans	6,413	4,102
Operating cash surplus applied to debt repayment	(5,077)	(6,214)
Balance at 30 June	44,983	43,647

All public debt obligations are fully secured against the rateable property of Greater Wellington Regional Council. The interest rate paid for the year ended 30 June 2006 was 7.53% (7.45% to 30 June 2005). All operating cash surpluses are applied to the accelerated repayment of debt.

8. Fixed assets

2006	Deemed cost \$000	Revaluation reserve \$000	Accumulated depreciation \$000	Net book value \$000
Land	2,896	4,954	-	7,850
Water supply infrastructure	113,960	181,356	12,332	282,984
Office equipment	264	-	108	156
Plant and equipment	1,734	-	1,169	565
Motor vehicles	1,109	-	690	419
Work in progress	1,171	-	-	1,171
	121,134	186,310	14,299	293,145

2005	Deemed cost \$000	Revaluation reserve \$000	Accumulated depreciation \$000	Net book value \$000
Land	2,871	4,979	-	7,850
Water supply infrastructure	106,347	181,825	6,316	281,856
Office equipment	252	-	101	151
Plant and equipment	1,619	-	1,082	537
Motor vehicles	1,032	-	750	282
Work in progress	2,577	-	-	2,577
	114,698	186,804	8,249	293,253

The last valuation of land, buildings and water supply infrastructure assets was performed in 2004, by the appointed registered valuers, Knight Frank Ltd. These valuations were stated at either the 2004 market values (land), or the depreciated replacement cost as at 30 June 2004 (infrastructure). The next asset revaluation will be carried out by June 2009 at the latest, and thereafter will occur on a regular cyclical basis. Those assets that contribute directly to the supply and distribution of water are classified as Water Supply Infrastructure and valued at component level. Detailed valuation information is held in GW Water's asset information system.

9. Investments

	2006 Actual \$000	2005 Actual \$000
Insurance investment	9,472	8,109
	9,472	8,109

As at 30 June 2006, this investment attracted an interest rate of 7.21%, after the effect of derivatives (7.01% as at 30 June 2005).

10. Stocks

	2006	2005
	Actual \$000	Actual \$000
Chemicals	119	125
Capital spares	1,334	1,369
	1,453	1,494

11. Reconciliation of funds from operations to operating surplus

	2006	2005
	Actual \$000	Actual \$000
Reported surplus	(59)	873
Add/(less) non-cash items:		
Depreciation	6,331	6,563
Loss/(gain) on sale	420	155
Total non-cash items	6,751	6,718
Net cash flow from operating activities	6,692	7,591

12. Financial instruments

Currency risk

GW Water is not exposed to foreign currency risk.

Credit risk

Financial instruments that expose GW Water to credit risk are principally bank balances, receivables and investments.

A provision for doubtful receivables is maintained and monitored on a regular basis. Bank balances are held with New Zealand-registered banks in accordance with GW Water's policy.

Concentration of credit risk

GW Water derives the majority of its income from the regional water supply levy. Regional water supply levies are collected from the region's four city councils.

Interest rate risk

Greater Wellington Regional Council's internal treasury unit manages GW Water's debt. A fixed rate of interest is charged by the unit, which minimises the exposure of GW Water to interest rate fluctuations.

Fair values

The estimated fair values of all of the financial instruments of GW Water are the book value of those investments.

13. Related parties

GW Water contracts other divisions of Greater Wellington Regional Council for some operational services. All such transactions are carried out on normal commercial terms.

14. Contingencies

GW Water had a single contingent liability of \$211,458 as at 30 June 2006 (\$160,186 at 30 June 2005).

15. Commitments

GW Water leases Level 4 of The Regional Council Centre from Greater Wellington Regional Council on an arms-length basis. As at 30 June 2006 GW Water had a variety of short-term capital works programme-related contractual commitments, valued at \$104,703, in addition to the office lease (\$854,853 at 30 June 2005).

Performance indicators

Performance indicators that applied during the 2005/06 operating year are shown in standard text. Results for 2005/06 in relation to the performance indicators are shown in italic text.

Quality: long-term

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

The water supplied from the water treatment plants will meet the Ministry of Health's DWSNZ 2000. However, once the draft standards for 2005 are finalised, water will be supplied to the new standards.

All water that GW Water treats currently meets Ministry of Health's DWSNZ. GW Water has a policy to target an 'A' grade standard for each of its water treatment plants. This means the water supplied to its customers is completely satisfactory, with minimal levels of health risk.

Since January 2006, a new more stringent edition of the standard has been in place and the provisions of this have been complied with according to our records. Hutt Valley District Health Board (HVDHB) has confirmed compliance to the 2000 standard for the 2005 calendar year, but it has not yet confirmed compliance with the new standard for the first two quarters of the 2006 calendar year.

A1 grade signifies "completely satisfactory, negligible level of risk, demonstrably high quality".

A grade signifies "completely satisfactory, extremely low level of risk".

B grade signifies "satisfactory, very low level of risk".

Our Te Marua, Waterloo and Gear Island treatment plants are currently un-graded ('U'). This is because the grade for each has lapsed and reassessments by HVDHB were outstanding at our year-end. Te Marua was formerly graded 'A'; we believe it will achieve an 'A1' grading when next assessed by HVDHB. Waterloo and Gear Island were formerly graded 'B'. We believe the Gear Island plant will achieve an 'A' grade when next assessed. Waterloo can only be graded 'B' because chlorine is not added to the treated water. This is at the request of Hutt City Council. The addition of chlorine provides a residual disinfection capability which helps protect water against the risk of contamination in the distribution network.

Wainuiomata Water Treatment Plant is graded 'A1'.

GW Water holds certification to ISO 9001:2000 Quality Management Systems – Requirement for its wholesale water supply operations. Quality management procedures within the system ensure the high quality of all aspects of the water supply operation.

Quality: short-term

By 30 June 2006:

The collection, treatment and delivery of water will be managed to ensure the quality of water supplied continually complies with the Ministry of Health's DWSNZ.

Compliance was confirmed for 2005. Analysis of the test results for the six months to 30 June 2006 indicate ongoing compliance with the standard.

Water testing will be carried out by an International Accreditation New Zealand (IANZ)-registered laboratory at sampling points defined by the quality assurance section of GW Water, not less than five days out of every seven. Expenditure will not exceed the budget of \$640,000.

A comprehensive monitoring and testing programme, complying with the requirements of the DWSNZ, has been undertaken. The quality of the water leaving the treatment plants has been continuously monitored, with results recorded every minute. The quality of the water in the wholesale distribution system has been sampled and tested by an IANZ-accredited laboratory every second day at representative locations. The cost of routine laboratory testing was on-budget, at \$640,000.

The grading for each of the water treatment plants at 1 July 2005 will be maintained.

The grading for Te Marua changed from 'A' to 'U' on 1 January 2006. This was due to the plant not having been assessed by HVDHB under the 2003 grading rules by 31 December 2005, rather than because of any material change at the treatment plant.

Vegetation management measures will be carried out in Greater Wellington Regional Council's water supply catchments, in accordance with its Forestry Management Plan and within a budget of \$220,000, so that the treatment plants receive good quality water.

Vegetation management control was carried out in the catchments as required. The final full-year cost of this work was \$191,460.

Provided legislation is passed by 30 June 2005, five public health risk management plans will be prepared.

Drinking water legislation was introduced to Parliament on 21 June 2006, but has not yet had its first reading. Development of risk management plans is on hold in the meantime.

A ranger service for the Wainuiomata/Orongorongo Water Collection Area will be obtained from the Landcare Division, at a cost not exceeding \$118,000.

Work by Regional Park Operations was completed as required. Annual expenditure of \$95,120 was incurred.

Security of supply: long-term

Water will be available on a daily basis to meet the 1-in-50-year return-period drought situation. The related water supply infrastructure will be maintained and improved to meet the standards specified in the *Regional Water Supply Asset Management Plan*.

In the event of a major emergency, appropriate contingency plans will be in place.

Projections using a computer-based sustainable yield model show that Greater Wellington Regional Council's water supply infrastructure has a greater-than 1-in-50-year shortfall probability until about 2007, at current growth rates. A 1-in-50-year shortfall probability was adopted after consultation with our customers. This is higher than that of Auckland's 1-in-200-year standard, though the Auckland system is more reliant on storage and hence more susceptible to long-term droughts.

We manage water supply assets in accordance with a planned programme of maintenance. Our policy is that there is no deferred maintenance. The Asset Management Plan was prepared in accordance with the National Asset Management Steering Group guidelines, and has been approved by Audit New Zealand.

GW Water has an '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 million litres still met.

Security of supply: short-term

By 30 June 2006:

Rebuilding the Karori Pumping Station will be completed in 2005/06 at a total project cost not exceeding \$2,500,000.

Construction of the new Karori Pumping Station was completed in June 2006. Commissioning is to be completed. Total cost to 30 June 2006 is \$2,833,300. Only minor costs are expected to arise during completion of commissioning. The bulk of the over-expenditure was due to adverse ground conditions. Additional capital works funding to cover these increased costs was approved by the Policy, Finance and Strategy Committee at its February 2006 meeting.

The section of the Kaitoke-Wellington pipeline on the Silverstream Bridge will be replaced at a cost not exceeding \$450,000, provided Upper Hutt City Council's bridge strengthening work is completed by 28 February 2006.

Replacement of the Kaitoke-Wellington pipeline has not proceeded as the benefit, in terms of flood level reductions, is being re-examined. Strengthening of the bridge for Upper Hutt City Council commenced in June 2006, but the chosen design has little direct impact on the pipeline. Only \$12,000 was spent in 2005/06 on design and liaison.

The new section of the Kaitoke-Wellington pipeline between State Highway 2 and State Highway 58 will be completed at a total project cost not exceeding \$2,400,000.

Relocation of a section of the Kaitoke-Karori pipeline at Haywards was completed in June 2006, after encountering severely adverse ground conditions. Project cost to 30 June is \$2,909,000. Additional capital works funding to cover these increased costs was approved by the Policy, Finance and Strategy Committee at its February 2006 meeting.

Environmental management: long-term

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

GW Water acquires and seeks to comply 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 wastewater recovery plants and removed off-site.

GW Water holds certification to ISO 14001:2004 (the International Standards Organisation's environmental management benchmark) for its wholesale water supply activities. Certification to ISO14001:2004 was granted in May 2006.

Environmental management: short-term

By 30 June 2006:

All appropriate resource consent conditions will be complied with, within a monitoring budget of \$65,000.

We hold 74 resource consents. Full compliance was certified by the Greater Wellington Environment Division for all but five. The instantaneous abstraction rates in relation to water take from (1) Kaitoke and (2) Wainuiomata River and Upper and Lower George Creek were exceeded on a single occasion in each instance. The rate of discharge from Wainuiomata Water Treatment Plant to Wainuiomata River was also exceeded, on two days. The total fee for ongoing consents during the financial year was \$55,792.

Resource consent compliance will be demonstrated to an auditable standard and a report on compliance for 2004/05 will be prepared by 30 November 2005.

A report was published by 30 November 2005.

Aquifer monitoring wells will be installed at the Petone foreshore at a cost not exceeding \$100,000.

No expenditure has been incurred on this project to date, with the installation of the wells now deferred to 2006/07.

Health and safety: long-term

The manner in which we carry out our operations will comply with the *Health and Safety in Employment Act 1992*, as amended in 2002, *Health and Safety Regulations 1995*, relevant codes of practice and current legislation.

A hazard identification programme will be undertaken at all work locations in order to eliminate, isolate or minimise the effect of risk to all GW Water staff and contractors working at those locations. These hazards will be entered on a hazard register, which will be continually updated.

A hazard identification programme has been undertaken for all operational sites and hazard registers have been updated and are maintained on an ongoing basis.

Health and safety: short-term

By 30 June 2006:

The hazard register will be reviewed on a six-monthly basis. The effectiveness of the measures taken to eliminate, isolate or minimise risk to all GW Water employees and contractors will be continually assessed.

The health and safety plans of all contractors employed by GW Water will be reviewed prior to their employment. Their activities should comply with the *Health and Safety in Employment Act 1992*, as amended in 2002, the *Health and Safety Regulations 1995*, relevant codes of practice and current legislation, and meet or exceed the methods of operation as determined within the *Utility Services Health and Safety Plan*. Their activities will be monitored on a regular basis, to ensure that any risk to their employees, employees of subcontractors, Greater Wellington Regional Council staff or the general public is eliminated, isolated or minimised.

The hazard registers have been recently reviewed and no issues relating to their effectiveness have been identified.

Contractor Health and Safety plans continue to be reviewed prior to engagement.

There have been two minor incidents in the year to 30 June 2006. In the first, a fire extinguisher went off and spray went into the right eye of a contractor. Remedial corrective action has been taken to avoid a repetition. The second incident saw a contractor slip on wet ground, striking his right knee on a rock and sustaining bruising and soreness, resulting in one day lost time. He has been advised to get his boots resoled.

Customer service: long-term

GW Water will continue to demonstrate that it has a high standard of customer service. It will provide customers with up-to-date and relevant information, as well as listening and responding to their needs.

GW Water maintains regular communication with customer organisations at various levels of seniority.

Customer service: short-term

By 30 June 2006:

Customers will be provided with a business report by 30 November 2005, which will include the following information:

- financial results for the preceding financial year ended 30 June
- actual quality compared with targeted performance
- a list of incidents where supply has been interrupted, together with the time taken to respond and repair
- a report on compliance with resource consent requirements
- status of ongoing service level agreements.

A report was published by 30 November 2005. Information as per the bullet points above was included.

Business efficiency: long-term

GW Water has improved its business efficiency over the last nine years following various restructuring initiatives, whilst maintaining its service quality levels. Total operating expenditure, excluding depreciation, is not expected to increase in real dollars. Thus we expect the water levy to be held at the 2004/05 dollar level across the eight year planning period. However, asset values are expected to increase significantly across the eight year planning period, which will in turn increase the depreciation expense.

The annual costs of running GW Water, excluding changes in depreciation rates, has reduced by \$5.2 million or 23 percent between 1997 and 2006, whilst service levels have been maintained throughout this period.

Business efficiency: short-term

By 30 June 2006:

Total operating expenditure, excluding depreciation, will not exceed \$20,940,000.

Expenditure of \$20,374,200 was incurred during the financial year with activities having been carried out according to requirements.

The revenue from the water levy will not exceed \$22,777,000.

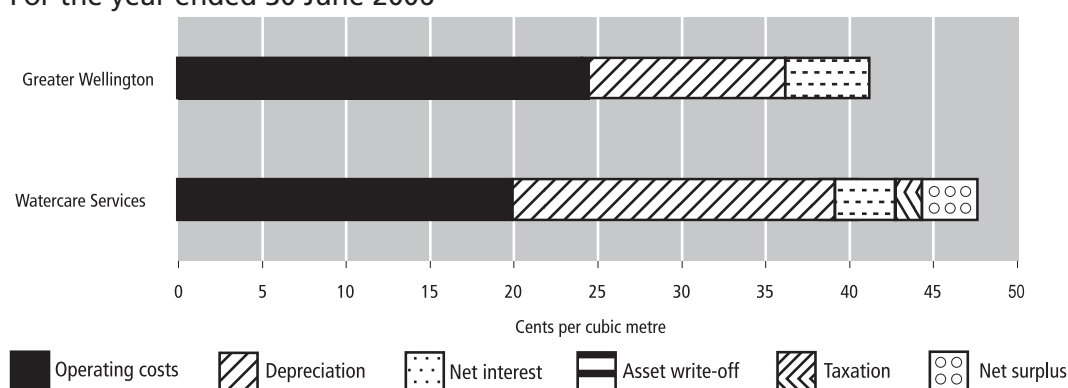
Water levy revenue of \$22,746,473 was received during the financial year.

Benchmarking of costs

GW Water's performance has been compared with that of Watercare Services Limited (Auckland), the only other water supplier in New Zealand that sells water to territorial authorities or their agents for on-sale, rather than selling to consumers directly. Although the two organisations work under substantially different conditions, Watercare provides the most meaningful performance comparison currently available. The costs shown for GW Water resulted in a deficit relative to the water levy paid by our four territorial authority customers equivalent to 1.4 cents per cubic metre of water supplied. When other income is taken into account the deficit is equivalent to 0.1 cents per cubic metre of water supplied. Please note that Watercare's result includes an upward revaluation of its derivative financial instruments, equivalent to 0.4 cents per cubic metre of water supplied. This has been represented as an offset against the actual surplus of 3.4 cents per cubic metre.

Potable water supply costs

For the year ended 30 June 2006



Water sources

Water abstraction (million of litres)

For the year ended 30 June

Source	Annual					Maximum week			Maximum day		
	Total		Percent	Average day		Date	Average day		Date	Day	
	2006	2005		2006	2005		2006	2006		2005	2006
River and stream abstraction											
Kaitoke/Te Marua	28,544	28,641	46.1%	78.2	78.5	10/8/05	137.1	128.6	7/8/05	144.0	144.1
Wainuiomata	3,662	5,616	5.9%	10.0	15.4	14/6/06	29.6	27.9	8/6/06	40.7	35.4
Orongorongo	1,749	869	2.8%	4.8	2.4	9/11/05	22.5	20.6	6/11/05	24.8	24.4
George Creek	1,024	1,741	1.7%	2.8	4.8	24/5/06	6.2	13.2	27/6/06	8.6	22.1
Big Huia Creek	663	653	1.1%	1.8	1.8	30/11/05	6.1	6.9	27/11/05	9.5	9.3
Total - rivers	35,641	37,520	57.5%	97.6	102.8	19/4/06	168.6	166.3	28/6/06	175.9	175.6
Public artesian abstraction											
Waterloo	26,272	23,034	42.4%	72.0	63.1	14/9/05	84.5	88.5	10/1/06	99.0	98.7
Gear Island	70	161	0.1%	0.2	0.4	21/12/05	3.3	7.5	16/12/05	10.6	22.0
Total - artesian	26,341	23,195	42.5%	72.2	63.5	14/9/05	84.7	91.1	10/1/06	99.3	108.2
Total public abstraction	61,983	60,715	100.0%	169.8	166.3	24/5/06	218.6	224.4	23/1/06	253.6	238.9

Totals may not add exactly due to rounding

Rainfall levels (millimetres)

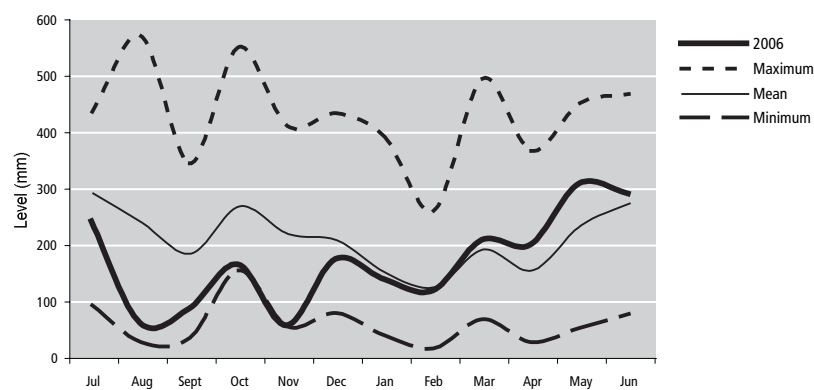
For the year ended 30 June 2006

	Kaitoke ¹	Karori ²	Orongorongo ³	Wainuiomata ⁴
2006	1,694	931	2,011	1,546
2005	2,501	1,324	3,166	2,218
Mean of data record	2,192	1,238	2,472	1,932
2006: mean	77%	75%	81%	80%

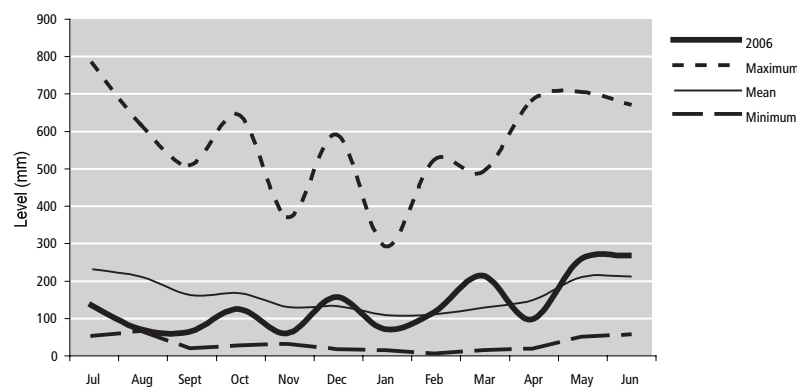
¹: Kaitoke Headworks rain gauge. ²: Karori Sanctuary rain gauge. ³: Orongorongo Swamp rain gauge. ⁴: Wainuiomata Reservoir rain gauge.

The following graphs show average rainfall per month in our surface water catchments for the year to 30 June 2006 compared with the maximum, minimum and mean of the data record for each site.

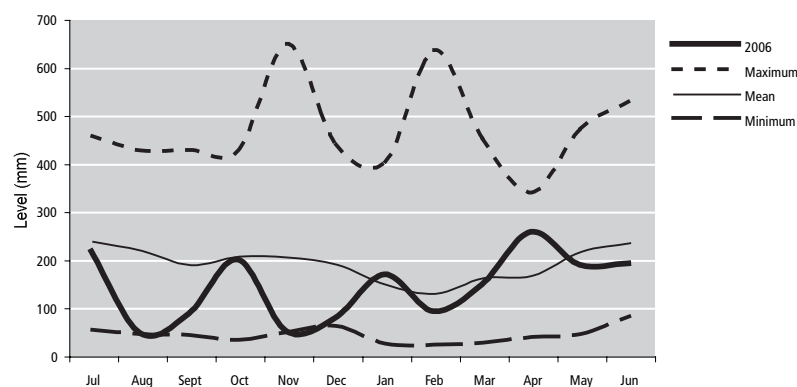
Orongorongo catchment rainfall (Orongorongo Swamp record 1980 – 2006)



Wainuiomata catchment rainfall (Wainuiomata Reservoir record 1890 – 2006)



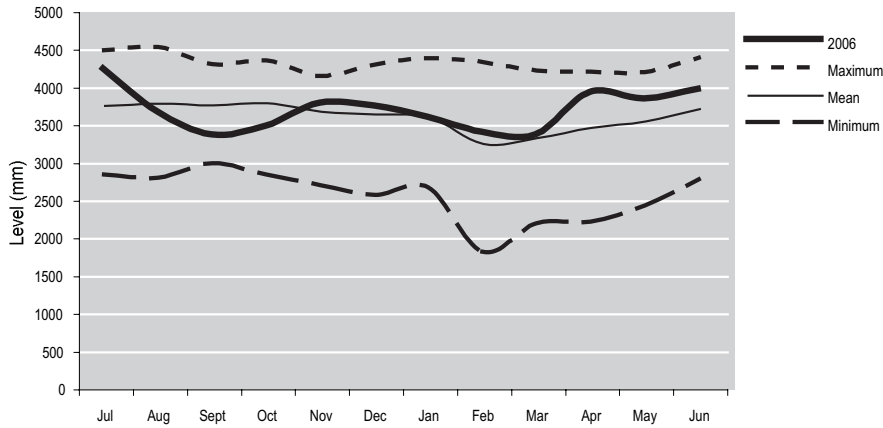
Hutt catchment rainfall (Kaitoke Headworks record 1991 – 2006)



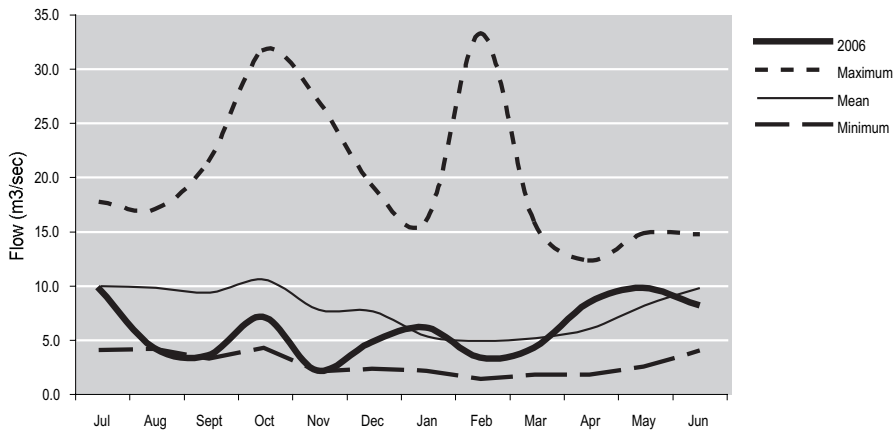
Levels and flows from water sources

The following three graphs show the average aquifer level and river flow rates per month for the year ended 30 June 2006 compared with the maximum, minimum and mean of the total data record for each site.

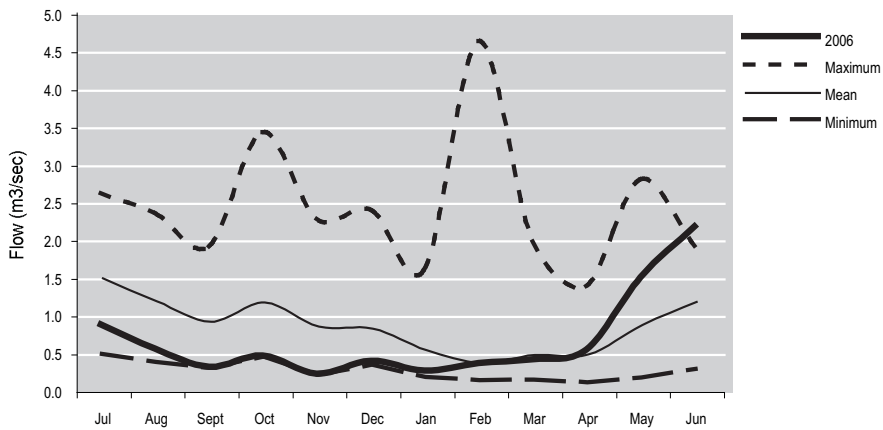
Waiwhetu Aquifer level (McEwan Park record 1971-2006)



Hutt River flow (Kaitoki record 1968-2006)



Wainuiomata River flow (Manuka Track record 1982-2006)



Resource consents

Resource consents held

As at 30 June 2006

Water take	Land use	Discharge	Total
11	43	20	74

For the year to 30 June, we received full compliance for all but five consents held. We received a 'mainly complying' assessment for water take at Kaitoke Weir, due to the consented maximum instantaneous abstraction rate being exceeded on a single occasion. The consent manager assessed the cause of the breach was beyond our control. The maximum abstraction rate from the Wainuiomata water catchment area – three separate consents covering Wainuiomata River and upper and lower George Creek – was also exceeded on a single occasion. In that instance we received a 'non-complying' assessment, as the fault was due to operator error. The incident has been reviewed and actions taken to improve our procedures. The resource consent for discharge from Wainuiomata Water Treatment Plant to the Wainuiomata River was also assessed as 'non-complying', due to our rate of discharge being classified as exceeding the permitted maximum on two days. We intend to review the timing and duration of discharges on the two days in question before deciding what further action is needed.

Distribution shutdowns

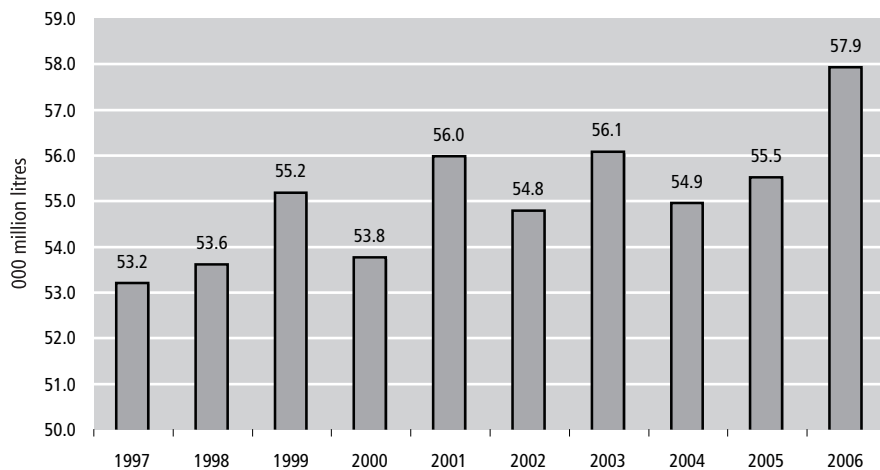
In the year ended 30 June 2006 there were 57 shutdowns (2005 = 66) on the GW Water's regional water supply mains: no loss of pressure or supply to customers resulted.

12 shutdowns were unscheduled, for the repair of leaking or burst mains, or to repack leaking valves, compared with 13, 19, 21, 16 and 17 in the five prior financial years (2005, 2004, 2003, 2002 and 2001 respectively). All of the shutdowns during the year ended 30 June 2006 were completed and the water supply reinstated within eight hours.

The remaining 45 shutdowns were scheduled (2005 = 53). This work was required to install new or refurbished pipes and valves (23), remove redundant distribution assets (8), to mitigate the risk to third parties working in close proximity to our high-pressure mains (1) and for planned maintenance (13). All scheduled shutdowns were completed and the supply reinstated in less than eight hours.

Water supplied to customers

Water supply figures have historically been recorded weekly by manual reading of revenue meters at the supply points to our customers (from December 2005, we have had remote access to these meters and have collected readings daily). The annual supply totals presented below have been calculated to represent 365/366 day years, so as to make the historic data more directly comparable between years and consistent with abstraction and production figures, which are recorded daily. The years ended 30 June 1996, 2000 and 2004 are 366 days.



Water supplied (millions of litres)

For the year ended 30 June

	Hutt City		Porirua City		Upper Hutt City		Wellington City		Total supply	
	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day
2006	14,236	39.0	6,475	17.7	5,533	15.2	31,667	86.8	57,913	158.7
2005	13,938	38.2	6,022	16.5	5,319	14.6	30,244	82.9	55,522	152.1
% change	2.1%		7.5%		4.0%		4.7%		4.3%	
2004	13,956	38.1	5,907	16.1	5,296	14.5	29,776	81.4	54,935	150.1
2003	14,714	40.3	6,135	16.8	5,303	14.5	29,899	81.9	56,050	153.6
2002	14,177	38.8	5,908	16.2	5,774	15.8	28,902	79.2	54,760	150.0
2001	14,441	39.6	5,987	16.4	5,807	15.9	29,729	81.4	55,962	153.3
2000	13,989	38.2	5,536	15.1	5,496	15.1	28,729	78.5	53,750	146.9
1999	14,986	41.1	5,777	15.8	5,741	15.7	28,661	78.5	55,165	151.1
1998	14,679	40.2	5,499	15.1	5,111	14.0	28,296	77.5	53,585	146.8
1997	14,310	39.2	5,138	14.1	5,167	14.2	28,571	78.3	53,186	145.7

Average per capita daily supply (litres)

For the year ended 30 June 2006

	Hutt City	Porirua City	Upper Hutt City	Wellington City	Total
Population ¹	100,300	50,400	35,700	186,300	372,700
Households ²	35,500	15,450	14,200	68,300	133,450
Gross litres/head/day	389	352	425	466	426
Gross litres/household/day	1,099	1,148	1,068	1,270	1,189

¹: Usually resident population – projection from Statistics New Zealand estimates for 30 June 2004 and 2005. ²: Occupied dwellings – 2006 Census (provisional)

Maximum week supply (millions of litres)

For the year ended 30 June

	Hutt City	Porirua City	Upper Hutt City	Wellington City	Total
Maximum week 2006	16/11/05	18/1/06	1/2/06	22/2/06	22/2/06
Total of max. week					
2006	315.6	147.7	127.8	692.0	1,270.2
2005	347.3	153.9	141.3	680.9	1,323.3
% change	-9.1%	-4.0%	-9.6%	1.6%	-4.0%
Avg. day of max. week					
2006	45.1	21.1	18.3	98.9	181.5
2005	49.6	22.0	20.2	97.3	189.0

'Base' winter (June – August) supply (millions of litres)

For the year ended 30 June

	Hutt City		Porirua City		Upper Hutt City		Wellington City		Total 'base' supply	
	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day
2006	3,377	36.7	1,503	16.3	1,276	13.9	7,560	82.2	13,716	149.1
2005	3,356	36.5	1,443	15.7	1,245	13.5	7,271	79.0	13,314	144.7
% Change	0.6%		4.2%		2.5%		4.0%		3.0%	
2004	3,414	37.1	1,415	15.4	1,226	13.3	7,230	78.6	13,285	144.4
2003	3,498	38.0	1,402	15.2	1,283	13.9	7,137	77.6	13,319	144.8
2002	3,445	37.4	1,365	14.8	1,374	14.9	6,996	76.0	13,180	143.3
2001	3,361	36.5	1,335	14.5	1,335	14.5	6,974	75.8	13,005	141.4
2000	3,394	36.9	1,284	14.0	1,305	14.2	7,016	76.3	12,999	141.3
1999	3,452	37.5	1,315	14.3	1,284	14.0	6,810	74.0	12,861	139.8
1998	3,405	37.0	1,281	13.9	1,184	12.9	6,711	72.9	12,581	136.8
1997	3,396	36.9	1,215	13.2	1,219	13.2	6,869	74.7	12,699	138.0

N.B. figures are July and August from one calendar year and June from the next. E.g. 2006 represents July and August 2005 and June 2006

Water quality

Chemical monitoring of the wholesale water supply

The health risk due to toxic chemicals in drinking water differs to that caused by microbiological contaminants. It is unlikely that any one substance could result in an acute health problem except under exceptional circumstances, such as significant contamination of the supply. Moreover, experience has shown that the water usually becomes undesirable after such incidents for obvious reasons such as taste, odour and appearance. The problems associated with chemical constituents arise primarily from their ability to cause adverse effects after prolonged periods of exposure. Standards for chemical compliance are set out in the DWSNZ 2005.

Mean values of chemical analysis at treatment plants

For the year ended 30 June 2006

Parameter	GV or MAV ^(A)	Te Marua		Wainuiomata		Waterloo		Gear Island	
		No. of samples	Value	No. of samples	Value	No. of samples	Value	No. of samples	Value
Alkalinity (total), mg/L CaCO ₃	-	250	43	38	47	52	61	8	67
Aluminium (acid soluble), mg/L	0.10	12	<0.02	9	0.03	-	-	-	-
Arsenic (total), mg/L	0.01	2	<0.001	2	<0.001	4	<0.001	4	<0.001
Boron, mg/L	1.4	2	0.012	2	0.020	4	0.027	4	0.026
Cadmium (total), mg/L	0.004	2	<0.00005	2	<0.00005	4	<0.00005	4	<0.00005
Calcium (total), mg/L	^(B)	4	13	3	20	4	22	4	10
Chloride, mg/L	250	4	7.7	3	21	4	14	4	14
Chromium (total), mg/L	0.05	2	<0.0005	2	<0.0005	4	<0.0005	4	<0.0005
Colour (true), PtCo units	10	54	<5	37	<5	-	-	-	-
Conductivity, µS/cm @ 25°C	-	13	133	9	182	12	185	8	202
Copper (total), mg/L	2	12	0.04	9	<0.02	12	<0.02	8	<0.02
Cyanide (total), mg/L	0.08	2	<0.008	2	<0.008	4	<0.008	4	<0.008
Fluoride, mg/L	1.5 ^(C)	250	0.84	182	0.88	498	0.86	301	0.84
Hardness (total), mg/L CaCO ₃	200	12	38	9	58	12	65	8	43
Iron (total), mg/L	0.2	12	<0.05	9	0.05	12	0.09	8	0.15
Langelier saturation index	≥0	6	-1.0	6	-0.9	6	-0.5	5	-1.1
Lead (total), mg/L	0.01	2	0.0002	2	<0.0001	4	<0.0001	4	<0.0001
Magnesium (total), mg/L	^(B)	2	1.3	2	2.0	4	2.7	4	4.0
Manganese (total), mg/L	0.4	12	<0.05	9	<0.05	12	<0.05	8	<0.05
Mercury (total), mg/L	0.002	2	<0.00008	2	<0.00008	4	<0.00008	4	<0.00008
Nickel (total), mg/L	0.02	2	<0.0005	2	<0.0005	4	<0.0005	4	<0.0005
Nitrate, mg/L -N	50	2	0.02	2	0.05	4	0.64	4	1.2
pH	7.0-8.5	250	7.8	38	7.6	52	7.7	10	7.6
Selenium (total), mg/L	0.01	2	<0.001	2	<0.001	4	<0.001	4	<0.001
Silica (molybdate-reactive), mg/L	-	2	10	2	13	4	15	4	16
Sodium (total), mg/L	200	4	13	3	12	4	12	4	26
Solids (total dissolved), mg/L	1000	12	86	9	115	12	120	8	130
Sulphate, mg/L	250	4	8.6	3	5.8	4	6.1	4	6.7
Turbidity, NTU	2.5	54	0.15	38	0.35	52	0.50	-	-
Zinc (total), mg/L	1.5	12	<0.05	9	<0.05	12	<0.05	8	<0.05

Notes: ^(A) *Drinking-water Standards for New Zealand 2005*, Guideline Values (GV) or Maximum Allowable Values (MAV). The 2005 standards came into effect on 31 December 2005. Prior to 31 December 2005 the 2000 edition of the standards applied. A dash in the 'GV or MAV' column indicates that there is no applicable guideline or maximum allowable value. ^(B) See Hardness. ^(C) The fluoride content recommended for drinking water by the Ministry of Health for oral health is 0.7 to 1.0 mg/L.

Microbiological monitoring of the wholesale water supply

A public water supply that is free from microbiological contamination is an important factor in achieving high standards of public health. Microbiological contamination of a water supply has the potential to cause sickness within the community. Microbiological monitoring of potable water is carried out in order to determine the safety of the water in relation to the possibility of transmission of waterborne disease. *Escherichia (E.) coli*, which usually comes from faecal material, is used as an indicator of bacteriological contamination. Low numbers of protozoa (*Cryptosporidium*) are demonstrated by ensuring the turbidity of the water following treatment is kept very low. Direct testing for protozoa is not practical or required by the Ministry of Health.

Production

During the year in review, the DWSNZ 2000 was in effect until 31 December 2005, when it was superseded by the DWSNZ 2005.

At our surface water treatment plants (Te Marua and Wainuiomata) compliance to the microbiological criteria of the DWSNZ is demonstrated by continuously monitoring turbidity of the water leaving each filter and free available chlorine (FAC) and pH in drinking water leaving the treatment plants. A chlorine residual in the treated water indicates that microbiological contaminants have been neutralized.

The Waiwhetu Aquifer is a secure water source and therefore, according to the drinking water standards, free from microbiological contamination. However, water leaving our aquifer-source water treatment plants (Waterloo and Gear Island) is tested to demonstrate compliance to the *E.coli* criteria of the DWSNZ. No *E.coli* was detected in daily testing of water leaving either the Waterloo or Gear Island Water Treatment Plant.

The Ministry of Health assesses microbiological compliance to the DWSNZ annually, on a calendar year basis. Te Marua, Wainuiomata, Waterloo and Gear Island treatment plants were assessed as complying with the microbiological requirements of the DWSNZ 2000 for the year to 31 December 2005.

Our continuous monitoring records indicate that we achieved compliance with the microbiological requirements of the DWSNZ 2005 for the six months to 30 June 2006. HVDHB is yet to assess these records in relation to the 2006 compliance year.

Distribution

Greater Wellington Regional Council's Laboratory monitors the microbiological quality of water in our distribution system after treatment. *E.coli* sampling is used, in accordance with the requirements of the drinking water standards for sampling reticulation systems.

Our distribution system is listed in the *Register of Community Drinking Water Supplies in New Zealand*. The system is split into three distinct zones, with each having its own sampling requirements based on population served. Samples must be taken on different days of the week and from sites that represent the full range of conditions that exist within a distribution zone. The three zones are (1) Central Hutt/Petone (unchlorinated supply from Waterloo Water Treatment Plant), (2) Wainuiomata/South Wellington (supply from Wainuiomata Water Treatment Plant) and (3) Upper Hutt/Porirua/North Wellington (supply from Te Marua Water Treatment Plant). Samples are drawn from 16 sampling sites within the three zones.

A summary of results for the twelve months from 1 July 2005 to 30 June 2006 is given below.

***E.coli* results – summary of samples collected**

For the year ended 30 June 2006

Distribution Zone	DWSNZ MAV ^(D)	No. of samples	No. of positive results
Central Hutt/Petone	<1	337	1
Wainuiomata/South Wellington	<1	394	0
Upper Hutt/Porirua/North Wellington	<1	363	0

^(D) Drinking Water Standards for New Zealand 2000, Maximum Allowable Value (MAV).

Retesting was carried out following the single positive result from the Central Hutt/Petone zone. No *E.coli* was detected.

HVDHB confirmed compliance with the DWSNZ for the 2005 calendar year. Our records indicate that we also complied for the 2006 year to 30 June and we have been advised informally that compliance is likely to be confirmed, but confirmation is yet to be received.

Quality management system

Quality management system objectives, targets and performance

Text in the two columns to the right of each target gives (1) a summary of performance against the target for the 2005/06 financial year, and (2) additional background information where needed.

	Targets	Achievement 2005/06	Comment
Objective 1.1	Provide sufficient water to meet the unrestricted (other than routine hosing restrictions) demand in all but a drought situation that has a severity equal to or greater than a 1-in-50-year drought		
Target 1.1.1	Develop new sources, as required, to ensure that sufficient water is available to meet the unrestricted (other than by routine hosing restrictions) demand in all but a drought situation that has a severity equal to or greater than a 1-in-50-year drought	All demand met without restrictions. New long-term water source options being investigated	GW Water uses a complex supply and demand model (Sustainable Yield Model) to assist with strategic planning. The SYM indicates that there is sufficient water available to service a population of 377,000 to a 1-in-50-year reliability standard. Statistics New Zealand's current population projections indicate that this level of population could be reached as soon as 2007. A wide range of options for supplementary supply is being considered, including taking more water direct from the Hutt River, abstracting water from the Upper Hutt aquifer or building a storage dam.
Target 1.1.2	Develop and extend the water supply infrastructure as required to ensure that sufficient water is available to meet the unrestricted (other than by routine hosing restrictions) demand in all but a drought situation that has a severity equal to or greater than a 1-in-50-year drought [Note: In a drought situation it may be necessary to impose restrictions as a precautionary measure, even though the drought may at its conclusion turn out to be of lesser severity than 1 in 50 years.]	Customers consulted re capital work. All demand met without restrictions	Customers are consulted annually about their requirement for new supply points to meet population movement within their boundaries. The supply infrastructure was not extended, but various seismic strength improvement projects were progressed, including relocating 800m of the Kaitoke to Karori pipeline to a more secure location. New supply points at Whitby and Judgeford are being planned.
Objective 1.2	Maintain the customers' service reservoirs above agreed minimum levels.		
Target 1.2.1	Meet the following criteria for each customer service reservoir supplied directly by GW Water: <ul style="list-style-type: none"> maintain at least 70% full for 90% of the time maintain at least 60% full for 98% of the time. [Note: Compliance with this target will be assessed by interrogating reservoir level data recorded at 15 minute intervals.]	60% full target met for 530 of 540 reservoir-months (98.1%) 70% full target met for 520 of 540 reservoir-months (96.3%)	The 60% target was not reached for 26 reservoir-months in total. However, 12 of these events were due to reservoir levels being lowered or emptied so the customer could carry out maintenance or improvement work. A further 4 events were directly due to planned works by GW Water on reservoirs or pipelines that necessitated use of storage. The remaining 10 events were unexpected and resulted from either high demand or equipment failure. The 70% target was not reached for 34 reservoir-months in total. However, 12 of these events were due to reservoir levels being lowered or emptied so the customer could carry out maintenance or improvement work. A further 2 events were directly due to planned works by GW Water on reservoirs or pipelines that necessitated use of storage. The remaining 20 events were unexpected and resulted from either high demand or equipment failure.
Objective 1.3	Maintain system pressure above agreed minimum levels		
Target 1.3.1	Maintain the wholesale supply pressure into the Thorndon Zone above 85m for 90% of the time and above 80m and below 100m for 98% of the time [Note: Compliance with this target will be assessed by interrogating pressure data recorded at 15 minute intervals.]	Above 80m and below 100m pressure target met for all 12 months Above 85m pressure target met for 11 of 12 months	Thorndon Zone pressure above 80m and below 100m for at least 99.4% of the time for each month (range = 99.4% to 100%) Thorndon Zone pressure above 85m for 86% of November 2005. For the remaining 11 months it was above 85m for at least 91.4% of each month (range = 86.0% to 100%)

	Targets	Achievement 2005/06	Comment
Objective 2.1	Comply with the microbiological, chemical and aesthetic requirements of the DWSNZ for water leaving the treatment plants		
Target 2.1.1	Comply with the microbiological requirements of the DWSNZ for water leaving the treatment plants 100% of the time	Fully complying	Formal compliance is assessed on a calendar-year basis. Microbiological compliance to the DWSNZ 2000 was certified by Hutt Valley District Health Board's (HVDHB) Regional Public Health section for 2005 for our four water treatment plants. We believe our compliance data for January to June 2006 meets the compliance criteria of the DWSNZ 2005 (effective from 31 December 2005), but HVDHB has yet to assess compliance for that period.
Target 2.1.2	Comply with the chemical [P2] requirements of the DWSNZ for water leaving the treatment plants 95% of the time	Fully complying	Compliance is assessed on a calendar-year basis. Chemical [P2] compliance was certified by HVDHB for 2005 for our four water treatment plants. We believe our compliance data for January to June 2006 meets the compliance criteria of the DWSNZ 2005 (effective from 31 December 2005), but HVDHB has yet to assess compliance for that period.
Target 2.1.3	Comply with the aesthetic requirements of the DWSNZ for water leaving the treatment plants	Not yet achieved	Compliance is assessed on a calendar-year basis. We are monitoring for aesthetics and believe that our records show we fully met the compliance criteria, consistent with the DWSNZ and the <i>Public Health Grading of Community Drinking-Water Supplies 2003</i> . However, a compliance report was not submitted to HVDHB for assessment.
Objective 2.2	Comply with the microbiological, chemical and aesthetic requirements of the DWSNZ for water in the distribution system		
Target 2.2.1	Comply with the microbiological requirements of the DWSNZ for water in the distribution system 100% of the time	Fully complying	Compliance is assessed on a calendar-year basis. Microbiological compliance with DWSNZ 2000 was certified by HVDHB for 2005. Data for January to June 2006 under the revised DWSNZ 2005 shows compliance and we have interim confirmation of this from HVDHB.
Target 2.2.2	Comply with the chemical requirements of the DWSNZ for water in the distribution system	Fully complying	Chemical compliance testing is carried out at the water treatment plants (see target 2.1.2 above).
Target 2.2.3	Comply with the aesthetic requirements of the DWSNZ for water in the distribution system 90% of the time	Not yet achieved	Compliance is assessed on a calendar-year basis. We are monitoring for aesthetics and believe that our records show we fully met the compliance criteria, consistent with the DWSNZ and the <i>Public Health Grading of Community Drinking-Water Supplies 2003</i> . However, a compliance report was not submitted to HVDHB for assessment.
Objective 3.1	Unless our customers specifically request that un-fluoridated water be supplied, and it is practicable to do so, add fluoride to treated water in accordance with Ministry of Health recommendations in the DWSNZ		
Target 3.1.1	For fluoridated supplies, comply with Ministry of Health recommendations for the addition of fluoride 85% of the time	Achieved	Compliance by treatment plant: Te Marua 96%, Wainuiomata 94%, Waterloo 96%, Gear Island 96%
Objective 4.1	Manage assets wisely		
Target 4.1.1	Keep asset information up-to-date by adding information about newly created or refurbished assets by 31 August following the end of the financial year	Achieved	All new and refurbished asset data entered on GW Water's asset management system by 8 August 2006
Target 4.1.2	Carry out a condition assessment of assets that have reached 90% of their economic life within one year of that event [that is, the life recorded in the Hansen asset management system primarily for the purpose of calculating loss of service potential]	Not fully achieved	A list of assets within two years of their recorded life expectancy was prepared in June 2003. Condition assessment of these assets was completed on 19 December 2005. In June 2006 we ran a report of assets due to reach 90% of their economic life by 30 June 2007. Condition assessment of these assets is scheduled to be undertaken during 2006/07.
Target 4.1.3	Replace or refurbish assets before failure reduces levels of service	Mainly achieved	Minor equipment failures contributed to our narrowly missing self-imposed reservoir level targets for a handful of reservoir-months. (see QMS target 1.2.1)

	Targets	Achievement 2005/06	Comment
Objective 4.2	Practise prudent financial management		
Target 4.2.1	Net debt-to-levy ratio does not exceed target level of 220%	Achieved	Debt-to-levy ratio 198% at 30 June 2006
Target 4.2.2	Ensure that the asset value recorded in the financial statements is materially correct by capitalising completed capital projects each financial year and conducting regular revaluations as set out in <i>New Zealand Infrastructure Asset Valuation and Depreciation Guide</i>	Achieved	Assets last re-valued at 30 June 2004, as per the requirements of <i>New Zealand Infrastructure Asset Valuation and Depreciation Guide</i> . New assets relating to the 2005/06 financial year have been added to the asset register at cost, while assets that were replaced have been written off.
Target 4.2.3	Ensure that the annual actual direct operating costs do not exceed the budgeted value	Achieved	Annual direct operating costs were \$14.3 million, compared with a budget of \$15.0 million. (see page 16)
Target 4.2.4	Consult with the customer territorial authorities regarding the content of each annual capital works programme by 30 June each year	Achieved	Proposed capital works programme for 2006/07 presented to customers on 11 April 2006
Target 4.2.5	Ensure that the annual capital works programme is completed within budget	Not achieved	The budget – \$5.937 million – was increased by GWRC resolution in February 2006 to \$6.384 million. Actual full-year expenditure was \$6.387 million, \$3,000 over the revised budget amount. (See Financial Overview, page 15)
Target 4.2.6	Ensure that 90% of the major capital works projects nominated in the annual operating plan do not exceed the approved funding plus 20%	Not achieved	Of the 13 projects in the operating plan that were completed during 2005/06, 70% were completed within the criteria.
Target 4.2.7	Maintain and actively manage insurance policies or reserve funds, so that the financial impact of any natural disaster is minimised	Achieved	GW Water has a self-insurance reserve fund in relation to the Stuart Macaskill Lakes (Te Marua) and its distribution network. All other significant assets are covered by insurance policies. The insurance reserve fund stood at \$9.5M at 30 June 2006
Target 4.2.8	Consult with the customer territorial authorities regarding the content of each proposed annual plan and on Long-term Council Community Plans (LTCCP) by 30 June 2006	Achieved	The proposed Annual Plan for 2006/07 and Long-term Council Community Plan 2006-16 were presented to Porirua City Council in March 2006 and Wellington, Hutt and Upper Hutt city councils in April 2006. Their views have been noted.
Target 4.2.9	Achieve unit costs (both total and operating) per million litres of water produced that are comparable with other bulk suppliers operating under similar conditions. This is to be reported annually and subject to comparable organisations providing suitable information	Achieved	Costs benchmarked with Watercare Services (Auckland) (see page 30)
Objective 5.1	The Te Marua and Wainuiomata treatment plants will maintain at least an 'A' grading		
Target 5.1.1	The Te Marua and Wainuiomata treatment plants will meet all requirements for an 'A' grading	Not achieved	The 'A' grading for Te Marua at 30 June 2005 was superseded by a 'U' grading (un-graded) on 1 January 2006. This is because Te Marua has not been graded since the current (2003) grading rules were introduced. HVDHB has been in the process of re-grading Te Marua for more than 12 months, but no conclusive outcome has resulted. The delay stems from the departure of a key staff member from its Regional Public Health unit. We expect this matter to be resolved satisfactorily by 31 December 2006. 'A1' grading was retained for Wainuiomata.
Objective 5.2	The Te Marua and Wainuiomata treatment plants will obtain an 'A1' grading		
Target 5.2.1	The Te Marua and Wainuiomata treatment plants will meet all requirements for an 'A1' grading by 31 December 2005	Not achieved	See comment for QMS target 5.1.1

	Targets	Achievement 2005/06	Comment
Objective 5.3	The Waterloo Water Treatment Plant will retain its 'B' grading, unless Hutt City Council changes its policy of supplying un-chlorinated water to Central Lower Hutt, Petone and Eastbourne		
Target 5.3.1	The Waterloo Water Treatment Plant will meet all requirements for a 'B' grading	Achieved	At 30 June 2006 Waterloo was graded 'U' (un-graded). Our records indicate that the requirements for 'B' grading were met, but HVDHB is yet to carry out a re-grading of the plant. Hutt City Council prefers to receive an un-chlorinated supply for Central Lower Hutt, Petone and Eastbourne. This requirement means 'B' is the highest grading achievable.
Objective 5.4	The Gear Island Water Treatment Plant will obtain an 'A' grading		
Target 5.4.1	Install all necessary compliance monitoring instrumentation and software by 31 December 2005	Achieved	
Target 5.4.2	Monitor compliance and report and review monthly	Achieved	Monitoring results show that all requirements met from February 2006. Twelve months information required for re-grading
Target 5.4.3	Investigate and resolve apparently spurious turbidity readings by 30 December 2005	Achieved	Replacement of turbidimeter solved the problem
Target 5.4.4	Resolve administrative treatment of Gear Island in WINZ by 30 June 2006	Not achieved	Discussions were held with ESR (Christchurch) and the Regional Public Health unit at HVDHB. We anticipate this matter being resolved by 31 December 2006.
Objective 6.1	The Upper Hutt/North Wellington and Central Hutt/Petone zones will receive an 'a' grading by 31 March 2006		
Target 6.1.1	Assemble and collate data, and forward to drinking water assessor by 31 December 2005	Not achieved	This target was set in the expectation that we would know what compliance data would have to be supplied in advance of the target deadline. At 30 June 2006 documentation requirements had not been defined by HVDHB, which has been focusing on grading the treatment plants.
Objective 6.2	The Wainuiomata/South Wellington zone will receive an 'a' grading by 31 March 2006, provided that the cost of doing so is acceptable to GW Water and its customers		
Target 6.2.1	Assemble and collate data and forward to drinking water assessor by 31 December 2005	Not achieved	This target was set in the expectation that we would know what compliance data would have to be supplied in advance of the target deadline. At 30 June 2006 documentation requirements had not been defined by HVDHB, which has been focusing on grading the treatment plants. Changes to the DWSNZ since 31 December 2005 have meant that our compliance costs in relation to Objective 6.2 will be nominal.
Objective 7.1	An environmental management system certified under the terms of ISO 14001:1996 – <i>Environmental Management Systems – Specification with guidance for use</i> – will be maintained		
Target 7.1.1	Upgrade to ISO 14001:2004 by 31 May 2006	Achieved	A comprehensive re-certification Audit for ISO 9001:2000 and ISO 14001:1996 was completed on 3 November 2005 (certification valid until November 2008). We received confirmation from BVQI of certification to ISO 14001:2004 on 25 May 2006.

Environmental management system

Environmental management system objectives, targets and performance

Text in the two columns to the right of each target gives (1) a summary of performance against the target for the 2005/06 financial year, and (2) additional background information where needed.

	Targets	Achievement 2005/06	Comment
Objective 1.1	Be aware of all legislation, regulations, bylaws and standards that are relevant to the environmental performance of GW Water		
Target 1.1.1	Maintain a file of all resource consents issued to GW Water and regularly update it	Achieved	
Objective 1.2	Comply with all legislation, regulations, bylaws and standards that are relevant to the environmental performance of GW Water		
Target 1.2.1	Obtain all necessary resource consents and building permits for new work or changes to the operation of the system	Achieved	Records held by the Management Systems Co-ordinator
Target 1.2.2	Obtain and keep up-to-date all necessary trade waste permits by their respective expiry dates	Achieved	Trade waste permits are held for Te Marua and Waterloo treatment plants and for Greater Wellington's Laboratory.
Target 1.2.3	Obtain and keep up-to-date all necessary dangerous goods licences by their respective expiry dates	Achieved	Dangerous goods requirements are to come under the revised HSNO Act. (see Target 1.2.5)
Target 1.2.4	Keep all building warrants of fitness up-to-date by their respective expiry dates	Achieved	
Target 1.2.5	Review and implement the new hazardous substance component of the <i>Hazardous Substance and New Organism Act</i> by the dates required by regulation	Progressed	All chemicals other than chlorine were managed under the provisions of the <i>Dangerous Goods Act</i> , until 30 June 2006 pending transfer to the revised HSNO Act by 31 March 2007. Hazardous substance location test certificates for chlorine were in place at all sites where chlorine is used by 15 December 2005.
Objective 1.3	Report compliance with all legislation, regulations, bylaws and standards that are relevant to the environmental performance of GW Water		
Target 1.3.1	Demonstrate compliance with all resource consents	Not achieved	Compliance demonstrated for all but five resource consents. Water take for Kaitoke assessed as mainly-complying. Water take consents for the Wainuiomata water catchment (3) were assessed non-complying. Resource consent to discharge from Wainuiomata Water Treatment Plant to the Wainuiomata River was assessed as non-complying, due to higher-than-permitted instantaneous discharge. See page 33 for detail.
Target 1.3.2	Report all monitoring required by resource consents annually or to timeframes required by consent conditions	Achieved	All necessary reporting was provided to the consent manager within the required timeframes.
Target 1.3.3	Determine and report annually all monitoring required by hazardous substance legislation, where matters are not covered by resource consents	Achieved	See targets 1.2.3 and 1.2.5
Objective 2.1	Identify all activities with environmental impacts and assess the significance of these impacts		
Target 2.1.1	Maintain a written procedure for identifying aspects and impacts and evaluating their significance	Achieved	A revised procedure was introduced in September 2004. The success of this change was reviewed by 31 December 2005.
Objective 2.2	For new projects or activities, consider environmental aspects when choosing between alternatives		
Target 2.2.1	Options reports, feasibility reports and design reports for all capital projects initiated shall include consideration of environmental effects, including their avoidance or mitigation	Achieved	All reports include an assessment of environmental impact. In most cases the impacts are minor or insignificant.

	Targets	Achievement 2005/06	Comment
Objective 3.1	Adopt all practicable means to prevent pollution of the environment		
Target 3.1.1	Monitor and report on accidental discharges of substances with the potential of harming the environment at all treatment plants annually	Achieved	<p>Comprehensive spillage control measures, including bunding and managed sumps, are in place at all GW Water's treatment plants.</p> <p>Three minor chemical spillages occurred. These were contained by bunding, with no environmental harm resulting.</p> <p>All supply lines between chemical storage and dosing points at our four water treatment plants were assessed during 2004/05 to identify the potential effects of breaks in these lines. Remedial work has been completed during 2005/06.</p> <p>Funding for additional bunding is to be considered at a review of the 2006/07 capital expenditure programme in January 2007.</p>
Objective 3.2	Treat and dispose of wastes in an environmentally safe manner		
Target 3.2.1	Comply with trade waste permit conditions for the tenure of each permit and report annually	Achieved	Trade waste licences are held for Te Marua and Waterloo treatment plants and the Laboratory. Hutt City Council's Trade Waste section carries out an annual compliance audit. No matters of concern were raised.
Target 3.2.2	Comply with the requirements of all discharge consents	Not achieved	The discharge consent from Wainuiomata Water Treatment Plant to the Wainuiomata River was assessed as non-complying due to higher-than-permitted instantaneous discharge.
Target 3.2.3	Dispose of sludge and other solid waste to a properly consented landfill or in some other environmentally safe manner	Achieved	Sludge and solid waste are sent to a consented landfill at Silverstream.
Target 3.2.4	Dispose of liquid waste in an environmentally safe manner	Achieved	Trade waste contractors manage the treatment and disposal of our liquid waste in accordance with the conditions of their trade waste licences, issued by their local territorial authority.
Target 3.2.5	Install a centrate sewer main from Wainuiomata Water Treatment Plant by 30 June 2007	Progressing	Funding included in 2006/07 capital expenditure programme.
Objective 3.3	Adopt policies, procedures and practices that will reduce waste		
Target 3.3.1	Review operation of the waste water plant to optimise performance by 30 September 2006	Achieved	<p>The current practise of disposal of sludge to consented landfill has been identified as the best option available at present and will be continued.</p> <p>A review of our waste water treatment plants has been started, to try to increase the dry solids content of sludge and so reduce the cost of disposal.</p>
Objective 4.1	Recognise the natural limits of regional water resources		
Target 4.1.1	Accurately monitor and investigate adverse trends in losses between abstraction, production and supply. Any losses are to be reported annually	Achieved	No adverse trends evident from production efficiency performance (see page 4) or distribution efficiency performance (see page 7)
Target 4.1.2	Further investigations of losses between Kaitoke and Te Marua to be undertaken	Progressing	This work is scheduled for 2006/07
Target 4.1.3	Complete draft water management plan by 31 March 2006, subject to timely responses from territorial authorities	Not achieved	The draft plan is still being developed. Adapting Auckland's water management plan, <i>From the Sky to the Sea</i> , proved more difficult than anticipated, while customer input was not received as quickly as anticipated. (See also page 6-7)
Target 4.1.4	In conjunction with the Resource Investigations section of GWRC, install additional sentinel wells on Petone foreshore to reduce the risk of saltwater intrusion into the Waiwhetu Aquifer by 31 December 2006	Progressing	Funding allocated in 2006/07 capital expenditure programme

	Targets	Achievement 2005/06	Comment
Objective 4.2	Minimise energy use		
Target 4.2.1	Each month monitor the power usage at those sites with half-hour power meters, to check for discrepancies	Achieved	Monitoring has identified low power factors at four sites. Projects to install power factor correction equipment at these sites are substantially complete.
Target 4.2.2	Every two years review the efficiency of the boost and treatment pumps at: Bloomfield Terrace Colin Grove Hautana Street Mahoe Street Penrose Street No. 1 Penrose Street No. 2 Willoughby Street No. 1 Willoughby Street No. 2 Kaiwharawhara Pumping Station Te Marua Pumping Station Waterloo Water Treatment Plant	Achieved	Reviews completed by 31 May 2006
Target 4.2.3	Every five years review the efficiency of the boost and treatment pumps at: Johnsonville Pumping Station Karori Pumping Station Point Howard Pumping Station Moores Valley Pumping Station Ngauranga Pumping Station Warwick Street Pumping Station Te Marua Water Treatment Plant Wainuiomata Water Treatment Plant Wainuiomata No. 1 Pumping Station	Achieved	Reviews completed by 30 June 2006
Target 4.2.4	Adopt the use of energy-efficient products and equipment, where practicable and economic	Progressed	Major items of electrical equipment are assessed on a whole-life cost basis. Our electric drive motors are already close to 100% efficient and the pumps we purchase are over 80% efficient, the best currently available. High-efficiency pumps have been installed in the new pumping stations at Karori and Point Howard. Power factor correction equipment was installed at four sites.
Target 4.2.5	Install power factor correction at Wainuiomata and Gear Island treatment plants, and Ngauranga Pumping Station by 30 June 2006, and at Waterloo Water Treatment Plant by 30 June 2007	Not achieved	Completion expected at Wainuiomata and Gear Island by September 2006, Ngauranga by February 2007 and Waterloo by June 2007
Objective 5.1	Prevent damage to significant habitats and ecosystems		
Target 5.1.1	Recognise the need to maintain appropriate minimum river flows and, as far as practicable, natural flow variation in watercourses below points of abstraction	Achieved	Minimum flow and flow sharing arrangements are written into resource consents for water take and the control logic for operating software systems. Consented minimum downstream flows were almost always maintained. A detailed study of low flow requirements for the Hutt River has been started in conjunction with GW Environment Division and other stakeholders.
Target 5.1.2	Avoid damage to significant ecosystems by new capital works or, if this is unavoidable, mitigate the damage by establishing, if practicable, equivalent replacement ecosystems	Achieved	No new capital works that impacted on significant ecosystems. Impact of proposed future dams being studied in detail
Target 5.1.3	No target currently exists for this number		

	Targets	Achievement 2005/06	Comment
Target 5.1.4	Complete the Wainuiomata water catchment boundary fencing project by 30 June 2006	Achieved	
Target 5.1.5	No target currently exists for this number		
Target 5.1.6	Establish a wetland behind the lower Wainuiomata Dam by 30 June 2007, subject to the cost of lowering the dam being within budget limits	Progressed	This project is to be re-tendered in 2006/07 based on a revised design.
Objective 6.1	All recommendations made by the Utility Services Committee involving investment or the use of natural resources shall include consideration of environmental impacts		
Target 6.1.1	All reports to the Utility Services Committee or the Divisional Manager, Water Supply, Parks and Forests proposing investment or use of physical resources shall address the environmental aspects of the proposal, including any practicable alternative courses of action	Achieved	Consistent with GWRC policy, assessment of environmental impacts is included in all reporting.
Objective 7.1	Achieve environmental awareness in all GW Water staff		
Target 7.1.1	Provide initial training for all new GW Water staff in environmental awareness and the environmental management system within three months of starting employment	Achieved	
Objective 7.2	Ensure that all staff members whose actions have potential environmental impacts understand that potential		
Target 7.2.1	Provide specific training to staff whose actions have potential environmental impacts, to ensure they understand those potential impacts and their significance, and are equipped to eliminate or mitigate any impact	Achieved	Three levels of environmental awareness training have been identified, depending on the duties of employees. Specific training is given and the details are recorded in a training database against individual employees.
Objective 8.1	Ensure that third parties engaged by GW Water are aware of environmental matters or concerns associated with the work they are engaged to do		
Target 8.1.1	All formally documented works and supply contracts shall include any applicable environmental requirements	Achieved	All works and sealed contracts contained clauses covering environmental matters, including requirements to prevent or minimise adverse impacts.
Objective 8.2	Where practicable, the environmental performance of a contractor or suppliers shall be taken into account in the assessment of tenders		
Target 8.2.1	Include environmental performance as an attribute when assessing tenders for major works or supply contracts by the weighted attribute method	Achieved	The weighted attribute assessment method, including environmental performance, is used to assess all tenders for major works.
Objective 9.1	Report annually on resource consent compliance		
Target 9.1.1	Facilitate the preparation of the Consents Investigations section's annual compliance report	Achieved	
Objective 9.2	Report annually on the environmental performance of GW Water		
Target 9.2.1	Prepare an annual report for the year ending 30 June on the environmental performance of GW Water, by 30 November each year	Achieved	A report for 2004/05 was published in November 2005. A report for 2005/06 will be considered for adoption by GWRC's Utility Services Committee on 29 November 2006.

Utility Services Committee members

The following councillors were members of the Utility Services Committee for the year ended 30 June 2006.

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¹ The Council Chairperson is not a member of the Utility Services Committee when considering regional wholesale water supply matters.

Water, air, earth and energy: elements in Greater Wellington's logo combine to create and sustain life. Greater Wellington promotes **Quality for Life** by ensuring our environment is protected while meeting the economic, cultural and social needs of the community.

FOR FURTHER INFORMATION

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Greater Wellington is the
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Wellington Regional Council

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