Stormwater
Activity Management Plan 2021-31

August 2021

Ashburton
DISTRICT COUNCIL

www.ashburtondc.govt.nz

Document Control

Revision	Name	Author	Reviewed by	Date
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Contents

List of tables

List of figures

1. Introduction

In the Ashburton District, there is presently only one significant piped stormwater system, serving the urban area of Ashburton. Methven and Rakaia have small lengths of stormwater pipe serving specific areas, while Lake Hood and Hinds have small systems of swales and open drains.

The balance of properties in the district dispose of their stormwater by other means, typically through on-property soak pits.

This plan summarises the Council's strategic and management long-term approach for the operation and maintenance of the stormwater service.

The stormwater activity has a large amount of capital expenditure programmed as part of a long-term project to improve both the management and the treatment of stormwater in Ashburton, underpinned by the Stormwater Management Plan (SMP).

The SMP itself, and the global stormwater discharge consent that has been granted and given effect to, will lead to significant improvements in levels of service.

2. Key issues for Stormwater

2.1. System capacity

The district's stormwater reticulation dates primarily from the 1960s and onwards. Nuisance flooding occurs on a regular basis in a number of locations, largely due to undersized pipes, culverts and reliance on soak-pits. Surface flooding is predicted across 33 ha of the urban area for Ashburton and Tinwald during a 1 in 10 year Average Recurrence Interval (ARI) rainfall event, with 84% of pipes predicted to be surcharged. Development over recent years has put pressure on the stormwater system with urban expansion and infill exacerbating urban stormwater flooding. There is no spare capacity in the existing system to accept additional flows from further development or intensification. If not managed properly, the additional runoff created from new impervious areas will greatly exacerbate current flooding issues.

Future development areas are required to management stormwater onsite as far as possible and discharges to the Council network will be limited to the same or less than pre-development levels.

While urban flooding is a frequent occurrence during rain events, Ashburton is relatively flat and ponding is generally static, shallow (less than 300mm) and is rarely sufficient to enter habitable buildings or cause property damage. A greater concern is that natural overland flow paths, many of which cross private property, are not clearly defined and are easily manipulated, intentionally or unwittingly, through subdivision development and the construction of new roads.

Stormwater management in Methven, Rakaia and other small communities will be considered via an extension to the Ashburton SMP or through the development of a District SMP. This will provide the future direction of stormwater within these communities.

Future expansions of the serviced area will be aligned with the growth directions signalled in the District Plan, as well as forecast climate change effects.

One way in which network capacity can be maximised is through altering stormwater catchments to share the load more evenly. The proposed capital programme begins to do this, and further work may identify other opportunities.

2.2. Environmental impact and global stormwater consent

Stormwater is mainly discharged to urban streams (Mill Creek, Lagmhor Creek, Carters Creek) or to ground. This affects the surface and groundwater quality, leading to degraded in-stream habitat and ecology. The urban streams hold low cultural and recreational value. Waterway water quality is a strong focus for central and regional government at the moment. This affects the way we prioritise projects within the broader stormwater work programme.

Coupled with this existing stormwater discharge is the potential expansion of stormwater into other urban areas. The networks and infrastructure in Methven, Rakaia, Hinds and elsewhere is minimal and generally intended only to service the road corridor. Planning for future requirements to treat and manage this stormwater is a key consideration.

In 2019 ADC was granted a global resource consent (CRC186263) to discharge stormwater covering the whole Ashburton, Tinwald and Fairton urban areas. This places requirements on ADC to monitor, and report on, the quality of the receiving environment for urban stormwater, the management of stormwater and incidences of flooding, and other factors. It authorises discharges from the reticulated network. Importantly,

it excludes risky discharges, such as very large or hazardous developments, which will need a separate consent if they threaten ADC's ability to meet the targets under the global consent.

There will be a need for some capital development. Firstly to ensure that monitoring can be carried out to schedule, but mostly to provide conveyance and treatment solutions to meet the targets.

2.3. Rural stormwater

Ashburton District has had a network of stockwater races since the late 1800s. As these races have been closed and filled in the drainage function they also served has been lost, causing flooding and nuisance issues. Environment Canterbury only takes responsibility for the drainage schemes operated by the former drainage boards. Therefore there is a gap in coverage.

ADC is faced with two questions:

- How to manage closed races and account for the drainage function they perform; and
- How to deal with rural or minor township stormwater in general.

Both of these questions are still to be resolved. In the short term ADC has set aside a small budget in the Rural Stormwater cost centre to address issues as they emerge. This budget, and the associated operational cost to maintain and inspect the drains, will need to increase as more are adopted.

In the longer term, there is a decision to be made about the extent to which ADC wishes to support this area, and how the service is delivered. This AMP assumes that ADC will take the approach of assessing and designating important former races as drainage assets for the purposes of the Land Drainage Act, and will then accept responsibility for these drains.

Looking further and more broadly, there are a number of cut-off drains, swales, transient water courses and overland flow paths that serve an important purpose in managing stormwater in the district, which are not being actively managed, and which may fall under the rural stormwater umbrella as well.

3. The Stormwater activity

3.1. What we do

In the Ashburton District, there is presently only one significant piped stormwater system, serving the urban area of Ashburton. Methven and Rakaia have small lengths of stormwater pipe serving specific areas, while Lake Hood and Hinds have small systems of swales and open drains.

Operations and maintenance is covered by a contract with Ashburton Contracting Limited. This contract was retendered in 2020 and is discussed further later.

Table 1: Community based stormwater schemes

Scheme	Length of network	Manholes	ORC June 2020	Annual depreciation June 2020
Ashburton	39.8 km	569	$54,592,341	$558,352
Methven	3.0 km	36	$3,096,021	$29,586
Rakaia	1.4km	14	$1,039,340	$9,898

3.1.1. Ashburton

Stormwater from residential, commercial and industrial properties in the Ashburton District is collected via gravity pipelines and open drains before being discharged to soakage pits and watercourses. Some stormwater is held in detention and infiltration basins. There is also a retention pond adjacent to Mill Creek for flood control.

Ashburton is the only system where historic stormwater discharges to the kerb and channel from private dwellings exist. From the kerb and channel the stormwater enters the stormwater system.

3.1.2. Methven

Methven has a very limited piped stormwater network with stormwater disposal in road side channel or old gravel pit. System capacity is adequate with no significant flooding issues, although there is some nuisance flooding.

3.1.3. Rakaia

Rakaia has two pipelines and a discharge to the Rakaia River. This scheme is small in scale, but is included separately as it will be subject to an application for a network-wide consent.

3.1.4. Other townships

Lake Hood and Hinds have small systems of swales, open drains and the occasional pipe.

Outside those areas served by public stormwater systems, dwellings are reliant on on-site disposal of stormwater – generally via ground soakage systems. These are generally single property solutions and not Council responsibility.

3.2. Why we do it

Council operates stormwater schemes to help protect the health and safety of the community and environment through the provision of reliable and efficient stormwater schemes. The Health Act 1956 requires Councils to improve, promote and protect public health within their Districts.

4. Goal for Stormwater

The stormwater service primarily supports the outcomes of providing great spaces and places, and balanced and a sustainable environment. Council is committed to providing fit for purpose stormwater services.

4.1. 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.

4.2. Our contribution to community outcomes

Stormwater 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
Stormwater		✓	✓	✓

5. Levels of service and performance measures for Stormwater

5.1. What are we trying to achieve

Council manages performance to monitor levels of service and improve service delivery. Performance measures for stormwater are reported through the Biannual Performance Report, Annual Report and six-weekly activity briefings to Council.

The mandatory performance measures adopted for the 2018-28 LTP are retained for the 2021-31 LTP. These focus on:

- Minimising the number of flooding events and responding quickly to those that occur.
- Ensuring that management of stormwater has acceptable environmental impact.

In addition, we aim to increase customer satisfaction by minimising complaints. In practice, customer complaints typically relate to the system's performance under load.

What we plan to do and our levels of service

What we're aiming for: To ensure property and the environment are protected and roads and footpaths continue to be accessible during rain events.

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	2023/24	2024/25	2025/26 – 2030/31
We provide protection from flooding for private properties	Flooding events from stormwater overflows *		0	0	0	0	0
	The number of flooding events resulting from stormwater overflows, and for each flooding event the number of habitable floors affected, expressed per 1.000 properties connected to the stormwater system.		0	0	0	0	0
	Median response time (in hours) to callouts*		N/A	1 hour	1 hour	1 hour	1 hour
	Where Contractors attend a call-out on Council's behalf to attend a flooding event, the median response times are measured from the time Council receives the notification to the time that service personnel reach the site.						
We provide efficient and sustainable stormwater services	Compliance with resource consents *	Abatement notices	0	0	0	0	0
	Compliance with Council's resource consents for discharge from its stormwater systems measured by the number of the following received by Council:	Infringement notices	0	0	0	0	0
		Enforcement orders	0	0	0	0	0
		Convictions	0	0	0	0	0
The majority of residents are satisfied with our stormwater services	Customer satisfaction with stormwater services*		1.94	≤5	≤5	≤5	≤5
	The total number of complaints received by Council about the performance of its stormwater system, expressed per 1,000 connections to the stormwater systems.						

* Mandatory performance measure set by the Department of Internal Affairs

5.2. How will we know if we are achieving it

5.2.1.1. Data inputs

Incidences of flooding and customer complaints are assessed by reviewing records of customer contacts.

Management of the environmental impacts is assessed by ECan by checking compliance with issued resource consents for the stormwater network.

Response time to reported issues is a contractual performance indicator with the maintenance contractor.

5.2.1.2. 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 wastewater are reported through the Biannual Performance Report, Annual Report and reports to Council.

6. Management of the Stormwater activity

6.1. General

6.1.1. Operation and maintenance

The Council intends to continue to own, control and manage all of the public systems, but the work of actually operating and maintaining them is contracted out.

The operation and maintenance of drinking water assets is contracted out to Ashburton Contracting Ltd (ACL). ACL is required to operate and maintain the assets to achieve specified outcomes and ensure they provide the required levels of service.

The contract is performance based with a focus on forward programming, preventative maintenance and reporting, however, there are certain minimum standards. Contract works must be carried out to an acceptable standard, at the least cost, with minimum disruption to the community and the environment.

In accordance with Section 17A of the LGA 2002 a review of the cost-effectiveness of current arrangements was completed. One of the difficulties identified during the review was that a negotiated contract with one party made it difficult to demonstrate cost-effectiveness. The current contract, which commenced in July 2020, was competitively tendered and was won by ACL.

6.1.2. Forecasting assumptions

The broad underlying assumptions that form the basis for the stormwater AMP development are presented below.

Table 2: Stormwater forecasting assumptions

	Management area	Assumption	Comment
1	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 project costs have been estimated using the following uncertainties: Tendered +/-5% Designed +/-10% Estimate +/- 30%
2	Demand management	Discharges from new developments will be the same as or less than pre-development flows.	-
3	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.
4	Population forecasts	The level of population growth will be as forecasted.	-
5	Assets aging	No attempt has yet been made to predict increases in maintenance costs that might occur.	-
6	Method of service delivery	A new contract having been issued, O&M will not change until 2025.	While there is the possibility of significant change in the next 3 years, ADC has not committed to anything and thus status quo has been assumed.

	Management area	Assumption	Comment
7	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.
8	Land Use change	There will be no sudden changes in network demand caused by sudden changes in land use.	-
9	Rural Stormwater	A steady increase in operating costs is assumed, as assets are brought under the rural stormwater umbrella.	-

6.1.3. 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 ensure that:

- Replacement of assets is carried out at the most appropriate time
- The most effective benefit is received from any asset renewal
- Renewals assist with compliance with stormwater levels of service

6.1.4. Renewal profiles

The overall stormwater main renewal profile for 2018 to 2068 is presented in Figure 1. This indicates the expenditure required based purely on projected useful life.

Figure 1: 50 year reticulation ORC profile

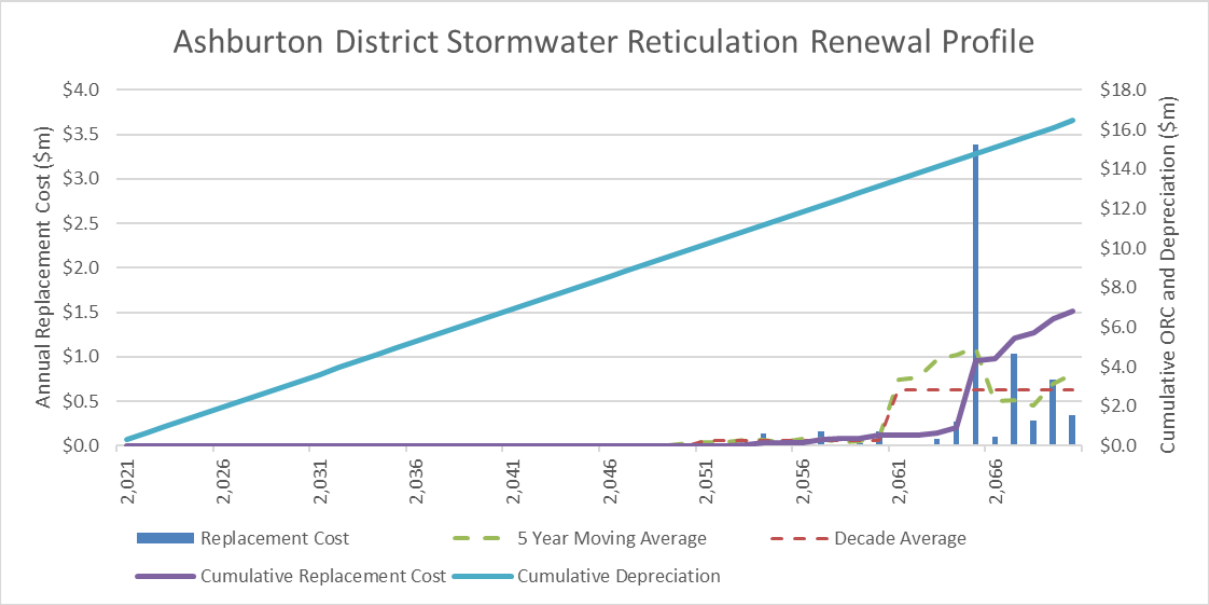
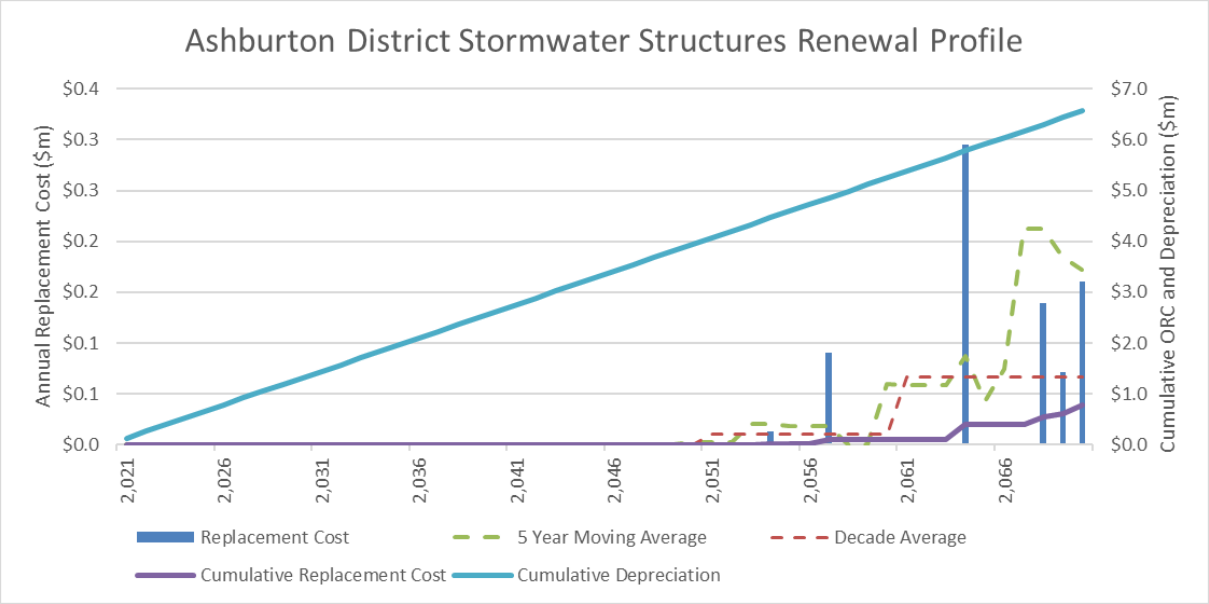


Figure 2: 50 year facilities ORC profile



7. Changes made for Stormwater

7.1. Capital work

In the past three years the focus of stormwater capital work has been the Ashburton CBD, which is undergoing a complete upgrade. Around $800,000 of new and renewed infrastructure is being built, including stormwater pipes, sumps, and treatment structures such as rain gardens.

New subdivisions have been vested, including stormwater reticulation and management structures.

7.2. Investigations

The first large capital project programmed for the 2018-28 LTP was a stormwater main along West Street, intended to capture and direct stormwater from side streets towards the Ashburton River, relieving flooding on State Highway 1 at West Street. Investigations were carried out to identify an alignment and assess the benefits of the proposed pipeline. However it appears that flooding on this stretch of the road is less likely to be related to downstream capacity and be a local road drainage issue. Further investigation will take place. Due to the CBD absorbing the budgets and resources, this project was delayed until the 2021-31 LTP.

It is most likely that the treatment for the West Street outfall will move up in priority, while the West Street stormwater pipe is further investigated, and projects to effect the implementation of the global stormwater consent will be slotted into the first few years.

8. Key projects for Stormwater

8.1. Capital projects

An extensive capital upgrade programme over the next 30+ years will dominate the expenditure for stormwater. The programme is in two parts: new and upgraded pipework to provide flood alleviation; and attenuation and treatment facilities to improve the quality of the final discharge. The total programme is budgeted at approximately $22.6m.

Pipelines are proposed in:

- West Street: Mill Creek to the river. Split into four stages.
- Chalmers Avenue: South St to the river.
- Alford Forest Road: Charles Street to Allens Road; and
- Havelock St: Grigg St to West St.

Attenuation and treatment facilities are proposed for the discharges located at:

- West Street
- Chalmers Avenue
- Trevors Road
- River Terrace
- Allens Road
- Melcombe Street
- Smithfield Road

The timeline has been modified since originally programmed in the 2015-25 LTP to address the increased regional and national focus on river and stream water quality. The attenuation and treatment projects have been brought forward, and the pipeline projects have been moved back. No major capital projects have been added or removed, although there are new provisions in the 2021-31 LTP for investigations into stormwater improvements on Bridge Street, Ashburton.

There are also provisions for defining and protecting overland flow paths and installing sampling points and purchasing equipment. These are requirements of the network-wide consent.

8.2. Renewals

The stormwater reticulation is relatively young, and stormwater structures are generally long-lived concrete, rock or earthwork structures. As a result there are no renewals in the 10-year renewals programme.

Planned condition assessment of pipes will ensure future renewal programmes are based on the best information available. Once additional condition data is obtained on pipelines and facilities, any urgent projects will be added to the programme.

8.3. Operational

Implementing the global consent and SMP will involve some operational expenditure on projects and monitoring. Highlights include:

- Define and protect overland flow paths

Some operational improvement projects are fundamental to meeting the Ashburton SMP Strategic Objectives and the targets in Schedule 2 of the global resource consent. More detail is included in Appendix D, and the original is in the SMP.

These include:

- Implementing the global stormwater consent for Ashburton, including monitoring and assessments to create a baseline for surface and ground water quality and ecosystem health and to track these over time
- Continuing to plan and prioritise the capital upgrades
- Defining and protecting overland flow paths
- Expanding the network of rain gauges and water table monitoring bores
- Assessing industrial sites and their stormwater arrangements
- Education and engagement with the community
- Stormwater standards and specifications
- Creating a new stormwater bylaw
- Creating SMP(s) and global stormwater discharge consents for Methven and Rakaia

9. Proposed programme

9.1. Ashburton (Incl. Tinwald, Lake Hood and Fairton)

Project	Work type	Timing	Year	Indicative cost
Global consent implementation (bores and sampling equipment)	Addition	2021-22	1	$50,000
Define and protect overland flow paths	Operational	2021-22	1	$27,000
Industrial sites assessment	Operational	2021-23	1-2	$100,000
Stormwater Bylaw (new)	Operational	2021-22	1	$25,000
Bridge Street Stormwater Improvements - Investigation	Addition	2021-22	1	$10,000
Community engagement and education	Operational	2021-31	1, 3, 5, 7, 9	Staff time
CCTV/Condition Assessment	Operational	2021-31	1-10	$20,000 per year
West St Attenuation & Treatment Facilities	Addition	2022-23	2	1,900,000
West St Trunk Stormwater Main (Havelock/River)	Addition	2023-24	3	3,380,000
West St Trunk main (Wills/Havelock)	Addition	2024-25	4	1,175,000
Chalmers Ave Attenuation & Treatment Facilities	Addition	2026-27	6	2,580,000
West St Trunk Stormwater Main (Walnut/Wills)	Addition	2027-28	7	2,910,000
West St Trunk Stormwater Main (Mill Ck/Walnut)	Addition	2029-30	9	1,640,000
Trevors Rd Attenuation & Treatment Facilities	Addition	2030-31	10	1,450,000

9.2. Methven

Project	Work type	Timing	Year	Indicative cost
Global stormwater consent	Operational	2021-22	1	$50,000

9.3. Rakaia

Project	Work type	Timing	Year	Indicative cost
Global stormwater consent	Operational	2021-22	1	$50,000

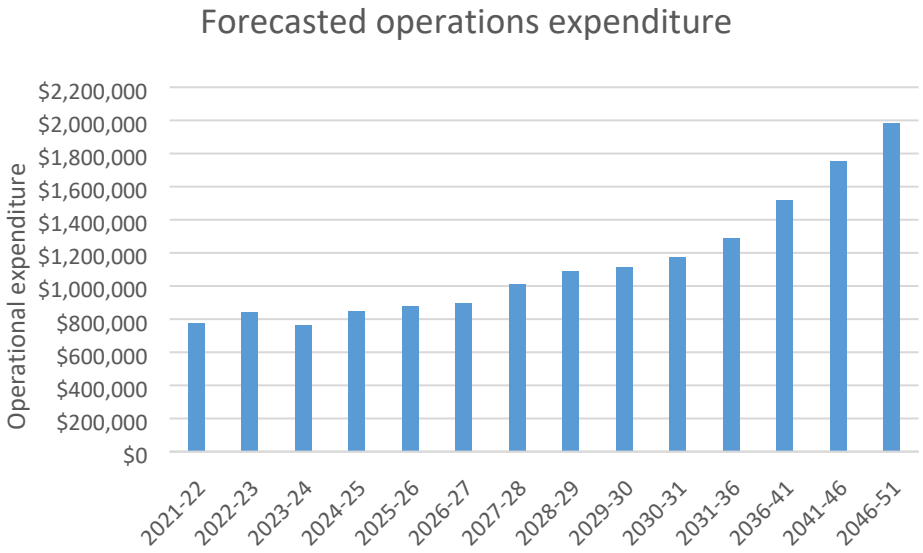
10. Costs for Stormwater

10.1. Operations and maintenance expenditure

The total estimated operations and maintenance costs for stormwater activities is summarised below. The figures from year 2 include application of a forecast cost indexation to current expenditure.

Please note that these forecasts excludes interest, depreciation and overhead charges and are inflated.

Figure 3: Forecast operations and maintenance expenditure (inflated)



The primary operational and maintenance issues associated with the stormwater schemes are:

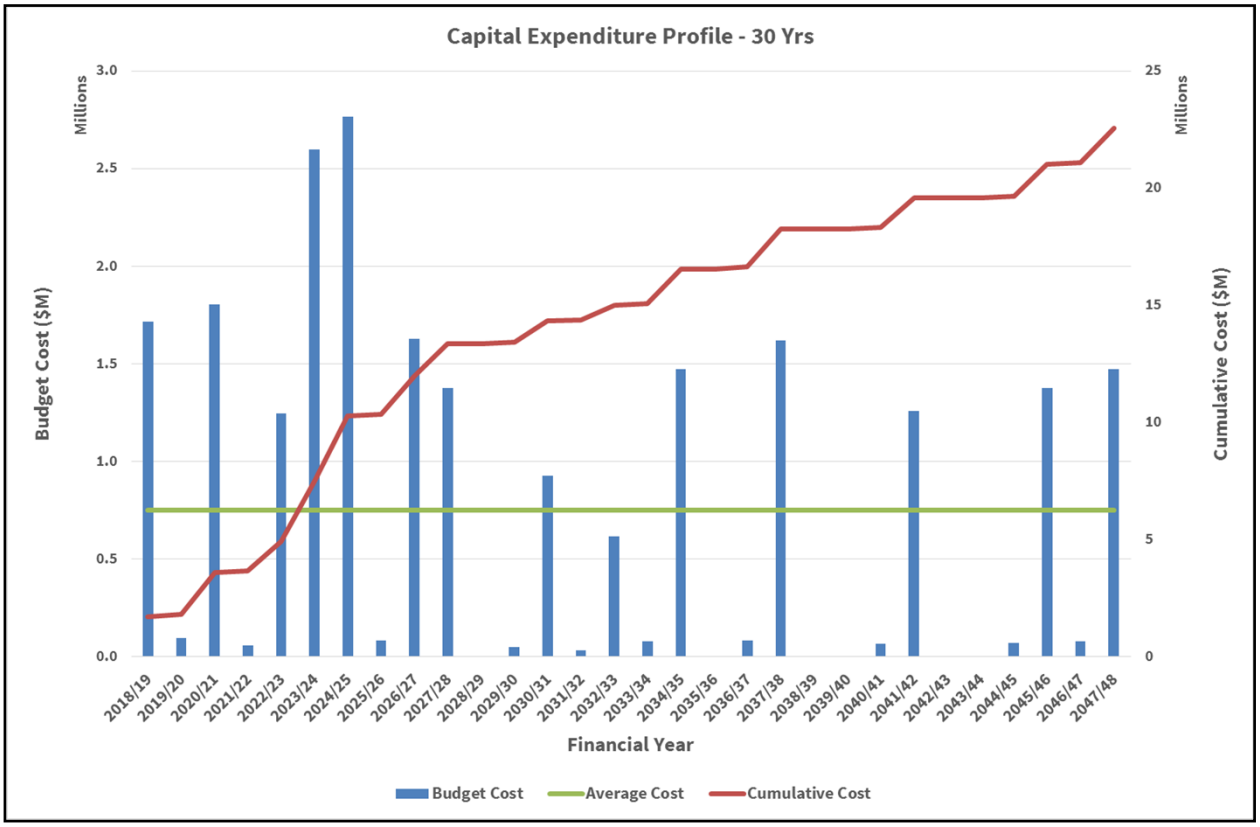
- A need to ensure that preventative maintenance is being carried out regularly and robustly. This is an area of focus.
- A need to revisit the quantity, quality and medium of asset information being captured by the contractor and reported back to council during the course of operating the network.

Our new operations and maintenance contract has improved the integration with the O&M contractor and data is being captured electronically, and can be related back to unique assets.

10.2. New capital expenditure

The 30 year capital expenditure profile for Ashburton stormwater is shown in the figure below. The 30 year plan is only a subset of the total extent of upgrades required to provide a fully developed network and improve stormwater discharge quality. The complete package of potential projects is identified in Appendix D.

Figure 4: 30 year capital plan



10.3. Funding requirements

10.3.1. General approach to funding

Council's approach to funding its activities is detailed in its revenue and financing policy.

Owners of all properties that are within the catchment served by a public stormwater system pay a **targeted capital value rate** per property. This approach recovers 90% of the cost of the service. The remaining 10% of the cost of the service is recovered through the district-wide **general rate**.

10.3.2. Funding requirements

For Stormwater

	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	112	112	130	141	160	159	166	186	186	204	215
Targeted rates	1,057	1,241	1,312	1,283	1,439	1,433	1,491	1,675	1,675	1,839	1,935
Subsidies and grants for operating purposes	0	0	0	0	0	0	0	0	0	0	0
Fees and charges	1	1	1	1	1	1	1	1	1	1	1
Internal charges and overheads recovered	11	0	0	0	0	0	0	0	0	0	0
Local authorities fuel tax, fines, infringement fees and other receipts	35	0	0	0	0	0	0	0	0	0	0
Total sources of operating funding	1,215	1,353	1,443	1,425	1,600	1,592	1,657	1,862	1,862	2,044	2,150
Applications of operating funding											
Payments to staff and suppliers	258	410	465	344	354	360	375	418	427	445	462
Finance costs	163	75	69	100	168	180	168	222	278	264	291
Internal charges and overheads	324	290	307	316	322	332	346	353	363	377	388
Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
Total applications of operating funding	744	775	841	760	844	872	889	994	1,068	1,086	1,141
Surplus/(deficit) of operating funding	471	577	602	664	756	721	768	868	794	958	1,009

* 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	298	(271)	1,385	3,014	535	(526)	2,253	2,435	(636)	1,130	814
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	298	(271)	1,385	3,014	535	(526)	2,253	2,435	(636)	1,130	814
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	756	88	1,982	3,659	1,236	170	2,994	3,275	128	2,056	1,789
- to replace existing assets	0	0	0	0	0	0	0	0	0	0	0
Increase/(decrease) in reserves	13	218	5	20	55	24	27	28	30	32	35
Increase/(decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
Total applications of capital funding	769	306	1,987	3,679	1,292	195	3,021	3,303	158	2,088	1,824
Surplus/(deficit) of capital funding	(471)	(577)	(602)	(665)	(756)	(720)	(769)	(869)	(795)	(958)	(1,010)
Funding Balance	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Expenditure by stormwater 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
Ashburton	1,090	1,155	1,254	1,275	1,416	1,472	1,505	1,684	1,817	1,855	1,954
Methven	64	111	104	80	114	83	86	88	89	93	95
Rakaia	19	62	54	29	30	30	31	32	33	34	35
Hinds	3	12	12	12	13	13	13	14	14	14	15
Rural	0	51	53	57	61	65	70	74	79	85	90
Total operating expenditure	1,226	1,391	1,477	1,453	1,634	1,664	1,705	1,892	2,032	2,081	2,189
less depreciation	481	616	636	693	790	792	816	898	964	995	1,048
Total applications of operating funding	744	775	841	760	844	872	889	994	1,068	1,086	1,141

Capital by stormwater 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
Ashburton	1,526	285	2,477	3,850	1,454	492	3,438	3,614	597	2,414	2,284
Methven	0	155	132	89	73	158	162	166	171	176	181
Rakaia	0	0	0	0	0	0	0	0	0	0	0
Hinds	0	0	0	0	0	0	0	0	0	0	0
Rural	0	0	0	0	0	0	0	0	0	0	0
Total capital expenditure	1,526	440	2,609	3,939	1,527	649	3,600	3,780	768	2,590	2,465
less vested assets	770	352	627	280	291	479	606	505	640	534	676
Council funded capital expenditure	756	88	1,982	3,659	1,236	170	2,994	3,275	128	2,056	1,789

10.4. Development Contributions

10.4.1. Stormwater contributions

The Development and Financial Contributions Policy has been the subject of review and public consultation in 2020.

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

11. Key legislation / industry standards and relationship with other planning / policy documents for Stormwater

11.1. Legislation and other drivers

11.1.1. 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 34 resource consents for stormwater treatment and disposal associated with Ashburton, Methven and Rakaia.

11.1.2. Health Act 1956

Places an obligation on Council to improve, promote and protect public health within the District. The provision of stormwater services conserves public health and helps to protect land and waterways from contamination.

11.1.3. 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.

11.1.4. 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.

11.1.5. National Policy Statement for Freshwater Management (2017)

Provides high level guidance for regional authorities when considering freshwater management objectives, policies and methods for inclusion in statutory planning documents. Key changes in 2017 are the inclusion of national targets which now give them legal status. New policies make it mandatory for regional council to work toward the targets. Other changes including monitoring requirements and management nitrogen and phosphorus.

11.1.6. Canterbury Water Management Strategy (2010)

The Canterbury Water Management Strategy (CWMS) is a non-statutory document with a collaborative approach to managing water within the Canterbury Region.

11.1.7. Canterbury Land and Water Regional Plan:

The purpose of the Canterbury Land and Water Regional Plan (LWRP) is to identify the resource management outcomes or goals for managing land and water resources in Canterbury to achieve the purpose of the RMA. It identifies the policies and rules needed to achieve the objectives.

11.1.8. Ngai Tahu Claims Settlement Act (1998):

The Ashburton River is a statutory acknowledgement river and is identified as a major mahinga kai area for Ngai Tahu. The Ngai Tahu association with the river also includes the sustainable utilisation of resources. Mauri is a critical element of the spiritual relationship of Ngai Tahu Whanui with the river.

11.2. Related documents

11.2.1. 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.

11.2.2. 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.

11.2.3. Surface Water Strategy

The Surface Water Strategy (2019) builds on the foundation of the 2009 Stormwater Strategy. The Stormwater Strategy covered the Ashburton urban area, whereas the Surface Water Strategy captures not just stormwater related matters but also includes the water race (stockwater) network and other waterways, and covers the district as a whole.

It also provides a strategic approach to how Council manages the water race network (including race closures on the network), and future management of other surface water bodies.

11.2.4. Ashburton Stormwater Management Plan

The Stormwater Management Plan (SMP) provides an integrated approach to the management of stormwater discharges from a catchment perspective. Its provisions are given effect to through the

network-wide resource consent. Similar SMPs will be needed for Methven and Rakaia, when their network-wide consents will be needed.

The SMP comprises a review of existing issues and the identification of future needs. It includes the development of hydraulic models to examine both the piped network and stream channels within the Ashburton and Tinwald urban catchments, providing critical information on the performance of the networks. The models also predict the performance of the networks when future development is taken into consideration.

A hydraulic model of the stormwater network was developed in 2012 as part of the implementation of the Ashburton Urban Stormwater Strategy.

12. Risk management for Stormwater

12.1. Council risk register

The Council developed a district wide risk register in 2013. This includes a high level consideration of the risk around "flooding of roading network, Council facilities, private homes and land".

The impact of this risk was assessed from a Health and Safety, Operational, Political, Financial, and Environmental perspective. The risk register was reviewed and updated in 2015.

The risk register indicates the risk profile for the stormwater service is classed as **medium** and the controls in place effectiveness are classed as "Good – Majority of risks are managed but there is potential for failure." Further controls were required and these are presented in Table 3.

Table 3: Additional controls for the Stormwater service risk register

Control	Priority	Comment
Stormwater Management Plan (catchment specific)	Medium	Implementation of the Ashburton SMP. Stormwater management in Methven, Rakaia and other small communities will be considered via a District SMP.
Identify properties affected by wastewater infiltration and add information to LIMs	Medium	LIMs will identify properties shown to be non-complying in the "Right Pipe Project".

12.2. Stormwater risk register

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

The risk register was reviewed in 2017 and indicates there are no extreme risks and two high risks. The high risks have existing controls (mitigation) that have been or are being developed that reduce all the risks to moderate as presented in Table 4.

Table 4: Stormwater risk register - Extreme and high risk risks

Risk severity	Risk category	Potential impact	Controls
High	Product	Unable to meet legislative / consent compliance requirements for quality of stormwater discharged	Existing: LTP programme of works. To Develop: ADC will review consents once Global consent in place.
High	Infrastructure	Performance or	Existing:

Risk severity	Risk category	Potential impact	Controls
		capacity failure	LTP programme of works. Allowances for safety factors and climate change in design. To Develop: Stormwater improvement projects from the SMP upgrades long term capital works plan.

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

12.3. 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 stormwater 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.

The projected increased frequency of extreme rainfall events (or the increase in rainfall intensities) might cause more frequent rainwater entry into sewer systems that could result in more frequent sewer overflows.

12.4. Resilience

Council has contributed to the resilience of the Stormwater system (network, treatment and disposal) by:

- Effective implementation of the Ashburton Urban SMP
- Increase in maintenance requirements and standards
- Consideration of construction standards (including materials)
- Requiring conservative safety factors as part of asset design
- Designs account for projected increases in rainfall due to man-made induced climatic change.

13. Stakeholders and consultation for Stormwater

- ACL as contractor for the daily provision of the service
- Residents served by the respective stormwater networks
- Iwi
- Environment Canterbury
- Ministry of Health
- Ministry for the Environment
- Audit NZ
- Community and Public Health (CDHB)

14. Improvement programme for Stormwater

14.1. Process overview

14.1.1. Asset Management Approach

Council has undertaken a structured assessment of the appropriate level of asset management practice for the stormwater 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 stormwater was considered **Core Plus**.

14.1.2. 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.

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 should this step be taken in future.

14.2. Asset management data quality

The quantity and quality of the asset data held was reviewed in August 2011 by Opus International Consultants Ltd. These grades have been periodically reviewed since that time and no changes are warranted at this point. To lift the data quality from a B to an A grade would require significant and unjustifiable expenditure.

However, changes in requirements for as-built drawings and improvements in managing projects has increased the confidence level for data for new assets level A.

Table 5: Asset data confidence assessment

Asset group	Asset	Quantity	Replacement cost	Life expectancy	ODRC
Utilities assets	Drinking Water assets	B	B	B-C	B
	Wastewater assets	B	B	B-C	B
	Stormwater assets	B	B	B-C	B
	Stockwater assets	B	B	B-C	B

Table 6: Definition of Data Confidence Levels

Grade	Label	Description	Accuracy
A	Accurate	Data based on reliable documents	±5%
B	Minor inaccuracies	Data based on some supporting documentation	±15%
C	Significant data estimated	Data based on local knowledge	±30%
D	All data estimated	Data based on best guess of experienced person	±40%

14.3. Training

No specific training has been identified, however, through the re-write of the Utilities Operations and Maintenance contract, emphasis was placed on a requirement for Contractor staff to have appropriate industry recognised qualification(s).

Further staff training may be required in future as the SMP and network-wide consent implementations progress, to build up the in-house capability.

14.4. Improvement actions

Ashburton District Council is committed to on-going improvement in the quality of its stormwater 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 stormwater systems.
- **Scheme Knowledge**: Increased asset attribute knowledge (condition, performance, material, size) and monitoring regime for stormwater management assets, and in particular for assets identified as critical.
- **AM Policy**: To provide the principles by which Council intends to apply asset management to achieve Council's 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 ensure 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.

15. Appendices

15.1. Appendix A - Current valuation by scheme

Table 7: Scheme financial summary

Scheme	Asset group	ORC June 2020	Annual depreciation June 2020
Ashburton	Reticulation	$ 45,021,702	$ 429,154
	Structures	$ 9,570,639	$ 128,198
	Sub Total	**$ 54,592,341**	**$ 558,352**
Methven	Reticulation	$ 2,980,929	$ 28,930
	Structures	$ 115,092	$ 1,196
	Sub Total	**$ 3,096,021**	**$ 29,586**
Rakaia	Reticulation	$ 1,039,340	$ 9,898
	Structures	$ -	$ -
	Sub Total	**$ 1,039,340**	**$ 9,898**
Hinds	Reticulation	$ 5,791	$ 55
	Structures	$ -	$ -
	Sub Total	**$ 5,791**	**$ 55**
	Total	**$ 40,272,407**	**$ 425,898**

15.2. Appendix B – Stormwater network age and material details

15.2.1. District

Stormwater pipes across the district are mostly concrete with some PVC being used for small diameters from the 1990s.

It is expected that this pipe will remain functioning well for years to come, and that we will realise 100 years of life for most pipes, meaning a renewal programme will begin to ramp up in the 2040s.

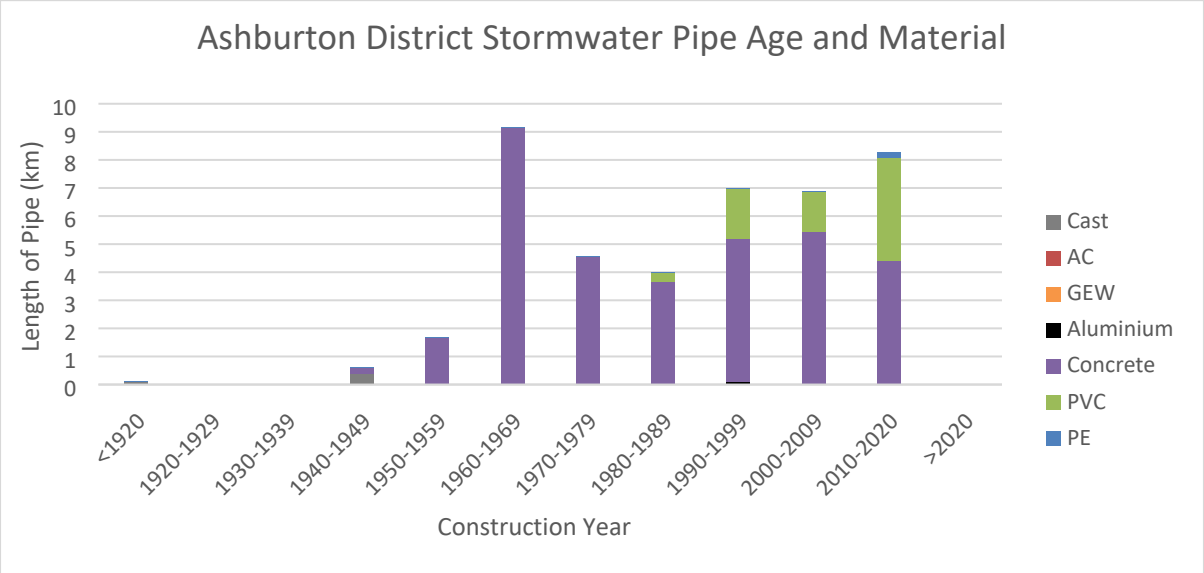


Figure 5 - Ashburton District Stormwater Pipe Age and Material

15.3. Appendix C - Operation and maintenance strategies

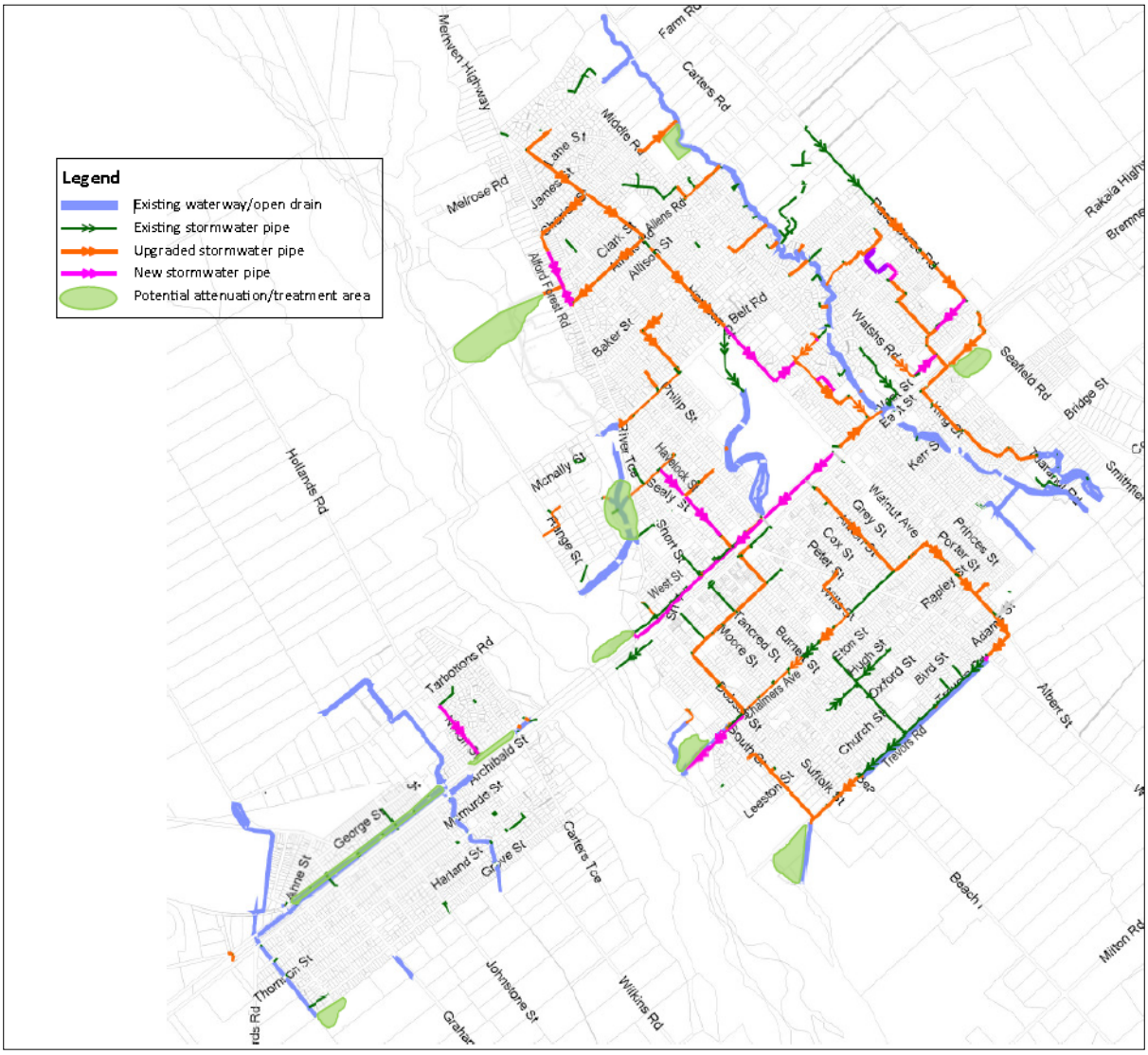
Table 8: Operations and maintenance strategies

Strategy	Objective/ Description
Routine maintenance	Routine Maintenance is carried out by ACL an supervised and monitored by Council staff to an agreed programme.
Repairs	The detection and repair of faults causing failure will be undertaken as quickly as practically possible. The fault will be isolated and components repaired or replaced as appropriate 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.
Redesign and modification	Redesign may be necessary if an asset or system does not meet its operational objective. Similarly, modifications may be necessary to improve the operating characteristics. Alternative options are considered and can coincide with Corrective Maintenance.
Operations	Operational activities will be undertaken by ACL unless specialised advice is required. 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. Council supervise and monitor ACL work with Council staff defining the required standards.
Physical works monitoring	Council audits work carried out ACL and any other contractor to verify compliance with standards.
	Audits are carried out of approximately 5% of maintenance work to confirm compliance with contractual requirements.
Operation of utilities	Utilities such as treatment plants are pump stations are operated in terms of defined parameters and standards set out in quality system manuals.
	Stormwater services utilities will be operated in terms of these quality manuals.
Incident management	Councils approach is an escalation process from minor to major, minor incidence is managed by the contractor, and medium to major issues by Council staff. Involvement is also judged by the potential consequences or asset criticality

15.4. Appendix D – Ashburton capital expenditure programme

The figure below shows the complete package of potential projects presented. The stormwater upgrades shown for Tinwald are indicative only.

Figure 6: Map showing all proposed stormwater improvements (from the SMP)



The following tables contain the complete list of proposed operational and capital improvements from the SMP. This goes beyond the 30-year timeframe.

Table 9: Operational projects to meet the SMP strategic objectives

Priority & project	Driver	Timeframe	Indicative cost
Ashburton Stormwater Consent			
Ashburton SMP Implementation			
Priority B Define and protect overland flow paths	LoS	2021-22	$27,000 [3]
Priority C Install rain gauge(s) and water table monitoring bores[1]	Compliance	Initial 3 Sites Completed	
Priority C Industrial sites assessment	Compliance	2021-23	$100,000 [3]
Priority C Community engagement and education[2] - community open day following lodgement of global consent to raise awareness of stormwater management and consultation with key stakeholders	Education & awareness	biennially	Staff Time
Priority D Staff training to build in-house capability to implement the SMP	Compliance	Initial staff training completed and now ongoing	
Priority D Stormwater Specification and standard details	Compliance	In development	
Priority E Stormwater Bylaw (new)	Compliance	2021-22	$10,000 [3]
District-wide SMP			
Priority - not assigned SMP(s) and global stormwater discharge consent for other urban stormwater catchments (Methven and Rakaia). Including, as necessary: SMP upgrades optimisation, define and protect overland flow paths, industrial sites assessment, community engagement and education	Compliance	2021-22	$100,000
		Total (External Only)	**$100,000**

Table 10: Capital projects to meet the SMP strategic objectives

Scheme	Project	Driver	Timeframe	Budget
Ashburton	West St Trunk Main (Havelock St to outfall)	LOS Improvement	2023/24	$3,380,000

Scheme	Project	Driver	Timeframe	Budget
Ashburton	Attenuation and Treatment Facilities – West Street Discharge	Compliance LOS Improvement	2022/23	$1,900,000
Ashburton	West St Trunk Main (Wills St to Havelock St)	LOS Improvement	2024/25	$1,175,000
Ashburton	Attenuation and Treatment Facilities – Chalmers Ave Discharge	Compliance LOS Improvement	2026/27	$2,580,000
Ashburton	West St Trunk Main (Walnut Ave to Wills St)	LOS Improvement	2027/28	$2,910,000
Ashburton	West St Trunk Main (Mill Creek to Wills St)	LOS Improvement Catchment Mgmt.	2029/30	$1,640,000
Ashburton	Attenuation and Treatment Facilities – Trevors Rd Discharge	Compliance LOS Improvement	2030/31	$1,450,000
Ashburton	Chalmers Ave Trunk Main (South St to River)	LOS Improvement	2030/31	$975,000
Ashburton	Attenuation and Treatment Facilities – River Terrace Discharge	Compliance LOS Improvement	2031/33	$650,000
Ashburton	Attenuation and Treatment Facilities - Allens Rd Discharge	Compliance LOS Improvement	2033/35	$1,550,000
Ashburton	Alford Forest Rd Trunk Main (Charles to Allens Rd)	LOS Improvement	2036/38	$1,705,000
Ashburton	Havelock St Stormwater (Grigg St to West St)	LOS Improvement	2040/42	$1,325,000
Ashburton	Attenuation and Treatment Facilities – Melcombe St	Compliance LOS Improvement Catchment Mgmt	2044/46	$1,450,000
Ashburton	Attenuation and Treatment Facilities – Smithfield Rd	Compliance LOS Improvement Catchment Mgmt.	2046/48	$1,550,000