

**Kāpiti Coast Water Conservation Report
2013/14**

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Revision History

Revision N°	Prepared By	Description	Date
1	Ben Thompson	Prepared initial draft	17/07/14
2	Martyn Cole	Revised first draft to reflect the activity areas of the Kapiti Coast Water Conservation Plan.	21/07/14
3	Ben Thompson	Widened to include Ōtaki and Paekākāriki	25/07/14
4	Ben Thompson	Completed changes	30/07/14
5			

Document Acceptance

Action	Name	Signed	Date
Prepared by	Ben Thompson		30/7/14
Reviewed by	Martyn Cole		31/7/14
Approved by	Sean Mallon		31/7/14
on behalf of			

1 Executive Summary

Kāpiti Coast District Council (Council) is committed to delivering a sustainable water management strategy and achieving the adopted water conservation targets. This Water Conservation Report has been prepared to document the progress towards those targets in the 2013/14 and sets out works planned in the future to achieve and maintain water use targets.

This report covers the three water supplies managed by Council; Ōtaki Supply, Waikanae Supply (servicing, Waikanae, Paraparaumu and Raumati (WPR)) and Paekākāriki Water Supply. The 2010 water conservation plan identifies seven action areas. These are being actively delivered and include:

- Council leadership
- Better data, better results
- Reducing leakage in water supplies
- Regulation
- Financial Incentives
- Education
- Technical innovation

1.1 Key water conservation activates in 2013/14

In 2013/14 Kāpiti Coast District Council has focused on

- completing the installation of consumer water meters across the District;
- informing, assisting and preparing the districts residents for the introduction of volumetric water charges in 2014/15;
- reviewing and improving water use management practices and tools;
- maintaining network performance and repairing reported leak

1.2 Water use reduction 2013/14

Water use reduction

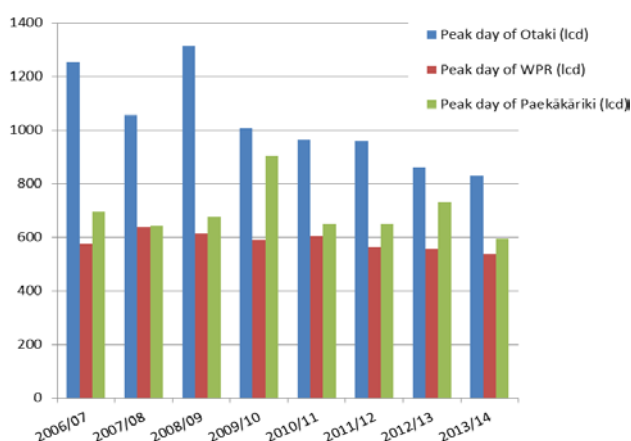
From when water meters were being considered in 2011, the summers following decision show a dramatic shift in consumption, with no daily use exceeding 21000, despite a population growth of 0.95% each year.

The Paraparaumu/Raumati network met the 490 lpd peak water use target and there is a clear trend in water use and peak water use reduction since Council decided to adopt water meters in 2012. The WPR supply peak day water use is still above the 490 lpd target at 531 litres/person/day.

Council expects the peak consumption to drop further as customers respond to volumetric water charges and repair any private leaks identified and improvements to the water use management practices are implemented through 2014/15.

Leakage repairs

The number of private leaks identified escalated with consumer water meter installations. Of the 390 private property leaks identified 265 were in the



WPR area. The estimated water loss from these leaks is 2721 m³/day with 2207 m³/day in WPR alone.

While Council has power under the bylaw to address private leaks that haven't been resolved with 21 days of notification, Council has committed to providing residents with a grace period to complete leak repairs. All private leaks should have been resolved by the issuing of second invoices to residents and progress to leak repairs will be monitored where a leak is identified.

Of the 776 water network repairs undertaken 546 were in the WPR supply area and Council replaced 250 m of water main in Waikanae from a total of 600m in 2013/14.

The auditing and re-establishing of the integrity District Meter Areas (DMA) will improve the accuracy of DMA water use reporting for 2014/15 and help reduce burst response times and water leak run times.

1.3 Work programme for 2014/2015

Council's focus for 2014/2015 will shift to:

- Implementing water use management improvements
- Monitoring network performance and targeted leak location and repair activities and;
- Continued assistance to the districts residents to reduce water use and repair leaks.

A total of \$1.14 million of funding is available in 2014/15 for activities associated with the water conservation and demand management works

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2 Introduction and overview

Kāpiti Coast District Council (Council) is committed to delivering a sustainable water management strategy and achieving the adopted water conservation targets. This Water Conservation Report has been prepared to document the progress towards those targets in the 2013/14 and set out works planned in the future to achieve and maintain water use targets.

This report covers the three water supplies managed by Council; Ōtaki Supply, Waikanae Supply (servicing, Waikanae, Paraparaumu and Raumati) and Paekākāriki Water Supply.

Kāpiti Coast District Council's key water use management documents are the 2003 Sustainable Water Management Strategy and 2010 Water Conservation Plan as described below.

2.1 Water Matters - Sustainable Water Management Strategy 2003

The 2002 Sustainable Water Management Strategy sets out Kāpiti Coast District Council's vision for water management in the district over the next fifty years. Central to this Strategy is there is considerable room within each catchment within the next fifty years for further development. That potential is only there if demand for water is reduced and there is careful management of water storage.

None of the communities are likely to reach the final capacity of their catchment within the fifty years of this Strategy – if they make a conscious effort to reduce demand. However, by the end of the fifty year period, at current population growth levels and with a stringent demand management regime in place, Waikanae will have come close to the capacity of natural systems to deliver water. If the community fails to adapt its levels of water use then the limits will be reached much earlier. If that happens, the desired balance between residential growth and supporting local economy may not be as achievable.

The Strategy set a peak water target of 400 Litre/person/day by 2013/14, with an additional 75 litres for leakage. To reach the target, Council recognized households, schools and businesses and Council itself each play their part. This was subsequently revised by the water conservation plan and consent requirements.

2.2 Kāpiti Coast Water Conservation Plan 2010

The Water Conservation Plan was designed to ensure Council and the community reached the 490 litres per person (lpd) per peak day target by 2015. It contains a series of measures and tactics. No one initiative alone will help reach the target but by combining them, it is hoped the peak water target can be reached and sustained.

The decision to implement water meter pricing in 2012 proceeded Council adopting the Water Conservation Plan in 2010. Water meters complement the activities outlined in the plan and provide more certainty that the 490lpd peak water target will be reached.



To reach the target, the Conservation Plan states it will be critical for Council, residents and business to each play a part.

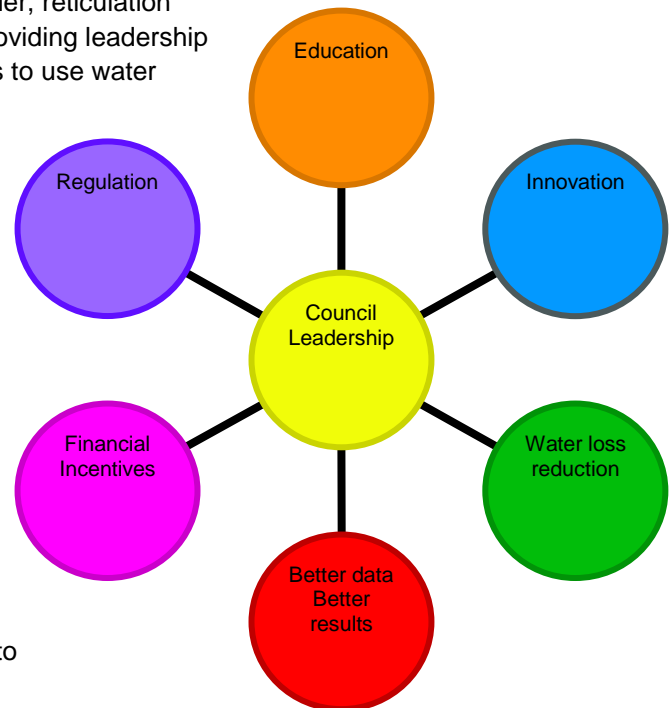
Council has multiple roles in this, as a water supplier, reticulation network owner, a consumer of water as well as providing leadership and support to the community around finding ways to use water efficiently.

There are seven action areas in the plan:

- Council leadership – Council needs to demonstrate throughout its own activities that is walking the talk. Council also recognised its role in supporting local residents and businesses with good information on saving water.
- Better data, better results – with better information on where water being used and lost, Council can better target resources for better outcomes.
- Regulation – Council uses the District Plan to require new homes meet the 490 lpd target. The Water Supply bylaw to manage summer demand, water pricing and minimising wastage.

- Financial Incentives – Council offers an interest free targeted rate for households to install rainwater or greywater systems to offset public water use.
- Education – Council recognised the importance of students of all ages understanding the importance of their water supply and the role water has in local life.
- Technical innovation – Council recognised the importance of new ideas and technology in assisting local businesses and residents save water.

This report uses the action areas to describe and detail the work undertaken by Council over the 2013/14 year and planned work for the 2014/15 year.



The Kāpiti Coast Water Conservation Plan includes the seven action areas

3 Consent requirements

A number of consents held by Council, including those for the development and operation of the River Recharge with Ground Water scheme, have water conservation consent conditions. The relevant consent conditions that this report addresses are listed below.

Water Permit WGN050025 [32191] (Surrendered in October 2013) & Water Permit WGN050025 [32192]

Condition 15b requires reporting on measures undertaken to investigate, implement and manage water conservation methods to reduce water demand on the Kapiti Coast, including the introduction of water meters, any increases in population, any reduction in peak daily water demand and the achieved results of these measures.

Water Permit WGN130103 [31992]

Condition 4 requires the implementation of water conservation and water demand management measures referred to in section 1.3 of the *Assessment of Environmental Effects* (Appendix 1) that accompanied the application as necessary to achieve the reductions in water demand necessary to reduce maximum peak daily water demand to 490 litres per person per day for the Waikanae, Paraparaumu and Raumati supply area by 31 July 2016.

Water Permit WGN130103 [31993]

Condition 4 requires the implementation of water conservation and water demand management measures referred to in section 1.3 of the *Assessment of Environmental Effects* (Appendix 1) that accompanied the application as necessary to achieve the reductions in water demand necessary to reduce maximum peak daily water demand to 490 litres per person per day for the Waikanae, Paraparaumu and Raumati supply area by 31 July 2016.

Condition 25 requires the submission of an annual Water Conservation Report to the Manager by 30th August each year. The annual Water Conservation Report shall be made available to the public on the Kāpiti Coast District Council website by 30th August each year. The annual Water Conservation Report shall report on the year 1st July to 30th June inclusive, and includes Table 1 to follow.

Table 1 Condition 25 of consent WGN130103[31993]

Conditions	Section in this annual report
a) Summary of the consent holder's progress towards achieving its water conservation target of 490 Litres/person/day;	Executive Summary
b) Details of peak summer daily use, expressed as L/person/day;	5.1
c) Outcomes of any water conservation measures to reduce peak demand, including but not limited to water meters;	4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7
d) A discussion of any reduction in peak daily demand;	5.1
e) Details of any increases in population	6.1
f) Investigations and work completed to identify and fix leaking water pipes;	4.3
g) Details of any planned work to identify and fix leaking water pipes in the coming year.	7.3

4 Water conservation and demand management activities 2013/14

4.1 Council leadership

4.1.1 Informed community

The implementation of the district wide water meter project is a significant multi-year project for Council and the Kāpiti community. A communication and engagement plan has been implemented during the course of the project to keep the community informed and supported in preparation for the change to volumetric charging from 1 July 2014. Council has been actively engaging with the community in 2013/14 including the following.

4.1.1.1 Two trial water meter readings

Two Trial Water Meter Readings were sent out to ratepayers with actual usage. They enabled the rate payer to understand:

- how much water they have used over a specific period of time
- what they would pay for that amount of water under the new charging system
- how the new charging system works
- how to identify if their use indicates a leak
- how to test for leaks
- what they can do to save water
- where to find more information.

4.1.1.2 Water updates

A full page Water Update has been published every three weeks in the Kapiti Observer from December 2013 with a progressive information strategy to lead the community through the stages of the transition. Including:

- December 2013 Summers here let's think about water
- February 2014 Good water habits
- March 2014 Water meters just one part of the solution
- April 2014 How we pay for water is changing
- May 2014 How we use water
- May 2014 Helping you save water
- June 2014 Your questions answered

This builds on a similar information campaign from September 2011 to May 2012 when the decision to implement meters was being made.

4.1.1.3 Council website and facebook

Website Updates continues to be reviewed and updated as feedback from the community is received about the key areas of interest and concern. Council **facebook page** is now live and posts are being used to inform the community and identify and address public concerns.

4.1.1.4 Elected members and Council staff

Customer services staff were kept up to date with the preparations the change to water charges. As the front face of Council its important customer services is able to field people's queries efficiently as they are received.

An Elected Member Bulletin on progress and communications was issued on 11 April 2014.

4.1.1.5 2014 Sustainable Home and Garden Show

2014 Sustainable Home and Garden Show in March had over 9,000 people visit the event. The Council water tent focussed on water meters and answered many questions from the public. A working water meter display was a key attraction and water detective agency work sheets a particular success with young and old alike. The bags to measure shower flow and Waterwise five minute shower timer giveaways were well received as was the free advice and explanations. The cubic meter water model was also a talking point at the tent, physically illustrating the size and volume of 1,000 litres (for only \$0.95).

Council water advice brochures have been tailored to different audiences and their needs. Posters and leaflets were developed and available at the show on a range of issues from "How much water will typical households use", "Locating your toby", "Water leaks", to "Waterwise gardens" and "Xeriscaping – low water gardens".

4.1.1.6 Information displays

Library Displays on water meters and saving water aimed to inform people about what they can do before new charging begins, their responsibilities about leaks and how to use their water meter to monitor for them.

Informed community Outcomes

- Raised awareness of importance to conserve water.
- Community had clear information to make decisions on improving their water use
- Community had time to change their behaviour before new water charging regime was implemented
- Residents, schools and businesses could look for leaks and repair them before new charging began.

4.1.2 Quality advice and information

4.1.2.1 Water Conservation Advisor

Water Conservation Advisor offers free water conservation home visit service to offer advice (leaks and water use) and also replaces washers on leaking toilets and taps. 518 properties were visited during 2013/14.

4.1.2.2 Green Gardener

Green Gardener offers free garden advice to residents to create water efficient gardens via articles, workshops and demonstrations.

4.1.2.3 Ecodesign Advisor

Ecodesign Advisor visits people's homes for a free two hour assessment of the home. This visit includes water use and conservation advice. Over 200 properties were visited during 2013/14.

4.1.2.4 High water user visits

High water users (greater than 2000 Litres/day) were identified in the first trial readings and visited. In excess of 667 properties across the district were visited and provide targeted information on how to identify the leak and lower water use.



The Ecodesign Advisor demonstrates how to test the flowrate with a Council shower bag

Through the trial read process, Council is identifying households who have high water use and potential leaks. These trial readings were hand delivered to properties with a letter explaining water use reduction options and a water use reduction pack. Staff also provided a face to face explanations.

The water use reduction pack included items such as shower bags to check shower water use, shower timers, recent water updates published in the newspaper, water use reduction advice for indoor, outdoor and garden use, and the water detective agency sheet to track and understand daily use over a week.

The purpose of visiting households is to help them understand the trial read and give advice on how to reduce their use and/or isolate the location of any likely leak. If they're not home a follow-up is made to make sure everyone has been contacted. This process will continue to be used to help people with general trial meter reading queries through 2014/15.

4.1.2.5 Rental market advice

Rental market brochures were sent out to properties identified as potential rental properties to inform landlords and tenants. A generalised letter has also been sent out to property management companies.

4.1.2.6 Community and business groups

Older people organisations such as Greypower have been approached to see what information they need for their members and what is the most appropriate way of reaching them.

Council recognises the gardening community as a potential high water use sector. Council is working on a number of initiatives to engage with the suppliers of gardening products and supplies in the district. Access to efficient watering methods and systems and low water use plants will support the communities in making low water use choices in the garden.

The Chamber of Commerce undertook a survey asking members for their views on the impact of volumetric charging for water about water. Council staff provided information about the charging system to the Chamber to assist with the preparation of the survey prior to its release. Staff will be following up with the Chamber seeking to understand the results, the concerns raised and how Council can assist the Chamber to inform its members.

4.1.2.7 Private water leak advice

A directory of local plumbers has been prepared and advice from consumer affairs on engaging a tradesman was also included in the directory.

Quality advice and information outcomes

- Targeted residents and businesses with high water use to allow them enough time to fix leaks or reduce their use
- Targeted advice to the needs of specific sectors of the community
- Community water use awareness raised and Residents informed of water use reductions actions and support available to them.

4.1.3 Reduce Council water use

Council provides a number of services for the local community requiring water. Council has made efforts to ensure it uses water efficiently.

4.1.3.1 New buildings and renovations

When Council builds new or renovates, it makes every effort to ensure water efficient appliances are installed and where possible the use of rainwater for toilet flushing and outdoor use. The Mazengarb soccer changing rooms for example utilising rainwater for all toilet flushing.

4.1.3.2 Irrigating sportsfields and amenity areas

All major Council sportsfields are now irrigated with onsite bores not Council supplied water.

Council selects summer hardy plants for much of its amenity planted areas and concentrates annuals around town centre areas. This reduces the amount of water needed to areas with high pedestrian activity.

4.1.3.3 Pay for the water used

Just as with other water users in the District, Council pays for the water it uses. This provides an incentive to use water efficiently and provides future opportunities for making a business case to invest in water saving technology or repair leaks.

Reduce Council water use outcomes

Council is actively finding ways to increase the water use efficiency and minimise water leaks in assets it manages.



A 25,000 litre rainwater tank was installed at the Mazengarb soccer changing rooms to supply water for toilet flushing

4.2 Better data, better results

4.2.1 Zone metering

Council has 19 District Metering Areas (DMA) across the three water supply schemes 15 of which are in Waikanae Paraparaumu and Raumati water supply scheme. Figure one shows the location of the DMAs in the WPR area.

Ōtaki	3
Waikanae	5
Paraparaumu-Raumati	10
Paekākāriki	1
Grand Total	19

Through December 2013 Council operations teams audited the boundary valves of all DMAs across the district. This exercise led to the identification of a number of open DMA boundary valves which were resolved to re-established the integrity of the DMAs. It also highlighted low pressure issues in the Waikanae Beach Zone which were investigated further before this zone was re-established in February 2014.

4.2.1.1 District meter area review

In January 2014 Council commissioned a review of the district metering areas with the purpose of:

- Reviewing the DMZ as designed.
- Identifying any operational issues with the designs
- Identifying any operational issues during boundary valve audit and shuts in December.
- Documenting the findings of the review and setting out prioritised actions.



Figure 1 shows how the WPR network has been isolated into smaller district metered areas.

4.2.1.2 Monitoring leakage across the water supply networks

Before the DMAs were in place, Council could only track the minimum night-time flows (MNF) from each reservoir. While this could indicate the level of water loss it could not identify the location of any potential leakage.

With DMA's in place, Council will be able to:

- Track MNF more accurately across the network
- Identify priority areas for targeted leak detection and repair
- Assess effectiveness of leak repair work
- Track each DMA and intervene if the MNF increases
- React to major bursts quickly reducing leak run times
- Provide an accurate picture of actual leakage at the DMA and network level.

Zone metering outcomes

- DMA integrity now established and Council can monitor water use and loss more accurately across the network.
- DMA improvements identified and actions will be implemented over 2014/2015.

4.2.2 Understanding water use

4.2.2.1 Water use management review

A water use management review was undertaken in April and the draft findings becoming available June 2014. The review provides a focus on the activities that are being undertaken and identifying what is working well and the areas that need improvement or are not currently underway. The areas of water use management covered by the review included:

- Existing Strategy
- Roles and responsibilities
- Document current practices
- Tracking Water loss/benchmarking
- DMA management
- Data management
- ALD procurement and practices
- Metering
- Pressure Management
- Demand management
- Asset management
- Reporting



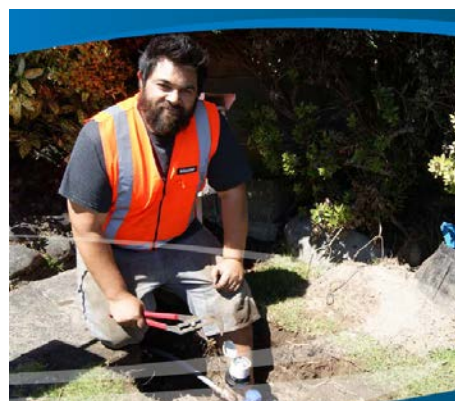
The water use management review provides a staged improvement plan that will be implemented over 2014/15 to improve water use management practices.

4.2.2.2 Consumer meter installation and water balance calculations

With the installation of in excess of 23,000 consumer water meters across the district since August 2012, Kāpiti is extremely well placed to significantly improve the understanding of water use behaviours of the community and the overall performance of the water networks. Water meters across the district will be read on a rolling quarter with a third of the districts meters being read each month. The read routes for water meters have been aligned with district meter areas so that the information can be used easily in water balance calculations at a DMA level.

Currently Council estimates the level of leakage in the networks. With the installations of the consumer meters and DMAs in place, Council is now in a position to balance each DMA and the network with greater accuracy and confidence to:

- Improve non-revenue water calculations (leakage, theft, fire fighting, etc)
- Target resources for leak reduction or education to DMA's with high water use
- Improve understanding of water use trends throughout the year
- Identify the high water users for targeted engagement
- Improve the accuracy of assessments of measures in managing water use.



Over 23,000 meters have been installed across the District.

4.3 Reducing leakage in water supplies

Currently Council estimates the water use throughout the three networks annually. The assessments are based on MNF and water balance methodologies using flows from reservoirs.

4.3.1 Finding and repairing private leaks

Council uses the Water Supply Bylaw (2013) to enforce property owners to repair leaks on their property. The number of private leaks identified escalated with water meters being installed. Table 2 shows the number of leaks identified in across the District during 2013/14 and the amount of leakage been identified.

Table 2 Private leaks identified in 2013/14 across the District that are greater than one litre/minute

Network	Daily leakage (m ³ /day)	Number of properties with leaks greater than one litre/minute
Ōtaki Network	491.4	23 properties identified
WPR Network	2207.1	265 properties identified
Paekākāriki Network	23.0	2 properties identified
District Total	2721.5	390 properties identified

The Water Conservation Officer has visited many of the properties to help isolate the leak location and talk through what the property owner needs to do to fix the leak.

Finding and repairing leak outcomes:

While Council has power under the bylaw to address private leaks that haven't been resolved with 21 days of notification Council has committed to providing residents a grace period to complete leak repairs within. All private leaks should have been resolved by the issuing of second invoices to residents and progress to leak repairs will be monitored where a leak is identified.

4.3.2 Finding and repairing leaks on the public side of reticulation network

Table 3 shows the reactive and planned work undertaken by Council on the public networks to resolve leaks as they arose, as well as planned renewals.

Table 3 Reactive maintenance on the WPR network over the 1 July 2013 – 30 June 2014 period.

Activity undertaken	Reactive or planned	Ōtaki Network	WPR Network	Paekākāriki Network	District Total
Repair hydrant	Reactive	1	9	0	10
Replace hydrant	Reactive	5	13	3	21
Repair main	Reactive	5	14	1	20
Repair main - asset failure	Reactive	4	14	1	19
Replace mains	Planned		1 (250m)	1 (350m)	2 (600m)
Repair valve	Reactive	2	11	0	13
Replace valves	Reactive	1	3	0	4
Repair toby	Reactive	20	31	3	54
Replace toby	Reactive	32	105	4	141
Repair lateral	Reactive	52	118	18	188
Repair lateral - asset failure	Reactive		7	0	7
Replace lateral	Reactive	59	168	9	236
Replace lateral	Reactive	6	53	3	62
Leak Detection	Reactive	1	0	0	1
Total		188	546	42	776

4.4 Regulation

4.4.1 Council's District Plan water demand management requirements

Since 2008, Council has required all new homes with an on demand connection to Council water supply to include one of:

- 10,000 litre of rainwater storage to supply the toilets and outside taps. When the rainwater level falls below 1,000 litres, mains water will top up the tank at a rate of 600 litres/day.
- A greywater diversion device and a 4,000 litre of rainwater storage to supply the toilets and outside taps. When the rainwater level falls below 1,000 litres, mains water will top up the tank at a rate of 600 litres/day.
- An alternative solution that demonstrates it can achieve the reduced peak water use targets.

These requirements flatten any peak demands arising from outdoor use from new homes being built.

District Plan Outcomes:

Over 200 District Plan compliant homes were built across the District over 2013/14 period.

4.5 Financial Incentives

4.5.1 Interest free rates payback scheme

Council offers a \$5000 targeted rate for residents to install a rainwater tank or greywater system for outdoor irrigation.

Targeted Rate outcome:

40 properties took up the offer over the 2013/14 period.

4.5.2 Financial Assistance

Council offers three schemes to support residents on limited income to assist residents in financial hardship.

- Hardship Grant provides up to \$300 of rates remission
- One of High Cost Grant provides up to \$300 to be put towards unexpected costs. This includes repairing leaks.
- Vulnerable Families remission provides a grant towards the cost of water for low income households with four or more dependents. These households would pay the same as a household with three dependents.



Council provides a targeted rate for residents to install rainwater tanks for outdoor irrigation

4.6 Education

Water Education Service provided curriculum units and facilitator support for Early Childhood Education, Primary Schools and Colleges wanting to explore water. Three Colleges, five Primary Schools, six ECE used the resources. Over 1600 students used the water detective form at home. Seven schools designed a water saving garden at the Sustainable Home and Garden Show.

Council Staff have visited twelve schools across the District to introduce the Water Detective Agency programme (WDA). The WDA programme encourages students to read their home's water meter and record their family's use.

The aim was to get families familiar with reading a meter, informed about their water use and talking with others as the trial water meter readings are sent out. Feedback has been very positive with over 1600 students now participating in understanding their meter and household water use.

Education outcome:

Local students and their families had the opportunity to learn about water conservation and water metering.

4.7 Fostering innovation

Council provided a \$25,000 grant for local business to develop new water saving devices. Due to low interest, this grant has been discontinued.

5 Water use results 2013/14

5.1 Peak water use

The peak water use for the three water supply schemes for 2013/14 and the preceding years is shown in Table 4 and Figure below.

Figure 2 Daily peak day figures for each Kapiti Coast water supplies over the last eight years

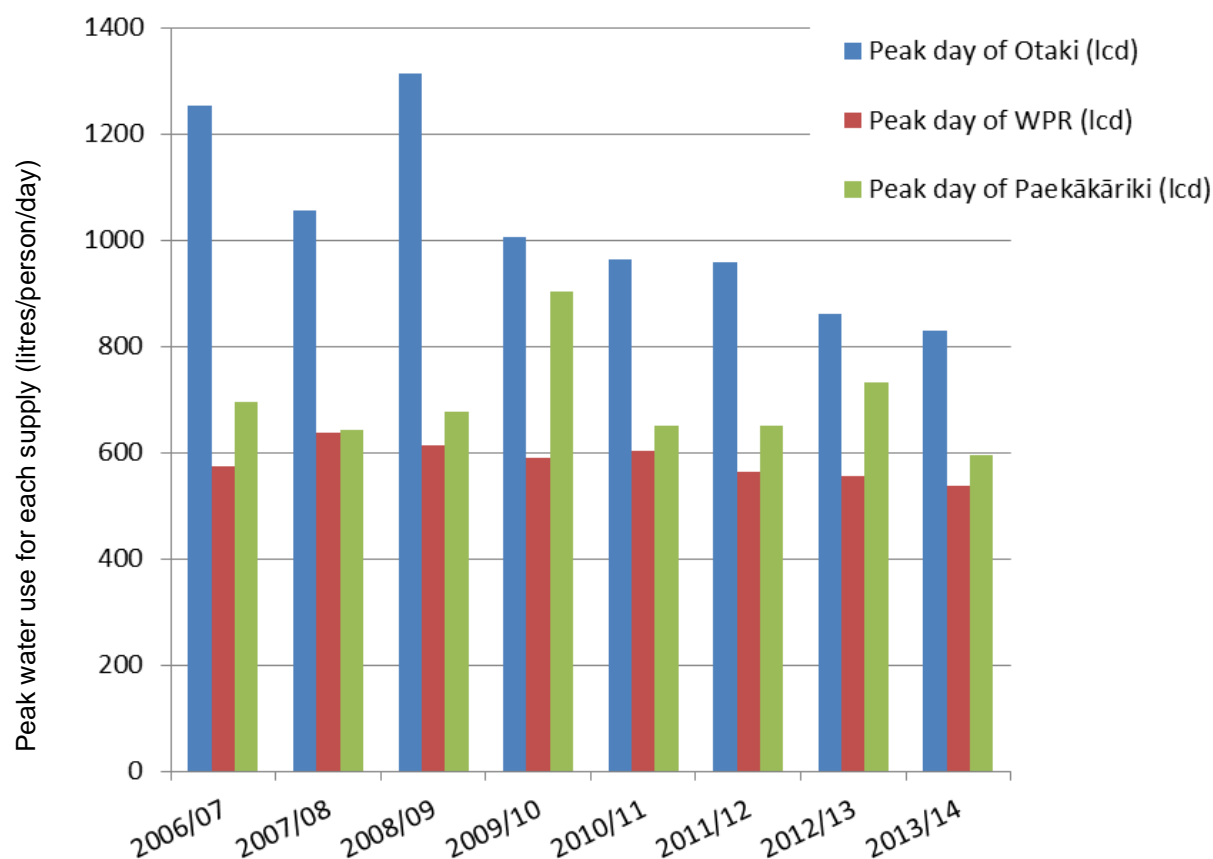


Table 4 Peak consumption for each network and high water use days

Year	Ōtaki (litres/person/day)	WPR (litres/person/day)	Paekākāriki (litres/person/day)
2007/08	1,057	637	643
2008/09	1,314	614	676
2009/10	1,006	589	903
2010/11	963	602	651
2011/12	959	564	650
2012/13	861	555	731
2013/14	829	538	595
490 lpd target met?	Progress made	On target	On target

There is a clear trend in reduction in water use and peak water use since Council considered water meters in 2011. The peak water use across the WPR has continued on a downward trend but still sits above the 490lpd target. Ōtaki and Paekākāriki supplies have also declined and still sit above the peak 490lpd target.

Table 5 below shows the number of days WPR water use exceeded various totals and the peak water use day for the year.

Table 5 Peak consumption for each network and high water use days

	Days greater than 18,000 m ³ /day	Days greater than 20,000 m ³ /day	Days greater than 21,000 m ³ /day	Days greater than 22,000 m ³ /day	Peak day consumption m ³ /day
2007/08	72	20	6	2	22,705
2008/09	48	16	6	1	22,163
2009/10	45	7	0	0	20,753
2010/11	66	20	7	1	22,225
2011/12	42	5	0	0	20,630
2012/13	63	5	0	0	20,972
2013/14	10	1	0	0	20,359

Over 2013/14, water use only exceeded 18,000m³/day for the WPR scheme 10 times and this was over the summer period (November 2013 – March 2014). The reduction in water use is expected to continue with the community changing water use habits with the volumetric water use charges being introduced on 1 July 2014, the number of private and public leaks detected are repaired and more new homes are built with water saving devices.

Traditionally when demand consistently exceeds 18,000m³/day, Council would introduce water restrictions. With water metered charging in place Council expects the peak water use to decrease further. Council will also be able to use the water metered records to target areas with high water records through education, leak detection sweep and incentives to bring the peak water use down.

6 Population changes

6.1 Population figures

Council uses the New Zealand Census “Usual resident population” data for population calculations. In the inter-Census years, Council uses population estimates developed for Council's 2012 Long Term Plan. To calculate the per capita consumption the census area units are overlaid with the water supply area boundaries and populations allocated to DMAs and Water supply schemes.

Table 6 below shows the population estimates for each of the Council's water supply schemes and the population increase between Census years (percentage in brackets).

Table 6 Population numbers connected to each water supply

Population source	Year	Ōtaki	WPR combined	Paekākāriki
Census 2006	2006/07	5,460	35,404	1,590
LTP projection 2007	2007/08	5,634	35,656	1,641
LTP 2007-12 annual increase	2008/09	5,646	36,079	1,622
LTP 2007-12 annual inc.	2009/10	5,658	36,501	1,603
LTP 2007-12 annual inc.	2010/11	5,671	36,924	1,585
LTP 2007-12 annual inc.	2011/12	5,683	37,346	1,566
LTP projection 2012	2012/13	5,695	37,769	1,547
Census 2013	2013/14	5,778 (5.8%)	37,823 (6.9%)	1,655 (4.1%)

6.2 Calculating per capita water consumption

The flow meters for reservoirs and DMAs report to Councils SCADA system where flows are recorded and daily totals calculated. Council calculates the daily per capita water consumption by dividing the daily reading by population to give an average water litres/person/day. This is recorded for the Waikanae, Paraparaumu and Raumati networks, for WPR as a whole and Ōtaki and Paekākāriki.

7 Water Conservation and Demand Management Activities 2014/15

7.1 Council leadership

7.1.1 Informed community

7.1.1.1 Digital support

Website Updates will continue as long as needed. Council **facebook page** will be used to inform the community and identify and address public concerns.

Council will be making videos for the website to provide practical measures residents and businesses can do to save water.

7.1.1.2 Elected members and Council staff

Elected members and Council staff will continue to be kept up to date.

7.1.1.3 2015 Sustainable Home and Garden Show

Council will continue offering advice on how residents can most efficiently use water and promote services related to water use reduction.

7.1.1.4 Information displays and brochures

Council will update and maintain these displays as required although it is expected that once the first round of water metering invoicing for the district has been issued these can be removed.



7.1.2 Quality Advice and information

7.1.2.1 Water Conservation Advisor

Water Conservation Advisor will continue providing the free water conservation home visit service to offer advice (leaks and water use) and also replaces washers on leaking toilets and taps.

7.1.2.2 Green Gardener

Green Gardener will continue offering free garden advice to residents, community groups and schools to create water efficient gardens via articles, workshops and demonstrations.

7.1.2.3 Ecodesign Advisor

Ecodesign Advisor will continue including water conservation in the two hour assessment of resident home's.

7.1.2.4 Community groups and business

While water meters have been implemented, experiences in other areas show it takes time for community to adjust. Council will continue to be available to assist community groups adjust to the new charging scheme.

Council will continue to assist residents to reduce their water use and action leak repairs in 2014/15.

7.1.3 Reduce Council water use

All Council properties pay applicable rates in accordance with the ratings Act (2002) including water rates. Council will monitor and continue to seek ways to reduce water use at properties under its control using the information provided by water metering.

7.2 Better data, Better results

7.2.1 Zone metering

7.2.1.1 Monitoring leakage across the WPR network

The water management review identified the areas for improvement and an implementation plan is being prepared currently. This will include:

- Piloting improved leak monitoring and reporting procedures on one DMA. This will ensure Council has the ability to monitor, manage and analyse the minimum night time flows (MNF) in the DMA.
- Roll out the leak monitoring procedures for all DMAs.
- Actively monitor, manage and analyse minimum night time flows (MNF) in each District Meter Areas (DMA).
- Set up minimum night flow targets for each of the DMAs and prioritise DMAs for leak investigation and repair.
- Every three months and annually, Council will calculate the Infrastructure Leakage Index of each of Council's water supplies to understand the real losses within the networks.

7.2.2 Understanding water use

Using the consumer meter readings the accuracy of DMA and system water balance calculations will be significantly improved allowing increased confidence in water use figures to target active leakage control, repairs and future renewals.

7.2.3 Investigating condition of the water network

\$21,000 has been set aside to assess the condition of water supply pipework in the Waikanae catchment. This will feed into the water infrastructure renewal programme.

7.3 Reducing leakage in water supplies

Council's focus in 2014/15 will shift from the implementation of water metered charging to Council's monitoring and reviewing the network performance, undertaking a targeted active leak detection and repairs management programme.

7.3.1 Finding and repairing private leaks

While Council has power under the bylaw to address private leaks that haven't been resolved with 21 days of notification Council has committed to providing residents a grace period to complete leak repairs. All private leaks should have been resolved by the issuing of second invoices to residents and progress to leak repairs will be monitored where a leak is identified. This will be actively monitored and outstanding leakage pursued.

7.3.2 Finding and repairing leaks on the public side of reticulation network

Building on the existing water management systems in place the information from the DMA reporting will be used to prioritise DMAs for leak investigation and repairs. Council will intervene in a DMA if it becomes economical to survey the zone to find and repair the leaks.

\$88,500 of funding is provided for leak detection and repair across the WPR network in the 2014/15 Annual Plan. \$136,881 in total will be available for leak detection and repair across the District in the 2014/2015 Annual Plan.

Information gained during the water meter installation project about the materials and condition of service laterals will be used to target areas for advanced renewals.

\$243,000 of funding is provided for water main reactive renewals and repair across the WPR in the 2014/15 Annual Plan. \$ 345,745 of funding is available in total for reactive renewals and repair across the District in the 2014/15 Annual Plan.

\$ 325,447 of funding is available for mains renewal and repair across the District in the 2014/15 Annual Plan.



7.4 Regulation

7.4.1 Council's District Plan water demand management requirements

No changes expected with this activity.

7.5 Financial Incentives

7.5.1 Interest free rates payback scheme

No changes expected with this activity. \$210,000 of funding has been allocated..

7.5.2 Water leak grant

In response to concerns about delays in the issuing of trial readings Council have extended a grace period in the transition including:

- All properties will receive two trial readings.
- No charge for water use until two trail readings have been sent.

- Council will take the estimated cost of water lost from the leak off first invoices where ratepayers are taking steps to fix the leak.

7.5.3 Rates relief

The Hardship rates remission fund has been increased to \$125,000.

Council has introduced a new financial support package for vulnerable families with a \$50,000 fund to provide an allocation of water for families with four or more dependents. The allocation will ensure larger families will pay the same as a three dependent household.

7.6 Education

Council will continue providing facilitated education service for local schools.

A new activity will be to assist schools undertake a water audits of their property and activities to identify water savings opportunities and business cases for auctioning the savings.

\$36,000 has been provided to fund this service in the 2014/15 year.

7.7 Fostering innovation

While no grants will be available, Council will continue its “open for business” approach to companies developing new technology by providing feedback on any designs shown or legislation that may apply.

7.8 Investing in water demand management and leak reduction for 2014/2015

Table 7 outlines the key funding allocations for water conservation and demand management work for 2014/15.

Table 7 planned expenditure for 2014/15 for water demand management and leak reduction

Activity	District-wide budget for 2014/15
Keeping community informed and providing advice	\$ 62,000
Water Education	\$ 36,000
Targeted Rate for rainwater or greywater systems	\$ 210,000
Water pipeline condition assessment	\$ 21,000
Leak detection and repair	\$ 136,881
Reactive renewals	\$ 345,745
Mains renewal and repair	\$ 325,447
Total	\$ 1,137,073

Appendix 1 Assessment of Environmental Effects

section 1.3

1.3 Meeting Water Conservation Targets

Council is implementing the Water Matters Strategy and working towards improving water conservation across the district. The district has historically been a high water consumer in comparison with other districts. The intention is to stabilise daily WPR consumption at 490 litres per person per day (L/person/day), which includes an allowance for water losses. This allowance is for unaccounted water lost from the reticulation, including unauthorised connections and loss through leaks from reservoirs, supply pipes, and connections.

RRwGW has been designed to deliver a peak of 490 L/person/day to an estimated population of between 53,120 and 65,940 by 2060.

"Litres per person per day" is a common measure but does not mean that all of this water is used by individuals at home. The measure is an average figure for all users, including homes, businesses, industry, schools, hospitals, Council facilities, fire fighting, etc.

Peak daily use across the WPR area currently stands at around 590 L/person/day. Within the WPR area, the peak use averages around 550 L/person/day (Paraparaumu/Raumati) and around 720 L/person/day (Waikanae). These usage figures include water losses.

The importance of water conservation has been an ongoing theme during the community consultation for this project, with both Council and the community raising a range of methods to achieve lower consumption rates of drinking water. Council's water conservation initiatives go hand-in-hand with the water supply project. Council has a wide range of conservation initiatives for reducing demand, from the Green Plumber and the Green Gardener services; the Eco Design Advisor; the Kāpiti Coast Sustainable Home and Garden Show, the Summer On The Coast programme, Plan Change 75 (requiring a water tank/ grey water system for any new or relocated dwelling), education in local schools, water metering and financial incentives that provide loans for installation of non-potable water systems. Water metering is a critical element of Council's conservation strategy.

The conservation target of 490 L/person/day forms a fundamental design assumption for the Kāpiti Water Supply Project. Council believes it is an important and realistic target and has implemented a range of measures to help ensure 'water wasters' and inefficient users of drinking water are mindful of the need to reduce consumption and use water wisely. However, should the target not be achieved by 2016, the benefit of the RRwGW scheme is that its staged delivery can be brought forward if required. Council is committed to seeing its water supply infrastructure and associated consents as part of a long-term framework for water abstraction, environmental monitoring and responsible management of the district's water resource.