

Surface Water Strategy

ASHBURTON DISTRICT COUNCIL | 2018 - 2028

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Published by

Ashburton District Council

Version Status

Adopted by Council on 13 December 2018

Effect of resolution adopting Surface Water Strategy

(1) The effect of adoption of this Strategy is to provide a formal and public statement of the Council's intentions in relation to the matters covered by the Strategy.

(2) The resolution to adopt the Strategy does not constitute a decision to act on any specific matter included within the Strategy, as external events and emerging priorities may require Council to re-allocate resources from time-to-time.

Tōtika
Mahia i runga i te
rangimārie me
te ngākau māhaki



Balance
With a peaceful mind and
respectful heart, we will
always get the best results

Mauri Ora- Wisdom from the Māori World
Peter Alsop and Te Rau Kupenga
October 2016

Image 1. *The Water Project* exhibition
installation view with Elizabeth
Thomson, Jacqui Colley and Ross
Hemera, 2018. Image courtesy of the
Ashburton Art Gallery and the artists.
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From the Mayor

For many people who call the Ashburton district home, the waterways of our district often play an integral part in our identity. Whether it's the childhood memories spent along the Ashburton/Hakatere River, fishing along Wakanui Beach or taking in the breath-taking beauty of the Ashburton Lakes high in the foothills, water is often fundamental to our way of life.

We are bordered to the north and south by two large braided rivers that signal the start and end of our district; the Rakaia and Rangitata Rivers, as well as the Hinds/Hekeao and braided Ashburton/Hakatere Rivers that transect our district. We also have a number of nationally significant wetlands such as the inter-montane wetland system Ō Tū Wharekai, high country lakes and streams as well as a number of coastal lagoons. The large water race network of 2,150 kilometres that was first built in the late 1800's still winds through our rural areas. These water bodies, along with our many springs continue to be important to Tangata whenua, Ashburton District residents and visitors, and play a vital role in our environmental, economic and cultural landscape.

These water bodies face a number of different pressures and are impacted by agricultural, development and recreational activities. Now we also need to consider the effects of climate change on our surface water resources.

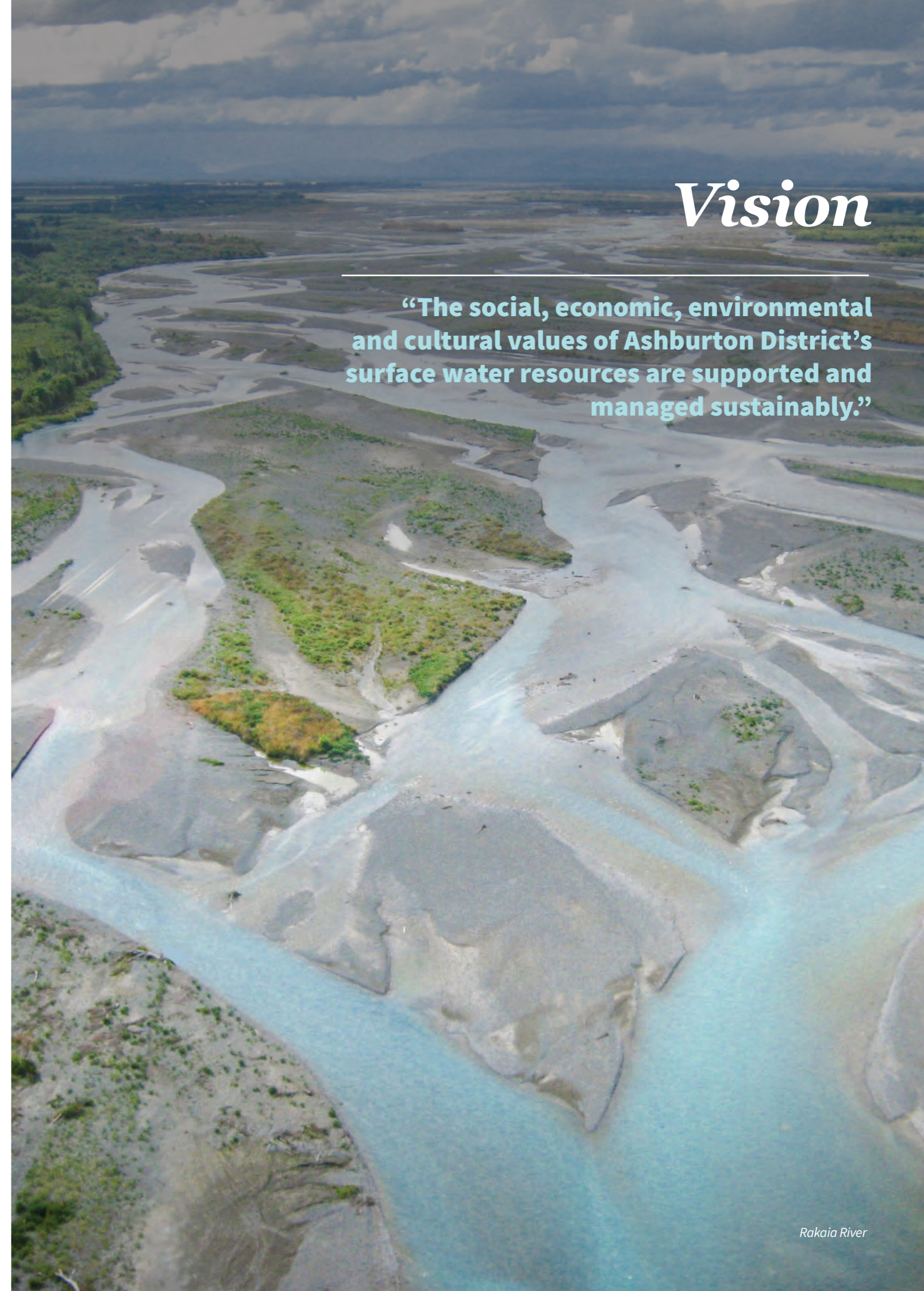
Freshwater management is a topic of high interest nationally, regionally and to our community¹. As a Council, we are actively engaged in the Canterbury Water Management Strategy process to safeguard and manage our surface water. We are supporting the Zone Implementation Programme and associated projects like the Managed Aquifer Recharge projects. We are also working to manage flooding issues in our district and have just applied for a network-wide stormwater consent for Ashburton township from Environment Canterbury.

We have prepared this Strategy to detail how we will work with the many organisations involved in surface water management throughout the district to make our vision a reality. Some of the actions we need to take will happen in a few years, while others will take longer. Implementing the Strategy will involve working together as a community to ensure our surface water resources are sustainably managed for future generations so they can be enjoyed and appreciated for many years to come.

¹ In May 2018, following a formal blessing of the Water Project exhibition by Arowhenua Marae Upokeo Te Wera King, I had the privilege to open the exhibition. The Gallery received over 4,000 visitors over the course of the exhibition highlighting the intense interest in water and its management. The Water Project was a year-long endeavour created by the Ashburton Art Gallery, involving 13 artists exploring the cultural, conceptual and imaginative concepts of water.

Vision

“The social, economic, environmental and cultural values of Ashburton District’s surface water resources are supported and managed sustainably.”



The Strategy



Lake Clearwater area - Kelly
Bisset Photography

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What is surface water?

In the context of this Strategy, surface water includes lakes, rivers, springs, associated wetlands, stormwater and Council's water race network but does not include groundwater. Ashburton District's surface water bodies have played an important role shaping the district's landscape and heritage. They continue to be of fundamental importance to Ngāi Tahu and Ashburton District residents and visitors, playing a vital role supporting the wellbeing of our community, natural environment and economy.

Many of Ashburton District's large surface water features such as the Ashburton Lakes and our braided rivers are managed by other agencies such as the Department of Conservation and Environment Canterbury. Ashburton District Council is responsible for the Council water race network (also known as the stock water race network), Mill Creek/Wakanui Stream and managing stormwater in townships.



Sharplin Falls



Water race at Oakley's Road

Water race network

Council manages four water race areas across the district with a total of about 2,150 kilometres of water races some of which feed into urban streams and are conduits for stormwater. The water race network provides rural properties with access to water for agricultural uses; primarily for stock water. The network also provides some parts of the district (once treated) with drinking water. Although the water race network was constructed to provide a reliable agricultural water supply, it is now valued for and supports a range of purposes including biodiversity and recreational activities. With fewer properties using the network to source water, however, and to comply with the requirements in the Natural Resources Regional Plan (the forerunner to the Canterbury Land and Water Regional Plan), Council has closed

significant lengths of the network, over the last 17 years. Council continues to investigate methods to improve water use efficiencies under the revised regional plan documents and the Canterbury Water Management Strategy (CWMS).

Stormwater

Council provides a stormwater service in the townships of Ashburton, Methven, and Rakaia. The stormwater system includes kerb and channel, a piped network, open channels and detention areas which capture and channel rainfall runoff before releasing it into local streams and rivers or into ground. Some recently established systems (typically associated with recent developments) provide treatment to remove pollutants prior to discharge to ground and/or to rivers and streams. For the most part stormwater is not treated before it enters the rivers and streams.

Ashburton has the most comprehensive piped stormwater network in the District with approximately 40 kilometres of pipelines, kerb and channel, grassed swales and infiltration basins to help convey stormwater to discharge to land and/or water bodies. In recent years Council has been installing litter traps downstream of the stormwater systems before it discharges into local streams and the Hakatere/Ashburton River. Methven has a total of approximately 3 kilometres of pipelines in three separate stormwater systems, kerb and channel, and infiltration basins to discharge to land. The water race network is also used to convey stormwater from one of the Methven stormwater networks. Rakaia has the smallest piped network with approximately 1.5 kilometres of pipelines in 2 separate areas which discharge to swales.

Council has been working on obtaining a network-wide resource consent from Environment Canterbury with the preparation of an Ashburton Urban Stormwater Strategy and a Stormwater Management Plan. A network-wide consent for Ashburton town will require improvements in stormwater management, formalise existing stormwater discharges from urban areas and remove the requirements for separate consents for new developments. The application for the network-wide consent was lodged in June 2018. Council is also working with Timaru District Council to prepare stormwater system design guidelines for developers.



Stormwater

Council responsibilities

Council's planning and management of surface water sits within a complex policy framework set out in statutory and non-statutory documents at the national, regional and district level. The table below highlights the key documents that have informed the development of the Surface Water Strategy.

NATIONAL	Resource Management Act 1991 (RMA)
	Local Government Act 2002 (LGA)
	National Policy Statement for Freshwater Management 2017
REGIONAL	Canterbury Regional Policy Statement
	Canterbury Land and Water Regional Plan (LWRP)
	Regional Coastal Environment Plan
	Canterbury Water Management Strategy (CWMS)
DISTRICT	Ashburton District Plan
	Ashburton Zone Implementation Programme (ZIP) and associated documents
	Activity Management Plans
	Biodiversity Action Plan
	Open Spaces Strategy
	District Water Management reports
	Mill Creek Management Plan
	Stock Water Closures Guidelines and Policy Document
	Stock Water Race Management Plan
	Water Races Bylaw
Ashburton Urban Stormwater Strategy	

Besides Council's responsibilities to manage its water race and stormwater network, Council's responsibilities under the CWMS, the Canterbury LWRP and the Ashburton ZIP have required Council to investigate methods to increase efficiencies in the water race network and to make available if possible, unused water from the stock water consent for other uses. The LWRP introduced a new flow and allocation regime for the Hakatere/Ashburton River by 2023. The LWRP also identified a number of methods to achieve this, including decreasing abstraction from the river for the network.

Council continues to reduce its take from the Hakatere/Ashburton River and is supporting projects like the Hinds/Hekeao Managed Aquifer Recharge project to improve groundwater and surface water quality and quantity. Council has installed litter traps at outfalls to trap stormwater pollutants before it enters rivers. Council also continues to seek ways to improve its management of Mill Creek/Wakanui Stream by incorporating this water body as part of the amenity of its open spaces.



Mystery Lake, Ashburton Lakes area
- Kelly Bisset Photography

Why is surface water important?

Water is of great significance to Ngāi Tahu. As kaitiaki (guardians) Ngāi Tahu and the Papatipu Rūnanga are required to exercise kaitiakitanga (guardianship) over the surface water resources of the district. Historically Māori relied on the surface water resources of Ashburton District to provide food and material while also recognising that water supported all other life. Likewise these surface water resources provide for and support a range of ecosystems and biodiversity as well as enable our agricultural and recreational activities.

Ashburton District's surface water resources are a taonga (treasure) which provides and sustains life. Our surface water resources are valued for a number of reasons including:

- the resources it provides mana whenua (customary authority) including mahinga kai (resource gathering sites);
- supporting a healthy ecosystem including supporting our indigenous plants and animals;
- being part of our history, heritage and culture;
- supporting our economy and playing a vital role enabling our agricultural industry;
- managing flood risk and providing drainage and receiving stormwater;
- providing residents and visitors places to visit and enjoy activities like boating, swimming and fishing;
- adding to the amenity and character of our urban and rural areas and open spaces; and
- providing for our mental and spiritual wellbeing.

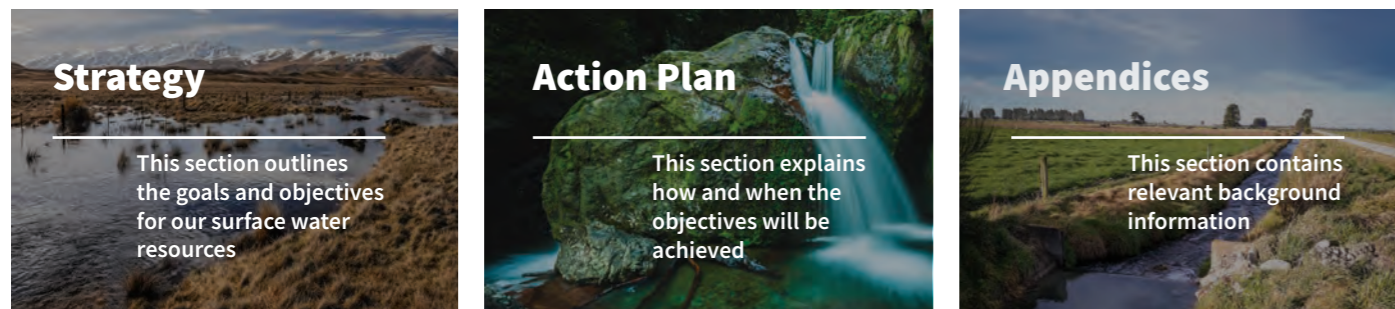
What does this strategy include?

This strategy identifies goals, objectives and actions that will help Council achieve its Vision for surface water working together with our community, Ngāi Tahu and stakeholders.

The strategy:

- Provides information on the surface water systems Council manages and current work Council undertakes;
- Sets out how Council will work with the community and stakeholders; and
- Provides information on the work Council will do over the next 10 years.

The strategy is designed to guide Council decision making² in relation to the district's surface water network and is structured as follows:



Why do we need a strategy?

Freshwater management remains a topic of high interest nationally, regionally and to the Ashburton District's community. Council is already working with several interest groups to improve the way our freshwater resources are managed. Council supports several community organisations by way of funding or providing in-house resourcing. Through its participation in the Ashburton Zone Committee's ZIP Council has been working with Environment Canterbury, community groups and irrigation companies to meet its targets in the CWMS³. Council has also prepared several documents that provide guidance on managing the different parts of the District's surface water network, of which a large part is Council's water race network.

The Ashburton ZIP, Council's Open Spaces Strategy, Biodiversity Action Plan and the Ashburton Urban Stormwater Strategy provide some of the foundation principles and goals supporting the different values of the District's surface water network. As much of the network (e.g. braided rivers and wetlands) is managed by organisations other than Council, the Surface Water Strategy provides the overarching direction to Council's management of surface water resources under its jurisdiction, such as the water races network, Mill Creek/Wakanui Stream and stormwater systems.

The Surface Water Strategy provides the links between the different activities and values Council manages with regards to the water race network. It also provides a strategic approach to collaboration with community and other interest groups, the future management of Council's water race network, other surface water bodies and the stormwater network.

² It is at Council's discretion as to whether or not and when a project will commence taking into consideration priorities and funding impacts.

³ The CWMS sets a collaborative regional approach for the sustainable management of Canterbury's freshwater resources.

How has the strategy been prepared?

This Strategy has been prepared by the Strategy and Policy, Assets and Open Spaces teams and overseen by a working group of Councillors. It has been informed by:

- **A review of relevant and related documents** (Appendix 1)

In line with regional requirements and requests for water race closures from users, over the last seven years, Council has been considering options around decreasing the size of the network it manages as well as improving environmental values where possible. These include commissioning reports identifying the different values of the network, seeking legal advice on the ability to transfer water permits, the ZIP and Managed Aquifer Recharge (MAR) projects and the internal review process of related documents such as the Mill Creek Management Plan, the Stock Water Closures Policy and the Water Races Bylaw.

- **Targeted consultation with key external stakeholders** (Appendix 2)

Aoraki Environmental Consultancy Ltd (AEC) has the mandate from Arowhenua to be the primary contact for all environmental and resource consent matters. Council has worked closely with AEC to ensure engagement with Ngāi Tahu and rūnanga takes place throughout development of the strategy and associated documents. Council also undertook a meeting with key stakeholders to identify priorities, issues and options to support the development of the strategy.

- **Survey of Council's water race network users** (Appendix 3)

Council has around 1,300 properties on its stock water race network rates database. All these properties pay a targeted rate⁴ for the race section that runs through their property. Council invited these ratepayers to participate in the survey which was made available online and by paper.

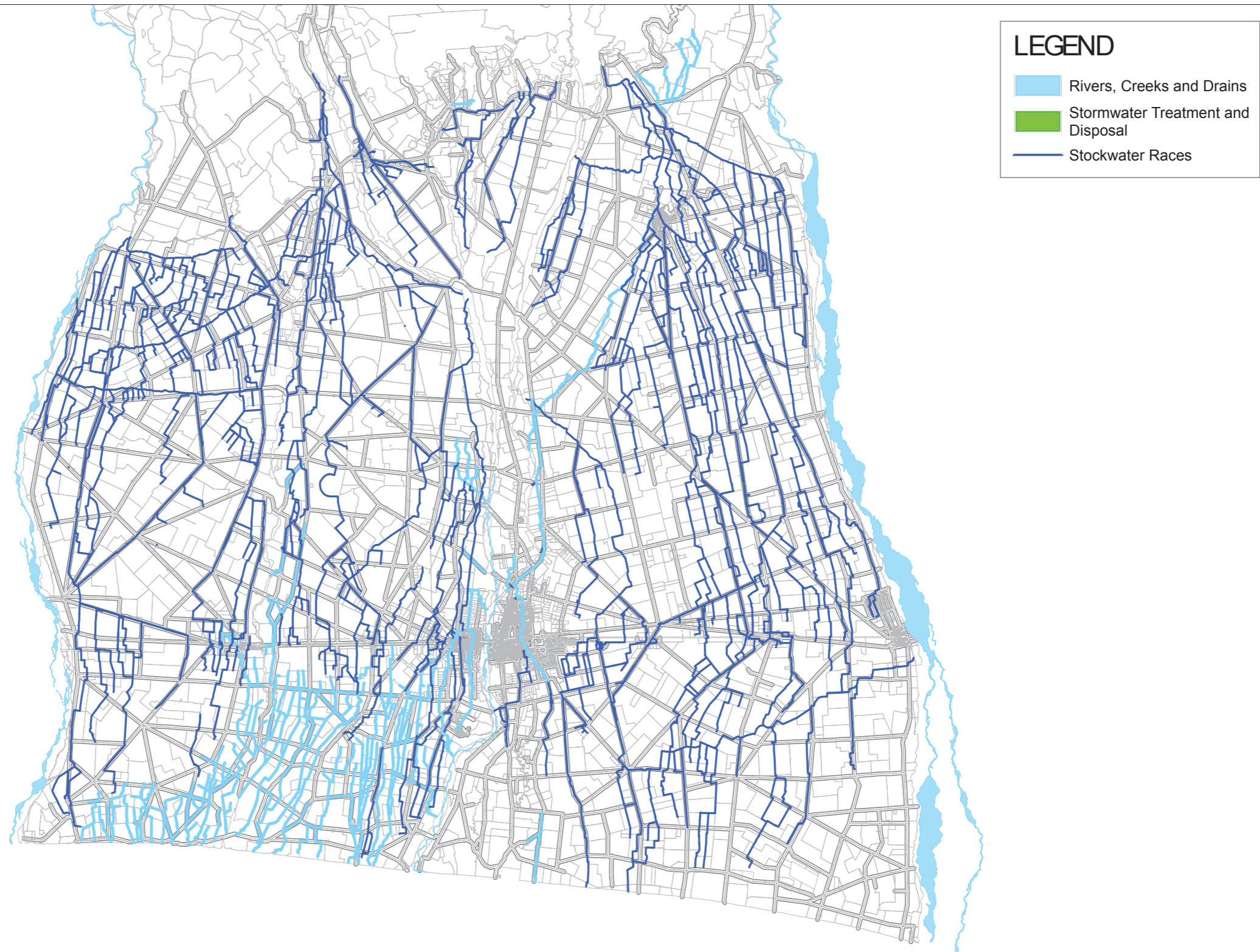
The survey asked a range of questions including what the race was used for, reliability of water supply from the race and if ratepayers had access to other sources of water.

⁴ A targeted rate can only be used for the purposes for which it is collected – in this case the general stockwater scheme. Details of this targeted rate are contained in the Funding Impact Statement in the Ashburton District Long Term Plan 2018-28.



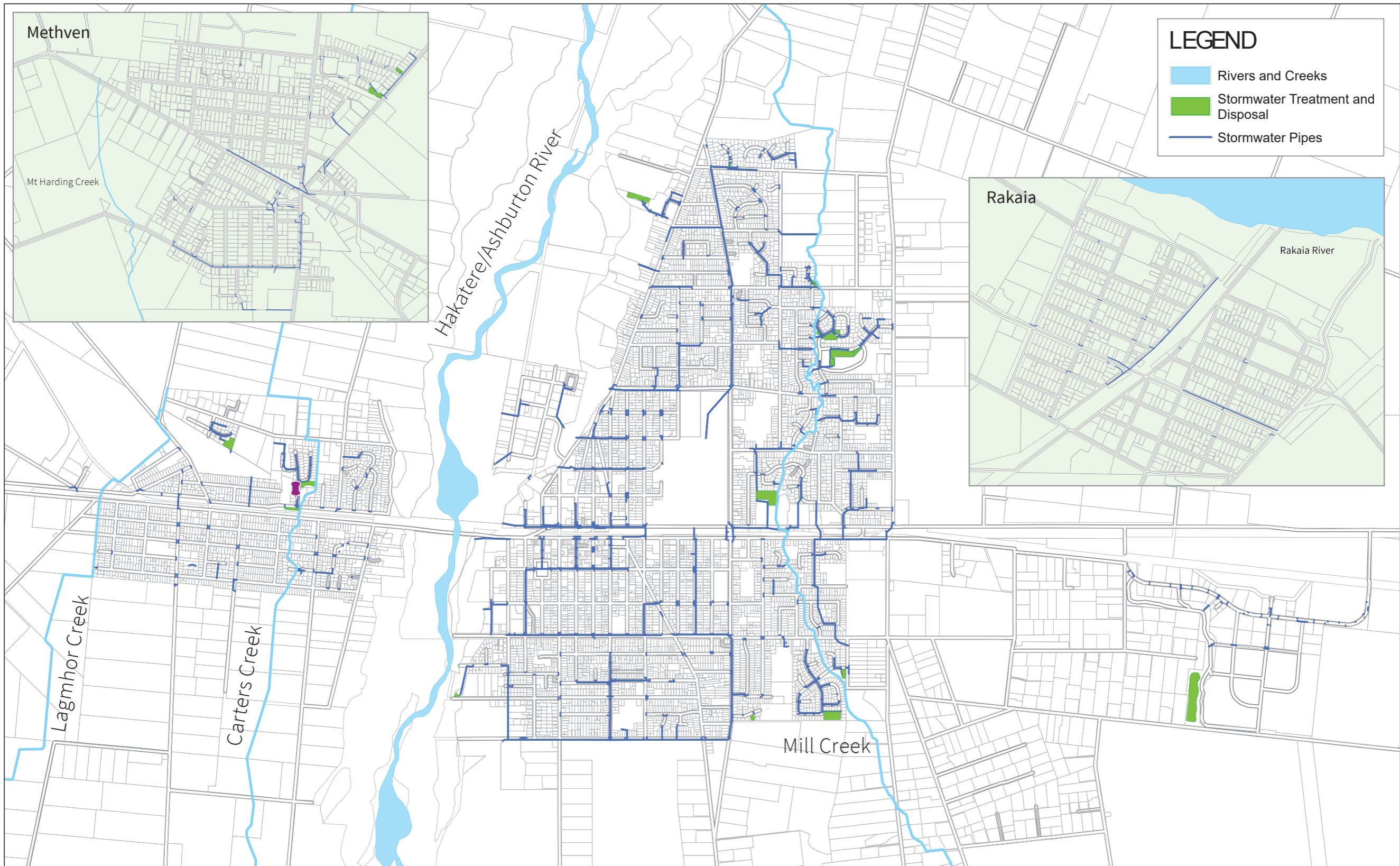
What do we have now?

Maps of the Ashburton District Water Race Network and the Existing Stormwater Systems for Ashburton, Methven and Rakaia appear on the following pages.



Ashburton District Water Race Network

Ashburton District Council



LEGEND

- Rivers and Creeks
- Stormwater Treatment and Disposal
- Stormwater Pipes



Existing Ashburton Stormwater System

Ashburton District Council

What do we have to think about?

Climate Change

This page explains how the climate in the Canterbury region⁵ is likely to change into the future and what implications this has for the Surface Water Strategy. There are four main global emissions scenarios ranging from low to high greenhouse gas concentrations. This page presents regional projections as a range of values from a low emissions to a high emissions future. The projected changes are calculated for 2031–2050 (referred to as 2040) and 2081–2100 (2090) compared to the climate of 1986–2005 (1995).

Temperature: Compared to 1995, temperatures are likely to be 0.7 °C to 1.0 °C warmer by 2040 and 0.7 °C to 3.0 °C warmer by 2090. By 2090, Canterbury is projected to have from 6 to 35 extra days per year where maximum temperatures exceed 25 °C and the number of frosts could decrease by around 13 to 38 per year.

Rainfall: Rainfall will vary locally within the region. The largest changes in rainfall are likely to be for particular seasons rather than annually. By 2090, winter rainfall is projected to decrease by up to 12 per cent in Christchurch and up to 10 per cent in Hanmer, but increase by 6 to 28 per cent in Tekapo. According to these latest projections, the frequency of extreme rainy days in the Canterbury region is not projected to significantly change as a result of climate change. Under the highest emissions scenario, there is likely to be a small increase in frequency by 2090.

Snowfall: The Canterbury region will likely experience significant decreases in seasonal snow. By 2090 the number of snow days is projected to decrease by up to 30 days per year. The duration of snow cover is also likely to decrease, particularly at lower elevations. Less winter snowfall and an earlier spring melt may cause marked changes in the annual cycle of river flow in the regions. Places that currently receive snow are likely to see increasing rainfall as snowlines rise to higher elevations due to rising temperatures. So for rivers where the winter precipitation currently falls mainly as snow and is stored until the snowmelt season, there is the possibility of larger winter floods.

Wind: The frequency of extremely windy days in Canterbury by 2090 is likely to increase by between 2 and 10 per cent. Changes in wind direction may lead to an increase in the frequency of westerly winds over the South Island, particularly in winter and spring.

Sea-level rise⁶: In its most recent (2014), the Intergovernmental Panel on Climate Change (IPCC) projects that global sea-level rise by 2100 will be between around 0.3 metres and 1.0 metre above the 1995 level, depending on the amount of future greenhouse gas emissions. Over a shorter time frame to 2060, there is more certainty, and the IPCC projects a narrower range of sea-level rise – 0.2–0.4 metres.

How we adapt to sea-level rise needs to be based on what will happen here. For New Zealand, that means using sea-level rise projections for the south-west Pacific (which indicate about an additional 0.05 metres above the global average by the 2090s), plus any local uplift or subsidence of the land, which can be measured by continuous GPS recorders.

Sea-level rise is relevant to the Strategy as higher sea levels raise lower catchment groundwater levels (which increase lower catchment drainage challenges and flooding risk).

⁵ There is no currently published information available at an Ashburton District level. Please also note that the Canterbury Region data is presented around three locations – Hanmer, Christchurch and Tekapo – none of which are in the Ashburton District. Further information is available at www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region

⁶ http://www.mfe.govt.nz/sites/default/files/media/MFE_Coastal_Fact%20Sheet%207.pdf



What could this mean for Canterbury?

Water shortages: Higher temperatures, less rainfall and greater evapotranspiration are likely to cause increasing pressure on water resources, particularly in North Canterbury. Droughts are likely to become more frequent and more extreme.

Fire risk: Strong winds, combined with high temperatures, low humidity and seasonal drought may result in an increased fire risk in some areas (such as Christchurch, Kaikoura, and Darfield). The length of the fire season is expected to increase.

Biosecurity: Climate change could increase the spread of pests and weeds. Banana passionfruit, a frost-tender plant, appears to be spreading, and argentine ants have survived through two winters, which was previously not thought possible. There may also be an increased threat to native species from changed distribution of disease vectors.

Agriculture: Warmer temperatures, a longer growing season and fewer frosts could provide opportunities to grow new crops. Farmers might also benefit from faster growth of pasture and better crop growing conditions. However, these benefits may be limited by negative effects of climate change such as prolonged drought, increased flood risk, and greater frequency and intensity of storms. There is also likely to be increasing pressure on water resources.

The implications for the Surface Water Strategy relate to increasing future demand on water resources and the need to use water wisely to maximise community well-being. Government is preparing a suite of legislation to help New Zealand mitigate the effects of climate change where possible and adapt to changes where necessary.⁷ Council already considers the effects of climate change in its long term and infrastructure planning processes and uses guidance from the New Zealand Government, based upon the best available climate science, to support the planning. Council is also currently developing a climate change policy to provide a whole of council approach to managing the effects of climate change in the district.

⁷ Ministry for the Environment Climate Change webpage, www.mfe.govt.nz/climate-change

Tangata Whenua values

The Ngāi Tahu Papatipu Rūnanga of Arowhenua, Taumutu Rūnanga and Ngāi Tūāhuriri share mana whenua status and responsibilities in Ashburton District. Arowhenua is the principal Māori kainga (settlement) of South Canterbury and lies between the junction of the Temuka and Opihi Rivers just two kilometres south of Temuka. Arowhenua's takiwā (district) covers the area between the Rakaia and Waitaki Rivers and inland to the Main Divide. Taumutu Rūnanga centres on Taumutu and Te Waihora, extending south to the Hakatere/Ashburton River. Ngāi Tuahuriri's takiwā of Te Ngāi Tūāhuriri Rūnanga centres on Tuahiwi and extends from the Hurunui to the Hakatere/Ashburton Rivers and inland to the Main Divide.

Ngāi Tahu consider water a taonga with an inherent value. It supports all life and nothing can survive without it. It is akin to the life blood of the earth. The health of the water reflects the health of the environment and the people. The surface water bodies of Ashburton District support many places of spiritual and cultural importance to Ngāi Tahu and provide important mahinga kai resources. The importance of this relationship is reflected in law, with the RMA identifying the relationship of Māori and their culture and traditions with their ancestral lands, water bodies, wahi tapu (sacred sites) and other taonga as a matter of national importance.

The Act also states the principles of the Treaty of Waitangi must be taken into account when managing the use, development and protection of natural and physical resources such as Ashburton District's surface water resources. It is important to take the principles into account when planning for surface water management to promote and enable Ngāi Tahu to exercise kaitiakitanga of these resources.



Rakaia Gorge
- Kelly Bisset Photography



Silvereyes feeding in winter

Ecology and biodiversity

Our surface water bodies support a range of ecosystems from the internationally recognised braided rivers systems to spring-fed lowland streams, wetlands, coastal lagoons and estuaries. These ecosystems support a range of plants and animals found nowhere else. However, many of our native plants and animals are rare and/or threatened due to habitat clearance, land use change, impacts of pollutants and plant and animal pests.

Council is already working with a number of organisations to restore and protect the biodiversity of the surface water bodies discussed above. The water race network can also be used to support ecological values and can be managed to ensure these values are maintained. Improving the management of our urban streams by treating stormwater, improving and adjusting maintenance methods to support these values can also improve the ability of these systems to support our biodiversity.

Urban growth and development

Areas of rural land have been rezoned for residential purposes and the Ashburton District Plan allows for increase in density in inner urban areas which will result in smaller residential sections. Ashburton, Methven and Hinds (particularly Lake Hood) are the main urban growth areas in the district. These areas continue to have new residential developments on the urban periphery of each town, expanding the urban footprint into surrounding rural and rural-residential areas. This will mean an increase in impervious surfaces in the district.

Flood risk /stormwater

Increasing development in rural areas and increasing density within urban areas will mean less impervious land surfaces to absorb rainfall. New network infrastructure including stormwater management within new subdivision developments must be provided by the developer and vested in Council.

Closures of sections of the water race network have also impacted on the ability of these channels to take overland flow. The effects of climate change and changing land use will require Council to investigate other ways to manage overland flow and flood risk in rural areas.

The Action Plan

What are our goals?

The principles of collaboration and partnership, integrated management and evidence based solutions have guided Council in its development of the four Surface Water Strategy Goals:

1. Council will use a collaborative approach to support surface water management.

This means:

- Working with and supporting Ngāi Tahu’s values associated with surface water resources;
- Building partnerships with different agencies, interest groups and community to achieve the best outcomes for surface water management; and
- Improving our understanding of Council resources and how to best use them.

2. The different values of the water race network are recognised and managed.

This means:

- Identifying the values of the network and understanding the needs of network users;
- Improving how the network is managed and responding to changes in land use; and
- Ensuring the management of the network is equitably funded.

3. Stormwater and overland flow management is improved.

This means:

- Improving our understanding of the district’s drainage network and identifying methods to reduce flood risk to rural land; and
- Working with Environment Canterbury to identify key infrastructure and implementing our network-wide stormwater consent.

4. Continue to support the implementation of the Canterbury Water Management Strategy.

This means:

- Council will continue to meet its obligations for the Hakatere/Ashburton River;
- Supporting and implementing the Zone Implementation Programme through projects such as Managed Aquifer Recharge (MAR); and
- Implementing relevant objectives of our Open Spaces Strategy.

What do we want to achieve?

To achieve these goals, 17 objectives have been identified. They are set out in the following table.

Part B of the Strategy the “Action Plan” contains the actions designed to achieve these objectives.

Our Vision			
“The social, economic, environmental and cultural values of Ashburton District’s surface water resources are supported and managed sustainably.”			
Goals			
1. Council will use a collaborative approach to support surface water management.	2. The different values of the water race network are recognised and managed.	3. Stormwater and overland flow management is improved.	4. Continue to support the implementation of the CWMS.
Objectives			
1.1 Recognise and support Ngāi Tahu’s values associated with surface water resources.	2.1 Identify the values of the network.	3.1 Improve Council’s understanding of the district’s drainage network.	4.1 Continue to meet Council’s obligations for the Hakatere/Ashburton River.
1.2 Work with different agencies, interest groups and community to achieve the best outcomes for surface water management.	2.2 Understand the needs of network users.	3.2 Work with Environment Canterbury to identify key infrastructure.	4.2 Continue to make unrequired stock water available for CWMS related projects such as Managed Aquifer Recharge (MAR).
1.3 Enable and support the efforts of relevant agencies and interest groups.	2.3 Improve management of the network.	3.3 Identify methods to reduce flood risk to rural land.	4.3 Support the work of the Ashburton Zone Committee and implement the ZIP.
1.4 Improve understanding of Council resources and how to best use them.	2.4 Respond to changes in land use.	3.4 Implement Council’s network wide stormwater consent.	4.4 Integrate with and support projects that help Council achieve the objectives of its Open Spaces Strategy.
	2.5 Fund the management of the network equitably.		



Image 2.

OBJECTIVES	ACTIONS	COUNCIL TEAM(S) RESPONSIBLE FOR DELIVERY. (FIRST NAMED TEAM IS LEAD)	DELIVERY TIMEFRAME (IN ALL CASES “ON OR PREFERABLY BEFORE” SPECIFIED DATES)
1.1 Recognise and support Ngāi Tahu’s values associated with surface water resources.	A. Work with Ngāi Tahu Papatipu Rūnanga to enable them to exercise kaitiakitanga of Ashburton District’s surface water resources including the water race network.	Assets (Assets Team is responsible for water supply, wastewater and stormwater)	Ongoing
	B. Work with Ngāi Tahu Papatipu Rūnanga to identify cultural values of the district’s surface water resources including those of the water race network.	Assets/Strategy & Policy (Strategy & Policy Team is responsible for strategic planning, bylaws and policy-making)	March 2019 onwards
	C. Work with Ngāi Tahu Papatipu Rūnanga to recognise sites of cultural significance in the district’s surface water resources including those within the water race network.	Assets	March 2019 onwards
	D. Identify options with Ngāi Tahu Papatipu Rūnanga to prioritise and/or protect the values of sites of cultural significance.	Assets/Planning (Planning Team is responsible for District Planning and resource consenting under the RMA)	March 2022 onwards
1.2 Work with different agencies, interest groups and community to achieve the best outcomes for surface water management.	A. Identify values of the district’s surface water resources including those of the water race network.	Assets/Strategy & Policy	March 2019 onwards

Image 2. The Water Project exhibition installation view with Elizabeth Thomson and Phil Dadson, 2018. Image courtesy of the Ashburton Art Gallery and the artists. All rights reserved.

	B. Identify key interest groups already involved in and/or interested in surface water management.	Assets/Strategy & Policy	By June 2019
	C. Develop a Surface Water Strategy communication plan to guide information provision to different agencies, interest groups and community.	Assets/Communications (Communications Team is responsible for Council’s external communications)	June- Aug 2019
	D. Work with these groups to identify strategic sites of importance in the district’s surface water resources.	Assets	Jan 2020 onwards
	E. Investigate the establishment of a Water Race Network Advisory Group to look at one or more trials for delivery of stockwater through irrigation company infrastructure to improve efficiency of water use, improve water quality and better understand impacts on overall values.	Strategy & Policy	Report with terms of reference to Council before 31 March 2019.
1.3 Enable and support the efforts of relevant agencies and interest groups.	A. Share information with key interest groups where possible.	Assets/Communications	Ongoing
	B. Continue to make available Council’s Community Grants and Funding.	Strategy & Policy	Ongoing
	C. Provide and/or share in-kind support where relevant.	Assets	Ongoing
	D. Investigate resourcing requirements to support this work.	Assets	Nov- Dec 2019
1.4 Improve understanding of Council resources and how to best use them.	A. Assess cost and Council resources required to maintain the water race network and respond to service requests.	Assets	By Feb 2019
	B. Review all related surface water information and projects currently in progress.	Assets	By June 2019
	C. Conduct a stock take of information/resources needed for/available on surface water resources.	Assets	By Sept 2019
	D. Identify and/or review work undertaken to improve stormwater/overland flow management.	Assets	Ongoing
	E. Investigate need for additional resources to improve management practices.	Assets	By Sept 2019
	F. Commission an investigation into the effects of climate change on the district’s surface water resources.	Assets	By July 2020
	G. Monitor and review implementation of Surface Water Strategy objectives and Action Plan.	Strategy & Policy/Assets	Every 3 years

2.1 Identify the values of the water race network.	A. Complete development of Water Race Closures Assessment Standard Operating Procedure (SOP).	Assets	By March 2019
	B. Assess the water races using the SOP.	Assets	April 2019 - April 2021
	C. Review the Stock Water Management Plan (Opus 2016) in light of the Surface Water Strategy and the review of the Water Races Bylaw.	Assets/Strategy & Policy	By April 2020
	D. Identify high value races.	Assets	By April 2021
2.2 Understand the needs of network users.	A. Confirm the number of water race rate payers.	Finance (Finance Team is responsible for Council's financial management and rating)	By March 2019
	B. Develop a water race management guidelines booklet.	Assets/Communications	By March 2019
	C. Conduct a needs assessment of water race users.	Assets	April 2020-April 2021
	D. Confirm number of properties with access to the water race network.	Assets/Finance	By April 2021
2.3 Improve management of the water race network.	A. Complete the review of the Water Races Bylaw.	Strategy & Policy/Assets	By March 2019
	B. Investigate use of unmanned aerial vehicles (drones) and other options to gather updated information on the water race network.	Information Systems /Assets (Information Systems Team is responsible for the Council's information management hardware, software and systems)	By June 2019
	C. Confirm and update the location of races and drains in the district.	Assets/Open Spaces (Open Spaces Team is responsible for Councils parks, gardens, cemeteries, reserves & water races)	April 2020 – April 2021
	D. Identify options around decommissioning schemes and/or transfer of water race services.	Assets/Strategy & Policy/ Open Spaces	April 2021- April 2022
	E. Identify other water supply schemes.	Assets	By Dec 2022 or 2023
	F. Confirm viability of other water supply schemes.	Assets	By Feb 2023 or 2024

2.4 Respond to changes in land use.	A. Identify infrastructure requirements of different developments.	Assets/Planning/Property Developers	Ongoing
	B. Work with Planning team to provide input into zone changes.	Assets/Planning	Ongoing
	C. Work with Roding and Planning teams, and Environment Canterbury to identify impacts of changes in land use on the surface water network. (Roding Team is responsible for Council's network of roads, footpaths and bridges)	Assets/Roding/Planning/ Environment Canterbury	By Jan 2021
2.5 Fund the management of the network equitably.	A. Review minimum charge rates for water race network.	Assets/Finance	By March 2019
	B. Update water race rating database.	Finance	By June 2019
	C. Identify options for a rating system that consider the multiple values of the water race network.	Assets/Finance/Strategy & Policy	By June 2023
	D. Implement rating changes.	Finance/Strategy & Policy	By June 2024
3.1 Improve Council's understanding of the district's drainage network.	A. Commission an investigation of overland flow paths in the district, including effects of the MAR and associated projects on overland flow paths.	Assets	By Dec 2020
	B. Identify which schemes are receiving overland flows.	Assets	By March 2021
3.2 Work with Environment Canterbury to identify key infrastructure.	A. Confirm location and responsibility of drainage structures and associated infrastructure.	Assets/Environment Canterbury	By March 2021
	B. Work with Environment Canterbury to share information and update relevant databases.	Assets/Information Systems/ Environment Canterbury	Ongoing
	C. Work with Environment Canterbury to develop a coordinated flood response and readiness plan. (Civil Defence is the Team responsible for managing Council's preparedness and response to civil defence emergencies)	Assets/Civil Defence/ Environment Canterbury	By June 2023
	D. Where necessary, identify options for future management of drainage structures taking into consideration the value provided.	Assets/Environment Canterbury	By June 2023



Mid Canterbury stockwater race

3.3 Identify methods to reduce flood risk to rural land.	A. Work with Planning, Roading and Environment Canterbury teams to identify options to manage flood risk to rural land.	Assets/Planning/Roading/Environment Canterbury	By June 2023
	B. Review rating options for areas affected by flood risk.	Assets/Finance/Strategy & Policy	By June 2027
3.4 Implement Council's network-wide stormwater consent.	A. Develop and implement stormwater bylaw.	Assets/Strategy & Policy	By June 2021
	B. Progress network capital improvements including discharge quality improvement projects.	Assets	By June 2021
4.1 Continue to meet Council's obligations for the Hakatere/Ashburton River.	A. Develop an implementation plan to close sections of the water race network.	Assets	By March 2022
	B. Identify water race sections that can be closed following assessment.	Assets	By April 2022
4.2 Continue to make unrequired stockwater available for CWMS related projects such as Managed Aquifer Recharge (MAR).	A. Support continuation of MAR and associated projects.	Assets	Ongoing
	B. Investigate effects of such projects on the surface water network including the water race network.	Assets	By March 2023
	C. Identify and assess MAR and associated project sites as part of green corridors in support of Council's Open Spaces Strategy.	Assets/Open Spaces	By April 2026
4.3 Support the work of the Ashburton Zone Committee and implement the ZIP.	A. Officers responsible to attend meetings regularly.	Assets	Ongoing
	B. Identify opportunities for biodiversity enhancement of high value sections of the water race network.	Assets	By April 2022
	C. Investigate techniques to reduce impact of drain and water race cleaning on environmental and cultural values of these channels.	Assets	By April 2022
	D. Identify opportunities for biodiversity enhancement of the surface water network.	Assets	By April 2026
4.4 Integrate with and support projects that help Council achieve the objectives of its Open Spaces Strategy.	A. Establish a Working Party of relevant stakeholders to improve the connection between open spaces and surface waterways.	Open Spaces	By August 2019
	B. Identify options to enhance water race overflow basins/pits as part of green corridors.	Open Spaces/Assets	By April 2024
	C. Identify sites within the surface water network, including the water race network, which can be used to establish native plantings to support open spaces in promoting indigenous biodiversity.	Assets/Open Spaces	By April 2026
	D. Identify opportunities to make open spaces that showcase surface water resources accessible to the community.	Open Spaces	By April 2026
	E. Update the Open Spaces database of reserves to include these identified sites.	Open Spaces	By April 2028

Appendices



Appendix 1 Related documents

To support the strategy's development, Council reviewed several documents related to the management of surface waterbodies. The desktop review included:

- Mill Creek Management Plan and Policy (2000)
- Stockwater Race Closure Policy (2011)
- Water Investigation reports (2012)
- Stockwater User Survey (2013)
- Ashburton District Water Race Network - Ecological Assessment (2014)
- Stockwater Supply - Detailed Investigations (2014)
- Stockwater Network Management Plan (2016)
- Review of Water Races Bylaw (ongoing)
- Development of Standard Operating Procedure to Assess Applications to Close Water Races (ongoing)
- Development of Water Races Management Guidelines (ongoing)

Significant pieces of work undertaken at a regional and district level informed the development of the Surface Water Strategy principles and goals:

Zone Implementation Programme Principles (2011)

- Collaborative approach
- Principles of kaitiakitanga
- Whole of catchment approach

Ashburton District Council Stockwater strategic goals (August 2016)

- Support Canterbury Water Management Strategy
- Recognise Ngāi Tahu cultural values
- Efficient provision of clean reliable stockwater

Surface Water Strategy Development Working Group outcomes (2017-2018)

- Improve management of surface water
- Partner with Ngāi Tahu through Arowhenua Rūnanga
- Collaboration to recognise values

Surface Water Strategy Stakeholder meeting (April 2018)

Recognised:

- Abundance of water; its historical importance
- Direct water to where it is needed; improve efficiency of use
- Different values but can be maintained for all
- Improve water quality (through a range of treatments such as wetlands, MAR)

Appendix 2 Summary of stakeholder feedback

Summary of discussion

Participants agreed that our strength lies in that there is an abundance of water and there is a good delivery system. The stockwater network is used and valued for a range of purposes including water for stock and domestic use as well as for drainage, ecological/biodiversity and recreation. The ability to take and use water is managed under a strong legislative framework. There are already a range of options people are looking at to improve water quality and how to reduce the takes from rivers.

Issues were identified around water quality in the stockwater network and the lack of efficiency of the stockwater system in terms of targeted delivery of water. Participants raised issues around the cost of maintaining a system that has aging infrastructure and has to provide for new requirements under health and safety. There were also comments made about impacts of the takes on the rivers and the effects of untreated stormwater entering rivers and urban catchments. The effects of climate change on flood management, water quantity and quality were also identified along with the uncertainty we face when the political landscape changes. Concerns were raised on the negative impacts on biodiversity/ecological values with the closures of the stockwater network.

Discussion themes

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Abundance of water and good delivery system • Different uses of water and network • Different values placed on water and network • Legislative frameworks 	<ul style="list-style-type: none"> • System is not most efficient and cost effective • lack of control over where and when water is delivered • Water quality issues – for domestic use/impact on rivers (takes and returns) and impacts of stormwater/race maintenance
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Improved communication/engagement with S/H • Improve water quality (wetland treatment systems, MAR). • Increase efficiency of stockwater system- other options for delivery, direct water to where needed to support range of values. • Improve biodiversity, ecological and amenity values • Reduce take from rivers • Recreation • Urban streams 	<ul style="list-style-type: none"> • Climate change impacts • Cost to manage system (infrastructure, regulations, H&S) • Different uses of water and network and values • Loss of stockwater - impacts on non-use values • Recognising uncertainty in political landscape at national, regional and local level

Participants identified several areas for opportunities to improve water quality through projects like MAR and wetland treatments and the ability to improve the efficiency of the stockwater network through provision of water through piped systems. Some of these treatment opportunities could improve the biodiversity/ecological and recreational values of the network. Participants also identified the need to improve communication between council, stakeholders and interest groups.

Based on the priorities that were identified participants felt strongly that there are many opportunities to improve on the different values the community places on the stockwater race system. Opportunities prioritised were based on improving water quality through the MAR and other recharge activities and treatment options (such as wetlands) as well as making more efficient use of the water in the stockwater network. Participants prioritised the need to improve water quality for domestic use and the range of values (including biodiversity, amenity and mahinga kai) people placed on the stockwater network.

Feedback from submitters during public consultation

Council received 20 submissions to the public consultation on the draft Surface Water Strategy. Ten submitters appeared in person to deliver oral submissions.

A full summary of their submissions, Council’s deliberations and amendments made to the Strategy are contained in the notes of the Submission Hearings and the final covering report to Council’s meeting on 13 December where the Strategy was adopted. Both documents can be found in the Council Agenda for 13 December 2018 at www.ashburtondc.govt.nz.



Appendix 3 Summary of results of water race users' survey

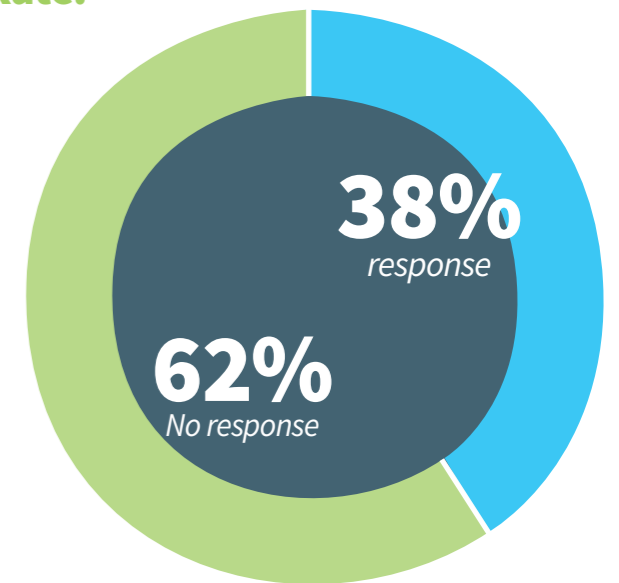
Council has around 1,300 properties on its water race network rates database. All these properties pay a rate for the race section that runs through their property. Those that draw water from the race by pump to a pond or trough also pay an additional service fee. A survey of these property owners and/or occupiers was undertaken to inform the development of the Surface Water Strategy and associated documents. The Survey ran for one month in May 2018 and was available online and by paper.

Council received just over 500 responses. Most people reported that they used their water race for a variety of reasons including to supply water for animals, to capture runoff and for enjoyment of the race itself. Several people also said that they didn’t use their race any longer or want the race on their property. However, over 50% of water race users still relied on the race for water.

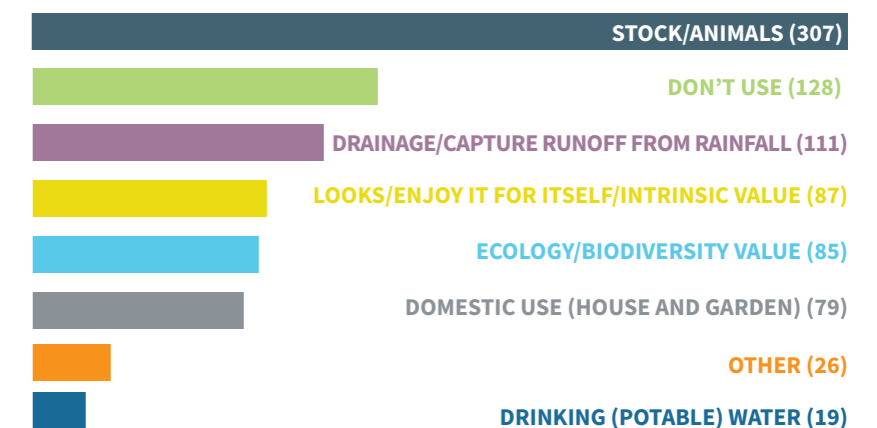
Response Rate:

1,305
INVITATIONS

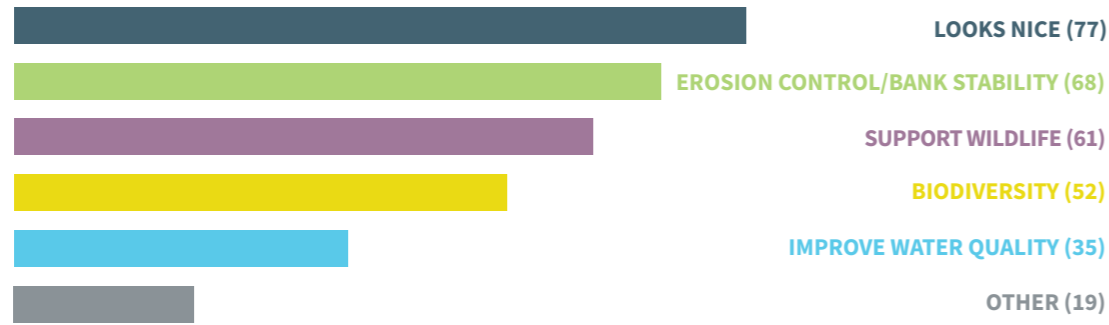
501
RESPONSES



Uses of water races:

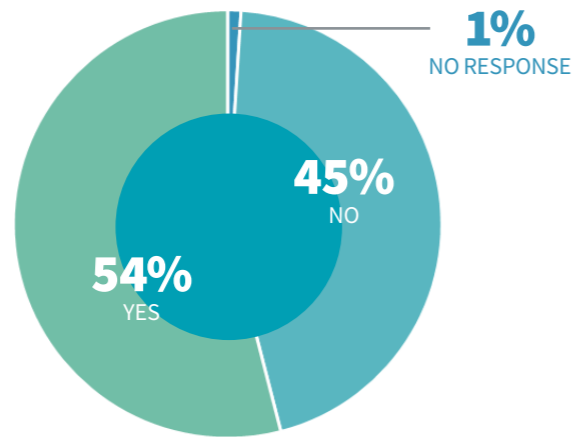


Reasons for planting the banks of the water race



The survey also confirmed that some people were planting the banks of their race. The reasons the 23% of respondents gave ranged from supporting wildlife/biodiversity, to making it “look nice”. Many people also planted the banks to improve bank stability.

Reliance on stockwater race



Overall conclusions

People were asked for additional comments throughout the questionnaire which were analysed and key themes identified (see Figure 8 below). Main themes included “no longer using or needing a race”, considering the “environmental” (which included biodiversity, recreational and ecological) values of the race network and considering it a “valuable asset”.

There is high interest in the network and it’s management as the response to the Survey was strong. It is clear that ratepayers are using and valuing the race for a variety of different reasons and some have stated that they are happy for the system to remain as is. Several identified the importance of the network to projects that Council is supporting through the Zone Implementation Programme such as Managed Aquifer Recharge. Many have also commented that they would prefer to have the race closed but most did not say if they had tried to close the race.



Glossary of terms

Canterbury Land and Water Regional Plan

The Canterbury Land and Water Regional Plan identifies the resource management outcomes and objectives for managing land and water resources in Canterbury to achieve the purpose of the RMA. It contains the policies and rules needed to achieve the objectives, and provides direction to the processing of resource consent applications.

Canterbury Water Management Strategy

The Canterbury Water Management Strategy was prepared in 2009 and sets a collaborative regional approach for the sustainable management of Canterbury’s freshwater resources. The Strategy identifies first and second priorities for water and sets targets which are delivered by Zone Committees through their ZIPs.

District Water Management initiatives

Council’s range of water management investigations (including reports and research) to inform and improve Council’s management of water resources (including groundwater) began in 2012 and is ongoing.

Impervious surfaces

Are surfaces that do not allow water to soak through the material to the soil or substrate beneath.

Managed Aquifer Recharge and associated projects

Managed aquifer recharge is a method used successfully in the United States and Europe to intentionally replenish aquifers. Infiltration basins, which act like big leaky ponds, are filled with high-quality clean water which seeps down and recharges the aquifer.

Stormwater and overland flow

This is water that originates during rainfall and snow/ice melt. It can soak into the soil (infiltrate), be held on the surface and evaporate, or runoff and end up in nearby streams, rivers, or other surface water bodies. For the purposes of this Strategy, stormwater refers to the rainfall that is captured by urban stormwater networks while overland flow is rainfall captured in the drains and channels of the water race network.

Surface Water

Surface water includes lakes, rivers, associated wetlands, springs, stormwater and Council’s water race network but does not include groundwater.

Water (stockwater) race network

Council provides water for rural use (primarily for stock) to about 1,300 rural properties in the district through a large network of open races. Some of the network was built in the late 1880’s. Originally labelled as the “stockwater” network it is now referred to as the “water race network” to reflect the multiple values it has.

Zone Implementation Programme

Is a programme of work developed by the Ashburton Zone Committee (a joint committee of Ashburton District Council and Environment Canterbury) in 2011 recommending water management solutions for the Ashburton Water Management Zone.



Rakia River



Image 3.

Image 3. The Water Project exhibition installation view with Jacqui Colley, Gregory O'Brien and Bing Dawe, 2018. Image courtesy of the Ashburton Art Gallery and the artists. All rights reserved.

The Water Project credits

Image 1. From Left to right:

ELIZABETH THOMSON, *Sentients*, Cast vinyl film, lacquer, contoured and shaped wood panel, 2018. Courtesy the artist and The Central, Christchurch

ELIZABETH THOMSON, *Waka, Storm Warning*, Cast vinyl film, lacquer, contoured and shaped wood panel, 2018. Courtesy the artist and The Central, Christchurch

ROSS HEMERA, *Ko Kārewa te Whakarare*, alkathene pipe, raffia, river stones, charcoal, kokowai, 2018

JACQUI COLLEY, *Twitch*, lithograph, 2018

JACQUI COLLEY, *Phenomenon #1*, oil and acrylic on canvas, 2018

JACQUI COLLEY, *Phenomenon #2*, oil and acrylic on canvas, 2018

All images courtesy of the Ashburton Art Gallery and the artists. All rights reserved.

Image 2. From Left to right:

ELIZABETH THOMSON, *Sentients*, Cast vinyl film, lacquer, contoured and shaped wood panel, 2018. Courtesy the artist and The Central, Christchurch

ELIZABETH THOMSON, *Waka, Storm Warning*, Cast vinyl film, lacquer, contoured and shaped wood panel, 2018. Courtesy the artist and The Central, Christchurch

PHIL DADSON, *Wai ata Portal*, acrylic paints, Indian inks on paper, Lithophone stones ex Maerewhenua River, Waitaki Valley, 2018.

All images courtesy of the Ashburton Art Gallery and the artists. All rights reserved.

Image 3. From Left to right:

JACQUI COLLEY, *Method #1*, drawing on cotton paper, 2018

BING DAWE, *Downstream under Aoraki - Tuna with Barrier*, wood, steel and bronze, 2018

GREG O'BRIEN AND EUAN MACLEOD, *WAI TAPU*, acrylic on canvas, 2018

GREG O'BRIEN AND EUAN MACLEOD, *Tributary*, acrylic on canvas, 2018

GREG O'BRIEN, *Ode to a South Island water molecule*, acrylic on canvas, 2018

GREG O'BRIEN, *Ode to a water molecule and five Canterbury rivers*, acrylic on canvas, 2018.

All images courtesy of the Ashburton Art Gallery and the artists. All rights reserved.



Cover Image: *Staveley*
By Kelly Bisset Photography