

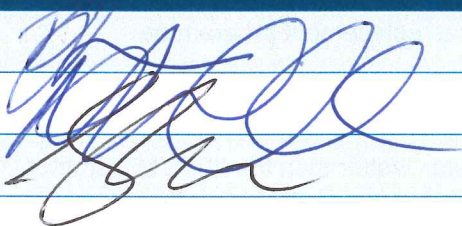
**Kāpiti Coast Water Conservation Report
2016/17**

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Revision History

Revision N°	Prepared By	Description	Date
1	Ben Thompson	Initial draft for review	27 July 2017
2	Ben Thompson	Final draft for issue to AMG	3 August 2017
3	Ben Thompson	Final for Submission to Greater Wellington Regional Council	14 September 2017

Document Acceptance

Action	Name	Signed	Date
Prepared by	Ben Thompson		14 September 2017
Reviewed by	Martyn Cole		14 September 2017
Approved by	Sean Mallon		14 September 2017
on behalf of	Kāpiti Coast District Council		

1 Executive Summary

1.1 Overview

This water conservation report has been prepared to document:

- how Council has met the 490 litres/person/day (lpd) peak water demand target
- works in managing public and private leakage and water use
- the proposed 2017/18 water conservation work programme.

This report covers the three water schemes managed by Council of Ōtaki, Waikanae (servicing, Waikanae, Paraparaumu and Raumati (WPR) and Paekākāriki.

1.2 Key water conservation activates in 2016/17

In 2016/17 Kāpiti Coast District Council focused on:

- Continuing assistance to the District's residents to use water wisely and repair leaks
- Continuing improvements to its water use management systems
- Monitoring network performance and targeted leak location and repair activities
- A proactive lateral replacement programme.

1.3 Peak water use again below 490 lpd in 2016/17

The 2016/17 summer was wetter than the 2015/16 summer. The inclement weather dampened demand in summer, with District peak daily use reducing from 420 lpd to 369 lpd. The WPR and Paekākāriki schemes met the 490 lpd target. Ōtaki was very close at 491 lpd. Table 1 shows the peak day demand as litres per person per day (lpd) for each water supply scheme and District-wide.

Year	Ōtaki	WPR	Paekākāriki	District-wide
2013/14	777	532	486	557
2014/15	554	406	726	437
2015/16	511	404	475	420
2016/17	491	353	403	369
Progressing towards target		Target met	Target met	Target met

Table 1 Downward trends in peak water demand as litres per person per day for each Kāpiti supply

Figure 1 highlights the continued reduction in demand experienced in 2016/17. A number of large leaks in Paraparaumu and Ōtaki caused the spike in autumn. Also the repair of a long running leak in Waikanae in June assisted in reducing the overall consumption to levels lower than same time in 2015/16.

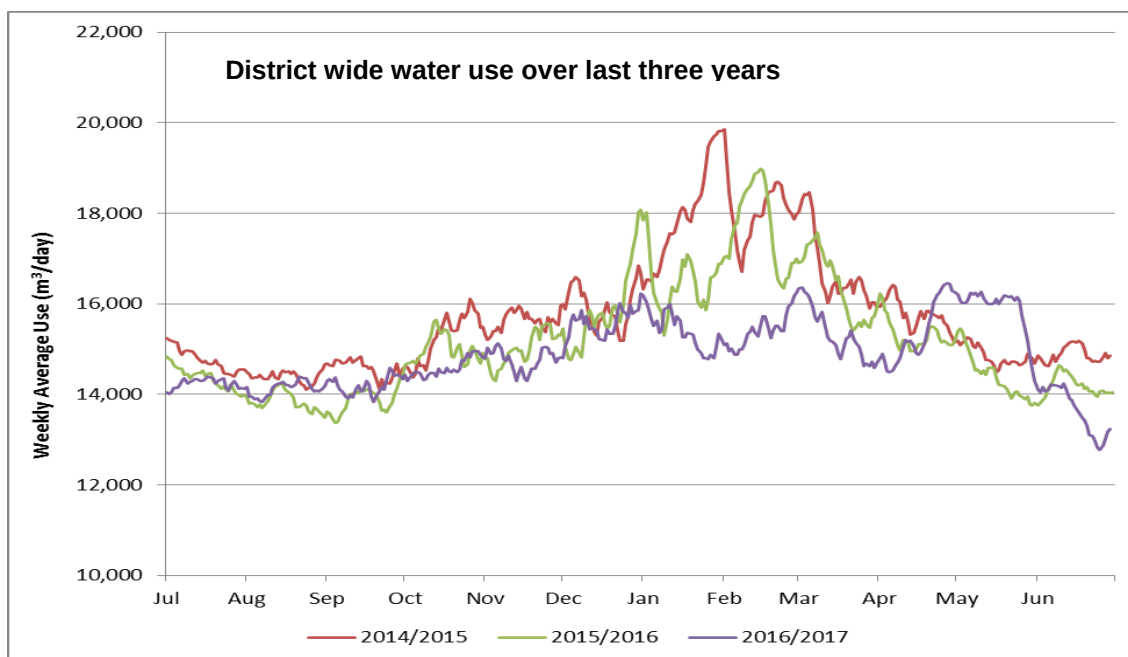


Figure 1 Changes in District water demand for the last three years since the installation of water meters and new metered charging in place

1.4 Investigating and repairing public and private leaks

Council found and repaired an estimated 3,646m³ per day of leakage in 2016/17 through the water conservation programme. Council investigated 110km (23%) of the 420.9km of water networks (excluding Hautere Scheme) based on prioritised leak detection programme. In addition a large leak emerged in Riwai zone (Paraparaumu network) in the third quarter and Council included this zone for investigation. Table two shows the results of the surveys.

Network	Zone	Average night flow before (l/s)	Average night flow after (l/s)	Reduction (l/s)	Estimated reduction (m ³ /day)
Ōtaki	Waitohu	6.1	3.5	2.6	224.6
Waikanae	Te Moana and Hemi	11.4	9.5	1.9	164.2
	Kakarariki	29.5	14.8	14.7	1,270.0
Paraparaumu	Riwai	44	21	23	1,987.2
Total District leak reductions				42.2	3,646

Table 2 Summary of estimated water loss reductions from leak investigations and repair for 2016/17

Council credited \$154,699 of water lost to leakage to 231 properties who fixed their private leaks. The water charges and Council's offer to credit water loss for repairing leak provided a strong incentive to repair leaks.

1.5 Estimated water loss increases in 2016/17.

The Current Annual Real Losses (CARL) for 2016/17 was an estimated as 3,220 m³/day (+/-10.5%), a decrease on last years CARL of 3,350m³/day +/- 9.2%.

1.6 Work programme for 2017/18

Council's focus for 2017/18 will be on:

- Continued support of the community to use water wisely
- Investigate changes in scheme performance to prioritise any future leakage and water saving opportunities
- Continued monitoring of network performance to prioritise leak detection, repairs and renewals
- Continued proactive lateral and mains replacement as budget allows.

Council has \$1.02 million available in 2017/18 for activities associated with the demand management and asset renewal.

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2 Introduction and overview

The Kāpiti Coast Water Conservation Report documents how Council met the peak water use 490 litres/person day target in 2016/17. It also details efforts in managing water use and reducing private and public leakage over the 2016/17 financial year. Section four details the range of activities Council undertook to reach the targets and section five provides the results of these efforts. Section seven in the report details the work planned across 2017/18 to achieve and maintain water use targets.

This report covers the three water supply schemes managed by Council of Ōtaki, Waikanae (servicing, Waikanae, Paraparaumu and Raumati) and Paekākāriki Water.

2.1 Sustainable Water Management Strategy 2003 sets the direction

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.

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 defines how to get there

Council developed Water Conservation Plan to ensure it and the community reached the 490 litres per person (lpd) per peak day target by 2016. 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.

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 – Council can better target resources for better outcomes with better information on where water being used and lost.
- Reducing leakage in water supplies – Council needs to take a proactive approach in finding and repairing leaks across each network, as well as ensure property owners fix their leaks in a timely manner.
- Regulation – Council uses the District Plan to require new homes meet the 490 lpd target and uses the Water Supply bylaw to manage summer demand, water pricing and minimising wastage.
- Financial Assistance – Council offers an interest free targeted rate for households to install rainwater or greywater systems to offset public water use. It also offers rates support for hardship
- 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.

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 WGN130103 [34384] Groundwater take

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 [34399] Surface water take

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 September each year. The annual Water Conservation Report shall be made available to the public on the Kāpiti Coast District Council website by 30th September each year. The annual Water Conservation Report shall report on the year 1st July to 30th June inclusive, and includes Table 3 to assist in assessing report for compliance.

Water Permit WGN050025 [33147]

Condition 15b requires reporting on measures undertaken to investigate, implement and manage water conservation methods to reduce water demand on the Kāpiti 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.

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;	5.2
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;	5.2
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

Table 3 Condition 25 of consent WGN130103 [33760]

4 Water conservation and demand management activities 2016/17

4.1 Council leadership

4.1.1 Keeping the community informed

Over 2016/17 Council continued keeping the community informed through its usual communication channels. Council also completed its Water Engagement Planner to inform future communication on water.

Informed community outcomes

- Water Engagement Planner completed
- wide range of channels used to communicate with public about water
- community had access information to make decisions on improving their water use.

4.1.1.1 Completed the Water Engagement Planner

The Water Engagement Planner:

- aligned with Council's Communication Strategy
- identifies the key themes of managing the activity
- outlines the work programme for water for the next ten years and links these to the themes and interested parties
- identifies key partners and stakeholders.

4.1.1.2 Keeping community informed via online resources

Council uses its website and Facebook page to inform the community and answers questions raised by the community. It also provides useful tools that the community can access to assist with leaks and wise water use.

Council contacted property owners if their high water use was suspected to be caused by a leak. In addition to the advice offered through the water conservation advisor service, a directory of local plumbers (including advice from consumer affairs on engaging a tradesman) was publically available and included with all leak notifications.

4.1.1.3 Ensure frontline staff had up to date information

Customer services staff remain critical to answering residents queries. As the front face of Council its important customer services is able to field people's queries efficiency as they are received.

4.1.2 Council provided quality advice and information

Council offers a range of services to assist community manage their water use.

Quality advice and information outcomes

- Targeted residents and businesses with high water use to fix leaks or reduce their use
- Raised awareness on options to manage water use and support available.

4.1.2.1 Water Conservation Advisor (WCA)

Water Conservation Advisor offered free home visits to advise people on fixing leaks or managing water use. After each water meter reading cycle, the WCA investigated any property using more than 2,000 litres/day or had an increase of 40% or more from the last read. Council promoted the free WCA service in all leak notices sent out.

4.1.2.2 Green Gardener

The Green Gardener offered free garden advice to residents to create water efficient gardens via articles, workshops and demonstrations. Throughout the year the Green Gardener:

- Trialled efficient low cost irrigation systems at four community gardens
- Provided weekly advice on Beach Fm and monthly articles on gardening in Council publication Ontoit
- Ran 37 workshops on water efficient gardening.

The Green Gardener also worked with schools to encourage waterwise gardening practice. This included:

- Advising 12 schools on their school gardens
- Running four cluster meetings for teachers to upskill on water-wise gardening.

4.1.2.3 Ecodesign Advisor (EDA)

The EDA offered free independent advice on new, proposed and existing homes and this year undertook:

- 192 home visits: As part of the resident's whole home consultation, awareness was raised on water conservation. Typically, water conservation makes up 20% of the two hour consultation and covers:
 - Water use in kitchens, bathrooms, WC, laundries and gardens
 - Water meters
 - Explain what grey water and rain water collection is and how the water can be used
 - Promote the Targeted Rate Funding for grey water and rain water collection use
- Also provided free shower water flow rate bags, shower timers and WC water saving Gizmo where appropriate
- 205 short contacts: Residents asked specific questions about their homes. These included questions on residential water use (See above)
- Thirteen presentations: Delivered to community groups, professional groups and Government Departments: The whole home review presentation includes residential water conservation, rain and grey water systems and reading of water meters.

4.1.3 Council aimed to reduce water use in Council assets

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

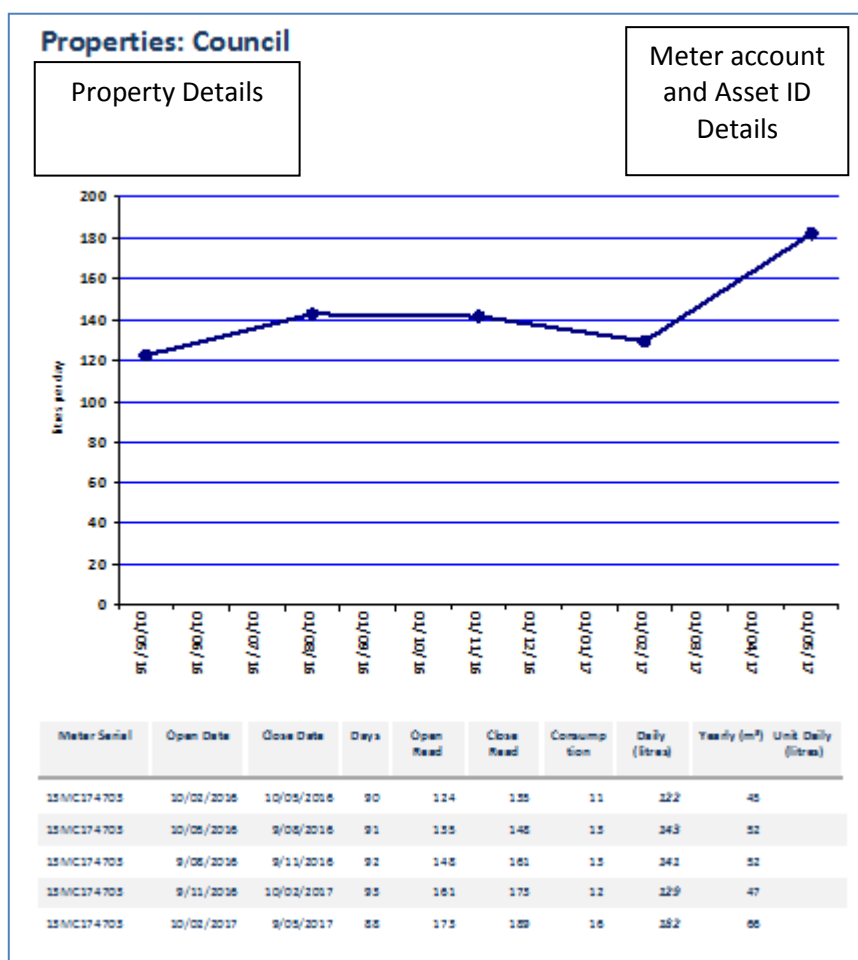
Reduce Council water use outcomes

- Developed a water use reporting tool to support the proactive management of water and identify opportunities to fix leaks or replace inefficient fixtures.
- Commitment that all new or refurbished buildings will use water efficient fixtures and appliances

- Appropriate use on non-potable water sources.

4.1.3.1 Tool developed to monitor water use at Council properties

Council has a number of properties it owns, manages on behalf of other government agencies or leases to businesses or community groups.



Council developed a water use reporting tool for Council properties. That provides updates after each reading cycle on water consumed from each property. The data helps prioritise any maintenance needed, such as repairing leaks or replacing inefficient toilets or taps.

Figure 2 provides an example of how the report presents water consumption for each property. The graph highlights any trends, such as signs of leakage or usage.

The table details the amount of water consumed by quarter. Managers can use this to set triggers for intervening if water costs escalate

Figure 2 How Council reporting tool shows water use by Council asset

4.1.3.2 Making new buildings and renovations more water efficient

When Council builds new or renovates, it makes every effort to install water efficient appliances where possible.

4.1.3.3 Lowering water use on sportsfields and amenity areas

All major Council sportsfields use onsite bores as preferred source of water for irrigation. 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.

4.2 Better data, better results

Better data, better results outcomes

- monitored and prioritised zones for leak detection and repair
- resolved high night flows in the Kakariki Zone
- identified properties with sharp increases in water use or high consumption to assist with proactive leak repair
- Council produced water balances (the level of annual leakage) for all water schemes.

4.2.1 Monitored trends in water use and leakage

4.2.1.1 Undertook weekly monitoring of District networks and supplies

Council undertook weekly reviews of each network at a zone level to:

- identify growing leaks requiring urgent attention
- prioritise zones for leak detection in the summer for repair in autumn.

Section 4.3 provides more detail on the four zones selected for leak detection.

4.2.1.2 Resolved the high water use anomalies in Kakariki water zone

Council completed the investigations into the high night flows in the Kakariki zone and included the zone again in the annual leakage survey. This resulted in the location of a large undiscovered leak that had been running for some time. Repairing the leak reduced water loss by an estimated 1,270m³ per day.

4.3 Finding and repairing public and private leaks

Finding and repairing public leak outcomes:

- 3,646 m³ per day of estimated leakage repaired.
- five of the 19 water zones were investigated, 26% of the network length surveyed for leakage
- notified properties with potential leakage after every billing cycle
- 66 laterals replaced as part of three year trial programme.

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

4.3.1.1 Council found and repaired large leaks across three networks

After six months of weekly monitoring, Council prioritized one zone in Ōtaki and three in Waikanae for leak detection and repair for 2016/17. In mid-April, a large leak in the Riwai Zone of Paraparaumu network emerged and Council added this to the leak sweep. The investigations covered 110km, 26% of the 420.9km of water networks (excluding the Hautere Scheme and laterals).

Table four summarises the estimated size of the leakage, how long the leaks had been running and the estimated water lost to these leaks in 2016/17.

Network	Zone	Average night flow before sweep (l/s)	Average night flow after repairs (l/s)	Reduction (l/s)	Estimated reduction (m ³ /day)	Leak duration (days)	Estimated water lost 2016/17 (m ³)
Ōtaki	Waitohu	6.1	3.5	2.6	224.6	186	41,212
Waikanae	Te Moana and Hemi	11.4	9.5	1.9	164.2	260	42,682
	Kakarariki	29.5	14.8	14.7	1,270.0	349	443,258
Paraparaumu	Riwai	44	21	23	1,987.2	38	51,088
Total		91	48.8	42.2	3,646		578,240

Table 4. Large leaks had a high impact on overall water use

Ōtaki results

In Ōtaki, Council contractors discovered a 100mm main leaking at a rate of 2.6 litres/second in the Waitohu Zone. The estimated water lost from this leak was 41,200m³.

Waikanae results

Council swept three zones in Waikanae, Te Moana, Hemi Zones and Kakariki. The leak sweep in Kakariki uncovered a 14 litre/second leak that was a major cause of the high night flows in the zone. The estimated water lost from leakage was 443,300m³.

Paraparaumu results

In late April, Council noticed a dramatic increase in night flows in the Riwai Zone. Due to the leak's size, contractors investigated all the mains greater than 150mm. The estimated water lost from leakage was 51,100m³.

4.3.1.2 Council targeted poorly performing laterals

Council's Water Laterals Assessment suggested laterals (service pipes between the mains and the water meter) are a significant risk for water loss from the pipes. In 2015/16 Council initiated a three year plan to target lateral renewals to improve network performance.

In 2016/17 Council:

- developed and applied the reactive lateral replacement criteria
- replaced 66 laterals using these criteria.

4.3.1.3 Responding to issues as they arised

Table 5 shows the reactive work undertaken by Council in 2016/17 on the public networks to resolve leaks as they arose. Of the 924 water service requests, 473 related to repairing leaks across the District water networks.

Activity undertaken	Ōtaki Scheme	WPR Scheme	Paekākāriki Scheme	District Total
Repair or replace leaking hydrants	3	16	0	19
Repair or replace leaking valves	0	13	1	14
Repair or replace leaking manifolds	14	68	7	89
Repair or replace leaking laterals	83	197	18	298
Repair or replace leaking mains	8	35	10	53
Total interventions	108	329	36	473

Table 5 Reactive leak maintenance on each network over the 1 July 2016 – 30 June 2017 period

4.3.2 Finding and repairing private leaks

After each billing cycle, Council check for any properties using more than 2000 litres/day, or who have experienced a 40% increase in water consumption to identify potential leakage or high water use. The Water Conservation Advisor visits the properties to assess if there is a leak, a misread or high legitimate use.

If there is a leak, the Council sends the property owner a leak notification letter to fix the issue within 21 days, a directory of local plumbers who can help and a credit due to water loss application form (invites the property owner to apply for a credit on their water account if they fix the leak in a timely manner).

4.4 Regulation

4.4.1 Council's District Plan water demand management requirements

District Plan water demand management outcomes:

- Council approved 207 District Plan compliant homes across the District over the 2016/17 period.

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 from outdoor use from new homes built.

4.5 Financial Incentives

Financial incentive outcomes:

- Council credited 231 properties \$154,699 for the cost of water lost through leaks that were repaired
- Twenty three properties obtained up to \$300 assistance to help cover unexpected water costs
- Council provided \$40,569 of funding for 10 households installed rainwater tanks through the targeted rate.

4.5.1 Encouraging people to fix their leaks

231 property owners received a total of \$154,699 credit on their water accounts for the cost of water lost through leaks that were repaired..

Council offers a credit on water accounts to encourage people to fix their leaks. Successful applicants were not charged for the water lost to leaks. Property owners need to provide evidence that the leak is fixed.

4.5.2 Providing financial support to those in need

In 2016/17 Council offered three schemes to support residents on limited income to assist residents in financial hardship:

- 634 households obtained the General Hardship Rates Remission. The General Hardship Rate Remission provides up to \$300 towards rates.
- 23 households obtained a Rate Remission for Significant Costs related to water costs. The Rate Remission for Significant Costs causing financial hardship provides up to \$300 towards significant costs causing financial hardship.
- Two households obtained a water rates remission on their water account. The Water Rate Remission for Vulnerable Households relating to high water use provides a rates remission towards the cost of water for households with four or more dependents who receive the Working for Families Tax credit and meet other criteria.

4.5.3 Interest free rates payback scheme to install rainwater tanks

Ten properties obtained a targeted rate to install a rainwater tank. In total Council provided \$40,569 of funding. Council offers a \$5,000 targeted rate for residents to install a rainwater tank or greywater system for outdoor irrigation.

4.6 Education

Water Education Service provided curriculum units and facilitator support for teachers wanting to explore water supply and conservation as a topic.

Education outcome:

- Six schools attended a teacher professional training day on water
- Seven schools and one colleges used the Council resources
- Two schools visited the Waikanae water treatment plant
- Four schools and one college undertook water testing field trips.

4.7 Fostering innovation

Council continued its “open for business” approach to companies developing new technology by providing feedback on any designs shown or legislation that may apply. No companies approached Council over 2016/17.

5 Peak water use target met again in 2016/17

5.1 Peak water use continued to decrease

The wet summer had a dampening effect on demand. All schemes were either well under the peak water target or near the 490 lpd target. Table 6 shows peak demand per capita for the three water supplies for 2016/17 and the two preceding years.

Year	Ōtaki	WPR	Paekākāriki	District-wide
2014/15	554	406	726	437
2015/16	511	404	475	420
2016/17	491	353	403	369
Result 2016/17	Progressing towards target	Target met	Target met	Target met

Table 6 Peak consumption for each network

5.2 Schemes showed overall drop in demand

Figure 3 shows the continued reduction in water demand that occurred over 2016/17. Average daily demand dropped slightly from 15,182m³/day to 14,692m³/day and peak daily demand from 19,617 m³/day to 17,422m³/day.

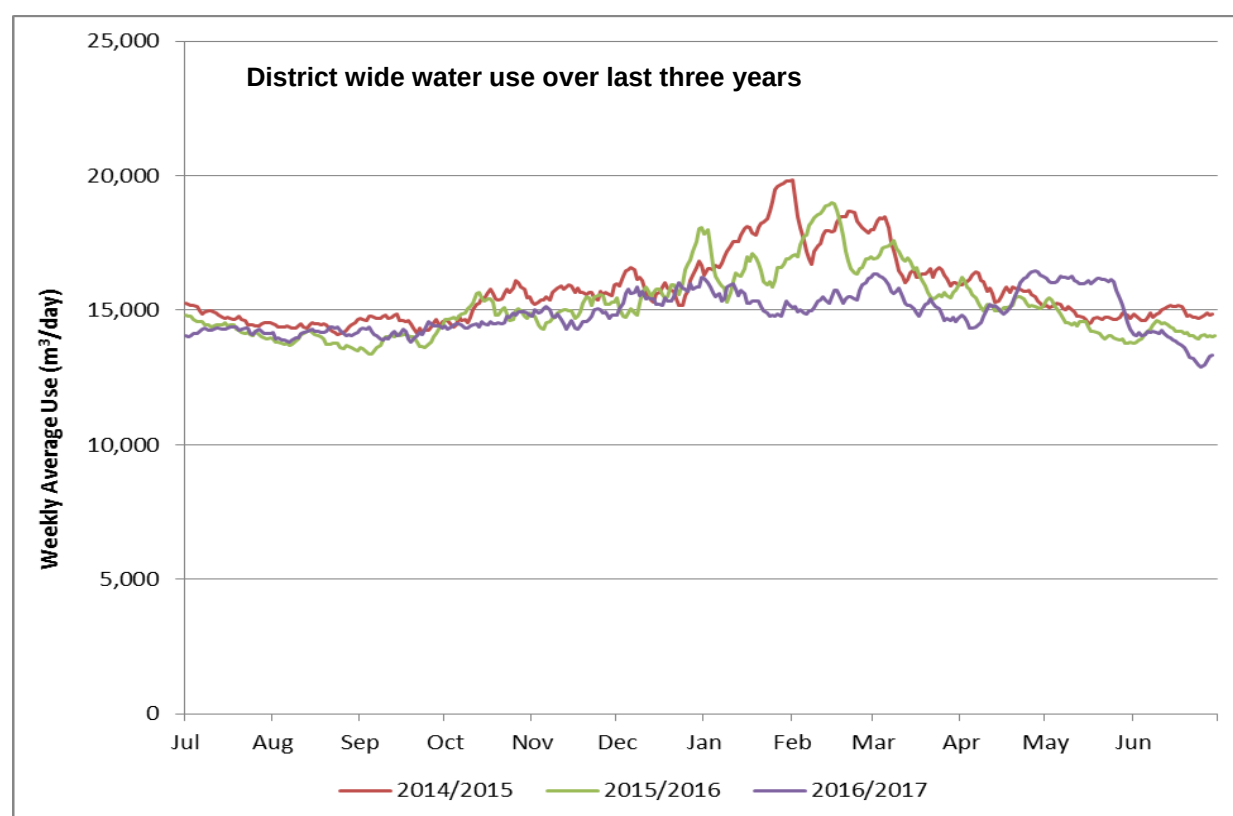


Figure 3 District wide water demand for the last three years has changed with the installation of meters and new metered charging in place

In the Ōtaki Scheme, there was a continued reduction in peak demand, from 3,116 m³/day to 3,011 m³/day from 2015/16 to 2016/17. Average demand increased from 2,318 m³/day in 2015/16 to 2,521 m³/day in 2016/17. Figure 4 shows the changes in water use and note the impact of the leak in Waitohu Zone in April and May 2017

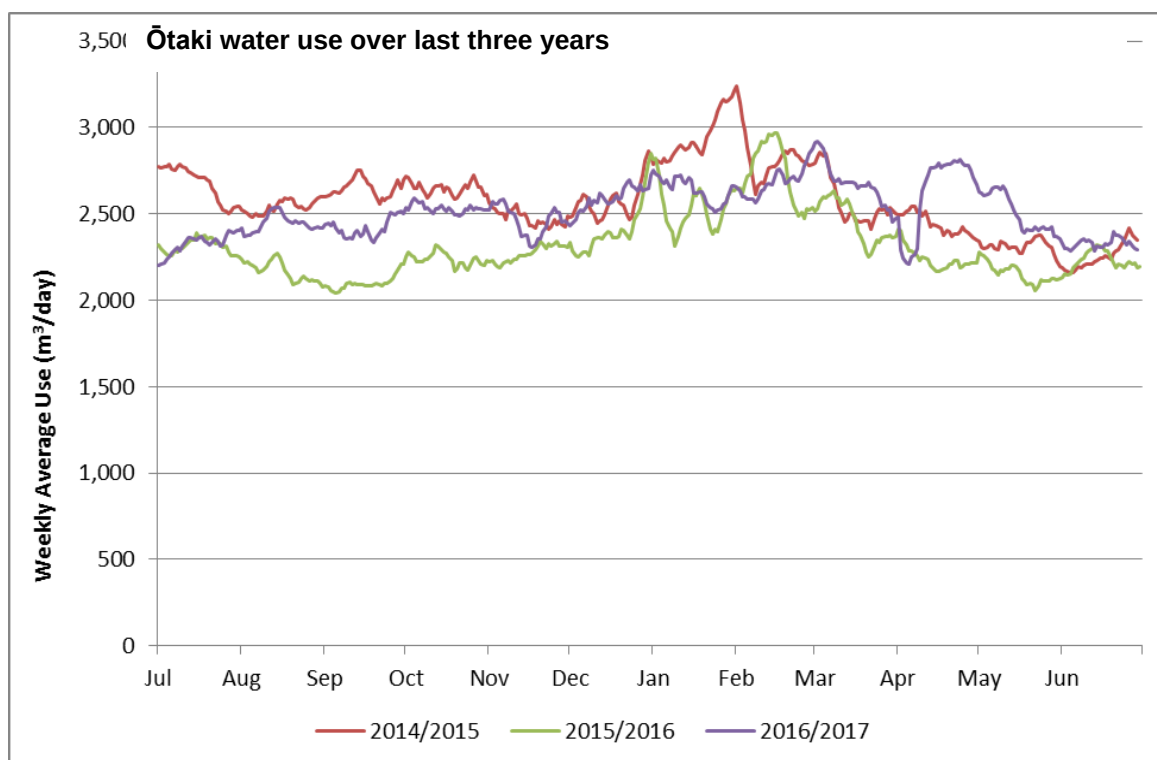


Figure 4 The Ōtaki water demand for the last three years has changed with the installation of meters and new metered charging in place

In the WPR Scheme, there was a slight reduction in daily average demand from 12,309 m³/day to 11,861 m³/day and a decrease in peak daily demand from 15,773 m³/day to 13,912 m³/day. Figure 5 shows how the large leak in the Riwai Zone caused the autumn spike and the repair in the Kakariki zone assisted in the large drop in late June.

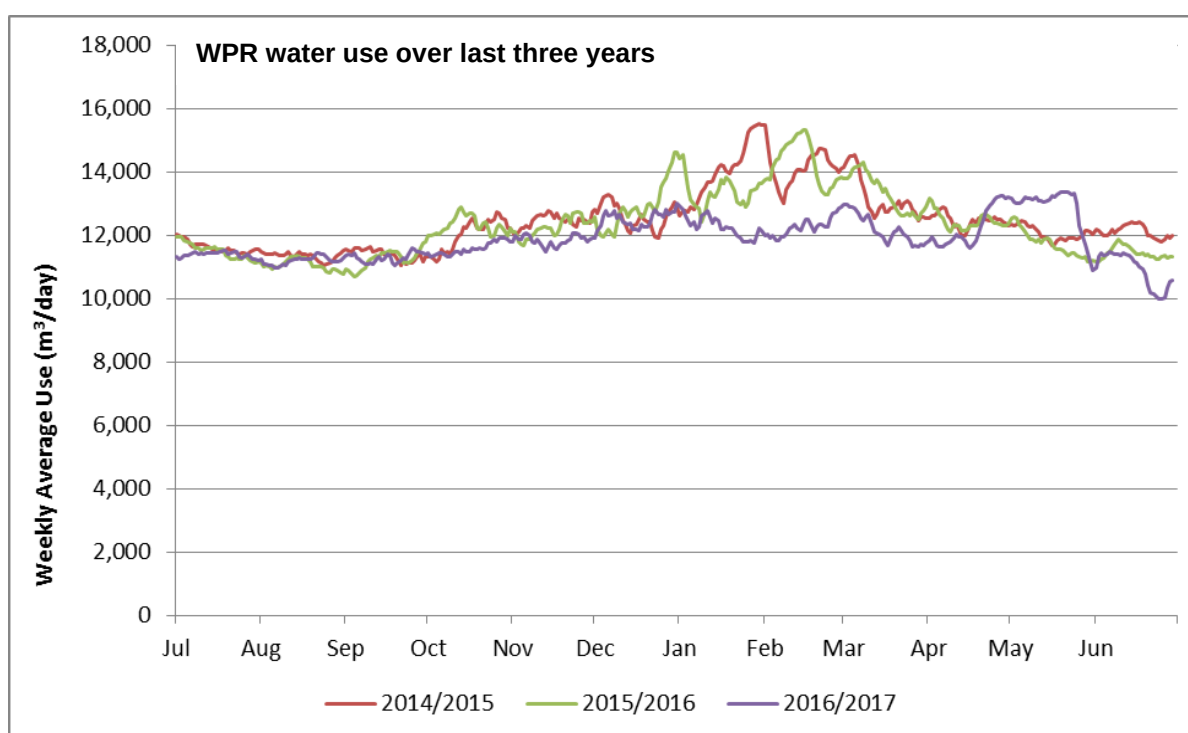


Figure 5 The WPR water demand for the last three years has changed with the installation of meters and new metered charging in place

In the Paekākāriki Scheme, there was a continued reduction in peak demand from 2015/16, due to a number of leaks being repaired. Peak demand dropped from 769 m³/day to 643m³/day and average demand fell from 559 m³/day to 470 m³/day. Figure 6 shows how the demand changed for Paekākāriki.

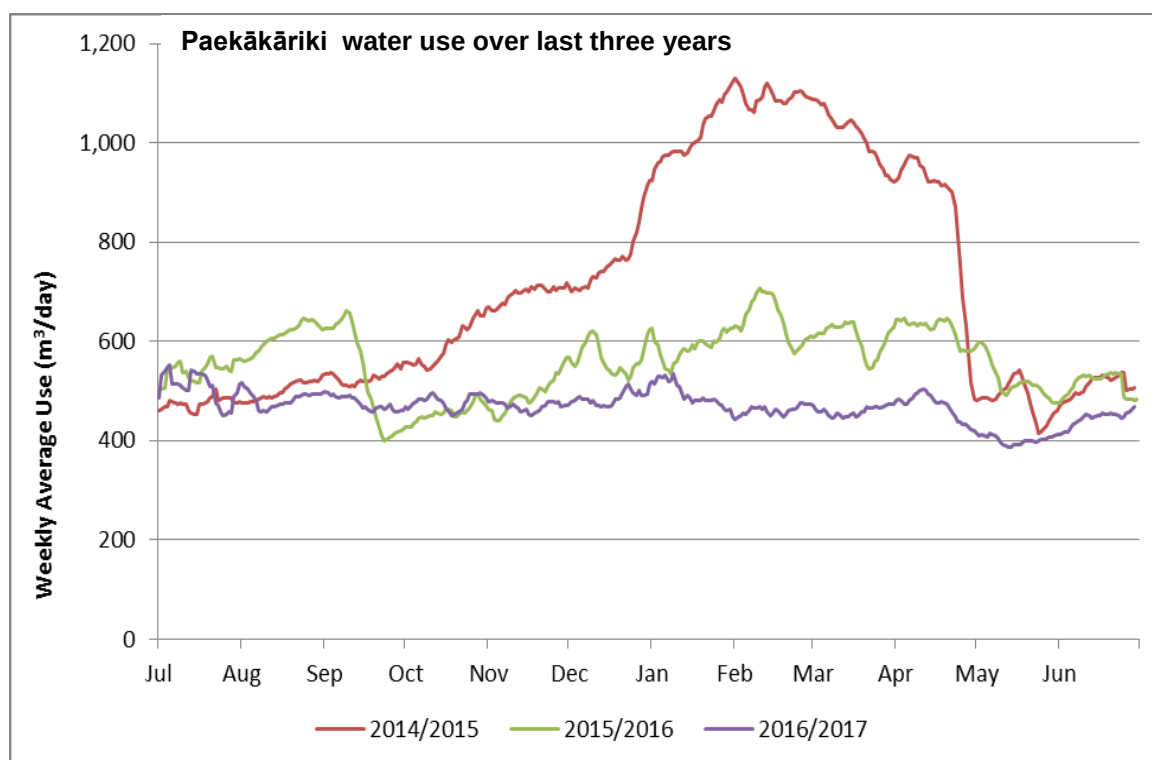


Figure 6 The Paekākāriki water demand for the last three years has changed with the installation of meters and new metered charging in place

5.3 Estimated water loss increased from last year

The current annual real loss decreased from last year's 3350m³/day to 3,220m³/day.

Table 7 shows the average daily water loss estimates across the District for the last three years. Table 7 also includes the daily water loss estimate, as defined by Department of Internal Affairs of real water loss, meter under-registration and theft.

Water losses	2014/15 (m ³ /day ¹)	2015/16 (m ³ /day ¹)	2016/17 (m ³ /day ¹)
Current Annual Real Losses (CARL)	3,680	3,350 (+/- 10.3%)	3,220 (+/- 10.5%)
CARL, meter under-registration and theft	-	3,580 (+/- 10.3%)	3,460 (+/- 9.3%)

Table 7 Estimated water loss results from 2014/15 to 2016/17.

Water loss is the difference between water input into supply (whether supplied or exported) and the authorised water consumption. After accounting for unauthorised use (such as theft) and under reading by meters (apparent losses), the amount left is water lost to leaks, overflows or bursts (real water loss).

¹ Rounded to nearest 5 m³/day

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 2015 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.

Population source	Year	Ōtaki	WPR combined	Paekākāriki	District Total
Sum of 2013 zone population estimates from Census 2013 Usually Resident Population aligned to zone boundaries	2012/13	5,986	37,899	1,691	45,576
2013 to 2018 linear interpolation	2013/14	6,022	38,281	1,668	45,971
2013 to 2018 linear interpolation	2014/15	6,059	38,663	1,645	46,366
2013 to 2018 linear interpolation	2015/16	6,095	39,045	1,622	46,761
2013 to 2018 linear interpolation	2016/17	6,131	39,427	1,598	47,156

Table 8 Population numbers connected to each water supply

6.2 Calculating per capita water consumption

The flow meters for reservoirs and zones 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 Ōtaki, Waikanae, Paraparaumu and Raumati networks, for WPR as a whole and Paekākāriki.

7 Water Conservation and Demand Management Activities 2017/18

7.1 Council leadership

7.1.1 Keeping the community informed

7.1.1.1 Continue using website and Facebook page to keep people informed

Council will ensure it keeps the information current and up to date on water. Council's Facebook page and other channels will be used to inform the community and identify and answer any questions from the public.

7.1.1.2 Elected members and Council staff will be kept up to date

Elected members and Council staff will continue to be kept up to date with developments in water.

7.1.2 Providing advice to the community on saving water

7.1.2.1 Water Conservation Advisor

The Water Conservation Advisor will continue providing the free water conservation home visit service to offer advice (leaks and water use).

7.1.2.2 Green Gardener

The Green Gardener programme will continue offering garden advice to residents, community groups and schools.

7.1.2.3 Ecodesign Advisor

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

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 proactively repair leaks and seek ways to reduce water use at properties under its control using the information provided by the reporting tool developed this year.

7.2 Better data, Better results

7.2.1 Zone metering

7.2.1.1 Monitoring leakage across District networks and supplies

The Council will continue monitoring minimum night flows to prioritise zones for leak detection and repair.

7.2.2 Reporting water use and water leaks

Council will provide a water balance on water used and lost over the year.

7.3 Reducing leakage in water supplies

7.3.1 Finding and repairing private leaks

Council will continue proactively reviewing water use data for signs of leakage and notify property owners early if an issue is identified.

Council will use its Water Supply Bylaw to request property owners to fix their private leaks within 21 days of notification. Property owners will still be able to apply for a credit on their water account due to fixing the leak. All identified leaks will be actively monitored and outstanding leakage pursued.

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

Using information from the Wateroutlook monitoring and reporting tool Council will monitor zones weekly to prioritise zones for leak investigation and repairs.

Council will continue targeting laterals for repair and collect information about this matter.

7.4 Regulation

7.4.1 Council's District Plan water demand management requirements

New properties will continue needing to comply with the District Plan water demand management requirements

7.5 Financial Incentives

7.5.1 Interest free rates payback scheme

No changes expected with this activity and \$210,000 of funding has been allocated for 2017/18.

7.5.2 Rates relief

Over 2017/18, Council will continue providing financial assistance to those in need. The following remissions will be available in 2017/18:

- The General Hardship Rate Remission provides up to \$300 of rates remission. There is a total of \$ 125,000 available for 2017/18.
- Rate Remission for Significant Cost provides up to \$300 to towards significant costs causing financial hardship. This includes repairing leaks. There is a total of \$ 25,000 available for 2017/18.
- Water Rate Remission for Vulnerable Households provides rate remissions towards the cost of water for households with four or more dependents who receive the Working for Families Tax credit and meet other criteria. There is a total of \$25,000 available for 2017/18.

7.6 Education

Council will continue to support water education in local schools.

7.7 Fostering innovation

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 2017/18

Table 11 outlines the key funding allocations for water conservation and demand management work for 2016/17.

Activity	District-wide budget for 2016/17
Water conservation programme	\$ 100,000
Targeted rate for rainwater or greywater systems	\$ 210,000
Financial assistance	\$ 155,000
Water network condition rating and investigation	\$ 10,000
Leak detection and repair	\$ 48,000
Reticulation maintenance	\$ 210,000
Planned network renewals	\$ 300,000
Total	\$1,023,000

Table 9 Planned expenditure for 2017/18 associated with water demand management and leak reduction

8 Bibliography

Sustainable Water Use Strategy, Kāpiti Coast District Council, September 2003

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Kāpiti Coast District Council Water Management Review, GHD, May 2014

Kāpiti Coast Long Term Plan 2015, Kāpiti Coast District Council, 2015

Water Use Management – Project Scoping Report, CH2M Beca, February 2015

Water Laterals Assessment, CH2M Beca, December 2015

Charging Regime Advisory Group Tariff Review, CRAG, March 2016

Water Use Management Procedures Manual, CH2M Beca and M & P Consulting , May 2016

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.