Stockwater

Activity Management Plan 2021-31

August 2021

Ashburton DISTRICT COUNCIL

www.ashburtondc.govt.nz

Document control

Revision	Name	Author	Reviewed by	Date
1.0	Stockwater AMP			

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1. Introduction

In the Ashburton District there are five stockwater areas making up the stockwater race network to which 1,385 properties are receiving a stockwater service in an area of the Canterbury plans that extends from the Rakaia River in the north to the Rangitata River in the south.

This plan summarises the Council's strategic and management long-term approach for the operation and maintenance of community-based stockwater schemes.

2. Key issues for Stockwater

The main high level issues affecting the stockwater race network are:

- The stock water network has been identified as both a key issue and an opportunity for the District in the Ashburton Zone Implementation Programme of the Canterbury Water Management Strategy (2009).
- The need to achieve the objective of reducing stockwater abstractions from the Ashburton River and making any unrequired water available for environmental or productive benefit.
- The perceived view that water races are inefficient as about 4% of the water passing into the water race scheme is actually used as stock drinking water and another 5% for domestic uses (the majority of the water delivered through the race network is lost to infiltration).
- There are areas where stockwater is presently essential as no other stock water source available without capital expenditure.
- Resource consent compliance in relation to fish screens on four key intakes.
- The management charge for Acton is considered very high compared to the extent of scheme and number of users.
- Minimum rating charge for rural lifestyle blocks is considered to low compared to the resources required to maintain the required level of service.

Many of the issues noted above are to be addressed through the development of a Surface Water Strategy in the 2018 calendar year.

2.1. Future of the Stockwater supply

A survey of the stockwater users throughout the District was undertaken in 2013 that identified that of all the respondents:

- 58% stated that the stockwater supply was essential for their farming operation, the predominant use being for stock drinking water (96%) and domestic uses were 19%. The water is also used for potable supply for 7% of customers.
- Stockwater, domestic uses and potable supply are considered by Council to be the core uses of the stock water network.

Council is presently considering options, costs and implications for potentially closing the stockwater race schemes in Ashburton District in favour of other alternative supply means. The process being instigated by Council is:

- Open dialogue with irrigation schemes throughout the District to see what potential synergies exist; e.g. supply via irrigation schemes for those properties without alternative supply that are located within the command area of existing and proposed piped irrigation schemes.
- Explore options for alternative sources of water, particularly for those at distal parts of the network to reduce 'water required to convey water'. This could include supply to:
  - Some clusters of properties by restricted rural water supply schemes.
  - Remaining users by individual bores.
- An ecological survey of the races to identify areas of high ecological value. This did not identify any particular races that contain Canterbury mudfish. However, there are some areas that could provide suitable habitat. The vast majority of the District does not have races that would be suitable for mudfish.

Specific stock water races may be required to remain open in existing or similar form to preserve localised high-value ecology where it is identified.

2.2. Future demand

2.2.1. Anticipated changes in customer expectations

Dairy conversions are of particular significance. Dairying changes the nature of land use and the configuration of water demand. Invariably a conversion of a property to dairying requires the implementation of extensive irrigation systems and access to reliable quantities of clean water.

Open races are not compatible with travelling irrigations systems and due to the variable water quality within the stockwater network, there have been ever increasing requests to realigned water races to the perimeter of farming blocks. These properties are typically choosing to access stock water from bores rather than the network.

2.2.2. Demand management

Demand is presently managed on the District's stockwater schemes as identified in the Stockwater Network Management Plan, in particular sections on:

- Operations during drought.
- Water conservation.

Additional demand management initiatives include education and awareness programmes to promote stockwater race efficiency, such as:

- Improving communications between property owners and race operators when race blockages occur.
- Disseminating information to users on Bylaws, Management Plans and the importance of regular cleaning of races.

3. Stockwater

3.1. What we do

The water race network is primarily a gravity fed open race system, although there are a number of areas serviced by piped systems.

The Council also provides stockwater via two piped schemes in Methven/Springfield and Montalto areas. These schemes are also used for household purposes and are treated to provide potable water. For the purposes of management, these piped schemes are considered drinking water supplies and described in the Drinking Water AMP.

The network of stock water races comprises five separate areas which service a combined serviced farm area of approximately 181,920 ha. The five areas are:

- Methven/Lauriston - located in the northwest part of the District.
- Winchmore/Rakaia - located northeast of the Ashburton Township and at the "bottom" of the ADC race water network.
- Mount Somers/Willowby - located in the centre of the District.
- Montalto/Hinds - located to the south of Mt Somers/Willowby.
- Acton - located south of the Rakaia River and east of Winchmore/Rakaia.

3.1.1. Extent of stockwater races

The network consists of approximately 2,150 km of water races (460 km of main races and 1,690 km of minor races).

There are 23 operational intakes, including one from the Rangitata Diversion Race (RDR) at Klondyke and the Acton intake which is operated and managed by Acton Irrigation Ltd. Of the 23 intakes, 16 abstractions are from the Hakatere/Ashburton River system.

The main intakes and locations are:

- Methven Auxiliary (North Ashburton River) and Pudding Hill (Pudding Hill Stream) [Methven/Lauriston].
- Brothers (South Ashburton River) [Mount Somers/Willowby].
- Winchmore (Springs) [Winchmore/Rakaia].
- Cracroft (Rangitata River) [Montalto/Hinds].

The Council holds 15 resource consents associated with the water race network. These consist of four water permits, four land use permits and seven discharge permits. The Consents were granted in 2012 and expire in 2032 (20 year consents).

Approximately 436 km of main race is operated and maintained by Council and a further 24 km is operated by Acton Farmers Irrigation Co-operative Ltd. The remaining minor races are operated by Council, but maintenance is the responsibility of the property owners.

Council's requirements with respect to the maintenance of the races is supported by the Ashburton District Council Bylaws and the Stockwater Network Management Plan (2016).

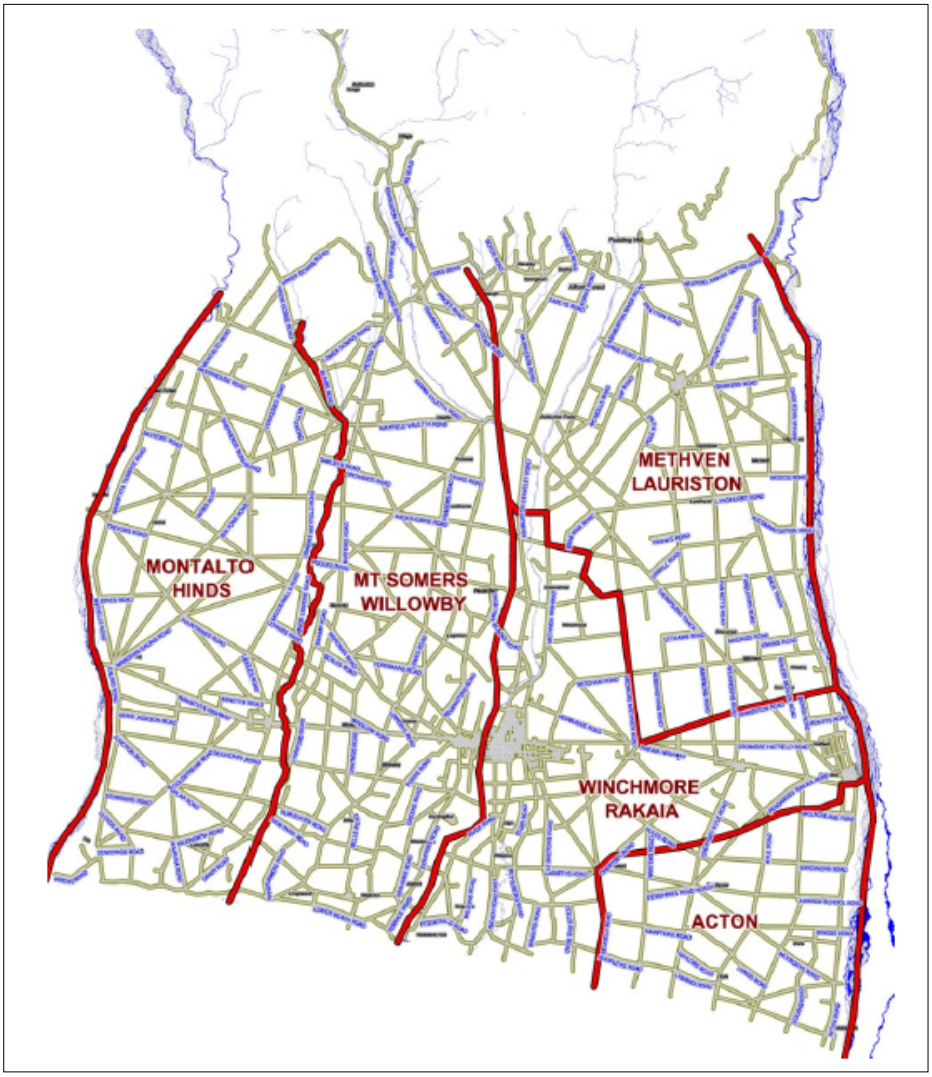

Figure 1 Operational boundaries of the five stockwater race schemes

Refer also 14.1 Appendix A – Current valuation by scheme

3.2. Why we do it

Council operates stockwater schemes to promote the productivity of rural land through the efficient provision of clean, reliable stockwater

Our principles

These are the guiding principles for how we will function and deliver activities and services to the community.

- Plan and provide fit for purpose services.
- Work with the community and engage in meaningful conversations.
- Lead the community with clear and rational decision-making.

- Represent the district on regional / national issues and partner with others when needed.

Our contribution to Community Outcomes

Stockwater contributes to the following Community Outcomes as shown below.

	Residents are included and have a voice	A district of great spaces and places	A prosperous economy based on innovation and opportunity	A balanced and sustainable environment
Stockwater		✓	✓	✓

4. Levels of service and performance measures for Stockwater

4.1. What are we trying to achieve

What we plan to do and our levels of service

What we're aiming for: To promote the productivity of rural land through the efficient provision of clean, reliable stockwater.

WHAT WE'RE WORKING TOWARDS (Levels of service)	HOW WE'LL MEASURE PROGRESS (Performance measures)		HOW WE'RE PERFORMING NOW (2019/20 results)	WHAT WE'RE AIMING FOR 2021/22	2022/23	2023/24	2024/25 – 2030/31
We provide efficient and sustainable stockwater services	Compliance with resource consents * *Compliance with Council's resource consents for discharge from its stockwater systems measured by the number of the following received by Council.*	Abatement notices	0	0	0	0	0
		Infringement notices	0	0	0	0	0
		Enforcement orders	0	0	0	0	0
		Convictions	0	0	0	0	0

4.2. How will we know if we are achieving it

4.2.1. Reporting of performance measures

Council manages performance to monitor levels of service and improve service delivery. Reporting performance information is a key element of performance management. Interpreting results and communicating them to Council, management and the community provides a picture of service performance across Council. Performance measures for stockwater are reported through the Triannual Performance Report, Annual Report and reports to the Service Delivery Committee.

5. Changes made for Stockwater

- Goughs Crossing and McFarlanes Terrace stockwater intakes closed
- Minor stockwater races closures

6. Key projects for Stockwater

New capital projects being considered within the next 30 years include:

- Fish Screen installations at:
    - Brothers Intake
    - Methven Auxiliary Intake
    - Pudding Hill Intake

Key renewals required within the next 30 years are:

- Minor structure renewals

7. Management of activity for Stockwater

7.1. General

The operation and maintenance of stock water races is carried out by the Open Spaces team. The Acton scheme is operated and managed by Acton Farmers Irrigation Co-operative Ltd by formal agreement at an annual cost of ~$45,000.

The day to day management of each of the schemes is carried out by two full time and two part-time water rangers. Each ranger is responsible for organising maintenance and capital work, monitoring flows, enforcing water race bylaws and managing the overall operation of their scheme.

In accordance with Section 17A of the LGA 2002 (amendment Act 2013), a review of the cost-effectiveness of current arrangements has been completed.

Refer to 14.2 Appendix B – Operations and Maintenance Strategies

7.1.1. Remote monitoring stations

The majority of intakes are now flow metered and remotely monitored. This is achieved through the use of cellular data-loggers which store the flow data and periodically transmit the information back to a computer based in Council offices.

Although not entirely real-time, staff can interrogate "up to the hour" field data directly to specific intakes through the use of SMS communication. The data-loggers can also alert staff in real time if key flow thresholds have been exceeded.

7.1.2. Forecasting assumptions

The purpose is to confirm the broad underlying assumptions that form the basis for the Stock water AMP development are presented below.

Table 1: Stockwater forecasting assumptions

Management area	Assumption	Comment
Major project & capital works	Procurement will be provided that delivers the defined Level of Service within budget, at a similar cost to that presently incurred.	Construction projects costs estimated using the following: Post tender +/-5% Where designed +/-10% Estimate +/- 30%
Asset lives and depreciation	Assets will not wear out more quickly than forecast and require replacement earlier than planned.	If assets require replacement more quickly than forecast, renewal projects may need to be brought forward.
Population forecasts	The level of population growth will be as forecasted.	
Assets aging	No attempt has yet been made to predict increases in maintenance costs that might occur.	
Method of service delivery	In preparing the maintenance and operating budget it is assumed that there will be no change in the method of service delivery.	
Renewal forecasts	Based on current knowledge of asset condition and performance, and levels of service identified in this AMP.	Analysis of asset renewal requirements will increasingly be undertaken using predictive modelling. Some increases and decreases in expenditure may result.
Land use change	There will be no sudden changes in network demand caused by sudden changes in land use.	
Alternative stock water supply methods	The delivery of alternative stock water supply methods for the existing stock water network users will occur progressively over the next 10 years.	

7.1.3. Renewal strategy

Renewal expenditure is major work that does not increase the asset's design capacity or increase its planned level of service, but restores, rehabilitates, replaces or renews an existing asset to its original capacity or service level. Work over and above restoring an asset to original capacity involves new works expenditure.

The purpose of the Renewal Strategy is to insure that:

- Replacement of assets are carried out at the most appropriate time.
- Most effective benefit received from any asset renewal.
- Assist in the compliance of stock water's Levels of Service.

Historically isolated failures within the stock water network are repaired under maintenance and stock water races are maintained on an indefinite-life basis.

At present, the strategy is to replace structures when their condition has deteriorated to the point where their performance is compromised, collapse is likely, or where public safety is at risk.

Replacements over the next ten years amount to $50,000.

7.1.4. Asset disposal

Once formally closed, a stock water race is abandoned and the water inflow stopped. This may involve minor works. Land-owners are then free to alter the races as they wish although Council advises property owners to consider drainage implications if choosing to fill in abandoned races.

Any costs associated with localised stock water race closures are considered minor and are met through the operational budget.

7.2. Programmed actions years 1 - 3

Project	Driver	Timing	Indicative cost
Brothers Intake – Fish Screen	Compliance	2023/24	$500,000
Methven Auxiliary Intake – Fish Screen	Compliance	2023/24	$500,000
Pudding Hill Intake – Fish Screen	Compliance	2023/24	$500,000
Minor Structure Renewals	Asset Condition	2021/22	$50,000

7.3. Future directions for years 4 – 10

Project	Driver	Timing	Indicative cost
No projects identified.	N/A	N/A	N/A

8. Costs for Stockwater

8.1. Operations and maintenance expenditure

The primary operational and maintenance issues associated with the stock water service is a need to ensure that preventative maintenance is being carried out regularly and robustly.

8.2. New Capital Programme Funding

Council is required under its current resource consents to install fish screens on three key intakes to prevent fish from entering the schemes. This requirement fell due in February 2015. In the 2018-28 LTP, Council made budget provision in the order of $250,000 to address the requirement at the then four sites using rock bunds.

Given the uncertainty around the future scale of the stockwater network as a result of possible transfer of service provision to irrigation schemes, Council has been reluctant to proceed with this work and sought temporary (or permanent) non-enforcement of the resource consent conditions relating to fish screening. We have in the meantime managed to close the Cracroft intake, thereby avoiding one of the fish screens.

Since that time, it has become apparent that rock bunds will not meet the requirements of the fish screening condition, and instead a mechanical fish screen will be required. These devices have a very high capital cost, estimated at around $500,000 each and annual maintenance costs are typically up to 10% of capex costs.

Environment Canterbury is increasing pressure to progress these structures and bring the sites into compliance. The projects have been included in the future programme of the 2021-31 Long Term Plan, but efforts are continuing to close the affected intakes to avoid the project expenditure.

8.3. Funding requirements

8.3.1. General approach to funding

Council's approach to funding its activities is detailed in its Revenue and Financing Policy.

Council sets a targeted rate for the general stockwater scheme (including a minimum charge). The rate on each rating unit within the general stockwater scheme is determined in accordance with the factors listed below:

- The total length of any stockwater races, aqueducts or water channels that pass through, along, or adjacent to, or abuts the rating unit of such occupier or owner, or
- Whether the property accesses stockwater using a service e.g. pond service, pipe service, ram service, pump service, water wheel or windmill, dip service or extension pump service.

8.4. Development Contributions

8.4.1. Stockwater contributions

The Development and Financial Contributions Policy can be found on Council's website or at the Council offices. The policy outlines the approach to be used by Ashburton District Council to implement development or financial contributions to fund growth related investment in network infrastructure and community facilities.

There is currently no development contribution in place for the stockwater activity. There are no plans to introduce a contribution at this point in time.

Funding Impact Statement

For Stockwater

	Annual Plan 2020/21 $000	Year 1 2021/22 $000	Year 2 2022/23 $000	Year 3 2023/24 $000	Year 4 2024/25 $000	Year 5 2025/26 $000	Year 6 2026/27 $000	Year 7 2027/28 $000	Year 8 2028/29 $000	Year 9 2029/30 $000	Year 10 2030/31 $000
Operating Funding											
Sources of operating funding											
General rate, UAGC*, rates penalties	118	84	87	87	80	71	62	52	41	30	19
Targeted rates	1,058	935	870	797	718	637	554	464	369	272	167
Subsidies and grants for operating purposes	0	0	0	0	0	0	0	0	0	0	0
Fees and charges	0	0	0	0	0	0	0	0	0	0	0
Internal charges and overheads recovered	10	0	0	0	0	0	0	0	0	0	0
Local authorities fuel tax, fines, infringement fees and other receipts	0	0	0	0	0	0	0	0	0	0	0
Total sources of operating funding	1,186	1,018	957	884	798	708	616	515	410	302	186
Applications of operating funding											
Payments to staff and suppliers	830	834	752	663	570	472	370	263	149	31	(94)
Finance costs	10	4	4	4	3	3	3	3	2	2	2
Internal charges and overheads	301	154	164	170	174	181	189	195	202	211	218
Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
Total applications of operating funding	1,141	992	919	836	748	656	563	461	354	244	126
Surplus/(deficit) of operating funding	45	26	38	48	50	52	53	55	56	58	59

* Uniform Annual General Charges

	Annual Plan 2020/21 $000	Year 1 2021/22 $000	Year 2 2022/23 $000	Year 3 2023/24 $000	Year 4 2024/25 $000	Year 5 2025/26 $000	Year 6 2026/27 $000	Year 7 2027/28 $000	Year 8 2028/29 $000	Year 9 2029/30 $000	Year 10 2030/31 $000
Capital Funding											
Sources of capital funding											
Subsidies and grants for capital expenditure	0	0	0	0	0	0	0	0	0	0	0
Development and financial contributions	0	0	0	0	0	0	0	0	0	0	0
Increase/(decrease) in debt	229	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)
Gross proceeds from sale of assets	0	0	0	0	0	0	0	0	0	0	0
Lump sum contributions	0	0	0	0	0	0	0	0	0	0	0
Other dedicated capital funding	0	0	0	0	0	0	0	0	0	0	0
Total sources of capital funding	229	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)
Application of capital funding											
Capital expenditure											
- to meet additional demand	0	0	0	0	0	0	0	0	0	0	0
- to improve the level of service	275	0	0	0	0	0	0	0	0	0	0
- to replace existing assets	0	0	0	0	0	0	0	0	0	0	0
Increase/(decrease) in reserves	(1)	17	28	39	41	42	44	45	47	49	50
Increase/(decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
Total applications of capital funding	274	17	28	39	41	42	44	45	47	49	50
Surplus/(deficit) of capital funding	(45)	(26)	(38)	(48)	(50)	(52)	(53)	(55)	(56)	(58)	(59)
Funding Balance	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Expenditure by stockwater scheme

	Annual Plan 2020/21 $000	Year 1 2021/22 $000	Year 2 2022/23 $000	Year 3 2023/24 $000	Year 4 2024/25 $000	Year 5 2025/26 $000	Year 6 2026/27 $000	Year 7 2027/28 $000	Year 8 2028/29 $000	Year 9 2029/30 $000	Year 10 2030/31 $000
Stockwater	1,187	1,039	968	886	799	708	616	516	411	303	186
Rural	0	0	0	0	0	0	0	0	0	0	0
Total operating expenditure	1,187	1,039	968	886	799	708	616	516	411	303	186
less depreciation	46	47	49	50	51	53	54	55	57	59	60
Total applications of operating funding	1,141	992	919	836	748	656	563	461	354	244	126

Capital by stockwater scheme

	Annual Plan 2020/21 $000	Year 1 2021/22 $000	Year 2 2022/23 $000	Year 3 2023/24 $000	Year 4 2024/25 $000	Year 5 2025/26 $000	Year 6 2026/27 $000	Year 7 2027/28 $000	Year 8 2028/29 $000	Year 9 2029/30 $000	Year 10 2030/31 $000
Stockwater	275	0	0	0	0	0	0	0	0	0	0
Total capital expenditure	275	0	0	0	0	0	0	0	0	0	0
less vested assets	0	0	0	0	0	0	0	0	0	0	0
Council funded capital expenditure	275	0	0	0	0	0	0	0	0	0	0

9. Key legislation / industry standards and relationship with other planning / policy documents for Stockwater

9.1. Legislative and other drivers

Commentary related to the key legislation and regulations affecting the wastewater activity is provided below.

9.1.1. Civil Defence Emergency Management Act 2002

The expectations under the CDEM Act 2002 are that Council's services will function at the fullest possible extent during and after an emergency, even though this may be at a reduced level. In addition, Council has established planning and operational relationships with regional CDEM groups to deliver emergency management within our boundaries.

Stockwater is regarded as a critical service and is given special consideration within Council's emergency management procedures. Every effort will be given to restore services immediately after an event.

9.1.2. Health and Safety at Work Act 2015

Requires Council to ensure the health and safety of workers while at work by providing: a working environment that is without risks to health and safety; safe plant and structures; safe systems of work; and information, training and supervision that is necessary.

Council must ensure the safety of the public and all workers (including contractors) when undertaking the activity. This requirement extends to the design and supply of new plant and structures.

9.1.3. Local Government Act 2002

Provides for democratic and effective local government that recognises the diversity of New Zealand communities. It states the purpose of local government, provides a framework and powers for local authorities to decide which activities they undertake and the manner in which they will undertake them, promotes the accountability of local authorities to their communities; and provides for local authorities to play a broad role in meeting the current and future needs of their communities for good-quality local infrastructure, local public services, and performance of regulatory functions.

9.1.4. Resource Management Act 1991

Provides an environmentally conscious framework for Local and Regional Authorities to administer powers with regard to development and the management of natural resources. The RMA 1991 focuses on the effects of activities rather than on the activities themselves. Council has 18 resource consents for stockwater abstraction, operations and discharge activities in the Ashburton District.

9.2. Related documents

9.2.1. Infrastructure Strategy

The infrastructure strategy provides a look forward for 30 financial years at current and upcoming key infrastructure issues for the core activities (water, wastewater, stormwater and transportation) and stockwater, and the significant projects and expenditure required to address them.

The AMP provides the context and support for the infrastructure strategy.

9.2.2. Long-Term Plan

The Long Term Plan explains what Council proposes over the next ten years with an infrastructure strategy and financial strategy looking at a thirty year horizon.

10. Risk management for Stockwater

10.1. Stockwater race network risk register

A risk management framework based on ISO AS/NZS 30001 was developed in 2011 for utilities services and used to establish a water race risk register in 2014. The risk register identifies risk management strategies to minimise the risks associated with the provision of stock water. The risks are categorised as extreme, high, medium or low.

The risk register was reviewed in 2017 and indicates there is one high risk.

Risk Severity	Risk Category	Potential Impact	Controls
High	Drought events	Restrictions in water abstraction and availability of water to consumers	Management Plan

The risk profile will in the future be extended to encompass all assets in a Risk Management Plan.

10.2. Climate change risk

As with the rest of the Canterbury region, the Ashburton area will likely be affected by climate change. The District has experienced extremes of drought and flood in the past and these may occur with greater frequency and severity.

The Climate Change Effects and Impacts Assessment report (Ministry for the Environment, 2008) details projections for climate trends in the Canterbury Region. Possible climate change trends that may impact on wastewater schemes in Ashburton District include:

- Increase in mean annual temperature.
- More frequent extreme rainfall events as a result of increased moisture holding capacity of warm air.
- Reduced annual mean precipitation and increased drought conditions.
- Sea level rise.

Due to reduced annual precipitation and increased drought conditions a change in livestock farming practices is possible which would influence the demand for stockwater. There would also be increased evaporation from open water races making them less efficient for distributing water and reducing the volume reaching the users.

River water quality at the intakes as well as water quality within the open stock water races themselves could be compromised by increased concentrations of nutrients, particles and pathogens washed into the river during heavy rainfall events or due to low oxygen levels caused by increased

water temperature during dry conditions. As a result algae growth in the open water races could increase and cause nuisance.

10.3. Resilience

Council has contributed to the resilience into the stock water service by:

- Having the network operate by gravity.
- Simple system of intakes, divides, gates, weirs and siphons.
- Appropriate design and construction standards (including materials).

11. Stakeholders and consultation for Stockwater

- Residents serviced by the stockwater race network
- Iwi / Te Rūnanga o Arowhenua
- Environment Canterbury
- Ministry for the Environment
- Department of Conservation
- Audit NZ
- Fish and Game
- Rangitata Diversion Race Management Ltd
- Federated Farmers

12. Improvement programme for Stockwater

12.1. Process overview

12.1.1. Asset management

Council has undertaken a structured assessment of the appropriate level of asset management practice for the stockwater network assets in October 2010. This structured assessment follows the guidance provided in Section 2.2.4 of the International Infrastructure Management Manual (IIMM) 2006. The results of this assessment were that the stock water service was considered **Core Plus**.

12.1.2. ISO 55000 Asset Management 2014

This international standard was released in January 2014 and outlines the requirements for an asset management system for achieving a balance between cost, risk and performance in asset management to help guide asset related decision making and activities.

At the time of writing this AMP the Council has yet to review whether their current Council's asset management practices will be changed to seek conformance with ISO 55000. However, improvement

areas have been identified in this AMP which will assist in the move towards aligning with the requirements of ISO 55000.

12.2. Training

As required.

12.3. Improvement actions

Ashburton District Council is committed to on-going improvement in the quality of its stock water services management practices. This is reflected in the implementation of asset management systems and associated data collection and maintenance requirements.

The Improvement Plan is integral to that approach, quantifying current business practice and measuring progress toward an identified future position. Improvement Plan is focused on the key areas of:

- **Information Management**: AMIS implementation and the use of this system to increase the effectiveness, efficiency and reporting of the management and operation of the stock water systems.
- **Scheme Knowledge**: Increased asset attribute knowledge (condition, performance, material, size) and monitoring regime for stock water management assets in particular for assets identified as critical.
- **AM Policy**: To provide the principles by which Council intends to apply asset management to achieve Councils objectives.
- **AM improvement programme**: To achieve the Asset Management level of Core Plus
- **Criticality assessment** (reflects the consequence of the asset failing): To allow assets to be managed more proactively in order to mitigate the risk associated with their failure.
- **Renewal Strategy**: To insure that replacement of assets are carried out at the most appropriate time and the most effective benefit is received

Additional resources will be required to enable the achievement of the above improvement programme.

13. Appendices

13.1. Appendix A – Current valuation by scheme

Totals	Asset Group	Quantities	ORC 30 June 2017	ODRC 30 June 2017	Annual Depreciation
	Structures		$ 2,414,483	$ 1,344,849	$ 44,963
	Races (m)	2,149,921	$ 29,292,489	$ 29,292,489	$ -
	Total		**$ 31,706,973**	**$ 30,637,338**	**$ 44,963**

Scheme	Asset Group	Quantities	ORC 30 June 2017	ODRC 30 June 2017	Annual Depreciation
Methven Lauriston	Structures		$ 445,905	$ 252,071	$ 11,709
	Races (m)	646,599	$ 6,772,519	$ 6,772,519	$ -
	Total		**$ 7,218,423**	**$ 7,024,590**	**$ 11,709**
Montalto Hinds	Structures		$ 716,661	$ 518,328	$ 11,361
	Races (m)	539,869	$ 8,022,306	$ 8,022,306	$ -
	Total		**$ 8,738,967**	**$ 8,540,634**	**$ 11,361**
Mt Somers Willowby	Structures		$ 939,255	$ 435,738	$ 14,659
	Races (m)	516,466	$ 9,618,884	$ 9,618,884	$ -
	Total		**$ 10,558,139**	**$ 10,054,622**	**$ 14,659**
Winchmore Rakaia	Structures		$ 312,662	$ 138,711	$ 7,234
	Races (m)	338,286	$ 2,936,497	$ 2,936,497	$ -
	Total		**$ 3,249,159**	**$ 3,075,208**	**$ 7,234**
Acton	Structures		$ -	$ -	$ -
	Races (m)	108,700	$ 1,942,285	$ 1,942,285	$ -
	Total		**$ 1,942,285**	**$ 1,942,285**	**$ -**

13.2. Appendix B – Operations and maintenance strategies

Strategy	Objective/ Description
Repairs	The detection and repair of faults, blockages etc will be undertaken as quickly as practically possible with the main aim to restore service as quickly as possible.
Corrective Maintenance	Remedial maintenance will be undertaken to restore an asset to a satisfactory condition after a repair or following routine maintenance has identified additional work is required to avoid a likely future problem.
Operations	Council staff are responsible for the determination and optimisation of planned and unplanned works, work methods and maintenance scheduling to achieve the target service standards.
Operation of Utilities	Intakes, major divides and control structures are operated in terms of the Stockwater Network Management Plan (2016).
Renewal of road culverts	The renewal of road culverts associated with the stock water network is within the transportation activity.
Incident management	Councils approach is an escalation process from minor to major, minor and medium incidences are managed by the Rangers, and major issues by senior management. Involvement is also judged by the potential consequences or asset criticality
Intake operation	Repairs and reconstruction of intakes are undertaken by Rangers.