

SOUTH WAIRARAPA DISTRICT COUNCIL

22 APRIL 2015

AGENDA ITEM D3

WATER CONSERVATION STRATEGY AND WATER MANAGEMENT PLANS

Purpose of Report

To enable Council to adopt a Water Conservation Strategy for the District and Water Management Plan for the public water supply systems.

Recommendations

Officers recommend that the Council:

1. *Receive the information.*
2. *Adopt the South Wairarapa Water Conservation Management Strategy 2015 and the South Wairarapa Water Demand Management Plan 2015.*
3. *Take the steps necessary to implement the South Wairarapa Water Conservation Management Strategy 2015 and the South Wairarapa Water Demand Management Plan 2015.*

1. Executive Summary

Council has requested that a Water Conservation Strategy be developed for the District. In addition in order to satisfy conditions placed by the Wellington Regional Council on Council's water take consents, Water Demand Management Plans are required to be developed and submitted to the Wellington regional Council.

The attached documents have been prepared by Kaha Consultancy (Mr Hans van Kregten) in close liaison with the Group Manager Planning and Environment and Council's Assets and Operations Manager.

2. Background

In April 2014 Council resolved as follows;

"Supplementary Water Supplies

To continue to promote and create and use educative material to encourage developers and individuals when building a new house in an urban area to consider incorporating supplementary water supply/reuse systems.

To formulate a Water Conservation and Efficiency Plan for the Public Water Supply System”.

In addition two action notes were adopted as follows;

“Include commentary on suitable connections for domestic tanks to fire appliances in the educational material as described in resolution DC2014/66”, and

“Provide an information sheet (brochure) for the public on where suitable water supply/reuse systems and tanks can be purchased.”

The Water Conservation Strategy attached has been prepared in order to address the second resolution and the two action notes.

In preparing these documents it became apparent that there was a close linkage between the strategy and action notes, and the regulatory requirements of the Wellington Regional Council arising from the water takes consents held by Council.

Accordingly staff have aligned the two requirements to ensure a consistent approach is proposed both in the strategy and in the Water Management Plans to be submitted to Wellington Regional Council.

3. Discussion

3.1 Reason for developing a strategy

The South Wairarapa Water Conservation Strategy 2015 originates from a desire to promote the sustainable use of water supplied by the reticulated water supply systems in the three urban communities of Featherston, Martinborough and Greytown.

3.2 Purpose

The strategy provides a framework which contains the principles applying to our management of water supplies and demand for water, infrastructure, regulatory controls and community responses in South Wairarapa.

3.3 Overview

A reliable supply of water is crucial for people’s economic, environmental, recreational, health, and social wellbeing.

Conservation and minimisation of water use are important components of this strategy for many reasons.

They:

- delay or avoid the need for additional water sources and infrastructure;
- reduce energy and cost associated with water treatment and distribution;
- reduce costs to the local community;
- ensure supplies are reliable in the long term;

- mitigate environmental effects, such as impacts on natural flows of rivers and streams, and water levels in aquifers;
- help to protect freshwater flora, and fauna, and natural features, such as wetlands and lakes; and
- help to protect cultural values associated with freshwater bodies, including Maori cultural values such as the mauri of water and mana of water bodies.
- Benefits from water conservation and minimisation are therefore linked to a variety of social, cultural, recreational, economic and environmental outcomes.

3.4 Water Use

In South Wairarapa, the volume of water taken by the Council for its reticulated supply system has reduced slightly in the past ten years.

In Wairarapa however, the amount of water taken for farm pasture irrigation has more than doubled over that period, (Wellington Regional Council data).

The regional council says that with increasing population in Wairarapa's urban areas, demand for additional water supplies from rivers, lakes and groundwater, is also expected to increase.

The Regional Policy Statement notes that groundwater levels in some Wairarapa aquifers are declining year by year.

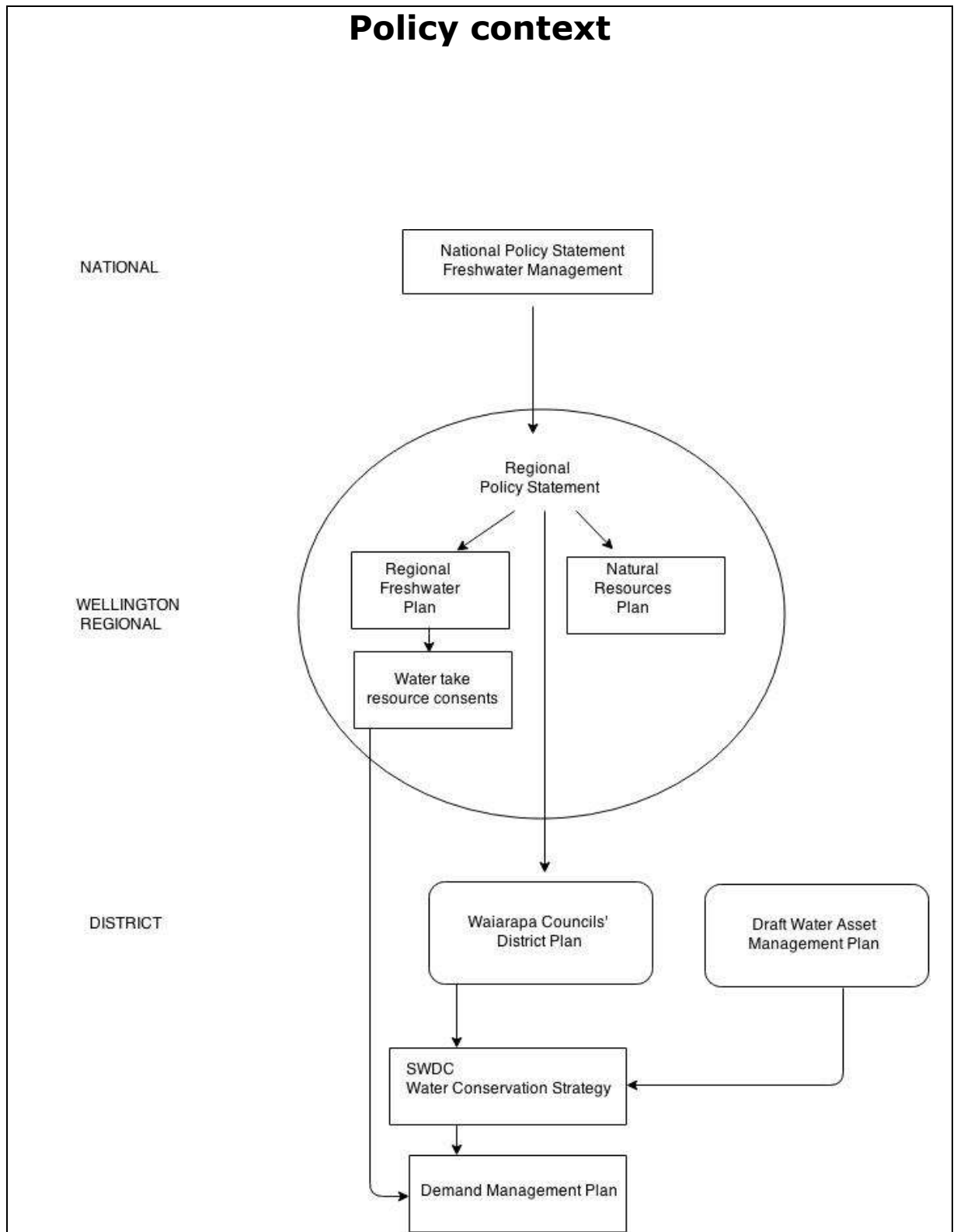
It says that lowered groundwater levels can affect the flow of springs and rivers and streams, and water levels in wetlands resulting in them eventually drying up, permanently affecting dependent ecosystems.

In the longer term, the pressure on water resources is also likely to increase as a result of climate change.

3.5 Policy Context

The Water Conservation Strategy needs to respond to national, regional and local (territorial) policies and statutory requirements.

Maori cultural values affecting water use are also relevant and need to be taken into account.



3.5.1. National Policy

The National Policy Statement for Freshwater Management requires regional and territorial councils to be more specific about the limits to water availability and improve efficiency of allocation and use.

The National Policy Statement also requires regional councils to maintain or improve water quality within their regions.

3.5.2. Regional Policy

The Regional Policy Statement (RPS) states that accommodating people's needs for water is becoming more and more difficult because some water resources in the region are already fully allocated and others are close to full allocation.

In addition, the current regional Freshwater Plan, which guides the management of freshwater resources in the region, describes issues surrounding the use and development of freshwater, noting that:

"The benefits to people and communities of the use and development of water bodies and river and lake beds should be recognised in decision making. The benefits of fresh water to people and communities include the value of water supplies..... Use and development of fresh water can also bring economic benefits to people. While the Act requires the adverse effects of activities to be looked at, these need to be measured against the benefits that will occur."

The Plan goes on to state that:

"Some uses of fresh water may need to change because they are not sustainable. People want to be able to continue to use and develop fresh water to provide for their social, economic and cultural well-being and for their health and safety. In most instances the uses which people make of fresh water will continue unchanged because they are sustainable. However, some uses of fresh water may not be sustainable and could need to change...."

Subsequently, the Plan includes the following objectives which provide guidance on when change is required;

"6.1.1 People and communities are able to take, use, dam, or divert surface water, and take and use groundwater, while ensuring that the flows in rivers, and water levels in lakes and wetlands, are sufficient to maintain the natural and amenity values of water bodies.

6.1.2 People and communities are able to take and use groundwater while ensuring that the construction of bores and abstractions do not:

- exceed the safe yields of aquifers; or*
- adversely affect the yields of nearby bores through interference, inefficient borehole construction, or excessive drawdown; or*
- adversely affect water quality".*

Other relevant policies are:

"6.1.3 Water abstracted from rivers, streams, lakes and aquifers is used efficiently and water conservation is promoted.

6.1.4 The flows in rivers and water levels in lakes and wetlands are, as far as practicable, consistent with the values of the tangata whenua."

These policies would have been taken into account when the Regional Council considered the resource consent applications from the South Wairarapa District Council for water takes for its reticulated supply systems.

In September 2014, the Wellington Regional Council started the consultation phase of a new regional plan called the Natural Resources Regional Plan. The regional council states that it has received comments, views and suggestions from more than 130 people or organisations on the draft plan.

The draft Natural Resources Plan contains the following objective:

"3.19 Water allocation Objective

RP.O55 The efficiency of water use is improved through time, including by means of:

- (a) Efficient infrastructure and application methods, and*
- (b) good management practice, including irrigation, domestic municipal and industry practices, and*
- (c) maximising reuse, recovery and recycling of water and contaminants, and*
- (d) enabling a dynamic water allocation regime.*

The objective links to the proposed policy below:

"4.3.13 Reasonable and efficient use of water Policy LW.P117:

Reasonable and efficient use. The amount of water taken or diverted through resource consents shall be reasonable and used efficiently, including consideration of:

- 74 (a) applying the reasonable and efficient use criteria identified in Schedule R (efficient use) to new users immediately, while existing users replacing existing resource consents have a period of four years from the date of the plan being made operative to meet the criteria, and*
- (b) maximising the efficient use of water when designing systems to convey or apply water, and (c) industry guidelines."*

Appendix R of the draft plan states that a water management plan shall be submitted with a resource consent application to take and use water for group or community water that addresses:

- (a) the reasonable demand for water;
- (b) the amount of water required for the health needs of people and how the water supplier will manage water used by all sector at times of water shortage when restrictions are being placed on all consented uses of water,

and

(c) the effectiveness and efficiency of the distribution network.

3.5.3. Local Policy

Wairarapa Combined District Plan (WCDP)

The WCDP states that non-regulatory methods such as education, partnerships and management plans have been adopted to foster co-operation between the various parties with interests in freshwater environments, and to encourage innovation in finding ways to sustainably manage these environments.

The District Plan also seeks that:

"The efficiency of water use is improved through time, including by means of:

- (a) Efficient infrastructure and application methods, and*
- (b) good management practice, including irrigation, domestic municipal and industry practices, and*
- (c) maximising reuse, recovery and recycling of water and contaminants, and*
- (d) enabling a dynamic water allocation regime."*
- (g) Promote a strategic approach to the management of rivers, lakes, wetlands and their margins and catchments, particularly by using management plans for areas with significant environmental issues that require a collaborative approach with other organisations.*
- (h) Support cooperative relationships with landowners, communities and key stakeholders in managing freshwater environments – for example, environmental care groups."*

3.5.4. Maori Cultural Values

Within Maori, water represents the life blood of Mother Earth (papatuanuku), and supports all forms of life. Maori consider that without water, life would not exist, and this captures the importance of water.

It follows that stewardship (kaitiakitanga) is required so that water's life forces are sustained. The health of water bodies and the life force of their waters also help to determine the mauri of water and mana of water bodies.

The District Plan touches on these matters too. It includes the following policy:

"(a) Recognise Tangata Whenua values and provide for Tangata Whenua to maintain and enhance their traditional relationship with the natural environment.

(b) Have particular regard to the exercise of kaitiakitanga by Tangata Whenua in the management of activities and resources. "

3.6 SWDC Water Supply System

The Council's draft Water Asset Management Plan, prepared in 2014, sets out the scope of Council assets which include water treatment and reticulation assets within the serviced rural and urban communities of Featherston, Greytown and Martinborough. The total population served is 5,925 (2013).

The Plan notes that;

a) the Featherston scheme was initially installed in 1965 and serves a population of 2,253 (2013) with 36 kilometres of water mains. Its estimated replacement cost is \$ 12,433,000.

b) the Greytown scheme was initially installed in 1940. It serves a population of 2,202 (2013) with 30.0 kilometres of mains. Its estimated replacement cost is \$ 17,136,000, and

c) the Martinborough scheme was initially installed in 1960. The population served is 1,470 (2013) and has a replacement cost of \$ 12,485,000.

The water supply systems serve residential, commercial, industrial and community uses in the three towns. In Martinborough some five per cent of the water use is for agricultural production, wine making and vineyards.

The Council's existing Water Supply Policy states that no further extension of water supply use for vineyard irrigation will be permitted.

3.7 Water sources

There are six sources of water for the urban populations of Featherston, Greytown and Martinborough.

Water Source	Total Volume Allowed	Maximum Rates of Take	Expiry date
Featherston Boar Bush Gully	Up to 518,400m ³ / year, at 5,184m ³ / day (Combined with Tait's Creek)	60 litres/sec (Combined with Tait's Creek)	2030
Featherston - Tait's Creek Intake Weir	Up to 518,400m ³ /year, at 5,184m ³ / day. (Combined with Bush Gully)	60 litres/sec (Combined with Bush Gully)	2030
Featherston and Greytown - Waiohine River	9000m ³ / day during normal operation of the plant. Up to 16,000m ³ /day to refill the storage ponds provided that the flow exceeds 4000l/s at the Waiohine River Gorge recorder site.	180 litres/second	2019
Greytown – Supplementary well	900,000 m ³ per year and 5,184 m ³ per day (September to May) and 3,000 m ³ per day (June to August)	60 litres per second.	2037
Martinborough - Herricks Wells	900,000 m ³ / per year at max 7,776 m ³ /day (Oct to April) and up to 4,000 m ³ / day (May to Sept)	90 litres/second (October to April), 50 litres/second (May to September)	2037
Martinborough – Huangarua River Intake	345,600m ³ /year, at max 3,456m ³ / day	40 litres/ second.	2030

Note that the information in this table is a summary. Full details are included in the actual resource consent documents.

3.7.1. Featherston - Boar Bush Gully Catchment

A catchment area of approximately three square kilometres supplies runoff to an earth dam. The reservoir behind the earth dam contains approximately 40 days storage and includes a settling pond immediately upstream. Water flows by gravity from the reservoir to the Boar Bush Holding Tanks.

This source is currently operated as an emergency supply only.

Wellington Regional Council has granted a resource consent for this take (WAR 120050), which expires in 2030.

3.7.2. Featherston - Taits Creek Intake Weir

A concrete intake weir is located across Taits Creek to the north of Featherston. The weir is designed to divert water from the creek into a 300mm gravity trunk main which supplies water to the holding tanks.

This source is currently operated as an emergency supply only.

Wellington Regional Council has granted a resource consent for this take (WAR 120050), which expires in 2030.

3.7.3. Featherston and Greytown - Waiohine River

Water is abstracted from the Waiohine River into a diversion channel (water race) on the river berm from which it is pumped to storage ponds, each having a gross capacity of 18,250,000 litres. There is a proposal to upgrade supply here through three new wells. An application to the Wellington Regional Council to take that water will be required.

Wellington Regional Council has granted a resource consent for the current take (WAR 990142), which expires in 2019

3.7.4. Greytown – Supplementary well

This was a supplementary source of water for Greytown but due to production limitations at the Greytown UF plant it is currently the source for Greytown. The groundwater is abstracted from a single well along Kuratawhiti Street outside the Memorial Baths. Water is pumped directly into the existing mains.

This well will be for emergency use only once the current water supply upgrades have been completed.

The take must not exceed 900,000 m³ per year, and no more than 5,184 m³ per day from September to May and up to 3,000 m³ per day between June and August.

Wellington Regional Council has granted a resource consent for this take (WAR [WAR120244](#)), which expires in 2037.

3.7.5. Martinborough - Herricks Wells

The groundwater is abstracted from three wells approximately 2.5km south east of Martinborough and approximately 650m from the older terraces upon which Martinborough township is located. Water is pumped both directly to the Martinborough urban area and the four town reservoirs.

This is the principal source of water for Martinborough and relies on the groundwater aquifer in the vicinity of the Ruamahanga River.

These reservoirs supply water to the urban area by gravity flow via a 1.8km length of main. As part of the agreement with the landowner, Council can provide water at 20 l/s from a fourth well. The aquifer water wells have elevated levels of iron and manganese.

The three wells are the preferred source of water for Martinborough.

Wellington Regional Council has granted a resource consent for this take (WAR 120245), which expires in 2037.

The take must not exceed 900,000 m³ per year, and no more than 7,776 m³ per day from October to April and up to 4,000 m³ per day between May and September.

3.7.6. Martinborough – Huangarua River Intake

A channel intake is located adjacent to the Huangarua River approximately 200m north of Gladstone Road. The diverted water then flows approximately 50m into a well and is then pumped 1km to the four reservoirs.

This source is currently operated as an emergency supply only.

Wellington Regional Council has granted a resource consent for this take (WAR 120051), which expires in 2030.

3.8 Public reticulated supply as part of all water takes

Council's public reticulated water system use only small proportion of all abstracted water in South Wairarapa. The majority of allocatable water is used for other purposes, particularly to support farming practices.

The Greytown-Featherston Waiohine River take represents 33 per cent of the total allocatable flow. For the Greytown-Featherston bore take the proportion is 4.5 per cent, and for the Martinborough bore take, it is 8.2 per cent.

This means that any savings in water use within Council's reticulated systems will only have a limited positive effect on the wider environment and water availability generally.

Nevertheless, the Council still has a responsibility under the Resource Management Act, the National Freshwater Policy Statement and regional council policies to use water in an efficient, sustainable manner and to apply the principle of kaitiakitanga (stewardship) to its water use.

3.9 Consent requirements

The resource consents obtained from the Wellington Regional Council stipulate that Council needs to operate its water supply systems in accordance with approved Demand Management Plans which need to be approved by the regional council by 31 July 2015.

These plans need to include:

- Description of the network;
- Existing and future demand;
- Methods for water savings;
- Levels of service and key performance indicators;
- Low flow management planning.

It is intended that the Water Conservation Strategy will provide the key directions for these Demand Management Plans.

Specific requirements when rivers are at low flows have also been included in the consents. These are:

3.9.1. Greytown-Featherston River take

The consent allows a water take of up to 180 litres per second with a daily cap of 9,000m³, but general water conservation measures are required to be implemented. Seasonal water conservation measures are required under when water flows are less than 3040 litres per second at the Waiohine Gorge monitoring site.

3.9.2. Greytown-Featherston groundwater take

The permitted take from the well is for up to 60 litres per second and 900,000 m³/year. Seasonal water conservation measures are by required when the flow in the Waiohine River falls below 3395 litres per second at the Waiohine Gorge monitoring site.

3.9.3. Martinborough groundwater take

The permitted take from the well is for up to 90 l/sec and 900,000 m³/year. Seasonal water conservation measures are required when the flow in the Ruamahanga River falls below 8500 litres per /second at the Waerenga monitoring site. Specific guidance is provided as to what the Regional Council considers to be the minimum conservation measures. This guidance requires gardening irrigation using hand held only devices and a restriction on commercial irrigation users to night time (7 pm-7 am) irrigation only.

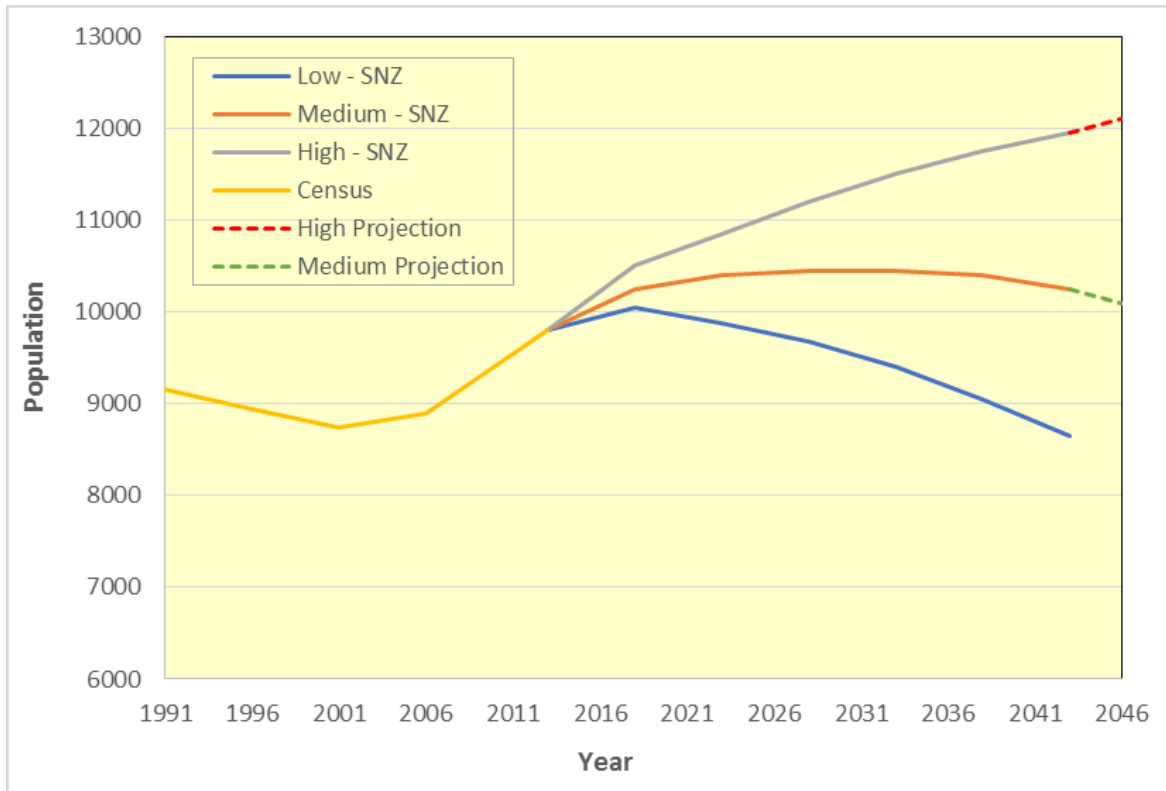
3.10 Demand

Demand in the main, is a result of increased population, new production activities which require water (economic development), climatic variability and change (droughts) and cost.

3.10.1. Population Trends

The District's usually resident population at the 2013 Census was 9,530. It has grown by 9 per cent from 2001, when the population was 8,748. The growth was a reversal from a 4 per cent decline in the period 1991-2001.

The latest Department of Statistics medium population projections based on the 2013 Census show slow to modest growth for the District in the medium growth scenario, which is considered to be the most likely. Even the highest scenario shows a growth of only twenty percent between 2013 and 2046.



District Population Predictions (2013 base)

For the reticulated towns in the District, the draft Water Asset Management Plan includes the following projections:

- Featherston under present conditions continue to suffer a population loss over the next 30 year period that will reduce the population from 2,253 in 2013 to about 1,500 in 2045
- Greytown will under present conditions have marginal population loss over the next 30 year period
- Martinborough will under present conditions suffer a population loss over the next 30 year period that will reduce the population from 1,470 in 2013 to about 1,000 in 2045

These projections do not match the actual 2001-2013 Census counts, nor the expectations outlined in the Wellington Regional Council’s Regional Policy Statement which states that:

“In the Wairarapa.....increasing populations in the region’s urban areas means demand for water supply from rivers, lakes and groundwater is expected to increase.”

This uncertainty about future population growth levels underlines the need to have a precautionary approach to future water use.

3.10.2. Pricing

Average daily water uses for the period 2007 to 2014, indicate that water consumption over all three towns has shown an overall downward trend, but also that there was a peak in water use towards the end of 2014. That peak, however, was lower than other seasonal peaks in 2007, 2009 and 2011.

NOTE: For graph refer to appendix 3 - Water use in South Wairarapa

Universal metering of the reticulated supply was introduced by Council in 2009. The draft Asset Management Plan states that universal metering has reduced the magnitude of peak demand and overall water consumption.

It says that these trends are consistent with Council's objectives of encouraging sustainable usage of the resource. The Plan also says that in spite of reducing consumption, Council plans to maintain active water conservation and leak detection programmes.

3.11 Future areas of service

The draft Water Asset Management Plan states that there are likely to be on-going expectations for water supply network extension beyond the current urban area(s).

The Plan says, however, that unless special circumstances apply, Council will not allow service extension into the rural zoned area(s).

Council's Water Supply Policy states that in the rural zone new water supply connections are for domestic uses only on urban size properties (less than 1,000 square metres), and that to manage demand, supply is limited to 1500 litres per 24 hours only.

However, the Policy also says that:

"Council may provide a new connection of any specification to a rural property provided that the connection is for a Council deemed significant commercial use and it promotes the social, economic, environmental and/or cultural well-being of the community. Any connection provided under this clause will be at Council's absolute discretion. For the avoidance of doubt, no connection will be provided under this clause for any agricultural use or a residential subdivision."

3.12 Climate change

The effect of climate change on future water demand is not clear. The environmental effects of water takes may increase as a result of climate change. The impacts of climate change are potentially significant. For instance the environmental effects of water takes may intensify as a result of climate change.

The Ministry for the Environment has stated that in the Wellington region rainfall effects will vary locally;

"There is expected to be a small increase in rainfall in the Kapiti and Wellington areas, and less rainfall in the Wairarapa. In Masterton, it is likely that there will be little change in average annual rainfall. In Paraparaumu, average annual rainfall is likely to increase by 3% by 2090. Seasonal projections show that Wairarapa is likely to have much less rain in winter and spring, and more rain in summer and autumn. Porirua and Kapiti are likely to have drier summers, with autumn, winter and spring being wetter."

The Ministry then goes on to state:

"Very heavy rainfall events are likely to become more frequent, especially in the Tararuas during north westerly storms, and in Wellington city and south Wairarapa during southerly storms", and

"By 2090, for the Wellington region and the Wairarapa in particular, the time spent in drought ranges from minimal change through to more than double, depending upon the climate model and emissions scenario considered. More frequent droughts are likely to lead to water shortages, increased demand for irrigation and increased risk of wild fires."

These climate change predictions suggest that in the longer term, the need for conservative and sustainable water use in the Wairarapa will be even more important than now.

3.13 Water conservation methods

The need for water conservation is widely accepted in New Zealand. In recent times councils such as Wellington City Council, Kapiti Coast District Council and Dunedin City Council have adopted water conservation strategies. The actions in those strategies appear very similar, although Kapiti District Council has been more pro-active in adopting compulsory engineering codes in district plans requiring water conservation.

Water conservation methods seek to change water use behaviours, either through education and information provision, coercion, economic instruments, or regulation. It is expected that these will result in more conscious and responsible water use.

Typical methods used include:

3.13.1. Education

- Educating consumers on the need for water conservation;
- Educating consumers of effective conservation methods;
- Using and promoting appliances with high water efficiency ratings;
- Collecting and using rainwater;
- Applying water efficiency methods into new homes or businesses, or retrofitting existing buildings to promote greater efficiency;
- Fixing leaking taps and appliances and pipes on private property; and

- Promoting water efficient household machines (front load washing machines, economical shower nozzles, dual flush toilets etc).

3.13.2. Economic instruments

- Measuring water use;
- Requiring payment for used water, so that it becomes clear that water use is not free and there is a cost;
- Councils having effective maintenance, renewal and leak detection and repair systems in place;
- Using and promoting appliances with high water efficiency ratings;
- Subsidizing systems which collect and use rainwater;
- Subsidizing water efficiency methods into new homes or businesses, or retrofitting existing buildings to promote greater efficiency;
- Subsidizing water efficient household machines (front load washing machines, economical water saving nozzles, dual flush toilets etc).

3.13.3. Regulation

- Requiring water efficiency methods in new homes or businesses, to promote greater efficiency through district plan rules. Kapiti Coast District Council has introduced rules for new buildings.
- Requiring rain water collection systems for new buildings through district plan rules, for use of rain water for uses such as gardening, car washing and toilet flushing.
- Bylaw provisions to regulate water use so that it is used prudently, particularly in times of low flowing rivers and drought.
- Demand Management Plans required by regional councils.

3.14 Current Council approaches to demand management

The South Wairarapa District Council already uses a number of these methods to manage the demand for water.

The Council's draft Water Activity Management Plan indicates the Council's existing and proposed demand management activities. The key components are:

Strategy	Objective	Existing or Proposed	Description
Operations	Reduce water losses by leakage detection.	Existing	Ongoing leak detection programme
	water loss monitoring	Proposed	Greater understanding of water loss
	Technical Standards	Existing	Ensuring new assets are constructed and tested (to the appropriate standards) standards prior to commissioning
	Codes of Practice	Existing	Ensuring maintenance is carried out to relevant standards reducing the incidence

Strategy	Objective	Existing or Proposed	Description
			of faults/leaks
	Response time	Existing	Prompt response and repair of reported leaks
	Water Restrictions	Existing	Used to manage peak demand. Water restrictions typically include limits on the use of garden hoses
Renewal / Rehabilitation programme	Ensure assets are not utilised beyond their useful life (where the risk of unpredictable failure is greatly increased)	Existing	Long term renewal programme
Council Water Bylaw	To prohibit water wastage and to ensure prudent use	Existing	Requires consumers to comply with any water restrictions, periods of unusually high demand or emergencies
Education	Water conservation programmes aimed at increasing community awareness of the benefits of conserving water and reducing water demand.	Existing	Programmes include information on ways to conserve water and using the print media or Council's website
		Proposed	Public signage in key locations
			New household conservation technologies (showerheads, dual flush toilets etc)
Water metering and Usage charging	Price water to help manage demand	Existing	Water meters are installed for all connections and users pay a flat charge and a rate for all water consumed over 350m ³

It is proposed that the activities of this plan will be carried out.

3.15 A Water Conservation Strategy framework

With falling water use over 2009-2014 and a stable or modestly growing population, it is considered that Council should set a primary aim of maintaining future reticulated water use at current levels, with a secondary aim of reducing demand for water at times of low river flows when environmental impacts of water takes are high.

Council would seek to accommodate growth in the next ten years within the current allocation of water. This is similar to the approach adopted by Wellington City Council in 2011.

These aims are feasible, practical and achievable and build on initiatives already in place, as well as allowing for better co-ordination of these.

It would not require significant additional financial resources beyond what has been included in the Council's 2015-2025 Ten Year Plan, for the 2015-2018 period.

The success of the approach should be evaluated before Council finalises its next Ten Year Plan for 2018-2028.

The proposed aim of the Strategy would thus be:

To maintain future reticulated water use in the District to the levels of 2014 so as to reduce demand for water at times of low river flows when environmental impacts of water takes are high.

The key actions in the strategy would be to:

- *foster a community culture of conservation and efficiency promotion across the Council, businesses and the District's residents based on increased knowledge within our communities about water use and conservation issues;*
- *put in place educational and regulatory measures to help reduce demand for water, particularly when river flows are low, and environmental impact of water takes is high;*
- *have robust asset management in place so that the Council's water supply system is efficient; and*
- *create clarity and certainty about where reticulated water will be supplied.*

These initiatives would mean that Council can continue its current sound asset management approach which focuses on water metering, a pricing model allowing basic domestic level water use without charge, and prudent, prompt maintenance, renewal and leak detection activities.

The regulatory approach would continue its focus on limiting new connections to the existing urban water supply systems and having bylaw controls targeting water use at peak demand times.

The current educational activities advising the community on the need to use water prudently, particularly during summer months, would also continue, but more intensively.

Some additional activities and actions should also be undertaken. It is considered that these can be undertaken within the general scope of the resources made available in the draft Water Activity Management Plan and Proposed 2015-2025 Ten Year Plan.

The proposed new activities would be:

- *increased monitoring of unaccounted water loss;*
- *display of permanent signs in key locations in and near the reticulated townships promoting the need for water conservation. Additional signs should be displayed at times of low river flows, and during the late summer;*
- *an enhanced education programme, which includes the targeting of major water users, schools, community groups and retailers. This can*

be based on information already used by other authorities in the Wellington Region;

- *increased enforcement of bylaw provisions restricting water use in periods of high demand and low river flows; and*
- *the promotion of new household conservation technologies (economical showerheads, dual flush toilets etc) and on-site rainwater storage by making available information on these.*

The effectiveness of this approach should be monitored from now to 2018.

If in 2018, it appears that the target of stabilizing use can be met, then no further additional actions would be required.

At this stage, it is also considered that further regulatory initiatives making household conservation technologies compulsory should not be promulgated (e.g. a compulsory requirement for rain water storage tanks or dual reticulation systems in new buildings or gathering rain water for gardening, washing of cars and other uses that do not require potable water).

The reasons for this are:

- the cost benefit analyses for such regulations are not conclusive, and retrofitting existing buildings and infrastructure is expensive;
- the costs to Council of developing and implementing such regulations are high;
- the community costs to comply with such a policy are likely to be high;
- the gains made from such regulation in areas with modest growth are slow;
- the adverse amenity effects (less garden and green space, visual pollution) have not been investigated; and
- because of the combined nature of the Wairarapa District Plan, a joint approach with the other councils in the plans' jurisdiction would be expected. A joint approach has not been contemplated at this stage.

If this approach does not appear to be meeting the target of stabilizing water use, then the Council should consider within the process of preparing its 2018-2028 Long Term Plan whether additional actions and resources are required.

Such actions could include:

- *introduction of seasonal pricing, making water more expensive in summer or at times of drought, thus better reflecting the true cost of water supply which is determined by peak demands;*
- *lower water charges when alternative sources or water saving hardware are being used;*
- *changing of the district plan provisions on matters such as rain water storage, and use of more efficient reticulation and delivery systems in new buildings;*
- *consideration of larger reservoir storage areas to allow for distribution in summer of water abstracted from rivers in winter;*

- *increased leak detection activities, higher maintenance activity and increased pace of infrastructure renewals in order to conserve water; and*
- *review of the bylaw (further provisions on car washing, garden irrigation, requirements to fix leaks, penalties).*

4. Conclusion

This report suggests a staged approach to water conservation, and a target of limiting future water use to levels reached in 2014.

This target can be reached by implementing practical and relatively low cost steps to foster a community culture of water conservation and efficiency. It can be promoted across Council, businesses and residents based on increased knowledge about water use and conservation issues.

This requires Council to put in place educational and regulatory measures to help reduce demand for water, particularly when river flows are low, and environmental impact of water takes is high.

Robust asset management practices should be put in place so that the Council's water supply system is efficient and clarity should be created about where reticulated water will be supplied.

Regulatory requirements to require water conservation practices for new developments are not promoted, because the costs and the costs and benefits of such measures are not clear and such measures are likely to have limited effect in a modest growth environment.

The effects of Council's approach can be evaluated over the next few years. If the approach does not meet the target of stabilising water use to 2014 levels, Council may wish to introduce further measures in the 2018-2028 Long Term Plan, to reduce demand for water.

5. Appendices

Appendix 1 - South Wairarapa District Council Water Conservation Strategy 2015

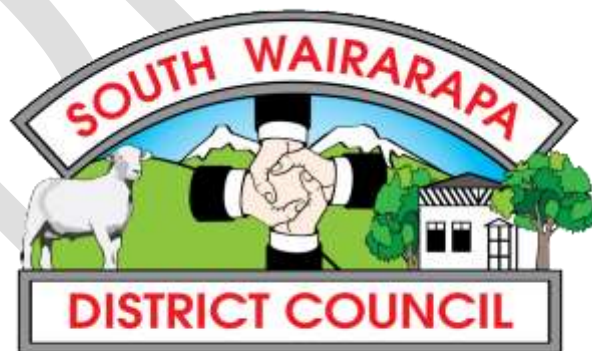
Appendix 2 - South Wairarapa Water Demand Management Plan 2015

Appendix 3 - SWDC Water Use Graph

Contact Officers: Bill Sloan, Assets and Operations Manager and Murray Buchanan, Group Manager Planning and Environment.

Appendix 1 – Wairarapa District Council Water Conservation Strategy 2015

South Wairarapa Water Conservation Strategy 2015



Background

The South Wairarapa Water Conservation Strategy 2015 is about promoting sustainable use of water supplied by the reticulated water supply systems in the three urban communities of Featherston, Martinborough and Greytown.

The purpose of the Strategy is to establish the principles which apply to managing water supply and demand, infrastructure, regulatory controls and community engagement around water use in South Wairarapa.

A reliable supply of water is crucial for people's economic, environmental, recreational, health, and social wellbeing.

Abstraction of water can also have adverse effects on the environment, particularly in summer when river flows can be low. Like all users of freshwater, the Council is required under the Resource Management Act to promote the sustainable use of water.

Central, regional and South Wairarapa District Council's own policy frameworks reinforce that requirement.



South Wairarapa's water supply system

South Wairarapa's water supply is known as a 'run-of-the river' system. Effectively, the water that passes through our water supply catchments today provides the water we consume tomorrow.

Water is derived from rivers and aquifers close to the reticulated towns of Featherston, Greytown and Martinborough. Very little of our water demand is met by water stored in a longer term bulk supply.

This means that the supply can be significantly affected by weather conditions, low river flow conditions or spikes in consumption.

Council's own actions in the past five years have led to a slight reduction in reticulated water use. The introduction of water metering and the charging of residents for water beyond standard use appear to have contributed to stabilising water use. Education and the promotion of sustainable water use by the Council are also likely to have assisted.

It is important that the Council continues to promote responsible water use. There are immediate benefits:

- It avoids the need for additional water sources and infrastructure;
- It reduces energy and cost associated with water treatment and distribution; and
- It reduces costs to the local community while ensuring supplies are reliable in the long term.

Wider environmental impact is also important.

Wellington Regional Council information indicates that in Wairarapa, the amount of water taken for farm pasture irrigation has more than doubled over the last ten years. The regional council also states that increasing populations in urban areas means demand for water supply from rivers, lakes and groundwater is expected to increase. The regional council has noted that groundwater levels in some Wairarapa aquifers are declining year by year.

Lowered groundwater levels can affect the flow of springs and rivers and streams, and water levels in wetlands can eventually dry up, permanently affecting dependent ecosystems.

Responsible water use is thus important for environmental reasons:

- It mitigates environmental effects such as impacts on natural flows of rivers and streams, and water levels in aquifers.
- It helps to protect freshwater flora and fauna, and natural features such as wetlands and lakes.
- It helps to protect cultural values of freshwater bodies, including Maori cultural values such as the mauri of water and mana of water bodies.



Council is also concerned about the effects of climate change, which in the longer term may lead to less rainfall in summer and additional pressures on the Council's supply systems.

Benefits from water conservation therefore spread over a variety of social, cultural, economic and environmental outcomes.

The Water Conservation Strategy is responding to national, regional and local (territorial) policies and statutory requirements. Maori cultural values about water use are also relevant.

The South Wairarapa District Council has obtained resource consents from the Wellington Regional Council for the water takes for its reticulated supply systems. Conditions on those consents require the District Council to take steps to use water more efficiently and to reduce peak demand during times of drought and low river flows.

Council's reticulated water supplies are not the only users of Wairarapa freshwater. The majority of allocatable water is used for other purposes, particularly to support farming practices. Nevertheless, the Council is required by legislation and national and regional resource management policies to use water in a sustainable manner and to avoid, remedy or mitigate adverse effects of that use. The Council's own district plan policies also require sustainable use of water resources.

Possible actions

Experience both in New Zealand and overseas indicates that a combination of approaches is necessary to manage and reduce demand for water. Typical actions to reduce water use by the Council and community can revolve around minimization of use, efficiency gains and alternative sources.

Minimization of use.

This is where we do fewer things that use water, such as not watering the garden as frequently, not washing the car, using buckets rather than hoses for car washing, only running the dishwasher when it's full, or using the shower less often or for shorter periods. Gardening techniques of using only hand held garden watering devices and applying mulch to gardens are also effective.

It also involves people changing their behaviours. Behavioural change can be realised by education, information provision, instilling community pride, and economic instruments. The latter include water metering and pricing mechanisms. Some changes take a long time. Others, such as those resulting from water charging, can be made more immediately. If behavioural changes can be made, conservation measures are generally low cost and can be implemented straight away.

Conservation is also a very important tool when water supplies become unusually low, such as in dry summers or after natural events that disrupt water supplies. In these circumstances some water conservation measures will be promoted and required at short notice by the Council. These measures may be made compulsory.



Efficiency gains

These can be made when Council and users use management tools and hardware to obtain the same level of benefits from using water, but with the use of less water.

Examples of water efficiency measures include detecting and fixing leaks in the Council owned infrastructure and on private land and installing water conservation measures such as low-flow shower heads, front loading washing machines, and low or dual flush toilets.

Alternative sources

Alternative sources through the collection and use of rainwater tanks and grey-water systems can also be promoted.

Additional water efficiency measures and alternative sources are more sustainable over time, since people generally do not need to change their behaviour for them to be effective. However, they tend to be more expensive and take longer to implement.

Strategy aim

With falling water use over 2009-2014 and a stable or modestly growing population, Council has set a primary aim of maintaining future reticulated water use at current levels, with a secondary aim of reducing demand for water at times of low river flows when environmental impacts of water takes are high.

Council seeks to accommodate growth in the next ten years within the current allocation of water. This is similar to the approach adopted by Wellington City Council in 2011.

The success of the approach should be evaluated before Council finalises its next Ten Year Plan for 2018-2028.

The proposed aim of the Strategy would thus be:

To maintain future reticulated water use in the District to the levels of 2014 so as to reduce demand for water at times of low river flows when environmental impacts of water takes are high.

In the District, peak demands occur in summer, with February generally being the month of highest use. River flows in summer also tend to be lower, and the environmental impact of water takes is the highest at that time.

The size of the water infrastructure needed to ensure a secure supply is determined by the peak demand during dry periods.

For that reason and because of the environmental impact of water takes being the highest in summer, Council's minimisation of water use and efficiency improvements should focus on that period.

The Council considers that in the medium to longer term only increased efficiency and changes in our water use behaviour will ensure that we can live within our means.

The District's overall water demand has been tracking downwards over the past five years. This is primarily a result of the introduction of universal water metering in 2009. Council's active leak detection work and increased public awareness of water conservation issues also have contributed.

Without any new major interventions, the downward trend may plateau in the future and demand may then rise incrementally with increases to the population and overall economic growth and wealth.

The actions derived from this Strategy are intended to:

1. Foster a community culture of conservation and efficiency promotion across the Council, businesses and the District's residents based on increased knowledge within our communities about water use and conservation issues,

2. Put in place regulatory measures to help reduce demand for water, particularly when river flows are low and environmental impact of water takes is high.
3. Have a robust asset management plan in place so that the Council's water supply system is efficient.
4. Create clarity about where reticulated water will be supplied and when not.



Rationale

It is considered that the Council's existing approach to reticulated water use has been sound. The introduction of water metering and a user pays pricing model for high domestic use in particular has helped reduce water use.

Robust asset management practices including leak detection and repair programmes and maintenance and renewal practices are in place.

Basic educational tools and information provision systems are in place, and Council bylaws require responsible use and allow for seasonal restrictions.

The strategy builds on the past approach, and suggests some more minor new actions.

The Strategy's aims are feasible, practical and achievable and build on initiatives already in place, as well as allowing for better co-ordination of these.

It would not require significant additional financial resources beyond what has been included in the Council's 2015-2025 Ten Year Plan.

Significant new initiatives to further reduce water use are not contemplated in the next three years, as such initiatives can be expensive, particularly if retrofitting of existing buildings and infrastructure is required. Such initiatives may be unnecessarily restrictive on the community and the effectiveness is likely to be marginal.

Proposed actions 2015-18

In the period 2015-18 Council will:

1. Foster a community water conservation culture

To establish a community culture that delivers sustainable water conservation practices requires a consistent approach from the Council with clear and enduring messaging, and engagement of relevant community agents to reinforce such messaging.

This approach will include:

- Council making available to the community relevant and accessible information on the financial and environmental costs of water use and promoting water saving and efficiency practices available to citizens.
- Council promoting the introduction of low environmental design practices (rainwater tanks, dual reticulation of potable/non potable household systems).
- Council making available education material to schools, community groups, and retailers.
- Council being a community leader on establishing sustainable water use practices in its own buildings and on its parks and reserves.
- Council working co-operatively with the District's water users with the aim of reducing water use, and communicating the results of these efforts to the wider community.
- Council considering the introduction of a permissive regulatory approach for such practices (installation of rainwater tanks (in side yards), dual reticulation of potable/non potable household systems). This should involve consideration of matters such as fees on resource consent applications for not meeting district plan rules or a change to the Plan to enable these activities to occur "as of right".



2. Put in place regulatory measures to help reduce demand for water, particularly when river flows are low, and environmental impact of water takes is high.

The approach will include:

- Using the Council's bylaw (The Masterton and South Wairarapa District Councils' Consolidated Bylaw 2012 (Part Five, Water Supply) to require responsible water use practices by the community.
- Using and enforcing the bylaw provisions restricting water use for non-essential purposes during periods of high demand and low river flows. This includes additional provision of advice, erection of sign boards and additional enforcement action at such times.
- Developing and implementing a programme of seasonal information distribution which will precede possible bylaw restrictions on water use at periods of low river flows and high water demand.

3. Have a robust asset management plan in place so that the Council's water supply system is efficient.

This approach will include:

- Increasing Council's monitoring and investigation of unaccounted water losses, and taking actions to reduce such losses. Continuing to use Council's successful water metering and pricing system as a demand control instrument.
- Ensuring that Council's water supply is well maintained, renewals are carried out before parts of the system lead to inefficiencies, and leaks are detected and repaired in a timely manner.

- Inviting the community to report suspected leaks, and providing timely responses to such reports.

4. Create clarity about where reticulated water will be supplied.

Council has a policy that restricts new connections in the rural area, subject to a limited number of exclusions. This policy should continue in the short term.

The approach will include:

- Continuing Council's its urban limits policy, which means that generally no new connections will be provided outside current urban areas.
- Reviewing using reticulated supplies in Martinborough for vineyard irrigation and to work with these vineyards to enable a shift to alternative water sources.

Possible actions beyond 2018

If in 2018, it appears that the target of stabilizing use can be met, then no further additional actions would be required.

If further actions are required post 2018, Council will, while taking into account the effectiveness of its water conservation actions in 2015-2018, consider further additional approaches.

These further approaches could include:

1. Foster a community water conservation culture

Additional approaches:

- Employing or contracting of environmental education personnel, possibly in conjunction with other Wairarapa Councils and Wellington Regional Council; and
- Providing Council grants to assist with the installation of water conservation devices such as low flow showers, water saving toilets, front-loading washing machines, rainwater storage tanks, and grey water (dual reticulation) supply systems.

2. Put in place regulatory measures to help reduce demand for water, particularly when river flows are low, and environmental impact of water takes is high.

Additional approaches

- Introducing seasonal pricing regimes for water consumption, where higher prices are payable when demand is high, and

- Introducing subsidies or regulatory requirements to install water conservation devices such as low flow showers, water saving toilets, front-loading washing machines, rainwater storage tanks, grey water (dual reticulation) supply systems.

3. Have a robust asset management plan in place so that the Council's water supply system is efficient.

Additional approaches:

- Increasing capital expenditure to ensure higher levels of leak detection and system maintenance, and
- Considering larger reservoirs to allow for more abstraction at times of higher river flows for use at times of low flows.

4. Create clarity about where reticulated water will be supplied and when not.

Additional approaches:

The Policy could be made clearer so that there is a general exclusion of new connections outside the urban area unless:

- Council mains are already present in the area;
- Provision of alternative water supply is not practical or economical; and
- There are tangible economic or environmental benefits to the provision.

Council could also consider further reducing exceptions of supply from the reticulated services and reinforcing the policy that no new reticulation connections will be provided outside of the current urban areas.

Details on the actions above are included in the South Wairarapa District Council Water demand Management Plan 2015.

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Overall assessment and reporting

The progress on implementing these actions and their impact on water use will be reported back to Council in late 2017.

That report will confirm the implementation of the activities, assess their relative performance in achieving the stated outcomes and identify any further development that might be required.



Reporting will also identify how the activity will be further advanced across the District and provide for updated performance targets or outcomes. The report will consider whether the possible further actions outlined in this Plan for implementation in 2018 will likely be required.

Appendix 2 – South Wairarapa Water Demand Management Plan 2015

South Wairarapa District Council
Water Demand Management Plan 2015



1. Introduction

The South Wairarapa District Council's Water Conservation Management Strategy 2015 contains a number of actions for the period 2015-2018 and lists possible actions for the period beyond 2018.

This South Wairarapa District Council Water Demand Management Plan 2015 provides further detail on these actions, and when these are proposed to be implemented.

This Plan also sets out details that would help satisfy the conditions on resource consents obtained from the Wellington Regional Council stipulating that the South Wairarapa District Council needs to operate its water supply systems in accordance with approved Demand Management Plans which need to be approved by the regional council by 31 July 2015.

These Plans need to include:

- Description of the network;
- Existing and future demand;
- Methods for water savings;
- Levels of service and key performance indicators;
- Low flow management planning.

This document, in conjunction with the Council's draft Water Asset Management Plan aims to help to satisfy those conditions.

2. Description of network

The South Wairarapa District Council supplies reticulated water to its three urban communities in Featherston, Greytown and Martinborough.

The Council's draft Water Asset Management Plan, prepared in 2014, sets out the detail of Council assets which include water treatment and reticulation assets within the serviced rural and urban communities of Featherston, Greytown and Martinborough.

The total population served is 5,925 (2013).

The Plan notes that the Featherston scheme was initially installed in 1965 and serves a population of 2,253 (2013) with 36 kilometres of water mains. Its estimated replacement cost is \$ 12,433,000.

The Greytown scheme was initially installed in 1940. It serves a population of 2,202 (2013) with 30.0 kilometres of mains. Its estimated replacement cost is \$17,136,000.

The Martinborough scheme was initially installed in 1960. The population served is 1,470 (2013) and has a replacement cost of \$ 12,485,000.

The water supply systems serve residential, commercial, industrial and community uses in the three towns. In Martinborough some five per cent of the water use is for agricultural production, wine making and vineyards.

There are six sources of water for the urban populations of Featherston, Greytown and Martinborough:

1. Featherston - Boar Bush Gully Catchment

A catchment area of approximately 3 km² supplies runoff to an earth dam. The reservoir behind the earth dam contains approximately 40 days storage and includes a settling pond immediately upstream. Water flows by gravity from the reservoir to the Boar Bush Holding Tanks.

This source is currently operated as an emergency supply only.

Wellington Regional Council has granted a resource consent for this take (WAR 120050), which expires in 2030.

2. Featherston - Taits Creek Intake Weir

A concrete intake weir is located across Taits Creek to the north of Featherston. The weir is designed to divert water from the creek into a 300mm gravity trunk main which supplies water to the holding tanks.

This source is currently operated as an emergency supply only.

Wellington Regional Council has granted a resource consent for this take (WAR 120050), which expires in 2030.

3. Featherston and Greytown - Waiohine River

Water is abstracted from the Waiohine River into a diversion channel (water race) on the river berm from which it is pumped to storage ponds, each having a gross capacity of 18,250,000 litres. There is a proposal to upgrade supply here through three new wells. An application to the Wellington Regional Council to take that water will be required.

Wellington Regional Council has granted a resource consent for the current take (WAR 990142), which expires in 2019.

The take must not exceed 900,000 m³ per year, and no more than 5,184 m³ per day from September to May and up to 3,000 m³ per day between June and August.

4. Greytown – Supplementary well

This was a supplementary source of water for Greytown but due to production limitations at the Greytown UF plant it is currently the source for Greytown. The groundwater is abstracted from a single well along Kuratawhiti Street outside the Memorial Baths. Water is pumped directly into the existing mains.

This well will be for emergency use only once the current water supply upgrades have been completed.

Wellington Regional Council has granted a resource consent for this take (WAR 120244), which expires in 2037.

5. Martinborough - Herricks Wells

The groundwater is abstracted from three wells approximately 2.5km south east of Martinborough and approximately 650m from the older terraces upon which Martinborough township is located. Water is pumped both directly to the Martinborough urban area and the four town reservoirs.

This is the principal source of water for Martinborough and relies on the groundwater aquifer in the vicinity of the Ruamahanga River.

These reservoirs supply water to the urban area by gravity flow via a 1.8km length of main. As part of the agreement with the landowner, Council can provide water at 20 l/s from a fourth well. The aquifer water wells have elevated levels of iron and manganese.

The three wells are the preferred source of water for Martinborough.

Wellington Regional Council has granted a resource consent for this take (WAR 120245), which expires in 2037.

The take must not exceed 900,000 m³ per year, and no more than 7,776 m³ per day from October to April and up to 4,000 m³ per day between May and September.

6. Martinborough – Huangarua River Intake

A channel intake is located adjacent to the Huangarua River approximately 200m north of Gladstone Road. The diverted water then flows approximately 50m into a well and is then pumped 1km to the four reservoirs.

This source is currently operated as an emergency supply only.

Wellington Regional Council has granted a resource consent for this take (WAR 120051), which expires in 2030.

More details of the network are available in the Council’s draft Water Supply Asset Management Plan, which is attached as Appendix A.

3. Existing and future demand

Future demand for water is related to population growth, number of future connections, water demand patterns, and leak detection and repair activities.

Council’s draft Water Asset Management Plan contains a summary of population projections as follows:

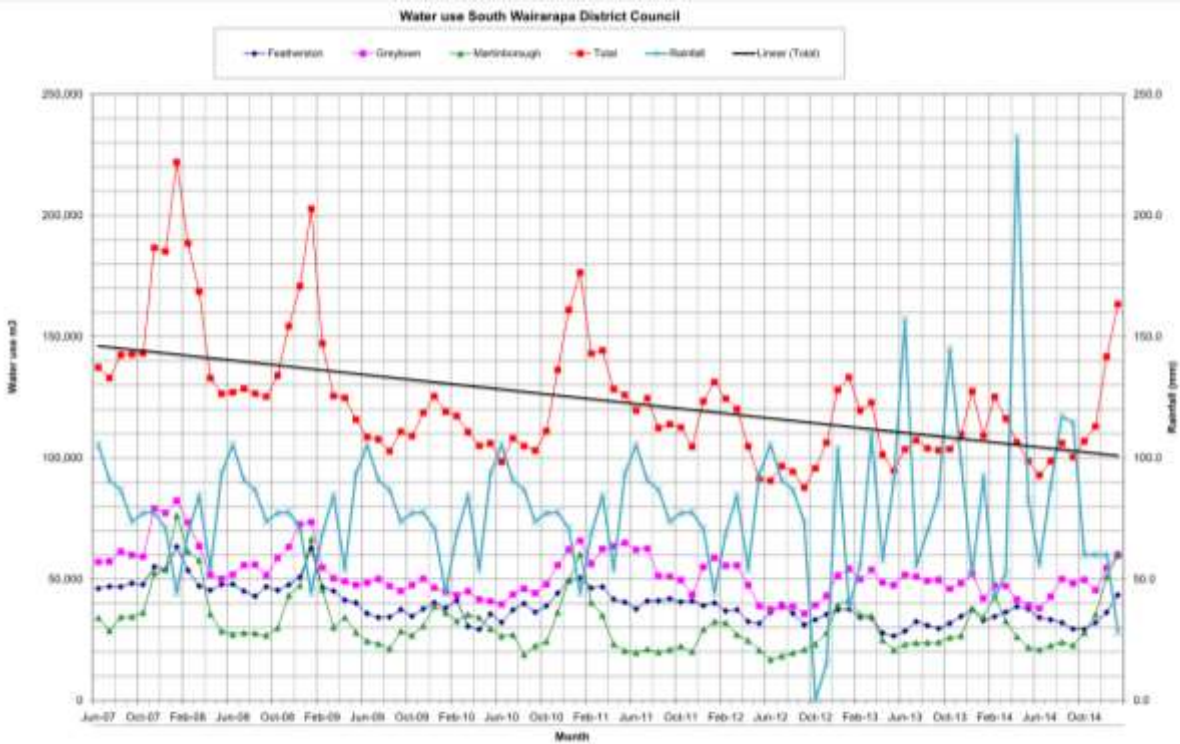
- Featherston will continue to have a negative population growth over the next 30 year period that will reduce the population from 2,253 in 2013 to about 1,500 in 2045;
- Greytown will have marginally negative population growth over the next 30 year period; and
- Martinborough will continue to have a negative population growth over the next 30 year period that will reduce the population from 1,470 in 2013 to about 1,000 in 2045

The draft Water Asset Management Plan notes the following the number of sections serviced with reticulated water supply that have been created since 2006 for each urban area by way of new subdivision or infill development are presented below.

Locality	Number of New Serviceable Lots 2006-2011	Number of New Serviceable Lots 2012-2014	Total	
Featherston	61	26	87	
Greytown	95	64	159	
Martinborough	38	116	154	
Total	194	206	400	

The Plan also states that the current level of activity indicates a slowing of growth as indicated by new subdivision and significant growth or take up of Water Services is not anticipated during the term of the Plan, which considers asset management activities until 2025.

The average daily water use for the period 2007 to 2014 indicate that water consumption over all three towns has shown a downward trend.



The adoption of universal metering has reduced the magnitude of peak demand and overall water consumption. These outcomes are consistent with Council’s objectives of encouraging sustainable usage of the resource. Water metering will continue as a key means to promote responsible water use.

Council is also continuing with its leak detection programme. Significant levels of Unaccounted for Water (UFW) or leakage were detected in Greytown during 2011. This loss was addressed by undertaking a programme of repair work both on public and private land. The programme is ongoing with leakage surveys carried out for each of the three serviced communities on a regular basis.

More details on future demand are available in the Council’s draft Water Supply Asset Management Plan, which is attached as Appendix A.

4. Methods of water savings

In line with the Council's Water Conservation Strategy, the Council will take the following steps to promote sustainable use of reticulated water in the District.

1. Foster a community water conservation culture

To establish a community culture that delivers sustainable water conservation practices requires a consistent approach from the Council with clear and enduring messaging, and engagement of relevant community agents to reinforce such messaging.

This approach will include:

- Council making available to the community relevant and accessible information on the financial and environmental costs of water use and promoting water saving and efficiency practices available to citizens.
- Council promoting the introduction of low environmental design practices (rainwater tanks, dual reticulation of potable/non potable household systems).
- Council making available education material to schools, community groups, and retailers.
- Council being a community leader on establishing sustainable water use practices in its own buildings and on its parks and reserves.
- Council working co-operatively with the District's water users with the aim of reducing water use, and communicating the results of these efforts to the wider community.
- Council considering the introduction of a permissive regulatory approach for such practices (installation of rainwater tanks (in side yards), dual reticulation of potable/non potable household systems). This should involve consideration of matters such as fees on resource consent applications for not meeting district plan rules or a change to the Plan to enable these activities to occur "as of right".

The key themes and targets for the education campaign are to:

- Spread the message that
 - ▶ we are all in the water conservation business together;
 - ▶ if the targets of the strategy are not met, this may result in additional community costs (such as further water abstraction and adverse environmental effects); and
 - ▶ rate rises to provide resources for additional storage, increased maintenance and accelerated renewals or even water shortages.
- Increase the awareness of the water conservation and efficiency issues facing the District by

- ▶ providing information to businesses, schools, clubs and residents as to what technologies are available to meet their individual needs;
- Making water conservation part of everyday life in the District;
- Building better relationships with the community and local schools to increase knowledge about water conservation; and
- Ensuring information is effective to enable behaviour change.

The campaign must allow the District’s residents to get information about:

- Water consumption by geographical areas and user groups so as to provide the ability to target conservation messages by area;
- water consumption patterns and behaviours to help target future water conservation actions;
- how mulch and water-efficient plants and irrigation tools can reduce the water needs of their lawns and gardens;
- how water-efficient appliances such as front-loading washing machines can reduce water consumption and save money on power how bathroom fittings can save water without reducing the enjoyment of a relaxing shower;
- how simple actions around the home and business can save water and potentially energy costs;
- what options are available for rainwater harvesting, grey-water recycling and what steps need to be followed;
- how to check for leaks around the house;
- how to report leaks to the Council;
- how to calculate their own water consumption or see how efficient their shower is; and
- where to find information on water conservation and efficiency or purchase water-efficient goods and services.

This campaign will include:

- Council making available, on an ongoing basis, to the community relevant and accessible information on the financial and environmental costs of water use and promoting water saving and efficiency practices available to citizens.

Timing of actions:	
Engage the Community Boards	2015
Establishing water conservation website page	2015
Regular reporting of water conservation news in Council publications	2015-2018
Issue regular and consistent press releases on water conservation	2015-2018
Erect billboards in prominent locations in the three reticulated communities to promote water conservation	2015

- Council promoting the introduction of low environmental design practices (rainwater tanks, dual reticulation of potable/non potable household systems).

At this stage, introducing regulatory requirements to install such practices is not considered feasible, economic or necessary. However, voluntary installation is supported and encouraged, and Council will make information available.

<p>Timing of actions:</p> <p>Preparing/adapting of information on of low environmental design practices. Publish on Council website, and distribute to retailers.</p>	2015
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- Council making available education material to schools, community groups, and retailers.

<p>Timing of actions:</p> <p>Preparing/adapting of educational material, based on existing information from Wellington Regional Council and other sources. Publish on Council website, and distribute to schools, community groups and retailers.</p>	2015
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- Council being a community leader on establishing sustainable water use practices in its own buildings and on its parks and reserves.

The key objectives are for the Council, as a major water user to be prudent about its own water use and seen to be leading by example.

This may lead to:

- Application of water saving techniques in Council buildings (water saving nozzles, dual flush toilets) as part of regular maintenance programmes
- Adoption of water conservation practices in Council parks and reserves, including increased use of mulch, use of rain water tanks and acceptance that lawn and sports fields may not always look green in summer.

Timing of actions:

Setting up a project to consider identification and implementation of Council becoming community leader on establishing sustainable water use practices in its own buildings and on its parks and reserves.

Establish internal project team	2015
Identify possible actions	
Implement low/no cost proposals	2016

- Council working co-operatively with the District’s largest water users with the aim of reducing water use, and communicating the results of these efforts to the wider community. The Council itself will be included in this project.

Timing of actions:

Setting up a project to identify the District’s largest water users largest and to scope possible proposals to reduce water use, particularly at times of low river flows.

Identify largest water users	2015
Establish project team	2016
Develop water saving proposals and implement these	2016-2018
Report and celebrate successes	Ongoing

- Council will promote the introduction of low environmental design practices (rainwater tanks, dual reticulation of potable/non potable household systems).

This activity is intended to maximise the level of information available to consumers about technologies and services available. Work has already been done by Wellington Regional Council with its ‘Be the Difference’ programme and this will dovetail with that initiative.

Although the replacement of older less-efficient water fittings and appliances will follow a natural course, it will require an increased level of participation if there is to be an acceleration of this process. The introduction of dual-flush or low-volume toilets, low-flow showerheads, front-loading washing machines, efficient dishwashers, rainwater harvesting, grey-water recycling and designed irrigation systems has resulted in the possibility of water and energy savings being attractive to different water users.

This work will be advanced by:

- Providing information to local retailers and service providers to increase awareness of, and access to, water conservation and efficiency appliances, fittings and services.

- Increased knowledge of Water Efficiency Labelling Scheme (WELS) regulations.
- In the longer term, the possible adoption of pricing structures for water that promote the installation of such devices.

Timing of actions:	
Collect and distribute information on low environmental design practices (rainwater tanks, dual reticulation of potable/non potable household systems).	
Collect information from Wellington Regional Council and other sources	2015
Publish information on Council website	2016
Distribute leaflets to retailers	2016

- Council will also consider the introduction of a permissive regulatory framework for such practices (rainwater tanks, dual reticulation of potable/non potable household systems). This may need consideration of matters such as waiving or reducing fees on resource consent applications for not meeting district plan rules on setbacks or preferably a change to the Plan to enable such activities "as of right".

Timing of actions:	
Council to liaise with other Wairarapa councils on scope of issue, and need for review of district plan provisions	2016
Review of fees and charges	2018

See Appendix B for further details on education/promotion material.

2. Put in place regulatory measures to help reduce demand for water, particularly when river flows are low, and environmental impact of water takes is high.

The purpose of the current Masterton and South Wairarapa District Council's Consolidated Bylaw 2012 is:

1. Identifying, limiting and restricting water use activities that are not suitable during high demand or drought periods.
2. Setting a clear expectation that all reticulated water users must comply with notified water restrictions; and
3. Passing on a duty of care to reticulated water users to ensure that their connection and plumbing is kept in a good state of repair so that water is not wasted.

The bylaw states that the customer shall comply with any restriction or other conservation measures which may be approved by the Water Supply Authority (i.e. the Council) to manage high seasonal or other demands. Such restrictions shall be advised by public notice.

The approach will include:

- Using the Council’s Masterton and South Wairarapa District Councils’ Consolidated Bylaw 2012 (Part Five, Water Supply) to continue requiring responsible water use practices by Council’s customers.

Timing of actions:	
Promotion of bylaw provisions through Council ongoing publicity and enforcement action.	Ongoing

- Using and enforcing the bylaw’s provisions restricting water use for non essential purposes during periods of high demand and low river flows. This includes additional provision of advice, erection of sign boards and additional enforcement action at such times.

Timing of actions:	
Preparing a clear programme of staged information provision and regulatory interventions based on weather conditions and river flows.	2015
See Appendix B	
Train a number of general staff members to enable them to enforce the bylaw provisions on water use, and provide them with necessary delegations to do so.	2015

- Developing and implementing a programme of seasonal information distribution which will precede possible bylaw restrictions on water use at periods of low river flows and high water demand.

Timing of actions:	See above
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3. Have a robust asset management plan in place so that the Council’s water supply system is efficient.

This approach will include:

- Continuing to use Council’s successful water metering and pricing system as a demand control instrument.

Timing of actions:	
Ongoing application of current system	2015-2018

- Ensuring that Council’s water supply is well maintained, renewals are carried out before parts of the system lead to inefficiencies, and leaks are detected and repaired in a timely manner. This will include inviting the community to report suspected leaks, and providing timely responses to such reports.

Timing of actions:	
Ongoing activities as per Council’s Asset Management Plans	2015-2018
Using Council promotion material to invite the community to report suspected leaks and ensuring timely responses to those reports	2015

- Increasing Council’s monitoring and investigation of unaccounted water losses, and taking actions to reduce such losses.

This work will include:

1. Cyclical leak detection

For the communities of Greytown, Martinborough and Featherston, Council aims to undertake a leak detection survey every three years. On-site property leakage matters are passed onto the private owners for remediation and in the public network repair work instructions will be given to Council’s contractors.

2. Establishing real water loss

Council will establish the extent of real water loss within its reticulated systems. Water loss is defined as the difference between System Input Volume and authorised consumption. It can also be described as a combination of real (leaks etc) and apparent (unauthorised consumption, meter inaccuracies) losses. This will be undertaken annually using Benchloss Marking Software developed by Water New Zealand. A realistic target to start with would be to have water losses of less than 15 per cent. This is the target that Council has included in its Long Term Plan.

3. Setting a benchmark water consumption level

Council will establish a demand management level of service in Long Term Plan for the average consumption of drinking water per day per resident within the district. This will become a reference level for future demand planning.

Timing of actions:

Cyclical leak detection Featherston	2015
Cyclical leak detection Martinborough and Greytown	2016
Establishing real water loss	2017
Setting benchmark water consumption levels	2017

4. Create clarity about where reticulated water will be supplied and when not.

Council has a policy that restricts new connections in the rural area, subject to a limited number of exclusions. This policy should continue in the short term.

The approach will include:

- Continuing Council's its urban limits policy, which means that generally no new connections will be provided outside current urban areas.

Timing of actions:

2015-2018

- Reviewing reticulated supply in Martinborough for vineyard irrigation. It is intended to work with these vineyards to enable a shift to alternative water sources.

Timing of actions:

Establish project group of vineyard operators and Council staff	2016
Identify opportunities for alternative water sources, and establish economic and environmental effects to reduce use of reticulated water for vineyard irrigation.	2017
Make decisions about future vineyard irrigation	2018

4. Levels of service and performance indicators

Chapter 8 of the Council's draft Water Asset Management lists the levels of service and performance indicators for its water supply network.

5. Low flow management planning.

Council's bylaw states in Clause 5.7.3 that the customer shall comply with any restriction or other conservation measures which may be approved by the Water Supply Authority (i.e. the Council) to manage high seasonal or other demands. Such restrictions shall be advised by public notice.

The Council will use a water restriction and status campaign to inform users of the likely and actual status of the water supply and the level of restrictions that may be imposed.

Council will stage information provision and introduce restrictions and conservation measures in a logical way, so that the need for actual restrictions will be delayed as long as possible, and possibly prevented altogether.

1. General conservation messaging in summer.

Council will promote summer water conservation measures in the months of December, January and February each year.

The key message that will be spread is that it is summer and that water is particularly precious at that time. Conservation of water means that formal restrictions will not be required or postponed.

The messages will concentrate on the avoidance of water use for activities such as garden watering other than in the evenings, and promoting the use using hand held

devices rather than sprinklers. Car and boat washing should be done using buckets, rather than hoses.

Council will also advise that it will be prudent in water use itself, and that irrigation of Council reserves and parks may be reduced and that people may see the effects of this.

The message will be spread by:

- Information on the Council website;
- Public notices in local newspapers;
- Emails to the District's largest water users;
- Notices to local community board members;
- Additional billboards in the three reticulated communities;
- Emails to the District's schools; and
- Instructions to Council staff and contractors.

2. Warning phase actions during times of low river flows and rainless weather forecast.

This phase will start for Featherston and Greytown when the flow levels at the Waiohine Gorge will drop below 4,000 litres per second, and for Martinborough when the flow in the Ruamahanga River falls below 8500 litres per second at the Waihenga monitoring site.

The key messages that will be spread are that it is summer, that the rivers are drying up and that water use must be reduced and that formal restrictions may be imposed in the near future.

The messages will concentrate on the need to:

- Stop unattended garden irrigation and using hoses for car washing;
- Stop emptying and refilling swimming pools and spa pools; and
- Limit commercial irrigation to night time hours (7 pm-7 am) only.

Council will also advise that it will stop irrigation of Council reserves and parks and that people may see the effects of this.

The message will be spread by:

- Information on the Council website;
- Public notices in local newspapers;
- Notices to local community board members;
- Emails to the District's largest water users;
- Council staff when they travel around the District;
- Additional billboards in the three reticulated communities;
- Emails to the District's schools; and
- Instructions to Council staff and contractors.

3. Restriction phase, near critical river flows, drought conditions.

This phase will start for Featherston and Greytown when the flow levels at the Waiohine Gorge will drop below 3,395 litres per second, and for Martinborough when the flow in the Ruamahanga River falls below 8500 litre per second at the Waihenga monitoring site.

The key message that will be spread is that river flows are reaching critical levels and that formal restrictions have been put in place to safeguard essential use, and to protect the environment.

Council will halt irrigation of Council reserves and parks and people will see the effects of this.

The following activities will be prohibited:

- Washing of cars and boats;
- Watering of lawns and gardens using sprinklers or hoses;
- Washing down or water blasting houses;
- Filling of water tanks, swimming pools and spa pools, and
- Commercial irrigation at day time hours (7 am-7 pm).

The message will be spread by:

- Information on the Council website;
- Public notices in local newspapers;
- Notices to local community board members;
- Emails to the District's largest water users;
- Additional billboards in the three reticulated communities;
- Emails to the District's schools; and
- Instructions to Council staff and contractors.

The restrictions will be actively enforced by Council staff, which may include staff not normally responsible for water supply asset management or regulatory enforcement. Such staff will have the appropriate delegations and warrants in place.

4. Severe restriction phase, extreme drought conditions.

This phase will start for Featherston and Greytown when the flow levels at the Waiohine Gorge will drop below 2,300 litres per second, and for Martinborough when the flow in the Ruamahanga River falls below 8500 litres per second at the Waihenga monitoring site.

The key message that will be spread is that river flows have reached critical levels and that further formal restrictions have been put in place to safeguard essential use, and to protect the environment.

Council will halt irrigation of Council reserves and parks and people will see the effects of this.

The following activities will be prohibited:

- Washing of cars and boats;
- Watering of lawns and gardens including using buckets and hand held hoses;
- Washing down or water blasting houses;
- Filling of water tanks, swimming pools and spa pools; and
- Commercial irrigation.

The message will be spread by:

- Information on the Council website;
- Public notices in local newspapers;
- Notices to local community board members;
- Emails to the District's largest water users;
- Additional billboards in the three reticulated communities;
- Emails to the District's schools; and
- Instructions to Council staff and contractors.

The restrictions will be actively enforced by Council staff, which will include staff not normally responsible for water supply asset management or regulatory enforcement.

Appendix A

Draft Water Asset Management Plan

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Appendix B

Examples of water conservation information that Council will disseminate.

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Examples of water conservation information that Council will disseminate

If every person in the District uses less water everyone will win! By reducing how much water you use you will save money on your water bill and the community will save on water production costs such as electricity to run the pumps, treatment plants, pipes and reservoirs. The environment will also win.

There are lots of ways to save water and they all start with you!

General

- Check for leaking pipes. Turn off all of the properties taps and check to see if the water meter is still turning; if it is you probably have a leaking pipe. Call a plumber to fix the leak as a leaking pipe can waste over 400 litres an hour (that's over 3,504,000 litres of water a year).
- Fix dripping taps. You can save up to 100 litres a day (that's up to 36,500 litres of water a year) just by replacing a worn washer.
- Make sure your hot water system thermostat is not set too high. Adding cold water to cool very hot water is wasteful.
- Aerated taps are inexpensive and can reduce water flow by 50%.
- A running tap can send 14 litres of water down the drain every minute.

Kitchen

- For rinsing dishes or washing fruit and vegetables etc, half-fill your sink with water rather than leaving the tap running.
- Use the minimum amount of dishwashing detergent (when washing dishes by hand) as this will reduce the amount of rinsing required.
- Use a compost pile or worm farm for food scraps rather than a waste disposal unit.
- Garbage disposal units use about 30 litres of water per day and send a lot of extra rubbish into the sewers.
- This places an additional load on sewerage treatment plants.
- Use economy settings for small loads in your dishwasher.
- If your Dishwasher does not have an economy setting, only do full loads
- Each time you use a dishwasher you use on average 40 litres of water, or 14,000 litres a year.
- When buying a new dishwasher, choose one that is water efficient.
- For cold drinking water keep a container of chilled water in the fridge, rather than running the cold water tap until the water is cold.

Bathroom

- Turn the tap off when you're brushing your teeth or shaving. If you brush your teeth twice a day, for two minutes each time, and leave the tap running, you waste approximately 56 litres per day – that's over 20,000 litres a year per person.
- An average shower head with mains pressure uses at least 12 litres of water per minute. If you have an 8 minute shower that is 96 litres per day or 35,040 litres per year.
- A water efficient/low flow shower head can reduce your water usage to between 5 and 7 litres per minute. They can cost as little as \$50 and can save up to 50 litres of water for each six minute shower, or up to 20,000 litres of water per person per year. An efficient shower will also reduce your power bill, as you use less hot water.
- Showers use much less water than baths. The average bath uses over 150 litres. Only fill the tub with as much water as is required, for example you don't need so much when bathing children.
- Take shorter showers - they also save you time and hot water costs.

Toilet

- The average single flush toilet uses 11 litres per full flush. A household with 3 occupants flushes, on average, 15 times per day which is 165 litres per day or over 60,000 litres per year.
- Modern dual flush toilets use only 3 or 6 litres of water per flush. This is 30% less than older dual flush cisterns and up to 8 litres less than single flush toilets.
- A flush control device, such as a gizmo, will save significant amounts of water on most types of toilet cistern. It can save up to 30,000 litres per year.
- If you can't install a gizmo a brick or zip-lock plastic bag filled with water can be placed in the cistern to reduce the amount of water used for each flush.
- It is common for toilet cisterns to leak or overflow. A leaking toilet wastes litres of water each day. Check for leaks by putting a few drops of food dye into the cistern. If you have a leak, coloured water will appear in the bowl before the toilet has been flushed. If you have a leak either adjust the water level in the cistern or you may have to get it repaired.
- Check your toilet and hot water overflow pipes are not leaking.

Laundry

- 20% of your water is used in the Laundry
- Ensure you have a full load of washing - each time you use your top loader machine you use 200 litres of water on average.
- If you don't have a full load, adjust the water level or use economy settings to suit the size of your wash load.
- Save water by reducing the rinse cycle.
- When buying a new washing machine, choose one that is water efficient. Front loaders use about half the water that top loaders use. Look out for the "AAA"

Water Conservation Label – the more 'A's the more water efficient it is. Improved washing machines use between 45 & 165 litres per load.

- Save your 'grey water' from your washing machine rinse and use it to water the garden.

Outdoors

- Water the garden early in the morning when the air is calm. Watering in the evening is the next best option. Heat and wind cause water to evaporate quickly.
- Try not to over-water - use a timer to remind you to turn off the sprinkler.
- Don't leave hoses running. A running hose can waste up to 1000 litres of water per hour.
- Check for leaks on hoses and taps.
- Use mulch to minimise evaporation. Mulch helps the soil retain moisture, inhibits weed growth, and prevents erosion.
- Use a broom instead of the hose to clean paths and driveways.
- Over 80% of the water used in your home ends up as wastewater (sewage). If you reduce your water usage you produce less waste water. That means that less treated waste water is discharged into the environment.
- Adjust sprinklers so they do not spray on paths, driveways and against buildings.
- When you clean your fish tank, use the 'old' nitrogen and phosphorous-rich water on your plants.
- Time watering your garden so you don't over water
- Group plants with similar water requirements together so that you can tend to them without overwatering other plants. Remember, native plants require less watering.

Rainwater tanks

- Install a rainwater tank or barrel. Using rainwater can reduce your water bills, as rainwater is free!
- A rainwater tank can be a useful water source for watering the garden or washing the car.
- Rainwater tanks reduce the load on stormwater systems, as roof runoff is not flushed into the drains.

Washing the car

- Wash using a bucket and rinse off with the hose. Wash your car on your lawn if possible to avoid detergent and other residues from entering the stormwater system. This also has the added benefit of watering your lawn.
- Alternatively, wash your car at a car-wash whose drains are connected to the wastewater network.

More information

More suggested methods of water conservation and efficiency can be found at the following web addresses.

<http://www.gw.govt.nz/water-conservation/>

http://www.waimakariri.govt.nz/Libraries/Fact_Sheets/Water_Conservation_brochure.sflb.ashx

<https://www.healthed.govt.nz/system/files/resource-files/HE4604-SaveWaterA4-WEB.pdf>

<http://www.trc.govt.nz/assets/Publications/information-sheets-and-newsletters/recycling-and-waste-information-sheets/watersaving.pdf>

<https://www.tauranga.govt.nz/sustainable-living/water.aspx>

<http://www.rdc.govt.nz/our-services/environment-and-health/sustainability/Documents/Sustainability%20Corner/WaterConservationA41.pdf>

<http://www.rdc.govt.nz/our-services/environment-and-health/sustainability/Documents/Sustainability%20Corner/WaterConservationA42.pdf>

<http://www.rdc.govt.nz/our-services/environment-and-health/sustainability/Documents/Sustainability%20Corner/WaterConservationA43.pdf>

<http://www.rdc.govt.nz/our-services/environment-and-health/sustainability/Documents/Sustainability%20Corner/WaterConservationPoster1.pdf>

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Appendix 3 – Water Use Graph

Water Use - South Wairarapa District Council

- ◆ Featherston
 - ▲ Martinborough
 - ✱ Rainfall
- Greytown
 - ✱ Total
 - Linear (Total)

