Water Supply Annual Report

FOR THE YEAR ENDED
30 JUNE **2013**

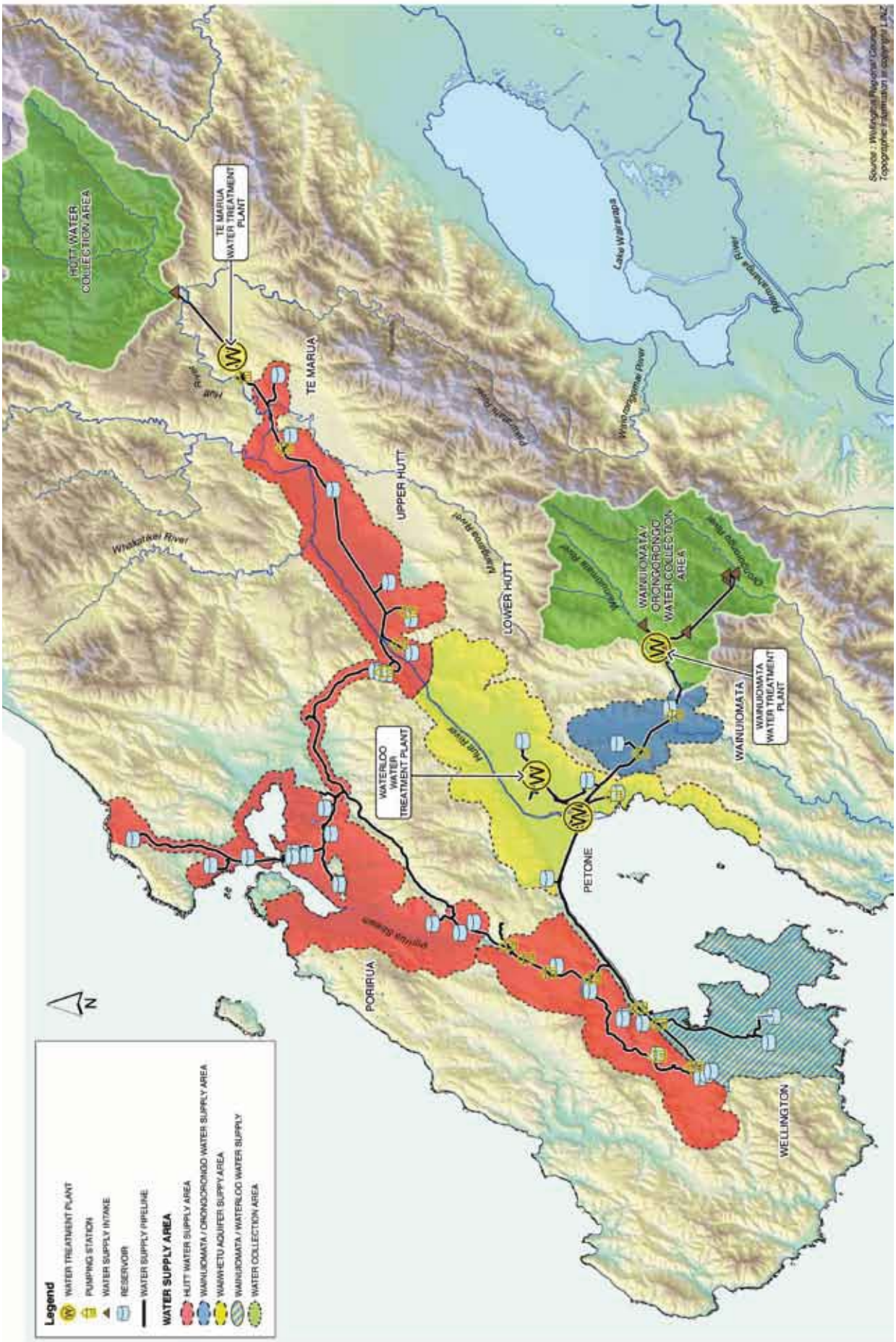
greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Contents

Cover

Outdoor water use ban sign on Petone foreshore
Fairfax Media/The Dominion Post

Greater Wellington's bulk water supply network map



Introduction

Reporting scope

This report covers the Greater Wellington Regional Council's (GWRC's) bulk water supply activity for the year ended 30 June 2013.

The GWRC's main annual report meets its statutory reporting requirements under the Local Government Act 2002. This report is supplementary to the statutory annual report and provides our customers and the community with a more detailed account of our bulk water supply operation.

The commentary on p4-23 reflects significant achievements and challenges in relation to our business objectives and performance targets.

Our objectives cover quality and quantity of supply, system security (risk), environmental responsibility, asset management, business efficiency, and health and safety. We have summarised our results for all annual targets for 2012/13 on p32-42.

Our purpose

We aim to provide a continuous and secure supply of safe, high-quality water in a sustainable and cost-effective way. We also aim to meet the reasonable water needs, both current and future, of the people in our region's four cities.

What we do

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

- Operate four water treatment plants, 15 pumping stations and 183km of pipeline
- Supply about 140 million litres of water daily on average, to meet the needs of public services, industry, commerce and about 395,000 people
- Target at least an "A" grade quality standard for our water treatment plants and distribution system, where consistent with customer requirements
- Forecast future water needs and plan so those needs can be met at an acceptable cost to the community
- Carry out our work with care for the environment, including promoting ways to conserve water and the benefits to the public of water conservation
- Manage assets with a book value of $464 million

Governance and organisation structure

The Wellington Regional Water Board Act (1972) defines GWRC's bulk water supply role. The Council is responsible for setting policy.

The Council's Social and Cultural Wellbeing Committee oversees the work carried out by GWRC's Water Supply Group to manage the bulk water supply. Within the Water Supply Group are five departments that share this workload:

- Assets and Compliance
- Engineering and Projects
- Marketing
- Operations and Controls
- Pipeline and Mechanical Maintenance

Other groups within the GWRC provide services to Water Supply. The Environment Management and Catchment Management groups provide water-catchment management services, which include pest monitoring and control. The Water Supply Group contracts out water quality testing services and some construction and maintenance work.

Performance indicators

GWRC's 10-Year Plan 2012-22 and Annual Plan 2012/13 group performance indicators and targets for bulk water supply under three main activities: water availability, water quality and sustainability. We have cross-referenced reporting of annual targets with these three main activities, from p34.

You can view the 10-Year Plan 2012-22 and Annual Plan 2012/13 on the GWRC website or you can contact us for a copy (see back cover for contact details).

Management systems

We operate management systems for assets, water quality, environmental effects, health and safety, public health risk, projects and maintenance. We hold quality-management system certification to international standard ISO 9001:2008 and environmental-management system certification to ISO 14001:2004.

Chairperson's report

Building the region's resilience to keep our water supply safe

It has been a year of challenges and successes for our Water Supply Group with the last 12 months seeing the region cope with drought, storm and earthquakes. However, we have risen to the challenges and have ensured that the water keeps flowing to our residents.

Greater Wellington Regional Council spends a considerable amount of time, money and effort on ensuring the integrity of our water supply, by planning against potential events like drought, floods, storms and earthquakes.

We have plans in place to make sure that we can not only store enough water to get us through a major event, but also that our supply lines can withstand disruptions and be reconnected quickly.

"I would like to thanks residents for their water-saving efforts"

Although we had been warning of possible constraints and asking users to be careful as far back as October 2012, the concept of water storage became an issue of major public debate in March and April when an unusually dry spell of 36 days without rain hit the region.

It was an unfortunate coincidence that one of the water storage lakes was empty due to earthquake strengthening, which meant that we had only half our back-up water storage available to supplement the water we were able to harvest from rivers and the aquifer.

Unlike last summer, this year we had to use a resource consent to take more water from the Hutt River to meet the water consumption needs of the greater Wellington region. The conditions of this resource consent enabled us to take this water only should river flows be reduced significantly due to dry weather while one of the Te Marua storage lakes was empty due to earthquake strengthening. One of the results of the drought is that we now understand more about how the river environment behaves in those kinds of conditions.

As river levels got lower, GWRC also worked with local councils and communities to limit water usage, starting with a sprinkler and irrigation system ban and then implementing an outdoor water use ban.

Public response was fantastic and the region was able to get through the drought and avoid further restrictions by limiting water use. Many households came up with innovative ways to save water during this time and that was great to see! I would like to thank residents in the four cities for their water-saving efforts during the record-breaking drought. If we stick with our new habits, we can push back the date by which we'll need to build an alternative water source – something for us to aim for!

While it is important that our reservoirs are able to provide enough water to supplement supply during extreme dry periods, it is equally important that they are able to stand up to natural hazards like earthquakes.

Earthquake strengthening work has been completed on the two storage lakes at Te Marua to protect our water stocks, and the reinforced lake walls withstood the recent earthquakes.

"Earthquake strengthening work has been completed on our storage lakes"

By using the latest scientific know-how we can not only ensure that our water supplies are better-protected, but we can also build the resilience of our water supply infrastructure and ensure water can keep flowing after a major event.

Working with other agencies, the council has identified key fault crossing points among the water infrastructure lines where a rupture is likely to occur during a major event. Engineers have installed shut off valves at these points to enable above-ground pipes to be used to reconnect water supplies to the region.

We know that based on the current level of demand, more water sources are likely to be required by about 2019. We have undertaken considerable work locating potential new water sources and we are in negotiation to purchase land at Kaitoke, which has been identified as a possible location for off-river storage lakes.

If the level of demand continues to decrease – as has been the trend over the past ten years – a new water source may not be needed until sometime next decade. Obviously this will save the region considerable money, so water conservation continues to be a focus.

"A new water source may not be needed until after 2019/20"

GWRC's staff, as evidenced in the Group Manager's report, is key to the effective operation of the water supply network. Year-on-year, staff work to improve our processes, and give value for money to our customers. As a region we should be very proud of the value that this department delivers.

Ultimately, the ratepayers of the region want reliability in our water supply network and that's what we strive to deliver. Water is an essential service and Greater Wellington Regional Council is working to ensure that our water supply is secure and able to keep flowing to residents, even in difficult conditions.

Councillor Nigel Wilson
Chair, Social and Cultural Wellbeing Committee

Group Manager's report – the year in review

2013 drought puts water supply in the spotlight

The group has had a positive year, despite some quite unusual and trying conditions, including a summer drought that put water supply well and truly in the spotlight. Overall we've come through well, thanks in no small part to a positive response from the public.

Dry summer for Wellington

During late February and March, our surface water catchments experienced record-breaking dry conditions. The Hutt catchment had 36 consecutive days without rain, the longest dry period there since records began in 1951. At Kelburn, just 4mm of rain fell in 40 days between 5 February and 16 March.

With half our storage capacity unavailable and river levels dropping steadily, demand had to be reduced to preserve storage in case the dry weather continued. A sprinkler ban was brought in, followed by an outdoor water use ban (a first for Wellington in living memory), together with well-publicised calls for active conservation of water.

Our water team was continually monitoring water demand, river levels, the pressure in the Hutt aquifer and the weather forecast. The decision to impose water restrictions was made jointly with our customers, the City Councils, and based on the low chance of rain in the next few weeks.

We asked for water savings and the community responded in an exemplary fashion. In the week leading up to the sprinkler ban, the average daily demand was approaching 160 million litres. When the sprinkler ban was introduced and publicity increased, demand dropped to 146 million litres. The introduction of the outdoor water use ban, and further publicity saw this number drop again, to 125 million litres[1].

The drop in demand gave us confidence that we'd be able to meet the community's essential water needs even if the dry weather had continued, despite having one water storage lake out of use.

As a result of the widespread interest in Wellington's water supply – and public support – during the drought, we held an open day at the Te Marua Water Treatment Plant in May. The event was a great success, with all 12 tours fully booked and over 220 people joining us to learn about our water supply network and how water is treated.

Ensuring resilience

From one extreme weather event to another, June saw an intense southerly storm hit Wellington. The bulk water network came through relatively unscathed but the storm caused a flurry of after-hours action for our Operations teams.

Amongst other problems; reservoirs had to be manually operated overnight due to power outages, and the Gear Island Treatment Plant was reliant on a mobile generator for 11 hours.

We pride ourselves on providing a reliable 24/7 service. Having highly-skilled teams of water-treatment and pipelines staff "in-house" is a huge advantage from a management point of view and for the region's water users. I would like to acknowledge the commitment and strong sense of responsibility demonstrated by all Operations team members during this and other emergency situations we have had to cope with throughout the year.

We are continually working to improve the resilience of the bulk water supply network and processes, and the capability of our people, in order to cope with natural emergencies such as earthquakes and floods. While the magnitude-6.5 earthquake on 21 July did not cause any serious damage to the network, it serves as a reminder of the importance of our work in this area. Our current resilience projects are discussed in the body of this report.

Storage lakes upgrade success

The upgrade of the Stuart Macaskill lakes is nearly complete. The enlarging and earthquake strengthening of the southern lake was finished at the end of 2012 and the northern lake will be refilled and fully operational by November 2013.

While the dry spell provided a challenge for the supply of water to our customers, it was a blessing for contractors undertaking the lakes work and ultimately ratepayers. This $12 million project was delivered on time and under budget.

1 Average day for 16 March to 8 April 2013 inclusive

Water management

Water use has decreased in each of the last seven years, and this welcome trend is one of several factors behind GWRC deciding to update its water supply development strategy.

With the lakes upgrade including an extra 360 million litres of capacity, our forecasts show that more large-scale storage won't be needed before 2019/20. This could be delayed further if changes in population, water availability and usage in the intervening years are collectively favourable.

We are pursuing a flexible strategy that should give the community options in the scale, cost and location of a new water source, whenever that is needed. To that end, we are negotiating to buy land at Kaitoke for up to three new storage lakes.

While preparing for new supply capacity, we're committed to fostering a continuation of the trend in declining per capita water use. Indicators point to behavioural changes and lower rates of leakage from city pipes as main causes. Trends towards higher-density housing and more efficient water-using appliances, toilets, showers and taps appear broadly favourable from the perspective of water-use efficiency and conservation, while the public response to last summer's drought shows what can be achieved through greater attention to water saving. In the coming year we'll fund a pilot study to try and identify with more clarity the specific drivers behind water demand, to inform future modelling of system capacity needs and demand management work. We'll also continue working with the city councils to promote further water conservation and efficiency gains from the community.

Water levy increase

The 2012-22 Long-Term Plan (LTP) indicated a levy increase of 4% for the 2013/14 year. This figure has now been revised to a 3% increase.

Our record of holding the bulk water levy largely unchanged over many years for our customers – while improving service delivery – is one we are proud of (see Bulk water levy and CPI inflation graph, page 22). This year, the levy was less-than 1% more than it was in 1997. However, we are now in a phase of small incremental increases to the levy, to reduce debt. We are doing this in readiness for new borrowing to fund the next stage of system development for the region's growing population.

The change is driven by savings in operational expenditure with the bulk of the identified savings coming from interest cost savings due to lower-than forecast debt and savings from the reorganisation of insurance contributions.

We are pleased that we have been able to make savings, and pass these savings on to our customers, and ultimately the regions ratepayers.

Water supply success

A 2012 IPANZ award[2] underlined our strong performance over many years, and our operations continue to demonstrate reliability, efficiency cost-effectiveness and forward-thinking.

Benchmarking

Effective performance is a key aspect of our commitment to the region and this year we sought an assessment of our infrastructure management practices based on the NZ Treasury's guiding principles for best practice.

The assessment included comparison with nine other water operators from across New Zealand. Overall, the results placed us joint-best performing, with Auckland's water supplier.

Engineering excellence

One of the highlights of the year was being awarded a New Zealand Engineering excellence award for our part in developing a ground-breaking chemical process for water treatment. This has helped to cut our chemical costs by almost 25%, as well as improving water quality and reducing waste volumes. The award reflects our willingness to find innovative solutions to the challenges faced by the water industry.

We believe such endorsements help to retain the community's confidence that a public entity can manage and deliver a world-class water supply.

Chris Laidlow
General Manager, Water Supply Group

2 Institute of Public Administration New Zealand special recognition award for transforming Greater Wellington's bulk water supply operation into a world class business

The following pages cover GWRC's major water supply projects and key performance measures for 2012/13. Information is grouped by our main business activities and objectives:

1. Water availability – providing a secure and reliable water supply
2. Water quality – providing water that is safe and pleasant to drink
3. Sustainability – ensuring that the water supply infrastructure is adequate to meet future needs and being cost-effective, while minimising environmental impacts

Where applicable, a reference to relevant objectives and targets follows each project and performance measure. We have listed our objectives and targets in full, with links to the relevant content from GWRC's Long-Term Plan 2012-22, from p32.

Continual improvement is a key aspect of our operating philosophy and our adoption of ISO management system standards provides a strong focus on this process. We identify improvement opportunities through routine monitoring of our performance targets. Improvement options are assessed by their value in relation to one or more of our business objectives, and prioritised accordingly.

WATER AVAILABILITY

Objective: Provide a secure and reliable water supply

Community outcome contribution: resilient community and strong economy

While most Wellingtonians are probably aware of the possible impact of a movement on the Wellington Fault, there are other events that can cause less, but still significant damage, for example, a movement on another fault-line. On a smaller scale, fire, storms or flooding could all disrupt our operations and take time to recover from.

Future water sources and long-term storage needs are evaluated taking sea level rise and resilience to natural hazards into account, and work continues to identify potential emergency water storage sites. A GNS report[3] indicates how much water will be needed after an emergency before normal supply is resumed and this has provided a basis for planning emergency water supply provisions.

This year saw significant progress on the seismic upgrade of the Stuart Macaskill lakes, as well more investigative work into how a "survival" level of water could be provided to the public after a major emergency until the bulk water network can be restored.

SEISMIC EVENT RESTORATION TIMES

A Wellington Fault movement is likely to have the greatest impact on the bulk water supply system compared with other events, so planning is based on this event. GWRC has spent in excess of $20 million over the last 20 years making the water supply system more robust in a seismic sense. Even so, the forces associated with a movement on the Wellington Fault are so huge that almost 100 breaks are expected in the bulk water pipelines (based on similar events overseas) and many more in the city reticulation networks.

In 2011, we commissioned GNS to produce a report into how long it would take to restore water supply to key parts of Wellington city after a major earthquake. That report was built on this year, with wider investigations of estimated restoration times for each of the four cities that we serve – covering bulk supply to city reservoirs and reticulated water within the cities.

In November, the Wellington Lifelines Group (comprising 20 utility operators and civil defence authorities from local and central government) presented a report on lifeline restoration times following a rupture of the Wellington Fault, to the Wellington region's Civil Defence Emergency Management Joint Committee.

The estimated restoration times to return water to consumers ranged from 25 days for central Lower Hutt to around 75 days for central Porirua. The eastern Wellington suburbs, Roseneath and the southern bays suburbs have an estimated 70 days before water is fully restored to these communities.

This analysis is being used to guide our work on potential options for emergency water supplies (see next story "Options for emergency water supplies").

OPTIONS FOR EMERGENCY WATER SUPPLIES

In 2010, a group was established to plan and coordinate water services emergency preparedness for metropolitan Wellington (the WSEPG). The group included water supply and emergency management staff from the four cities, GWRC and Capacity Infrastructure Services.

The WSEPG commissioned MWH NZ Ltd to review the options for emergency water supply for each city following a major earthquake. While Wellington, Porirua and Lower Hutt now have a programme of installing water storage tanks at key civil defence sites, these would not provide an adequate water supply to meet the "survival" needs for Wellington and Porirua[4].

3 Wellington Without Water – Impacts of Large Earthquakes (Report 2012/30)

4 The Wellington Regional Emergency Management Office defines "survival" water as a minimum of 20 litres per person per day in a major emergency for drinking, cooking and hygiene for as long as the water supply isn't working

Last year we reported that we were investigating two options that could help to provide a "survival" level of water supply to Porirua and Wellington: covered storage ponds and a small desalination plant. These investigations have been completed, and we presented a report to Council in December, summarising investigations to date and recommending a detailed feasibility study for the largest of the covered storage proposals – some 500 million litres – on Landcorp land near Takapu Road on the Wellington-Porirua boundary. This recommendation was approved and the study is due for completion in November 2013.

A pre-feasibility study of the use of desalinated sea water, by SKM, found desalination plants expensive to build and operate, and better suited to daily operation rather than occasional or emergency use.

Since our options report was presented, a new possibility – a pipeline beneath Wellington harbour from Seaview to Wellington city – has been raised by Wellington City Council. A feasibility study into this proposal will be commissioned in the coming year.

A new line valve at Mangaroa improves recovery time after maintenance or a rupture of the Kaitoke main, by cutting the time needed to drain, flush and recharge it, when required.

WAIWHETU AQUIFER

Further research into how the Waiwhetu Aquifer might be affected by a movement of the Wellington Fault has provided some confidence that aquifer water would be available fairly quickly after a major seismic event.

The Waiwhetu Aquifer provides around 40% of the total bulk water supply for metropolitan Wellington. Our emergency planning puts a high reliance on the aquifer being able to supply water after a major earthquake, even if at a reduced level. But relatively little was known about the impact such an event could have on the aquifer.

GNS was commissioned in April 2012 to report on the potential impact of a Wellington Fault movement on the Waiwhetu Aquifer. Their study utilised knowledge gained from recent studies into the Wellington Fault, geological investigations in the Hutt Valley, and the effect of the 2010 Darfield earthquake on Christchurch's aquifer.

Their report, received in November, suggests that an increase in aquifer level and pressure, possibly lasting years, could be expected due to ground cracking in the surrounding hills. Water discharges along the fault are expected, but the current absence of springs indicates that any breaching of the confining layer from previous fault ruptures was temporary. How long the confining layer took to seal is not known at this time. After a major earthquake, GNS advised that at least 24 hours should be allowed for disturbed sediments in the aquifer to settle. This would also help to avoid blocking the well inlets.

LIFELINES WORK – PETONE AND SEAVIEW

GWRC has continued to work with other lifeline utility representatives on the Wellington Lifelines Group's (WeLG) Seaview critical area project. This has resulted in a Statement of Best Practice that identifies the planned actions of the lifeline utilities in an emergency affecting Seaview.

The plan is focussed on response and recovery actions to enable fuel to be despatched from the fuel depots as soon as possible after an emergency – an important factor in the recovery of the region. As a result of this project, we have retained a redundant water pipeline along Seaview Road[5] to Point Howard, to provide a back-up means for water supply to the fuel depots in an emergency.

SEISMIC PERFORMANCE OF WATER SUPPLY BUILDINGS AND STRUCTURES

SKM has completed detailed seismic assessments of the critical buildings and other structures at our Te Marua, Waterloo and Wainuiomata water treatment plants.

We commissioned the assessments to determine the level of compliance with the 2002 building standard for critical structures (AS/NZS 1170, Importance Level 4). Full compliance is desirable to ensure the best chance of being able to recover our water supply operations quickly following a major earthquake.

Separate reports were provided for each water treatment plant, identifying the performance of the structural elements of each building under seismic loading. Options for bringing structures up to

5 See improvement project 2.6, Install and commission the replacement Point Howard suction main, p35

100% of the building standard were included for all structural elements that were rated at less-than 100%.

Each water treatment plant was found to have some structural elements that need remedial work. SKM was also commissioned to design the remedial work needed to raise these underperforming structural elements to the required seismic design standard. The majority of this design work was completed by the end of July 2013. The physical upgrading work will now be prioritised for completion.

Last year we reported that the flume bridge at Kaitoke had some elements that needed attention in order to bring it up to 100% of the building standard. This work will be included in the water treatment plant buildings and structures seismic upgrade programme.

SEISMIC UPGRADE AND INCREASED STORAGE – STUART MACASKILL LAKES

(Improvement project 2.1)

Works to improve the resilience of our water storage lakes against earthquake damage – and to increase their capacity – are almost complete.

A 2008 review of the seismic performance of the lakes (as part of our investigations into whether the lakes storage capacity could be increased) found that a movement of the Wellington Fault could cause cracking of their clay linings. This cracking could cause the lakes to leak and possibly fail eventually.

The result of our investigations lead to a two-part project: one to increase the capacity of the lakes by raising their embankments by 1.3 metres (equating to an extra 360 million litres); and the second to upgrade the lakes' seismic strength. The additional storage will help to maintain normal supply for up to two weeks longer in a drought.

The northern Stuart Macaksill lake was upgraded this year

The seismic upgrade consists of reinforcing the steepest sections of the outer walls of the lakes and partially lining the internal walls of the lakes with a plastic liner, capable of stretching to seven times its original length without breaking.

The outer walls were reinforced with rock buttresses in 2011. The larger (southern) lake was enlarged and lined during 2012 before re-commissioning last November.

The smaller (northern) lake was drained in December 2012 with work commencing on lining and raising the embankments in January. At time of writing (August 2013), this work had been completed – on time and within budget – and refilling had begun. We expect to have the northern lake back in service by November 2013.

EMERGENCY CROSS CONNECTIONS – WATERLOO WELLFIELD

(Improvement project 2.3)

We have been working with our customers for several years to address areas where a failure in our network would cut supply to a large number of consumers. This year we have installed two emergency connections from our aquifer wells in Waterloo (Lower Hutt) directly into Lower Hutt's reticulation in Knights Road, at Mahoe and Hautana Streets.

We can now provide a basic level of water supply directly into the local reticulation, in the event that the Waterloo Water Treatment Plant is inoperable. These connections will also enable tankers to be filled in Knights Road for distributing water to areas with damaged reticulation.

KAIWHARAWHARA PUMPING STATION – SEISMIC STRENGTHENING

(Improvement project 2.4)

We have improved the seismic strength of the Kaiwharawhara Pumping Station building this year, after it was identified in 2011 as being potentially earthquake prone (less than 34% of the 2002 building standard).

SKM conducted a detailed seismic assessment during 2011/12, which found the pumping station was only 19% of the 2002 building standard. They also delivered a design report for improvements targeting full compliance with the standard.

Kaiwharawhara Pumping Station is the sole delivery point for supply to the Ngaio and Onslow zones, so needed to be strengthened to as close as practical to 100% of the building standard. This strengthening work was completed by May 2013.

UPGRADE OF GRAVITY-FED RESERVOIRS TO BATTERY POWER SYSTEM

(Improvement project 2.7)

We are part-way through upgrading 24 gravity-fed reservoirs from mains to battery power supply, to improve continuity of water distribution in the event of power cuts.

We monitor and control the flow of water into reservoirs from Pukerua Bay and Timberlea to Karori, from central Lower Hutt. Historically, our ability to remotely control reservoir filling has depended on the mains power supply working. If a power cut occurs, the reservoirs have had to be operated manually by an operator on site.

The battery systems provide enough power to allow the reservoirs to operate normally for three days if the mains power supply is down. Once mains power resumes, the batteries will recharge automatically.

The number of callouts our operators receive due to power outages at reservoirs is expected to reduce greatly. A saving of $10,000 per year is likely to result from this project.

The upgraded reservoirs proved their worth during the severe storm of June 21, which saw numerous power cuts. Those reservoirs that had been upgraded to the battery power system continued to operate normally without the need for manual intervention.

Seventeen gravity-fed reservoirs were upgraded this year; the remaining seven have been scheduled for completion in 2013/14. The 20 reservoirs that require pumping to fill are not being switched to battery systems as the pumps require more power than batteries can deliver.

BULK WATER SUPPLY DEVELOPMENT STRATEGY

Twelve months ago, we reported that the need to settle on a single preferred option to provide for long-term water supply growth had receded, but that new source investigations were continuing and we expected to include a revised water-source development strategy within the Council's Long-Term Plan 2015-25.

In December, we presented a development options report to Council and noted several factors that may influence development timing over the next few years, but whose impacts are unknown at present: the downward trend in water supply; a review of the Regional Plan, including water allocation; and an update of population growth projections following the 2013 Census.

In light of this options report, Council agreed to retain the ability to develop either a dam on the Whakatikei River or a large new storage lake at Kaitoke[6], but to also pursue a more flexible and incremental approach that would give the region choice in the scale, location and cost of the next stage of bulk water development, whenever that is needed.

This approach involves buying land at Kaitoke that could provide for up to three storage lakes of varying sizes and costs. Councillors approved that we negotiate with owners AgResearch Ltd, to purchase 207 hectares for this purpose, not far from our two existing storage lakes at Te Marua.

A feasibility study has previously been completed for a single large storage lake at the southern end of this site, following the signing of an option to buy the land. We are currently negotiating the purchase and a further feasibility study is to be completed in the coming year, for two smaller lakes at the northern end of the site.

We are continuing to work towards including a revised water source development strategy in the Council's 2015-25 Long-Term Plan.

6 Circa 5,000 million litres storage

WATER QUALITY

Objective: Providing water that is safe and pleasant to drink

Community outcome contribution: quality of life

FULL QUALITY COMPLIANCE ACHIEVED AGAIN

(Annual performance target 1.3.1)

We achieved full compliance with New Zealand's drinking water standards. This includes the microbiological, chemical and aesthetic requirements for water leaving our water treatment plants and in our bulk water distribution network.

TOP TREATMENT AND DISTRIBUTION GRADINGS MAINTAINED

(Annual performance target 1.4.1)

We maintained an "A1" grading for our Gear Island, Te Marua and Wainuiomata water treatment plants – the Ministry of Health's highest possible endorsement for drinking water.

Our Waterloo Water Treatment Plant, which supplies most Lower Hutt residents, is graded "B", due to Hutt City Council's preference to receive un-chlorinated water. The addition of chlorine, to reduce the risk of contamination affecting the water in pipe networks, is needed to get an "A" or "A1" grading.

We've also maintained an "a1" grading for each of our three bulk water distribution pipeline zones – the highest distribution grading possible.

SUSTAINABILITY

Objectives: Ensure there is sufficient drinking water available to sustain and grow our population and economy; Encourage people to use water wisely, to reduce environmental impacts; Protect current and future water catchments

Community outcome contribution: healthy environment, strong economy

WATER SUPPLY VOLUMES

We supplied 49,685 million litres (ML) of water, 2% less than during 2011/12 (50,722 ML) and the lowest annual total on record in over 25 years. The average daily supply was 136 ML/day.

Total water supply has reduced in each year since 2005/06, with a range of factors thought to have contributed, including reduced leakage from city pipe networks, gradual improvement in water-use efficiency of toilets, showers, taps and appliances, and water conservation habits.

Extensive communications to manage demand for water during the summer – and particularly during the water shortage from early March – played an unmistakable part in the low supply total this year. (Find more about the water shortage on page 14).

WATER SUPPLY BY CITY

Total supply to each city (and share of supply) was:

- Wellington: 26,601 ML (53.5%)
- Lower Hutt: 12,707 ML (25.6%)
- Porirua: 5,688 ML (11.5%)
- Upper Hutt: 4,688 ML (9.4%)

Each of the four cities reduced its water demand year-on-year, Lower Hutt by 1.5%, Porirua by 2.5%, Upper Hutt by 2.0% and Wellington by 2.2%.

PEAK WATER SUPPLY

The highest weekly supply total for the year was 1,112 ML (averaging 159 ML/day), 4.8% more than the maximum week during 2011/12 (1,061 ML), but still the second-lowest peak week in over 25 years. The highest daily supply total last year was 174 ML (162 ML in 2011/12).

This increase in peak value can be explained by the warmer, drier and sunnier weather this year. Relative to average data for the last 30 years, the December – February period saw sunshine hours 13% above average (-21% in 2011/12), rainfall 6% below average (+57% in 2011/12) and the mean daily maximum temperature 4% above average (-5% in 2011/12).

TOTAL PER CAPITA WATER SUPPLY

Total (gross) supply of water per resident[7] averaged 343 litres per person per day (L/p/day), 8 L/p/day lower than in 2011/12 (2.5%).

RESERVOIR SUPPLY RELIABILITY

We have two time-related monthly targets for maintaining water storage – above 60% full and 70% full – for every city reservoir that we supply to directly:

- We achieved the "70% full" target for 99.6% of all reservoir-months; we aim to achieve 100%
- We achieved the "60% full" target for 99.8% of all reservoir-months; we aim to achieve 100%

No loss of supply to water users resulted from the few events that led to the <100% results.[8]

WATER DELIVERY EFFICIENCY

There was a 1.5% difference between the metered volume of water leaving our treatment plants and that entering customer reservoirs; this result is within the error margin for our revenue meters (+/-2%).

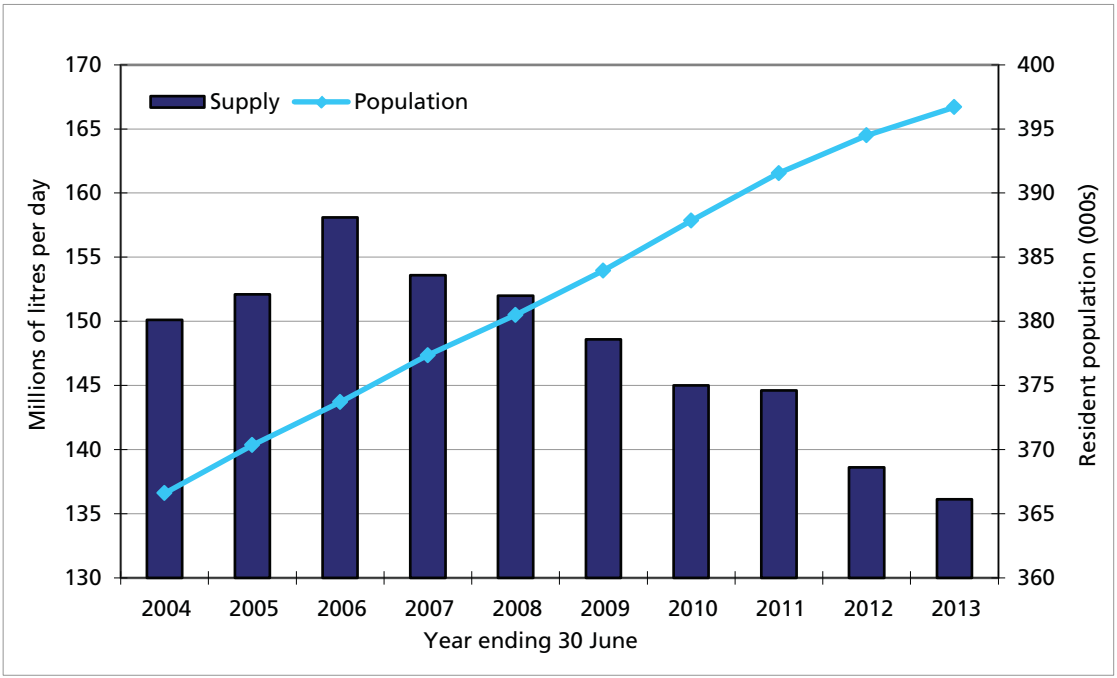
ESTIMATED DOMESTIC WATER USE

Most local households do not have a water meter to measure their individual water use, so our city council customers do not have precise figures for domestic water use. City council estimates of average domestic water use[9] this year are:

- Wellington: 220 L/p/day
- Lower Hutt: 225 L/p/day
- Porirua: 200 L/p/day
- Upper Hutt: 210 L/p/day

These values represent a decrease in estimated domestic water use per resident across our supply area in the last year.

AVERAGE DAILY WATER SUPPLY AND POPULATION – 10-YEAR TREND



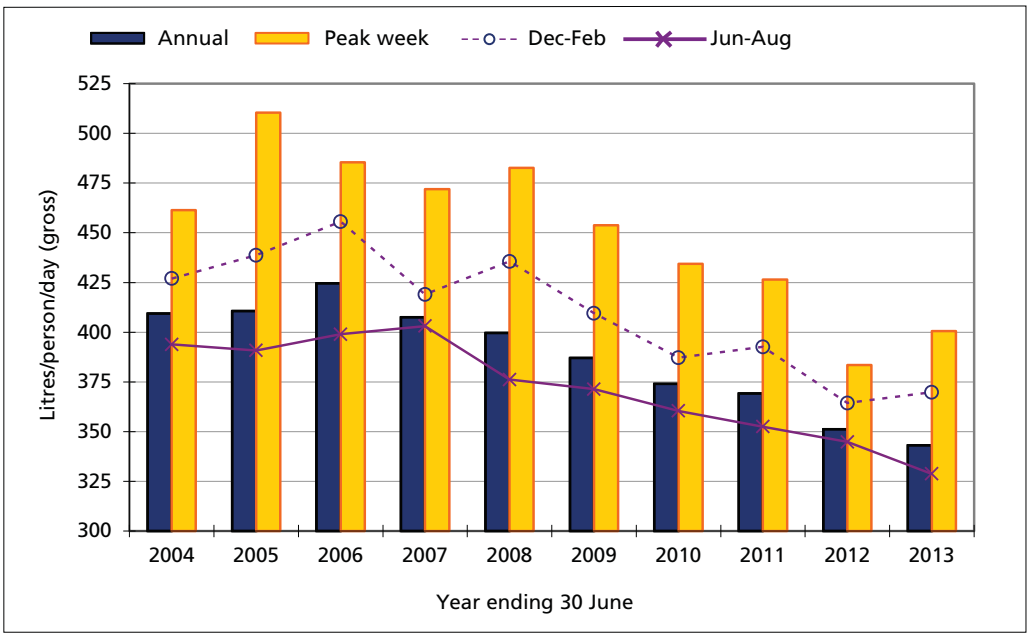
Our annual water supply total has decreased for seven consecutive years. This year saw the lowest annual total in over 25 years. This trend is in contrast to the estimated population supplied.

7 Total water supply by Greater Wellington Regional Council to city councils for all types of consumption (including domestic, commercial/industrial and services), divided by the estimated resident population

8 See Distribution shut-offs, p27 for more detail

9 Estimates provided by Capacity (for Wellington, Lower Hutt and Upper Hutt) and Porirua City Council. Figures estimated as accurate to +/-20 L/p/day. Domestic water use is a subset of total (gross) water supply (see page 13)

AVERAGE DAILY WATER SUPPLY PER RESIDENT – 10-YEAR TREND



Although the summer of 2012/13 was warm, sunny and dry, water use was relatively low. The summers of 2005/06, which had similar rainfall, sunshine hours and temperatures, and 2007/08, when the region last had a sprinkler ban, offer useful comparisons. While "winter" demand is reducing, so too is the gap between winter and summer use in years with similar summer weather.

SUMMER'S DROUGHT AND WATER CONSERVATION

The threat of a serious water shortage over summer gained front-page headlines and widespread public attention from late February. The record-breaking dry spell, which occurred while one of our two storage lakes was empty for earthquake-strengthening, generated considerable media interest.

The critical period of low rainfall was between 4 February and 16 March, with only 4mm of rain recorded for Wellington in 40 days[10]. Typically, our water catchments receive rainfall every 7-10 days.

The length of the dry period in our water catchments that led to dwindling river flows and water shortage concerns went well beyond previous records. These records go back 60 years for the Hutt catchment and 130 years for Wainuiomata.

At the same time, water use was lower than expected from past experience under dry weather conditions (see graph "Average daily water supply per resident – 10-year trend" above). Our communications about the lake-upgrade work and associated risk of a water shortage if the summer was dry – as well as conservation tips – ran from October. The water use through the mid-summer period[11] was amongst the lowest seen in over 25 years.

10 NIWA, Kelburn

11 December to February

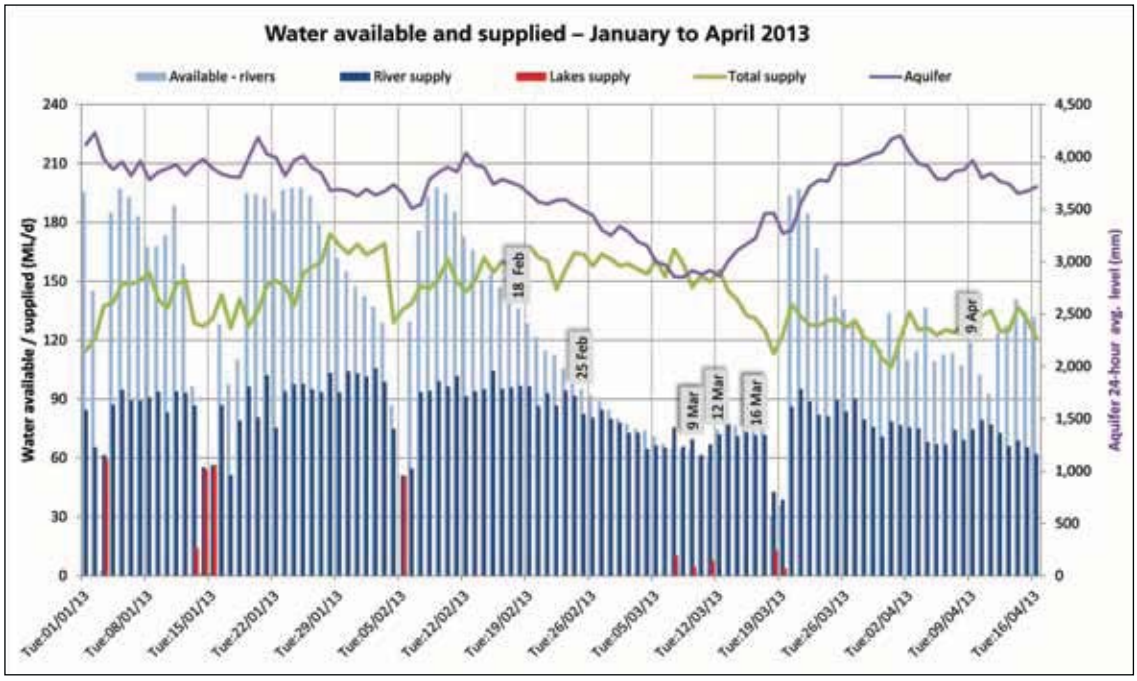
The public response to an escalating threat of shortage was outstanding, with our call in mid-March to reduce usage to "winter" levels more-than met.

For the record, sprinkler bans were introduced by Upper Hutt, Porirua, Hutt and Wellington city councils on 9 March, following our recommendation, with bans on all non-essential outdoor water use following on 16 March. Projections assuming a worst case of no rainfall for a further four weeks and the continuing decline of water available for supply from our rivers and aquifer prompted the decision to adopt the outdoor water use ban, to manage use within the limits of water available from these sources, and so retain our storage. The bans were accompanied by calls for all water users to make savings wherever possible.

The water use bans and related communications – including via NZTA's electronic highway signs – were highly effective in raising awareness and reducing water use to a sustainable level.

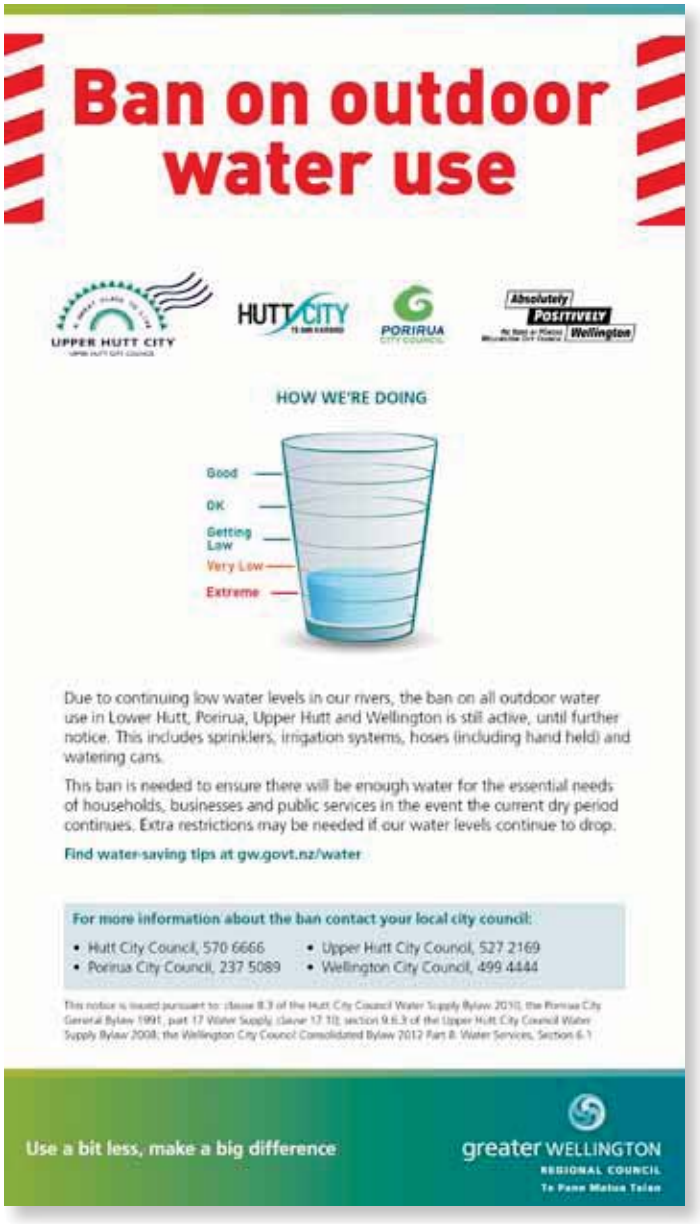
In the week prior to the sprinkler ban, water supply averaged 158 ML/day, this dropped to 146 ML/day when the sprinkler ban came into effect. For the duration of the outdoor water use ban, demand averaged 125 ML/day. The bans were lifted on 9 April, following the end of Daylight Saving and our expectation that water use would remain in check.

The experience gained from managing for a sustainable level of water use during summer's drought leaves us better prepared for any repeat. And with the necessary upgrading on both storage lakes almost finished – including a 13% increase in maximum storage capacity – a repeat is less likely in the near future. Despite this, we will be working to encourage the community to retain newly-adopted water-conservation actions as routine in the future.



By late February, all water available for supply from rivers was being used, river flow rates were falling and supply from the aquifer had to be increased to match demand. This resulted in the aquifer level dipping sharply in early March (key dates marked are explained below). Water use declined rapidly to a sustainable level from mid-March in response to widespread publicity, and this coupled with growing confidence that improved river flow rates after rainfall on 17 and 18 March would be sustained, saw water restrictions lifted on 9 April. Key dates, as shown on graph:

- Monday 18 February – No rain in 14-day weather outlook. Customers alerted to our concern for what that could mean for water availability
- Monday 25 February – GWRC request for a sprinkler ban by 1 March
- Saturday 9 March – start of sprinkler ban (the earliest date WCC could enforce its ban)
- Tuesday 12 March – activation of 400L/s residual flow consent at Kaitoke weir. Meeting with customer water supply managers that agreed an outdoor water use ban as the next stage of restriction
- Saturday 16 March – activation of the outdoor water use ban
- Tuesday 9 April – outdoor water use ban (and sprinkler ban) lifted



Outdoor water-use ban advertising

ENVIRONMENTAL IMPACTS

The main impacts of our operations on natural and physical resources relate to: the taking of water; energy and chemical use; discharges; and disposal of waste.

About two-thirds of our annual electricity use usually occurs at three sites: the Waterloo Water Treatment Plant (about 40% of total kilowatt-hours), the Waterloo wells (about 10%) and the Te Marua Pumping Station (about 15%).

The amount of power we use is affected by how much water we pump from the aquifer at Waterloo, and how much of the raw water treated at the Te Marua Water Treatment Plant is pumped from the Stuart Macaskill Lakes instead of coming direct from the Hutt River.

Our use of chemicals relative to the volume of water we treat is influenced by how much of our total production comes from river sources (which required more chemical treatment than our aquifer source) and natural variation in raw water quality. Treating river water also generates solid and liquid waste, which we must dispose of.

We measure carbon emissions from energy use, but we have been unable to identify standardised emission factors for the production and transportation of treatment chemicals. Our three main water treatment plants use different proportions of power and chemicals, which means the relative environmental impacts are unknown. Given this uncertainty, our approach is to produce water at minimum marginal cost, subject to meeting our obligations under the Resource Management Act and organisational targets, and maintaining an agreed standard for our security of supply.

CARBON EMISSIONS TARGET PROGRESS

Our carbon emissions from power use for the year to June were 44% less than in 2006, our base year for target setting. The result comfortably exceeds our medium-term target for carbon emissions reduction from energy use: 25% by December 2020.

The GWRC carbon emission targets were set in 2008 and are under review. New targets should be in place by December 2013.

TAKING OF WATER

We took 70,626 million litres of water in total from our river and aquifer sources, 1.8% less than during 2011/12.

49,685 ML of our take (70%) was supplied to city reservoirs, with most of the remaining water used to generate electricity at our Wainuiomata and Te Marua water treatment plants (after which the water was returned to the Hutt and Wainuiomata rivers).

All water take was within consented limits.

ELECTRICITY USE

(Annual performance target 3.16.2)

We used 17,578 megawatt-hours (MWh) of electricity – 0.2% less than in 2011/12; this equated to 354 kilowatt-hours per million litres of production (353 in 2011/12).

SELF-GENERATION ELECTRICITY USE

We self-generated 896 MWh of electricity at Te Marua and 1,101 MWh at Wainuiomata – 5% and 6.4% respectively of our total power use. 63% of the power generated at Wainuiomata was exported to the local network, for which we receive payment.

The electricity generated by our two hydro plants had a market value in excess of $170,000.

CHEMICAL USE

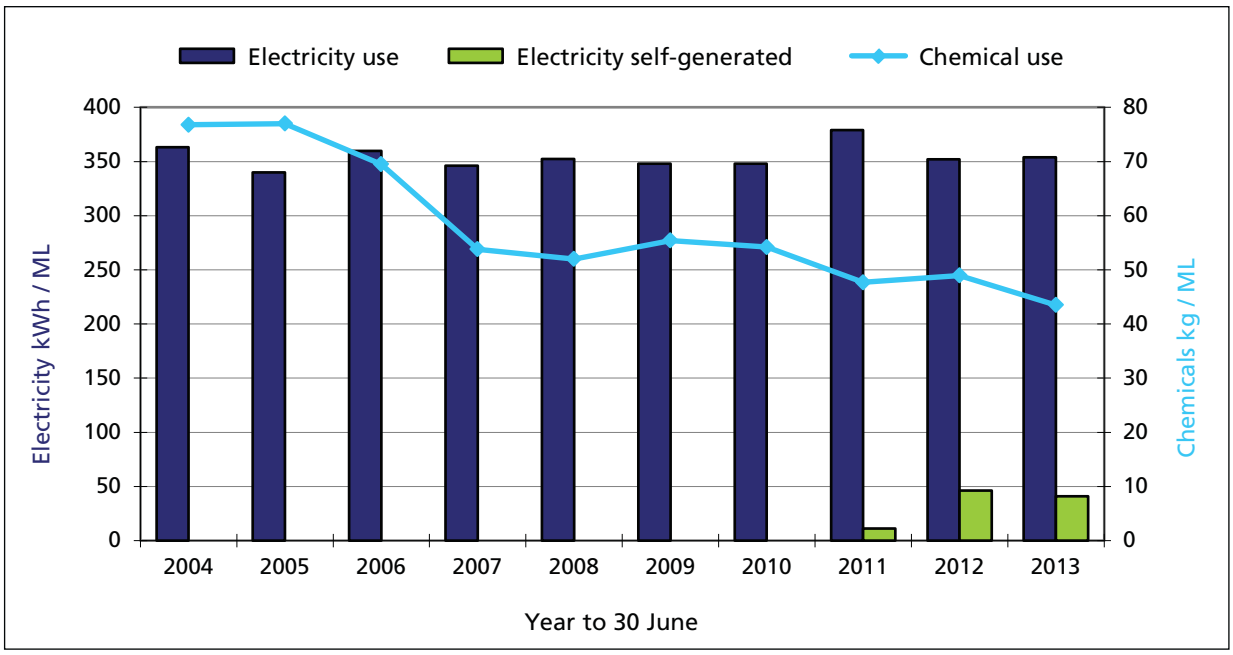
(Annual performance target 3.16.3)

We used 2,130 tonnes of treatment chemicals – 13% less than during 2011/12.

Across all water treatment plants, we used 43kg of chemicals for every million litres of water treated – 6kg/ML less than in 2011/12. The decrease in the amount of treatment chemicals being used is due to a smaller proportion of river water relative to aquifer water being treated than last year – river water requires more chemicals to treat than aquifer water.

We received a New Zealand Engineering excellence award for developing a ground-breaking chemical process for water treatment (see p7)

POWER AND CHEMICAL USE TREND



TREATMENT WASTE

We sent 1,617 tonnes of de-watered treatment waste (sludge) to landfill from our river-water treatment plants – 3.9% less than during 2011/12.

On a weight-by-flow basis, this is 59kg of sludge per million litres of river water treated, an increase of 1.2% over 2011/12. The ratio of sludge to treated water is determined by the quality of "raw" river water to be treated: dirtier water results in more sludge.[12]

COMPLIANCE WITH RESOURCE CONSENTS

(Annual performance target 3.2.1)

We incurred a minor technical non-compliance for one consent this year, due to late submission of photographic evidence for a discharge consent. Full compliance was achieved for all other consents held.

KAITOKE WEIR CONSENT

This summer saw the activation of our three-year consent to take up to 200 litres per second more water from the Hutt River at Kaitoke Weir. The consent was granted in July 2011, to cover the reduced level of storage in the Stuart Macaskill Lakes while they were being upgraded (see story, p10).

The consent was activated on 12 March and the residual flow remained at the consented minimum of 400 litres per second for 53 days.

The intensive monitoring required by the new consent was carried out over the summer for the second time. The monitoring programme looked at the range of nutrients in the river, the type and number of macro-invertebrates and at sediment deposits.

While most monitoring results are not available for reporting yet (due in August 2013), we do have information from the nutrient monitoring, which show an increase in levels entering the Hutt River between the Whakatikei River confluence with the Hutt River (north of Trentham), and Silverstream.

Elevated nutrient levels in rivers is one of the main factors contributing to algal blooms. Historically, algal blooms have occurred in the Hutt River between Trentham and Silverstream.

RESULTS OF RESEARCH INTO BLUE-GREEN ALGAE

Last year we reported that we had funded a Victoria University PhD student to conduct research into what physical river conditions promote blue-green algae growth. The results of his work were released in October 2012.

The research concluded that *"Elevated nitrogen and phosphorus limitation appears to be playing a vital role in the regulation of Phormidium (the prevalent species of blue/green algae) in the Hutt River and further investigation is recommended."*

In response to this recommendation, an additional nutrient monitoring point was instituted downstream of the Whakatikei River confluence for monitoring during summer 2012/13.

The research also showed that *Phormidium* was able to colonise over a wide range of depth and velocities and concluded:

12 Sludge represents 96% of measured treatment waste by dry weight. The sludge volume for 2011/12 has ben revised downward to 1,682 tonnes, to exclude liquid waste that has previously been included in error

"Although flushing flows are still the biggest regulator of Phormidium cover, the results of this study indicate that factors, other than flow, are regulating Phormidium cover in low flows."

These results will be included in the ongoing research being carried out by GWRC's Environmental Science department.

TURNING ON THE TAP – WATER EDUCATION RESOURCE

The uptake of our *Turning on the tap* educational resource has been helping to build engagement by local schools with water supply issues.

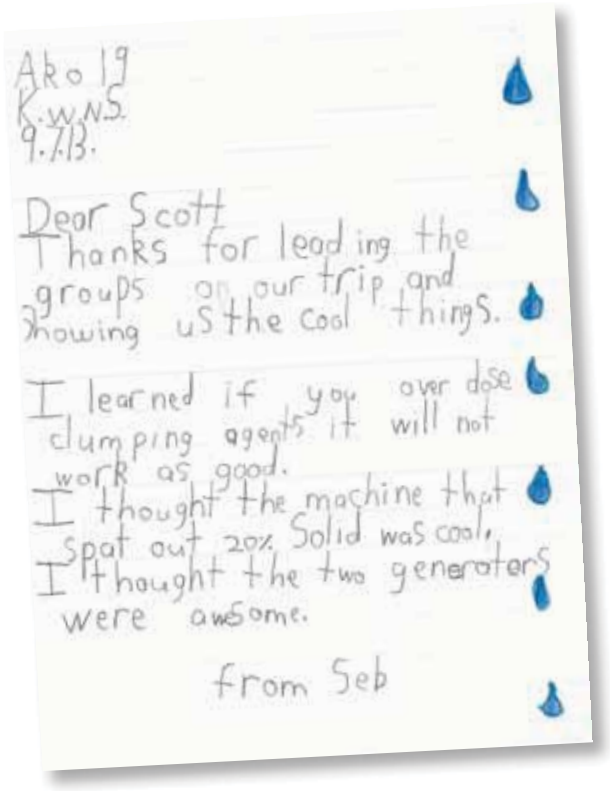
In 2011 we launched *Turning on the tap*, our water educational teaching resource for years 5-8. *Turning on the Tap* is focused on the potable water supply and water conservation and includes the offer of a guided visit to one of our water treatment plants.

This year we hosted 42 primary and intermediate school groups at our water treatment plants, up from five groups in the previous year. We also sent out 43 hard copies of the *Turning on the tap* resource to teachers in the last 12 months. The resource is also available to download for free from our website.

Feedback about both the teaching resource and water treatment plant visits has been extremely positive from teachers and students.


Ako 19
KWNS
2.7.13
Dear Scott
Thanks for letting us go to your treatment plant.
I enjoyed when the dirty water bubbled up then came over the side with a golden colour.
I noticed the dirt dropping into skips it sounded disgusting.
I was amazed with those big pipes that carried water and added chlorine and fluoride.
By India


Ako 1a
KWNS
9/7/13
Dear Scott
I loved the waterfall and the way everyone got to see it.
I loved the way we got to see dirty water turn into clean water. I enjoyed watching the water slide down the walls with a golden colour. It was scary walking on the dirty water. I thought there were people under me when I was walking on the water thankgoodness there was like a cage there. It was like an Adventure!!!. love=Tamati


Ako 19
K.W.N.S.
9.7.13.
Dear Scott
Thanks for leading the groups on our trip and showing us the cool things.
I learned if you over dose clumping agents it will not work as good.
I thought the machine that spat out 20% Solid was cool.
I thought the two generaters were awsome.
from Seb


Ako 19
KWNS
Dear Scott
Thank you for having us at the treatment plant.
I was surprised when the sandfilters was bubbling up, I got a big fright.
I learned that if you put more chemicals it wont clump as fast.
I was amazed when you showed us the giant pipes
from Alicia

FINANCIAL HIGHLIGHTS

OPERATING REVENUE

Operating revenue was better-than budget by $0.4m, with external revenue and investment income each $0.2m ahead of budget.

External revenue was boosted by unbudgeted work for external parties including the installation of an emergency water supply for the Haywards substation and work on the Macalister Park reservoir for Wellington City Council.

Our investment revenue – from returns on our Asset Rehabilitation Fund – was above budget. These funds are invested by the GWRC's Treasury Department in the short-term money market, which continues to produce above-forecast returns.

OPERATING COSTS

Operating costs were lower than budget by $1.1m. Notable savings and variances occurred from:

- Staff costs were $0.6m lower-than budget. Actual payments to staff were on budget, the variance is due to staff spending considerably more time on capital projects than was budgeted, so charging more time to projects rather than operating expenses
- Chemicals and electricity costs were $32,000 over budget. Although not a large variance, it is worth noting that during the drought months we had to turn off our electricity optimising software and treat lower-quality river water, rather than cleaner lake water, to conserve storage. These actions resulted in higher chemical and electricity use, but total costs were still held close to budget, due to savings in the first half of the year
- Other costs: $0.2m below budget. Savings of $0.1m were made on property expenses, mainly due to lower-than budgeted rates, security and rent. Further savings of $0.1m were made on sundry materials and supplies used for maintenance
- Contractors and consultants: $0.3m better-than budget. Mostly unspent budget for consultants for system development investigations

FINANCE COSTS

Debt financing costs: $0.5m less-than budget. Mainly due to the delay in settling the Kaitoke land purchase[13] ($4.0m) and other under spending against the capital budget.

CAPITAL EXPENDITURE

We ended the year with an under-spend of $5.0m against our capital budget. $4.0m of this was for the land purchase at Kaitoke. Negotiations with the landowner, AgResearch Ltd, are progressing but are still to be concluded. The budget for the purchase was carried forward to the 2014/15 financial year. Of the other $1.0m, $0.5m was also re-budgeted to next year and net savings of $0.2m were made on completed projects. The remainder of uncompleted projects are to be funded from next year's budget allocation.

CASHFLOW

Cash flow from operating activities was $1.9m better-than budget, from higher income and lower expenses relative to budgets. The surplus was used to retire debt early, with the on-going benefits of lower debt-related interest costs and improved debt carrying capacity, with an eye towards substantial future investment in new operational storage (see story, page 11).

FINANCIAL POSITION

The Water Supply Group has been further strengthened by the results of the recent asset revaluation. Total asset values now stand at $463.9m with total liabilities of $56.4m. Debt has increased by $5.2m to $54.1m.

Note regarding 2012/13 results

In viewing this year's results against budget, it should be noted that there are two significant variances arising from one-off events. The preceding commentary relates to operational variances and ignores these events.

1. We have changed the way our Engineering and Projects team charges time to projects. As a consequence we are reporting a negative variance of $1.5m against internal revenue and a $1.5m saving against internal costs
2. A comprehensive (five-yearly) revaluation of our assets has resulted in a $112m net increase in their book value, to $464m. Work since the previous revaluation to improve the level of detail in our fixed asset register enabled us to determine with greater accuracy remaining lives and values of those assets. This resulted in an one-off operating loss of $4.4m

13 See improvement project, p34, "2.5 – Provide regional councillors with sufficient information so that they can make an informed decision about whether to purchase land at Kaitoke for additional water storage lakes"

BULK WATER LEVY 2013/14

The Council approved a 3% increase in the bulk water supply levy (to $24.9m) over that set for 2012/13, to enable accelerated retirement of current debt and meet anticipated increases in operational costs due to inflation. Operational efficiency and cost minimisation continue to be a focus to enable the levy increases to be kept at a minimum.

INSURANCE REVIEW

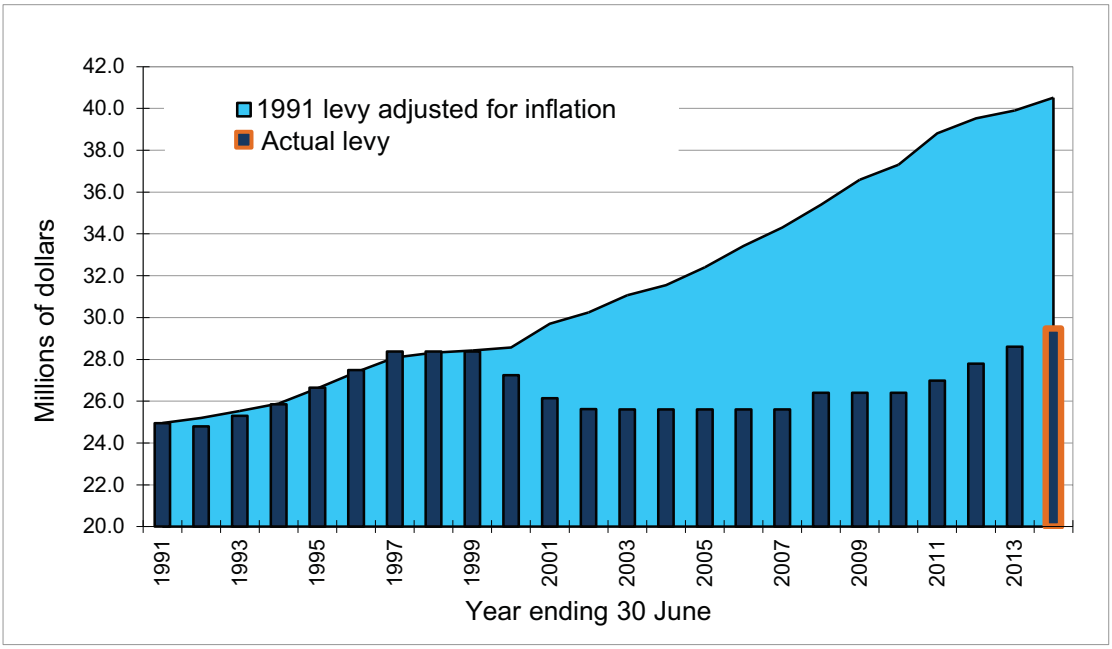
The Council currently insures its water supply assets through a combination of council-wide Material Damage Insurance, and by holding cash reserves in a Water Supply asset rehabilitation fund, currently valued at $19.1m.

We are in the process of conducting a comprehensive review of our asset insurance arrangements. This follows:

- an increase in Water Supply asset values, resulting from this year's revaluation exercise;
- concern at the rising level of insurance costs and a related decision by Council to increase the deductible (excess) on its Material Damage Insurance policy, covering all Council groups, from $10m to $20m
- a Council decision during the 2013/14 Annual Plan approval process that the Water Supply Group stop buying top-up insurance for the asset rehabilitation fund, with the provision that a review of maximum probable loss (MPL) be undertaken to provide a level of comfort over the extra financial exposure the Council was assuming. The top-up insurance covers the difference between the value of the asset rehabilitation fund and the MPL estimate for the assets covered by the fund. We will now invest the "saved" insurance premiums in growing the asset rehabilitation fund more rapidly

An initial review of the Council's insurance policies, and in particular the level and application of deductibles, indicated further work was needed to understand fully their implications in determining the Water Supply Group's total financial exposure in the event of a rupture of the Wellington Fault. We expect to report the outcome of the review to Council in the coming year.

BULK WATER LEVY AND CPI INFLATION



The water levy that we charge the Hutt, Porirua, Upper Hutt and Wellington city councils will increase by 3% for 2013/14. The levy was held or cut for 12 of the 13 years between July 1998 and July 2010, however, we are now in a phase of small incremental levy increases. This will reduce public debt in anticipation of future borrowing for the development of a new water source.

FINANCIAL SUMMARY

	June 2013 Actual $000	June 2012 Actual $000	June 2011 Actual $000	June 2010 Actual $000	June 2009 Actual $000
Operating revenue	26,513	27,402	27,051	27,106	27,325
Depreciation	8,257	8,334	8,215	7,950	7,541
Financial costs	3,585	3,204	2,538	2,924	3,750
All other operating expenditure	21,866	19,392	17,217	16,732	17,498
Operating surplus/(deficit)	**(7,195)**	**(3,528)**	**(919)**	**(500)**	**(1,464)**

BENCHMARKING

Effective performance is a key aspect of GWRC's commitment to the region.

This year, we sought an independent performance assessment of our Water Supply activities based on the NZ Treasury's six guiding principles for infrastructure management. PwC and GHD carried out the assessment and included comparison with nine other council water operators from across New Zealand, from an earlier assessment using the same methods. Overall, the results placed us joint-best performing, with one other water service provider, WaterCare Services Ltd (Auckland).

PRINCIPLES+	GWRC
Investment analysis	
Resilience	
Funding mechanisms	
Accountability and performance	
Regulation	
Coordination	

Note:

Green = Occurs effectively

Amber = Occurs but could be further developed

Red = Does not occur or is ineffective

While this overall result is pleasing, the Water Supply Group received an "amber" result for two of the principles (occurs but could be further developed): funding mechanisms and regulation.

PRINCIPLE 3 – FUNDING MECHANISMS

There were two metrics for this principle that contributed to the amber result. One was "Actual versus Planned Capital Expenditure"; points were lost due to high-value project deferrals, such as the land purchase at Kaitoke ($4m, see page 11).

The second was the metric of "Costs versus Revenue". The success criteria indicated that we should be recovering depreciation as part of the economic cost of the assets. GWRC deems this to be a future cost and therefore not a current expense that we pass on to our customers.

PRINCIPLE 5 - REGULATION

The metrics for this principle are designed to assess the performance of the regulatory framework, rather than that of the water operator. No operator has achieved a green result for this principle.

Note: The above two principles with amber results are aligned with the results of the other highest performing operator.

+Explanation of principles

Investment analysis
Investment is well analysed and takes sufficient account of potential changes in demand

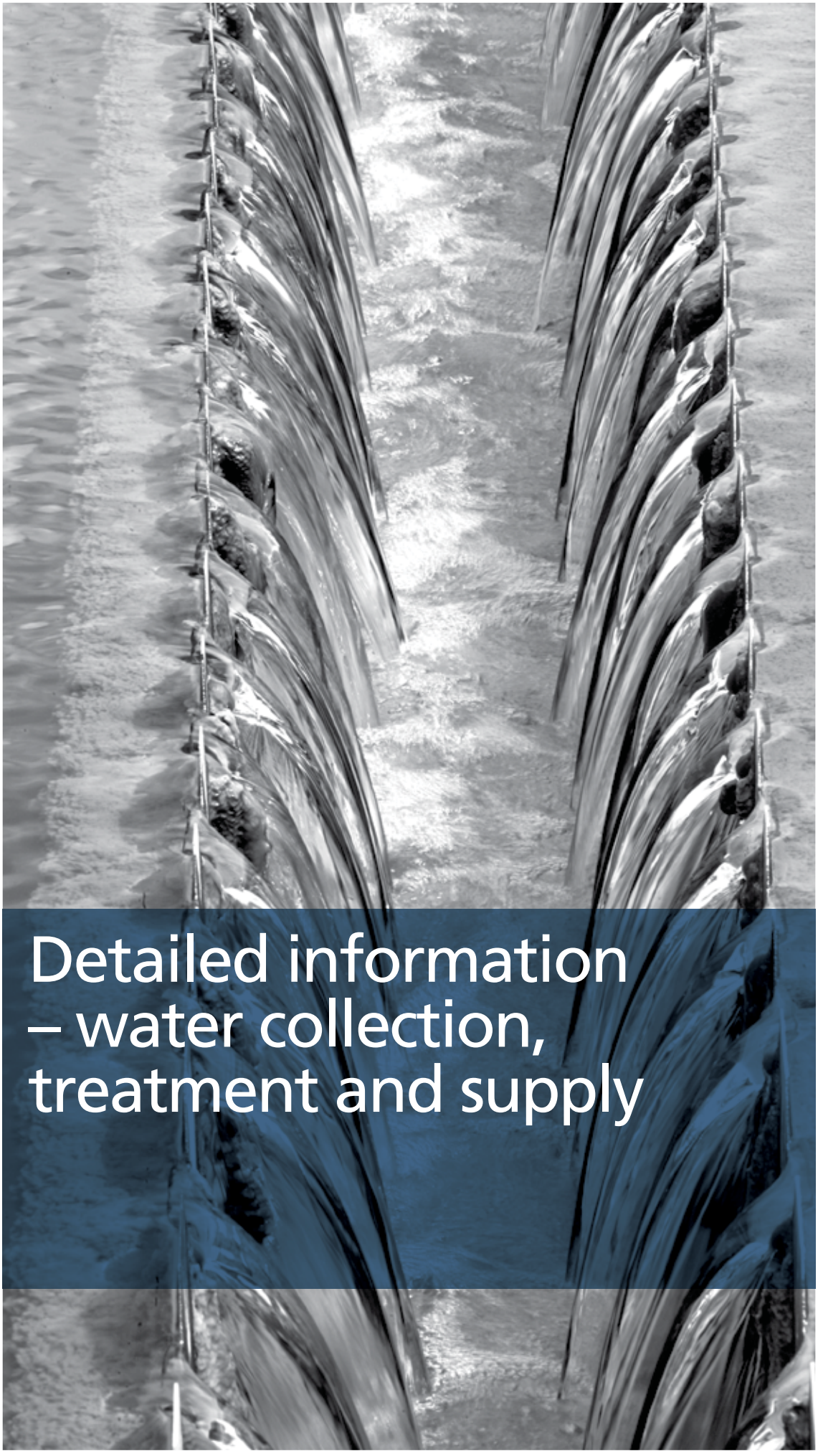
Resilience
National infrastructure networks are able to deal with significant disruption and changing circumstances

Funding mechanisms
Maintain a consistent and long term commitment to infrastructure funding and utilise a broad range of funding tools

Accountability and performance
It is clear who is making decisions, and on what basis, and what outcomes are being sought

Regulation
Regulation enables investment in infrastructure that is consistent with other principles, and reduces lead times and uncertainty

Coordination
Infrastructure decisions are well coordinated across different providers and are integrated with decisions about land use



Detailed information – water collection, treatment and supply

Sources of water supplied

WATER ABSTRACTION (MILLIONS OF LITRES)

For the year ended 30 June

Source	Annual					Maximum week			Maximum day		
	Total		Percent	Average day		Date	Average day		Date	Day	
	2013	2012	2013	2013	2012	2013	2013	2012	2013	2013	2012
River and stream abstraction											
Kaitoke/Te Marua	37,516	37,407	53.1%	102.8	102.2	21/11/12	142.0	149.7	05/11/12	142.0	149.9
Wainuiomata	3,931	4,798	5.6%	10.8	13.1	22/05/13	29.7	22.4	19/05/13	34.8	29.5
Orongorongo	5,475	5,553	7.8%	15.0	15.2	30/01/13	27.0	29.4	18/04/13	33.0	32.8
George Creek	1,062	1,260	1.5%	2.9	3.4	22/05/13	7.2	6.1	16/05/13	9.8	9.6
Big Huia Creek	1,360	1,993	1.9%	3.7	5.4	04/07/12	11.4	12.6	25/08/12	13.1	13.4
Total – rivers	49,343	51,010	69.9%	135.2	139.4	26/09/12	197.0	205.8	04/10/12	199.0	210.3
Public artesian abstraction											
Waterloo	21,109	20,887	29.9%	57.8	57.1	13/03/13	85.9	78.7	07/03/13	99.7	89.2
Gear Island	174	32	0.2%	0.5	0.1	29/08/12	7.7	0.6	22/08/12	24.4	4.3
Total – artesian	21,283	20,919	30.1%	58.3	57.2	13/03/13	85.9	78.7	07/03/13	99.7	89.2
Total public abstraction	**70,626**	**71,930**	**100%**	**193.5**	**196.5**	**26/08/12**	**253.8**	**262.4**	**26/10/12**	**275.9**	**272.1**

See also "Taking of water", p17. Totals may not add exactly due to rounding

RAINFALL LEVELS (MILLIMETRES)

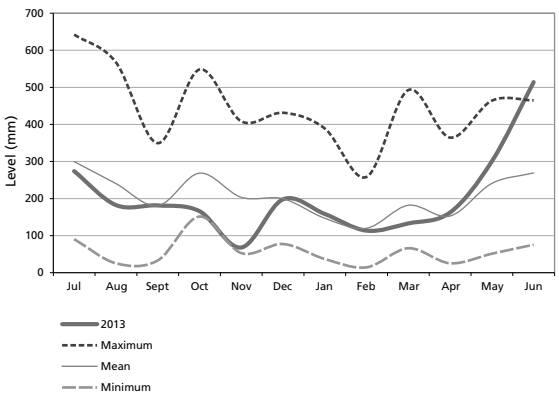
For the year ended 30 June

	Kaitoke[1]	Karori[2]	Orongorongo[3]	Wainuiomata[4]
2013	1,973	1,292	2,270	1,712
2012	1,968	1,392	2,223	1,708
Mean of data record	2,286	1,256	2,504	1,920
2013:mean	86%	103%	91%	89%

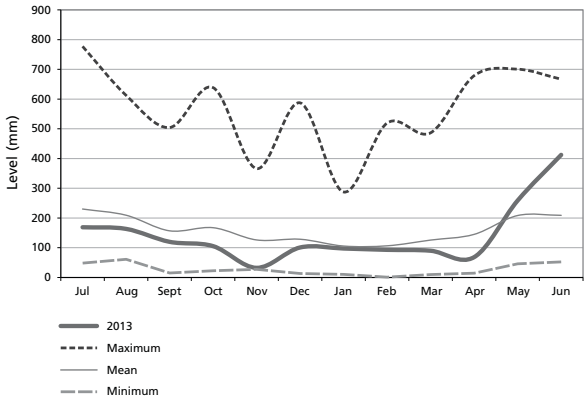
1: Kaitoke Headworks rain gauge. 2: Karori Sanctuary rain gauge. 3: Orongorongo Swamp rain gauge. 4: Wainuiomata Reservoir rain gauge

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

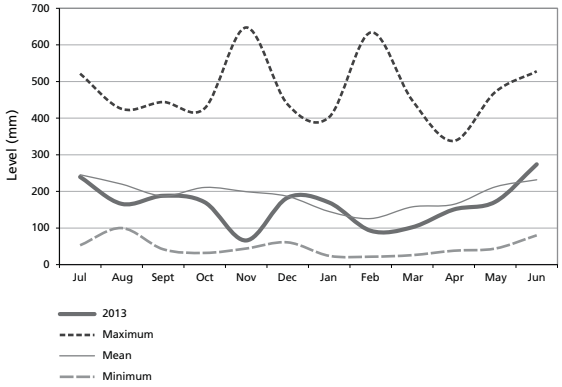
ORONGORONGO CATCHMENT RAINFALL
(Orongorongo Swamp record 1980-2013)



WAINUIOMATA CATCHMENT RAINFALL
(Wainuiomata Reservoir record 1890-2013)



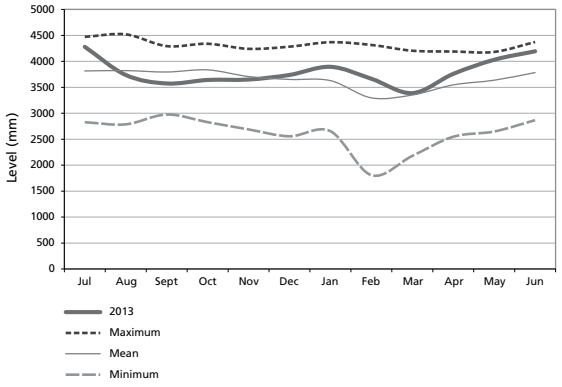
HUTT CATCHMENT RAINFALL
(Kaitoke Headworks record 1951-2013)



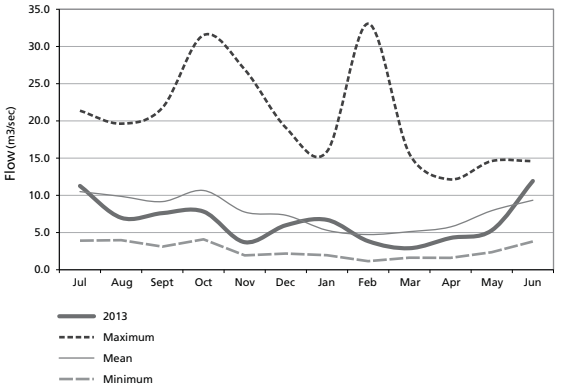
LEVELS AND FLOWS FROM WATER SOURCES

The following three graphs show historical highs, lows and averages for river flows from the Hutt and Wainuiomata rivers and for the level of the Waiwhetu aquifer at Petone – the three main water sources that we use to supply Lower Hutt, Porirua, Upper Hutt and Wellington – compared with data for the 12 months to 30 June 2013.

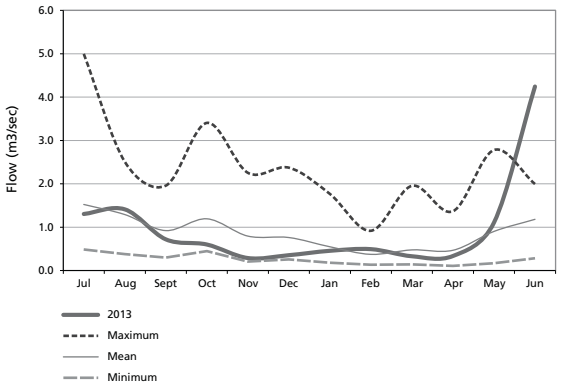
WAIWHETU AQUIFER
(McEwan Park record 1971-2013)
Average monthly level for the year ended 30 June



HUTT RIVER
(Kaitoke record 1968-2013)
Average monthly level for the year ended 30 June



WAINUIOMATA RIVER
(Manuka Track record 1982-2013)
Average monthly level for the year ended 30 June



Distribution shut-offs

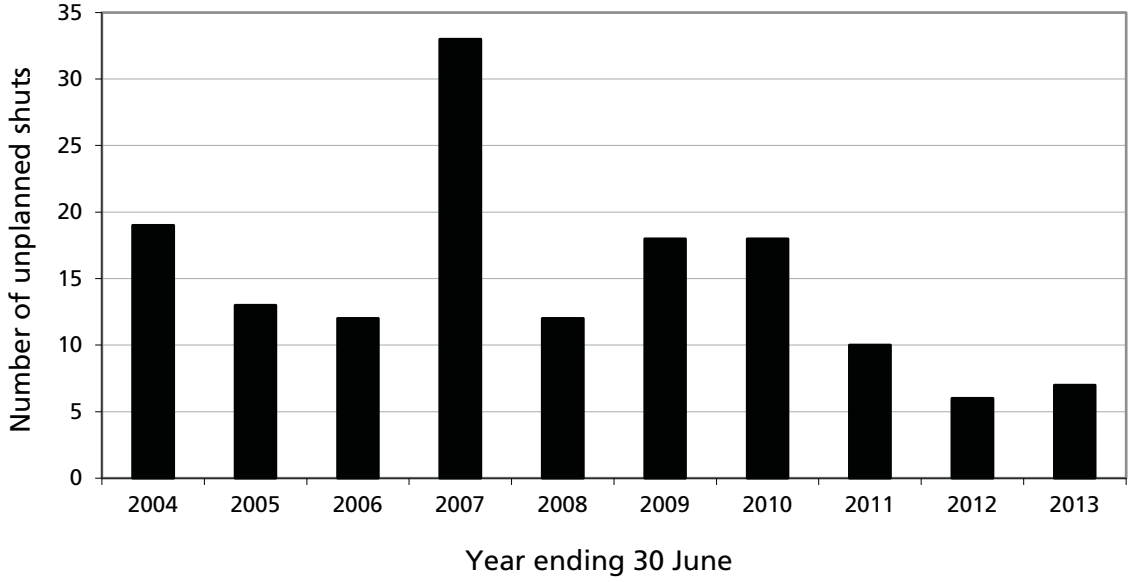
For the year ended 30 June

We had to shut off part of our bulk water supply network on 42 occasions this year to carry out repairs, maintenance and improvements (2012 = 41). In all cases, we finished the work and reinstated the supply without loss of water or pressure to consumers within the affected supply zones.

Of the 42 shut-offs, we needed more than eight hours to reinstate 12 of them. We were able to supply water from either an alternative reservoir or we managed the affected reservoir to avoid disruption in all of these cases.

Seven shutdowns were unscheduled, for repair of leaking for burst mains or to replace leaking valves, compared to six during the year to 30 June 2012 (see graph below). The remaining 35 shutdowns were scheduled (2012 = 35). This work was required to install new or refurbished pipes and valves, install new flow meters and mitigate the risk of asset failures from seismic activity.

UNPLANNED SHUT-OFFS OF WHOLESALE WATER MAINS



Water supply volumes

Since December 2005, we have had remote access to revenue meters at the supply points to our customers, and have collected readings daily. Prior to December 2005, we recorded water supply figures weekly by manual reading of revenue meters at the supply points to our customers. The annual supply totals prior to the year ended 30 June 2006 (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 2000, 2004, 2008 and 2012 are 366 days.

WATER SUPPLIED (MILLIONS OF LITRES)

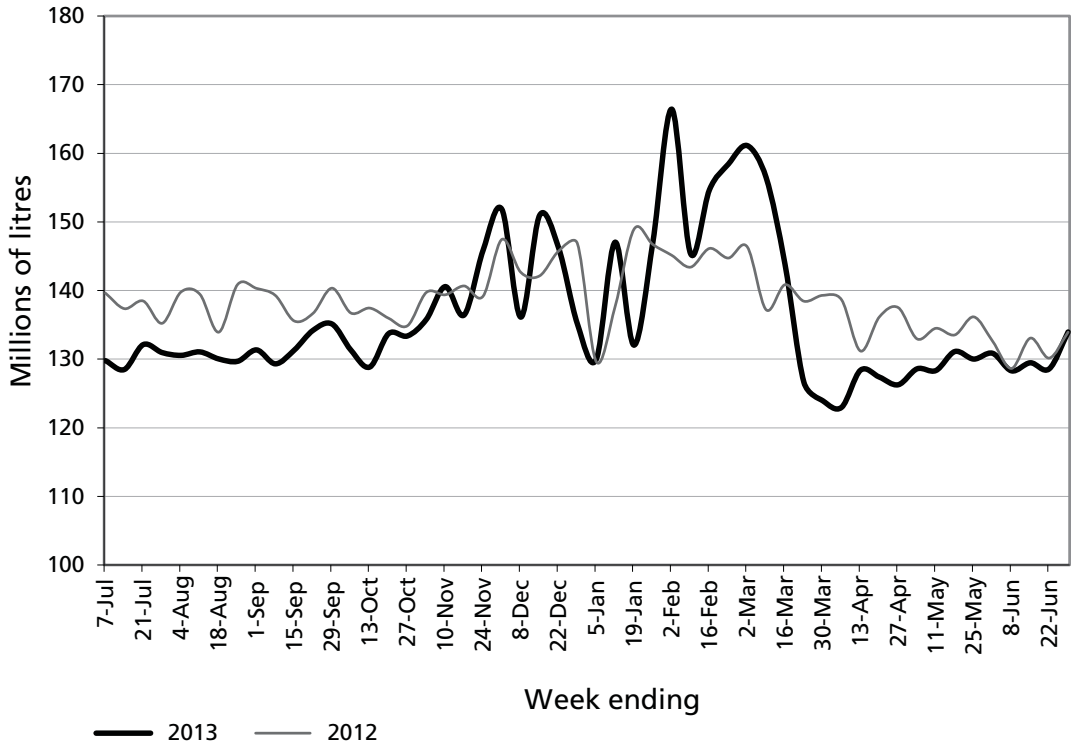
For the year ended 30 June

	Lower Hutt		Porirua		Upper Hutt		Wellington		Total supply	
	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day
2013	12,707	34.8	5,688	15.6	4,688	12.8	26,601	72.9	49,685	136.1
2012	12,900	35.3	5,834	15.9	4,784	13.1	27,204	74.3	50,722	138.6
% change	*-1.5%*		*-2.5%*		*2.0%*		*-2.2%*		*-2.0%*	
2011	13,470	36.9	5,877	16.1	4,990	13.7	28,441	77.9	52,777	144.6
2010	13,369	36.6	6,179	16.9	4,880	13.4	28,510	78.1	52,939	145.0
2009	13,804	37.8	6,277	17.2	5,011	13.7	29,136	79.8	54,228	148.6
2008	14,133	38.6	6,439	17.6	5,159	14.1	29,912	81.7	55,642	152.0
2007	14,076	38.6	6,317	17.3	5,113	14.0	30,542	83.7	56,048	153.6
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
2004	13,956	38.1	5,907	16.1	5,296	14.5	29,776	81.4	54,935	150.1

AVERAGE DAILY WATER SUPPLY BY WEEK

For the year ended 30 June 2013

Weeks shown are seven days from 1 July



AVERAGE DAILY SUPPLY GROSS WATER SUPPLY PER CAPITA (LITRES)

For the year ended 30 June

	Lower Hutt	Porirua	Upper Hutt	Wellington	Total
Population[1]	101,950	53,100	39,350	202,350	396,700
Gross litres/head/day	342	294	326	360	343

1: Usually resident population, urban areas – extrapolated from Statistics NZ estimates. The populations presented are estimates for 30 June 2012, plus half the difference between the 30 June 2011 and 2012 estimates, to approximate a 2012/13 average population

MAXIMUM WEEK SUPPLY (MILLIONS OF LITRES)

For the year ended 30 June

Maximum week 2013	Lower Hutt	Porirua	Upper Hutt	Wellington	Total
	30/01/13	20/02/13	27/02/13	06/03/13	06/03/13
Total of maximum week					
2013	287.3	130.3	109.7	593.0	1112.4
2012	283.5	132.5	108.6	555.6	1060.7
% change	*1.3%*	*-1.7%*	*1.0%*	*6.7%*	*4.9%*
Average day of the maximum week					
2013	41.0	18.6	15.7	84.7	158.9
2012	40.5	18.9	15.5	79.4	151.5

'BASE' WINTER (JUNE - AUGUST) SUPPLY (MILLIONS OF LITRES)

For the year ended 30 June

	Lower Hutt		Porirua		Upper Hutt		Wellington		Total supply	
	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day	Total	Avg. day
2013	3,044	33.1	1,373	14.9	1,127	12.3	6,458	70.2	12,001	130.4
2012	3,185	34.6	1,397	15.2	1,161	12.6	6,772	73.6	12,515	136.0
% change	*-4.4%*		*-1.7%*		*-2.9%*		*-4.6%*		*-4.1%*	
2011	3,240	35.2	1,411	15.3	1,150	12.5	6,903	75.0	12,704	138.1
2010	3,275	35.6	1,472	16.0	1,174	12.8	6,940	75.4	12,860	139.8
2009	3,352	36.4	1,505	16.4	1,201	13.1	7,062	76.8	13,119	142.6
2008	3,321	36.1	1,491	16.2	1,192	13.0	7,165	77.9	13,168	143.1
2007	3,387	36.8	1,515	16.5	1,240	13.5	7,813	84.9	13,955	151.7
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
2004	3,414	37.1	1,415	15.4	1,226	13.3	7,230	78.6	13,285	144.4

N.B. Figures are July and August from one calendar year and June from the next. E.g., 2012 represents July and August 2011 and June 2012

Water supply to Wellington during June 2006 (shown as part of the 2006 June year total), and July and August 2006 (shown as part of the 2007 June year total), was substantially more than expected, due to a large leak in the city's reticulation, which was repaired in September 2006. Our analysis indicates that this leak accounts for much of the increase seen in total base supply during those two financial years.

Water quality measurement

CHEMICAL MONITORING – 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 Ministry of Health's *Drinking-water Standards for New Zealand (DWSNZ) 2005 (Revised 2008*).

The drinking-water standards state that maximum acceptable values (MAV) for inorganic determinands of health significance represent concentrations in the water that, based on present knowledge, do not result in any significant risk to the health of the consumer over their lifetime of consuming that water. Guideline values (GV) apply to aesthetic determinands, which the standards identify as not of health significance. However, if a GV is exceeded the water may be rendered unappealing to consumers.

MEAN VALUES OF CHEMICAL ANALYSIS AT TREATMENT PLANTS

For the year ended 30 June

DWSNZ 2005 (Revised 2008)			Te Marua			Wainuiomata			Waterloo			Gear Island		
Parameter	**MAV[A]**	**GV[B]**	**No. of samples**	**Median Value**	**Max value**	**No. of samples**	**Median value**	**Max value**	**No. of samples**	**Median value**	**Max value**	**No. of samples**	**Median value**	**Max value**
Alkalinity - Total g $CaCO^3/m_3$	-	-	13	25	28	12	36	43	13	55	61	1	54	54
Aluminium - Total g/m³	-	0.1	13	0.018	0.038	12	0.031	0.036	2	0.039	0.042	1	0.005	0.005
Arsenic - Total g/m³	0.01	-	2	<0.002	<0.002	2	<0.002	<0.002	2	<0.002	<0.002	1	<0.002	<0.002
Boron - Total g/m³	1.4	-	2	<0.05	<0.05	2	<0.05	<0.05	2	<0.05	<0.05	0	-	-
Cadmium - Total g/m³	0.004	-	2	<0.001	<0.001	2	<0.001	<0.001	2	<0.001	<0.001	1	<0.001	<0.001
Calcium hardness g $CaCO^3/m_3$	-	200	13	18	20	12	37.5	43	13	45	53	1	26	26
Chloride g/m³	-	250	1	10.7	10.7	1	14.9	14.9	2	14.5	14.8	1	16.3	16.3
Chromium - Total g/m³	0.05	-	2	<0.001	<0.001	2	<0.001	<0.001	2	<0.001	<0.001	1	<0.001	<0.001
Conductivity - µS/cm at 25°C	-	-	1	10.4	10.4	1	17	17	2	16.8	16.8	1	18.9	18.9
Copper - Total g/m³	2	-	13	0.013	0.253	12	<0.013	<0.013	13	<0.013	<0.013	14	<0.013	<0.013
Cyanide g/m³	0.6	-	2	<0.005	<0.005	2	<0.005	<0.005	2	<0.005	<0.005	1	<0.005	<0.005
Fluoride g/m³	1.5	-	93	0.78	0.99	85	0.83	1.1[C]	93	0.78	0.93	83	0.79	0.89
Hydrogen Sulphide g/m³	-	0.05	1	<0.05	<0.05	1	<0.05	<0.05	2	<0.05	<0.05	1	<0.05	<0.05
Iron - Total g/m³	-	0.2	13	<0.013	0.029	12	0.017	0.028	13	0.048	0.080	14	0.045	0.128
Lead - Total g/m³	0.01	-	2	<0.001	<0.001	2	<0.001	<0.001	2	<0.001	<0.001	1	<0.001	<0.001
Manganese - Total g/m³	0.4	-	13	<0.013	<0.013	12	<0.013	<0.013	13	<0.013	<0.013	14	<0.013	0.003
Mercury - Total g/m³	0.007	-	2	<0.001	<0.001	2	<0.001	<0.001	2	<0.001	<0.001	1	<0.001	<0.001
Nickel - Total g/m³	0.08	-	2	<0.001	<0.001	2	<0.001	<0.001	2	<0.001	<0.001	1	<0.001	<0.001
Nitrate - Nitrogen g/m³	50	-	2	0.035	0.05	2	0.055	0.09	2	0.66	0.7	1	1.18	1.18
pH	-	7.0-8.5	14	7.75	8	13	7.7	7.8	15	7.6	8.5[D]	48	7.5	7.8
Selenium - Total g/m³	0.01	-	2	<0.005	<0.005	2	<0.005	<0.005	2	<0.005	<0.005	1	<0.005	<0.005
Silica g/m³	-	-	2	9.74	10.1	2	12.55	12.7	2	15.5	15.6	1	17.3	17.3
Sodium g/m³	-	200	1	10.2	10.2	1	12.2	12.2	2	11.2	11.3	1	27.7	27.7
Sulphate g/m³	-	250	1	3.16	3.16	1	4.17	4.17	2	6.195	6.86	1	6.88	6.88
Total Dissolved Solids g/m³	-	1000	1	51	51	1	83	83	2	82	82	1	92	92
Zinc - Total g/m³	-	1.5	13	0.013	0.034	12	<0.013	<0.013	13	<0.013	<0.013	14	<0.013	<0.013

(A) MAV denotes the maximum acceptable value to comply with the Drinking Water Standards (B) GV denotes the maximum guideline value in the Drinking Water Standards (C) There is no GV value for Fluoride in the Drinking Water Standards. The Ministry of Health guidelines are 0.7 – 1.0 mg/m³. Fluoride levels were maintained below the upper guideline value 99.6% of the time, with two slightly high values due to (1) an instrument fault and (2) immediately after the Wainuiomata Water Treatment Plant's fluoride hopper's annual maintenance – the powder is slightly more free-flowing than usual at this time (D) Commissioning of new control device produced very brief higher pH levels in January, but not over the guideline range

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. We carry out microbiological monitoring of potable water 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 an accepted indicator of bacteriological contamination. We maintain very low turbidity levels in our treated water to demonstrate low numbers of protozoa *(Cryptosporidium)*. Direct testing of protozoa is not practical or required by the Ministry of Health.

PRODUCTION

At our surface-water treatment plants (Te Marua and Wainuiomata), we demonstrate compliance to the microbiological criteria of the DWSNZ 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 we have neutralized microbiological contaminants.

The Waiwhetu aquifer is a secure water source and, therefore, free from microbiological contamination according to the drinking water standards. However, we test water leaving our aquifer-source water treatment plants (Waterloo and Gear Island) to demonstrate compliance to the *E.coli* criteria of the DWSNZ. Daily testing detected no *E.coli* in the water leaving either the Waterloo or Gear Island water treatment plants.

Regional public health units assess microbiological compliance to the DWSNZ on behalf of the Ministry of Health. These assessments cover the same period as our financial year: that is, 12 months to 30 June.

DISTRIBUTION

An International Accreditation New Zealand-registered laboratory monitors the microbiological quality of water in our distribution system after treatment. The laboratory uses *E.coli* sampling, in accordance with the sampling requirements for urban reticulation systems, as contained in the drinking water standards.

The *Register of Community Drinking Water Supplies in New Zealand* includes our distribution system. The system has three distinct zones, with each having its own sampling requirements based on population served. We must take samples 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 (un-chlorinated supply from the Waterloo Water Treatment Plant), (2) Wainuiomata/South Wellington (supply from the Wainuiomata Water Treatment Plant) and (3) Upper Hutt/Porirua/North Wellington (supply from the Te Marua Water Treatment Plant). We take samples from 16 sampling sites within the three zones.

A summary of results for the twelve months to 30 June 2013 appears below.

E.COLI RESULTS – SUMMARY OF SAMPLES COLLECTED

For the year ended 30 June 2013

Distribution Zone	DWSNZ MAV[A]	No. of samples	No. of positive results
Central Hutt/Petone	<1 in 100ml sample	388	0
Wainui/South Wellington	<1 in 100ml sample	153	0
Upper Hutt/Porirua/North Wellington	<1 in 100ml sample	226	0

(A) Drinking Water Standards for New Zealand 2005 (Revised 2008), MAV denotes "Maximum acceptable value" for microbial determinands

Annual plan levels of service and performance measures

Greater Wellington Regional Council is responsible for collecting, treating and distributing water to the Wellington City Council, Hutt City Council, Upper Hutt City Council and Porirua City Council.

ACTIVITIES

Our water supply group of activities have three components:

- Water quality – ensuring safe, high-quality water
- Water availability – a secure reliable water supply
- Sustainability – planning for future demand and being cost effective while meeting all relevant environmental and health and safety standards

CONTRIBUTION TO COMMUNITY OUTCOMES

Water supply activities contribute towards achieving:

- a **strong economy** by ensuring there is sufficient drinking water available to sustain and grow our population and support our economy
- a **resilient community** by preparing the system to cope with emergencies and the long-term impacts of climate change
- a **healthy environment** by encouraging people to use water wisely to reduce the environmental impacts, and protecting current and future water catchments
- **quality of life** by ensuring that drinking water meets Ministry of Health requirements

ACTIVITY 1: WATER QUALITY

Level of service	Performance measure	Performance targets		
		Baseline	2012/13 target	2012/13 actual
Provide water that is safe and pleasant to drink	Number of waterborne disease outbreaks	0 (2010/11)	0	0
	Number of taste complaint events related to the bulk water supply	0 (2010/11)	0	0
	Percentage compliance with the Drinking Water Standards of New Zealand[14]	Microbiological and aesthetic compliance – 100%	Microbiological and aesthetic compliance – 100%	100%
		Chemical compliance – 100% (2010/11)	Chemical compliance – 100%	100%
	Treatment plant and distribution system grading	Te Marua, Wainuiomata and Gear Island treatment plants – "A1" Waterloo treatment plant – "B" Distribution system – "a1" (2010/11)	Maintain current grading	No change to grading

ACTIVITY 2: WATER AVAILABILITY

Level of service	Performance measure	Performance targets		
		Baseline	2012/13 target	2012/13 actual
Provide a continuous and secure water supply	Number of shut-offs of the bulk water supply network resulting in loss of water or pressure to consumers	0 (2010/11)	0	0
	Improve the resilience of the bulk water supply to catastrophic events such as earthquakes	Resilience projects completed in 2010/11 included: - Aro Tunnel improvements - Gear Island valve chamber improvements - Emergency supply point in Khandallah - New connection in Ngaio - Changing the management of pipe stock	Establish a methodology for assessing improvements to the resilience of the bulk water supply	A methodology to assess projects based on their contribution to increasing the resilience of the network has been developed

14. The Long Term Plan 2012-22 incorrectly identified 85% chemical compliance baseline (2010/11) and 90% compliance 2012/13 target. Both the baseline and the target for 2012/13 should have been 100%. The 85% baseline refers to fluoride within the range recommended by the Ministry of Health for drinking water in NZ (0.7-1.0mg/L). Compliance with the Drinking-water Standards is assessed against the maximum acceptable value for fluoride of 1.5mg/L

ACTIVITY 3: SUSTAINABILITY

Level of service	Performance measure	Performance targets		
		Baseline	2012/13 target	2012/13 actual
Ensure that water supply infrastructure is adequate to meet future needs while minimising environmental impacts	Modelled probability of annual water supply shortfall	1.5% (20/11/12 forecast)	No greater than 2%	The Annual Shortfall Probability (ASP) for the bulk water supply as at 30 June 2013 is 1.5%. This is based on an estimated population of 396,700 and excludes the benefit of the increased storage capacity of the Stuart Macaskill Lakes. If we include the benefit of the increased storage capacity of the Stuart Macaskill Lakes the ASP is 0.9%
	Compliance with environmental regulations	Full compliance (2010/11)	Full compliance	One minor technical non-compliance due to late submission of photographic evidence for a discharge consent

Greater Wellington Regional Council's Long-Term Plan 2012-22 (Water Supply, section 7.4 p76) identified specific areas of work for 2012/13. The results of this work are reported below:

Specific areas of work for 2012/13	Results
Renew and improve water supply infrastructure, including improvement of earthquake resilience	A number of projects were completed this year that contributed to improving our earthquake resilience. The main projects were: • The seismic strengthening of the Kaiwharawhara Pumping Station • Emergency cross connections installation in the Waterloo wellfield • The replacement of the Point Howard suction main • Seismic evaluation of key buildings at Te Marua, Waterloo and Wainuiomata water treatment plants. The evaluation has been completed and remedial work to bring the underperforming structural elements of the plants up to the required seismic design standard is currently being designed. The physical work will then be prioritised for completion Of the $14m 2012/13 Capital Expenditure budget, approximately $6.3m was spent on projects that contributed to improving the earthquake resilience of our bulk water supply network
Increase the water storage capacity of the Stuart Macaskill lakes	The southern lake has been completed. The work on the northern lake is expected to be completed under budget and ahead of the scheduled time
Earthquake strengthen the Stuart Macaskill lakes	The southern lake has been completed and work on the northern lake is ahead of schedule
Confirm preferred option for a significant new storage facility	A preferred option has not yet been identified. Continued reduction in the amount of water being used means that a major new source will not be required until after 2020, allowing more time to investigate alternatives. A more flexible strategy for developing new water storage was agreed by GWRC in December 2012. The new strategy consists of an incremental approach, which would allow for the development of smaller scale and lower cost solutions than the long-term solution of either the Whakatikei Dam or Kaitoke Lake 3
Investigate options for an interim solution to increase capacity	Additional sites for off river storage have been identified on AgResearch land at Kaitoke. A feasibility study to investigate these sites in detail will be conducted in 2013/14. GWRC is currently negotiating to purchase this land. A proposal for a small treated water emergency storage reservoir at Takapu Road may also be able to supply water during extreme droughts, postponing the need for a major new source. A feasibility study of this proposal is currently underway

Management systems reporting

We have implemented a new Integrated Management Manual (IMM) framework to consolidate our quality and environmental management systems. The IMM has significantly improved our ability to demonstrate compliance with the requirements of ISO 9001 and 14001 standards.

We have split our quality and environmental management systems reporting between "business as usual" work (annual performance targets) and improvement work (improvement projects). For both the improvement projects table and the annual performance targets table we have shown links to the community outcomes listed in the Greater Wellington Regional Council's Long-Term Plan 2012-22.

IMPROVEMENT PROJECTS

Level of service	**Target**	**Achievement** and 2012/13 commentary	**10-Year plan 2012-22 community outcomes reference**
WATER QUALITY			
Providing water that is safe and pleasant to drink	Project 1.1 – Install triple validation of the chemistry of the raw water at the Waterloo Water Treatment Plant	**Achieved** We installed two extra pH meters to improve the measurement reliability of the chemistry of raw water entering the Waterloo Water Treatment Plant. The pH level of raw water dictates how much lime is needed to adjust the pH to the optimal range. Three separate pH meters now measure the pH level of the raw water. The two measurements that are the closest to each other are then used to calculate the required lime dose.	Healthy environment
WATER AVAILABILITY			
Providing a continuous and secure water supply	Project 2.1 – Complete the refilling process of Lake 2 and install at least 60% of the geo-membrane liner in Lake 1 of the Stuart Macaskill Lakes	**Achieved** See "Seismic upgrade – Stuart Macaskill Lakes", p10	Resilient community
	Project 2.2 – Complete the construction of the Khandallah emergency pumping station	**Achieved** We've completed the construction of an emergency pumping station in Khandallah. The emergency pumping station will be able to provide water from the Ngauranga-to-Karori bulk water pipeline into the local reticulation in the Onslow supply zone when required. This project was part of our work to reduce the risk of interruption of water supply to the four territorial authorities	Resilient community
	Project 2.3 – Install an emergency cross connection between the Waterloo well-field collector main and the local reticulation system	**Achieved** See "Emergency cross-connection – Waterloo wellfield", p10	Resilient community
	Project 2.4 – Complete building work required to bring the Kaiwharawhara Pumping Station to as close as practical to 100% of the 2002 building standard	**Achieved** See "Kaiwharawhara Pumping Station – seismic strengthening", p10	Resilient community
	Project 2.5 – Provide regional councillors with sufficient information so that they can make an informed decision about whether to purchase land at Kaitoke for additional water storage lakes	**Achieved** Approval was gained from our regional councillors to proceed with negotiations with AgResearch Ltd to purchase their land at Kaitoke. Valuation of the land has been completed by both parties and the valuation reports exchanged. The negotiation to purchase is currently underway	Resilient community Strong economy

Level of service	Target	**Achievement** and 2012/13 commentary	10-Year plan 2012-22 community outcomes reference
	Project 2.6 – Install and commission the replacement Point Howard suction main	**Achieved** The replacement of the aging Point Howard suction main was completed. The new suction main was realigned so that it took a more seismically secure and shorter route. The new route is 1.8km shorter than the old one. We have retained the redundant pipeline along Seaview Road to Point Howard to provide additional redundancies in this area	Resilient community
	Project 2.7 – Upgrade gravity fed reservoirs to battery power system	**In progress** See "Upgrade of gravity-fed reservoirs to battery power system", p11	Resilient community
	Project 2.8 – Develop a secure trunk network for data and communications	**In progress** We are partway through developing a more secure trunk network for our data and communications. This project was set up to create a stand-alone and more reliable communication network between our water treatment plants. In 2011/12, investigation work identified a total of 10 new repeater sites that needed to be installed, covering an area from the Regional Council Centre in Wellington to Masterton. These 10 new repeater sites were to be installed in 2012/13. The installations were delayed by investigations into the possibility of partnering with another GWRC group that would have resulted in cost sharing. However, after further investigations this proposed scope change was found to be uneconomic. A total of 5 new repeater sites have been installed with the remaining 5 repeater sites scheduled to be installed in 2013/14	Resilient community
	Project 2.9 – Update the Hutt Aquifer computer model and develop "state of the aquifer" reporting	**Achieved** The Hutt Aquifer computer model has been updated and a way to report on the "state of the aquifer" has been recommended. As part of this work we investigated whether the preservation or "banking" of aquifer storage during spring or early summer would result in higher aquifer levels during a prolonged dry spell. The model showed that a 30-day banking period would return a storage benefit for only about 10-20 days. To assist in reporting on the state of the aquifer, the report recommended using two indicators that would provide information on the resource stress state and the yield availability. The two indicators are the foreshore level at McEwan Park and the unconfined aquifer level at Taita Intermediate. A tool was also developed that will allow prediction of the level response at McEwan Park for a given Waterloo well field abstraction rate and Taita Intermediate recession curve. The existing saline intrusion management levels for the Hutt Aquifer need to be reviewed in light of the new hydrogeological model. This work will be completed in 2013/14	Resilient community Healthy environment

Level of service	Target	**Achievement** and 2012/13 commentary	10-Year plan 2012-22 community outcomes reference
SUSTAINABILITY			
That water supply infrastructure is adequate to meet future needs while minimising environmental impacts	Project 3.1 – Improve the accuracy of the CO^2 dosing controls at Te Marua and Wainuiomata water treatment plants	**In progress** This project was delayed due to our resources being fully committed on other projects. We expected that it will be completed in 2013/14. The CO^2 meters will be upgraded at the Te Marua and Wainuiomata water treatment plants. The new meters will allow for a more accurate dosing of CO^2 which will result in a more consistent alkalinity level in our treated water. The projected annual chemical savings is around $40,000	Quality of life
	Project 3.2 – Build and commission a mini hydro facility on the inlet to the Porirua low level reservoir No 2	**Mainly achieved** The construction of the mini hydro facility on the inlet to the Porirua low level reservoir No 2 was completed. The commissioning was delayed due to resources being fully committed elsewhere. The commissioning is due to be completed by the end of August 2013	n/a
	Project 3.3 – Implement a SAP application for mobile devices	**In progress** Completion of this project has been delayed due to the vendor pulling out of the project before the mobile application could be implemented. We are in the process of trying to secure a new support partner before continuing with the implementation	n/a
	Project 3.4 – Implement the changes to alkalinity control in treated water	**Achieved** We have implemented changes to alkalinity and pH in our treated water. In 2010, we began looking at the impact on water supply pipes and fittings of lower alkalinity and raised pH levels in treated water. We believed that by changing our water chemistry, we could reduce the corrosion of cement-lined water mains and household plumbing materials. The service life of these assets would be extended and the GWRC could realise significant cost savings through reduced use of CO^2 and lime. A final set of trials at Te Marua was carried out in 2012 which had positive results. We have adopted a conservative and incremental approach in making changes to our water chemistry. The initial changes will be monitored for one year before final changes are made which will take us to the recommended optimal levels of alkalinity and pH	n/a

ANNUAL PERFORMANCE TARGETS

Level of service	Performance measure	Target ref.	Target	Achievement and 2012/13 comment	10-Year plan 2012-2022 community outcomes reference
WATER QUALITY					
Provide water that is safe and pleasant to drink	Number of waterborne disease outbreaks	1.1.1	No waterborne disease outbreaks	**Achieved** There were no waterborne disease outbreaks	Healthy environment
	Number of taste complaints related to the bulk water supply	1.2.1	No taste complaints related to the bulk supply	**Achieved** No complaints received	Healthy environment
	Comply with the requirements of the DWSNZ 2005. Aesthetic and microbiological for treatment and distribution 100% of the time, and chemical requirements 100% of the time	1.3.1	100% compliance with the Drinking Water Standards of New Zealand	**Achieved** We have received confirmation from Regional Public Health that we achieved full compliance. 100% compliance achieved with DWSNZ MAVs and GV maxima	Healthy environment
	Treatment plant and distribution system gradings will be maintained or improved	1.4.1	Maintain Te Marua, Wainuiomata and Gear Island plants at "A1" grading. Maintain Waterloo treatment plant at "B" grading ("A" or "A1" is not possible in an unchlorinated supply). Maintain distribution system at "a1" grading	**Achieved**	Quality of life
	Comply with Health (drinking water) amendment act 2007	1.5.1	Annual review of Public Health Risk Management Plans (PHRMPs)	As per the Health (Drinking Water) Amendment Act 2007 the PHRMPs are due for a full review early 2014. The review work has commenced	Healthy environment Quality of life
		1.5.2	Average Fluoride values comply with DWSNZ and Ministry of Health Guidelines	**Achieved** MAV of 1.5 g/m3 not exceeded, average values within 0.7 - 1.0 g/m3 guideline	Healthy environment Quality of life
	Operate a quality management system that is certified to ISO 9001	1.6.1	Maintain quality management system ISO certification	**Achieved**	Healthy environment Quality of life
	Operate a quality management plan for the Stuart Macaskill lakes	1.7.1	Annual review of quality management system for Stuart Macaskill lakes	**In progress** Management of the Stuart Macaskill Lakes has yet to be incorporated into our ISO 9001 documentation. The annual review for this is due to be held in September 2013	Healthy environment
WATER AVAILABILITY					
Provide a continuous and secure water supply	Maintain water supply to consumers	2.1.1	No shutoffs of bulk water supply network resulting in loss of water or pressure to consumers	**Achieved**	Resilient community
		2.1.2	Improve the resilience of the bulk water supply to catastrophic events such as earthquakes by establishing a methodology for assessing improvements to the resilience of the bulk water supply	**Achieved**	Resilient community

Level of service	Performance measure	Target ref.	Target	Achievement and 2012/13 comment	10-Year plan 2012-2022 community outcomes reference
	Maintain reservoir levels and distribution system pressure as per the Bulk Water Supply Agreement	2.2.1	Reservoirs with at least 24 hours storage to be at least 70% full for at least 90% of the time (from customer supply agreement)	**Mainly achieved** 99.6% compliance, where 100% is achieved. Out of 540 reservoir-months: • There were 58 reservoir-months in total when the level was below target (10.7%) • 52 of these were due to customer-derived events (9.6%) • 4 of these were due to GWRC planned and pre-notified maintenance (0.7%) • 2 of these were due to GWRC unanticipated faults or works (0.4%)	
		2.2.2	Reservoirs with at least 24 hours storage to be at least 60% full for at least 98% of the time (from customer supply agreement)	**Mainly achieved** 99.8% compliance, where 100% is achieved. Out of 540 reservoir-months: • There were 44 reservoir-months in total when the level was below target (8.1%) • 41 of these were due to customer-derived events (7.6%) • 2 of these were due to GWRC planned and pre-notified maintenance (0.4%) • 1 of these was due to GWRC unanticipated faults or works (0.2%)	Resilient community
		2.2.3	Thorndon zone pressure between 80 and 100 metres head for at least 98% of the time, and 85 metres for 90% of the time (from customer supply agreement)	**Achieved**	Resilient community
	Our raw water sources will be protected against contamination	2.3.1	Protecting water source – maximum daily flow from the Waiwhetu Aquifer does not exceed 115 ML/day, and the 24-hour mean level at McEwan Park does not fall below 2.3 metres	**Achieved**	Healthy environment
		2.3.2	Protecting water sources – pest animal numbers per hectare and areas of pest plants	Monitoring is occurring. Appropriate Service Level Agreements will be developed with the internal service providers	Healthy environment
	The distribution system will be protected from damage	2.4.1	Protecting pipelines – process all mark-out ("Dial Before You Dig") applications within two days	**Achieved**	Resilient community

Level of service	Performance measure	Target ref.	Target	Achievement and 2012/13 comment	10-Year plan 2012-2022 community outcomes reference
SUSTAINABILITY					
The water supply infrastructure is adequate to meet future needs while minimising environmental impacts	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	3.1.1	Modelled probability of annual water supply shortfall (calculated annually) is no greater than 2%	**Achieved** The Annual Shortfall Probability (ASP) for the bulk water supply as at 30 June 2013 is 1.5%. This is based on an estimated population of 396,700 and excludes the benefit of the increased storage capacity of the Stuart Macaskill Lakes. If we include the benefit of the increased storage capacity of the Stuart Macaskill Lakes the ASP is 0.9%	Strong economy
	Achieve full compliance with all resource consents	3.2.1	Full compliance with Resource Consents	**Mainly achieved** We incurred one minor technical non-compliance – see "Compliance with resource consents, p18"	Healthy environment
		3.2.2	Annual review of relevant environmental legislation	**Achieved** The Register of Environmental Resource Requirements was reviewed on 23/2/13 and the consents and bylaws were reviewed on 12/4/13	Healthy environment
		3.2.3	Annual review of trade waste permits	**Achieved** Consents renewed for 2013-14	Healthy environment
		3.2.4	HSNO location and stationary container test certificates are current	**Provisionally achieved** All diesel tanks have current certification. The plastic tank certification is in progress, with all tanks inspected – awaiting confirmation of compliance. The steel and concrete chemical tank legal requirements are being reviewed	Healthy environment
	Comprehensive details, including age and condition rating, of all assets and equipment will be recorded in the Asset Management System (SAP)	3.3.1	Asset management – accuracy and currency of asset register. All new or redundant asset details recorded in SAP within 3 months of commissioning or removal	The target has been met for all CAPEX forms submitted for SAP entry within 3 months of completion. The process is under review to ensure all asset activity is captured	n/a
		3.3.2	Asset management – knowledge of asset condition. Each year, the condition of assets falling within 4 years of their predicted life in the previous 12 months will be assessed (life is determined by valuation data)	**Achieved**	n/a
	Maintenance plans are produced for all equipment and critical maintenance is not deferred	3.4.1	Asset management – completeness of maintenance plans. All new maintenance plans set up within 3 months of commissioning	The existing business process is not robust enough to determine the level of performance relating to this internal target. This is an item to feature on the Asset Management Improvement Plan	n/a
		3.4.2	Asset management – execution of maintenance plans. 95% of compliance maintenance activities are carried out on time	**Not achieved** 91% of compliance maintenance activities were achieved on time. Scheduling improvements are now in place	n/a

Level of service	Performance measure	Target ref.	Target	Achievement and 2012/13 comment	10-Year plan 2012-2022 community outcomes reference
	Comprehensive Asset Management Plan (AMP) is in place to guide maintenance, renewal and replacement programme so that assets are replaced or refurbished to maintain overall asset condition rating	3.5.1	Asset management – annual review of Asset Management Plan	**Achieved**	n/a
		3.5.2	Asset management – asset condition. Average condition rating meets the requirements of Asset Management Plan	The updated AMP includes asset condition grading based on NZWWA Visual Assessment of Utility Assets Guideline. The AMP is a living document and is supported by the Asset Management Improvement Plan which all GWRC Groups are working on with the assistance of the corporate external resource, AECOM	n/a
	Projects are managed to meet quality, time and cost standards	3.6.1	All Key Improvement Projects are complete and the full year expenditure is within 5% of 3rd quarter forecast, 10% of 2nd quarter forecast and +10%/-15% of allocated budget	A change to our project management process occurred during 2012/13. This has impacted on how data is collected to report against this particular internal performance target. These targets will be rewritten to align with our reporting ability for the new financial year	n/a
		3.6.2	For 75% of all projects the full year expenditure is within 5% of 3rd quarter forecast, 10% of 2nd quarter forecast and +10%/-15% of allocated budget		n/a
		3.6.3	90% of projects that are scheduled to be complete within the current year are complete within the current year		n/a
	Maintain an active, up-to-date, health and safety management system that helps achieve the requirements of the HSEA	3.7.1	Health and Safety system meets the requirements of the ACC Workplace Safety Management Practices Standards – Tertiary level	The Workplace Safety Management Practice (WSMP) for Water Supply is deemed to remain at Secondary Level. An internal assessment was carried out in December 2012 but was not fully aligned with the methodology that ACC uses for auditing. Gaps were identified as constraints to achieving Tertiary Level	n/a
		3.7.2	Health and Safety – ratio of proactive to reactive reports is no less than 2:1	**Achieved** Ratio 10:1. However this includes audits with no corrective actions prior to September 2012	n/a
		3.7.3	Health and Safety – lost time injury frequency rate is less than 1 incidents/10,000 hours	**Achieved** Lost time rate 0.2/10,000hrs	n/a
		3.7.4	Health and Safety – lost time injury severity rate is less than 1 day/10,000 hours	**Achieved** Injury severity rate 0.6 days/10,000hrs	n/a
	Ability – people have the knowledge, skills and competence to perform the role they are in	3.8.1	Training plans are in place for all staff	**Achieved** Training plans are in place	**n/a**
		3.8.2	Training plan execution	**Partially achieved** Improvements are to be made to training plan consistency for improved implementation	**n/a**

Level of service	Performance measure	Target ref.	Target	Achievement and 2012/13 comment	10-Year plan 2012-2022 community outcomes reference
	Motivation – our staff are engaged and feel valued	3.9.1	People – ratio of days worked to sick days is greater than 30:1 (based on 224 working days/year)	**Achieved** Ratio of workdays to sick days was 54:1	n/a
	Direction – our staff know what is expected and understand the priorities	3.10.1	People – performance review discussions for all staff are six monthly	**Achieved**	n/a
		3.10.2	All job descriptions reviewed annually and updated (at the end of year performance reviews)	**Achieved**	n/a
	Adopt all practicable means to prevent pollution of the environment	3.11.1	All solid waste to consented landfill	**Achieved** All solid waste was sent to consented landfill (now all going to the Silverstream landfill since the closure of the Wainuiomata landfill)	Healthy environment
		3.11.2	All liquid waste removed and disposed as per code of practice. Waste disposal to be reviewed – site to be visited as part of our Environment Aspects Register	**Achieved** All liquid waste was disposed of at the Seaview depot. The review of the disposal site is part of the new waste contract (the new contract is due to be awarded in July 2013)	Healthy environment
		3.11.3	Environmental – no accidental discharges of substances with the potential of harming the environment	**Achieved**	Healthy environment
		3.11.4	Environmental – annual audit of chemical delivery and discharge procedures	**Achieved** Audits completed for all relevant procedures	Healthy environment
	Conserve non-renewable resources such as fuels, energy and materials and to minimise waste	3.12.1	Non-revenue water is +/- 2%	**Achieved** See " Water delivery efficiency", p13	n/a
		3.12.2	Environmental – complete at least 80% of annual test programme for pump efficiency testing	**Partially achieved** 60% of the pump testing programme was completed this year. Some pumps could not be tested for operational reasons	Healthy environment
	Consider the environmental implications of business decisions	3.13.1	Provide awareness training for all staff and specific training to all staff whose actions have potential environmental impacts – within three months of commencing employment	**Achieved** Awareness training has been delivered for new staff	Healthy environment
		3.13.2	Include environmental performance as an attribute when assessing tenders for all sealed contracts (as defined in the contract works procedure)	**Achieved**	Healthy environment
		3.13.3	An environmental aspect and impact assessment will be completed for all new activities and new construction projects (excludes minor works as defined in the contract works procedure, and excludes equipment replacement projects)	Project audits confirm that environmental assessments are being conducted as per procedure. The register is currently under review	Healthy environment
	Operate an environmental management system that is certified to ISO 14001	3.14.1	Environmental management system ISO certification maintained	**Achieved** Bureau Veritas provided a report on 20/5/13. While one minor non-conformity was re-raised, no new non-conformities were found. Continuing certification was recommended	Healthy environment

Level of service	Performance measure	Target ref.	Target	Achievement and 2012/13 comment	10-Year plan 2012-2022 community outcomes reference
	Ensure that the actual direct operating costs do not exceed the budgeted value	3.15.1	Direct operating costs do not exceed budget	**Achieved** Direct operating costs for 2012/13 were $16.113m against a budget of $18.788m. A better than budget result of $2.675m	n/a
	Areas of significant operational expenditure will be routinely monitored and opportunities for cost reduction will be identified	3.16.1	Unfavourable variances greater than $20,000 or 10% of budget are identified and reported on monthly	**Partially achieved** All variances are monitored and analysed on a monthly basis. Reporting framework has been developed and is in place to ensure written monthly reporting from 2013-14 onwards	n/a
		3.16.2	Power and generation usage and costs monitored and reported monthly	**Achieved**	n/a
		3.16.3	Chemical use is monitored and reported monthly	**Achieved**	n/a
	Practice prudent financial management	3.17.1	Financial – asset valuation recorded in financial statements is correct	**Achieved** Valuation report complete	n/a
		3.17.2	Financial – asset insurance cover is reviewed annually to insure that there is sufficient cover for maximum probable loss, through a mix of external insurance and reserve funds, so that the financial impact of any natural disaster is minimised	**Achieved** All insurances have been reviewed. As a consequence the maximum probable loss (MPL) top up insurance has been cancelled. A review of the MPL value has been initiated. This is to be combined with a detailed analysis of the impacts of changes to the deductible on the material damage policy to ensure risks are understand and that Water Supply have appropriate insurance cover	n/a
		3.17.3	Consult with the customer territorial authorities regarding the content of each proposed capital works programme (annual plan)	**Achieved** The Capital Expenditure programme was consulted on at the May 2013 customer meeting	n/a

Financial statements

These financial statements are extracts from Greater Wellington Regional Council's audited financial statements.

COMPREHENSIVE INCOME STATEMENT

For the year ended 30 June 2013

	Notes	2013 Actual $000	2013 Budget $000	2012 Actual $000
Operating revenue				
Water supply levies		24,890	24,889	24,164
Internal revenue		565	1,875	2,231
Other revenue (interest and external)	1	1,265	873	1,007
Total operating revenue		**26,720**	**27,637**	**27,402**
Operating expenditure				
Personnel costs		3,730	4,362	4,358
Contractor and consultant costs		2,213	2,545	1,867
Internal consultant costs	2	1,243	2,577	3,508
Interest costs		3,586	4,059	3,204
Depreciation		8,257	8,185	8,334
Loss/(gain) on sale/disposal		4,372	35	388
Movement in doubtful debt provision		-	-	-
GWRC overhead charge		1,378	1,378	1,051
Operating expenditure	3	9,167	9,304	8,220
Total operating expenditure		**33,946**	**32,445**	**30,930**
Net operating surplus/(deficit) for the year		**(7,226)**	**(4,808)**	**(3,528)**
Other comprehensive income				
Unrealised revaluation gains (losses)		112,672	-	-
Other reserve and equity movements		(65)	-	-
Total comprehensive income for the year		**105,381**	**(4,808)**	**(3,528)**

STATEMENT OF CHANGES IN EQUITY

For the year ended 30 June 2013

	2013 Actual $000	2013 Budget $000	2012 Actual $000
Equity as at 1 July 2012	**301,800**	**302,287**	**305,063**
Total comprehensive income for the year	105,381	(4,808)	(3,528)
Other reserve and equity movements	47	-	265
Equity as at 30 June 2013	**407,228**	**297,479**	**301,800**
Components of equity:			
Closing accumulated funds	193,222	195,865	200,401
Closing other reserves	151	216	216
Closing asset revaluation reserve	213,855	101,398	101,183
Equity as at 30 June 2013	**407,228**	**297,479**	**301,800**

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

BALANCE SHEET

As at 30 June 2013

	Notes	2013 Actual $000	2013 Budget $000	2012 Actual $000
Equity				
Closing accumulated funds as at 30 June 2013		**407,228**	**297,479**	**301,800**
Represented by:				
Non-current liabilities				
Public debt	4	54,275	59,403	48,892
Total non-current liabilities		**54,275**	**59,403**	**48,892**
Current liabilities				
Accounts payable		1,714	2,179	1,245
Employee entitlements		553	-	474
Total current liabilities		**2,267**	**2,179**	**1,719**
Total liabilities		**56,542**	**61,582**	**50,611**
Non-current assets				
Property, plant and equipment	5	439,013	334,702	329,137
Intangible assets	6	240	260	338
Investments	7	19,241	19,147	18,200
Total non-current assets		**458,494**	**354,109**	**347,675**
Current assets				
Accounts receivable		2,828	2,618	2,602
Stocks	8	2,367	2,217	2,145
Accrued revenue/prepayments		81	117	(11)
Total current assets		**5,276**	**4,952**	**4,736**
Total assets		**463,770**	**359,061**	**352,411**
Total net assets		**407,228**	**297,479**	**301,800**

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

FUNDING IMPACT STATEMENT

For the year ending 30 June 2013

	012/13 Actual $000s	2012/13 LTP - Budget $000s	2011/12 Annual Plan $000s
Sources of operating funding			
General rate	-	-	-
Targeted rates	-	-	-
Subsidies and grants for operating purposes	-	-	-
Interest and dividends from investments	-	-	-
Fees, charges, and targeted rates for water supply	-	-	-
Fines, infringement fees, and other receipts[15]	26,166	26,734	27,298
Total operating funding	**26,166**	**26,734**	**27,298**
Applications of operating funding			
Payments to staff and suppliers	15,802	17,889	17,660
Finance costs	3,586	4,059	3,665
Internal charges and overheads applied	1,373	1,373	1,051
Total applications of operating funding	**20,761**	**23,321**	**22,376**
Surplus/(deficit) of operating funding	**5,405**	**3,413**	**4,922**
Sources of capital funding			
Subsidies and grants for capital expenditure	-	-	-
Increase / (decrease) in debt	5,413	12,109	12,710
Gross proceeds from asset sales	72	115	117
Total sources of capital funding	**5,485**	**12,224**	**12,827**
Applications of capital funding			
- to meet additional demand	1,556	5,500	6,202
- to improve the level of service	5,587	5,716	6,446
- to replace existing assets	2,705	3,691	4,162
Increase / (decrease) in investments	1,107	946	1,047
Increase / (decrease) in reserves	(65)	(216)	(108)
Total applications of capital funding	**10,890**	**15,637**	**17,749**
Surplus/(deficit) of funding	**-**	**-**	**-**
Depreciation on Water assets	**8,254**	**8,185**	**8,359**

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

This statement is not an income statement. It excludes all non-cash transactions such as depreciation and valuation.

All figures on this page exclude GST.

15. This includes revenue from the bulk water supply levy charged to the Wellington, Upper Hutt, Porirua and Hutt City councils

Notes to the Financial Statements

For the year ended 30 June

1. STATEMENT OF ACCOUNTING POLICIES

A Reporting entity

The Greater Wellington Regional Council is a regional local authority governed by the Local Government Act 2002. For the purposes of financial reporting the Greater Wellington Regional Council is designated as a public benefit entity. The entity, Greater Wellington Water (GWW) collects, treats and distributes potable water to four Territorial Authority customers.

B Statement of compliance

These financial statements have been prepared in accordance with the requirements of the Local Government Act 2002 and New Zealand Generally Accepted Accounting Practices (NZ GAAP).

These financial statements are prepared in accordance with New Zealand equivalents to the International Financial Reporting Standards (NZ IFRS), as appropriate for public benefit entities.

Accounting judgements and estimations

The preparation of financial statements in conformity with NZ GAAP requires management to make judgments, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, income and expenses. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances. These results form the basis of making the judgments about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised, when the revision affects only that period. If the revision affects current and future periods, it is reflected in those periods.

C Accounting policies

Basis of preparation

The financial statements are presented in New Zealand dollars, rounded to the nearest thousand. The financial statements have been prepared on a historical cost basis except for certain infrastructural assets that have been measured at fair value. The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

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

Budget figures

The budget figures are those approved by the Council at the beginning of the year in the Annual Plan. The budget figures have been prepared in accordance with NZ GAAP, using accounting policies that are consistent with those adopted by GWRC for the preparation of these financial statements.

Water supply levies

Levies, a statutory annual charge, represent charges to Territorial Authorities for the collection, treatment and distribution of potable water. Levies are recognised in the year the charges are raised.

Property, plant and equipment

Property, plant and equipment consists of operational and infrastructure assets. Expenditure is capitalised when it creates a new asset or increases the economic benefits over the total life of an existing asset. Costs that do not meet the criteria for capitalisation are expensed.

The initial cost of property, plant and equipment includes the purchase consideration and those costs that are directly attributable to bringing the asset into the location and condition necessary for its intended purpose.

Property, plant and equipment are categorised into the following classes:

- Regional water supply infrastructural assets
- Regional water supply administrative buildings
- Regional water supply minor equipment
- Regional water supply motor vehicles
- Regional water supply capital work in progress

All property, plant and equipment are initially recorded at cost.

Stocks

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

Depreciation

Depreciation is provided on a straight-line basis on all tangible property, plant and equipment other than land and capital works in progress, at rates which will write off assets, less their estimated residual value over their remaining useful lives.

The useful lives of major classes of assets have been estimated as follows:

- Regional water supply infrastructural assets – 3 to 150 years
- Regional water supply administrative buildings – 10 to 50 years
- Regional water supply minor equipment – 3 to 15 years
- Regional water supply vehicles – 5 to 10 years

Capital work in progress is not depreciated.

Intangible assets

Software is carried at cost less any accumulated amortisation and impairment losses. It is amortised over the useful life of the asset as follows

- Software – 1 to 5 years

Accounts receivable

Accounts receivable are stated at estimated net realisable value after allowing for a provision for doubtful debts. Specific provisions are maintained to cover identified doubtful debts.

All known losses are expensed in the period in which it becomes apparent that the receivables are not collectable.

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.

Employee entitlements

A provision for employee entitlements is recognised as a liability in respect of benefits earned by employees but not yet received at balance date. Employee benefits include salaries, annual leave and long service leave. Where the benefits are expected to be paid for within 12 months of balance date, the provision is the estimated amount expected to be paid by the Group. The provision for other employee benefits is stated at the present value of the future cash outflows expected to be incurred. Obligations for contributions to defined contribution superannuation schemes are recognised as an expense in the Income Statement as incurred.

Funding statement

The following are the definitions of the terms used in the funding statement:

- Cash means cash balances on hand, held in bank accounts, demand deposits and other highly liquid investments in which the Group invests as part of its day-to-day cash management
- Operating activities include cash received from all income sources of the Group and the cash payments made for the supply of goods and services
- Investing activities are those activities relating to the acquisition and disposal of non-current assets
- Financing activities comprise the change in equity and debt capital structure

Changes in accounting policies

There have been no changes from the accounting policies adopted in the last audited financial statements.

2. INTERNAL CONSULTANT COSTS AND REVENUE

Internal consultants costs comprises the costs of the Engineering and Projects team. These statements contain internal transactions that are eliminated on the consolidation of the Greater Wellington statements.

3. OPERATING EXPENDITURE

Operating expenditure comprises payments for transportation costs, plus materials and supplies, such as chemicals and power.

4. LONG-TERM PUBLIC DEBT

	2013 Actual $000	2012 Actual $000
Balance at 1 July	**48,892**	**43,468**
New loans	9,528	9,037
Operating cash surplus applied to debt repayment	(4,145)	(3,613)
Balance at 30 June	**54,275**	**48,982**

All public debt obligations are fully secured against the rateable property of Greater Wellington Regional Council. The interest rate charged on the facility as at 30 June 2013 was 7.00% p.a. Any operating cash surplus is used to retire debt.

5. PROPERTY, PLANT AND EQUIPMENT

2013	Deemed cost $000	Revaluation reserve $000	Accumulated depreciation $000	Net book value $000
Land	2,926	10,384	-	13,310
Water supply infrastructure	213,943	203,306	1,202	416,047
Office equipment	315	-	283	32
Plant and equipment	77	-	1	76
Motor vehicles	1,631	-	884	747
Work in progress	8,801	-	-	8,801
	227,693	**213,690**	**2,370**	**439,013**

2012	Deemed cost $000	Revaluation reserve $000	Accumulated depreciation $000	Net book value $000
Land	2,925	4,941	-	7,866
Water supply infrastructure	245,401	96,242	30,363	311,280
Office equipment	311	-	256	55
Plant and equipment	393	-	354	39
Motor vehicles	1,529	-	920	609
Work in progress	9,287	-	-	9,287
	259,846	**101,183**	**31,893**	**329,137**

Regional water supply plant and equipment assets were revalued by John Freeman, FPINZ, TechRICS, MACostE, Registered Plant and Machinery Valuer, a Director of Bayleys Valuations Ltd at 30 June 2013 using Optimised Depreciated Replacement Cost (ODRC) methodology. Water supply buildings were revalued by Paul Butcher, BBS, FPINZ, Registered Valuer, a Director of Bayleys Valuations Ltd at 30 June 2013 using Optimised Depreciated Replacement Cost (ODRC) methodology. Land was revalued by F T Rutherford, BBS (VPM) ANZIV of Baker Associates at 30 June 2013. Further asset revaluations are planned and these will be undertaken regularly. Water Supply Infrastructure Assets are defined as those assets which make up the supply and distribution of water and these are valued at their component levels respectively. GWW's asset information system holds detailed valuation information on each item. Property, plant and equipment have been accounted for in accordance with NZ IAS 16.

6. INTANGIBLE ASSETS

2013	Deemed cost $000	Revaluation reserve $000	Accumulated depreciation $000	Net book value $000
Computer software	1,440	-	1,200	240

2012	Deemed cost $000	Revaluation reserve $000	Accumulated depreciation $000	Net book value $000
Computer software	1,436	-	1,098	338

7. INVESTMENTS

	2013 Actual $000	2012 Actual $000
Asset rehabilitation fund	19,090	18,092
General reserve	151	108
	19,241	**18,200**

The Water Group contributes annually to an asset rehabilitation fund. Interest earned on the fund is capitalised annually.

8. STOCKS

	2013 Actual $000	2012 Actual $000
Chemicals	343	308
Capital spares	2,024	1,837
	2,367	**2,145**

Chemical stocks represent those stocks held to reasonably cover operating requirements in the foreseeable future. Capital spares include seismic stock held to make emergency repairs in the event of a major untoward event.

9. RECONCILIATION OF FUNDS FROM OPERATIONS TO OPERATING SURPLUS

	2013 Actual $000	2012 Actual $000
Reported surplus/(deficit)	109,250	(3,528)
Add/(less) non-cash items:		
Depreciation	8,257	8,334
Reserve movements	(112,476)	-
Loss/(gain) on sale	471	388
Total non-cash items	**(103,748)**	**8,722**
Net funds from operating activities	**5,500**	**5,195**

10. FINANCIAL INSTRUMENTS

Currency risk

The Water Supply Group had no foreign currency exposure at 30 June 2013.

Credit risk

Financial instruments which expose Greater Wellington Water to credit risk are principally bank balances, receivables and investments. A provision for doubtful receivables has been maintained and the subject of a regular review. Bank accounts are held with New Zealand registered banks in accordance with Greater Wellington Water 's policy.

Concentration of credit risk

Greater Wellington Water derives the majority of its income from the regional water supply levy. Regional water supply levies are collected from the four Wellington metropolitan city councils.

Interest rate risk

Greater Wellington Water's debt is managed by Greater Wellington's Internal Treasury unit. A fixed rate of interest is charged by the unit which minimises the exposure of Greater Wellington Water to interest rate fluctuations.

Fair values

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

11. RELATED PARTIES

Greater Wellington Water contracts from and to other groups of GWRC for some operational services. All such transactions are carried out on normal commercial terms.

12. CONTINGENCIES

As at 30 June 2013, Greater Wellington Water had no contingent liabilities (June 2012 $0).

13. COMMITMENTS

Greater Wellington Water leases Level 4, Regional Council Centre from Greater Wellington on an arm's length basis. As at 30 June 2013, Greater Wellington Water had capital works programme contractual commitments of $560,727 (30 June 2012: $4,392,320).

Social and Cultural Wellbeing Committee members

The Greater Wellington Regional Council established the Social and Cultural Wellbeing Committee in November 2010. The committee comprises eight members. Its membership at 30 June 2013 was:

Cr Nigel Wilson (Chair)

Cr Sandra Greig (Deputy Chair)

Cr Judith Aitken

Cr Jenny Brash

Cr Paul Bruce

Cr Prue Lamason

Cr Paul Swain

Cr Fran Wilde

Kim Skelton
Appointee, representing the interests of the Iwi of the Wellington region

Water Supply management team

At 30 June 2013, the management team members of the Water Supply Group with responsibilities for bulk water supply were:

Chris Laidlow
(General Manager)

Noel Roberts
(Manager, Operations)

Maseina Koneferenisi
(Manager, Assets)

Andrew Samuel
(Team Leader, Marketing)

Murray Ruddell
(Group Accountant)

The Greater Wellington Regional Council promotes **Quality for Life** by ensuring our environment is protected while meeting the economic, social and cultural needs of the community

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