ATTACHMENTS

UNDER SEPARATE COVER

Extraordinary Council Meeting

1 June 2021

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2021-2031 LTP SIGNIFICANT FORECASTING ASSUMPTIONS

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
POPULATION CHANGE						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
DEMOGRAPHIC CHANGES						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups
OIL PRICE						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum market has historically demonstrated a tendency to stabilise rapidly, where possible.	WDC	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater frequency and/or greater severity.	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase demand for alternative methods of transport.	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
CLIMATE CHANGE						
The effects of climate change are expected to manifest in three categories: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) general socio-economic consequences of such changes, and c) socio-economic consequences of policies/ measures designed to curb the adverse effects of climate change.	WDC	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY (NZTA) REVENUE						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidized works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths
GRANTS AND SUBSIDIES						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.	WDC	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in reduced level of service.	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
NEW ZEALAND DRINKING WATER STANDARDS & SERVICE DELIVERY						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	WDC Central Government	Legislation changes under urgency in Parliament that must be implemented immediately.	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply
RESOURCE CONSETS						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	WDC	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply
WATER IRRIGATION SCHEMES						
Council does not expect major irrigation schemes to be introduced into the district over the period of the Long Term Plan.	WDC	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal impact on Council, but a more considerable impact on the district's agricultural sector.	Council will monitor the environment in regard to any potential development, and seeks to remain involved in discussions/proposals.	Roading and Footpaths, Rural Water Supply, Sewerage

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
EMERGENCY EVENT						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	WDC	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups
DEVELOPMENT CONTRIBUTIONS						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable under each system will be broadly similar.	WDC	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
DISTRICT ECONOMY						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	WDC	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices- the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups
USEFUL LIVES OF SIGNIFICANT ASSETS AND DEPRECIATION						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support WDC asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply
REVALUATION OF NON-CURRENT ASSETS						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets: Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%	WDC	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FUNDS FOR FUTURE REPLACEMENT OF SIGNIFICANT ASSETS						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	WDC	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage
RETURN ON INVESTMENT- ALPINE ENERGY						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it is assumed the dividend will remain at 6c.	WDC (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be unlikely to maintain dividends at the proposed level.	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FORESTRY ASSETS VALUES						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	WDC	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance
CAPITAL DELIVERY						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	WDC	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in any given year, and carried over to subsequent years.	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. Due to the nature of the rates smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	Water Supply & all other activities

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
RETURN ON INVESTMENTS- OTHER						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	WDC (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance
INFLATION						
Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL). Year / Roading % / Property and Parks % / Water % / Staff % / Other % / Wastewater % / Capital Expenditure % June 2022 1.1 1.7 7.2 4.8 1.7 7.2 4.0 June 2023 1.1 2.0 3.4 2.4 2.0 3.4 3.0 June 2024 3.0 2.0 2.1 1.5 2.0 2.1 2.6 June 2025 2.9 1.9 2.4 1.7 1.9 2.4 2.6 June 2026 2.9 1.8 2.6 2.0 1.8 2.6 2.7 June 2027 2.9 1.8 2.3 2.2 1.8 2.3 2.6 June 2028 2.9 1.7 3.0 2.3 1.7 3.0 2.8 June 2029 2.9 1.7 3.3 2.4 1.7 3.3 2.8 June 2030 2.9 1.7 3.3 2.6 1.7 3.3 2.9 June 2031 2.9 1.6 2.7 2.7 1.6 2.7 2.7	Business and Economic Research Ltd.	Inflation will be higher or lower than anticipated.	Moderate	A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.	Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan. In the event of significant changes to the underlying costs supporting work in the activity areas, mitigation planning will feature in the Annual Plan.	All activity groups

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
BORROWING COSTS						
Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.	WDC (in conjunction with its financial advisors)	Interest rates will differ significantly from those estimated.	Low	If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.	Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.	Investment and Finance
UNIDENTIFIED LIABILITIES						
It is assumed that Council does not have any unidentified liabilities.	WDC	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

Note on Document Control:

This version of the 2021-2031 LTP Significant Forecasting Assumptions is the latest version of the document, produced after feedback from Audit NZ, and reproduced to comply with Audit's recommendations.

Date of Production: 24/5/2021

Prospective Statement of Comprehensive Revenue and Expenditure for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Revenue											
Rates (net of remissions)	10,549	11,598	12,419	13,286	13,679	14,032	14,522	14,719	14,988	15,377	15,805
Rates (Downlands Rural Water Scheme 14% share)	-	324	395	401	381	382	400	397	399	414	444
Development and financial contributions	63	63	65	66	67	69	71	72	74	76	78
Subsidies and grants	3,387	4,873	3,905	4,016	4,323	4,445	4,574	4,708	4,842	4,983	5,124
Fees and charges	1,057	1,181	1,206	1,230	1,254	1,277	1,300	1,324	1,347	1,372	1,395
Other revenue	1,492	1,105	1,155	1,171	3,084	1,270	1,218	1,233	1,300	1,303	1,344
Other revenue (Downlands Rural Water Scheme 14% share)	-	11	12	12	12	13	13	13	14	14	14
Total revenue	**16,547**	**19,156**	**19,156**	**20,182**	**22,799**	**21,488**	**22,099**	**22,466**	**22,965**	**23,539**	**24,205**
Expenditure											
Employment benefit expenses	4,693	5,444	5,353	5,270	5,359	5,467	5,587	5,715	5,853	6,005	6,167
Depreciation and amortisation	5,435	5,732	5,740	5,999	6,067	6,083	6,455	6,555	6,551	6,902	7,050
Depreciation and amortisation (Downlands Rural Water Scheme 14% share)	-	114	138	142	144	144	156	156	156	168	168
Finance costs	239	293	406	391	309	286	248	212	199	175	149
Finance costs (Downlands Rural Water Scheme 14% share)	-	17	60	60	62	60	58	57	55	53	52
Other expenses	7,614	8,526	8,168	8,383	10,416	8,819	8,946	9,041	9,238	9,556	9,677
Other expenses (Downlands Rural Water Scheme 14% share)	-	129	132	135	139	142	146	150	154	158	162
Total expenditure	**17,980**	**20,255**	**19,997**	**20,380**	**22,496**	**21,002**	**21,596**	**21,885**	**22,205**	**23,016**	**23,425**
Surplus/(Deficit) before tax	**(1,433)**	**(1,100)**	**(841)**	**(198)**	**304**	**486**	**502**	**581**	**760**	**522**	**780**
Increase / (decrease) in restricted reserves	-	-	-	-	-	-	-	-	-	-	-
Increase / (decrease) in revaluation reserves	2,272	-	25,105	2,759	-	26,749	2,836	-	28,436	2,863	-
Increase / (decrease) in revaluation reserves (Downlands 14% share)	-	-	210	-	-	581	-	-	636	-	-
Financial assets at fair value through other comprehensive income	797	633	649	674	700	728	756	786	816	848	881
Total other comprehensive revenue and expenditure	**3,069**	**633**	**25,964**	**3,433**	**700**	**28,058**	**3,592**	**786**	**29,889**	**3,711**	**881**
Total Comprehensive Revenue and Expenditure	**1,637**	**(467)**	**25,122**	**3,235**	**1,004**	**28,544**	**4,094**	**1,366**	**30,648**	**4,233**	**1,662**

Prospective Statement of Changes in Equity
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Equity at start of year	454,846	448,331	447,864	472,987	476,222	477,226	505,770	509,864	511,231	541,879	546,111
Total comprehensive income	1,837	(467)	25,122	3,235	1,004	28,544	4,094	1,366	30,648	4,233	1,662
Equity at end of year	**456,283**	**447,864**	**472,987**	**476,222**	**477,226**	**505,770**	**509,864**	**511,231**	**541,879**	**546,111**	**547,773**
Components of equity											
Retained earnings at start of year	84,965	81,404	80,397	79,879	79,560	79,944	80,479	81,078	81,668	82,477	83,038
Surplus / (deficit) after tax	(1,433)	(1,100)	(841)	(198)	304	486	502	581	760	522	780
Transfers (to) / from restricted / council created reserves	7,712	93	123	79	80	49	96	10	49	39	112
Transfers (to) / from revaluation reserves	-	-	-	-	-	-	-	-	-	-	-
Retained earnings at end of year	**91,244**	**80,397**	**79,679**	**79,560**	**79,944**	**80,479**	**81,078**	**81,668**	**82,477**	**83,038**	**83,931**
Revaluation reserves at start of year	365,074	363,318	363,318	388,633	391,392	391,392	418,722	421,558	421,558	450,630	453,493
Revaluation gains / (losses)	2,272	-	25,315	2,759	-	27,330	2,836	-	29,072	2,863	-
Retained earnings at end of year	**367,346**	**363,318**	**388,633**	**391,392**	**391,392**	**418,722**	**421,558**	**421,558**	**450,630**	**453,493**	**453,493**
Restricted / Council created reserves at start of year	(1,874)	(3,483)	(3,576)	(3,698)	(3,777)	(3,857)	(3,907)	(4,003)	(4,012)	(4,061)	(4,101)
Transfers (to) / from reserves	(7,712)	(93)	(123)	(79)	(80)	(49)	(96)	(10)	(49)	(39)	(112)
Restricted / Council created reserves at end of year	**(9,586)**	**(3,576)**	**(3,698)**	**(3,777)**	**(3,857)**	**(3,907)**	**(4,003)**	**(4,012)**	**(4,061)**	**(4,101)**	**(4,213)**
Fair value through comprehensive revenue reserve at start of year	6,461	7,091	7,724	8,373	9,047	9,748	10,476	11,232	12,017	12,833	13,682
Transfers (to) / from reserves	797	633	649	674	700	728	756	786	816	848	881
Fair value through comprehensive revenue reserve at start of year	**7,278**	**7,724**	**8,373**	**9,047**	**9,748**	**10,476**	**11,232**	**12,017**	**12,833**	**13,682**	**14,563**
Equity at end of year	**456,283**	**447,864**	**472,987**	**476,222**	**477,226**	**505,770**	**509,864**	**511,231**	**541,879**	**546,111**	**547,773**

Prospective Statement of Financial Position
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Assets											
Current assets											
Cash and cash equivalents	4,267	853	724	638	560	514	418	414	388	329	216
Trade and other receivables	1,593	1,651	1,695	1,741	1,776	1,810	1,847	1,876	1,908	1,943	1,977
Inventories	103	103	103	103	103	103	103	103	103	103	103
Other financial assets	11	10	8	7	5	3	1	-	-	-	-
Total current assets	**5,973**	**2,617**	**2,530**	**2,488**	**2,444**	**2,430**	**2,369**	**2,394**	**2,379**	**2,375**	**2,296**
Non-current assets											
Property, plant and equipment	440,891	435,679	461,054	460,094	462,522	488,726	490,698	489,947	518,680	521,193	521,029
Property, plant and equipment - Downlands (14% Share)	-	7,242	7,506	7,636	7,849	8,185	8,208	8,159	8,746	8,688	8,701
Forestry assets	2,226	1,993	2,074	2,126	293	622	739	877	981	1,084	1,199
Intangible assets	193	302	278	273	235	205	218	193	174	165	175
Other financial assets	18,265	16,672	17,321	17,995	18,695	19,423	20,179	20,965	21,781	22,629	23,510
Other financial assets - Downlands (14% Share)	2,717	-	-	-	-	-	-	-	-	-	-
Total non-current assets	**462,293**	**462,057**	**488,233**	**491,123**	**489,394**	**517,160**	**520,041**	**520,140**	**550,362**	**553,759**	**554,615**
Total assets	**468,266**	**464,674**	**490,763**	**493,612**	**491,839**	**519,590**	**522,410**	**522,534**	**552,741**	**556,133**	**556,911**
Liabilities											
Current liabilities											
Trade and other payables	1,463	1,817	1,853	1,890	1,926	1,961	1,996	2,030	2,066	2,100	2,133
Borrowings	71	87	99	102	106	108	112	115	118	122	126
Provisions	6	6	6	6	6	6	6	6	6	6	6
Employment benefit liabilities	380	380	380	380	380	380	380	380	380	380	380
Total current liabilities	**1,929**	**2,290**	**2,338**	**2,378**	**2,417**	**2,455**	**2,494**	**2,531**	**2,569**	**2,608**	**2,645**
Non-current liabilities											
Provisions	61	61	61	61	61	61	61	61	61	61	61
Borrowings	10,003	12,350	13,289	12,795	10,026	9,265	8,000	6,782	6,360	5,534	4,655
Borrowings - Downlands Rural Water Scheme (14% Share)	-	2,108	2,088	2,156	2,108	2,039	1,991	1,929	1,872	1,819	1,777
Total non-current liabilities	**10,064**	**14,520**	**15,438**	**15,012**	**12,196**	**11,365**	**10,052**	**8,772**	**8,293**	**7,414**	**6,493**
Equity											
Public Equity	88,527	77,531	76,736	76,541	76,876	77,369	77,908	78,450	79,210	79,723	80,539
Public Equity - Downlands (14% Share)	2,717	2,898	2,943	3,019	3,068	3,116	3,170	3,218	3,267	3,315	3,392
Other reserves	365,038	365,200	390,831	394,185	394,805	422,233	425,729	426,505	455,706	459,379	460,148
Other reserves - Downlands Asset Revaluation Reserve (14% Share)	-	2,267	2,477	2,477	2,477	3,058	3,058	3,894	3,894	3,894	3,894
Total equity	**456,282**	**447,864**	**472,987**	**476,222**	**477,226**	**505,770**	**509,864**	**511,231**	**541,879**	**546,111**	**547,773**
Total liabilities and equity	**468,266**	**464,674**	**490,763**	**493,612**	**491,839**	**519,590**	**522,410**	**522,534**	**552,741**	**556,133**	**556,911**

Prospective Statement of Cash Flows for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Cash flows from operating activities											
Cash was received from:											
Receipts from rates revenue	11,875	11,903	12,848	13,721	14,103	14,480	14,966	15,166	15,437	15,839	16,297
Interest received	3	14	15	15	15	16	16	16	17	17	17
Dividends received	420	196	196	197	197	197	197	197	198	198	198
Receipts from other revenue	4,584	6,883	5,952	6,052	6,404	6,628	6,780	6,954	7,177	7,340	7,531
	16,882	**18,997**	**19,011**	**19,984**	**20,719**	**21,239**	**21,939**	**22,333**	**22,828**	**23,393**	**24,044**
Cash was applied to:											
Payments to suppliers and employees	12,306	13,748	13,616	13,699	13,934	14,338	14,621	14,872	15,209	15,683	15,972
Interest paid	239	310	466	451	370	346	306	269	254	228	201
	12,545	**14,056**	**14,083**	**14,150**	**14,304**	**14,684**	**14,928**	**15,140**	**15,464**	**15,912**	**16,173**
Net cash flow from operating activities	**4,337**	**4,941**	**4,928**	**5,834**	**6,416**	**6,615**	**7,011**	**7,193**	**7,365**	**7,482**	**7,871**
Cash flows from investing activities											
Cash was received from:											
Proceeds from sale of property, plant and equipment	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of harvested forests	-	-	-	52	1,944	55	22	-	-	-	-
Proceeds from sale of investments	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of Eric Batchelor subdivision sections	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	52	1,944	55	22	-	-	-	-
Cash was applied to:											
Purchase of property, plant and equipment	7,702	13,153	5,944	5,494	5,604	5,596	5,725	5,872	6,921	6,632	7,040
Purchase of intangible assets	30	10	36	53	11	11	57	12	12	12	13
Purchase of silviculture capital expenditure	-	3	10	2	9	282	37	37	2	1	13
Acquisition of investments	-	-	-	-	-	-	-	-	-	-	-
	7,732	13,167	5,988	5,549	5,624	5,889	5,819	5,921	6,935	6,645	7,066
Net cash flow from investing activities	**(7,732)**	**(13,167)**	**(5,988)**	**(5,497)**	**(3,680)**	**(5,833)**	**(5,797)**	**(5,921)**	**(6,935)**	**(6,645)**	**(7,066)**
Cash flows from financing activities											
Cash was received from:											
Proceeds from borrowings	7,550	7,000	1,050	-	-	-	-	-	-	-	-
Proceeds from borrowings - Downlands	-	1,517	-	78	-	-	-	-	-	-	-
	7,550	8,517	1,050	78	-	-	-	-	-	-	-
Cash was applied to:											
Repayment of borrowings	71	87	99	502	2,755	758	1,262	1,215	418	822	876
Repayment of borrowings - Downlands	-	-	21	-	58	69	48	62	57	53	42
	71	87	120	502	2,813	826	1,310	1,276	476	875	918
Net cash flow from financing activities	**7,479**	**8,430**	**930**	**(423)**	**(2,813)**	**(826)**	**(1,310)**	**(1,276)**	**(476)**	**(875)**	**(918)**
Net increase / (decrease) in cash held	4,084	205	(129)	(86)	(78)	(46)	(95)	(4)	(46)	(38)	(113)
Add cash at start of year (1 July)	183	648	853	724	638	560	514	418	414	368	329
Balance at end of year (30 June)	**4,267**	**853**	**724**	**638**	**560**	**514**	**418**	**414**	**368**	**329**	**216**
Represented by:											
Cash, cash equivalents and bank overdrafts	4,267	853	724	638	560	514	418	414	368	329	216
	4,267	**853**	**724**	**638**	**560**	**514**	**418**	**414**	**368**	**329**	**216**

Prospective Statement of General and Targeted Rates for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
General and Targeted Rates											
General Rates	1,147	1,420	1,615	1,972	2,011	2,089	2,181	2,094	2,028	2,080	2,113
Targeted Rates	9,450	10,553	11,249	11,766	12,100	12,378	12,794	13,116	13,417	13,786	14,193
Remissions	(49)	(50)	(51)	(51)	(52)	(53)	(53)	(94)	(55)	(56)	(57)
	10,549	**11,922**	**12,813**	**13,687**	**14,059**	**14,415**	**14,922**	**15,116**	**15,387**	**15,791**	**16,249**
General and Targeted Rates by Activity											
Community Facilities Group											
Camping	-	-	-	-	-	-	-	-	-	-	-
Cemeteries	80	90	100	98	96	94	107	117	114	111	111
Event Centre - General Rates	320	316	326	309	313	317	344	329	334	341	349
Event Centre - Targeted Rates	171	171	171	171	171	171	171	171	171	171	171
Parks and Public Spaces	708	887	890	903	906	916	929	949	962	974	989
Property	148	104	112	115	118	120	122	126	128	130	135
Swimming Pool	294	319	322	314	321	315	329	327	334	330	343
Community Services Group											
Community Support	116	95	109	111	113	115	118	120	122	125	127
Economic Development and Promotions	178	187	240	241	248	249	257	258	266	268	279
Emergency Management	182	182	189	188	190	192	195	199	202	206	212
Library	357	392	412	419	428	434	445	458	457	480	496
District Planning & Regulatory Services Group											
Animal Management	35	93	96	98	105	102	103	105	108	117	120
Building Control	189	186	227	184	184	194	202	206	208	209	216
Environmental Services	128	146	151	153	157	159	162	166	169	172	178
Resource Management	152	144	168	173	201	202	207	212	216	220	226
Organisation and Governance Group											
Central Administration	-	-	-	-	-	-	-	-	-	-	-
Community Representation	859	959	1,017	1,033	1,068	1,086	1,110	1,135	1,152	1,182	1,219
Investments and Finance - General Rates	(643)	(513)	(552)	(156)	(183)	(127)	(121)	(266)	(333)	(355)	(367)
Investments and Finance - Targeted Rates	49	49	50	51	52	53	54	55	56	57	58
Strategy	539	610	700	698	712	726	743	758	773	790	814
Roading and Footpaths Group											
Roading and Footpaths	2,844	2,752	2,808	2,876	3,124	3,209	3,295	3,388	3,481	3,577	3,684
Sewerage and Sewage Group											
Sewerage and Sewage	583	609	646	669	675	685	720	728	735	783	811
Stormwater Drainage Group											
Stormwater Drainage	118	121	127	131	132	132	138	138	138	144	145
Waste Management Group											
Waste Management	1,101	1,305	1,515	1,674	1,567	1,581	1,592	1,619	1,644	1,677	1,708
Water Supply Group											
Rural Water Supply	1,358	1,832	2,041	2,201	2,300	2,430	2,566	2,679	2,777	2,891	3,017
Urban Water Supply	808	889	960	1,036	1,062	1,089	1,116	1,141	1,167	1,190	1,208
Total General and Targeted Rates by Activity	**10,549**	**11,922**	**12,813**	**13,687**	**14,059**	**14,415**	**14,922**	**15,116**	**15,387**	**15,791**	**16,249**
Rateable Rating Units	4,073	4,110	4,128	4,146	4,164	4,182	4,201	4,219	4,238	4,256	4,275
Non-Rateable Rating Units	271	238	239	240	241	242	243	244	245	247	248
	4,344	4,348	4,367	4,386	4,405	4,425	4,444	4,463	4,483	4,503	4,522

Prospective Statement of Depreciation and Amortisation for the years ended 30 June 2021 to 2031

Depreciation and Amortisation by Activity	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Water Supply Group											
Rural Water Supply	484	643	672	719	721	720	777	777	777	839	839
Urban Water Supply	286	281	303	333	332	331	357	384	372	402	401
Waste Management Group	73	100	100	102	101	100	103	102	102	105	105
Stormwater Group	41	58	58	60	60	60	65	65	65	70	70
Sewerage Group	253	258	257	278	278	277	299	299	299	323	323
Roading and Footpaths Group	3,110	3,161	3,178	3,387	3,406	3,426	3,652	3,673	3,894	3,938	3,961
Organisation and Governance Group											
Central Administration	253	297	266	249	246	270	295	299	280	276	322
Community Representation	1	1	5	4	3	3	2	2	1	1	1
Investments and Finance	8	15	13	14	15	14	13	14	14	14	15
Strategy	-	-	-	-	-	-	-	-	-	-	-
District Planning and Regulatory Services Group											
Animal Management	10	8	7	6	13	9	7	7	6	14	12
Building Control	22	22	15	12	10	8	21	17	14	12	10
Environmental Services	-	-	-	-	-	-	-	-	-	-	-
Resource Management	-	-	-	-	-	-	-	-	-	-	-
Community Services Group											
Economic Development and Promotions	4	3	3	2	2	1	1	1	1	1	
Emergency Management	16	14	11	9	7	6	5	4	3	3	2
Library	85	84	84	85	87	89	73	78	83	89	95
Community Facilities Group											
Camping	117	148	144	139	146	143	141	150	149	148	160
Cemeteries	28	29	36	30	29	26	38	45	41	37	36
Event Centre	127	148	144	142	155	154	153	167	167	166	182
Parks and Public Spaces	173	180	167	158	162	155	149	154	150	147	156
Property	301	337	358	360	390	388	389	423	423	423	463
Swimming Pool	64	86	78	72	71	66	69	69	65	62	64
Total Depreciation and Amortisation	5,435	5,846	5,979	6,141	6,212	6,227	6,611	6,711	6,767	7,076	7,218

Forecast Statement of Debt
for the years ended 30 June 2021 to 2031

Council's definition of total debt for the purpose of setting debt limits includes both internal and external debt, (except where internal debt is defined as internal but is funded specifically from external sources).

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Internal Debt											
Waimate Event Centre *Note	2,524	2,437	2,338	2,237	2,132	2,023	1,912	1,797	1,679	1,557	1,431
Roading and Bridge Replacements Loan	496	496	476	456	436	416	396	376	356	336	316
Urban Water Scheme *Note	3,822	3,902	4,712	5,072	5,232	5,192	5,252	5,612	6,272	6,632	6,992
Waste Management - Disposal	505	483	461	439	417	395	373	351	329	307	285
Sewerage *Note	896	1,558	1,520	1,482	1,444	1,406	1,368	1,530	1,982	2,504	3,016
Stormwater *Note	490	490	470	450	430	410	390	370	350	330	310
Rural Water Schemes - Drinking Water Standards upgrades *Note	5,300	4,800	4,704	4,608	4,512	4,416	4,320	4,224	4,128	4,032	3,936
Library / Local Government Centre Extension *Note	-	900	872	844	816	788	760	732	704	676	648
Total Internal Loans	13,943	15,066	15,553	15,588	15,419	15,046	14,771	14,992	15,810	16,374	16,934
External Debt	10,074	14,546	15,476	15,053	12,240	11,412	10,102	8,828	8,350	7,475	6,557
Total Debt	24,017	29,612	31,029	30,640	27,658	26,458	24,873	23,818	24,160	23,849	23,491
Total Debt (excluding items as noted)	12,167	18,294	19,095	18,970	16,258	15,325	14,014	13,035	13,158	12,581	11,961

* Note - The above loans, while classified as Internal Loans, may be fully or partially funded from specific External Debt so are effectively double counted in the "Total Debt" values. The "Total Debt (excluding items as noted)" summaries the net total debt.

Prospective Funding Impact Statement for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates, uniform annual general charges and rates penalties	1,187	1,480	1,676	2,035	2,075	2,154	2,247	2,121	2,094	2,129	2,184
Targeted rates	9,450	10,553	11,249	11,768	12,100	12,378	12,794	13,116	13,417	13,785	14,193
Subsidies and grants for operating purposes	1,746	1,924	1,575	1,623	1,651	1,699	1,749	1,802	1,854	1,909	1,965
Fees and charges	1,057	1,181	1,206	1,230	1,254	1,277	1,300	1,324	1,347	1,372	1,395
Interest and dividends from investments	423	210	211	211	212	213	213	214	214	215	215
Local authority fuel tax, fines, infringements fees and other receipts	863	744	792	808	2,718	903	850	861	927	922	946
Total operating funding	**14,727**	**16,092**	**16,709**	**17,673**	**20,010**	**18,624**	**19,154**	**19,437**	**19,853**	**20,334**	**20,897**
Applications of operating funding											
Payments to staff and suppliers	12,355	14,150	13,704	13,768	14,021	14,426	14,710	14,980	15,299	15,774	16,053
Finance costs	239	310	466	451	370	346	306	269	254	228	201
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**12,594**	**14,460**	**14,170**	**14,239**	**14,392**	**14,772**	**15,017**	**15,229**	**15,553**	**16,003**	**16,263**
Surplus / (deficit) of operating funding	**2,133**	**1,632**	**2,539**	**3,434**	**5,618**	**3,852**	**4,138**	**4,209**	**4,300**	**4,331**	**4,634**
Sources of capital funding											
Subsidies and grants for capital expenditure	1,840	2,949	2,331	2,393	2,672	2,748	2,825	2,906	2,988	3,074	3,160
Development and financial contributions	63	63	65	66	67	69	71	72	74	76	78
Increase / (decrease) in debt	7,479	8,430	930	(423)	(2,813)	(828)	(1,310)	(1,276)	(476)	(875)	(918)
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	9,182	11,442	3,326	2,036	(74)	1,987	1,586	1,702	2,586	2,275	2,320
Applications of capital funding											
Capital expenditure - to meet additional demand	-	510	716	326	-	-	-	327	352	34	37
Capital expenditure - to improve the level of service	4,013	4,444	1,029	740	554	584	568	579	595	613	630
Capital expenditure - to replace existing assets	3,719	8,213	4,242	4,483	5,070	5,305	5,251	5,015	5,988	5,999	6,399
Increase/(decrease) in reserves	3,583	(93)	(123)	(79)	(80)	(49)	(96)	(10)	(49)	(39)	(112)
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	11,315	13,074	5,865	5,470	5,544	5,839	5,723	5,911	6,886	6,606	6,954
Surplus/(deficit) of Capital Funding	**(2,133)**	**(1,632)**	**(2,539)**	**(3,434)**	**(5,618)**	**(3,852)**	**(4,138)**	**(4,209)**	**(4,300)**	**(4,331)**	**(4,634)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

What does this mean for your rates?

To give you an idea of the rates increases we are talking about next year, we have provided some examples of typical properties in our district. The following tables show the proposed rates for year one (2021/22) of the LTP based on preferred Option 2.

Some of the services provided by Council are optional and for some the rate varies depending on the amount of water (for example) that you require.

RATING ZONE	URBAN RESIDENTIAL PROPERTY		
Capital Value	$250,000	$400,000	$600,000
Services included:			
Serviced Water	✓	✓	✓
Serviced Sewer	✓	✓	✓
Kerbside rubbish and recycling service	✓	✓	✓
Current year rates (2020/21)	$2,324	$2,526	$2,795
+ General rates increase	$40	$64	$96
+ Civic amenities rates increase	$116	$116	$116
+ Kerbside rubbish and recycling service increase*	$77	$77	$77
+ Water supply rates increase	$45	$45	$45
+ All other targeted rates increases	$21	$19	$16
Proposed total rates for 2021/22	**$2,624**	**$2,847**	**$3,145**
Increase for the year	$300	$321	$350
Weekly change $	$5.80	$6.20	$6.70
Change %	12.9%	12.7%	12.5%

* Note: The new kerbside rubbish and recycling service includes an organic bin, therefore you will no longer need to pay an external contractor for a green-waste bin if you currently have one.

RATING ZONE	URBAN COMMERCIAL PROPERTY		
Capital Value	$250,000	$400,000	$600,000
Services included:			
Serviced Water	✓	✓	✓
Serviced Sewer	✓	✓	✓
Kerbside rubbish and recycling service	✓	✓	✓
Current year rates (2020/21)	$1,763	$1,965	$2,234
+ General rates increase	$40	$64	$96
+ Civic amenities rates decrease	-$87	-$87	-$87
+ Kerbside rubbish and recycling service increase*	$77	$77	$77
+ Water supply rates increase	$45	$45	$45
+ All other targeted rates increases	$22	$19	$16
Proposed total rates for 2021/22	**$1,860**	**$2,083**	**$2,381**
Increase for the year	$97	$118	$147
Weekly change $	$1.90	$2.30	$2.80
Change %	5.5%	6.0%	6.6%

RATING ZONE	RURAL 1 PROPERTY		
Capital Value	$300,000	$1,500,000	$4,000,000
Services included:			
Water - Otaio/Makikihi (litres)	2,000	10,000	18,000
Hall Rate - Makikihi	✓	✓	✓
Kerbside rubbish and recycling service	✓	✓	✓
Current year rates (2020/21)	$2,087	$5,500	$10,067
+ General rates increase	$16	$81	$215
+ Civic amenities rates increase	$108	$108	$108
+ Kerbside rubbish and recycling service increase*	$43	$43	$43
+ Water supply rates increase	$33	$167	$301
+ All other targeted rates increases/decreases	$10	-$9	-$49
Proposed total rates for 2021/22	**$2,298**	**$5,890**	**$10,685**
Increase for the year	$211	$390	$618
Weekly change $	$4.10	$7.50	$11.90
Change %	10.1%	7.1%	6.1%

* Note: The new kerbside rubbish and recycling service includes an organic bin, therefore you will no longer need to pay an external contractor for a green-waste bin if you currently have one.

RATING ZONE	RURAL 2 PROPERTY		
Capital Value	$750,000	$1,500,000	$4,000,000
Services included:			
Water - Cannington (litres)	2,000	10,000	18,000
Hall Rate - Maungati	✓	✓	✓
Kerbside rubbish and recycling service	×	×	×
Recycling drop off service	✓	✓	✓
Current year rates (2020/21)	$1,927	$4,277	$8,048
+ General rates increase	$37	$74	$198
+ Civic amenities rates increase	$113	$113	$113
+ Kerbside rubbish and recycling service increase	-	-	-
+ Water supply rates increase	$43	$217	$391
+ All other targeted rates decreases	-$2	-$12	-$47
Proposed total rates for 2021/22	**$2,118**	**$4,669**	**$8,703**
Increase for the year	$191	$392	$655
Weekly change $	$3.70	$7.50	$12.60
Change %	9.9%	9.2%	8.1%

Want to know the proposed rates for your property?

Find them online at waimatedc.govt.nz/council/ltp



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Water Supply Group														
Rural Water														
Cannington - Renewals			100%	5	63	5	5	5	7	6	6	6	6	6
Cannington - Pratts Pumphouse - New Board and Telemetry			100%	-	23	-	-	-	-	-	-	-	-	-
Cannington - Pratts Pumphouse - Pump 1 Renewal			100%	-	-	-	-	-	-	5	-	-	-	-
Cannington - Pratts Chlorine Analyser		100%		-	16	-	-	-	-	-	-	-	-	-
Cannington - Renewal Maintenace of weir			100%	-	-	-	14	-	-	-	-	-	-	-
Cannington - Pratts pumphouse power supply			100%	-	-	-	-	20	-	-	-	-	-	-
Cannington - Line renewal PE 80mm Slip Line			100%	-	-	34	-	-	-	-	-	-	-	-
Hook / Waituna - Renewals			100%	-	10	21	11	11	11	11	23	12	12	28
Hook / Waituna - Drinking Water Intake/Plant Compliance Upgrade		100%		251	673	-	-	-	-	-	-	-	-	-
Hook / Waituna - O'Donnells Pumphouse Panel and Telemetry		100%		23	-	-	-	-	-	-	-	-	-	-
Hook / Waituna - Simmons Pumphouse Pump 1 Renewal			100%	-	-	-	-	-	-	5	-	-	-	-
Hook / Waituna - Flow Meter Replacement			100%	-	4	-	-	6	7	-	-	-	-	1
Hook / Waituna - Dual check augmentation		100%		-	18	-	-	-	-	-	-	-	-	-
Hook / Waituna - Line renewal Intake to O'Donnells			100%	-	-	-	-	-	-	-	-	48	50	-
Hook / Waituna - Line renewal investigation Garlands to Stud		50%	50%	-	8	-	-	-	-	-	-	-	-	-
Hook / Waituna - Line renewal upper Nortons Reserve Rd			100%	-	-	-	-	-	42	43	-	-	-	-
Hook / Waituna - Line renewal Manchesters and Molloys Rd			100%	-	-	-	22	39	-	-	-	-	-	-
Lower Waihao - Renewals			100%	5	30	5	5	5	-	6	6	6	6	6
Lower Waihao - Drinking Water Intake/Plant Compliance Upgrade		100%		921	797	-	-	-	-	-	-	-	-	-
Lower Waihao - Glenavy Township Mains Renewal			100%	-	-	-	-	-	78	-	-	125	-	-
Lower Waihao - Glenavy Township Restrictor Renewal			100%	-	-	-	-	-	11	-	-	20	-	-
Lower Waihao - Glenavy Chlorine Monitoring Station		100%		-	-	-	57	-	-	-	-	-	-	-
Lower Waihao - Lower Waihao Boost Pump 3 Renewal			100%	-	-	-	-	-	6	-	-	-	-	-
Lower Waihao - Telemetry - Lower Waihao Boost Renewal			100%	-	-	-	-	9	-	-	-	-	-	-
Lower Waihao - Flow Meter Renewal			100%	-	-	-	6	-	7	-	-	-	-	1
Lower Waihao - Old Ferry Rd 150mm AC Renewal			100%	43	-	-	-	-	-	-	-	-	-	-
Lower Waihao - Glenavy line renewal			100%	-	-	-	-	157	-	-	-	-	-	-
Otaio / Makikihi - Renewals			100%	-	48	-	2	-	2	-	2	-	2	-
Otaio / Makikihi - New Bore Redundancy		100%		-	-	127	-	-	-	-	-	-	-	-
Otaio / Makikihi - Wilton - 2500m 80mm PVC + 400m 32 OD			100%	29	-	-	-	-	-	-	-	-	-	-
Otaio / Makikihi - Makikihi Township Mains Renewal			100%	-	-	-	-	78	-	-	-	105	-	-
Otaio / Makikihi - Makikihi Township Restrictor Renewal			100%	-	-	-	-	11	-	-	-	13	-	-
Otaio / Makikihi - Flow Meter Replacement			100%	-	-	-	-	5	2	-	-	-	-	6
Otaio / Makikihi - Line renewal Makikihi 100mm PVC			100%	-	-	31	32	-	-	-	-	-	-	-
Otaio / Makikihi - Consent Volume Review			100%	-	-	-	-	-	17	-	-	-	-	-
Otaio / Makikihi - Renewal Marshalls Road			100%	-	10	-	-	-	-	-	-	-	-	-
Waihaorunga - Renewals			100%	-	109	-	-	5	-	-	6	-	-	6
Waihaorunga - Drink Water Intake/Plant Compliance Upgrade		100%		527	-	-	-	-	-	-	-	-	-	-
Waihaorunga - Takitu Pumphouse - New Board and Telemetry			100%	-	-	23	-	-	-	-	-	-	-	-

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Rural Water continued														
Waikakahi - Renewals			100%	5	175	5	5	5	6	6	6	6	6	6
Waikakahi - Drinking Water Intake/Plant Compliance Upgrade		100%		1,474	1,439	-	-	-	-	-	-	-	-	-
Waikakahi - Mehrtens/Cameron 700m 32 OD			100%	-	-	4	-	-	-	-	-	-	-	-
Waikakahi - Harrison B/T 1.5km 63 OD			100%	-	-	11	-	-	-	-	-	-	-	-
Waikakahi - McKay/ Francis 1.3km 40 OD			100%	-	-	-	12	-	-	-	-	-	-	-
Waikakahi - LW WK Booster PH - Pump 4			100%	-	-	-	-	-	14	-	-	-	-	-
Waikakahi - Dog Kennel Road PH - Pump 1			100%	-	-	-	-	-	-	20	-	-	-	-
Waikakahi - Telemetry - Waikakahi Reservoir			100%	-	-	-	-	-	-	-	9	-	-	-
Waikakahi - Flow meter renewals			100%	-	2	-	-	-	2	-	-	-	-	-
Downlands - Capital at 14% Share			100%	-	1,707	193	272	157	99	178	108	107	110	181
Rural Water Total				**3,283**	**5,131**	**460**	**443**	**512**	**310**	**279**	**165**	**448**	**194**	**242**
Urban Water														
Urban Water - General plant and equipment			100%	-	6	-	-	-	-	-	-	-	-	-
Urban Water - Bond Street Subdivision	100%			-	75	-	-	-	-	-	-	-	-	-
Urban Water - Lateral Renewals			100%	63	96	62	63	65	66	68	70	128	132	136
Urban Water - AC Water Main Renewals			100%	116	211	114	116	119	122	125	128	191	197	203
Urban Water - CI Water Main Renewals			100%	168	160	165	169	173	177	181	187	388	401	411
Urban Water - Timaru Road pump renewals			100%	-	68	28	-	-	-	-	-	-	-	-
Urban Water - Waimate Reservoir Wash Down Pump			100%	4	-	-	-	-	-	-	-	-	-	-
Urban Water - Telemetry - Timaru Rd Plant			100%	-	-	-	-	9	-	-	-	-	-	-
Urban Water - Telemetry - Manchesters Bore			100%	-	-	-	-	8	-	-	-	-	-	-
Urban Water - Waimate Reservoir Cover Replacement			100%	-	-	-	-	108	-	-	-	-	-	-
Urban Water - Main line valve renewals			100%	-	28	29	30	30	31	32	33	34	35	36
Urban Water - Booster Bakers/Court/Hunts/Fitzmaurice Roads	100%			-	20	-	296	-	-	-	-	-	-	-
Urban Water - Extension Bakers/Court/Hunts/Fitzmaurice Roads	100%			-	-	-	-	-	-	-	327	336	-	-
Urban Water - Booster Manchesters Standby Pump 2	100%			-	-	30	-	-	-	-	-	-	-	-
Urban Water - Water Meters		100%		-	472	-	-	-	-	-	-	-	-	-
Urban Water - Te Kiteroa Main, Booster and Reservoir	100%			-	83	686	30	-	-	-	-	-	-	-
Urban Water - Meter reader software		100%		-	-	24	-	-	-	-	-	-	-	-
Urban Water Total				**351**	**1,219**	**1,136**	**704**	**511**	**397**	**406**	**745**	**1,078**	**765**	**786**
Water Supply Group Total				**3,634**	**6,350**	**1,597**	**1,147**	**1,024**	**707**	**685**	**909**	**1,526**	**959**	**1,027**

Prospective Statement of Capital Expenditure continued for the years ended 30 June 2021 to 2031

	AG	LOS	REP	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Waste Management Group														
Waste Management - Fencing			100%	-	4	-	-	-	-	-	-	-	-	-
Waste Management - Miscellaneous plant and equipment			100%	-	3	-	-	-	-	-	-	-	-	-
Waste Management - Wheelie Bin Replacements			100%	3	2	2	2	2	2	2	2	2	2	3
Waste Management - Public place refuse and recycling facilities		100%		-	5	5	2	-	-	-	-	-	-	-
Waste Management - Miscellaneous Capital			100%	-	-	1	1	1	1	1	1	1	1	1
Waste Management - Seal and shingle RRP entrance		100%		-	-	78	78	18	37	-	-	-	-	-
Waste Management - Reuse shop upgrade		100%		-	10	-	-	-	-	-	-	-	-	-
Waste Management - Weighbridge		100%		120	-	-	-	-	-	-	-	-	-	-
Waste Management Group Total				123	23	84	81	21	41	3	4	4	4	4
Stormwater Group														
Stormwater - Queen Street Upgrade		30%	80%	-	341	-	-	-	-	-	-	-	-	-
Stormwater - SW Manhole SW171 Replacement			100%	-	-	-	-	5	6	-	-	-	-	-
Stormwater - CCTV Assessment of Mains		100%		5	5	5	-	5	-	6	-	-	-	-
Stormwater - Bell Street main renewal			100%	-	12	-	-	-	-	-	-	-	-	-
Stormwater - Marine Street crossing renewal			100%	-	-	-	40	-	-	-	-	-	-	-
Stormwater Group Total				5	359	5	40	11	6	6	-	-	-	-
Sewerage Group														
Sewer - Waimate Urban Renewals			100%	306	224	315	333	339	380	357	379	835	863	886
Sewer - Edward Street Upgrade (Renewal)			100%	-	616	-	-	-	-	-	-	-	-	-
Sewer - WWTP Electric Winch for Sewer Pumps			100%	2	-	-	-	-	-	-	-	-	-	-
Sewer - WWTP Submersible Pump 1 Renewal			100%	21	-	-	-	-	-	-	-	-	-	-
Sewer - WWTP Submersible Pump 2 Renewal			100%	-	-	21	-	-	-	-	-	-	-	-
Sewer - WWTP Electrics General 240, 24 Volts			100%	-	-	-	-	12	-	-	-	-	-	-
Sewer - WWTP In flow Meter Renewal			100%	-	9	-	-	-	-	-	-	-	-	-
Sewer - WWTP Out flow Meter Renewal			100%	-	-	-	-	-	-	6	-	-	-	-
Sewer - WWTP Alarming/Monitoring of Out flow Meter			100%	-	4	-	-	-	-	-	-	-	-	-
Sewer - Pond Bypass Valves Renewal			100%	13	-	-	-	-	-	-	-	-	-	-
Sewer - Telemetry - Milford			100%	-	-	-	8	-	-	-	-	-	-	-
Sewer - Milford - Flygt Controller (PLC)			100%	-	-	-	3	-	-	-	-	-	-	-
Sewer - Milford Pump Renewal			100%	-	-	-	-	-	-	-	-	-	5	5
Sewer - WWTP Electrical control Renewal			100%	-	-	-	-	-	63	-	-	-	-	-
Sewer - WWTP various equipment			100%	-	12	4	-	-	9	-	-	-	-	-
Sewer - Queen Street upgrade		30%	80%	-	130	-	-	-	-	-	-	-	-	-
Sewer - Septic Waste Receival Unit			100%	-	81	-	-	-	-	-	-	-	-	-
Sewer - Te Kiteroa Line	100%			-	312	-	-	-	-	-	-	-	-	-
Sewerage Group Total				342	1,388	340	344	351	453	363	379	835	868	891

Prospective Statement of Capital Expenditure continued for the years ended 30 June 2021 to 2031

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Roading and Footpaths Group														
Roading - Resealing			100%	1,308	1,244	1,283	1,322	1,246	1,282	1,319	1,358	1,397	1,438	1,479
Roading - Drainage construction			100%	229	266	274	282	335	344	354	365	376	386	397
Roading - Culvert replacement			100%	136	186	193	198	215	221	227	234	241	248	255
Roading - Kerb and channel renewal			100%	178	130	134	138	197	202	208	214	221	227	233
Roading - Concrete ford renewal			100%	47	45	46	48	49	51	52	54	55	57	58
Roading - Pavement rehabilitation			100%	315	389	401	413	738	758	781	804	827	851	875
Roading - Structures component rep.			100%	158	178	183	189	194	200	206	212	218	224	230
Roading - Sign renewal			100%	61	61	63	65	67	68	70	73	75	77	79
Roading - Minor improvements		100%		350	330	330	330	361	371	382	393	404	416	428
Roading - Footpath renewal			100%	157	215	222	229	235	242	249	257	264	272	279
Roading - Minor improvements (non-subsidised)		100%		26	45	46	48	49	51	52	54	55	57	58
Roading - Seal extensions		100%		52	60	62	64	66	67	69	71	74	76	78
Roading - Development		100%		35	50	52	53	55	56	58	60	61	63	65
Roading and Footpaths Group Total				**3,050**	**3,199**	**3,289**	**3,378**	**3,806**	**3,914**	**4,029**	**4,147**	**4,266**	**4,391**	**4,516**
Organisation and Governance Group														
Central Administration														
Chief Executive - Motor Vehicle			100%	-	-	-	32	-	-	-	-	-	-	-
Corporate Services - Vehicle Replacements (pool car)			100%	-	-	-	-	-	67	-	-	-	-	77
Corporate Services - Cleaners Vehicle			100%	-	-	-	-	43	-	-	-	-	50	-
Corporate Services - Furniture & Fittings			100%	16	10	15	16	16	17	17	18	18	19	19
Corporate Services - Computers / Hardware			100%	16	16	15	16	16	17	17	18	18	19	19
Corporate Services - Elected member devices			100%	-	4	-	-	18	-	-	5	-	-	-
Corporate Services - Servers			100%	-	90	-	-	-	-	103	-	-	-	-
Corporate Services - Telephone/PABX Upgrade			100%	-	-	-	16	-	-	-	-	18	-	-
Corporate Services - UPS			100%	-	15	-	-	-	-	17	-	-	-	-
Corporate Services - Public security cameras			100%	-	-	2	37	-	-	2	-	-	43	-
Corporate Services - Magiq Upgrades			100%	30	10	10	53	11	11	57	12	12	12	13
District Planning and Regulatory Services - Motor Vehicle			100%	-	20	-	-	22	-	-	23	-	-	26
Utilities - Sundry Plant Renewals			100%	5	7	5	5	5	7	6	12	6	6	16
Utilities - Digger / excavator replacement			100%	45	-	-	-	-	48	-	-	-	-	64
Utilities - Replacement Tablets for Staff (AssetFinda)			100%	-	-	10	-	-	-	11	-	-	-	13
Utilities - Data Loggers			100%	-	-	6	-	-	-	-	-	-	-	-
Utilities - Equipment renewals			100%	-	6	-	-	-	7	13	3	-	4	-
Utilities - Vehicle replacements			100%	33	67	48	-	51	66	77	85	-	56	98
Roading - Vehicle replacements			100%	-	40	41	-	43	45	-	47	48	-	51
Roading - Office equipment			100%	5	-	-	-	-	-	-	-	-	-	-

Prospective Statement of Capital Expenditure continued for the years ended 30 June 2021 to 2031

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Central Administration continued														
Asset Management - SCADA			100%	4	21	10	5	-	-	6	-	6	-	15
Parks - Plant and Machinery			100%	8	5	-	5	15	6	-	6	-	6	-
Parks - Walker Mower Replacement			100%	-	-	-	26	-	-	-	-	36	-	-
Parks - John Deere mower replacement			100%	-	65	-	-	-	-	-	82	-	-	-
Parks - Vehicle Replacement			100%	-	-	-	-	-	36	-	-	-	-	-
Parks - Vehicle Replacement			100%	-	-	-	-	-	-	37	-	-	-	-
Parks - Gator Vehicle			100%	20	-	-	-	-	-	-	-	-	-	-
Asset Manager - Pool vehicles			100%	-	30	-	-	-	33	34	-	-	-	38
Central Administration Total				182	405	165	211	241	378	397	280	163	217	449
Community Representation														
Governance - AV Conferencing System for Council Chambers		100%		-	-	21	-	-	-	-	-	-	-	-
Governance - Furniture and fittings			100%	3	-	-	-	-	-	-	-	-	-	-
Community Representation Total				3	-	21	-	-	-	-	-	-	-	-
Investments and Finance														
Investment - Gorge Road Premises		70%	30%	-	4	-	88	-	-	-	-	-	-	-
Forestry - Land access			100%	-	-	-	45	-	-	-	-	-	-	-
Forestry - Planting Waihao Forest			100%	-	-	-	-	-	241	25	22	-	-	-
Forestry - Planting Reserves			100%	-	3	10	2	9	41	12	15	2	1	13
Investments and Finance Total				-	7	10	132	9	282	37	37	2	1	13
Organisation and Governance Group Total				185	412	195	343	250	659	434	317	165	218	462
District Planning and Regulatory Services Group														
Animal Management														
Animal Management - Vehicle replacement			100%	-	-	-	-	38	-	-	-	-	43	-
Animal Management Total				-	-	-	-	38	-	-	-	-	43	-
Building Control														
Building Control - Vehicle replacements			100%	-	64	-	-	-	-	73	-	-	-	-
Building Control Total				-	64	-	-	-	-	73	-	-	-	-
District Planning and Regulatory Services Group Total				-	64	-	-	38	-	73	-	-	43	-

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Community Services Group														
Library														
Library - Books			100%	63	65	67	69	70	72	78	80	82	84	87
Library Total				63	65	67	69	70	72	78	80	82	84	87
Community Services Group Total				63	65	67	69	70	72	78	80	82	84	87
Community Facilities Group														
Camping														
Waimate Lakes Camping - Landscaping, fencing and plantings		100%		25	-	-	-	-	-	-	-	-	-	-
Waimate Lakes Camping - Concrete pad for refuse shelters		100%		10	20	21	-	-	-	-	-	-	-	-
Waimate Lakes Camping - Boat ramp upgrade			100%	-	-	-	16	-	-	-	-	-	-	-
Waimate Lakes Camping - Public toilet dry vault system		100%		-	70	-	-	-	-	-	-	-	-	-
Waimate Lakes Camping - Terraflake toilet floors			100%	30	-	-	-	-	-	-	-	-	-	-
Waimate Lakes Camping - Pipe renewals		10%	90%	10	10	10	11	11	11	11	12	12	12	13
Waimate Lakes Camping - Chlorine dosing Te Aka & Waitangi		100%		31	-	-	-	-	-	-	-	-	-	-
Victoria Park Camping - Driveway reseal			100%	8	-	-	-	-	-	-	-	-	-	-
Victoria Park Camping - General building capital		100%		-	-	8	-	-	-	-	-	-	-	-
Victoria Park Camping - Terraflake shower floor			100%	14	-	-	-	-	-	-	-	-	-	-
Victoria Park Camping - Upgrade Tennant Stoabins		100%		-	19	5	5	-	-	-	-	-	-	-
Victoria Park Camping - Appliances			100%	6	-	-	-	-	-	-	-	-	-	-
Victoria Park Camping - General capital			100%	-	2	2	2	2	2	2	2	2	2	2
Knottingley Park Camping - General building capital			100%	-	1	-	-	-	-	-	-	-	-	-
Knottingley Park Camping - Terraflake shower floor		100%		20	-	-	-	-	-	-	-	-	-	-
Knottingley Park Camping - Terraflake toilet block floor			100%	-	20	-	-	-	-	-	-	-	-	-
Knottingley Park Camping - BBQ and roofed area		100%		-	-	15	-	-	-	-	-	-	-	-
Knottingley Park Camping - Fountain upgrade		70%	30%	-	-	5	-	-	-	-	-	-	-	-
St Andrews Camping - Terraflake shower and toilet floors			100%	7	-	-	-	-	-	-	-	-	-	-
Camping Total				162	142	66	33	12	13	13	14	14	14	15
Cemeteries														
Cemetery - Reseal driveway		50%	50%	-	-	7	-	-	-	-	-	-	-	-
Cemetery - Extension	100%			-	-	-	-	-	-	-	-	14	34	37
Cemetery - Ash and burial berms	100%			-	20	-	-	-	-	-	-	-	-	-
Cemetery - Toilet facility upgrade		70%	30%	-	-	-	61	-	-	-	-	-	-	-
Cemetery - Fencing			100%	-	5	-	-	-	-	-	-	-	-	-
Cemetery - Walker Mower replacement			100%	-	-	43	-	-	-	-	49	-	-	-
Cemetery - Rubbish Bins & Seating		100%		8	-	-	-	-	-	-	-	-	-	-
Cemetery - Water line renewal			100%	-	15	-	-	-	-	-	-	-	-	-
Cemetery - Tipper truck replacement			100%	-	-	-	-	-	-	69	-	-	-	-
Cemetery - Signage upgrade		100%		-	-	8	2	-	-	-	-	-	-	-
Cemeteries Total				8	40	58	63	-	-	69	49	14	34	37

Prospective Statement of Capital Expenditure continued for the years ended 30 June 2021 to 2031

	AG	LOS	REP	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Event Centre														
Event Centre - Furniture & fittings			100%	-	5	-	-	-	-	-	-	-	-	-
Event Centre Total				-	5	-	-	-	-	-	-	-	-	-
Parks and Public Spaces														
Victoria Park - Sundry plant			100%	7	5	3	5	5	6	6	6	6	6	6
Victoria Park - New learn to ride area		100%		-	50	-	-	-	-	-	-	-	-	-
Victoria Park - Repaint the cycle track			100%	-	-	-	-	13	-	-	-	-	-	-
Victoria Park - Pergola replacement		30%	30%	-	-	21	-	-	-	-	-	-	-	-
Victoria Park - Irrigation system		100%		-	10	-	-	-	-	-	-	-	-	-
Land - Boland Park swimming pool walkway resealing			100%	-	-	12	-	-	-	-	-	-	-	-
Parks and Public Spaces Total				7	65	38	5	18	6	6	6	6	6	6
Property														
Property - Washdown concrete pad and interceptor		100%		-	15	-	-	-	-	-	-	-	-	-
Property - General building capital			100%	-	6	-	-	-	-	-	-	-	-	-
Property - Furniture and fittings			100%	-	3	-	-	-	-	-	-	-	-	-
Property - Tennant St building capital			100%	-	9	7	4	4	-	-	-	-	-	-
Property - Paint Tennant Street dwelling			100%	9	5	5	5	-	-	-	-	-	-	-
Local Govt Centre - Library / LGC Extension		10%	90%	-	960	-	-	-	-	-	-	-	-	-
Local Govt Centre - Library / LGC Extension Scoping and Plan		100%		100	-	-	-	-	-	-	-	-	-	-
Local Govt Centre - Security Cameras / alarm system			100%	-	5	-	5	-	-	6	-	-	-	-
Local Govt Centre - Sundry Purchases			100%	5	5	5	5	5	6	6	6	6	6	6
Local Govt Centre - Heatpumps			100%	-	-	10	11	-	-	-	-	-	-	-
Community Housing - Replacement Stoves			100%	-	-	3	-	-	3	-	-	4	-	-
Community Housing - Hot Water Cylinders & other Furn&Fitting			100%	10	6	8	12	6	6	13	6	7	14	7
Community Housing - Heatpumps			100%	8	3	6	3	6	3	7	3	7	4	7
Community Housing - Bathroom heaters and extractor fans			100%	-	34	-	-	-	-	-	-	-	-	-
Public toilets - Waimate Town (New Toilets)		100%		-	-	206	-	-	-	-	-	-	-	-
Property Total				132	1,049	249	45	22	18	31	16	23	23	21
Swimming														
Swimming Pool - Replace Pool Covers			100%	-	-	-	-	-	-	31	-	-	-	-
Swimming Pool - Shade Sails			100%	20	5	-	-	-	-	-	-	-	-	-
Swimming Total				20	5	-	-	-	-	31	-	-	-	-
Community Facilities Group Total				338	1,306	611	147	53	37	149	84	58	78	79
Total Capital Expenditure				7,732	13,167	5,988	5,549	5,624	5,889	5,819	5,921	6,935	6,645	7,066

Community Facilities Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	320	316	326	309	313	317	344	329	334	341	349
Targeted rates	1,360	1,590	1,614	1,618	1,631	1,635	1,675	1,710	1,728	1,735	1,768
Subsidies and grants for operating purposes	-	-	-	-	-	-	-	-	-	-	-
Fees and charges	391	483	492	502	512	521	530	539	548	558	567
Interest and dividends from investments	4	4	4	5	5	5	5	5	5	5	5
Internal charges and overheads recovered	394	405	461	454	471	475	478	494	495	501	526
Local authority fuel tax, fines, infringements fees other	359	356	372	387	404	422	441	460	480	502	524
Total operating funding	**2,828**	**3,154**	**3,259**	**3,275**	**3,336**	**3,374**	**3,473**	**3,536**	**3,591**	**3,642**	**3,738**
Applications of operating funding											
Payments to staff and suppliers	1,711	1,923	1,955	1,977	2,009	2,042	2,118	2,120	2,166	2,214	2,249
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	843	707	753	754	747	751	760	780	789	798	813
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**2,554**	**2,630**	**2,708**	**2,731**	**2,756**	**2,793**	**2,879**	**2,900**	**2,955**	**3,013**	**3,062**
Surplus / (deficit) of operating funding	**274**	**524**	**551**	**544**	**579**	**582**	**594**	**636**	**636**	**629**	**677**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	-	-	-	-	-	-	-	-	-	-	-
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	-	-	-	-	-	-	-	-	-	-	-
Applications of capital funding											
Capital expenditure - to meet additional demand	-	20	-	-	-	-	-	-	14	34	37
Capital expenditure - to improve the level of service	174	281	281	51	1	1	1	1	1	1	1
Capital expenditure - to replace existing assets	156	1,005	130	96	52	36	148	83	42	43	41
Increase/(decrease) in reserves	(56)	(782)	140	397	526	545	445	552	578	552	598
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**274**	**524**	**551**	**544**	**579**	**582**	**594**	**636**	**636**	**629**	**677**
Surplus/(deficit) of Capital Funding	**(274)**	**(524)**	**(551)**	**(544)**	**(579)**	**(582)**	**(594)**	**(636)**	**(636)**	**(629)**	**(677)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Community Services Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	312	299	363	364	371	373	382	385	394	399	411
Targeted rates	499	558	588	595	608	616	633	650	664	680	705
Subsidies and grants for operating purposes	21	427	30	30	31	32	32	33	33	34	34
Fees and charges	13	9	9	9	9	9	9	9	10	10	10
Interest and dividends from investments	1	1	1	1	1	1	1	1	1	1	1
Internal charges and overheads recovered	10	7	7	7	7	7	7	8	8	7	7
Local authority fuel tax, fines, infringements fees other	10	17	11	18	12	19	12	19	13	20	13
Total operating funding	**865**	**1,317**	**1,008**	**1,023**	**1,039**	**1,058**	**1,076**	**1,104**	**1,121**	**1,150**	**1,181**
Applications of operating funding											
Payments to staff and suppliers	610	957	820	834	842	858	868	884	895	714	726
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	293	362	387	392	400	405	412	421	424	431	446
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**903**	**1,320**	**1,007**	**1,026**	**1,042**	**1,062**	**1,080**	**1,105**	**1,120**	**1,145**	**1,172**
Surplus / (deficit) of operating funding	**(38)**	**(3)**	**1**	**(2)**	**(4)**	**(4)**	**(3)**	**(1)**	**2**	**5**	**10**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	-	-	-	-	-	-	-	-	-	-	-
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	-	-	-	-	-	-	-	-	-	-	-
Applications of capital funding											
Capital expenditure - to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to replace existing assets	63	65	67	69	70	72	78	80	82	84	87
Increase/(decrease) in reserves	(100)	(68)	(66)	(71)	(74)	(77)	(81)	(81)	(80)	(79)	(77)
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**(38)**	**(3)**	**1**	**(2)**	**(4)**	**(4)**	**(3)**	**(1)**	**2**	**5**	**10**
Surplus/(deficit) of Capital Funding	**38**	**3**	**(1)**	**2**	**4**	**4**	**3**	**1**	**(2)**	**(5)**	**(10)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Sewerage and Sewage Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	-	-	-	-	-	-	-	-	-	-	-
Targeted rates	569	615	661	675	682	692	727	735	743	790	819
Subsidies and grants for operating purposes	-	-	-	-	-	-	-	-	-	-	-
Fees and charges	54	54	55	57	58	59	61	63	65	67	69
Interest and dividends from investments	-	-	-	-	-	1	1	1	1	1	1
Internal charges and overheads recovered	17	3	3	2	2	2	2	2	2	2	2
Local authority fuel tax, fines, infringements fees other	8	8	8	8	8	8	9	9	9	9	10
Total operating funding	**647**	**679**	**717**	**742**	**750**	**763**	**799**	**809**	**819**	**869**	**900**
Applications of operating funding											
Payments to staff and suppliers	175	292	213	218	223	229	234	241	249	257	264
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	219	164	193	192	195	199	207	209	209	226	247
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**394**	**456**	**407**	**410**	**417**	**428**	**441**	**450**	**456**	**482**	**511**
Surplus / (deficit) of operating funding	**253**	**223**	**310**	**331**	**333**	**335**	**358**	**360**	**361**	**387**	**389**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	16	16	17	17	18	18	19	19	20	20	21
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	**16**	**16**	**17**	**17**	**18**	**18**	**19**	**19**	**20**	**20**	**21**
Applications of capital funding											
Capital expenditure - to meet additional demand	-	312	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	5	65	-	-	-	-	-	-	-	-	-
Capital expenditure - to replace existing assets	337	1,011	340	344	351	453	363	379	835	869	891
Increase/(decrease) in reserves	(73)	(1,149)	(13)	5	(1)	(100)	13	(1)	(454)	(460)	(482)
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**269**	**239**	**327**	**349**	**351**	**353**	**377**	**379**	**381**	**407**	**410**
Surplus/(deficit) of Capital Funding	**(253)**	**(223)**	**(310)**	**(331)**	**(333)**	**(335)**	**(358)**	**(360)**	**(361)**	**(387)**	**(389)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

District Planning & Regulatory Services Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	484	589	632	607	647	647	675	689	697	719	740
Targeted rates	-	-	-	-	-	-	-	-	-	-	-
Subsidies and grants for operating purposes	-	-	-	-	-	-	-	-	-	-	-
Fees and charges	451	540	551	562	573	583	593	603	614	624	634
Interest and dividends from investments	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads recovered	16	7	4		(2)	(4)	(4)	(4)	(4)	(4)	(5)
Local authority fuel tax, fines, infringements fees other	10	11	12	12	12	12	13	13	13	13	13
Total operating funding	**961**	**1,127**	**1,198**	**1,181**	**1,230**	**1,238**	**1,277**	**1,301**	**1,320**	**1,352**	**1,382**
Applications of operating funding											
Payments to staff and suppliers	785	942	970	776	785	762	750	793	782	828	817
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	395	462	480	486	496	501	513	526	533	542	559
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**1,180**	**1,404**	**1,450**	**1,262**	**1,281**	**1,263**	**1,263**	**1,320**	**1,314**	**1,370**	**1,375**
Surplus / (deficit) of operating funding	**(219)**	**(278)**	**(251)**	**(82)**	**(51)**	**(24)**	**14**	**(18)**	**5**	**(18)**	**7**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	20	20	21	21	22	22	22	23	23	24	24
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	**20**	**20**	**21**	**21**	**22**	**22**	**22**	**23**	**23**	**24**	**24**
Applications of capital funding											
Capital expenditure - to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to replace existing assets	-	64	-	-	38	-	73	-	-	43	-
Increase/(decrease) in reserves	(199)	(321)	(230)	(80)	(68)	(2)	(37)	4	28	(38)	31
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**(199)**	**(257)**	**(230)**	**(80)**	**(30)**	**(2)**	**36**	**4**	**28**	**6**	**31**
Surplus/(deficit) of Capital Funding	**219**	**278**	**251**	**82**	**51**	**24**	**(14)**	**19**	**(5)**	**18**	**(7)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Organisation and Governance Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	(46)	174	227	623	811	883	707	579	528	525	538
Targeted rates	908	1,008	1,068	1,084	1,120	1,139	1,164	1,190	1,207	1,239	1,277
Subsidies and grants for operating purposes	-	-	-	-	-	-	-	-	-	-	-
Fees and charges	-	2	2	2	2	2	2	2	2	2	2
Interest and dividends from investments	411	187	187	187	187	187	187	187	187	187	187
Internal charges and overheads recovered	4,000	3,942	4,298	4,355	4,409	4,475	4,561	4,630	4,672	4,765	4,921
Local authority fuel tax, fines, infringements fees other	233	221	255	244	2,139	295	225	208	252	213	216
Total operating funding	**5,505**	**5,533**	**6,036**	**6,494**	**8,469**	**6,781**	**6,846**	**6,793**	**6,848**	**6,931**	**7,140**
Applications of operating funding											
Payments to staff and suppliers	4,303	4,626	4,395	4,505	4,510	4,731	4,780	4,794	4,906	5,076	5,147
Finance costs	239	283	406	391	309	286	248	212	199	175	149
Internal charges and overheads applied	1,065	1,092	1,199	1,214	1,246	1,259	1,284	1,314	1,332	1,355	1,405
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**5,608**	**6,011**	**6,000**	**6,111**	**6,065**	**6,276**	**6,313**	**6,320**	**6,437**	**6,606**	**6,700**
Surplus / (deficit) of operating funding	**(103)**	**(478)**	**36**	**382**	**2,404**	**505**	**533**	**472**	**411**	**325**	**440**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	680	-	-	-	-	-	-	-	-	-
Development and financial contributions	-	-	-	-	-	-	-	-	-	-	-
Increase / (decrease) in debt	7,479	8,430	930	(423)	(2,813)	(828)	(1,310)	(1,276)	(476)	(875)	(916)
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	**7,479**	**9,110**	**930**	**(423)**	**(2,813)**	**(828)**	**(1,310)**	**(1,276)**	**(476)**	**(875)**	**(916)**
Applications of capital funding											
Capital expenditure - to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	-	3	21	59	-	-	-	-	-	-	-
Capital expenditure - to replace existing assets	185	409	174	284	250	669	434	317	165	218	482
Increase/(decrease) in reserves	7,191	8,220	771	(384)	(660)	(992)	(1,211)	(1,121)	(229)	(768)	(940)
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**7,376**	**8,632**	**966**	**(41)**	**(409)**	**(323)**	**(777)**	**(804)**	**(65)**	**(550)**	**(478)**
Surplus/(deficit) of Capital Funding	**103**	**478**	**(36)**	**(382)**	**(2,404)**	**(505)**	**(533)**	**(472)**	**(411)**	**(325)**	**(440)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Roading and Footpaths Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	-	-	-	-	-	-	-	-	-	-	-
Targeted rates	2,850	2,758	2,814	2,882	3,130	3,215	3,302	3,395	3,488	3,585	3,691
Subsidies and grants for operating purposes	1,692	1,464	1,511	1,558	1,585	1,632	1,681	1,732	1,783	1,837	1,892
Fees and charges	-	-	-	-	-	-	-	-	-	-	-
Interest and dividends from investments	1	-	-	-	-	-	-	-	-	1	1
Internal charges and overheads recovered	-	-	-	-	-	-	-	-	-	-	-
Local authority fuel tax, fines, infringements fees other	143	91	94	97	99	102	105	108	111	115	118
Total operating funding	**4,686**	**4,313**	**4,419**	**4,537**	**4,815**	**4,949**	**5,089**	**5,236**	**5,383**	**5,538**	**5,701**
Applications of operating funding											
Payments to staff and suppliers	2,751	2,886	2,954	3,043	3,161	3,251	3,346	3,444	3,542	3,648	3,751
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	471	443	487	490	500	511	519	531	543	554	574
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**3,222**	**3,329**	**3,441**	**3,533**	**3,661**	**3,762**	**3,865**	**3,975**	**4,085**	**4,200**	**4,325**
Surplus / (deficit) of operating funding	**1,464**	**984**	**978**	**1,005**	**1,154**	**1,187**	**1,223**	**1,260**	**1,298**	**1,337**	**1,377**
Sources of capital funding											
Subsidies and grants for capital expenditure	1,640	2,269	2,331	2,393	2,672	2,746	2,825	2,906	2,988	3,074	3,160
Development and financial contributions	-	-	-	-	-	-	-	-	-	-	-
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	**1,640**	**2,269**	**2,331**	**2,393**	**2,672**	**2,746**	**2,825**	**2,906**	**2,988**	**3,074**	**3,160**
Applications of capital funding											
Capital expenditure - to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	463	485	490	495	530	545	561	578	594	612	629
Capital expenditure - to replace existing assets	2,587	2,714	2,799	2,883	3,278	3,389	3,468	3,570	3,671	3,779	3,887
Increase/(decrease) in reserves	54	53	20	20	19	19	19	19	19	20	20
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**3,104**	**3,252**	**3,308**	**3,397**	**3,825**	**3,933**	**4,048**	**4,167**	**4,285**	**4,411**	**4,536**
Surplus/(deficit) of Capital Funding	**(1,464)**	**(984)**	**(978)**	**(1,005)**	**(1,154)**	**(1,187)**	**(1,223)**	**(1,260)**	**(1,298)**	**(1,337)**	**(1,377)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Stormwater Drainage Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	118	121	127	131	132	132	138	138	138	144	145
Targeted rates	-	-	-	-	-	-	-	-	-	-	-
Subsidies and grants for operating purposes	-	-	-	-	-	-	-	-	-	-	-
Fees and charges	-	-	-	-	-	-	-	-	-	-	-
Interest and dividends from investments	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads recovered	5	-	-			1	1	1	2	2	3
Local authority fuel tax, fines, infringements fees other	-	-	-	-	-	-	-	-	-	-	-
Total operating funding	**123**	**121**	**127**	**131**	**132**	**133**	**138**	**139**	**140**	**146**	**148**
Applications of operating funding											
Payments to staff and suppliers	26	25	26	26	27	28	28	29	30	31	32
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	60	44	49	49	49	49	50	50	50	50	50
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**86**	**69**	**75**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**
Surplus / (deficit) of operating funding	**37**	**52**	**52**	**56**	**56**	**56**	**61**	**60**	**60**	**65**	**66**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	4	4	4	4	4	4	4	4	5	5	5
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**5**	**5**	**5**
Applications of capital funding											
Capital expenditure - to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	5	178	5	-	5	-	6	-	-	-	-
Capital expenditure - to replace existing assets	-	183	-	40	5	6	-	-	-	-	-
Increase/(decrease) in reserves	36	(303)	51	20	49	54	59	65	65	70	70
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**41**	**56**	**56**	**60**	**60**	**60**	**65**	**65**	**65**	**70**	**70**
Surplus/(deficit) of Capital Funding	**(37)**	**(52)**	**(52)**	**(56)**	**(56)**	**(56)**	**(61)**	**(60)**	**(60)**	**(65)**	**(65)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Waste Management Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	-	-	-	-	-	-	-	-	-	-	-
Targeted rates	1,101	1,305	1,515	1,674	1,567	1,561	1,592	1,618	1,644	1,677	1,709
Subsidies and grants for operating purposes	33	33	33	34	34	35	36	36	37	38	38
Fees and charges	128	76	77	79	80	81	83	84	86	87	89
Interest and dividends from investments	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads recovered	16	2	3	3	4	5	6	6	7	8	9
Local authority fuel tax, fines, infringements fees other	-	-	-	-	-	-	-	-	-	-	-
Total operating funding	**1,277**	**1,415**	**1,628**	**1,790**	**1,685**	**1,682**	**1,716**	**1,745**	**1,774**	**1,810**	**1,844**
Applications of operating funding											
Payments to staff and suppliers	923	1,131	1,168	1,174	1,197	1,221	1,245	1,268	1,292	1,317	1,342
Finance costs	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	296	317	339	345	346	351	358	363	368	375	384
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**1,219**	**1,448**	**1,504**	**1,519**	**1,544**	**1,571**	**1,603**	**1,631**	**1,660**	**1,692**	**1,726**
Surplus / (deficit) of operating funding	**58**	**(33)**	**123**	**271**	**142**	**111**	**114**	**114**	**114**	**118**	**118**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	-	-	-	-	-	-	-	-	-	-	-
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	-	-	-	-	-	-	-	-	-	-	-
Applications of capital funding											
Capital expenditure - to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure - to improve the level of service	120	15	81	78	18	37	-	-	-	-	-
Capital expenditure - to replace existing assets	3	9	3	3	3	3	3	4	4	4	4
Increase/(decrease) in reserves	(65)	(56)	39	190	121	70	110	110	110	114	114
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**58**	**(33)**	**123**	**271**	**142**	**111**	**114**	**114**	**114**	**118**	**118**
Surplus/(deficit) of Capital Funding	**(58)**	**33**	**(123)**	**(271)**	**(142)**	**(111)**	**(114)**	**(114)**	**(114)**	**(118)**	**(118)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

Water Supply Group
Prospective Funding Impact Statement
for the years ended 30 June 2021 to 2031

	Annual Plan 30 June 2021 $000	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000
Sources of operating funding											
General rates and rates penalties	1	1	1	1	1	1	1	1	1	1	1
Targeted rates	2,165	2,719	3,000	3,237	3,361	3,516	3,701	3,819	3,943	4,080	4,224
Subsidies and grants for operating purposes	-	-	-	-	-	-	-	-	-	-	-
Fees and charges	20	20	20	21	21	22	22	23	24	24	25
Interest and dividends from investments	8	17	18	18	18	19	19	20	20	21	21
Internal charges and overheads recovered	85	86	88	90	92	94	96	101	107	112	117
Local authority fuel tax, fines, infringements fees other	100	40	41	42	43	44	45	47	48	50	51
Total operating funding	**2,377**	**2,884**	**3,169**	**3,409**	**3,537**	**3,696**	**3,886**	**4,011**	**4,143**	**4,288**	**4,441**
Applications of operating funding											
Payments to staff and suppliers	1,071	1,387	1,404	1,434	1,467	1,506	1,541	1,586	1,637	1,690	1,737
Finance costs	-	17	60	60	62	60	58	57	55	53	52
Internal charges and overheads applied	900	839	967	969	1,003	1,028	1,043	1,044	1,039	1,063	1,101
Other operating funding applications	-	-	-	-	-	-	-	-	-	-	-
Total application of operating funding	**1,971**	**2,244**	**2,430**	**2,462**	**2,532**	**2,594**	**2,642**	**2,686**	**2,731**	**2,806**	**2,889**
Surplus / (deficit) of operating funding	**406**	**640**	**738**	**926**	**1,005**	**1,104**	**1,243**	**1,325**	**1,412**	**1,482**	**1,552**
Sources of capital funding											
Subsidies and grants for capital expenditure	-	-	-	-	-	-	-	-	-	-	-
Development and financial contributions	22	22	23	23	24	25	25	26	27	28	28
Increase / (decrease) in debt	-	-	-	-	-	-	-	-	-	-	-
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-
Lump sum contributions	-	-	-	-	-	-	-	-	-	-	-
Other dedicated capital funding	-	-	-	-	-	-	-	-	-	-	-
Total capital funding	**22**	**22**	**23**	**23**	**24**	**25**	**25**	**26**	**27**	**28**	**28**
Applications of capital funding											
Capital expenditure - to meet additional demand	-	178	716	326	-	-	-	327	338	-	-
Capital expenditure - to improve the level of service	3,245	3,419	151	57	-	-	-	-	-	-	-
Capital expenditure - to replace existing assets	389	2,753	729	764	1,024	707	685	583	1,188	959	1,027
Increase/(decrease) in reserves	(3,206)	(5,688)	(835)	(197)	5	422	584	441	(88)	551	553
Increase/(decrease) of investments	-	-	-	-	-	-	-	-	-	-	-
Total applications of capital funding	**428**	**662**	**761**	**950**	**1,029**	**1,129**	**1,268**	**1,351**	**1,439**	**1,510**	**1,580**
Surplus/(deficit) of Capital Funding	**(406)**	**(640)**	**(738)**	**(926)**	**(1,005)**	**(1,104)**	**(1,243)**	**(1,325)**	**(1,412)**	**(1,482)**	**(1,552)**
Funding balance	-	-	-	-	-	-	-	-	-	-	-

FINANCIAL STRATEGY

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1. Summary

Our financial strategy remains a relatively conservative and low risk strategy although in this Long Term Plan (LTP) we are proposing making use of debt to an extent that has not been experienced by this Council in previous years. This LTP is proposing to maintain and improve levels of service in our Infrastructure area, and our financial strategy is to fund this in a manner that leads to a fair distribution of cost over the life of the asset.

Changes within the district will occur but in Council's opinion, these are unlikely to have any significant impact on Council's planning, projects and continued service levels during the term of this plan. Council considers investment is necessary to meet our community's needs and is mindful of compliance with legislation and standards. Council has assessed that the service levels and costs of new demand, as identified in this plan, can be met within the financial limits set in the strategy.

Council recognises that operating revenues are insufficient to meet operating expenses but for the reasons explained in the balanced budget statement, Council considers this to be prudent and adequate to meet the needs of current and future communities.

2. Introduction

The Financial Strategy sets out how Council intends to manage its financial performance and finance its activities and services throughout the 10 Year Plan. It also provides Council with a guide for considering and approaching expenditure and funding proposals.

The financial strategy outlines the key financial parameters and the limits that the Council will operate within. One of the main financial issues faced by Council is providing services in a cost effective way that the ratepayers and community can afford, while still meeting its legal obligations and being fair to current and future ratepayers. This involves a balancing act of keeping the services it delivers affordable, ensuring equity between current and future generations, fairly sharing the costs of delivering the services across different users and maintaining a strong financial position, which means having a sustainable debt position.

Some of the drivers of Council's activities and services include economic activity, changes in population, expectations of the community, requirements of central government and other regulators. These factors in turn affect operating and capital expenditure requirements.

The population of the Waimate District is forecast to increase by 4.38% over the next 10 years. Further to the previous LTP, Council believes the District's infrastructure still requires significant investment with the primary focus on replacing and improving existing assets. Investment in potable water quality, sewer renewals and additional demand projects will result in a significant change in the debt profile of Council.

While Council is not assuming significant land use change over the next ten years, past land use changes have, and continue to, impact on Council's delivery of services particularly for road maintenance in rural areas.

Prior to COVID-19, the 2020/21 rates were forecast to increase by 7.7%. In response to the pandemic and acknowledging the potential difficulty and pressures on families and businesses, Council opted to reduce the overall rates increase to 4%. While this provided some relief Council now needs to catch-up $377,700. This means that the rates impact for 2021/22, or year 1 of the LTP, requires Council to recover the loss of income to ensure the same levels of service can be provided in the future. COVID-19 has caused an increase in the level of uncertainty in relation to economic and demographic projections, however the impact on the Waimate District is deemed to be minor.

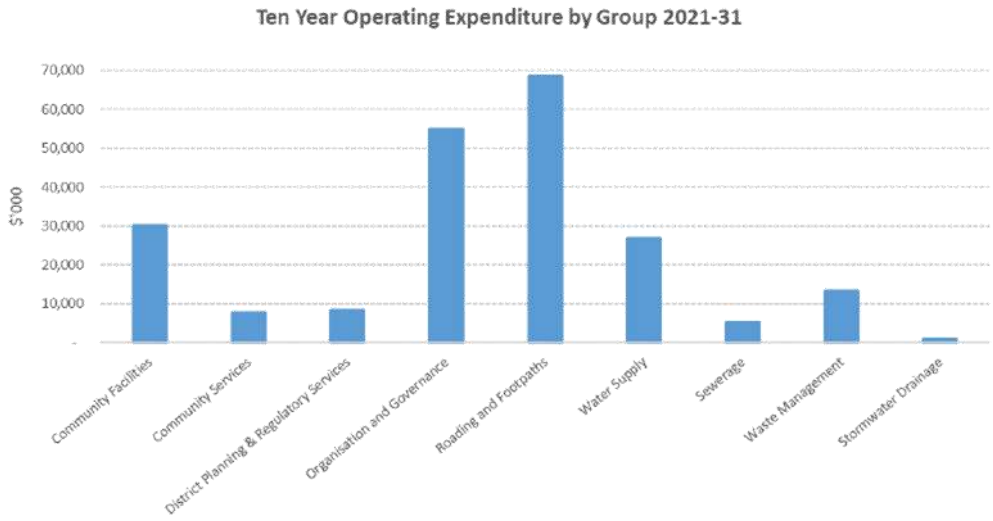
Other key uncertainties include the Government's Three Waters Reform Programme and Resource Management Act 1991 (RMA) reforms.

There remains potential for continuing economic development within the Waimate District over the next 10 years with capacity for the district to grow. Council has identified urban water and sewer projects due to additional demand and considers its infrastructure has sufficient capacity for future demand. Council believes that maintaining and improving levels of service are the primary concerns for this plan period.

3. Financial Overview

This section summarises the amount of expenditure Council anticipates it will incur in funding its activities.

Budgets have been prepared based on agreed levels of service for each activity, which are set out in detail in the group activity plan. The total cost of delivering this program is forecasted to be $216.3 million over the 10-year period. The total cost by activity group is shown below (note: this table is after internal expenditure has been eliminated and some activities may not necessarily align to the activity sections of the Long Term Plan). More information on what activities are in each group and expenditure details can be found in the activity sections of the Long Term Plan.



Operating Expenditure Increases

Council is forecasting that its operating expenditure will increase from $20.255 million in 2021/22 to $23.425 million in 2030/31.

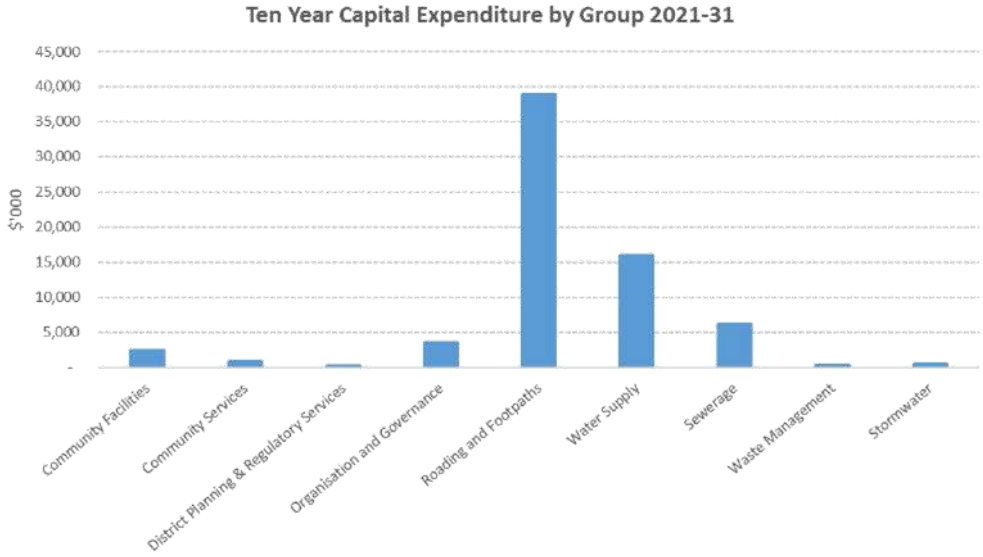
A driver of the increase is price increases for goods and services, for example, contract fees, wage increases, price of materials used, insurance costs and inflation mean it costs more for Council to deliver its activities and services. Council is constantly reviewing the cost and the way it delivers its operations to ensure it is undertaking the activities in a way that is most cost effective for households and businesses.

The requirement to externally loan fund the new capital initiatives, particularly in the Water Supply, Wastewater and Stormwater activities results in increased interest costs to Council.

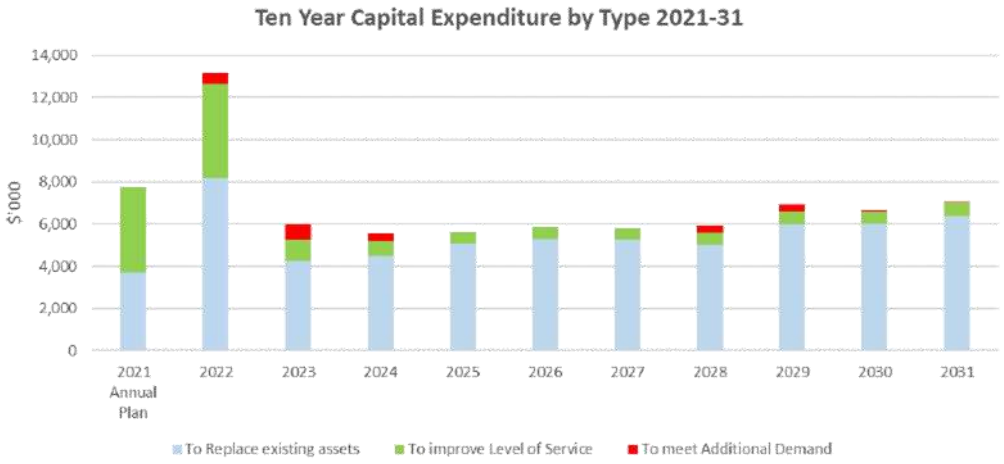
Capital Expenditure Requirements

Over the next 10 years, Council is forecasting capital expenditure of $68.603 million. Council is mindful that increased capital spending, commits the district to increased and sustained depreciation charges.

The following graph shows how capital expenditure is broken down by activity group:



The following graph shows the capital expenditure planned for each of the next 10 years. Council's spend is linked to renewing existing assets, additional demand or increasing level of service.



Adopting an unbalanced budget

A balanced budget is where the operating expenditure and operating revenue match in each year of our Plan.

Under this LTP Council is proposing a budget that doesn't balance over the course of the LTP. This occurs as we smooth the impact of significant capital works, the dividend income reduction and increased Resource Recovery Park operation contract costs over the term of the plan using increased debt.

Council has resolved not to fund certain costs for a variety of reasons. These include depreciation for:

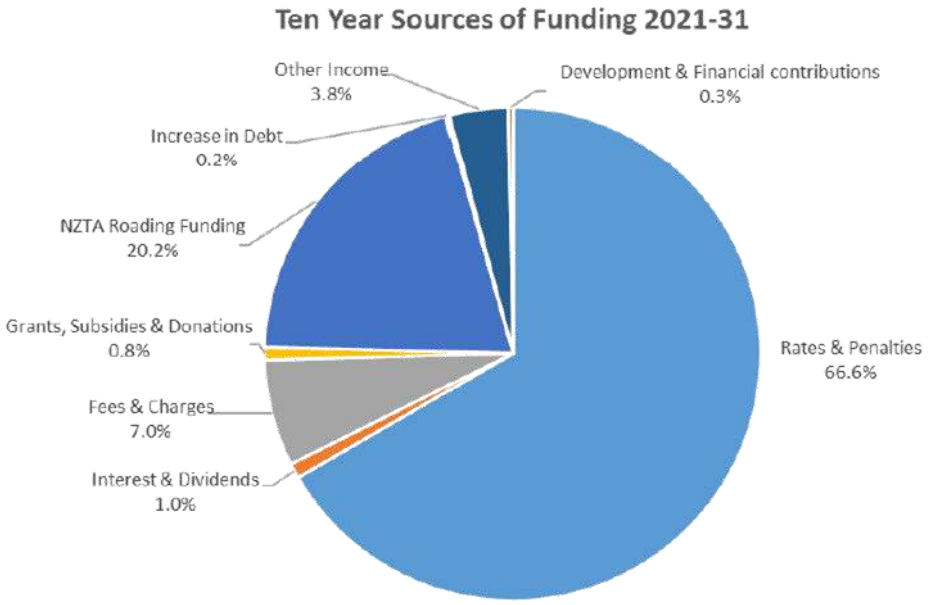
- Roading Infrastructure – capital program is funded
- Waimate Event Centre – loan funded
- Rural Halls, Aerodrome Club Rooms and various Park assets – unfunded

Council reflects deficits in the first three years of this LTP in order to deliver an affordable rates requirement. When combined with a clear plan to recover the deficit in later years with an affordable rates requirement, we believe this is a prudent approach.

4. How will Council Fund this Plan?

This section covers how Council intends to fund its activities and the services it delivers.

The total cost of council activities is funded from a number of sources, the graph below shows sources of funding that the council intends to use to fund this plan. Rates remain the major source of funds for Council.



Other Income includes petrol tax Income, commissions, forestry revenue, rental income and other miscellaneous income.

What about rates?

Rates increases

Council aims to strike a balance between delivering the demands of the district, and the rates required to fund this work. Council further plans to use debt to smooth the impact of rating increases over the period of the LTP 2021-31; the majority of the internal debt raised to support a smoothed rates profile is paid up within the LTP 2021-31 period.

Council is proposing increases of 9.9% for 2021/22, 7% for both 2022/23 and 2023/24 and an average of 2.5% for the remaining 7 years of the LTP.

Rates limits

Council proposes that its rates increases be limited to not more than 10% for the first 3 years of the LTP period and not more than 8% for the remaining 7 years of the plan. This represents a change from the previous rates limit of 8%. It is Council's view that it can deliver and maintain the levels of services and additional demand proposed in the LTP within these limits.

Rates & debt

The timing of the work we have planned in our LTP, if allowed to flow directly into our financial projections, results in sharp rate increases over the Plan period, especially in the early years of the plan.

Council recognises that ratepayers benefit from having less volatile rates requirements, as it better supports financial planning. We have therefore used both internal and external debt to smooth the rate requirement over the course of the plan period, running certain activities at losses for a period of time before recovering this debt over an extended period.

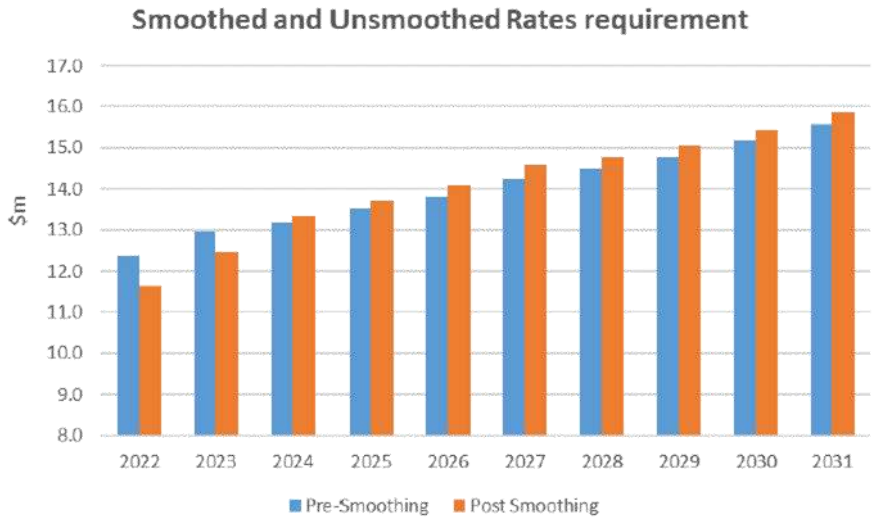
Whenever Council uses debt to smooth the rate requirement, there is an interest charge associated with the use of the debt. Council's assumptions determine the rate of interest applied to this debt; for the long-term plan period 2021-31 the rate is set at 3%. This is the 'cost of smoothing'.

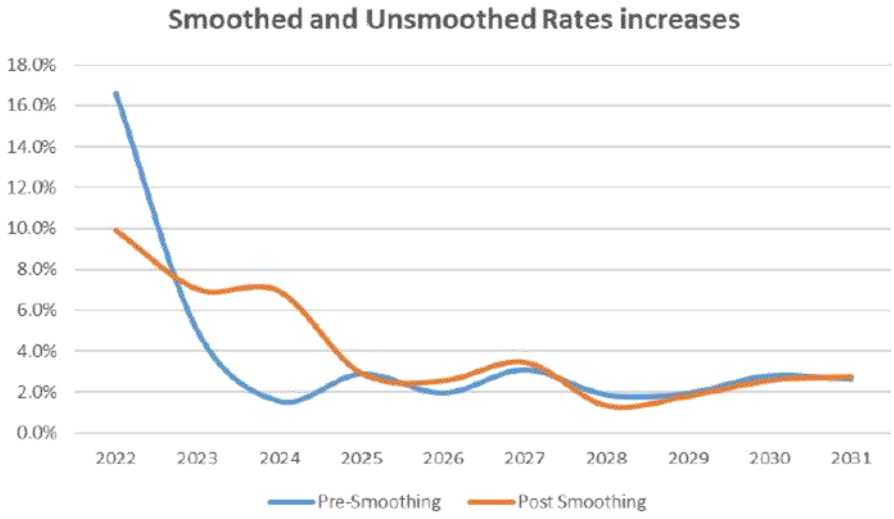
The tables below provide a detailed breakdown of the impact of Council's rates smoothing approach, by activity, indicating how the rates change both in percentage and dollar terms.

Description of Rates	Annual Rates Impact										Ten Year Interest cost of smoothing
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Targeted Rates											
Rural Water Schemes Pre smoothing $	1,787,071	1,908,205	1,957,499	1,972,740	2,006,223	2,077,070	2,098,394	2,115,788	2,196,370	2,238,025	
Rural Water Schemes Post smoothing $	1,506,263	1,645,062	1,798,610	1,917,973	2,046,430	2,184,748	2,279,960	2,376,171	2,475,783	2,571,559	
Impact of smoothing : (reduction) / catch up	(280,808)	(263,143)	(158,889)	(54,767)	40,207	107,678	181,566	260,383	279,413	333,534	117,895
Rural Water Schemes Pre smoothing %	31.8%	6.8%	2.6%	0.8%	1.7%	3.5%	1.0%	0.8%	3.8%	1.9%	
Rural Water Schemes Post smoothing %	11.1%	9.2%	9.3%	6.6%	6.7%	6.8%	4.4%	4.2%	4.2%	3.9%	
Targeted Rates											
Urban Water Scheme Pre smoothing $	894,757	959,269	1,019,175	1,038,759	1,059,815	1,102,689	1,125,018	1,154,570	1,220,751	1,256,041	
Urban Water Scheme Post smoothing $	889,000	960,120	1,036,930	1,062,853	1,089,424	1,116,660	1,141,785	1,167,475	1,190,825	1,208,687	
Impact of smoothing : (reduction) / catch up	(5,757)	851	17,755	24,094	29,609	13,971	16,767	12,905	(29,926)	(47,354)	107
Urban Water Scheme Pre smoothing %	10.7%	7.2%	6.2%	1.9%	2.0%	4.0%	2.0%	2.6%	5.7%	2.9%	
Urban Water Scheme Post smoothing %	10.0%	8.0%	8.0%	2.5%	2.5%	2.5%	2.2%	2.3%	2.0%	1.5%	
Civic Amenities Rates											
Resource Recovery Park operation Pre smoothing $	425,312	438,543	448,806	457,774	465,372	475,902	483,231	490,909	500,900	510,535	
Resource Recovery Park operation Post smoothing $	289,420	472,620	611,983	486,819	462,829	473,358	480,688	488,366	498,357	507,992	
Impact of smoothing : (reduction) / catch up	(135,892)	34,077	163,177	29,045	(2,543)	(2,544)	(2,543)	(2,543)	(2,543)	(2,543)	5,631
Resource Recovery Park operation Pre smoothing %	50.6%	3.1%	2.3%	2.0%	1.7%	2.3%	1.5%	1.6%	2.0%	1.9%	
Resource Recovery Park operation Post smoothing %	2.5%	63.3%	29.5%	(20.5%)	(4.9%)	2.3%	1.5%	1.6%	2.0%	1.9%	
General Rates											
Dividend Income Reduction Pre smoothing $	186,969	186,969	186,969	176,969	166,969	156,969	146,969	136,969	126,969	116,969	
Dividend Income Reduction Post smoothing $	492,469	468,969	43,469	(2,031)	(36,031)	(60,031)	71,249	142,969	132,969	122,969	
Impact of smoothing : (reduction) / catch up	305,500	282,000	(143,500)	(179,000)	(203,000)	(217,000)	(75,720)	6,000	6,000	6,000	39,000
Dividend Income Reduction Pre smoothing %	(54.5%)	0.0%	0.0%	(5.3%)	(5.7%)	(6.0%)	(6.4%)	(6.8%)	(7.3%)	(7.9%)	
Dividend Income Reduction Post smoothing %	19.7%	(4.8%)	(90.7%)	(104.7%)	1674.1%	66.6%	(218.7%)	100.7%	(7.0%)	(7.5%)	
Overall rates increases Pre smoothing	**16.6%**	**5.0%**	**1.5%**	**2.9%**	**1.9%**	**3.1%**	**1.8%**	**1.9%**	**2.8%**	**2.6%**	
Overall rates increases Post smoothing	**9.9%**	**7.0%**	**7.0%**	**3.0%**	**2.6%**	**3.5%**	**1.4%**	**1.8%**	**2.6%**	**2.8%**	
Overall impact of smoothing : (reduction) / catchup	**(6.7%)**	**2.1%**	**5.4%**	**0.1%**	**0.7%**	**0.4%**	**(0.5%)**	**(0.1%)**	**(0.2%)**	**0.2%**	
Annual interest cost of smoothing $	**4,500**	**29,948**	**32,531**	**27,086**	**23,721**	**15,368**	**10,335**	**12,457**	**6,525**	**162**	**162,633**
Makeup of rates increases Post smoothing:											
General Rates	2.6%	1.7%	2.9%	0.3%	0.6%	0.7%	(0.9%)	(0.2%)	0.2%	0.3%	
Civic Amenities Rates	3.5%	2.5%	1.3%	(0.5%)	0.0%	0.6%	0.5%	0.4%	0.4%	0.6%	
Targeted Rates	3.8%	2.9%	2.8%	3.2%	2.0%	2.2%	1.7%	1.7%	2.0%	1.8%	
	9.9%	7.0%	7.0%	3.0%	2.6%	3.5%	1.4%	1.8%	2.6%	2.8%	

Waimate District Council – Financial Strategy – Page 7

The diagrams below illustrates the impact of rates smoothing on the current plan (excluding Downlands Rural Water Scheme rates):





The following graph compares actual rates increases for the last 5 years with the projected increases for the next 10 years and shows the limit for that 10-year period (excluding Downlands Rural Water Scheme rates):

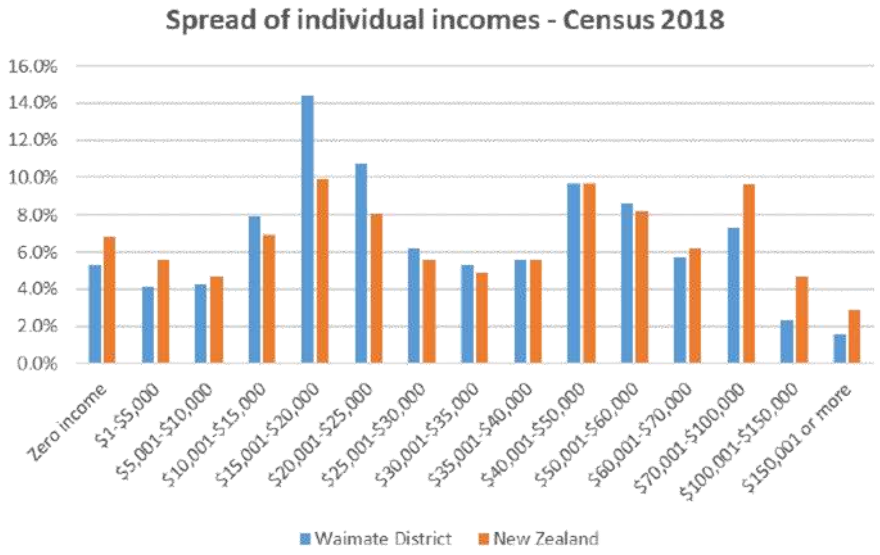


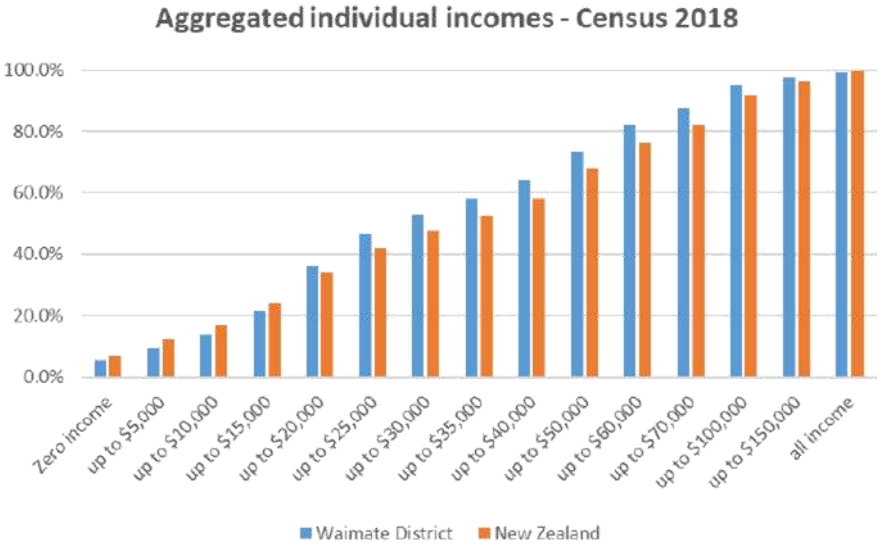
Like all households and businesses the costs of providing council services is increasing.

Council is committed to providing certainty and equity to ratepayers over their rates bills. Council is aware that there is significant income variation within the District and also that levels within the district are generally lower than the NZ average.

Council recognises that there are mechanisms available to low income ratepayers in the district to obtain relief on the rates levied by Council, such as the annual Rates Rebate. Council believes it is important to actively promote such options to rate payers.

The following graphs illustrate how income levels in the district lag the national average. Council does not expect the district's income profiles to vary significantly for this plan period.

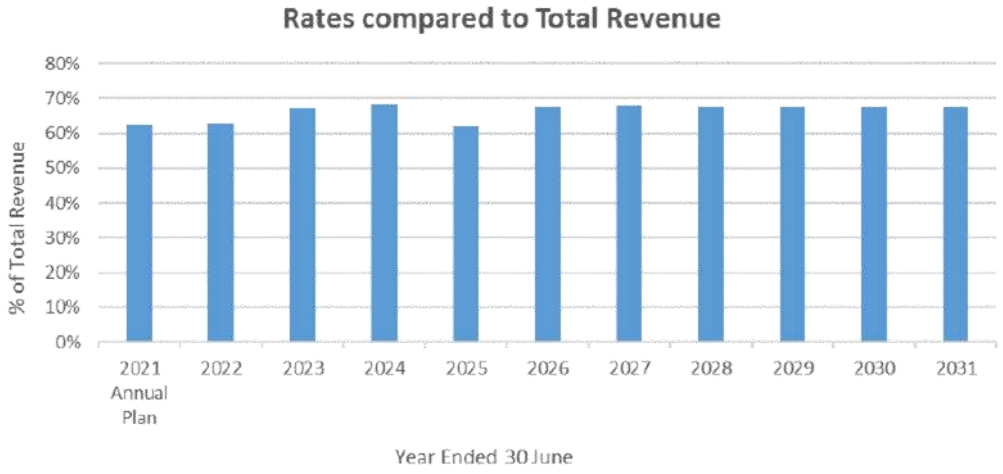




Other sources of revenue

Council has a number of other sources of revenue aside from rates, including fees and charges, funding assistance from Waka Kotahi (New Zealand Transport Agency), dividends from investments and forestry returns. Our Revenue & Financing Policy details how these revenue streams contribute to all the services we provide.

The graph below illustrates the proposed proportion of rates to overall revenue. Council plans to increase the ratio over the plan period to 63% initially with a maximum of 68% over next 10 years.



It is Council's view that it can deliver and maintain the levels of services and additional demand proposed in the LTP within these limits. Further information on Council's ability to maintain level of service and meet additional demand can be found in Council's Infrastructure Strategy and Asset Management Plans.

5. Planning for Improved Services

Community expectations are prioritised with focus on those that sustainably support the ability to deliver services to meet the social, cultural, environmental and economic wellbeing needs of the District. In addition, the government and other regulatory bodies impose requirements to provide increased or improved services and often it is a statutory obligation that we must meet, for example, fulfilling climate change obligations.

These projects often result in a change in the level of service provided to the community and may increase operating and capital expenditure. As stated elsewhere, Council proposes to leverage its balance sheet to draw down funds to support these long-term asset investments. The following are the major planned level of service improvements:

- **Water Supply – Drinking Water Standard Upgrades**
  Hook-Waituna, Lower Waihao and Waikakahi 2021/22
- **Water Supply – New Bore**
  Otaio-Makikihi 2022/23
- **Roading (2021-2031)**
  Continued investment in minor improvements
- **Library / Local Government Centre (LGC) Extension (2021/22)**

Further information

Further information on these projects can be found in the Council's Asset Management Plans for its activities and Council's Infrastructure Strategy.

6. Planning to Maintain Existing Services

Assets wear out over time and need replacing. Each year we need to ensure that enough work is done to maintain these assets and eventually we will need to spend significant amounts to rebuild or replace them. If the assets are not maintained to the same level each year this may result in a decline in the level of service.

The following are the major planned projects to maintain levels of service:

- **Waimate Urban Water Renewals (2021-31)**
- **Rural Water Supply Renewals (2021-31)**
- **Sewerage Renewals (2021-31)**
- **Roading Renewals (2021-31)**

Further information

Further information on these projects can be found in the Council's Asset Management Plans for its activities and Council's Infrastructure Strategy.

7. Borrowing/Debt

Council believes it is prudent to maintain a strong financial position. This does not mean that Council will have no term borrowings, but that it will carefully manage its levels of borrowings.

Council currently has a strong financial position, meaning Council has the capacity to increase debt. Council has previously preserved this capacity in order that borrowings can be undertaken in exceptional circumstances as part of a long term strategy to be financially sustainable, and to be able to fund a response to emergencies and disasters.

Due to some large capital works over the life of the plan our debt will increase. In addition, Council proposes to smooth the rates impact using both internal and external debt.

Council only borrows externally to meet cash flow requirements. Internal Borrowing means that one group of ratepayers are lending to another group of ratepayers. For this reason Council recognises that internal borrowing should be recognised as debt, as a call on those funds may occur unexpectedly.

Debt Limit

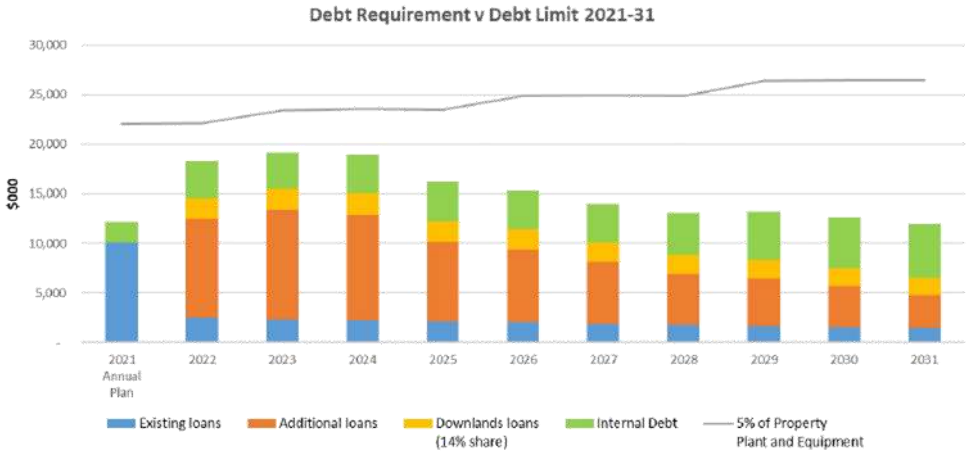
Determining an appropriate level of debt could be measured against Council's total assets or against its total revenue.

In previous Financial Strategies our debt limit was set at 100% of total revenue, but Council believes lifting the debt limit is essential to the delivery of our plan and to meet our community wellbeing outcomes.

As the purpose of Council's external borrowing is predominately to fund the cost of operational or infrastructural asset replacements or development, Council has determined that the most appropriate measure is to limit the level of borrowing as a percentage of the total value of Council's 'Property, Plant & Equipment'. Council considers that capping its limit on borrowing to be no more than 5% of total property, plant and equipment is financially prudent.

It is Council's view that it can deliver and maintain the levels of services and additional demand proposed in the LTP within these limits. Further information on Council's ability to maintain level of service and meet additional demand can be found in Council's Infrastructure Strategy and Asset Management Plans.

Total debt limits would therefore be as set out in the graph below.



Our debt levels peaks in 2023, reducing thereafter with significant forestry income in 2025-27 being applied to external debt reduction.

A detailed calculation of total debt can be found as a note within the financial statements. Council has included internal borrowing (except where specifically borrowed externally) as it considers that it is holding its reserves in trust for parts of the community and that in using those reserves for efficient cash management it should recognise that at any time it may need to externally borrow those funds should those reserves be required.

Where Council uses debt to smooth the impact of the rates (Rates smoothing), Council's intent is to pay the debt back as promptly as possible while delivering a smooth rate requirement. The practical application of this is illustrated earlier within this Financial Strategy (see Rates & Debt).

Policy on security for borrowings

Council will be required to give security for its borrowing from external lenders.

Council proposes to secure its borrowing, and interest rate risk management instruments, against rates revenue. In some circumstances, security may be offered by providing 'a charge' over one or more of the Council's assets.

Physical assets will be charged only where:

- there is a direct relationship between the debt and the purchase or construction of the asset which it funds;
- the Council considers a charge over physical assets to be appropriate.

The full policy on giving securities can be found in the Liability Management Policy.

8. Investments

Council has financial investments to create a return which can be used to pay for services and reduce rates. This section explains Council's objectives for holding and managing financial investments and equity securities and its targets for returns on those investments and equity securities.

Forestry

Council owns a 136.4 ha forestry investment largely to generate income and Carbon Credits for Council but also to provide some economic development benefit to the district. Council proposes to continue to maintain the forest asset to maximise commercial returns, but where a viable return is possible it may consider the disposal of these assets via the open market. Unless sales occur, Council will continue to replace forest stock as trees are felled.

Council expects that these forests are to be harvested from 2024 to 2027 and the return from the sale of trees will enable repayment of external debt. Council plans to replant following harvest.

Alpine Energy Ltd Shares

Council owns 7.54% of the shares in the company. Council primarily owns these shares for the commercial return received by way of dividend. Alpine Energy infrastructure supplies part of the district, so Council's investment also helps ensure a secure power supply necessary for the development of the district. Council anticipates the company to continue with its current level of dividend and as such is budgeting on a dividend of not less than 6 cents per share. An annual increase of 3.9% on the value of the Alpine Energy shares has been assumed for the life of the Long Term Plan.

Property

Council owns many properties for operational or community purposes that are not considered investment properties as any financial return is incidental to the reasons for ownership.

Cash

Council holds cash for the purpose of operating and maintaining stable cash flows. These funds are invested in internal borrowing or deposits as provided by council's Investment Policy. The return on net cash investments is budgeted at 1%.

Other Investments

Council holds a small number of low value investments in equity for which the reasons for holding are related to purchasing benefits or for economic development. Council does not have a target return for these investments, as this is incidental to Council's reason for ownership.

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APPENDIX 1

Local Government Cost Index (LGCI)

LTP Year	Year Ending	CAPEX (%)	OPEX (%)	LGCI (%)	Rates Limits %
1	Jun-22	4.0	3.6	3.7	10.0
2	Jun-23	3.0	2.9	2.9	10.0
3	Jun-24	2.6	2.5	2.5	10.0
4	Jun-25	2.6	2.5	2.5	8.0
5	Jun-26	2.7	2.5	2.6	8.0
6	Jun-27	2.6	2.5	2.5	8.0
7	Jun-28	2.8	2.6	2.6	8.0
8	Jun-29	2.8	2.7	2.7	8.0
9	Jun-30	2.9	2.7	2.7	8.0
10	Jun-31	2.7	2.6	2.6	8.0

Waimate District Council
30 Year Infrastructure Strategy

2021 - 2051

WAUGH

Quality Record Sheet

Waimate District Council
30 Year Infrastructure Strategy
2021 - 2051

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1.0 EXECUTIVE SUMMARY

Waimate District Council's Infrastructure Strategy forms part of the framework of strategy and planning documents that are used to guide Council's sustainable management of assets, while also allowing Council to achieve identified infrastructure objectives over the next 30 years. This is the third infrastructure strategy produced as a requirement of amendments to the Local Government Act 2002 in 2014. It provides discussion into the range of scenario and responses Council could make in providing services to the community in a sustainable way.

The Infrastructure Strategy has direct linkage to Council's Roading, Water, Sewerage and Stormwater Asset Management Plans, and is used to inform the 2021-2031 Long Term Plan.

The Infrastructure Strategy covers the Council's core infrastructure activities of Roading and Footpaths, Water Supply, Sewerage and Stormwater. The core infrastructure is the most critical area of investment for the Council with infrastructure delivering essential services to residents and visitors.

Purpose: The purpose of the Infrastructure Strategy is to:
Provide residents of the Waimate District with a clear view of the state of Council's core infrastructure, and priorities for investment over the next 30 years.
Provide robustness around long term budgets for the Core Infrastructure Assets activities
Discuss significant issues for the Core Infrastructure Assets across a 30-year time frame, and provide a strategic direction that reflects the current legislative environment and the Councils priorities across the district

Core Infrastructure Assets: A summary of the Council's Core Infrastructure Assets that are considered in this Infrastructure Strategy are presented below:

Asset	Description	Optimised Replacement Values (2020 $M) Value	% of Total
Roads and footpaths	Roads (arterial, collectors, local; curbs and gutters), bridges, footpaths	496	88%
Water Supply	Water extraction, treatment and distribution	40	7%
Sewerage	Sewerage collection, treatment and discharge	25	4%
Stormwater	Stormwater collection and discharge	6	1%
TOTAL		$ 567M	

Council's Priorities: At a high level, Council's priorities in respect to the Water, Sewerage, Stormwater and Roading and Footpaths are

Maintain the District's roads to a safe standard and fit-for-purpose for the long term
Using efficient and effective asset management practices to maximise roads and footpaths asset life to provide a resilient network.
Demonstrate to customers that Council is managing the assets responsibly.
Ensure that the level of service required by customers is provided at the lowest long-term cost to the community.

Customers will be regularly consulted over the price/quality trade-offs resulting from alternative levels of service
Provide a continuous supply of potable water to meet agreed demands.
Maintain sewage disposal and treatment facilities to protect public health through ensuring good sanitary standards and freshwater management.
Manage the impacts of land use change and growth.

There are several **key decisions** ahead for Council and the community.

Roading and Footpaths

Continually consider increased investment in Roading and Footpaths to provide a satisfactory level of service and provide for the effects of heavier vehicles. Historic Land use change continues to result in greater truck numbers associated with dairying and fodder crops, as opposed to dry stock farming. Trucks on the network are larger (including 50MAX and HPMV), as are agricultural vehicles. Historically the level of investment required to keep roads to a 'fit for purpose' level in Waimate District has been among the lowest in the country. However, with land use change the demands on components of the network increase so does the amount of work to keep them to the required standard. A comprehensive planning and maintenance approach to ensure the delivery of this level of service will require more investment. Given the large proportion of pavements that were constructed in the same periods Council is aware of the potential 'bow-wave' of rehabilitation and resealing works. While there is an acknowledgement of this, small increases in funding are proposed initially as monitoring and modelling is undertaken to gain a more robust understanding of this issue, and where this investment should occur.

Council also needs to consider if the current Aoraki (South-Mid Canterbury) Roading Collaboration Group arrangements are delivering the outcomes sought by Waimate customers. Since 2014, a strong collaboration has developed across Waimate, Mackenzie, Timaru and Ashburton District Councils. The development of a common maintenance contract document meant that the Councils had to work together and resolve differences. This has formed an excellent platform for combined work, as well as procuring physical works and professional services.

Water Supplies

The renewal programme is considerable and will extend well out into the future. Council will need to continue its commitment to this in order to maintain satisfactory levels of service and to provide increased levels of service required for compliance with the Drinking Water Standards for New Zealand, improved regulation and associated compliance monitoring.

Sewerage

The renewal programme is considerable and will extend well out into the future. Council will need to continue its commitment to this in order to maintain satisfactory levels of service, and compliance with both current and future consents.

Stormwater

The forward works programme is adequate. If a greater level of service is desired then higher levels of investment will be required. Short term investment is currently targeting known locations where agreed levels of service cannot be achieved. There is ongoing work required to identify, protect and improve overland flow paths through both the stormwater activity and the District Plan review.

Council's Response

Aging assets, addressing changing (heavy) transport demands, improving road safety and improving water supplies are all challenges for Waimate District Council. Over the next ten years investments to improve levels of service will be the priority, and renewal programmes will ramp up for water services and pavement rehabilitation works. Some shorter-term investment is also required to meet additional demand associated with growth.

Council will continue to engage with government around the water reform programme.

Roading investment levels are reviewed every three years in line with the government priorities for financial assistance.

Strategic Direction

Councils' strategic direction to ensure that its decisions address both the priorities and long and short-term issues are documented in Section 7 of this 30-year infrastructure strategy. Analysis of available options for the key issues has resulted in the following strategies:

Water Supply:

- The application of a prioritised approach to the replacement of aged water mains to ensure impacts on customer level of service is limited. Priority is given to those assets displaying poor condition, high failure rates, high criticality and that have potential to affect a high number of consumers. Comprehensive asset management planning is required to maintain a satisfactory level of service.
- Council will continue its programme of water scheme treatment plant upgrades in order to achieve compliance with the current Drinking Water Standards for New Zealand. Where the proposed water reform programme indicates that legislative change is likely and alternative compliance pathways become available, Council will review the programmed upgrades to ensure that cost-effective compliance is achieved. For example, completion of enabling works early, followed later by alternative compliance methodology. Council remains committed to achieving compliance concurrently with the Three Waters Reform process.
- Progressively renew and upgrade our rural townships to address leakage and access to water services for growth.

Sewerage:

- The application of a prioritised approach to the replacement of aged and poor condition sewer mains to ensure impacts on customer level of service is limited. Priority is given to those assets displaying poor condition, high failure rates, high criticality and that have potential to affect a high number of consumers. Comprehensive asset management planning is required to maintain a satisfactory level of service.
- A combined approach to replacing aged and poor condition pipes alongside a detailed inflow investigation to provide capacity and resilience in the waste water network.

Stormwater:

- Implementation of the Stormwater Management Plan once the global consent is issued. The global consent application is currently being processed by Environment Canterbury Regional Council with affected parties currently being consulted. Some risks exist if approvals are not provided, or National Policy is amended during the process.

3 Water Reforms:

- Towards the end of 2021 Council will need to establish its strategic direction (opt-in or opt-out). Until further information is available this is difficult to determine.

Roading:

- Increased traffic numbers and size require a programme of increased resurfacing, pavement rehabilitation, unsealed road metalling and drainage renewals.
- Failures due to poor ground conditions and drainage require a programme of increased resurfacing, pavement rehabilitation, unsealed road re-metaling and associated drainage renewals. Future increased investment needs to be underpinned by additional data collection.
- Unsuitable bridges to be addressed using the ONRC hierarchy and addressing key routes for both freight connections and network resilience. Priority determined using a replacement / upgrade strategy.
- Road Safety is a critical outcome and applying the ONRC a Low-Cost-Low Risk Minor Safety Improvements programme is developed. This covers the higher priority road, walking and cycling safety aspects.

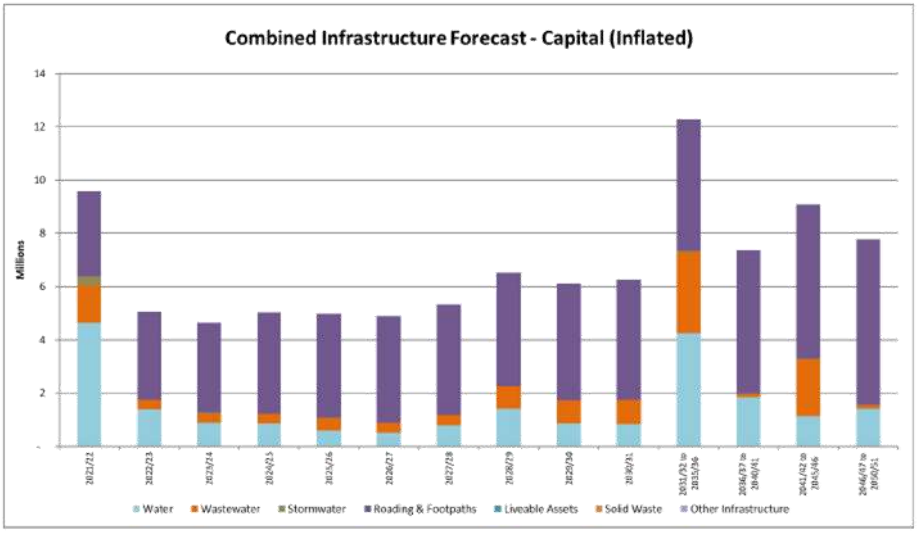
The following chart illustrates the key issues and responses.

	Years 1-3	Years 4-10	Years 11-20	Years 21-30
Roading and Footpaths	Improved drainage Flood resilience Infrastructure safety improvements and speed management Reseals Some Pavement Rehabilitation	Road strengthening to respond to drainage/pavement condition Reseals More Pavement Rehabilitation (1.3km / year) Safety improvements	Reseals Pavement Rehabilitation	Reseals Pavement Rehabilitation
Water Supplies	Treatment upgrades Pipe renewals Govt. water reform Provision of growth infrastructure	Pipe renewals Provision of growth infrastructure	Pipe renewals	Pipe renewals
Sewerage	Investigate inflow Pipe renewals Govt. water reform Provision of growth infrastructure	Reduce inflow Pipe renewals Provision of growth infrastructure	Pipe renewals	Pipe renewals

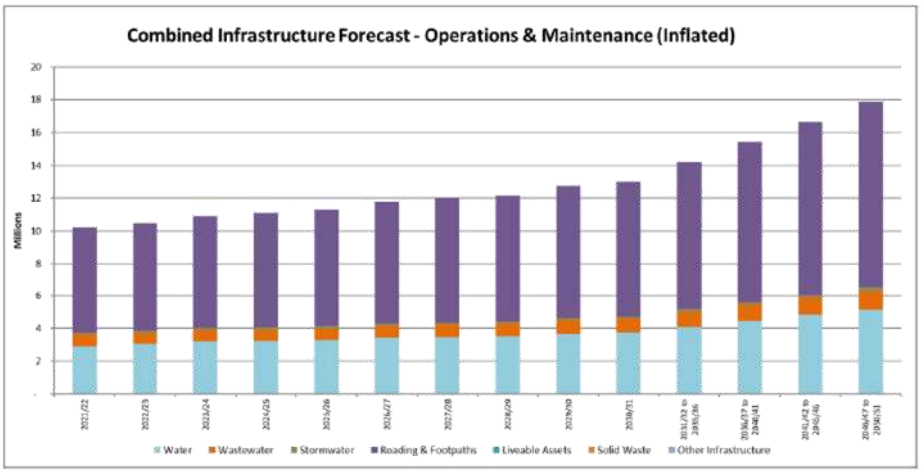
Stormwater	Urban improvements Global consent Identification, protection and improvement of overland flow paths Govt. water reform	Urban improvements		

Much of the Roading and Footpaths network is located on difficult soils which are poorly drained. The network is impacted by storm-related flooding, that is predicted to gradually increase as a result of climate change. This has the potential to affect the fit for purpose performance of the network - resulting in pavement defects where drainage and ground conditions are poor - and a backlog of maintenance and renewals work. New designs and renewals take the effects of climate change in to consideration.

Road safety initiatives contribute to the national 'Road to Zero' road safety strategy. Critical and urgent changes are required at a local, regional and national scale as part of the strategy.



Note: Years 2031 – 2051 represented as 5-year annualised average.



Note: Years 2031 – 2051 represented as 5-year annualised average.

Waimate District Council continues to face the challenge of aging pipe assets that are both due, or are overdue, for replacement and a roading network that is under pressure. This infrastructure is vital to the economy of the district and beyond, along with the wellbeing of the community.

The combined forecast for operations and maintenance as well as capital identified is considerable. Core infrastructure costs exceeding $20 million per year (Year 1, capex and opex) is a challenge for a small community and smart planning is vital.

On the infrastructure side, a focus on criticality and prioritisation is key to investing where it will provide the greatest benefit. This will need to be communicated well as with a prioritised approach there could be differing views on what should be done and what should be delayed. Council are currently considering additional analysis of the reticulated networks through fault records which will also assist with prioritisation. Balancing age, criticality, risk appetite and overall performance with affordability is also a challenge over the 30-year timeframe.

Alongside this infrastructure strategy, the financial strategy outlines the options for funding these infrastructural challenges. Council is focussed on continuing to support the district and its residents, and this means providing a fair balance of revenue methods, and providing fit for purpose services.

2.0 INTRODUCTION

This is Waimate District Council's third Infrastructure Strategy. It has been prepared from Council's 2021 suite of Activity Management Plans and the Long Term Plan of which it forms part.

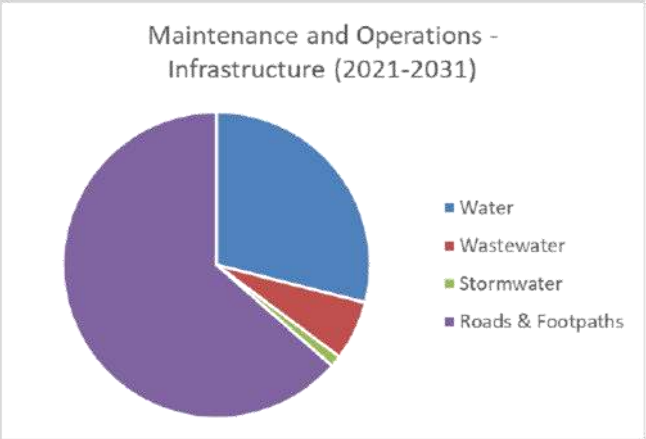
This Infrastructure Strategy should be read in-conjunction with other relevant Council documents that include the LTP, Financial Strategy and the current AMPs.

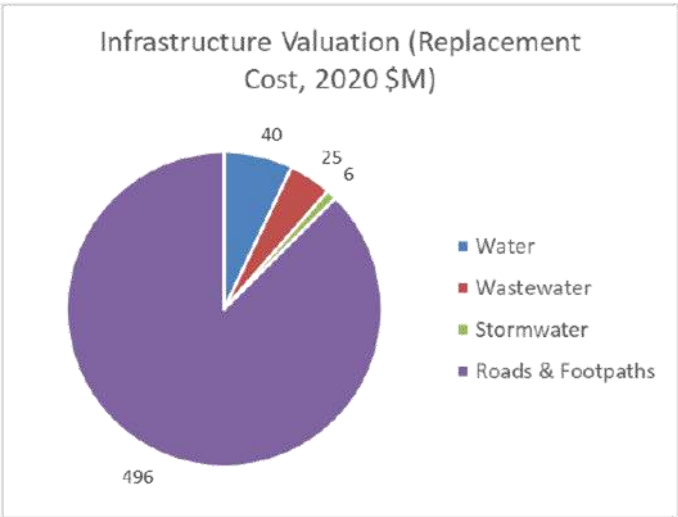
The issues discussed reflect the current legislative environment and the communities' priorities across the district.

The financial forecasts are estimates and the reliability of the forecasts decreases beyond ten years and towards the thirty-year planning horizon.

This Infrastructure Strategy covers the Waimate District Council's core infrastructure (Roads and Footpaths, Water, Sewerage and Stormwater). The core infrastructure is the most critical area of investment for the Council, representing around half of the annual expenditure and close to 90% of all the value of all Council's assets.

Figure 2.1: Infrastructure Annual Expenditure and Asset Valuation (Replacement Cost)





2.1 Strategy Layout

The Strategy document sections and corresponding LGA Act sections are tabled below:

Table 2.1: Strategy Layout

Strategy Section		LGA 2002 (Section 101B)
1	Executive Summary	
2	Identifies the purpose of the Infrastructure Strategy and the core infrastructure included in this strategy	2(a) and 6
3	Describe the district/city and illustrate the linkage between strategic documents	2(a)
4	Describe the core infrastructure, its condition and performance while recording the significant assumptions, risks and mitigation	2, 3(e), 4 (c) & (d)
5	Discuss the emerging issues that will impact on the core infrastructure assets	3 (b) to 3(e)
6	Discuss Council's response to the emerging issues and the significant decisions to be made during the term of this strategy	2(b), 4(b)
7	Identifies the response options for the significant issues and documents the benefits, cost, when and funding source	2(b); 3(a) to (e) & 4(a) to (c)
8	Identifies the costs associated with the actions proposed	4(a)

2.2 Purpose

2.2.1 Purpose of Infrastructure Strategy

The purpose of the Infrastructure Strategy is to:

- Provide residents of the Waimate District with a clear view of the state of Council's core infrastructure, priorities for investment over the next 30 years
- Provide robustness around long term budgets for the core Infrastructure Assets.
- Discuss significant issues for the Core Infrastructure Assets across a 30 year time frame, and provide a strategic direction that reflects the current legislative environment and the communities' priorities across the district.

Section 101B – Infrastructure Strategy states:

(1) A local authority must, as part of its long-term plan, prepare and adopt an infrastructure strategy for a period of at least 30 consecutive financial years.

The stated purpose of the Infrastructure Strategy is to;

a) Identify significant infrastructure issues for the local authority over the period covered by the strategy; and
b) Identify the principal options for managing those issues and the implications of those options.

Section (6) defines infrastructure assets as including:

a) existing or proposed assets to be used to provide services by or on behalf of the local authority in relation to the following groups of activities:
    i. water supply:
    ii. sewerage and the treatment and disposal of sewage:
    iii. stormwater drainage:
    iv. flood protection and control works:
    v. the provision of roads and footpaths; and
b) any other assets that the local authority, in its discretion, wishes to include in the strategy.

2.2.2 Infrastructure Drivers

Changing land Use

Expansion of reliable irrigation has underpinned historic changes to land use within the district. This is mainly in dairy, dairy support and high value crops. This in turn has and will continue to support local service industries and value added manufacturing. The expansion of reliable irrigation has and is expected to result in a stable but small population increase and ongoing demand of the Council's supporting infrastructure (Roading, Water, Sewerage and Stormwater).

As the demands on the networks increase and the remaining land-use changes occur, it is clear that levels of service will be challenged. It is timely to acquire knowledge and invest to protect the existing asset and ensure that levels of service remain satisfactory.

The report 'Economic Impact of Freshwater Management Policies on the Waimate District' April 2021 (Rationale, Benje Patterson) notes small but important potential changes in land use and farming practices as a result of national freshwater management changes and requirements. These changes may also have a small on-going detrimental effect on district employment. Council will work closely with various stake holders to quantify these effects over the coming years.

Population Growth

Introduction

Population growth (or decline), age structure and distribution (spread), and the number and type of households and families in our district affects:

- Demand for local services
- The willingness and ability of ratepayers to pay for them
- Representation and participation in local democracy
- Interactions between human activity and the environment.

It is therefore an essential for asset management planning that sound information is used regarding population, demographic and geographic change.

In the past Waimate District Council have used the growth projections prepared by Stats NZ. The Council is now looking for a more in-depth understanding of what their district might look like over the next 30 years. This, coupled with the delayed release of the Stats NZ projections following the 2018 Census, has led the Council to commission these growth projections from an external specialist. The 'Waimate District Council Growth Projections, August 2020' reporting prepared by Rationale enables the organisation to understand the future growth in their district and provide a single source of the truth for the Council.

This is discussed in section 5.1 along with other challenges.

2.2.3 Infrastructure Capacity

Capacity assessments by the Council in relation to the land use and population growth drivers indicate that:

- Hydraulic rearrangement and pressure management for the urban water supply both assists in extending the useful life of the network assets, and will provide additional capacity to cater for growth.
- National freshwater reforms may cause future land use change that results in different farming practices, water use requirements and transport network use.
- The urban sewerage network and treatment plant have adequate capacity to cater for the increased population (additional 2,900 persons available) provided stormwater inflow and groundwater infiltration can be reduced.

2.3 Waimate District Core Infrastructure Assets

The core Waimate District Infrastructure Assets are tabled with 2020 replacement values below:

Table 2.2: Waimate District Infrastructure Assets

Asset	Description	Replacement Value (2020 $M)	% of total
Water	Water extraction, treatment and distribution	40	7%
Sewerage	Sewage collection, treatment and discharge	25	4%
Stormwater	Stormwater collection and discharge	6	1%
Roads and footpaths	Roads (arterial, collectors, local; curbs and gutters), bridges, footpaths	496	88%
TOTAL		**$ 567M**	

There are some very minor infrastructure assets associated with flood protection and control works including the Elephant Hill drainage channel. Council considers that there will be no increased demand for this service over the next thirty years.

2.3.1 Infrastructure Performance

General comments on the condition and performance of the district's infrastructure in terms of the services required at a network level is presented in Table 2 3.

Table 2.3: Core Infrastructure Condition and Performance

Asset	Condition	Performance
Roads and Footpaths	Condition records and current assessments are thorough, being detailed and collected over many years. Improvements are planned to collect more complete age and remaining life data for all assets. The network is generally sound, but is beginning to show signs of deterioration as demands increase.	Increasing traffic volumes and heavy vehicle axle weights are expected to increasingly impact on the district's core road network, particularly where ground conditions are weak and drainage is poor.

Asset	Condition	Performance
Water	Council considers that the majority of the network (source, treatment and distribution) is in good condition but there are portions of the reticulation that are coming to their end the useful life.	Council considers that the networks operates effectively and efficiently. Some performance issues are noted due to undersized pipework which cannot meet fire flow requirements.
Sewerage	There are areas of the network (collection, treatment and disposal) that are showing signs that they are coming to their end of useful life. This is particularly evident with original pipework in Waimate town where there is inflow occurring.	Council considers that the majority of the network operates effectively and efficiently but there are sections of the network that have a lower level of performance during heavy rain or unusually high groundwater conditions.
Stormwater	The network is relatively new (with extensive useful lives) and in good condition.	There is only limited stormwater piping, there is some surface flooding of streets in parts of Waimate town which are being progressively addressed. Some

2.2.4 Risks to Core Infrastructure Asset Performance

Roads and Footpaths:

The assets are well understood and there is now better information on bridge structures. Risks have been considered at a South Canterbury level with neighbouring authorities to understand wider network resilience.

Work is underway to collect further detailed information on the ground conditions across the network and develop work programmes which manage the impact of weak ground and poor drainage on pavements.

Water, Sewerage and Stormwater:

The main risks that would affect the performance of the Infrastructure Assets have been identified using a Risk Summary Table initially developed in 2011. This indicates that there are a small number of high or significant risks, but these have appropriate mitigation. Critical reticulation assets were identified in 2017 to ensure they are prioritised appropriately.

Council is involved with the Government on the NZ water reform initiatives that are in progress in 2021 onwards. Final decisions regarding NZ water reform have yet to be made at the time of this Infrastructure Strategy. Council will continue to engage with the Government with regards to water reform proposals.

2.3.2 Other Activities

Council undertakes other activities beyond the core infrastructure described in this Infrastructure Strategy

In time the Parks and Recreation assets and Community Buildings may be added to the above list of core infrastructure as Council's plans for those activities matures.

2.3.3 Infrastructure Achievements

Over the last three/six years we have:

- maintained, replaced, constructed our infrastructure
- identified and investigated issues,
- undertaken strategic actions – including the adoption of Waimate District Council's Consolidated Bylaw (2018) and the Council's Procurement Strategy (2019)

The following details improvements achieved over the last number of years with our core infrastructure:

2.3.4 Water

Council has completed water treatment plant upgrades within the urban area and has partially completed upgrades of Cannington-Motukaika and Waihaorunga Rural Water Supplies.. Pipe renewals, particularly in the Waimate Urban scheme, are ongoing. The data capture and condition assessment programme is ongoing.

2.3.5 Sewerage

Pipe and manhole renewals, particularly in the Waimate Urban scheme, are ongoing. The data capture and condition assessment programme is ongoing.

2.3.6 Stormwater

Pipe and manhole renewals are ongoing. The data capture and condition assessment programme is ongoing.

2.3.7 Roads & Footpaths

Waimate District Council's service delivery as part of the Aoraki (South-Mid Canterbury) Roading Collaboration has ensured cost-effective service delivery in-line with industry best practice.

A Bridge Replacement and Upgrade Strategy has been developed.

Council has assessed condition of all culverts on the roading network, verifying RAMM data and estimating construction dates and condition of culvert itself. This information is being used to form a replacement programme.

Council has continued to manage a modest and affordable programme of "Low Cost-Low Risk" Minor Safety Improvements as part of Capital Programmes, which include targeted seal widening, geometric improvements, enhanced delineation on horizontal curves and footpath extensions.

3.0 WAIMATE DISTRICT

3.1 District Overview

Situated around 180 kilometres south of Christchurch, Waimate District is in the central South Island. The district is bounded by the Pacific Ocean in the east, west of the shores of Lake Benmore and the Pareora and Waitaki Rivers at the north and south respectively. The district covers around 3,582 square kilometres and has a population of approximately 7,800 persons.

The district is characterised by a variety of farming and forestry activities. Crop and livestock farming are the main activities on the fertile plains and easy hills with more extensive grazing on less fertile or steeper country. Dairying has expanded significantly with dairying now occupying the majority of the areas served by irrigation schemes.

Waimate town is the largest population centre, with the balance located in smaller communities and the rural area. Waimate town is the only community served with comprehensive water and sewerage schemes.

A summary of the Infrastructure Assets owned and operated by Council within the Water, Sewerage, Stormwater and Roads and Footpaths activities is provided below:

Roads and Footpaths: The Council operates and maintains 646 kilometres of sealed roads, 693 kilometres of unsealed roads, 48.5 kilometres of kerb and channel, 62.7 kilometres of footpaths, just under 3,500 culverts, and 182 bridges (plus an additional 85 concrete fords).

The total replacement cost of our Roads and Footpaths assets (as at June 2020) is $496 million.

Water: Council operates and manages one on-demand water scheme (Waimate) and six rural water supplies. Water is obtained from a range of surface and groundwater sources through the means of river intakes, infiltration galleries and bores. Water treatment plants, storage reservoirs, tanks and pump stations are operated to distribute the water to approximately 6,000 consumers via 914 km of pipe. The Cattle Creek (essentially a very small and private scheme) and Hakataramea water supply (managed and operated by an incorporated society)are not considered in this Infrastructure Strategy.

The combination of assets was valued in 2020 at $40M (Replacement cost)

Sewerage: Only Waimate town is served by a community sewerage scheme with a total of 1,730 connections. Sewage is collected through 67 km of gravity pipe and rising mains, including two pump stations, and conveyed to a Waste Water Treatment Plant (WWTP) and disposal system. Treated effluent is discharged on to land.

The scheme was valued in 2020 at $25M (Replacement cost)

Stormwater: In the Waimate District, there is presently only one significant piped stormwater system, serving Waimate town. There is 13.5 km of stormwater pipes, open drains and a number of sumps and soakholes. Stormwater is conveyed to disposal points (natural waterways, soakpits and streams).

The limited nature of the system is reflected in the 2020 value of $6M (Replacement cost)

3.2 Strategic Context

The Strategy aims to give effect to Council's strategic direction as set out in the Community Outcomes. Linkages to each activity are shown below.

Table 3.1: Community Outcome Linkages to Activity

Community Outcomes		Transportation	Water, Sewerage and Stormwater
Thriving Community	A district that provides infrastructure for economic activity A District that encourages development A District that actively promote itself and its businesses	Efficient and safe roading networks are part of the essential infrastructure for economic growth and development	Fault response Timely provision of utility services essential to supporting growth
Safe and Healthy People	A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Safe and well maintained roads, footpaths and road verges promote safety of all road users, including pedestrians	Safe Drinking Water Protect public health by ensuring a safe and viable sewerage disposal system. Flooding is adequately managed in urban areas. We have reliable, efficient and well-planned water, sewerage and stormwater infrastructure that meets the needs of residents. Customer Satisfaction
Sustainable District and Environment	A district that is enhanced through sustainable and diverse development We value the natural environment, biodiversity and landscapes Our heritage is valued and protected	A well-managed roading network minimises the adverse effects on the environment	Ensuring the quality and quantity of discharges to the environment. Maintenance of the reticulation
Active, Diverse and Supportive Community	District assets provide recreation and leisure choice We celebrate and support the good things in our community	Roads and footpaths are an important element in both the residential and rural environment for physical exercise, leisure activities and social contact	

3.2.1 Financial Strategy

The Infrastructure Strategy and Financial Strategy form the pillars that support the Consultation document, and each document has been developed in close cooperation with each other.

3.2.2 Infrastructure Strategy & AMPs

Waimate District Council has a well-developed suite of Asset Management Plans that are formally updated on a three yearly cycle. The Transportation AMP is audited by NZTA, and also integrates the business cases required to support transportation investments.

This Infrastructure Strategy integrates with the AMP's and is developed following the AMP update cycle. This Infrastructure Strategy draws on the detailed analysis contained in the AMPs to set out the high level issues and investment projections.

3.2.3 Significance and Engagement Policy

Waimate District Council developed a Significance and Engagement Policy to determine the significance of issues within the District, and how to align Council engagement with the public based on the degree of significance of the issue.

The Significance and Engagement Policy identifies the assets covered by this Infrastructure Strategy as Strategic Assets:

- Roading Networks and connected infrastructure
- Sewerage Networks and Treatment Plants
- Stormwater Networks
- Water Treatment, Storage and Supply Networks

3.3 Linkage With Other Documents

The Infrastructure Strategy and Financial Strategy underpin the Long Term Plan.

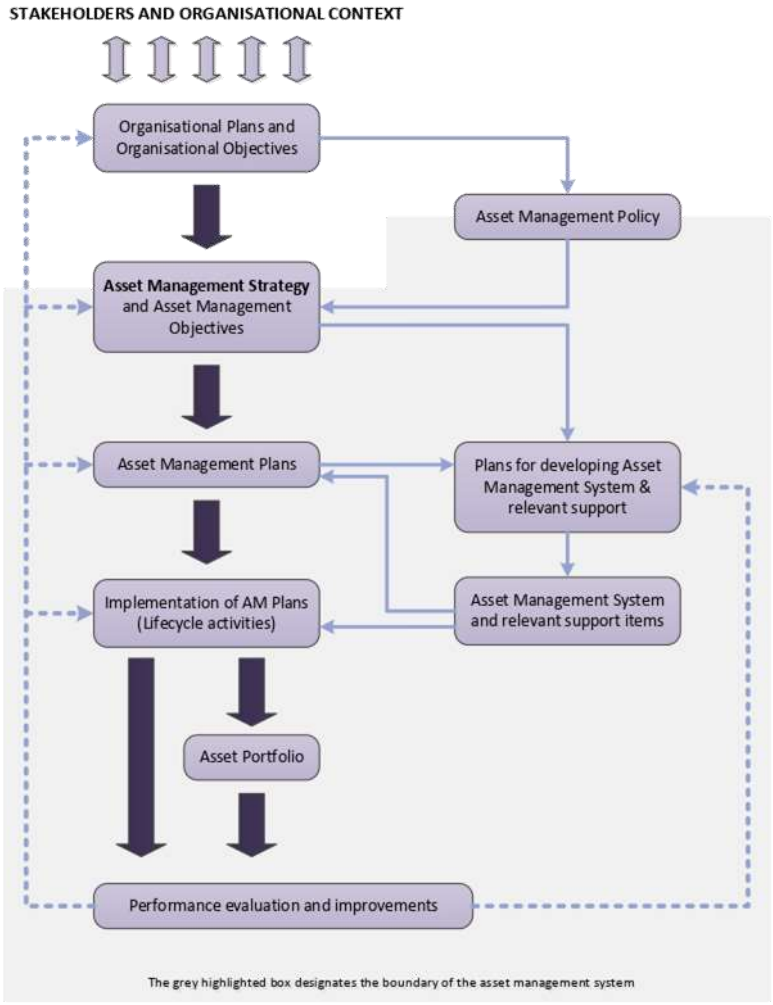
The Infrastructure Strategy and the Financial Strategy are key strategic documents for the future of Waimate District. The infrastructure strategy outlines the issues that are expected to arise and how Council proposes to respond to them, while the financial strategy discusses the financial implications and the funding options. In concert, the two are refined to produce the community consultation document. The manner of consultation is defined by the Significance and Engagement policy (and legislation). The Significance and Engagement policy also defines strategic assets that are discussed in the infrastructure Strategy.



Figure 3.1: Infrastructure Strategy – Supporting Long Term Plan 2021-2031

The following diagram illustrates the planning regime form an ISO55000 perspective, showing the Asset Management 'system'

Figure 3.2: Infrastructure Strategy- Linkages with other Documents



3.4 Waimate District Council

The Waimate District Council consists of a Mayor, eight Councillors and 53.08 FTE staff (as at 30 June 2020). The Mayor and Councillor positions are subject to election every three years. The elected representatives are drawn from four wards. Waimate Urban, Lower Waihao, Hakataramea-Waihaorunga, and Pareora-Otaio-Makikihi.

Ultimate responsibility for all of the District Council's activities rests with the Council. The Council decides the range of services and activities to be provided, sets the policy for these services and activities, delegates the implementation of these to the staff and monitors their performance. While the Council has at times considerable freedom and opportunity to exercise its initiative in deciding its aim and policies, it must do this within the laws, regulations and requirements set down by central government. A local authority may only undertake those activities which are permitted by central government.

As well as providing services itself, the Council may contract for services to be provided and assist many other organisations through membership, technical services, advice and financial grants.

The District Council is headed by the Chief Executive, who is responsible to the elected Council for ensuring the effective, efficient and economic management of all the Council's activities.

To carry out its function the Council is divided into the following departments.

- Roading
- Utilities
- Parks and Reserves
- Regulatory and Compliance
- Corporate Services
- Community & Strategy



Figure 3.1 – Waimate District Council Boundary

4.0 CORE INFRASTRUCTURE

The core infrastructure included in this strategy is:

- Water Supply – urban and rural
- Sewerage (Waimate urban)
- Stormwater (Waimate urban)
- Roads and Footpaths.

Figure 4.1 – Map of Waimate District



4.1 Asset Description

4.1.1 Water Supply

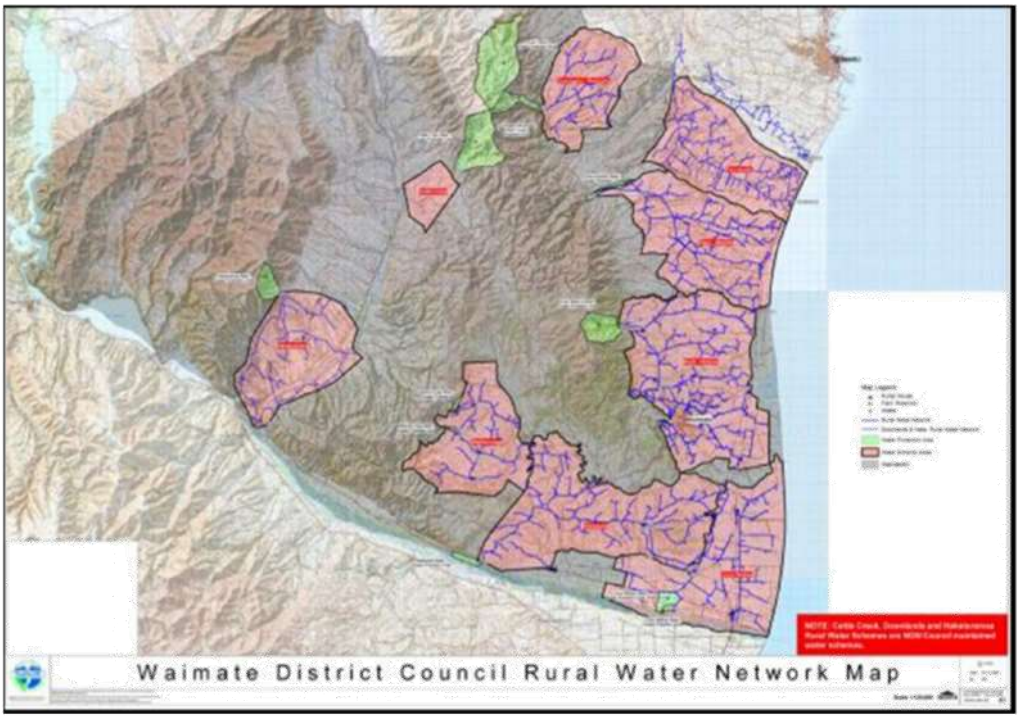
There are seven water schemes owned and operated by Council. This consists of one urban scheme, Waimate, and the remaining six are rural restricted schemes of Cannington Motukaika, Hook Waituna, Lower Waihao, Otaio Makikihi, Waihaorunga and Waikakahi.

The Hakataramea Rural Water Scheme is currently managed by the scheme users. This scheme may revert to revised management arrangements following the completion of government water reforms. This scheme is not included in the Infrastructure Strategy at this revision.

The Downlands water scheme is operated by Timaru District Council and provides water to properties within the Waimate District including St Andrews. The Council has a 14% stake holding in the scheme but has no direct involvement in the scheme apart from the collection of water rates on those properties. Timaru and Mackenzie District Councils have an 82% and 4% stake holding respectively. (The Downlands water scheme has not been included in this dataset).

A summary of the water scheme assets, owned by Council is given in the table below:

Scheme	Treatment Plants	Supply Bores	Pumping Stations	Storage Reservoirs	Dams	Water mains (kms)
Waimate Urban	2	2	0	1	0	65.9
Cannington Motukaika	1	0	1	-	1	56.8
Hook Waituna	1	0	4	-	1	252.1
Lower Waihao	1	2	3	1	0	125.1
Otaio Makikihi	1	0	1	1	0	155.1
Waihaorunga	2	0	4	1	0	67.1
Waikakahi	1	0	1	1	0	176.0
Total	**9**	**4**	**14**	**5**	**2**	**898.1**



4.1.2 Sewerage

The Council collects sewage from approximately 1729 connected properties through the Waimate urban sewerage system. Customers include residential, community and industrial/commercial.

A summary of the Sewerage assets, owned by the Council is presented below.

Asset Description	Units	Quantity
Reticulation:		
Gravity pipes	m	34,391
Rising mains	m	4,789
Laterals (mapped)	No.	1,041
Inspection Pits / Poo Pits	No.	18
Cleaning Eyes	No.	46
Valves	No.	13
Capped Ends	No.	32
Manholes	No.	308
Plant:		
Sewerage Treatment Plant	No.	1
Pump Stations	No.	2



4.1.3 Stormwater

Council owns and operates one significant stormwater system, the system servicing the Waimate Town with an estimated population of 3,000 people. Council owns and operates other systems in St Andrews, Makikihi and Morven townships, but these are considered very minor consisting of some kerb and channel.

With continued changes in weather patterns and rainfall event intensity as a result of climate change Council continues to monitor, model and develop an understanding of the effectiveness of the stormwater system to provide required levels of service. Overland flow paths require investigation, with this being modelled in conjunction with Environment Canterbury.

A summary of the Stormwater assets, owned by Waimate District Council is shown below:

Asset Description	Units	Quantity
Sump	No	27
Pit	No	19
Manhole	No	65
Headwalls	No	7
Open drains	m	5,133
Pipes	m	10,446

4.1.4 Roads & Footpaths

The transport asset includes all Council owned road reserve, roads, streets, bridges, footpaths and related infrastructure (road drainage, signs and streetlights) within the District as shown below.

There is also 120km of state highways through the district, where Council has limited involvement

Asset Description	Units	Quantity
Roads Total	km	1,339
Urban Roads - Sealed	km	48
Urban - Unsealed	km	4
Rural - Sealed	km	598
Rural - Unsealed	km	689
Bridges	No m	182 3,352
Footpaths	km	62.7
Traffic Services		
Signs	No	4064
Posts	No	1,826
Street Lighting	No	495
Drainage		
Culverts	No m	3,482 36,485
Concrete Fords	No m	85 1,696
Kerb and Channel & Dish Channel	km	48.5

4.1.5 Other Infrastructure

Council has considered the inclusion of other asset groups in this strategy, particularly parks and reserves, and solid waste. A large portion of the parks and reserve portfolio is operations focussed, and there are few assets involved in the solid waste activity. Both of these activities have sufficient planning within their respective activity management plans. Maintaining the overall liveability of the district remains a core service delivery function of Council.

4.2 Assumptions and Risk

Council has developed and adopted a set of assumptions to assist with the strategic planning process. Where there is some uncertainty about the issues that affect planning and what response Council chooses, an assumption with qualifications on likelihood and impact are made.

There are also many risks that are associated with long term delivery of services to the community through infrastructural assets. There is a high level of uncertainty about these risks and the impact that could be expected. These are also discussed under assumptions.



Assumptions

Table 4.1 summarises the significant assumptions that have been applied for the purpose of producing forecasts for the Roads and Footpaths, Water, Sewerage and Stormwater. An indication of the risk, impact and level of uncertainty associated with each assumption has been provided. Where the level of uncertainty associated with an assumption has been assessed as 'Medium' or 'High', Council's proposed action to reduce uncertainty and mitigate the level of risk has been presented.

Table 4.1: Significant Forecasting Assumptions

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Population Change						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
Demographic Changes						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Climate Change						
The effects of climate change are expected to manifest in three categories. These are: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) b) general socio-economic consequences of such changes, and c) c) socio-economic consequences of policies/measures designed to curb the adverse effects of climate change.	Waimate District Council	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Oil Price						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum market has historically demonstrated a tendency to stabilise rapidly, where possible.	Waimate District Council	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater frequency and/or greater severity.	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase demand for alternative methods of transport.	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups
Waka Kotahi New Zealand Transport Agency Revenue						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidised works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Grants and Subsidies						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.	Waimate District Council	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in reduced level of service.	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property
New Zealand Drinking Water Standards & Service Delivery						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	Central Government Waimate District Council	Legislation changes under urgency in Parliament that must be implemented immediately	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Resource Consents						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	Waimate District Council	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply
Emergency Event						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	Waimate District Council	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Development Contributions						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable under each system will be broadly similar.	Waimate District Council	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups
Water Irrigation Schemes						
Council does not expect major irrigation schemes to be introduced into the district over the period of the Long Term Plan.	Waimate District Council	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal impact on Council, but a more considerable impact on the district's agricultural sector.	Council will monitor the environment in regard to any potential development, and seeks to remain involved in discussions/proposals.	Roading and Footpaths, Rural Water Supply, Sewerage

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
District Economy						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	Waimate District Council	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices - the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups
Useful Lives of Significant Assets and Depreciation						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support Waimate District Council asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Funds for Future Replacement of Significant Assets						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	Waimate District Council	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage
Revaluation of Non-Current Assets						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets: Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%	Waimate District Council	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Forestry Asset Values						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	Waimate District Council	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Return on Investments - Alpine Energy						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it is assumed the dividend will remain at 6c.	Waimate District Council (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be unlikely to maintain dividends at the proposed level.	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance
Capital Delivery						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	Waimate District Council	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for	Water Supply & all other activities

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
		any given year, and carried over to subsequent years.		Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. Due to the nature of the rates	

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
					smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Return on Investments - other						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	Waimate District Council (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Inflation						
Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL). Increase Percentage by Type: Year / Roading % / Property and Parks % / Water % / Staff % / Other % / Wastewater % / Capital Expenditure % June 2022 3.1 1.7 7.2 4.8 1.7 7.2 4.0 June 2023 3.1 2.0 3.4 2.4 2.0 3.4 3.0 June 2024 3.0 2.0 2.1 1.5 2.0 2.1 2.6 June 2025 2.9 1.9 2.3 1.7 1.9 2.3 2.6 June 2026 2.9 1.8 2.6 2.0 1.8 2.6 2.7 June 2027 2.9 1.8 2.3 2.2 1.8 2.3 2.6 June 2028 2.9 1.7 3.0 2.3 1.7 3.0 2.8 June 2029 2.9 1.7 3.3 2.4 1.7 3.3 2.8 June 2030 2.9 1.7 3.3 2.6 1.7 3.3 2.9 June 2031 2.9 1.6 2.7 2.7 1.6 2.7 2.7	Business and Economic Research Ltd.	Inflation will be higher or lower than anticipated.	Moderate	A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.	Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan. In the event of significant changes to the underlying costs supporting work in the activity areas, mitigation planning will feature in the Annual Plan.	All activity groups

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Borrowing Costs						
Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.	Waimate District Council (in conjunction with its financial advisors)	Interest rates will differ significantly from those estimated.	Low	If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.	Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.	Investment and Finance
Unidentified Liabilities						
It is assumed that Council does not have any unidentified liabilities.	Waimate District Council	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

Remaining useful lives are discussed in greater detail within the associated asset management plans where the financial impacts associated with the predictive modelling of asset renewal are indicated. Deviation from the predictive model is discussed in terms of asset performance, criticality, renewal, smoothing, and risk. (see Lifecycle Management Plans, Water, Sewerage, Stormwater, and Roading AMP's).

4.3 Performance and Condition

Performance is tracked against a suite of levels of service which are developed through the Long Term Plan process and reported through the Annual Plan. The Mandatory Performance Measures are central to these.

The Long Term Plan should be referenced for these levels of service, and activity management plans for further detail.

Detailed discission on asset performance and condition is included in the respective Activity Management Plans. The following comments are high level and general only.

- Water reticulation condition and performance is good, but can be expected to be challenged as pipes near their expected life.
- The condition and performance of asset components at the treatment plants and pump stations are all considered by Council's engineers as good to excellent.
- Wastewater reticulation condition and performance is adequate, and is more frequently challenged as pipes near their expected life.
- Most of the Wastewater Treatment Plants is relatively new, Council engineers consider the condition of the WWTP assets to be excellent. The performance of the WWTP is considered to be very good
- There are no pipe condition ratings for the stormwater pipe assets but the Council engineers consider the condition of the stormwater reticulation in general to be in good order. The stormwater network is relatively limited and proven to be inadequate for some locations during times of heavy rainfall.
- The roading network is in good order, and levels or service are structured around the One Network Road Classification approach.

There is some backlog for roading renewals which are being addressed through works programmes. Backlog is less defined for water assets, but addressed adequately through criticality and condition assessments driving works programmes.

4.4 Data Quality

Council has been progressively improving data to underpin robust decision making. Each activity management plan contains an assessment of data suitability and a programme for improvement.

Roading data quality is considered through the REG data quality programme.

An overview of data quality is provided in the infrastructure valuations below and is further discussed in Section 6.6

Assessment of Confidence Levels

Asset	Valuation year	Quantity	Replacement Cost	Life Expectancy	Condition
Water assets	2017	B	B	B	C
Wastewater assets	2020	B	B	B	C
Stormwater assets	2020	B	B	B	C
Roading Assets	2020	A/B	A/B	B	B

5.0 MANAGING CHALLENGES AND EMERGING TRENDS

The task of building, operating and maintaining these infrastructure assets in an **affordable** and **sustainable** manner is becoming increasingly difficult in view of:

- Demographic changes
- New technologies
- Continually changing legislative environment (Central & Regional Government)
- Environmental impacts
- Infrastructure resilience
- Aging of infrastructure
- Economic Activity
- Affordability
- Skill Shortage (potentially worsening due to industry structure uncertainty)

5.1 Demographic Changes

Population growth (or decline), age structure and distribution (spread), and the number and type of households and families in our district affects:

- Demand for local services
- The willingness and ability of ratepayers to pay for them
- Representation and participation in local democracy
- Interactions between human activity and the environment.

In the past Waimate District Council have used the growth projections prepared by Stats NZ. The Council are now looking for a more in-depth understanding of what their district might look like over the next 30 years. This, coupled with the delayed release of the Stats NZ projections following the 2018 Census, has led the Council to commission these growth projections from an external specialist. The 2020 projections have been developed using a bottom up approach. Individual growth drivers for each Statistical Area 2 (SA2) have been developed using migration for employment and lifestyle as the basis of the modelling. The 'Waimate District Council Growth Projections, August 2020' reporting prepared by Rationale enables the organisation to understand the future growth in their district and provide a single source of the truth for the Council.

A 'Medium' growth scenario has been recommended as the expected level for growth in the next 30 years. This information is used to inform key projects, plans and strategies. The scenario incorporates short term effects in population changes due to COVID-19. However, it is not yet known what, if any, long term effects there will be. Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be re-projected, if necessary.

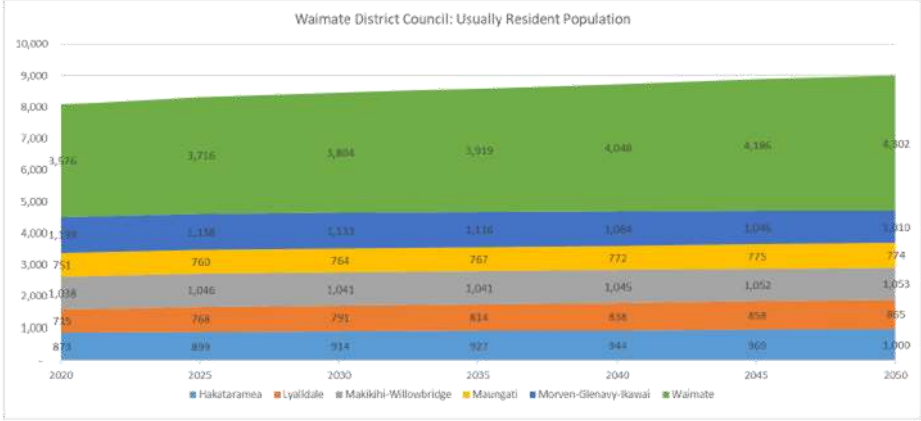
Population Projections (Usually Resident Population)

Over the next 30 years, the usually resident population of Waimate District is predicted to increase slightly.

The average age of Waimate District's population is older than the national average of 37.3 years (Stats NZ). Looking across the district, Waimate town has a significantly older average age of 48.6 years in 2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement later in life.

The recommended medium growth scenario projects the District's population to increase to 9,000 by 2050. Based on the medium projection, the population of the Waimate District is projected to grow by, on average, 0.4% a year between 2017 and 2050. This is less than the projected 1.0% a year growth rate of the Canterbury region and New Zealand's total population.

Figure 5.1: Waimate District Population Projections 2020-2050



With a low base population, significant industrial projects are capable of having an impact of the District's population. Further expansions of both Oceania and Fonterra Dairy Factories in the next ten years could increase job opportunities in the District. Whilst not predicted, future irrigation schemes have potential to see an increase in on-farm jobs in the District and the creation of secondary jobs as a result of increased agricultural production in wider South Canterbury. Should all of these projects proceed the District may see population growth trending more towards the high projection. While this may appear conservative, it is important that Council does not overestimate population growth and the associated infrastructure provision required. Also reflects that a considerable number of employees from both dairy factories live in either the Waitaki or Timaru Districts. Given the close proximity of both Timaru and Oamaru to these sites, increased job opportunities may not necessarily equate to comparable population increase in the Waimate District. Growth over the next 30 years of between 1,000 and 2,000 people is likely

Natural Decrease

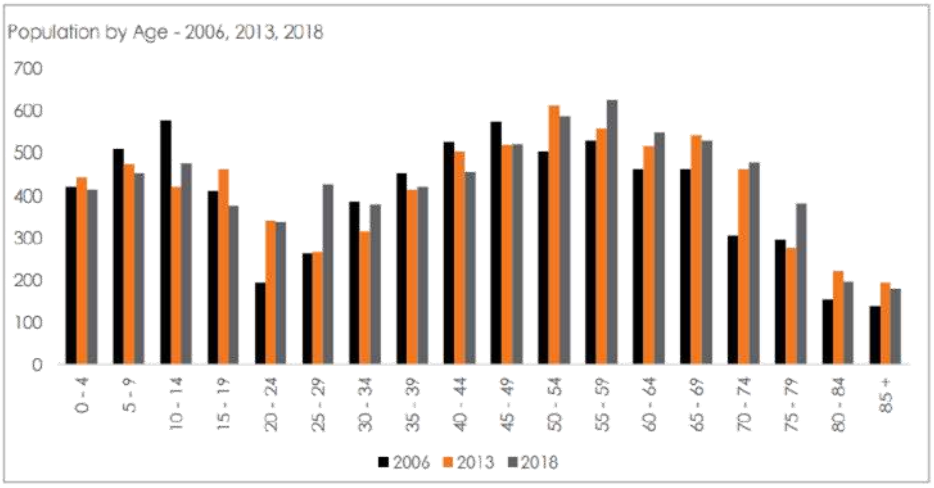
As New Zealand's population continues to age, more and more areas will consistently experience a natural decrease, i.e. more deaths than births (3 territorial authorities experienced this between 2010-2014). For areas that have traditionally relied on a natural increase for population growth (including Waimate), a natural decrease will mean a shrinking population unless offset by net migration gains. Within the Waimate District, natural decrease is projected to occur by 2038. Without net migration gains, the population will probably decrease.

Larger proportion of older people

Under the medium projection series, Waimate District is projected to have a higher proportion of older people (aged 65 and over) in 2050 compared with 2020.

In 2013 19.5% of the Waimate District population was aged 65 and older.

Figure 5.2: Waimate District's population by Age – 2006, 2013, 2018. Source: NZ Stats

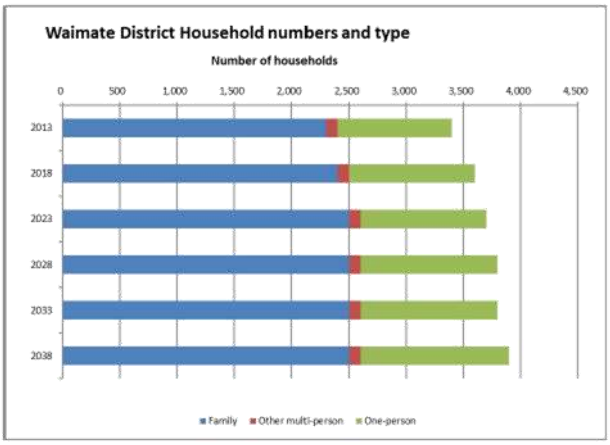


Households

Based on 2013 analysis the number of households in the District is projected to increase by an average of 0.7% a year, lower than the national and Canterbury regional increase of 1.1%.

The average household size in the Waimate District is set to decline from 2.3 people in 2013 to 2.1 people by 2038.

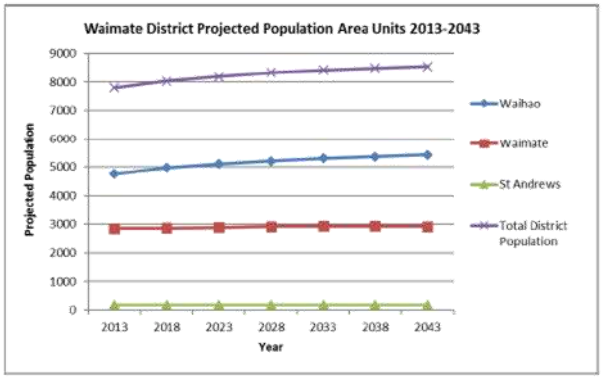
The number of one person households is the fastest growing household type in the Waimate District, increasing by an average of 1.2% per year.



By 2038 33% of Waimate households will be one-person households and over 15% of Waimate residents will be living alone.

Population Location

Based on 2013 analysis the projections show that the majority of the growth in the Waimate District will occur in the rural areas with a 14.1% growth in the Waihao area unit over the 30 year period 2013-2043 (an average of 0.46% a year). Rural growth, in keeping with the District-wide trends, is projected to be decrease over the 30 year period. In comparison, the Waimate area unit (which is urban) will grow by 2.1% (.06% on average per year). This urban growth will also slow over the 30 year period, and between 2033 and 2043 the population of the Waimate area unit is projected to decline.



5.2 New Technologies

From a strategic point of view the Council seeks to remain aware of technological advances primarily through staff involvement in industry developments via training, seminar attendance and directly from suppliers. Internal development of new technologies is advanced through collaboration between staff and with other councils. Staff maintain strong relationships with professional staff from neighbouring councils.

The greatest change expected to be observed in the district is intensification of farming, balanced by changes in farming practices driven by national fresh-water reforms, zero emissions targets and environmental sustainability objectives.

Should large scale irrigation projects proceed in the future, the construction period will impact local roads and possibly the demand for rural water supplies. However, observations from other areas indicate the establishment of irrigation schemes have not reduced the demand for reticulated stock water.

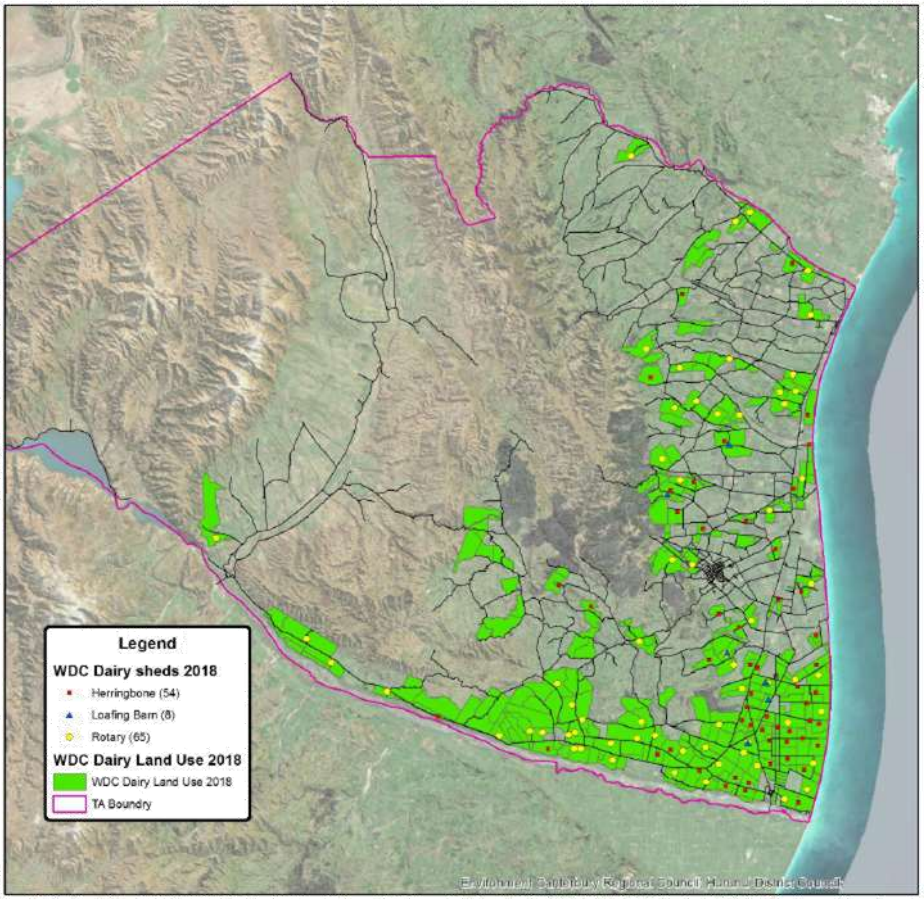
Agricultural intensification is usually associated with a step change in transportation demand on the existing roading network. Carting in stock foods and pasture supplies as well as carting product out will usually involve more truck movements using larger trucks.

This (potential) irrigation related intensification change may be offset by national freshwater management, zero emissions and environmental sustainability objectives. In total these changes could result in a decline in farm profitability, farm expenditure and lower farm related employment. Farming practices and land use would adapt, with perhaps a resurgence of sheep and beef farming and less dairy conversion. This could lead to less traffic movements on rural roads. The potential adaption is not currently known. Council will continue to monitor trends and adapt infrastructure investment as required.

Harvesting machinery is very large and some roads in the District are unsuitable for the dimensions or mass of such vehicles.

Dairy Farmland in the Waimate District 2018

Total Dairy 46,189.01 Hectares (2018) (41,531,00ha, 2014)



The vehicle fleet is expected to change in the next 30 years. In 20-30 years, electric vehicles are expected to be common, as well as some autonomous vehicles. Changes to freight movement is likely, but the technology is still developing.

5.3 Changing Government Priorities and Legislative Environment

National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management provides direction on how local authorities should carry out their responsibilities under the Resource Management Act 1991 for managing fresh water.

This policy was replaced on 3 September 2020 and requires regional councils to improve water quality and meet targets, giving effect to Te Mana o Te Wai. There are new requirements for regional councils to follow when managing the level of nutrients – such as nitrogen and phosphorus – which can get into waterways. This requires the consideration of cumulative effects.

The National Policy Statement on Fresh Water, which has influenced the Canterbury Land and Water Regional Plan, will require increased standards for stormwater discharges over the life of this Infrastructure Strategy. Council is progressing a Global Consent for stormwater activities.

National Policy Statement on Urban Development 2020

WDC sits as a Tier 3 urban environment.

"Tier 3 local authorities are strongly encouraged to do the things that tier 1 or 2 local authorities are obliged to do under Parts 2 and 3 of this National Policy Statement, adopting whatever modifications to the National Policy Statement are necessary or helpful to enable them to do so"

Consideration and implementation through the upcoming District Plan review.

Taumata Arowhai, and the Water Services Bill

Taumata Arowai – the Water Services Regulator Act received Royal Assent on 6 August 2020. The Act establishes Taumata Arowai–the Water Services Regulator and provides for its objectives, functions, and governance arrangements.

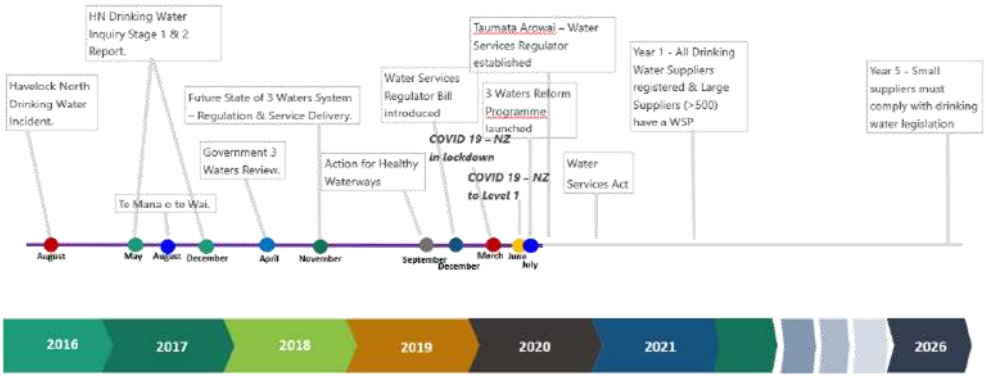
Taumata Arowai will oversee, administer and enforce a new and strengthened drinking water regulatory system. It will also have a national oversight role to improve the environmental performance of storm water and wastewater networks. The requirements of Taumata Arowai for the strengthened drinking water regulatory system are still under development at the writing of this Infrastructure Strategy. The implementation of the new requirements is expected to take 3-5 years. Council has made allowance for meeting anticipated new compliance requirements in the operational costs of the water and sewerage activities.

A separate Bill, the Water Services Bill, has been introduced in 2020, will give effect to decisions to implement system-wide reforms to the regulation of drinking water and source water, and targeted reforms to improve the regulation and performance of wastewater and stormwater networks. The Regulator's detailed functions and powers are located in that Bill. The Water Services Bill is currently before Select Committee and public submissions. The Bill is expected to be enacted in the second half of 2021.

Water Industry Reform

In providing the 3 Waters Services the Waimate District Council keeps a weather eye on the Central Government and Industry direction for the national infrastructure assets and public service provision. This is done through attending conferences and seminars, studying reports released by Central Government agencies and membership of industry organisations e.g. IPWEA, Water NZ, etc.

3 Waters - Government & Industry Direction



The August 2016 Havelock North Water incident and subsequent Inquiry has renewed the focus on the very high standard of care and diligence required to supply drinking water.

During 2017 the Minister for Local Government initiated the Government 3Waters Review to assess whether current local government practices and the system oversight are 'fit for purpose'. This review ran in parallel to the latter stages of the Havelock North Inquiry and raised a range of questions around the effectiveness, capability and sustainability of the current New Zealand water service delivery model.

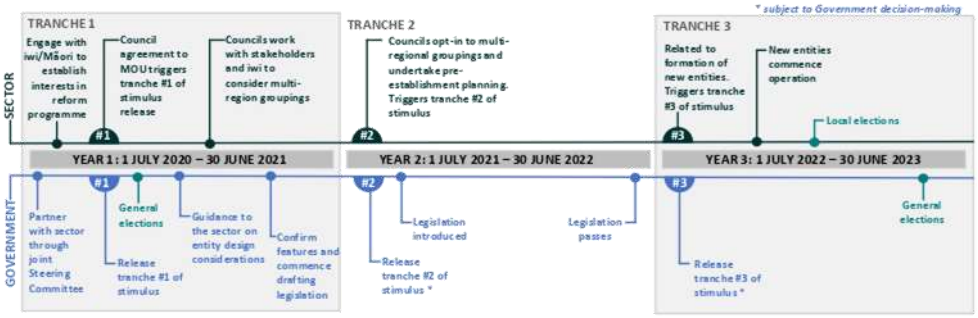
During 2017 the Government announced changes to the National Policy Statement for Freshwater Management – Te Mana o te Wai. Te Mana o te Wai is a concept for fresh water, which when given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community. This requires councils to involve iwi/hapū in the management of freshwater, work with them to identify their values and interests, and reflect those values and interests in decision-making.

The MfE discussion document 'Action for Healthy Waterways' released September 2019 signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems.

Towards the end of 2019, the Government agreed to establish a new drinking water regulator as an independent Crown entity. Associated legislation is expected to be passed by the end of 2021 and the establishment and roll out of the new Regulator - Taumata Arowai will follow and is expected to take a number of years.

In July 2020 the Government announced the 3 Waters Reform Programme consisting of a $761m funding package over the next three years to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure. Initial funding was only made available to councils that signed up to the Memorandum of Understanding. Waimate District Council signed up to the Memorandum of Understanding and has received Tranche One funding.

Below is an indicative timetable for the full reform programme. While this is subject to change as the reform progresses, this provides an overview of the longer-term reform pathway.



Waimate District Council will continue to communicate and engage with Government over the proposed 3 Waters Reform Programme, the impacts on district three waters service delivery, with the objective of continuing to continue to sustainability deliver agreed Community Outcomes for the districts varied communities.

National Infrastructure Plan

The government's objective is that, by 2045, New Zealand's infrastructure should be resilient and coordinated and contribute to growth and increased quality of life. This will be achieved

through better use of existing assets and better allocation of new investment, as set out in the New Zealand Infrastructure Plan 2015.

The National Infrastructure Plan 2015 (NIP 2015) is the third National Infrastructure Plan to be released by the Government. The NIP 2015 is currently being revised as the National Infrastructure Strategy 2021, which will be delivered to government in the second half of 2021.

The NIP provides a Vision for New Zealand's Infrastructure that:

"By 2045 New Zealand's infrastructure is resilient and coordinated and contributes to a strong economy and high living standards."

This identifies the following challenges:

- We have a number of aging infrastructure networks that will need renewing
- Some of our regions will grow and others will shrink
- Our population is also aging, whilst maintaining a good base working age population
- At the same time, our lifestyles are changing
- Technology is driving change everywhere.
- We also face economic challenges
- On top of these challenges, our climate is changing, and our natural resources are under pressure
- These challenges need to be met at a time when central and local government face financial constraints.

There are three main elements to the response outlined in the National Infrastructure Plan.

- a better understanding of the levels of service we want to deliver
- more mature asset management practices
- more effective decision-making that considers non-asset solutions

The plan is currently under review through the NZ Infrastructure Commission and the 30-year infrastructure strategy is currently being consulted on.

Each of the supporting Asset Management Plans (3 Waters, Roading and Footpaths) contains detailed discussion on infrastructure resilience. Resilience is acknowledged in relation to adverse events, natural disasters and climate change. More importantly, resilience is now a key feature of all asset management planning, particularly in relation to climate change as many of the assets that are constructed (or renewed) have serviceable lives that will ultimately witness the effects associated with our changing climate behaviours.

Government Policy Statement on Land Transport Funding (GPS) – September 2020

GPS 2021/22-2030/31 directs funding for the New Zealand land transport networks. The GPS 2021/22-2030/31 has considered priorities across New Zealand's diverse communities acknowledging that urban, regional, and remote communities have very different needs. GPS 2021/22-2030/31 has four strategic priorities, which are to direct land transport investment into activity that:

- safety (Road to Zero)
- better travel options
- climate change
- improving freight connections

Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that:

- contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels
- allow New Zealand to prepare for, and adapt to, the effects of climate change.

The amendments establish four key items.

1. set a new domestic greenhouse gas emissions reduction target for New Zealand to:
    a. **reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050**
    b. reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
2. establish a system of emissions budgets to act as stepping stones towards the long-term target
3. require the Government to develop and implement policies for climate change adaptation and mitigation
4. establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

Council continues to develop it responses to the Act and is working on the development of relevant internal policies and procurement, as well as facilitating discussions with the Waimate communities regarding the wider impacts and changes signalled by the Zero Carbon Act

5.4 Climate Change

Climate change is considered as a moderate consideration in the Council's long term planning. This Council uses guidance from the New Zealand government, based upon the best available climate science, to support the planning.

Waimate District is expected to experience two of the main impacts of climate change – sea level rise and more extreme weather patterns.

Sea level rise is considered the lesser of the influences as much of our coastline is elevated above MSL. Modelling of associated inundation, as a result of tsunami, is known to affect very few council controlled assets.

What is understood is that climate change associated risks will increase in time.

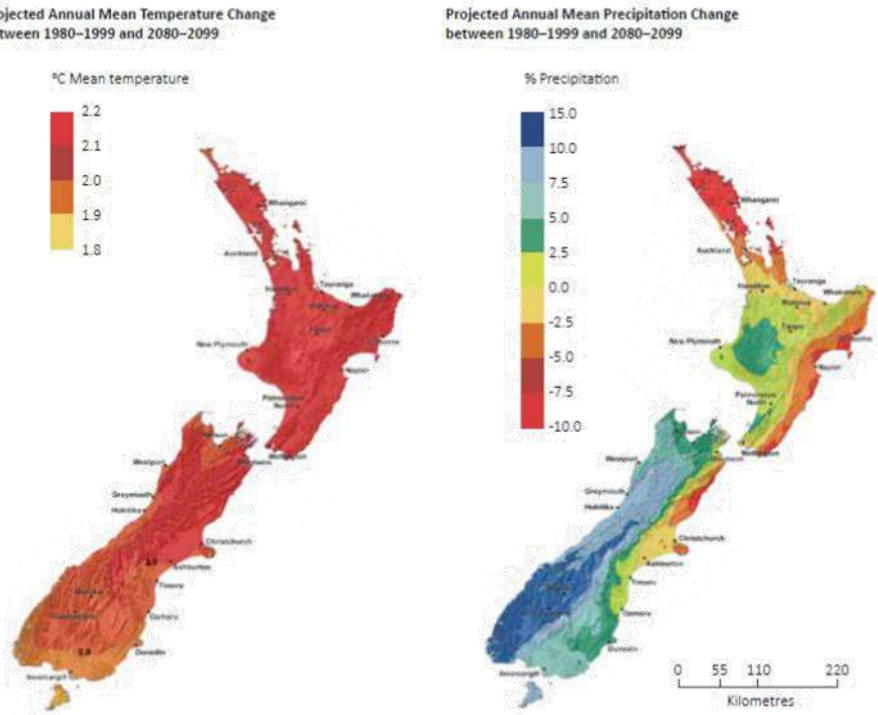
Waimate mayor Craig Rowley said climate change was a priority.

"As far as doing the work on something, we always take it into account looking at the of risk of climate change."

Rowley said it was a hectic time of the year with budgeting and planning, but climate change was something we certainly do recognise" (Timaru Herald 13/9/2017)

Council recognised the roles of Local Government, NZ, the Ministry of Primary Industries, and the Ministry for the Environment and the Royal; Society of NZ in researching and guiding a pragmatic response.

Figure 7: Average changes in annual mean temperature (left, degrees Celsius) and precipitation (right, percent) during 2080–2099 compared to 1980–1999, for a climate change scenario midway between low- and high-carbon futures.



Source: Climate change: implications for New Zealand (Royal Society of New Zealand, April 2016)

The local government position statement on climate change (2017) states

Climate change actions have three components:

1. actions to reduce emissions (mitigation);

2. planning and actions at the national and local level to support public safety and effective adaptation; and

3. limiting or removing pressure on systems affected by climate change.

All local authorities (city, regional, district and unitary) are at the frontline of climate change adaptation and have a role to play in mitigation.

The role of Council is key in delivering the outcomes sought by the community. Key drivers to support and manage the challenges are the National Climate Risk Assessment for New Zealand (Ministry for the Environment, 2020) and the Climate Change Projections for the Canterbury Region (NIWA, 2020).

Projections for Canterbury

Climate Change Projections for the Canterbury Region have considered the following scenarios, which take into account either cutting greenhouse gas emissions over time from 2019 levels – or not curbing emissions during the life of this Infrastructure Strategy.

Average Temperatures

- Increase with time and greenhouse gas concentrations.
- By 2040, annual mean temperature up 0.5 to 1.5°C.

- By 2090, up 0.5 to 2°C (if we cut emissions) or up 1.5 to 3.5°C (if we don't).

Maximum Daytime Temperatures

- By 2040, annual mean maximum temperature up 0.5 to 2°C.
- By 2090, up 1 to 3°C (if we cut emissions) and up 2 to 5°C (if we don't).
- By 2090, western Canterbury's alpine and sub-alpine areas could be 5 to 6°C warmer in spring and summer (if we don't).

Maximum Night-time Temperatures

- By 2040, annual mean minimum temperature up zero to 1°C.
- By 2090, up 0.5 to 1.5°C (if we cut emissions) and up 1 to 2.5°C (if we don't).
- The difference between a day's high and low increases with time and greenhouse gas concentrations.

Hot Days (25°C or more)

- By 2090, expect 20 to 60 more hot days in most of Canterbury (if we don't cut emissions).
- Inland areas feel it the most, particularly the southern Mackenzie Basin, which could have 60 to 85 more hot days.
- Most of these hot days would happen in summer.
- Our warmer season could get longer in relatively low-elevation areas, with 5 to 10 more hot days in autumn and spring.
- Increased fire risks.

Cold Days (Frosts)

- Expect fewer frost days throughout the region.
- Inland areas and higher elevations warm the most, with 10 to 30 fewer annual frost days by 2040, and 20 to 50 fewer by 2090.
- The frost season (the time between a year's first and last frost) will likely get shorter.

Rainfall

There is likely to be increased rainfall depth and intensity associated with climate change. In addition, the heat that comes from the condensation of this increased moisture will make storms more intense. These extreme events may exacerbate flooding risks for Waimate District.

- Most of the region can expect small changes in annual rainfall, up or down 5%.
- By 2040, autumn might be dryer in the Mackenzie Basin, with up to 10% less rain.
- By 2090, winters could be wetter in many eastern, western and southern parts of the region, with 15 to 40% more rain.
- By 2090, Banks Peninsula and many inland areas might get 5 to 15% less rain (if we don't cut emissions).

Snow

- Expect fewer snow days everywhere, especially in the mountains.

Drought
The modelling indicates that by the 2080s, there will be a significant increase in the average water deficit across Canterbury, with increases of between 2 weeks and over 6 weeks of pasture deficit as an average climate condition. By the 2030s, current drought events that are so severe that they only occur in 1 out of 20 years are projected to occur more frequently. Increased fire risks.

Windspeed

- Annual mean wind speeds up slightly, by nil to 5%.
- By 2090, winter and spring could be windier (up 5 to15%, if we don't cut emissions).
- That seasonal change might be more keenly felt in inland areas north and west of Rangiora (up 15 to 25%).
- Increased fire risks.

Sea Level Rise

Climate Change Projections for the Canterbury Region have identified worsening impacts over time at a regional and national level:

- Sea level rise projections for Canterbury are the same as for New Zealand.
- Up by 0.4m in the next 50 years and up 0.6 to 0.7m in 100 years (if we cut emissions).
- Up 0.5m in 50 years and up 1.2 metres in 100 years (if we don't).
- High tides get higher. At 0.65 metres of sea level rise, every high tide is above the spring tide mark (compared to 10% now).



Source: www.wetlandtrust.org.nz



Source: Stuff 24 July 2017

Climate Change Effects

The major effects that may impact on the Council's Infrastructure activities are set out below, along with potential mitigation options and an analysis of when the effects may occur. It should be noted that further work is required to understand how these effects will impact the Waimate District, but the collection and monitoring of data will be used to inform a more robust climate change response.

Dust from Unsealed Roads: Hotter temperatures and associated drought conditions could have detrimental effects in terms of increased dust from unsealed roads. This may mean that in future areas of unsealed roads need to be sealed, particularly close to residential properties. Council currently allows for $50k to part fund "dust seals" via policy. Road classifications and traffic volumes on our low use roads dictate the overall level of service. Individuals are able, with part funding by Council, to increase the level of service adjacent to their property to mitigate adverse effects associated with dust.

Council will continually monitor demand for this service and provide increased funding as required.

Hotter temperatures potentially have an impact on the timing of both grading and metalling activities which will need to be monitored over time.

In the shorter term this approach is considered appropriate but as the effects of drought conditions become more prevalent, Council may need to consider a revision of the level of service relating to unsealed rural roads which, in turn, will adversely affect funding requirements (increased).

- Likelihood - Possible (25 – 50%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Changes in Demand: An overall decrease in the mean rainfall for the district could impact on land use and in turn change demand on certain areas of the Council's infrastructure networks. More intense rainfall events have the ability to damage crops and this may manifest in changing farming practices. These changes in farming practices could result in changing traffic volumes for particular areas, changes in demand from our water networks, and requirements for higher levels of service to mitigate the risks associated with nuisance flooding, to name the major impacts.

Council will need to monitor and understand these requirements to inform future work programmes. This is achieved through regular traffic counts, up-to-date hydraulic modelling of our water schemes and optimised renewal of drainage assets.

Council is mindful that changes in demand with manifest as changes to LoS, geographic demand and overall demand. In order to cater for this, underlying data is important to plan appropriate renewals in the future.

Council is also installing water metering within the urban water network as a means to manage demand, manage water losses and to increase the availability of potable water.

- Likelihood - Likely (50 – 70%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Drainage Capacity: Extreme rainfall events in a generally dry region may cause surface flooding affects due to poor capacity of drainage assets. The cost of upgrading drainage assets for these extreme events is likely to be prohibitive for Council. Whilst, as a district, council is unable to build infrastructure to deal with these extreme flows and volumes, it is able to define the levels of service (20% and 2% annual exceedance probability) and therefore the level of protection that ratepayers and users can expect.

Mitigation of events outside of these parameters are dealt with through the protection and definition of overland flow paths, defined areas for detention and improved stormwater management practices. These practices (in an urban sense) are defined in Waimate District Councils draft Stormwater Management Plan which is an underpinning document for the global consent that is currently being sought through Environment Canterbury Regional Council. For example, Council defines on-site management of stormwater as the preferred solution up to a 1 in 50 year event. The defined 1 in 50 year design event takes in to account climate change factors defined by NIWA.

Extreme rainfall events have a detrimental impact on councils wastewater network where inflow of stormwater presents several challenges in terms of conveyance capacity and surcharging of manholes. In 2021, council is undertaking an inflow investigation to identify which areas are affected and formulating appropriate responses to mitigate the effects. Left unchecked, climate change impacts would adversely affect this activity. When addressed, this will lead to increased levels of service, allow for future growth by increasing available capacity and reduced compliance risks.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide

- Timeframe - 2021 onwards
- Mitigation - Design, planning, and policy

Increased Flood Damage Repair Work: Extreme rainfall events in a generally dry region may cause surface flooding affects and in turn increase requirements for flood damage repair works. Consideration will need to be given to design and location aspects for Council's assets to reduce the risk of damage or loss of service due to extreme weather events. There is no provision (currently) to fund these repairs and they are typically funded via existing budgets and often with co-funding from Waka Kotahi.

Council is continually monitoring the financial effects associated with flood events (and the diversion of existing budgets) and has considered (in the past) developing a "flood event" fund. This monitoring will continue with intervention likely if existing programmed work begins to be adversely affected. Potentially this issue will need to be consulted on as increased costs will result in increased rate requirement. Resultantly the community will receive a higher level of service than currently experienced.

Furthermore, storm events can impact on raw water quality from streams and bores used for water supply. This presents challenges associated with the provision of potable water in terms of reliability, treatability and therefore compliance with the Drinking Water Standards for New Zealand

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Monitor and adapt funding if required

Water availability for Construction: Increasing demand for water is currently an important issue for Canterbury. This increased demand is likely to become increasingly critical in a future characterised by drier average conditions, and an associated increase in both drought frequency and intensity. This may mean, as an example, that it will be more difficult to obtain the required water to complete construction works.

Updating of hydraulic models for the council water supplies allows for optimised future renewals that address the location of demand within the schemes (up or down). They also allow Council to plan for growth and increased demand as a result of changes to legislation e.g. the Water Services Bill and its potential impact on water suppliers outside of the current reform programme.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2025 onwards
- Mitigation - Monitor and adapt future programmes as required (LoS, additional demand, changing demand)

5.5 Infrastructure Resilience

Customers have a high expectation of continuing functionality and service delivery. Resilience is based on a design philosophy which acknowledges that failure will occur. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system.

Council is considering the performance of its infrastructure and services in terms of:

- Climate change – drought
- Climate change- severe storms
- Climate change – sea level rise
- Natural disasters – earthquake

In each case, some reduction in performance is expected. Managing demand and improving infrastructure to be resilient, where there is no redundancy in service delivery, is key. Resilience

of the roading network is being considered at a South Canterbury level with a 'One network' approach in mind. Council needs to consider managing and mitigating the risks to our infrastructure assets from natural disasters, by establishing the requirements for resilient transport and lifeline utilities networks.

Actions to address infrastructure resilience is discussed in more detail in section 6.5.

5.6 Aging infrastructure

The infrastructure is aging and the district is approaching an important period to ensure that its infrastructure assets continue to meet the needs of the community in the future. We need to consider when we are going to apply a 'just in time' philosophy and defer renewals or apply pro-active renewals. These decisions are informed by factors such as criticality, performance, and risk appetite and manifest as differing treatments at a component level.

Management of ageing infrastructure is closely aligned with the discussion of system resilience above. The key aspect is the recognition of failure mechanisms for our assets, and initiation of a suitable response to minimise cost and disruption to the community. Underground pipe networks represent the greatest risk because of their extent and inaccessibility.

The three key aspects for effectively managing ageing infrastructure are:

- to ensure the organisation has sufficient knowledge of asset status
- that funding is available
- that remedial work (maintenance and renewals) is actioned in a timely manner

Council's approach has been to collect data to understand condition and performance, as well as identify critical assets so we are focussing effort where it is needed most.

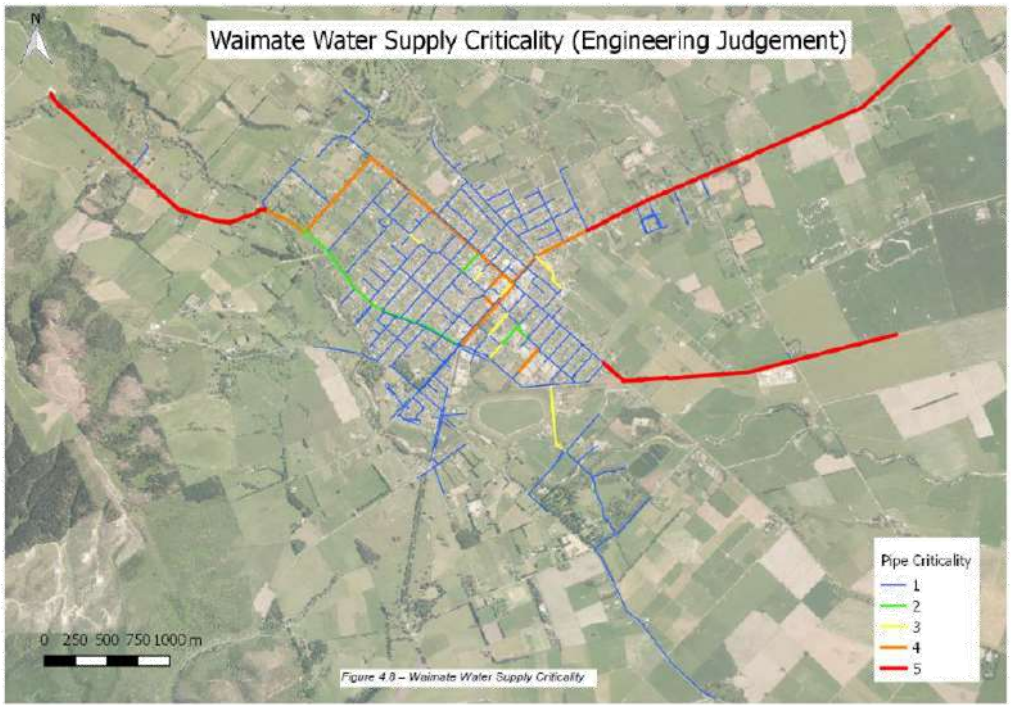


Figure 4.8 – Waimate Water Supply Criticality

The aging of Waimate's urban water and sewerage reticulation continue to be the greatest concern.

The water reticulation pipes are cast iron (dating back to 1908) or asbestos cement (1950s and 1970s). The sewerage pipes are earthenware (1915 and 1950s). The earthenware pipes are particularly susceptible to inflow and infiltration.

A renewal programme has been developed for these assets as discussed in sections 7 and 8 as we move into a phase where the expected life of these assets is reached.

The roading network is also aging, but changes in demand and operating conditions are more pertinent than the age of the asset. Changes in the mass and weight of vehicles has put the network under stress and the life of some assets is being rapidly decreased due to the extra wear and tear.

A more comprehensive data capture programme is now in place to improve knowledge about the roading assets, and how they are expected to perform in the future.

5.7 Economic Activity

Economic activity and changes in economic activity impact on the requirements for infrastructure, and the community ability to fund infrastructure.

COVID19 has impacted activity in Waimate District less than elsewhere. A high proportion of the community are engaged in primary production and other essential services. The ongoing economic impact is expected to be limited, with gains (such as interest in real estate) balancing out constraints (e.g. supply chain issues).

This is highlighted in "COVID-19's effect on industry and regional economic outcomes for NZ Transport Agency (Infometrics, May 2020)"

By 2025, this movement of workers towards primary industries or manufacturing shows through in several provincial areas where employment is projected to be above its pre-COVID trend. Areas such as Kawerau, Rangitīkei, Waimate, and Whanganui regularly appear in the grouping of the best performers in 2025 and 2031.

This is reinforced in "Briefing for Incoming Minister for Economic and Regional Development (MBIE, November 2020)

Canterbury has a strong platform for long-term economic prosperity. The region's strong agricultural base and the diversity of the Christchurch economy creates overall resilience in a post-COVID context.

5.8 Affordability

In view of the infrastructure investment (and associated funding) Council is facing, providing and managing continued affordable service delivery is a significant and complex challenge. Whilst Council puts considerable effort into managing the affordability of services, the districts small and aging population base means this will remain an ongoing challenge.

5.9 Tourism

Tourism has not been a major driver of demand in the district. Initiatives such as the Alps to Ocean Cycleway has seen a small growth in opportunities and tourism numbers before the Covid pandemic. The long-term impact of the Covid pandemic on tourism is not yet known. Council will remain engaged in regional and national tourism planning and monitor the long-term impacts on the district economy.

A Local Waimate based businessman has embarked on a range of commercial building renovation and development projects in the Waimate central business area. These projects have the potential to increase commercial vibrancy in central Waimate, and in time increase local, national and international tourism flows into the town.

5.10 Prudent Management

The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.

Waimate District must carefully manage its investment in infrastructure to ensure it gets value for every dollar and provide infrastructure in a lawful, functional and affordable manner.

The task of building, operating and maintaining - as well as the management of - core Infrastructure Assets in an affordable manner may become increasingly difficult in view of a number of influences (i.e. what is over the horizon) is discussed in Table 5.1.

Table 5.1: Influences on Infrastructure Assets

Influences	Comment
Continually changing legislative and operating environment (Central & Regional Government)	**Roads and Footpaths:** The Government Policy Statement (GPS) changes with the focus of the Government and means there are changes in priority and funding to be addressed These are outlined in the Governments GPS2021 and Road to Zero documents. **Water**: Regulatory trend towards more stringent Drinking Water Standards and associated compliance monitoring and reporting. Taumata Arowai (water regulator commences operation in 2021). Water industry reform proposed 2021-2024. Regulatory trend towards more comprehensive monitoring and reporting of water takes. Progressive upgrades of the rural water supplies have occurred meaning there is compliance with the Health (Drinking Water) Amendment Act 2007 and / or the New Zealand Drinking Water Standards 2005 (revised 2008). This does mean increased operating costs and bore security issues. **Sewerage**: Regulatory trend towards more comprehensive monitoring and reporting of the receiving environment, and treatment process improvements to ensure acceptable effluent quality. **Stormwater**: Compliance with Land and Water Regional Plan is required. This may see increased levels of compliance for discharges (treatment), especially as it relates to industrial discharges. Impacts of climate change legislation. **Service Integration**: Central Government may require additional integration (sharing) of services with neighbouring Councils to effect greater efficiencies.
Change in demand	**Roads and Footpaths:** Changing demand on the roading network is causing more rapid deterioration. This is multiplied where the road structure is constructed in areas where there are poor ground conditions and/or where the ability to drain water away from Roading infrastructure is limited. ***– Significant Issue*** Heavy vehicle laden weight limits have risen from 44 tonnes to 46 tonnes, and to 50 tonnes maximum (for 50Max vehicles). High Productivity Motor Vehicles (HPMV) permit further increasing weights on trucks, subject to specific axle loadings. To improve efficiency of the freight transport fleet it is likely this trend with increasing truck weights may continue. This creates issues of restricted access to some areas of the district due to bridge stock that is not capable of carrying these loads, and further damage to weak pavements ***– Significant Issue*** The irrigation to land that was previously not irrigated can significantly change water tables and therefore the ground conditions the road is founded on (in part offset by changing irrigation methodology from border dyke to pivot irrigation). The latter conversions are still not complete.

Influences	Comment
Aging infrastructure	**Water:** The reticulation networks for parts of the water supplies are at or approaching the end of their expected lives. A large amount of urban pipework was installed from the early 1900s, with rural pipework installed in the 1970s. As a result significant urban water supply renewals are being programmed from 2015-16 to 2024-25, with rural water supply renewals taking precedence from 2025-26 onwards. As renewal work will need to be spread out over a number of years this brings increased maintenance liability and risk of premature failures, although the latter risk can be mitigated through careful planning and consideration of asset condition. ***– Significant Issue*** **Sewerage:** The Waimate reticulation network dates from the early 1920s and 1930s, with an expansion in 1960-1980. Due to aged pipework Inflow and Infiltration in both private and public assets results in significant infiltration and inflow into the sewerage network (related to old earthenware mains installed in 1920-1040s). Reduction in Inflow and Infiltration will free up additional capacity in the sewerage network. Continued renewal programme of the aging pipe network is required. ***Significant Issue*** **Roads and Footpaths:** A significant amount of the sealed road infrastructure was constructed between 60 and 45 years ago (with rapid expansion in the network between 1963 and 1973). Some of this sealed infrastructure is nearing the end of its useful life and historic under-investment has resulted in a backlog in resealing and rehabilitation work. Council is expecting a 'bow-wave' of sealed road and pavement renewal from 2035 onwards. In addition, a number of bridges will require replacement to maintain accessibility, with some bridges approaching end of useful life. ***– Significant Issue***
Consents	**Sewerage:** The discharge consents for the Waimate sewerage treatment plant will required renewal in 2036. Considerations of additional or alternative treated effluence disposal options may be required due to increased environmental requirements. **Stormwater:** Effective implementation of the Urban Stormwater Management Plan (SMP) is imperative as Council will hold the global resource consent. Council will be liable for any non-compliances with the resource consents. Council will need to ensure each and every individual/private developer takes responsibility for stormwater management.

Influences	Comment
Environmental effects	**Water:** The extent of the taking of ground water and surface water may be required to reduce thereby necessitating greater demand management and or levels of service decline. **Sewerage:** Inflow into the sewerage network via the individual properties and Councils sewer mains will continue to present design constraints, require increased pipe sizing and treatment and disposal issues unless this is resolved on a community wide basis i.e. I&I reduction in the private and public assets. – ***Significant Issue*** In some small communities the reduced groundwater quality due to on-going use of conventional septic tanks may necessitate the installation of centralised community sewerage systems with ensuing treatment and disposal system. **Stormwater:** Increased number of intense rainfall events will challenge our current stormwater asset network in terms of capability to meet 20 year return periods. An increased number of intense rainfall events will challenge our aging sewer pipelines through infiltration and resultant surcharge risks, as well as placing a higher burden on our current WWTP capabilities and capacities. **Roads and Footpaths:** Reduced availability of good quality road metals for sustainable road maintenance practices. Traffic on unsealed roads that produces dust which can have adverse effects on the health of people, stock and adjacent crops.
Climate change	Water: The design of the Three Waters infrastructure is required to provide service to three or more generations, but in the short term there is a need to be efficient in the provision of infrastructure. Climate change will have a detrimental impact on water supply, demand and resilience. Stormwater: The predicted increases in extreme weather events involving significant rainfall may lead to increased levels of surface water leading to subsequent flooding, ponding problems and blockages to drains for stormwater run-off. Roads and Footpaths: The potential effects of climate change on the districts roading network are understood in terms of the predicted changes in weather patterns. The predicted increase in extreme rainfall events may cause increased pavement deterioration over time, with scouring at the edges of roads and potentially significant damage through scouring to the abutments of bridges in the district. Weather events which consist of rainfall over extended periods can cause landslips, which can affect the roading network in particular areas within the district.
Infrastructure resilience	Customers have an increasing expectation of continuing functionality and service delivery following significant natural events (snow, wind, extreme rainfall etc.). Council will need to continue to enhance resilience through infrastructural and procedural improvements. – ***Significant Issue***

Influences	Comment
Population and economic growth	In broad terms, the population of Waimate District is forecast to remain relatively steady. Many of the schemes have capacity to provide for some growth, and there are opportunities for more effective management to cater for growth if it is greater than expected. As the population and local economy grows, this may tend to raise expectations around higher levels of service, which will need to be catered for. For example, more intensive use of the transportation network places a greater maintenance burden on Council. **Water** - Hydraulic rearrangement and pressure management for the urban water supply both assists in extending the useful life of the asset and to provide additional capacity to cater for growth (whilst also reducing burst frequency, water loss and extending remaining life of already aged assets). The rural water supplies will be subject to changing demand profiles as a result of reliable irrigation in the future. It is envisaged that existing use will shift from predominantly stock water (potentially sourced from irrigation water) to domestic use as development occurs in the rural area. **Sewerage** - Assessments indicate that the urban waste water network and treatment plant have adequate capacity to cater for the increased population (additional 2,900 persons available) provided stormwater inflow and groundwater infiltration can be reduced. **Stormwater:** Council will need to undertake upgrades to the stormwater network to reduce known surface flooding resulting from increased stormwater run-off from developments. **Roads and Footpaths:** Council will need to continue footpath development and ongoing network improvements in a timely manner to cater for increasing demand on these assets.
Demographic changes	Significant increase in the over 65 age group may result in affordability issues (increased number of fixed income ratepayers). This trend may be offset by the districts stable working age population. Levels of service may need to be reviewed and amended to either a more affordable level, or to suit the dominant demographic in the future. **Roads and Footpaths:** An aging population will potentially require higher levels of service for the provision and quality of footpaths for vulnerable pedestrians and the mobility impaired.
Land use change	Historically, land use change (dryland farming to dairy) has had an impact on the water activity requirements within the district. Changing freshwater management standards may impact current land use practices and trends Changes in farming practices in the next 30 years will continue to have a significant influence on current infrastructure needs particularly with the increase in high productivity (i.e. very large tractors) movements throughout the district. If irrigation is improved throughout the district, more land is being converted for dairy farming. This may be offset or changed by evolving freshwater management standards. Dairy conversions have a large impact on the roading network through the generation of a wide range of additional traffic and increases use of agricultural vehicles on the roading network. Cultural diversity as a result of land use change may influence demand on infrastructure

Influences	Comment
New Technologies	New technologies will assist in the services becoming more efficient and effective. Opportunities will be reviewed with respect to whole-of-life costs. Historically the change in technologies has had a significant effect in the operation and management of infrastructure assets and it is considered that this will continue possibly at a greater pace. For example, the implementation of Asset Management Information Systems (AMIS) across the infrastructure activities and the continued development of the Council SCADA (system control and data acquisition) system to improve operational efficiency for the water supply and sewage treatment plants. During 2021/22 Council will install universal metering in order to better understand and manage water loss within the urban area. This is coupled with improved asset information, and will allow greater efficiency in the operation and management of Council's infrastructure. This will include utilising predictive models for programming and prioritisation of asset renewals. Changes in the scale and types of agricultural activities, including intensification / reduction of dairy and dairy support, in the District will create additional pressures on some of the Council's existing infrastructure networks over time.
Resourcing	An aging workforce and difficulties with the recruitment and retaining of experienced and qualified staff to a rural district may present issues with the future operation and management of the services and infrastructure projects. The continued development of appropriate staff and their skill sets to meet the challenges of infrastructural demands and meeting regulatory changes is essential to ensure prudent and rational outcomes.

6.0 THIRTY YEAR STRATEGY

6.1 The Organisations' Priorities

At high level, Council's priorities in respect to Water, Sewerage and Stormwater and Roads and Footpaths are to:

- Maintain the District's roads to a safe standard and fit-for-purpose for the long term
- Using efficient and effective asset management practices to maximise roads and footpaths asset life to provide a resilient network.
- Demonstrate to customers that Council is managing the assets responsibly.
- Ensure that the level of service required by customers is provided at the lowest long term cost to the community.
- Customers will be regularly consulted over the price/quality trade-offs resulting from alternative levels of service
- Provide a continuous supply of potable water to meet agreed demands.
- Maintain sewage disposal and treatment facilities to protect public health through ensuring good sanitary standards and freshwater management.
- Manage the impacts of land use change and growth.

The rationale for each of the services covered in this Infrastructure Strategy are as follows. These provide a useful 'outcome test' to ensure the services are community/customer focussed:

Table 6.1 – Community Outcomes and Activity Rationale

Community Outcomes		Transportation	Water, Sewerage and Stormwater
Thriving Community	A district that provides infrastructure for economic activity A District that encourages development A District that actively promote itself and its businesses	Efficient and safe roading networks are part of the essential infrastructure for economic growth and development	Fault response Timely provision of utility services essential to supporting growth
Safe and Healthy People	A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Safe and well maintained roads, footpaths and road verges promote safety of all road users, including pedestrians	Safe Drinking Water Protect public health by ensuring a safe and viable sewerage disposal system. Flooding is adequately managed in urban areas. We have reliable, efficient and well-planned water, sewerage and stormwater infrastructure that meets the needs of residents. Customer Satisfaction

Community Outcomes		Transportation	Water, Sewerage and Stormwater
Sustainable District and Environment	A district that is enhanced through sustainable and diverse development We value the natural environment, biodiversity and landscapes Our heritage is valued and protected	A well-managed roading network minimises the adverse effects on the environment	Ensuring the quality and quantity of discharges to the environment. Maintenance of the reticulation
Active, Diverse and Supportive Community	District assets provide recreation and leisure choice We celebrate and support the good things in our community	Roads and footpaths are an important element in both the residential and rural environment for physical exercise, leisure activities and social contact	

6.2 Asset and Service Management Strategy

In providing services to residents and visitors through the use of infrastructural assets, Council's management strategy is…..

> ***To maintain performance measures to ensure that the current strategies do not consume the asset leading to an unexpected increase in maintenance/renewal expenditure in the future.***

Council has established an asset management policy. This defines the appropriate level of asset management planning in line with the discussion contained in the International Infrastructure Management Manual (2015). The policy definitions for the three waters and roading activities is "Core".

Road and Water supply may include more complex asset management practices such as demand and deterioration modelling above this level, but it will be on a fit for purpose basis, rather than a requirement across all asset types.

Responsibility for the asset management of the Water, Sewerage and Stormwater, and Roads and Footpaths services is allocated to the Asset Group Manager. This responsibility includes:

- Ensuring services are constructed, maintained and in compliance with consents.
- Budgeting and long-term forecasting.
- Monitoring Levels of Service for services provided by assets.
- Identifying and managing asset and service related risk.
- Reporting of Level of Service, key performance indicators and risks at corporate level.
- The achievement of Asset Management practices which meet corporate Asset Management development standards and reporting of these in the AMPs.

In providing services to residents and visitors through the use of core Infrastructure, Council's management strategy is to:

- Review planned resource allocations
- Determine the effects these will have on agreed Levels of Service
- Assess how these changes in Levels of Service will be reflected in the end-of–period asset condition and performance
- Adjust the work plan as necessary to achieve the best possible life cycle asset condition and performance within the available budget. This may mean leaving some assets to decline in condition to the stage that they require more expensive remedial action later
- Assess the effects of the revised programs on achievement of the Council's performance targets
- Report the anticipated effects on the targets to senior management and elected members
- Manage the Water, Sewerage, Stormwater and Roads and Footpaths activities at a level in accordance with Council's assessment of appropriate asset management practice and asset management policy.

6.3 Sustainable Service Delivery

Council's assets and services contribute to the social, economic, environmental, and cultural well-being of community in accordance with the agreed community outcomes.

6.3.1 Response to Affordability

The affordability of services in a small, rural, agricultural economy based community is always a challenge. Council continues to meet this challenge by conventional and innovative programmes:

a) Focus on the critical assets and activities.
b) Use of a widely consulted rating system that uses targeted rates where appropriate
c) Grow the rating base - attracting new industries and developments that benefit the district
d) Partnering with community and sponsors to fund major community assets – For example the Whitehorse Development.
e) Partnering with developers to achieve mutual goals to the communities benefit
f) Partnering with government for funding – NZTA and Tranch One three waters funding
g) Engaging and responding to government changes in regulation and policy to optimise associated cost issues for district ratepayers
h) Keep rates affordable and sustainable for the community

6.3.2 Response to Four Wellbeings

The Local Government (Community Well-being) Act moved away from the previous efficient, effective and appropriate service delivery focus by restoring the four community well-beings of:

- Cultural
- Economic
- Environmental
- Social

This acknowledges Councils' broader role in looking after our communities, than simply providing core services.

6.3.3 Response to the Levels of Service

This Infrastructure Strategy provides a guide to Councils long term service provision over a thirty year period based on the current service levels provided by Council, and known and agreed changes in Councils service levels.

This Infrastructure Strategy does not provide commentary on annual service levels or current service level performance measurement of the services that Council currently provides. Councils Long Term Plan provides detail on annual service levels, performance measures and achievements. This Infrastructure Strategy forms part of Councils Long Term Plan document suite that includes the Long Term Plan, Financial Strategy, Infrastructure Strategy and Consultation Document . This Infrastructure Strategy should be read in conjunction with the other documents in the Long Term Plan document suite for full disclosure of required information.

6.3.4 Response to the Legislative Environment

Council continues to remain updated and engaged with changes in the legislative environment. The current and proposed changes are far reaching and will impact most areas of Councils activities.

Additional staff resources, equipment, external consulting support and compliance costs have been budgeted to meet known and anticipated costs associated with the Taumata Arowai (water regulator) requirements and drinking water standard compliance changes.

Costs associated with the governments water industry reform have not been budgeted in this Infrastructure Strategy as these proposals are still being developed by the government, and the shape and scope of the reforms has yet to be finalised.

Council will remain engaged with the proposed water industry reforms to ensure district community outcomes are achieved in a cost effectively and sustainably.

6.4 Cost Effective Delivery of Services

In terms of section 10 (Purpose of local government) there is a clear requirement to meet the current and future needs of communities for good-quality local infrastructure, local public services, in a way that is most cost-effective for households and businesses.

(2) In this Act, good-quality, in relation to local infrastructure, local public services, and performance of regulatory functions, means infrastructure, services, and performance that are—

(a) efficient; and

(b) effective; and

(c) appropriate to present and anticipated future circumstances

In order to demonstrate that the delivery of services are efficient, effective and appropriate; Waimate District Council has reviewed its procurement processes, undertaken service delivery reviews, and has systems and policies in place that include:

Customer Service: Council has determined customer expectations through formal and informal consultation with the community over many years. These surveys are no longer available and Council is currently reviewing the methodology for completing customer surveys. Monitoring of key performance indicators set against achieving Levels of Service puts Council asset management practices into context in terms of effectiveness.

Procurement Policy: The Waimate District Council Procurement Strategy was revised in 2019. The objectives are:

- Supporting the achievement of Council's Community Outcomes and the Waimate District Council Long Term Plan programme, through efficient and realistic procurement processes to meet Waimate District's needs
- Integration of Council's organisational goals into the procurement process
- Delivery of the agreed levels of service to the community that represent value for money
- Encouraging appropriate and equitable levels of competition across suppliers
- Ensuring procurement is fair and transparent with effective accountability measures
- Ensuring procurement is efficient and appropriate to the scale of the activity

Asset Management Practices and Processes: Services are managed in accordance with Council's Asset Management Policy. Practices and processes are reviewed and assessed against guidance and best practice provided in the International Infrastructure Management Manual (IIMM), Edition 2015 and the more recent 2020 Edition.

Asset Management Policy: The objective of this policy is to ensure that service delivery is optimised against agreed community outcomes and Levels of Service, manage related risks, and optimise expenditure over the entire lifecycle of the service delivery. The policy also ensures that the management of the assets is a systematic process, and that service delivery is sustainable in the long term.

Service Delivery

Road maintenance and network operations are procured as part of the Aoraki (mid South Canterbury) Roading Collaboration with Mackenzie and Timaru Districts. The Roading Network Operations and Maintenance Contract was jointly developed and procurement processes established to benefit all parties. The collaboration agreement also allows for sharing of skills and resources. Council staff manage the roading network with some assistance from consultants.

Waimate, Timaru, and Mackenzie District Councils have extended the contract period to 30 June 2021.

Sealed road resurfacing renewals are also let under a collaborative arrangement between Waimate, Timaru, and Mackenzie District Council, with a term of two years.

The result of the collaboration between the Councils has provided a range of benefits. To continue to access these benefits Waimate is working towards having common contract documentation with Mackenzie and Timaru District Councils.

Streetlighting maintenance contract arrangements are by negotiation with NETcon as the preferred contractor within the Waimate District.

Other works such as pavement rehabilitations and large renewal and improvement projects are let as competitively priced contracts on an annual basis.

The Water, Sewerage and Stormwater operations and maintenance services are provided using in-house resources. This has proven to be an appropriate fit for Council and also provided an excellent alignment between management and operations staff. Recently some of the operations staff have moved into management role, strengthening their professional opportunities and building corporate knowledge.

The teams are relatively small and are adaptable enough to undertake minor capital works alongside their planned and unplanned maintenance works.

The recent February 2021 DIA lead WICS review of Councils three waters operations, renewals and capital noted that Waimate District Council was efficient in operational service delivery.

Capital Programme Delivery

Council has an ambitious capital programme driven by a number of factors:

- Continuation of the active renewal programmes;
- Capital works required to meet the current Drinking Water Standards for New Zealand (DWSNZ)under the existing legislative framework;
- Future capital works associated with compliance through the proposed Water Services Act; and
- Capital works associated with the Department of Internal Affairs stimulus funding.

Particular pressure is exerted in year one of the 2021-31 Long Term Plan (Figures 8.1 – 8.4). In order to mitigate risks associated with programme delivery, Council has implemented a number of tactical responses:

i. A Project Manager and support staff (1.5 FTE) have been engaged to ensure that proposed stimulus funded projects (total $3.68M) are completed by 31 March 2022.
ii. The Project Manager is also assisting with timely delivery of proposed LTP projects through procurement assistance.
iii. All capital works have been programmed for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Where possible the programme has been modified to ensure successful and cost effective procurement can be realised.
iv. Council is aware that, given the effects of Covid 19, that material supply was likely to be impacted. Resultantly, Council addressed this issue by sourcing materials early and maintaining stock levels that can be drawn down on when projects commence. Sourcing materials early has also mitigated, to some extent, elevated pricing as raw materials become more scarce.
v. Procurement is now completed through the Government Electronic Tenders System (GETS). This affords the ability to notify the wider contracting / consulting market of upcoming projects and will undoubtedly maximise submissions received once projects are tendered.
vi. Nearly $2.5M of projects budgeted for 2021/22 are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. This maximises available construction time to achieve completion of the proposed capital programme.

The Waimate district is fortunate to have significant contracting resource located within the boundaries and at varying scale. In fact, one of the largest contractors in the South Island has its head office located within the Waimate town. Further afield, council is able to draw on further resource located to the North in Timaru and to the South in Oamaru.

As with any capital programme risks will always remain, even if mitigation has been employed. Known risks include:

- Dependent projects – Some proposed capital works are dependent on either technical investigations or other capital works. Delays in the latter could impact deliverability.
- Material Sourcing – Whilst proactive in sourcing materials, the risk associated with slow supply chains remain. There is also a risk associated with elevated pricing that could modify the scope of some projects.
- Compliance risks – A number of water supply compliance projects have been budgeted (2020/21 and 2021/22) to meet compliance requirements as defined in the current DWSNZ. Council is aware that enactment of the Water Services Act is highly likely to offer alternative means of treatment for some of these water schemes and anticipates, under this scenario, that the redefined capital works projects are likely to be more cost effective in the longer term. Timing associated with the "new standards" is restrictive in terms of construction. However, council is confident that these changes will occur and has selected to begin construction of the common requirements (pre and post Water Services Act) as Stage 1 to mitigate the potential loss of time. A reduction in capital investment will likely result in reduced depreciation charges, reduced borrowing (and

therefore interest charges) and an overall reduction in operational costs. This has yet to be modelled in detail.

- If the Water Services Act does not allow for redefinition of the proposed capital upgrades and the enactment is delayed, Council may experience compressed time to construct the centralised treatment options. This could result in 2021/22 water treatment capital programmes continuing in to the 2022/23 financial year.
- Delay in increased levels of service associated with the upgrade of individual water schemes for compliance with the DWSNZ. Whilst it is unlikely that the level of service will reduce, the current LoS will be extended until upgrades are commissioned.
- Delays (or cancellation) of projects reliant on third party funding sources such as Waka Kotahi co-funding or other funding agencies. Grants and subsidies can represent just a proportion of a particular project.

6.5 Addressing Resilience

Resilience is the ability to cope with and recover from adverse events. It requires active planning to cope with a disaster, restore functionality, and rebuild the societal and economic fabric. Communities that actively plan for resilience are less prone to disaster, recover faster, and endure less hardship than those that do not.

Planning for every disaster scenario is impossible, so the next step is to plan to contain damage. Planning involves understanding the chaos, the pressures and the trauma, then building redundancy, preparing for insurance, training and improving. Bouncing back to recover the social and economic soul of the community is the next component in planning for resilience.

Finally, a culture of improvement and learning develops resilience. This is achieved through commitment, understanding and training.

In order to improve resilience Council's approach will continue to:

- Actively participate in Civil Defence Emergency Management planning and activities, at both regional and local levels.
- Investigate and instigate options for alternative service provision and system redundancy.
- Promote design and construction standards (where cost effective) that ensure infrastructure is able to withstand natural hazards and long term changes in circumstances such as those resulting from climate change.
- Obtain insurance where this is deemed to be the most cost effective approach.
- Invest in business continuity succession planning and training.
- Identify critical assets within Water, Sewerage and Stormwater activities and are development management regimes based around criticality
- Work in closer collaboration with neighbouring authorities
- Look at more joint procurement opportunities and establish staff resource sharing arrangements

6.6 Evidence Base

The asset data held for water supply and sewerage had been a focus for improvement over the last six years. This was reflected in the positive peer reviews undertaken of both the 2017 and 2020 valuations.

Road and footpaths data continues to be sound, based on twenty years of RAMM use. An increase in data analysis as part of the ONRC framework and capture of pavement performance data has improved knowledge of the asset further.

The 2020 asset valuation identified the accuracy of most roading asset data as "B" or "Reliable" (Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old). Bridge data is of higher accuracy, "A" or "Highly reliable" (Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete).

The 2020 valuation has indicated (for three waters):

Confidence Level	Description	Accuracy	Condition	Quantity	Unit Cost	Base Life
A	Highly Reliable and Accurate	100%				
B	Reliable with Minor Inaccuracies	+/- 5%		B	B	B
C	50% estimated	+/- 20%	C			
D	Significant data estimated	+/- 30%				
E	All data estimated	+/- 40%				

From a valuation perspective the data reliability is considered (for all assets covered by the IS) to be "B" or +/- 5%. Council acknowledges that the reduced reliability associated with less accurate condition ratings (+/- 20%) could impact future financial forecasting. However, this is currently mitigated by empirical assessment of assets proposed for renewal. For example, roads identified for resealing are reassessed, alongside mains identified for renewal are investigated in regards to historical leaks, bursts and criticality.

Council acknowledges there are limitations with its data that affect decision-making. A commitment to improving data collection and analysis is indicated below. Additional part-time and full time roles have been added to the Council team to address data limitations and accuracy.

Table 6.2: Data Improvements

Activity	Data to be collected	Data to be analysed	Value this data provides
Roading	Traffic counts of Heavy Vehicles	Classified vehicle counts	Heavy traffic counts will help identify key routes and align these with pavement management. Allows council to assess and report on utilisation of the asset and review whether the asset actually provides sufficient capacity for current and future use.
	Falling Weight Deflectometer/Multi-Speed Deflectometer Testing	Pavement deformation (strength) / SNP	Assists with identifying where there may be pavement risk should there be a change in traffic demand or weakening ground conditions. Testing indicates areas where stronger pavements may be needed (informing renewals programme) or where attention should be given towards drainage provision.
Water supply		Water demands	Universal metering provides a comprehensive data set which is currently not leveraged to understand peak demands
Water supply and sewerage	Pipe condition		Validate renewal programmes Additional staff recruited to assist with pipe asset and condition data improvements

The approach to data collection, management and reliability is discussed in the respective asset management plans and budgets included where appropriate.

6.7 Significant Decisions

Taking a long-term view to the management of infrastructural Assets, Waimate District Council needs to make key decisions in a timely manner. In addressing Community desires and priorities the following key decisions have been identified.

Table 6.3: Significant Infrastructure Decisions

Key Decision	Indicative Timeframe
Roading and Footpaths Review investment in Roading to provide a satisfactory level of service and provide for large and heavier vehicles. Historically, the level of investment required to keep roads to a 'fit for purpose' level in Waimate District has been among the lowest in the country. However, as land use changes the demands on the network increase so does the amount of work to keep them to the required standard. A comprehensive planning and maintenance approach to ensure this delivery of this level of service will require more investment. For the next three years an increased capital investment of $716k (over the current level of spend of $3.05M in 2021) is sought and includes significant investment in resurfacing, pavement rehabilitation, drainage renewals and unsealed road metalling. It is envisaged that these investment levels will continue into the future. E.g., a further increase of $2.6M between 2025 and 2027 to fund increased pavement rehabilitation.	Review investment level every three years in conjunction with the National Land Transport Programme and any current Government Policy Statement (GPS). Changes to the GPS will inevitably affect where and how much funding will be available for particular Work Categories.
Roading and Footpaths WDC's Bridge Replacement/Upgrade Strategy lists the bridges which have been identified for component replacement, or upgrades, to re-establish appropriate levels of service for vehicles (including heavy vehicles) crossing these structures. Overall risks associated with asset failure have been assessed to be moderate, and are acknowledged to be the determining factor in network resilience. There are some critical routes, bridges and demand issues pending – the Bridge Replacement/Upgrade Strategy has used the ONRC to determine the priority for investment.	Review investment level every three years in conjunction with the National Land Transport Programme The timing for replacement and upgrade works is indicated in the strategy for some bridges, but is generally left to the Council to decide based on the information given and forecast budgets.

Key Decision	Indicative Timeframe
Water Supplies The renewal programme is considerable and will extend well out into the future. Council will need to commit to this to maintain satisfactory levels of service and to provide increased levels of service required for compliance with the Drinking Water Standards for New Zealand 2005 (revised 2008) (DWSNZ) and upcoming Taumata Arowai requirements. The proposed renewal programme is well underway and for the next ten years totals $7.3M and Council has budgeted an additional $3.6M to increase levels of service ($2.8M to meet the DWSNZ and associated improvements) $1.9M is set aside to facilitate growth (AD) projects	Renewal programmes are continually updated as asset knowledge and asset management practices are improved. Programmes are revised to align with Council planning processes (Long Term and Annual Plans) with detailed reviews occurring prior to the production of each respective Long Term Plan.
Sewerage Inflow survey across all properties in Waimate town to identify illegal connections. Property owners will be required to rectify faults. Total budgeted cost for the inflow survey is $145,000 ($89K 2021, $56K 2022) and includes both operational and capital investment.	2018/21 – Policies and Bylaws to be updated prior to embarking on this work.
Sewerage The renewal programme is considerable and will extend well out into the future. Council will need to commit to this to maintain satisfactory levels of service. The proposed renewal programme for the next ten years totals $5.8M with an additional $0.1M million budgeted to increase levels of service. $0.3M is set aside to reticulate the Point Bush Road area	Renewal programmes are continually updated as asset knowledge and asset management practices are improved. Programmes are revised to align with Council planning processes (Long Term and Annual Plans) with detailed reviews occurring prior to the production of each respective Long Term Plan.
Stormwater The forward works programme is adequate. If a greater level of service is required then a higher levels of investment will be required. Short term investment is currently targeting known locations where agreed levels of service cannot be achieved. Total capital investment over the next ten years is $0.4M	Stormwater investment programmes will refined once the global consent is issued

7.0 SIGNIFICANT INFRASTRUCTURE ISSUES

The Local Government Act 2002 Section 101B – Infrastructure Strategy states:

(2) The purpose of the infrastructure strategy is to—

"(a) identify significant infrastructure issues for the local authority over the period covered by the strategy; and

"(b) identify the principal options for managing those issues and the implications of those options.

In developing this 30 Year Strategy Council identified the anticipated significant infrastructure issues over the 30 years and considered each significant action and the benefits of the action. The significant infrastructure issues faced by Waimate District Council with the benefits and costs are tabled below.

As a result of Council's consideration of the combined emerging issues and key decisions required, significant infrastructure issues have been identified for the Core Infrastructure Assets as presented in Table 5-1. Projects that have been identified to respond to specific significant infrastructure issues faced by Council, and associated benefit(s) and costs, are presented in tables 7.3 to 7.6.

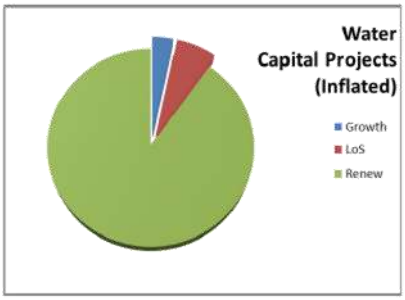
(Note where projects have been identified for level of service, these projects seek to either maintain the existing level of service, or to ensure that level of service targets are obtained in the future.)

In developing this 30 Year Strategy Council identified the anticipated significant infrastructure issues over the 30 years and considered each significant action and the benefits of the action. The significant infrastructure issues faced by Waimate District Council with the benefits and costs are tabled below.

7.1 Water

Strategic Goals for the Water Service are:

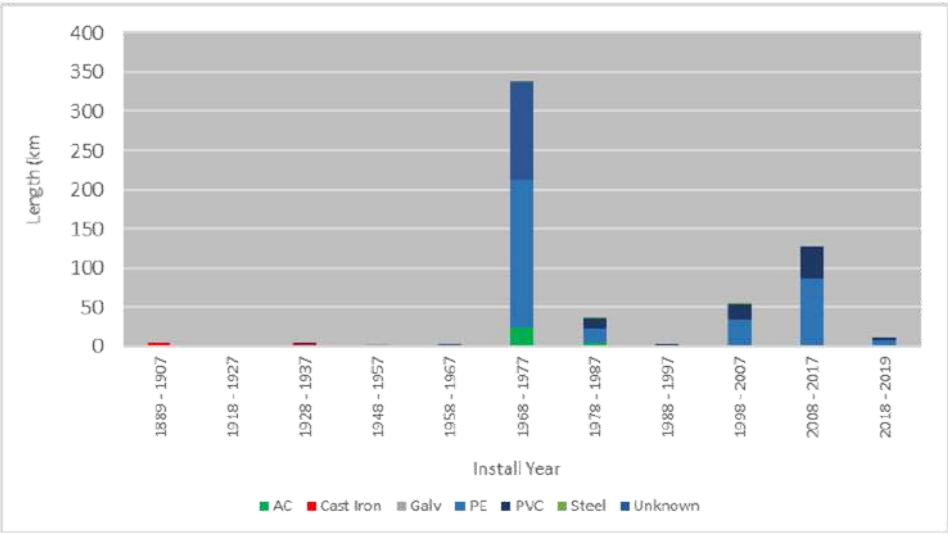
- To ensure that adequate water schemes are provided and maintained for the wellbeing of the public both now and in the reasonable foreseeable future
- To ensure that the long-term operation and maintenance of the water treatment facilities are environmentally sustainable
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Council owned water assets.



Issue - A significant percentage of aged and poor condition water mains (cast iron and asbestos cement within the urban reticulation) will need replacement in the next 20 years.		
Main Options	**Implication of Options**	
Option 1 -Embark on a renewal plan of all original cast iron pipes in Waimate Town	This is a costly option and is likely to have a significant impact on customers during replacement. This could be the most cost effective approach as there would be economies of scale.	
Option 2 - Replace pipes on an as needed approach.	This is likely to have severe impacts on the level of service provided. Outages would become common, and replacing pipes in an 'emergency' situation would be expensive and difficult to coordinate.	
Option 3 - Undertake replacement over a period of time	Apply a prioritised approach ensuring that the impact on customers is limited. Comprehensive planning is required to maintain a satisfactory level of service	
Time period	Ongoing – continually reviewed as information becomes available	
Cost	$ 4.2M (2021 – 10 Years)	$4.8M (inflated – 10 Years)
What is the benefit	LoS/Renewal	
Assumption	-	

The following figure illustrates the age profile of the water supply pipes.

Figure 7.1: Water Pipe Length by Installation Year and Material



Issue – A number of the districts water sources require upgrade to achieve compliance with the Health (Drinking Water) Amendment Act 2007 and to be compliant with the current Drinking Water Standards for New Zealand. This is further developed by the Governments response to the Havelock North Drinking Water Inquiry and the 2021 creation of the water quality regulator Taumata Arowai, with associated legislation	
Main Options	**Implication of Options**
Option 1 -Embark on an accelerated plant upgrade programme in the very short term.	This is a costly option and is likely to have a significant financial impact on both existing and future customers. Whilst cost effective (economies of scale etc.) it will require significant resourcing.
Option 2 – Consider recommendations from the Stage 2 Havelock North Inquiry, Water Services Bill, Revised DWSNZ and implement lowest risk capital programme in LTP year 1 - 3	The continued upgrade of some schemes (lower cost and predictable requirements) which have less financial impact early in the planning period mitigates some risk associated with funding sources that may become available in the future. Affordability can therefore be addressed. Whilst all upgrades can be programmed, further design and investigation into future upgrades can be carried out in terms of quality, quantity and funding.
Time period	2022
Cost	$ 2.8 Million (2022)
What is the benefit	LoS/Renewal
Assumption	Funding sources may become available and allow review of proposed treatment plants in terms of both rates levied and also to address both quality and quantity of potable water in tandem.

Work was completed during the period 2018-2021. Currently there are different levels and forms of water treatment across the district schemes as illustrated below.

Table 7.1: Water Quality Issues

Supply	Service Connections	Population served (WINZ)	Source	Existing Treatment						Proposed treatment	
				No treatment/ disinfection	Coagulation	Flocculation	Filtration	Ultra Violet Irradiation	Chlorination	Method	Completed/ Completion Due
Waimate Urban	1,956	3,000	Ground water[1, 2]		-	-	1	2	1 & 2	Filtration & UV upgrade (filtration not required)	2019/20 Manchester Completed 2019/20 Timaru in process
Cannington Motukaika	51	120	Surface water		-	-	sc			Filtration, UV & Chlorination upgrade. Potential for Acceptable Solutions	2018/20 On agreed hold for legislation changes
Hook Waituna	533	1,350	Surface water		-	-	sc	*	*	Filtration upgrade	2018/21
Lower Waihao	246	600	Ground water		-	-				Filtration, UV & Chlorination upgrade (TBC)	2020/21
Otaio Makikihi	220	430	Surface water[3] & Ground water[4]		-	-		4	4		
Waihaorunga	44	141	Surface water		-	-				Filtration & UV. Potential for Acceptable Solutions	2020/21 On agreed hold for legislation changes
Waikakahi	172	360	Surface water		-	-				UV & Chlorination upgrade. Potential for Acceptable Solutions	2020/21 On agreed hold for legislation changes

1 = Timaru road only / 2 = Manchester Bore / 3 = Gorge Rd (not in use) / 4 = Tavistock Bore / sc=screen / TBC = to be confirmed / * = Treatment issues

Issue – The rural townships are experiencing water loss, increased demand and associated pipework capacity deficiencies		
Main Options	**Implication of Options**	
Option 1 - Repair leaks	Repairing leaks as they occur will be required where assets are not being replaced and capacity is required. However, this will become more difficult as the state of the pipes deteriorates.	
Option 2 – Do not repair leaks	This is likely to have severe impacts on the level of service provided. Outages would become common. Additional, new connections would be impossible	
Option 3 – Renew existing pipes, optimise renewals to facilitate growth, allow for online compliance monitoring, relocate difficult to access pipework.	Given the age, condition and location of the pipes, a renewal programme is required to address difficult to detect leakage, provide future access to water services for growth and enhanced management of the schemes.	
Time period	2022 - 2029	
Cost	$ 431k	$ 494k (Inflated)
What is the benefit	LoS/Renewal	
Assumption	Water loss in the rural schemes is well managed	

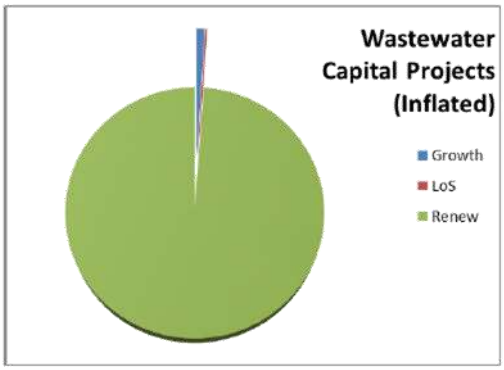
Issue - The government water reform programme is ongoing in 2021. The proposed industry restructuring has large public entities managing water services delivery		
Main Options	**Implication of Options**	
Option 1 -Engage with government structural reform process	Council continues to engage with the government reform process, with the water assets and service provision transferring to a new large public entity within the next 4 years	
Option 2 – Opt out of government structural reform process	Council opts out of the government reform process and continues to own water assets and provide water services. Additional costs associated with regulatory compliance and higher national water quality standards	
Time period	2021-2035	
Cost	To be determined	To be determined
What is the benefit	Yet to be determined	

Issue - The government water reform programme is ongoing in 2021. The proposed industry restructuring has large public entities managing water services delivery	
Main Options	**Implication of Options**
Assumption	Government will allow Council to consider different options

7.2 Sewerage

Strategic Goals for the Sewerage Activity are:

- To ensure that adequate Sewerage Services are provided and maintained for the wellbeing of the public both now and in the reasonable foreseeable future.
- To ensure that the long-term operation and maintenance of the sewage treatment plant is environmentally sustainable.
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Waimate District Council owned assets.

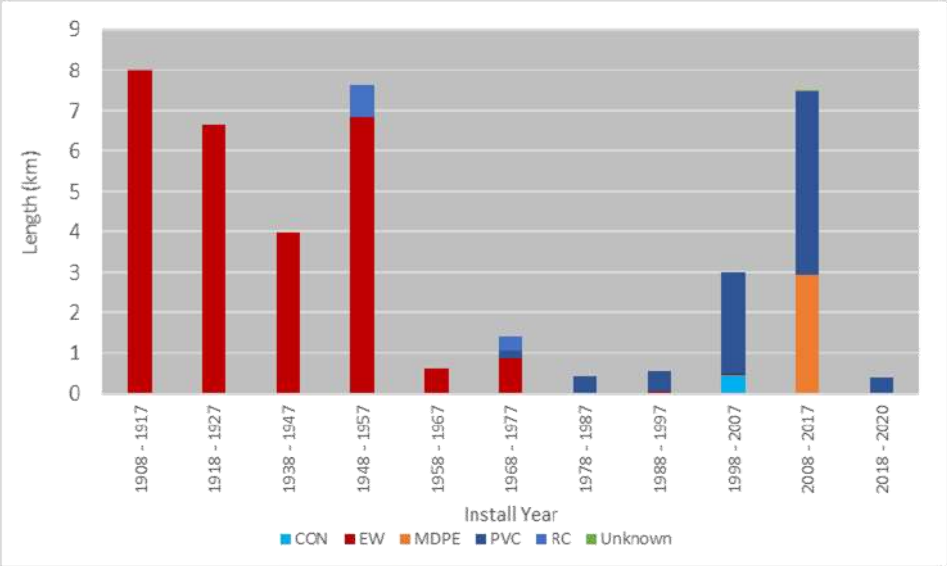


Significant infrastructure issues are tabled below. The highlighted option is the preferred approach for addressing the identified issue.

Issue - A significant percentage of aged and poor condition sewerage mains will need replacement in the next 20 years		
Main Options	**Implication of Options**	
Option 1 -Embark on a renewal plan of all original earthenware in Waimate Town	This is a costly option and is likely to have a significant impact on customers during replacement. This could be the cost effective approach as there would be economies of scale.	
Option 2 - Replace pipes on an as needed approach.	This is likely to have severe impacts on the level of service provided. Blockages would become common and replacing pipes in an 'emergency' situation would be expensive and difficult to coordinate.	
Option 3 - Undertake replacement over a period of time	Apply a prioritised approach ensuring that the impact on customers is limited.	
Time period	Ongoing – continually reviewed as information becomes available	
Cost	$ 4.2M (2021 – 10 Years)	$ 4.9M (inflated – 10 Years)
What is the benefit	LoS/Renewal	
Assumption	-	

The following figure illustrates the age profile of the sewerage pipes.

Figure 7.2: Sewerage Pipe Length by Installation Year and Material



Issue – There is a high level of inflow into the sewerage network	
Main Options	**Implication of Options**
Option 1 Replace all pipes	Not all pipes in the network are subject to infiltration. Even if all infiltration was eliminated, inflow would continue to be a source of peak wet weather flows.
Option 2 Identify the worst pipes and replace them	The age and condition of reticulation pipes suggest some replacement is required. The impact of the worst pipes on levels of service, infiltration and potential leakage into the environment needs to be addressed.
Option 3 Implement property surveys to identify inflows use bylaw to seek rectification	This is required to reduce illegal discharges and bring wet weather flows under control. As part of its sewerage resource consent Council is required to improve its management of the scheme and reduce the amount of treated waste that required disposal. The cost of rectification would lie with the party with illegal drainage
Option 4 – Combination of replacement (option 2) and addressing inflow (option 3)	The issue to be addressed is a combination of inflow and pipe condition. To be a responsible operator all factors need to be addressed
Time period	2021-24, renewals ongoing

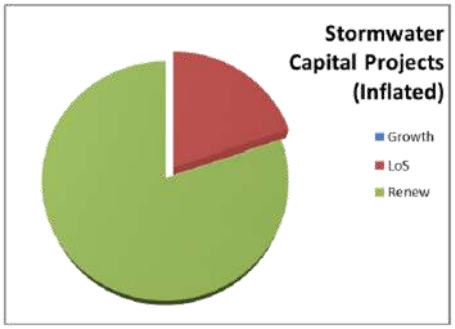
Issue – There is a high level of inflow into the sewerage network		
Main Options	**Implication of Options**	
Cost	$ 145,000 Inflow investigation $89k 2021, $56k 2022	
What is the benefit	LoS/Renewal	
Assumption	-	

Issue - The government water reform programme is ongoing in 2021. The proposed industry restructuring has large public entities managing water services delivery		
Main Options	**Implication of Options**	
Option 1 -Engage with government structural reform process	Council continues to engage with the government reform process, with the sewerage assets and service provision transferring to a new large public entity within the next 4 years	
Option 2 – Opt out of government structural reform process	Council opts out of the government reform process and continues to own sewerage assets and provide sewerage services. Additional costs associated with regulatory compliance and higher national water quality standards	
Time period	2021-2035	
Cost	To be determined	To be determined
What is the benefit	Yet to be determined	
Assumption	Government will allow Council to consider different options	

7.3 Stormwater

Strategic Goals for the Stormwater Activity are:

- To ensure that adequate Stormwater drainage is provided and maintained for the wellbeing of the public
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Council owned Stormwater assets.



There are no significant Stormwater issues. Isolated flooding occurs from time to time and this can be addressed with small 'fit for purpose' solutions. These include works to identify, protect and improve overland flow paths.

Compliance with the Land and Water Regional Plan is required. This may see increased levels of compliance for discharges (treatment), especially as it relates to industrial discharges. Currently these are very few in the district.

Effective implementation of the Urban Stormwater Management Plan (SMP) is required as Council works towards a global consent for Stormwater management.

Stormwater programme development will be further refined once the global consent is issued.

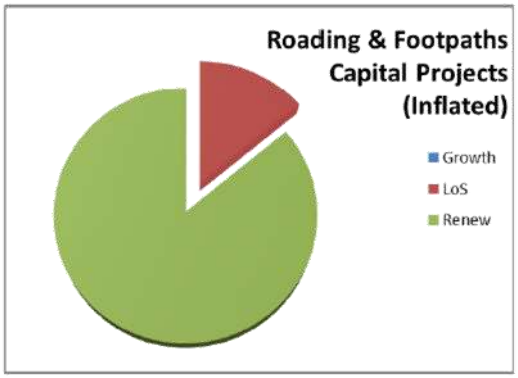
Stormwater may be included in the governments water industry reform, although this has yet to be clarified at the time of this Infrastructure Strategy.

$341k (2022) budgeted for the upgrade of storm water infrastructure in the Waimate CBD

7.4 Roads and Footpaths

Council's goal for the roads and footpaths activity is stated in the Transportation Policy.

The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.



Issue - Some of the roads are failing due to the increased use (traffic numbers and size)	
Main Options	**Implication of Options**
Option 1 -Limit vehicle size	Some roads are not suitable for large or oversized vehicles. While Council has the authority to restrict the types of vehicles on the network this would be inconsistent with the district's economic objectives.
Option 2 – Progressively upgrade all roads across the district	It is acknowledged that there are portions of the network that are no longer fit for purpose. This is an expensive option that could not be justified on the less trafficked routes. Upgrading roads progressively across the district could mean some are providing a very poor level of service while other areas need work urgently.
Option 3 – Identify key routes and undertake surveys and analysis to identify what works will be required in future	Applying the ONRC hierarchy and looking at key routes for improving freight connections and building network resilience, the maintenance and renewals programmes can be developed to undertake works in a timely manner. This may not mean 'worst first' but intervening to prevent increased deterioration.
Time period	Programme for increased resurfacing, pavement rehabilitation, unsealed road re-metalling and associated drainage renewals implemented from 2021.
Cost	$ 2,497,521 (2022)
What is the benefit	LoS/Renewal
Assumption	-

Issue - Some of the roads are failing due to poor ground conditions and drainage	
Main Options	**Implication of Options**
Option 1 -Repair failures and limit spending	The network can be kept in use by undertaking repairs, Where there is insufficient structural strength under sealed roads or metal on unsealed roads this will only provide a temporary solution. Levels of service will reduce.
Option 2 – Progressively upgrade all roads across the district	It is acknowledged that there are portions of the network that are no longer fit for purpose. This is an expensive option that could not be justified on the less trafficked routes. Upgrading roads progressively across the district could mean some are providing a very poor level of service while other areas need work urgently.
Option 3 – Identify key routes and undertake surveys and analysis to identify what works will be required in future	Applying the ONRC hierarchy, and looking at key routes for improving freight connections and building network resilience, the maintenance and renewals programmes can be developed to undertake works in a timely manner. This may not mean 'worst first' but intervening to prevent increased deterioration.
Time period	Programme for increased resurfacing, pavement rehabilitation, unsealed road re-metalling and associated drainage renewals implemented from 2021. Investment in additional data collection (MSD/FWD) and analysis to support increased investment in larger quantities of drainage renewals and pavement rehabilitation from 2024.
Cost	$ 2,983,513 (2024)
What is the benefit	Growth/LoS/Renewal
Assumption	-

Issue – Some bridges are no longer suitable for the demands on the network	
Main Options	**Implication of Options**
Option 1 - No replacements or upgrading	There are very few portions of the network that cannot be accessed by Class 1, 50MAX or HPMV vehicles. Some long routes are required to achieve access
Option 2 – Upgrade all bridges to 50MAX/HPMV	This is a costly option, and while it would provide an excellent level of service it would be likely to take considerable time to implement.
Option 3 – Upgrade key bridges to provide cost effective travel options and some network resilience	Applying the ONRC hierarchy and looking at key routes for improving freight connections and building network resilience, the prioritised Replacement/Upgrade Strategy has been developed for the next two NLTP periods (2021-24, and 2024-27). These are regarded as the priority and can be improved under NZTA's 'structural component replacement' Work Category.
Time period	Ongoing
Cost	$ 2,033,066 (over 10 Years, inflated)
What is the benefit	LoS/Renewal
Assumption	-

Issue – Road safety is critical and urgent as outlined in 'Road to Zero'	
Main Options	**Implication of Options**
Option 1 - No improvements to deliver safety outcomes	Improvements to road safety outcomes within the District would not include upgrades or improvements at high-risk intersections, high-risk rural road sites, walking and cycling projects or planned speed management implementation.
Option 2 – Carry-out an enhanced programme of safety improvements across maintenance, operations, renewals and improvements investment	This is a costly option, and while it would provide an excellent level of service it would be likely to take considerable time to implement.
Option 3 – Upgrade key sites to provide cost-effective improvements delivering safety benefits for customers	Applying the ONRC hierarchy, and looking at key sites for improving network safety, a Low Cost-Low Risk Minor Safety Improvements programme has been developed for the next NLTP period (2021-24). These are regarded as high priority to deliver road safety and walking and cycling benefits.
Time period	Ongoing
Cost	$ 990,000 (over 3 Years, inflated)
What is the benefit	LoS/Safety
Assumption	-

Consideration of Public Transport & Active Transport will continue to be developed in conjunction with Environment Canterbury and NZTA. Further programme revisions may be included as appropriate in future versions of the Infrastructure Strategy

7.5 Summary of Significant Infrastructure Issues

Aging assets, addressing changing transport demands and improving water supplies are all challenges for Waimate District Council. Over the next ten years investments to improve levels of service will be the priority, and renewal programmes will ramp up for Water and Sewerage activities.

Roading investment levels are reviewed every three years in lines with the government priorities for financial assistance.

The following chart illustrates the key issues and responses.

	Years 1-3	Years 4-10	Years 11-20	Years 21-30
Roading and Footpaths	Improved drainage Flood resilience Infrastructure safety improvements and speed management Reseals Some Pavement Rehabilitation	Road strengthening to respond to drainage/pavement condition Reseals More Pavement Rehabilitation Safety improvements	Reseals Pavement Rehabilitation	Reseals Pavement Rehabilitation
Water Supplies	Treatment upgrades Pipe renewals Govt. water reform	Pipe renewals	Pipe renewals	Pipe renewals
Sewerage	Investigate inflow Pipe renewals Govt. water reform	Reduce inflow Pipe renewals	Pipe renewals	Pipe renewals
Stormwater	Urban improvements Global consent Govt. water reform	Urban improvements		

7.5.1 Water

Table 7.3: Significant Water Projects

Scheme	Issue	Issue ID	What are We Doing?	What is the Benefit?	Cost Type (Inflated)	Total Cost (30 years)	First Year Group	Last Year Group
Cannington Motukaika	Aged Infrastructure - Renewals		10 years	Reduced failure rates / management of risks / Protect LoS	164,906			
Hook Waituna	Drinking Water compliance upgrade		2021/22	Compliance with DWSNZ	673,333			
Lower Waihao	Drinking Water compliance upgrade		2021/22	Compliance with DWSNZ	797,000			
Lower Waihao	Glenavy Reticulation Upgrade		2024 to 2029	Reduced leakage / increased capacity for growth	290,388			
Otaio Makikihi	New Bore Redundancy		2022/23	Redundancy in supply / resilience	127,182			
Otaio Makikihi	Makikihi Reticulation Upgrade		2025 to 2029	Reduced leakage / increased capacity for growth	203,874			
Waihaorunga	Renewals		10 years	Reduced failure rates / management of risks	126,136			
Waikakahi	Drinking Water compliance upgrade		2021/22	Compliance with DWSNZ	1,439,000			
Waimate Urban	Lateral renewals		10 years	Reduced failure rates / management of risks / Protect LoS	886,279			
Waimate Urban	AC Main Pipe renewals		10 years	Reduced failure rates / management of risks / Protect LoS	1,525,747			
Waimate Urban	CI Main Pipe renewals		10 years	Reduced failure rates / management of risks / Protect LoS	2,412,690			
Waimate Urban	Te Kiteroa Main, Booster and Reservoir		2022 to 2024	Promote growth / increased LoS	799,699			
Waimate Urban	Booster & Extension Bakers/Court/Hunts/Fitzmaurice Roads		2022 to 2029	Promote growth / increased LoS	980,232			

7.5.2 Sewerage

Table 7.4: Significant Sewerage Projects

Scheme	Issue	Issue ID	What are We Doing?	What is the Benefit?	Cost Type (Inflated)	Total Cost (30 years)	First Year Group	Last Year Group
Waimate Urban	Te Kiteroa Main,		2021/22	Promote growth / increased LoS	312,100			
Waimate Urban	Edward Street Upgrade		2021/22	Alleviate capacity issues	616,193			
Waimate Urban	Reticulation Renewals		10 years	Reduced failure rates / management of risks / Protect LoS / Environmental outcomes	4,891,786			

7.5.3 Stormwater

Table 7.5: Significant Stormwater Projects

Issue	Issue	Issue ID	What are We Doing?	What is the Benefit?	Cost Type	Total Cost (Inflated)	First Year Group	Last Year Group
Stormwater			Queen Street – upgrade	Reduce nuisance flooding / reduce failure rates / increase LoS	2021/22	341,167		

7.5.4 Roads and Footpaths

Table 7.6: Significant Roading Projects

Issue	Issue	Issue ID	What are We Doing?	Benefit	Project Type	Total Cost (inflated)	First Year Group	Last Year Group
Roading		10 years	Sealed Road Resurfacing	LoS / Safety	Renewal	13,368,988	2021-22	2030-31
Roading		10 years	Pavement Rehabilitation	LoS / Demand	Replacement	8,609,608	2021-22	2030-31
Roading		10 years	Drainage Renewals	LoS	Renewal	8,018,405	2021-22	2030-31
Roading		10 years	Unsealed Road Remetalling	LoS	Renewal	4,707,965	2021-22	2030-31
Roading		3 years	Low Cost – Low Risk Safety Improvements (excludes specific projects below)	Safety	Improvement	395,000	2021-22	2023-24
Roading		3 years	Footpath Extensions	Walking and Cycling	Improvement	235,000	2021-22	2023-24
Roading		2022-23	Talbots Road Widening	LoS / Safety	Improvement	200,000	2022-23	
Roading		2021-22	Holme Station Intersection Realignment	LoS / Safety	Improvement	160,000	2021-22	

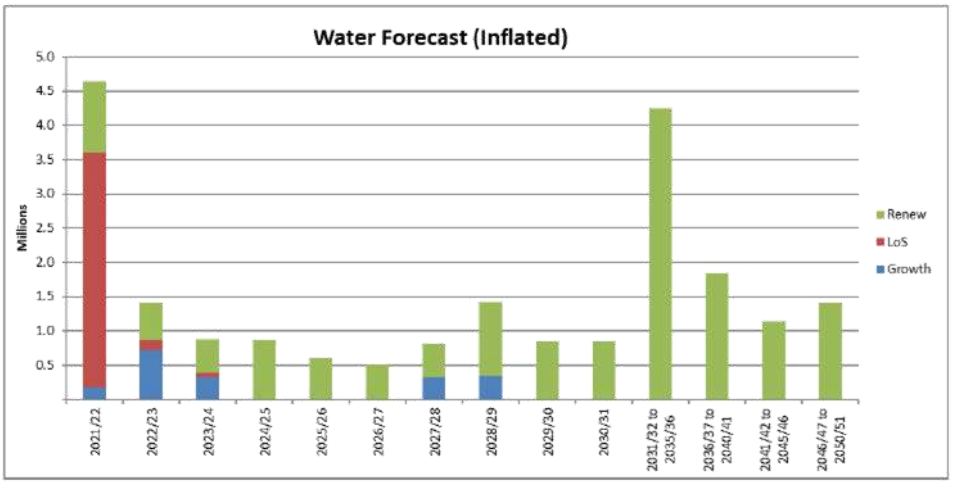
8.0 FINANCIAL ESTIMATES

8.1 Water

The projected capital expenditure associated with the water infrastructure assets are graphically represented below:

Renewing aging pipes (both urban and rural) is an ongoing programme. Early in the period, capital upgrades are required to complete the Lower Waihao, Waikakahi, Hook-Waituna, Cannington Motukaika and Waihaorunga upgrades.

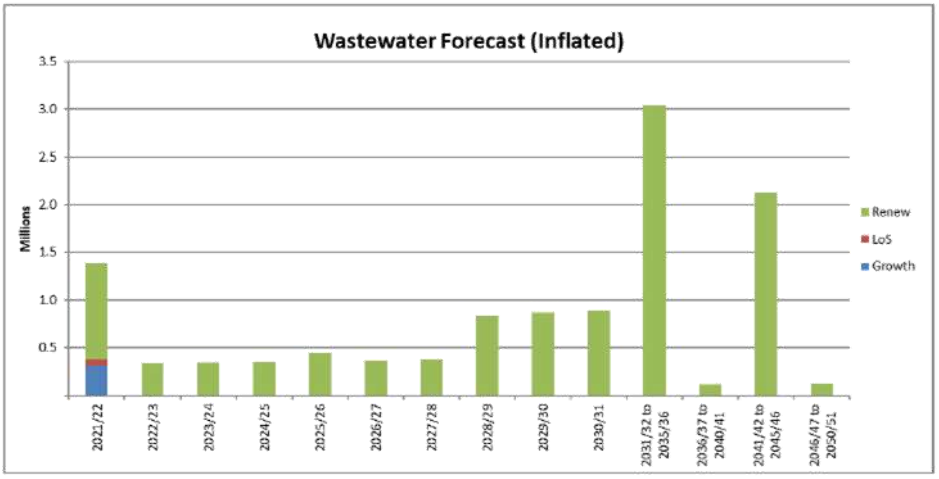
Figure 8.1: Projected Capital Expenditure – Water (Urban and Rural)



8.2 Sewerage

The projected capital expenditure associated with the sewerage infrastructure assets are graphically represented below. As illustrated all forecast expenditure relates to renewals, mostly reticulation.

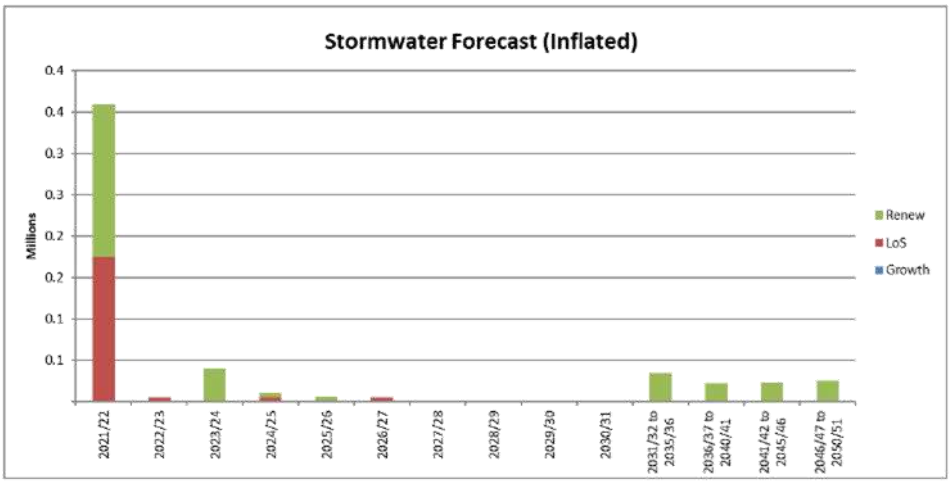
Figure 8.2: Projected Capital Expenditure – Sewerage



8.3 Stormwater

The projected capital expenditure associated with the stormwater infrastructure assets are graphically represented below. The graph illustrated very limited investment early in the planning period:

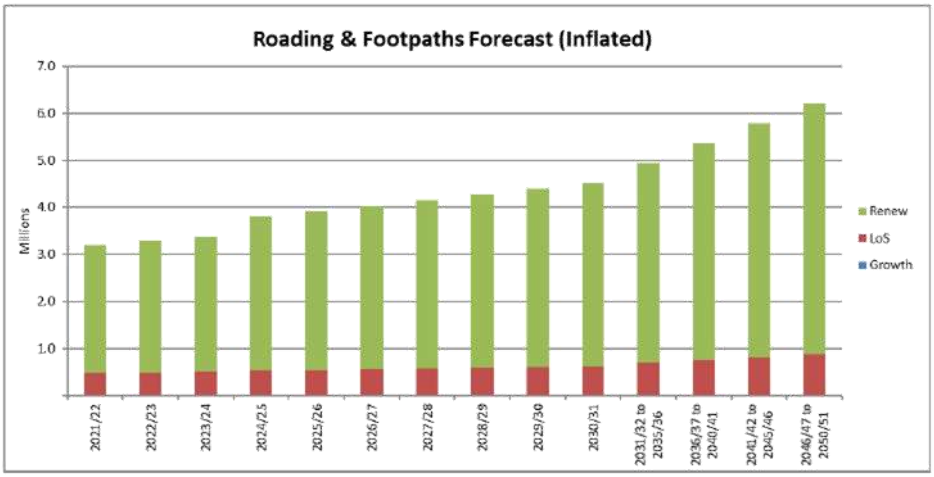
Figure 8.3: Projected Capital Expenditure – Stormwater



8.4 Roads and Footpaths

The projected capital expenditure associated with the Roads and Footpaths infrastructure assets are graphically represented below. Renewal of assets is the greatest portion of the forecast - which includes sealed road resurfacing, unsealed road metalling and pavement rehabilitation. The overall programme of drainage renewals is also significant. Minor "Low Cost Low Risk" safety improvement capital expenditure is lower than each of these renewal Work Category investments.

Figure 8.4: Projected Capital Expenditure – Roads and Footpaths



8.5 Total Expenditure

The projected capital expenditure associated with the significant infrastructure assets are graphically represented below:

The 30 year projected capital and operational expenditures associated with the core Infrastructure Assets are graphically represented in the figures below.

These expenditures come from Council's planned capital investments, predicted operations and maintenance cost and renewals forecasting. These expenditures take into account of all 'significant' and 'non-significant' capital and operational expenditure due to Level of Service, Growth, Operation and Maintenance or Renewal requirements.

Figure 8.5: Projected Capital Expenditure- Infrastructure Assets

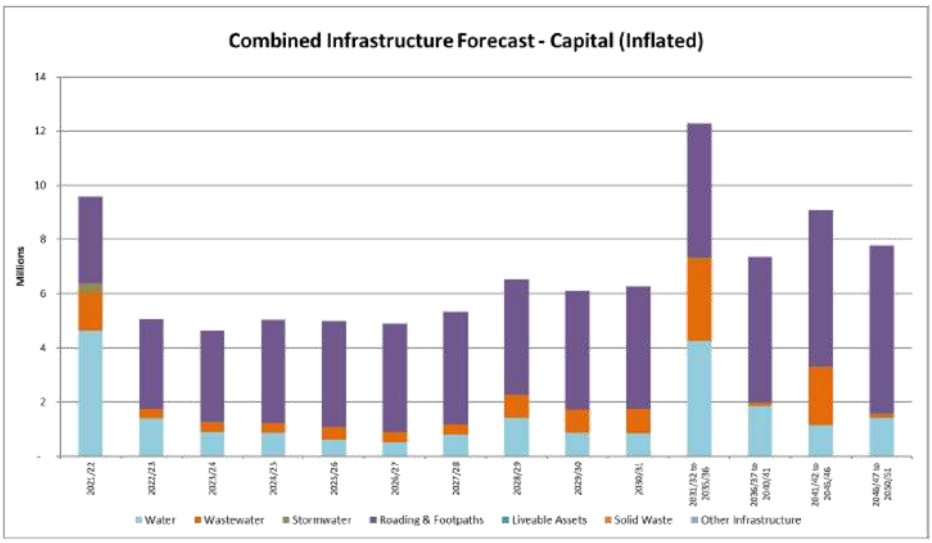
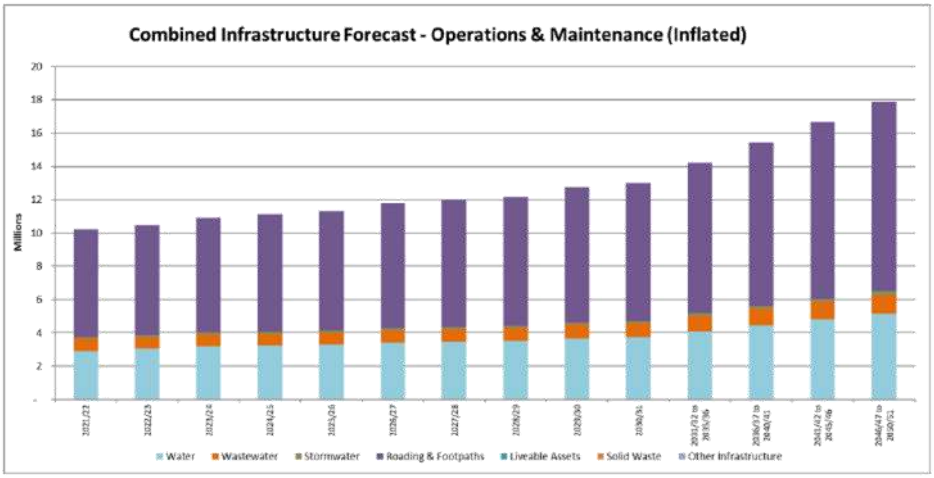


Figure 8.6: Projected Operational Expenditure –Infrastructure Assets



8.6 Infrastructure Strategy & Financial Strategy Linkages

This Infrastructure Strategy, the Financial Strategy and Consultation Document have been developed in conjunction with each other and are closely linked. The issues outlined in this Infrastructure Strategy were well developed in 2018 and have been updated in 2021, The Financial Strategy reflects the continued focus and development of these issues.

8.6.1 Financial Impacts of the Infrastructure Strategy

Waimate District Council faces the challenge of aging pipe assets that are due for replacement and a roading network that is under pressure. This infrastructure is vital to the economy of the district and beyond, along with the wellbeing of the community.

The combined forecast for operations and maintenance as well as capital identified is considerable. Core infrastructure costs exceeding $20 million per year is a challenge for a small community and smart planning is vital.

On the infrastructure side, a focus on criticality and prioritisation is key to investing where it will provide the greatest benefit. This will need to be communicated well as with a prioritised approach there could be differing views on what should be done and what should be delayed.

Alongside this infrastructure strategy, the financial strategy discussed the options for funding these infrastructural challenges. Council is focussed on continuing to support the district and its residents, and this means providing a fair balance of revenue methods and providing fit for purpose services.

8.7 Expenditure Summary

Summary of the 30- year Infrastructure Asset expenditure (Inflated, $) for the Roads and Footpaths and 3 Waters and is presented in Table 6 1.

Table 8-1: Expenditure Summary

		2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32 to 2035/36	2036/37 to 2040/41	2041/42 to 2045/46	2046/47 to 2050/51
Water	Minor Projects														
Water	O & M	2,906,690	3,074,628	3,197,323	3,239,737	3,298,538	3,416,467	3,465,120	3,516,023	3,667,176	3,746,752	20,478,084	22,222,407	23,966,730	25,711,053
Water	Growth	177,980	716,133	326,064	0	0	0	326,928	337,708	0	0	0	0	0	0
Water	LoS	3,419,378	151,387	57,008	0	0	0	0	0	0	0	0	0	0	0
Water	Renew	1,046,164	536,026	492,484	866,376	607,682	506,492	476,381	1,081,148	848,458	845,877	21,246,876	9,206,947	5,717,127	7,056,373
Water	**Total Capital**	**4,643,522**	**1,403,545**	**875,555**	**866,376**	**607,682**	**506,492**	**803,309**	**1,418,856**	**848,458**	**845,877**	**21,246,876**	**9,206,947**	**5,717,127**	**7,056,373**
Wastewater	Minor Projects														
Wastewater	O & M	707,755	657,758	681,284	688,451	698,534	733,369	741,827	749,645	797,688	826,278	4,516,069	4,900,747	5,285,426	5,670,105
Wastewater	Growth	312,100	0	0	0	0	0	0	0	0	0	0	0	0	0
Wastewater	LoS	64,917	0	0	0	0	0	0	0	0	0	0	0	0	0
Wastewater	Renew	1,011,180	340,186	343,630	351,000	452,659	363,319	379,470	835,224	867,894	891,300	15,253,506	601,134	10,639,232	630,016
Wastewater	**Total Capital**	**1,388,196**	**340,186**	**343,630**	**351,000**	**452,659**	**363,319**	**379,470**	**835,224**	**867,894**	**891,300**	**15,253,506**	**601,134**	**10,639,232**	**630,016**
Stormwater	Minor Projects														
Stormwater	O & M	124,370	130,585	135,443	136,053	136,956	142,802	143,682	144,643	150,978	152,509	833,545	904,547	975,548	1,046,549
Stormwater	Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stormwater	LoS	175,849	5,170	0	5,400	0	5,668	0	0	0	0	0	0	0	0
Stormwater	Renew	182,784	0	40,117	5,400	5,762	0	0	0	0	0	175,147	115,014	119,628	128,334
Stormwater	**Total Capital**	**358,632**	**5,170**	**40,117**	**10,800**	**5,762**	**5,668**	**0**	**0**	**0**	**0**	**175,147**	**115,014**	**119,628**	**128,334**
Roading & Footpaths	Minor Projects														
Roading & Footpaths	O & M	6,483,661	6,613,508	6,913,390	7,060,910	7,180,969	7,510,155	7,641,096	7,772,369	8,130,929	8,278,112	45,274,811	49,159,060	53,043,309	56,927,559
Roading & Footpaths	Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Roading & Footpaths	LoS	485,000	489,805	494,610	530,105	545,140	561,145	577,635	594,125	611,585	629,045	3,440,385	3,735,545	4,030,705	4,325,865
Roading & Footpaths	Renew	2,714,498	2,799,162	2,883,328	3,275,867	3,368,779	3,467,684	3,569,587	3,671,489	3,779,386	3,887,283	21,260,402	23,084,390	24,908,377	26,732,365
Roading & Footpaths	**Total Capital**	**3,199,498**	**3,288,967**	**3,377,937**	**3,805,972**	**3,913,919**	**4,028,829**	**4,147,222**	**4,265,614**	**4,390,971**	**4,516,328**	**24,700,787**	**26,819,935**	**28,939,082**	**31,058,230**

9.0 SUMMARY OF WELL-BEING CONTRIBUTION

Council is committed to on-going improvement in the quality of the Water, Sewerage, Stormwater and Roads and Footpaths services management practices. This is reflected in the implementation of asset management systems and associated data collection and maintenance requirements.

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

- Scheme Knowledge and Asset Condition
- Demand Management
- Project planning and coordination
- Communications

While reappraisal is an on-going process, the Improvement Plan will form the basis of the Water, Sewerage, Stormwater and Roads and Footpaths services annual business planning. An overarching Improvement Plan for this Infrastructure Strategy is presented in Table 9 1.

Table 9-1: Improvement Projects

Strategy Component	Specific Asset Management Improvements
Scheme Knowledge and Asset Condition	Ongoing data collection to ensure assets are understood and condition information is sufficient to develop robust renewal programmes
Demand Management	Collect traffic data (including heavy traffic) to identify level of service gaps, model pavement renewals and prioritise works.
Project planning and coordination	Prepare robust forward programmes and improve co-ordination between renewal programmes across asset types and other projects
Communication	Develop communication tools to engage the community and explain the prioritisation that will be required

These items are discussed in further detail in each of the Activity Management Plans.

10.0 GLOSSARY OF ACRONYMS AND OTHER TERMS

AC	Asbestos Cement
AEE	Assessment of Environmental Effects
AMIS	Asset Management Information System AP – Annual Plan
AMP	Asset Management Plan
AP	Annual Plan
AVG Filter	Automatic Valve-less Gravity Filter
CI	Cast Iron
FAR	Funding Assistance Rate
GNS	Geological Nuclear Science
HCV	High Capacity Vehicle
HPMV	High Productivity Motor Vehicle
I&I	Inflow and Infiltration
Infrastructure	Roading, footpaths and 3 Waters
K&C	Kerb and Channel
LTP	Long Term Plan
LoS	Levels of Service
Normalising or Harmonising	sharing
NZTA	New Zealand Transport Agency (Waka Kotahi)
NRRP	Natural Resources Regional Plan
O&M	Operations and Maintenance
ONRC	One Network Road Classification
PLWRP	Proposed Land and Water Regional Plan
PWWF	Peak Wet Weather Flow
RAMM	Road Assessment and Maintenance Management
RTC	Regional Transport Committee
SCADA	Supervisory Control and Data Acquisition
SMP	Stormwater Management Plan
WWTP	Wastewater Treatment Plant

Major projects
for the years ended 30 June 2021 to 2031

Project description	Activity	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000	TOTAL
Hook / Waituna - Drinking Water Intake/Plant Compliance Upgrade	Water Supply	673	-	-	-	-	-	-	-	-	-	
Lower Waihao - Drinking Water Intake/Plant Compliance Upgrade	Water Supply	797	-	-	-	-	-	-	-	-	-	
Waikakahi - Drinking Water Intake/Plant Compliance Upgrade	Water Supply	1,439	-	-	-	-	-	-	-	-	-	2,909
Cannington - Renewals	Water Supply	63	5	5	5	7	6	6	6	6	6	
Cannington - Pratts Pumphouse - New Board and Telemetry	Water Supply	23	-	-	-	-	-	-	-	-	-	
Cannington - Pratts Pumphouse - Pump 1 Renewal	Water Supply	-	-	-	-	-	5	-	-	-	-	
Cannington - Pratts Chlorine Analyser	Water Supply	16	-	-	-	-	-	-	-	-	-	
Cannington - Renewal Maintenace of weir	Water Supply	-	-	14	-	-	-	-	-	-	-	
Cannington - Pratts pumphouse power supply	Water Supply	-	-	-	20	-	-	-	-	-	-	
Cannington - Line renewal PE 80mm Slip Line	Water Supply	-	34	-	-	-	-	-	-	-	-	
Hook / Waituna - Renewals	Water Supply	10	21	11	11	11	11	23	12	12	26	
Hook / Waituna - Simmons Pumphouse Pump 1 Renewal	Water Supply	-	-	-	-	-	5	-	-	-	-	
Hook / Waituna - Flow Meter Replacement	Water Supply	4	-	-	6	7	-	-	-	-	1	
Hook / Waituna - Dual check augmentation	Water Supply	18	-	-	-	-	-	-	-	-	-	
Hook / Waituna - Line renewal Intake to O'Donnells	Water Supply	-	-	-	-	-	-	-	48	50	-	
Hook / Waituna - Line renewal investigation Garlands to Stud	Water Supply	8	-	-	-	-	-	-	-	-	-	
Hook / Waituna - Line renewal upper Nortons Reserve Rd	Water Supply	-	-	-	-	42	43	-	-	-	-	
Hook / Waituna - Line renewal Manchesters and Molloys Rd	Water Supply	-	-	22	39	-	-	-	-	-	-	
Lower Waihao - Renewals	Water Supply	30	5	5	5	-	6	6	6	6	6	
Lower Waihao - Glenavy Township Mains Renewal	Water Supply	-	-	-	-	78	-	-	125	-	-	
Lower Waihao - Glenavy Township Restrictor Renewal	Water Supply	-	-	-	-	11	-	-	20	-	-	
Lower Waihao - Glenavy Chlorine Monitoring Station	Water Supply	-	-	57	-	-	-	-	-	-	-	
Lower Waihao - Lower Waihao Boost Pump 3 Renewal	Water Supply	-	-	-	-	6	-	-	-	-	-	
Lower Waihao - Telemetry - Lower Waihao Boost Renewal	Water Supply	-	-	-	9	-	-	-	-	-	-	
Lower Waihao - Flow Meter Renewal	Water Supply	-	-	6	-	7	-	-	-	-	1	
Lower Waihao - Glenavy line renewal	Water Supply	-	-	-	157	-	-	-	-	-	-	
Otaio / Makikihi - Renewals	Water Supply	48	-	2	-	2	-	2	-	2	-	
Otaio / Makikihi - Makikihi Township Mains Renewal	Water Supply	-	-	-	76	-	-	-	105	-	-	
Otaio / Makikihi - Makikihi Township Restrictor Renewal	Water Supply	-	-	-	11	-	-	-	13	-	-	
Otaio / Makikihi - Flow Meter Replacement	Water Supply	-	-	-	5	2	-	-	-	-	6	
Otaio / Makikihi - Line renewal Makikihi 100mm PVC	Water Supply	-	31	32	-	-	-	-	-	-	-	
Otaio / Makikihi - Consent Volume Review	Water Supply	-	-	-	-	17	-	-	-	-	-	
Otaio / Makikihi - Renewal Marshalls Road	Water Supply	10	-	-	-	-	-	-	-	-	-	
Waihaorunga - Renewals	Water Supply	109	-	-	5	-	-	6	-	-	6	
Waihaorunga - Takitu Pumphouse - New Board and Telemetry	Water Supply	-	23	-	-	-	-	-	-	-	-	
Waikakahi - Renewals	Water Supply	175	5	5	5	6	6	6	6	6	6	
Waikakahi - Mehrtens/Cameron 700m 32 OD	Water Supply	-	4	-	-	-	-	-	-	-	-	
Waikakahi - Harrison B/T 1.5km 63 OD	Water Supply	-	11	-	-	-	-	-	-	-	-	
Waikakahi - McKay/ Francis 1.3km 40 OD	Water Supply	-	-	12	-	-	-	-	-	-	-	
Waikakahi - LW WK Booster PH - Pump 4	Water Supply	-	-	-	-	14	-	-	-	-	-	
Waikakahi - Dog Kennel Road PH - Pump 1	Water Supply	-	-	-	-	-	20	-	-	-	-	
Waikakahi - Telemetry - Waikakahi Reservoir	Water Supply	-	-	-	-	-	-	9	-	-	-	
Waikakahi - Flow meter renewals	Water Supply	2	-	-	-	2	-	-	-	-	-	2,036
Otaio / Makikihi - New Bore Redundancy	Water Supply	-	127	-	-	-	-	-	-	-	-	127
Urban Water - Bond Street Subdivision	Water Supply	75	-	-	-	-	-	-	-	-	-	
Urban Water - Lateral Renewals	Water Supply	96	62	63	65	66	68	70	128	132	136	

Major projects
for the years ended 30 June 2021 to 2031

	Activity	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000	TOTAL
Urban Water - AC Water Main Renewals	Water Supply	211	114	116	119	122	125	128	191	197	203	
Urban Water - CI Water Main Renewals	Water Supply	160	165	169	173	177	181	187	388	401	411	
Urban Water - Timaru Road pump renewals	Water Supply	68	26	-	-	-	-	-	-	-	-	
Urban Water - Telemetry - Timaru Rd Plant	Water Supply	-	-	-	9	-	-	-	-	-	-	
Urban Water - Telemetry - Manchesters Bore	Water Supply	-	-	-	8	-	-	-	-	-	-	
Urban Water - Waimate Reservoir Cover Replacement	Water Supply	-	-	-	108	-	-	-	-	-	-	
Urban Water - Main line valve renewals	Water Supply	28	29	30	30	31	32	33	34	35	36	
Urban Water - Booster Manchesters Standby Pump 2	Water Supply	-	30	-	-	-	-	-	-	-	-	**5,465**
Urban Water - Booster Bakers/Court/Hunts/Fitzmaurice Roads	Water Supply	20	-	296	-	-	-	-	-	-	-	
Urban Water - Extension Bakers/Court/Hunts/Fitzmaurice Roads	Water Supply	-	-	-	-	-	-	327	338	-	-	**980**
Urban Water - Water Meters	Water Supply	472	-	-	-	-	-	-	-	-	-	**472**
Waste Management - Seal and shingle RRP entrance	Waste Management	-	76	76	18	37	-	-	-	-	-	**208**
Stormwater - Queen Street Upgrade	Stormwater	341	-	-	-	-	-	-	-	-	-	
Sewer - Queen Street upgrade	Sewerage	130	-	-	-	-	-	-	-	-	-	**471**
Urban Water - Te Kiteroa Main, Booster and Reservoir	Water Supply	83	686	30	-	-	-	-	-	-	-	
Sewer - Te Kiteroa Line	Sewerage	312	-	-	-	-	-	-	-	-	-	**1,112**
Sewer - Waimate Urban Renewals	Sewerage	224	315	333	339	360	357	379	835	863	886	
Sewer - Edward Street Upgrade (Renewal)	Sewerage	616	-	-	-	-	-	-	-	-	-	
Sewer - WWTP Submersible Pump 2 Renewal	Sewerage	-	21	-	-	-	-	-	-	-	-	
Sewer - WWTP Electrics General 240, 24 Volts	Sewerage	-	-	-	12	-	-	-	-	-	-	
Sewer - WWTP In flow Meter Renewal	Sewerage	9	-	-	-	-	-	-	-	-	-	
Sewer - WWTP Out flow Meter Renewal	Sewerage	-	-	-	-	-	6	-	-	-	-	
Sewer - WWTP Alarming/Monitoring of Out flow Meter	Sewerage	4	-	-	-	-	-	-	-	-	-	
Sewer - Telemetry - Milford	Sewerage	-	-	8	-	-	-	-	-	-	-	
Sewer - Milford - Flygt Controller (PLC)	Sewerage	-	-	3	-	-	-	-	-	-	-	
Sewer - Milford Pump Renewal	Sewerage	-	-	-	-	-	-	-	-	5	5	
Sewer - WWTP Electical/control Renewal	Sewerage	-	-	-	-	83	-	-	-	-	-	
Sewer - WWTP various equipment	Sewerage	12	4	-	-	9	-	-	-	-	-	**5,690**
Sewer - Septic Waste Receival Unit	Sewerage	81	-	-	-	-	-	-	-	-	-	**81**
Roading - Resealing	Roading	1,244	1,283	1,322	1,246	1,282	1,319	1,358	1,397	1,438	1,479	
Roading - Drainage construction	Roading	266	274	282	335	344	354	365	375	386	397	
Roading - Culvert replacement	Roading	186	193	198	215	221	227	234	241	248	255	
Roading - Kerb and channel renewal	Roading	130	134	138	197	202	208	214	221	227	233	
Roading - Concrete ford renewal	Roading	45	46	48	49	51	52	54	55	57	58	
Roading - Pavement rehabilitation	Roading	389	401	413	738	758	781	804	827	851	875	
Roading - Structures component rep.	Roading	178	183	189	194	200	206	212	218	224	230	
Roading - Sign renewal	Roading	61	63	65	67	68	70	73	75	77	79	
Roading - Minor improvements	Roading	330	330	330	361	371	382	393	404	416	428	
Roading - Footpath renewal	Roading	215	222	229	235	242	249	257	264	272	279	
Roading - Minor improvements (non-subsidised)	Roading	45	46	48	49	51	52	54	55	57	58	
Roading - Seal extensions	Roading	60	62	64	66	67	69	71	74	76	78	
Roading - Development	Roading	50	52	53	55	56	58	60	61	63	65	**38,935**
Investment - Gorge Road Premises	Organisation & Governance	-	-	85	-	-	-	-	-	-	-	**85**
Forestry - Planting Waihao Forest	Organisation & Governance	-	-	-	-	241	25	22	-	-	-	
Forestry - Planting Reserves	Organisation & Governance	3	10	2	9	41	12	15	2	1	13	**396**
Regulatory - District Plan Review		200	204	104	106	43	44	45	45	46	47	**614**
Waimate Lakes Camping - Concrete pad for refuse shelters	Community Facilities	20	21	-	-	-	-	-	-	-	-	

Major projects
for the years ended 30 June 2021 to 2031

	Activity	LTP 30 June 2022 $000	LTP 30 June 2023 $000	LTP 30 June 2024 $000	LTP 30 June 2025 $000	LTP 30 June 2026 $000	LTP 30 June 2027 $000	LTP 30 June 2028 $000	LTP 30 June 2029 $000	LTP 30 June 2030 $000	LTP 30 June 2031 $000	TOTAL
Waimate Lakes Camping - Boat ramp upgrade	Community Facilities	-	-	16	-	-	-	-	-	-	-	
Waimate Lakes Camping - Public toilet dry vault system	Community Facilities	70	-	-	-	-	-	-	-	-	-	
Victoria Park Camping - Upgrade Tennant St cabins	Community Facilities	19	5	5	-	-	-	-	-	-	-	
Knottingley Park Camping - Terraflake toilet block floor	Community Facilities	20	-	-	-	-	-	-	-	-	-	
Knottingley Park Camping - BBQ and roofed area	Community Facilities	-	15	-	-	-	-	-	-	-	-	**192**
Cemetery - Reseal driveway	Community Facilities	-	7	-	-	-	-	-	-	-	-	
Cemetery - Extension	Community Facilities	-	-	-	-	-	-	-	14	34	37	
Cemetery - Ash and burial berms	Community Facilities	20	-	-	-	-	-	-	-	-	-	
Cemetery - Toilet facility upgrade	Community Facilities	-	-	61	-	-	-	-	-	-	-	
Cemetery - Water line renewal	Community Facilities	15	-	-	-	-	-	-	-	-	-	
Cemetery - Signage upgrade	Community Facilities	-	8	2	-	-	-	-	-	-	-	**198**
Victoria Park - New learn to ride area	Community Facilities	50	-	-	-	-	-	-	-	-	-	**50**
Local Govt Centre - Library / LGC Extension	Community Facilities	960	-	-	-	-	-	-	-	-	-	**960**
Public toilets - Waimate Town (New Toilets)	Community Facilities	-	206	-	-	-	-	-	-	-	-	**206**

Water Supply

What we do:	Council provides a regular supply of water to the designated Waimate urban area and the six rural areas of Waimate to serve drinking, commercial and fire protection uses.

1. Provide safe drinking water

How we do it:	▣ Manage and monitor all water supplies under requirement of Drinking Water Standards ▣ Monitor ongoing regulatory change for water supply activities ▣ Implement Water Safety Plans for drinking water schemes		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Extent of compliance with Drinking Water Standards (Part 4) - Bacterial Compliance (M)	Bacterial compliance - All schemes	Bacterial compliance - All schemes
	Extent of compliance with Drinking Water Standards (Part 5) - Protozoal Compliance (M)	Protozoal compliance - All Schemes	Protozoal compliance - All Schemes

2. Provide a continuous, appropriate and safe water system throughout the District with excellent customer service

How we do it:	▣ Manage, monitor and test all water supplies ▣ Respond to service failures and faults ▣ Provide a customer service request system 24 hours a day 7 days a week		
How we measure performance		Year 1—3 Target	Year 4—10 Target
	Median attendance and resolution times for urgent and non-urgent callouts for water supply faults or unplanned interruptions to the urban network* (M)	Attendance to urgent callout - ≤ 1 hour	Attendance to urgent callout - ≤ 1 hour
		Resolution for urgent callout - ≤ 24 hours	Resolution for urgent callout - ≤ 24 hours
		Attendance to non-urgent callout - ≤24 hours	Attendance to non-urgent callout - ≤24 hours
		Resolution for non-urgent callout - 72 hours	Resolution for non-urgent callout - 72 hours
	Total number of complaints received about: 1. drinking water clarity 2. drinking water taste 3. drinking water odour 4. drinking water pressure or flow 5. continuity of supply 6. Council's response to these issues (M)	Urban water supply: <10 complaints per 1000 connections Rural water supply: ≤ 40 complaints per 1000 connections	Urban water supply: <10 complaints per 1000 connections Rural water supply: ≤ 40 complaints per 1000 connections
	Percentage of residents receiving the service satisfied with water supply services	≥ 86%	≥ 86%

*Attendance: from the time Council receives notification to the time that service personnel reach site
Resolution: from the time Council receives notification to the time that service personnel confirm resolution of the fault or interruption.

3. Provide reliable, efficient and well planned water infrastructure and services that meets the needs of the community			
How we do it:	▣ Monitor demand on all water supplies ▣ Manage growth of network ▣ Monitor condition and performance of water supply reticulation and assets and analyse data to predict asset failure/identify priority improvements required ▣ Complete capital expenditure programme associated with developing the network ▣ Minimise the disruptions to water supplies ▣ Provide a restricted supply of water to customers on rural water schemes ▣ Implement leak detection and reduction programme		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	The average consumption of drinking water per day per resident within the Waimate district (M)	Average consumption ≤ 500 litres per person per day	Average consumption ≤ 300 litres per person per day
	Percentage of real water loss from Council's network reticulation systems (M)	Real water loss - ≤ 35%	Real water loss - ≤ 20%
	Reactive maintenance (system failure) or programed work in the Waimate urban area that exceed 8 hours of not suppling drinking water to the community or a consumer.	< 1 per year	< 1 per year
	Reactive maintenance (system failure) or programed work in the Rural Water Supplies that exceed 3 days of not suppling drinking water to the community or a consumer.	< 1 per year	< 1 per year

Stormwater

What we do:	Council provides stormwater drainage systems for the removal of surface water following rainfall events. In Waimate urban catchments this surface water is removed by a piped stormwater drainage system and existing kerb and channel networks.

1. Maintain reliable stormwater network services

How we do it:	▣ Maintain stormwater systems and respond to service failures ▣ Develop and implement system for recording flooding events ▣ Monitor demand and manage growth of network ▣ Collection and disposal of stormwater via stormwater systems ▣ Monitor condition and performance of stormwater reticulation and assets		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Number of flooding events that occur in our systems (M)	0	0
	Number of habitable floors affected in a flooding events in the district (M) (per 1000 properties connected)	0	0
	Number of blockages in the Councils urban storm water transmission (i.e. piped, open drain).	≤3	≤3

2. Deliver stormwater services according to required environmental standards

How we do it:	▣ Manage and monitor stormwater systems under conditions of resource consents ▣ Monitor ongoing regulatory changes to stormwater activities ▣ Develop a Demand Management Plan for the Stormwater activity ▣ Update and review Risk Management Strategy ▣ Investigate options for stormwater treatment ▣ Develop stormwater quality monitoring systems ▣ Apply for and receive stormwater resource consents within necessary period		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Compliance with Resource Consents for discharge from stormwater system (M)	No abatement notices, infringement notices, enforcement orders and convictions	No abatement notices, infringement notices, enforcement orders and convictions

3. Maintain excellent customer service for stormwater systems			
How we do it:	▣ Provide a customer service request system 24 hours a day, 7 days a week ▣ Maintain stormwater system and respond to service failures or faults in a timely manner		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Median response time to attend a flooding event.* (M)	≤120 minutes	≤120 minutes
	Number of complaints received about the performance of the stormwater system (M)	≤1.5 per 1000 properties	≤1 per 1000 properties

* Flooding event means an event where stormwater enters a habitable floor. Measured from the time of notification to the time that service personnel reach the site.

4

Sewerage

What we do:	Council provides a piped waste water collection system, a sewerage treatment plant and disposal system that safety removes sewage from urban homes in Waimate. It is Council policy to implement programmes for the relocation of wastewater disposal areas from riverbeds, wetlands or the margins of rivers, lakes and the coast and to implement programmes to reduce, and eventually cease the discharge of waste from the Council's sewage reticulation and treatment systems into natural waterways.

1. Maintain reliable sewerage network services

How we do it:	▣ Maintain wastewater schemes and respond to service failures ▣ Monitor demand and manage growth of network ▣ Monitor condition and performance of wastewater reticulation and assets ▣ Ongoing pipe investigation programme ▣ Public education (ie wipes disposal)		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Number of dry weather overflows from the sewerage system (M)	≤2 per 1000 connections	≤2 per 1000 connections
	Number of blockages in Councils urban sewer transmission reticulation.	≤10	≤6

2. Deliver sewer services according to required environmental standards

How we do it:	▣ Manage and monitor sewerage treatment and disposal system under conditions of resource consent ▣ Monitor quality of effluent ▣ Monitor ongoing regulatory change for wastewater activities ▣ Treatment and disposal of domestic and industrial wastewater via the wastewater schemes ▣ Update and review Risk Management Strategy		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Compliance with Resource Consents for discharge from sewerage system (M)	No abatement notices, infringement notices, enforcement orders and convictions	No abatement notices, infringement notices, enforcement orders and convictions

5

3. Maintain excellent customer service for sewerage system			
How we do it:	▣ Provide a customer service request system 24 hours a day, 7 days a week ▣ Investigate and rectify sewer services and wastewater odour complaints ▣ Maintain wastewater schemes and respond to service failures of faults ▣ Manage the collection, treatment and disposal of domestic and industrial wastewater		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Median attendance and resolution times to sewerage overflows resulting from blockages or other faults* (M)	Median attendance time ≤60 minutes Median resolution time ≤12 hours	Median attendance time ≤60 minutes Median resolution time ≤12 hours
	Total complaints received about: 1. Sewer odour 2. Sewerage system faults 3. Sewerage system blockages 4. The WDC response to sewerage system issues (M)	≤3 complaints per 1000 connections	≤3 complaints per 1000 connections
	People receiving the service are satisfied with sewerage services	≥97%	≥97%

* Attendance: from the time Council receives notification to the time that service personnel reach site
Resolution: from the time Council receives notification to the time that service personnel confirm resolution of the fault or interruption.

6

Waste management

What we do:	Waste Management provides a range of refuse and recycling collection and management services for urban and rural areas of the district for households and businesses. We operate a resource recovery park to process and sell recyclable materials and transfer residual waste to landfill in Timaru. Council provides education regarding recycling and waste minimisation. In accordance with the Waste Minimisation Act 2008 , Council completes a Waste Management and Minimisation Plan every six years that assesses the provision of existing services and provides options for the delivery of future services.

1. Convenient and accessible waste management services

How we do it:	▣ Provide a range of refuse collection and disposal services for urban and rural areas for households and businesses ▣ Manage and maintain all aspects of the waste operation including a competitive tender process and management of waste contract ▣ Provision of customer service request system 24 hours a day, 7 days a week ▣ Provide a resource recovery park according to set hours of opening		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Residents receiving the service are satisfied with waste management services	≥75%	≥75%
	Council provides access to kerbside recycling & refuse collection	≥70% of the district's properties	≥70% of the district's properties

2. Council manages the waste management services wisely

How we do it:	▣ Manages waste facilities under the conditions of the Resource Consent ▣ Apply for renewal of waste consents as required ▣ Monitor ongoing regulatory change for waste activities ▣ Waste is diverted from the landfill to the resource recovery park		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Compliance with Resource Consent conditions	Full compliance	Full compliance
	Reduce the percentage of residual waste to landfill	<49%	<49%

3. Public information and programmes promote waste minimisation and appropriate sorting of waste			
How we do it:	▣ Provide opportunities for the public, community organisations and businesses to learn about waste minimisation, including talks, tours, business support and event support ▣ Provide and disseminate written educational material to promote services available, waste minimisation and appropriate sorting of waste ▣ Conduct audits of kerbside collection for appropriate recycling ▣ Promote waste minimisation programmes ▣ Zero Waste programme		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Number of fly tipping incidents in the district	≤15	≤8
	Percentage of organics and recyclables in refuse collection bin	≤22%	≤15%

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Roading

What we do:	The purpose of this activity is to provide for the safe, convenient and efficient movement of people and goods around and through the district. This is achieved by providing a network of roads, footpaths, bridges, signs and markers, street lights and associated drainage systems. The Roading Activity is managed by Waimate District Councils Roading Team, who manage most aspects of the activity internally, although the physical maintenance of the Roading assets is externally contracted. New Zealand Transport Agency (NZTA) is Councils co - investment partner for roading and the works programme which is approved on a three yearly cycle in the National Land Transport Plan.

1. Provide quality roads and footpaths

How we do it:	▣ Planned and Reactive maintenance ▣ Replacement (renewal) of assets ▣ Manage Inspection and condition rating of network assets ▣ Manage Road Assessment and Maintenance Management (RAMM) data. ▣ Work collaboratively with neighboring Councils. ▣ Undertake Activity Management planning to demonstrate that the roading assets are operated and maintained in a sustainable and cost effective manner. ▣ Investigate improvement projects and long term network needs		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Resident satisfaction with sealed roads	≥66%	≥66%
	Resident satisfaction with unsealed roads	≥55%	≥55%
	Average quality of ride on a sealed local roads (M)	Smooth Travel Exposure: 93%	Smooth Travel Exposure: 93%

2. Respond to customer complaints and requests in a timely manner

How we do it:	▣ Provide customer service request system 24 hours a day, 7 days a week ▣ Investigate and rectify roading and footpaths complaints		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Percentage of customer service requests relating to roads and footpaths responded to within10 working days (M)	≥95%	≥95%

3. Provide a safe transport environment

How we do it:	▣ Conduct safety audits on aspects of the district's roading network ▣ Deliver quality community road safety campaigns with Timaru and Mackenzie Districts to improve road behaviour and awareness ▣ Monitor road accident statistics and locations ▣ Ensure traffic management plans are in place for all road works sites which effect roads and footpaths ▣ Ensure that private activities undertaken on the road corridor don't adversely compromise road safety or the road condition ▣ License and monitor all cow crossings		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	The change from the previous year in the number of fatalities and serious injury crashes on local road network (M)	Number of fatalities and serious injury crashes is less than the previous year on an annual basis	Number of fatalities and serious injury crashes is less than the previous year on an annual basis

4. Provide well maintained footpaths

How we do it:	▣ Inspection and condition rating of footpath assets ▣ Manage footpath renewals and maintenance projects ▣ Determine future footpath projects based on defined prioritisation approach and future demand		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Compliance with footpath prioritisation model	No more than 7km non-complaint	No more than 7km non-complaint
	Resident Satisfaction with footpaths	≥58%	≥58%
	Percentage of footpaths that fall within a condition rating of "fair", 1-3* (M)	≥85%	≥90%

* As detailed in the Roading Asset Management Plan

5. Provide adequate asset renewal

How we do it:	▣ Monitor and inspect the state of the roading network, including traffic counts, pavement roughness and condition ▣ Renewals implemented at the right time with the right treatment		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Percentage of the sealed local road network that is resurfaced (M)	>5.5%	>5.5%
	Annual quantity of metal spread on unsealed roads	13,000m3	13,000m3

District planning and regulatory services

What we do:	District Planning and Regulatory Services includes the following activities provided by Council: Building Control; Dog and Animal Control; Environmental Services and Resource Management. This group is concerned with monitoring and enforcement functions across a wide cross-section of statutes, focusing on the protection of community health, safety and amenity. Another major function of the group is processing consents under the Building Act 2004 and the Resource Management Act 1991.

1. Perform statutory functions as required

How we do it:

- Administer legislative requirements under District Planning and Regulatory Services related legislation
- Meet requirements to remain accredited as a Building Consent Authority
- Review District Plan, bylaws and related policies
- Monitor ongoing legislative and regulatory changes

How we measure performance

	Years 1—3 Target	Years 4—10 Target
Retain accreditation as Building Consent Authority	Associated audit processes ensure accreditation retained	Associated audit processes ensure accreditation retained
District Plan and bylaws reviewed within statutory timeframe	100% reviewed and adopted within statutory timeframe	100% reviewed and adopted within statutory timeframe

2. Deliver timely, efficient processing of consents and related requirements

How we do it:

- Process and grant building and resource consents
- Process and issue Land Information Memorandums (LIMs) and Project Information Memorandums (PIMs)
- Process and issue other Building Act requirements (eg notices to fix)
- Process Resource Management Act requirements (eg alterations to designations)

How we measure performance

	Years 1—3 Target	Years 4—10 Target
Building consent processing within statutory timeframes and average processing time	100% of building consents granted within 20 working days	100% of building consents granted within 20 working days
Resource Consent processing to take place within statutory timeframes and average processing time	100% processed within 20 working days (non-notified) or 70 working days (notified)	100% processed within 20 working days (non-notified) or 70 working days (notified)

3. Investigate and respond to public complaints

How we do it:

- Respond to regulatory service complaints in a timely fashion
- Provision of customer service request system 24 hours a day, 7 days a week

How we measure performance

	Years 1—3 Target	Years 4—10 Target
Response to food hygiene related complaints	All complaints actioned within 48 hours	All complaints actioned within 48 hours
Response to late night party noise	All complaints actioned within 2 hours	All complaints actioned within 2 hours
Response to environmental complaints	All complaints actioned within 10 working days	All complaints actioned within 10 working days

4. Resource Consents are monitored to ensure compliance			
How we do it:	▣ Monitor and enforce conditions of notified and non-notified Resource Consents ▣ Monitor effects of development on the environment ▣ Provide policy advice on planning and development in the District to ensure adherence to the Waimate District Plan and Resource Management Act 1991		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Percentage of implemented Resource Consents monitored	100% of implemented subdivision consents and notified land use consents monitored annually	100% of implemented subdivision consents and notified land use consents monitored annually
		50% of implemented non-notified land use consents monitored annually	50% of implemented non-notified land use consents monitored annually

5. Protect the public from dog and animal related nuisances and dangers			
How we do it:	▣ Investigate and respond to dog and animal related complaints ▣ Enforce Council bylaws and policy pertaining to dogs ▣ Statutory review of bylaws and policy pertaining to dogs ▣ Impound dangerous and wandering dogs and animals ▣ Maintain a safe pound ▣ Maintain a register of dogs in the District ▣ Provide public education on responsible ownership of dogs		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Response to wandering stock and animal related complaints	All complaints actioned within 2 hours	All complaints actioned within 2 hours
	Response to dog attacks on people and stock	Initial contact with all complainants within 2 hours of attack notified	Initial contact with all complainants within 2 hours of attack notified
	Percentage of known dogs in the District registered by 1 December	≥95% of all known dogs registered	≥95% of all known dogs registered

6. Provide quality customer services that meet the expectations of the community			
How we do it:	▣ Provide high quality building and resource planning customer services to community		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	User satisfaction with building services	≥44%	≥60%
	User satisfaction with resource consent services	≥44%	≥60%

Community services

What we do:	This group of activities involves promoting the social, cultural and economic development of our communities to ensure they have a good quality of life. This includes providing and administering community grants; providing high quality library and information centre facilities; promoting economic development in the district and marketing the district, and improving community awareness and preparedness for emergency events and leading the community through such events as they happen.

1. Provide quality community services that meet the expectations of the community

How we do it:	▣ Provide high quality library services to community and visitors		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	User satisfaction with library services	≥91%	≥91%

2. Improve individual, community and business awareness of the risks from hazards and assist them to build resilience to emergency events

How we do it:	▣ Educate and inform the public and businesses about the risks to their communities from hazards via presentations, media campaigns and printed material in order to improve community resilience ▣ Review Civil Defence Plan ▣ Identify hazards that require research for risk reduction and assist in the delivery of results from research as part of ongoing community education ▣ Provide training for volunteers and staff so they can respond to emergency events in a manner that supports our communities ▣ Monitor hazard information and events as they progress		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Percentage of residents who feel Council has provided them with enough information to be able to cope when there is an emergency	≥66%	≥66%
	Number of emergency management community engagement activities	6 per year	6 per year

3. Civil Defence Emergency Management personnel appropriately trained and prepared to assist community in the event of an emergency

How we do it:	▣ Civil Defence Emergency management personnel and partner agencies participate in in-house/regional/national exercises ▣ Civil Defence Emergency management personnel attend training courses		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Annual Group exercise	1 annually	1 annually
	Civil Defence Emergency Management personnel within the EOC offered training	2 training opportunities per year	2 training opportunities per year

4. Manage and allocate community funding scheme grants

How we do it:	▣ Administration, promotion and management of Council's community funding schemes, Creative Communities Scheme and Sport NZ Rural Travel Fund ▣ Grant accountability forms collected to ensure appropriate use of funds ▣ Promote the availability of all Council funding opportunities		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	All grants administered by Council are fully subscribed.	All grants fully subscribed	All grants fully subscribed

5. Support economic development in the District

How we do it:	▣ Maintain a business friendly Council approach to customer relations ▣ Ensure economic development is a high priority in decision-making ▣ Implement the Economic Development Strategy action items ▣ Support local events		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Annual progress of economic development strategy economic indicators	Year on year increase	Year on year increase
	Positive perception of living in Waimate District*	≥93%	≥93%

*As measured in biennial survey

6. Information and Library services, programmes and material are accessible to district residents, schools and visitors

How we do it:	▣ Ensure information and library services are open to the community and visitors with consistent and appropriate opening hours ▣ Ensure information centre is stocked with a variety of quality local information ▣ Provide access to physical collections at the library facilities and online ▣ Provide a wide range of high quality library material ▣ Produce and promote an annual programme of library exhibitions on a range of subject material		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Provide educational programmes at the library	≥4 programmes provided annually	≥4 programmes provided annually
	Visitors to Explore Waimate website	Number of visitors increases annually	Number of visitors increases annually

Community facilities

What we do:	Community Facilities is about providing facilities for sport, recreation and cultural activities, affordable community housing and buildings and facilities that enable us to provide a range of services to the community. The activities included in this group are: Camping, Cemeteries, Event Centre, Parks and Public Spaces, Property and Swimming Pool.

1. Provide high quality community facilities that meet the expectations of the community

How we do it:

- Ensure community facilities are accessible to the community and visitors
- Provide clean, safe and well maintained public toilets, camp sites and cemeteries
- Annual maintenance and health and safety programmes for public toilets, camp sites, cemeteries, swimming pool and Event Centre
- Facilities are open to the community and visitors with consistent and appropriate opening hours

How we measure performance:

	Year 1—3 Target	Year 4—10 Target
Resident satisfaction with public toilets	≥55%	≥55%
User satisfaction with camping facilities	≥75%	≥75%
Resident satisfaction with cemetery facilities and services	≥76%	≥76%
Resident satisfaction with parks and public spaces	≥89%	≥89%
User satisfaction with swimming pool facilities	≥83%	≥83%
User satisfaction with Event Centre facilities	75%	75%
Camping facilities are well maintained and tidy	Less than 5 complaints per year	Less than 5 complaints per year
Cemeteries are well maintained	Less than 5 complaints per year	Less than 5 complaints per year

2. Provide safe community facilities for the community and visitors

How we do it:

- Maintain facilities, parks, playgrounds and buildings to established standards
- Periodic replacement or refurbishment of plant to maintain existing level of service
- Ensure Health and Safety plans are in place for all community facilities
- Annual cleaning , maintenance and health and safety audits for public toilets, camp sites, cemeteries, swimming pool and Event Centre

How we measure performance

	Year 1—3 Target	Year 4—10 Target
Community facilities meet legislative safety requirements (Local Government Centre, Library, Regent Theatre, Event Centre)	Building Warrant of Fitness (WOF), Fire Regulations and Licence requirements are current	Building Warrant of Fitness (WOF), Fire Regulations and Licence requirements are current
All Council playgrounds are inspected and documented for maintenance every two months	2 monthly inspections	2 monthly inspections
Maintain Pool Safe accreditation	Accreditation maintained	Accreditation maintained

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3. Community Housing units are tenanted and well managed			
How we do it:	▣ Maintain a waiting list, interview and place prospective tenants according to Council's eligibility criteria ▣ Manage issues associated with the community housing portfolio ▣ Maintain units as notified through the Council's service request system ▣ Provide low cost Community Housing		
How we measure performance		Year 1—3 Target	Year 4—10 Target
	Occupancy rate of Community Housing units	90% or greater occupancy	90% or greater occupancy
	Rent charge for Community Housing units is equal to, or less than market rental	Equal to, or less than market rental	Equal to, or less than market rental

4. Provide accessible and accurate cemetery records			
How we do it:	▣ Maintain and update electronic cemetery database		
How we measure performance		**Year 1—3 Target**	**Year 4—10 Target**
	Cemetery records updated to reflect new internments	100% of cemetery records are updated within a month	100% of cemetery records are updated within a month

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Organisation and governance

What we do:	This group of activities supports and guides all activities carried out by Council. The activity enables Council to function and provide stable, transparent, effective, efficient and accountable local governance to the District. The group administers all financial aspects of Council activities, customer services and administrative support as well as providing support for elected representatives and leading the strategic planning and direction of Council.

1. Provide good quality governance for the community in an open and transparent manner

How we do it:

- Lead, govern and make decisions about the overall direction of the Council on behalf of the community
- Carry out regular Council and Standing Committee meeting programmes which are open to the public
- Develop and implement planned policy review programme
- Maintain relationships with iwi
- Fulfil the purpose of Local Government and all statutory obligations, as set by the Local Government Act 2002 and other relevant legislation
- Prepare and adopt statutory planning and reporting documents as required (Annual Plan, Annual Report and Long Term Plan)
- Conduct elections, by-elections and Representation Reviews as required

How we measure performance

	Year 1—3 Target	Year 4—10 Target
Ordinary Council meetings are recorded and made available to public	100% recorded and available to public	100% live streamed
Compliance with Local Government Act planning, accountability and regulatory requirements	Statutory Local Government Act planning, accountability and regulatory requirements are achieved	Statutory Local Government Act planning, accountability and regulatory requirements are achieved
Response time to Local Government Official Information and Meeting Act (LGOIMA) requests	100% responded to within statutory timeframe	100% response within statutory timeframe
Residents are satisfied with performance of elected members	≥84%	≥84%

2. Communicate with the community			
How we do it:	▣ Provide opportunities for community engagement, including public forums, informal consultation and Special Consultative Procedures (SCPs) ▣ Communicate Council work to the community via WDC website, print and social media ▣ Maintain an up-to-date website which is available 24 hours a day, 7 days a week		
How we measure performance		Year 1—3 Target	Year 4—10 Target
	Resident satisfaction with sufficiency of the information supplied by Council	≥69%	≥69%
3. Advocate for the community			
How we do it:	▣ Prepare submissions on issues that will, or may impact the Waimate District community ▣ Advocate on district issues on behalf of the community ▣ Maintain, collaborate and develop relationships and partnerships with other agencies to provide solutions to district issues ▣ Communicate issues of importance that may require advocacy to the community		
How we measure performance		Year 1—3 Target	Year 4—10 Target
	Formal Waimate District Council submissions are made to agencies	≥4 submissions per year	≥4 submission per year

Waimate District Council

Growth Projections

Final

May 2021



rationale > IMPROVING INFRASTRUCTURE OUTCOMES

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Growth Projections

Prepared for:

Waimate District Council

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Glossary

Output Definitions

Term	Definition
Usually Resident Population	The number of people who usually live in an area.
Total Dwellings	Any building structure, or any part of a building structure, that is used or intended to be used for human inhabitation.
Occupied Dwellings	Any dwelling which is usually has people residing in it.
Unoccupied Dwellings	Any dwelling which is usually does not have people have residing in it. These are primarily holiday homes.
Filled Jobs	The total number of jobs that are based in an area. These may be full time or part time jobs.
Rating Units - Total SUIPs	The total number of rating units. This is the sum of the individual rating units below.
Rating Units - Urban SUIPs	The number of rating units who are charged under the Urban rate.
Rating Units - Rural 1 SUIPs	The number of rating units who are charged under the Rural 1 rate.
Rating Units - Rural 2 SUIPs	The number of rating units who are charged under the Rural 2 rate.
Rating Units - Business SUIPs	The number of rating units who are charged under the Business rate.
Average Day Visitor Nights	The mean number of visitors that are within an area overnight, within in a 12-month period.
Peak Day Visitor Nights	The number of visitors that are within an area overnight, on the busiest night within in a 12-month period.
Average Day Visitor Numbers	The mean number of visitors that are within an area at any time in the day, within in a 12-month period.
Peak Day Visitor Numbers	The number of visitors that are within an area at any time in the day, on the busiest night within in a 12-month period.

Other Definitions

Term	Definition
Rating Unit	The unit of liability for rates is the rating unit. It is based on the concept of ownership – where, in particular, 1 certificate of title = 1 rating unit. Valuation rules allow for exceptions and oddities, as not all land in New Zealand has a certificate of title.
SUIP - Separately Used or Inhabited Part	A SUIP is every rating unit and, without limitation, every additional dwelling, commercial or community activity. This includes: a) any part or parts of a rating unit that is used or occupied by the ratepayer for more than one single use. b) any parts, whether or not actually occupied at any particular time, which are used for rental (or other form of occupation) on an occasional or long-term basis. c) vacant land and vacant premises offered or intended for use or habitation and usually used as such are defined as 'used'. For the purposes of clarity, every rating unit has a minimum of one SUIP.

rationale > IMPROVING INFRASTRUCTURE OUTCOMES

Statistical Area 1 (SA1	The main purpose of the SA1 geography is to provide an output geography that allows the release of more low-level data than is available at the meshblock level. Built by joining meshblocks, SA1s have an ideal size range of 100–200 residents, and a maximum population of about 500.
Statistical Area 2 (SA2)	The main purpose of the SA2 geography is to provide an output geography for higher aggregations of population data than can be provided at the SA1 level. The SA2 geography aims to reflect communities that interact together socially and economically. In populated areas, SA2s generally contain similar-sized populations. Statistical areas either define or aggregate to define urban rural areas, territorial authorities, and regional councils.
Peaking Factor	The ratio between peak day visitor numbers and average day visitor numbers
Net Migration	People moving into an area, less the people moving out of an area.

1 Executive Summary

This report presents Waimate District's 2020 growth projections, which seek to understand how Waimate might grow over the next 30 years.

Understanding growth is an extremely important component to consider when planning for the District's future and these growth projections will be used to inform a wide range of key projects, plans and strategies.

Projections through to 2050 are made for the following categories:

- Usually resident population
- Employment
- Dwellings
- Rating units
- Visitors

1.1 Methodology

In the past Waimate District Council (WDC) have used the growth projections prepared by Stats NZ. WDC are now looking for a more in-depth understanding of what their district might look like over the next 30 years. This coupled with the delayed release of the Stats NZ projections, following 2018 Census, has led WDC to commission these growth projections to understand the future growth in their district and provide a single source of the truth for council.

The 2020 projections have been developed using a bottom up approach. Individual growth drivers for each Statistical Area 2 (SA2) have been developed using migration for employment and lifestyle as the basis of the modelling.

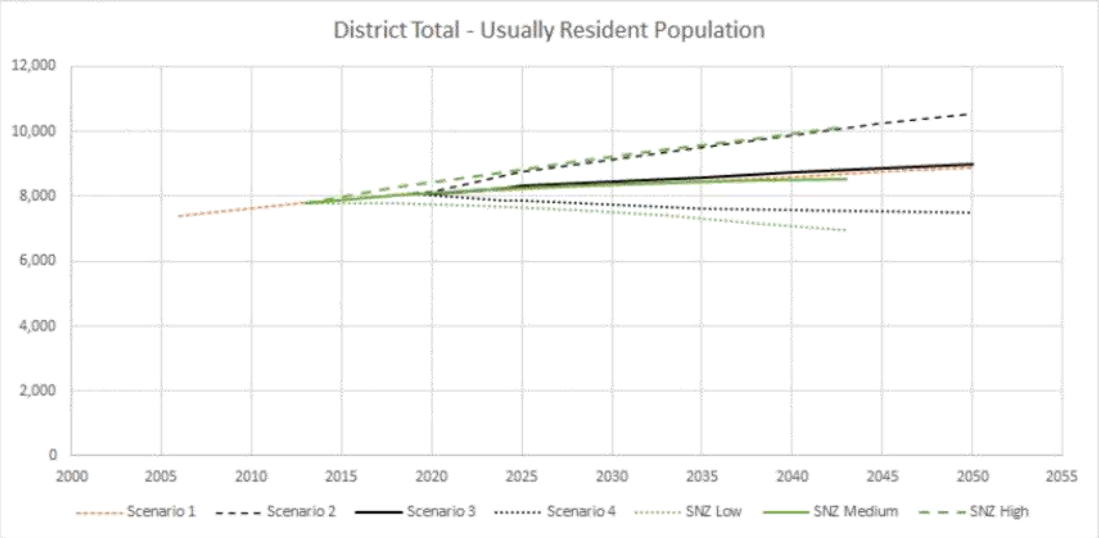


Figure 1. Comparison between 2017 Stats NZ predictions and Rationale's 2020 predictions.

1.2 Growth scenarios

Four growth scenarios have been modelled for each parameter representing different levels of ambition in terms of the district's growth over the next thirty years.

It is recommended that WDC adopt Scenario 3, medium growth.

Table 1. Summary of the four growth scenarios.

	Scenario	Description
Scenario 1	Business as Usual (Pre COVID-19)	Used as a baseline to compare the other three scenarios. It assumes that there has been no impact from COVID-19 and there is no limit on the number of dwellings that can be constructed.
Scenario 2	High	Assumes that COVID-19 has a minimal impact on the district. While there are some job losses, the district recovers to a level above the business as usual scenario. Migration drivers and assumptions are also increased by 20% which means more people will move to Waimate and less people will leave. Investment in the town centre of Waimate is expected to generate an additional 20 long term jobs per year, from 2020 to 2025.
Scenario 3	Medium	Models the expected impact from COVID-19. This assumes that all parameters return to the business as usual prediction by 2025. Investment in the town centre of Waimate is expected to generate an additional 10 long term jobs per year, from 2020 to 2025.
Scenario 4	Low	Models a situation in which COVID-19 has a higher than expected impact on the district, i.e. more job losses, and only recovers to 5% less than the business as usual scenario by 2025. Migration drivers and assumptions are also reduced by 20% which means less people will move to Waimate and more people will leave.

1.3 Waimate District Growth Projection Summary

Table 2. Waimate District growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	7390	7810	8070	8093	8327	8448	8584	8730	8885	9005
Total Dwellings	3519	3714	3912	3931	4034	4096	4170	4254	4346	4424
Occupied Dwellings	3000	3228	3327	3336	3434	3485	3544	3608	3676	3729
Unoccupied Dwellings	501	468	576	594	600	611	625	646	670	694
Number of Jobs	2165	2435	2595	2489	2884	2979	3081	3190	3312	3442
Number of Businesses	1221	1215	1260	1212	1406	1445	1486	1530	1580	1633
Rating Units - Total SUIPs				3822	3917	3977	4045	4121	4202	4274
Rating Units - Urban SUIPs				1756	1804	1832	1865	1902	1944	1979
Rating Units - Rural 1 SUIPs				1700	1735	1761	1790	1821	1853	1883
Rating Units - Rural 2 SUIPs				282	286	289	293	297	301	305
Rating Units - Business SUIPs				84	93	95	98	100	103	107
Total Peak Day Visitor Nights			762	527	829	877	925	973	1020	1068
Total Average Day Visitor Nights			243	168	265	280	295	311	326	341
Total Peak Day Visitor Numbers			1408	979	1531	1617	1704	1791	1878	1964
Total Average Day Visitor Numbers			346	241	377	398	419	441	462	483

Table 3. Waimate District short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	700	54	0.7%	237	40	0.5%	915	30	0.3%
Total Dwellings	408	31	0.8%	107	18	0.4%	496	16	0.4%
Occupied Dwellings	336	26	0.8%	98	16	0.5%	394	13	0.4%
Unoccupied Dwellings	91	7	1.3%	9	1	0.2%	102	3	0.5%
Number of Jobs	450	35	1.5%	269	45	1.6%	827	27	0.9%
Number of Businesses	48	4	0.3%	137	23	1.7%	364	12	0.8%
Rating Units - Total SUIPs				100	17	0.4%	457	15	0.4%
Rating Units - Urban SUIPs				49	8	0.5%	224	7	0.4%
Rating Units - Rural 1 SUIPs				38	6	0.4%	186	6	0.3%
Rating Units - Rural 2 SUIPs				5	1	0.3%	24	1	0.3%
Rating Units - Business SUIPs				9	1	1.6%	23	1	0.8%
Total Peak Day Visitor Nights				58	10	1.2%	297	10	1.1%
Total Average Day Visitor Nights				18	3	1.2%	95	3	1.1%
Total Peak Day Visitor Numbers				105	17	1.2%	538	17	1.0%
Total Average Day Visitor Numbers				26	4	1.2%	133	4	1.0%

1.4 Usually Resident Population

Over the next thirty years, the usually resident population of Waimate District is predicted to increase slightly.

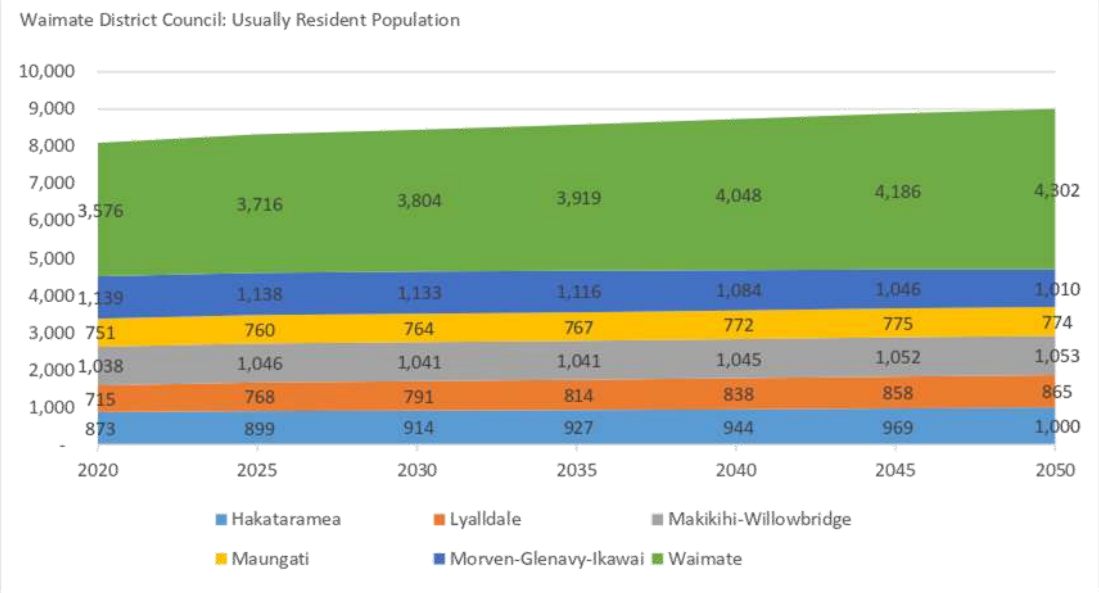


Figure 2. WDC – Usually resident population.

The average age of Waimate District's population is older than the national average of 37.3 years (Stats NZ). Looking across the district Waimate township has a significantly older average age of 48.6 years in

2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement later in life.

Table 4. Average age of District Population.

	2020	2030	2040	2050
District Wide	43.8	43.4	43.3	43.5

1.5 Employment

Whilst it is likely that WDC will experience a short-term reduction in the number of jobs, it is predicted that come 2025 the economy and number of jobs will have normalised and be on the increase once again.

Whilst COVID-19 has some impact on employment in the district, as seen in the figure below, it is expected that those who lose their jobs will not move away. Typically, the most mobile and reactive portion of the population are those in their early working years, who do not have the necessary finances to "stick out" unemployment, or strong ties (family, property ownership etc) to the area. Waimate District has a relatively small proportion of the population in this age group, between 20 and 35. Therefore, modelling has assumed that if residents become unemployed, they will find work elsewhere and commute or remain unemployed in the area.

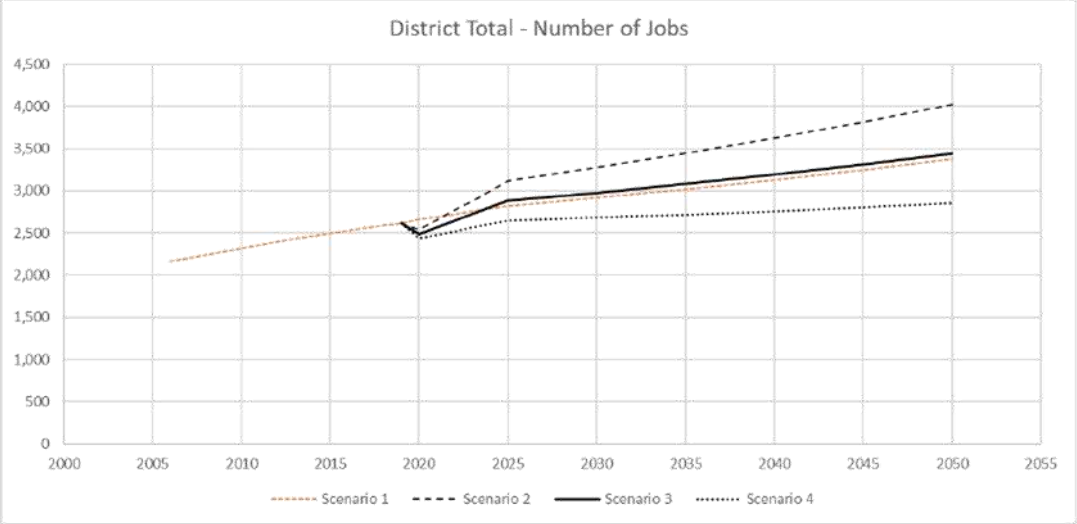


Figure 3. WDC's employment predictions in the next thirty years.

1.6 Dwellings

Waimate will continue to have a high percentage of occupied dwellings into the future. However, as the population reduces in some areas there may be an increase in the number of unoccupied dwellings.

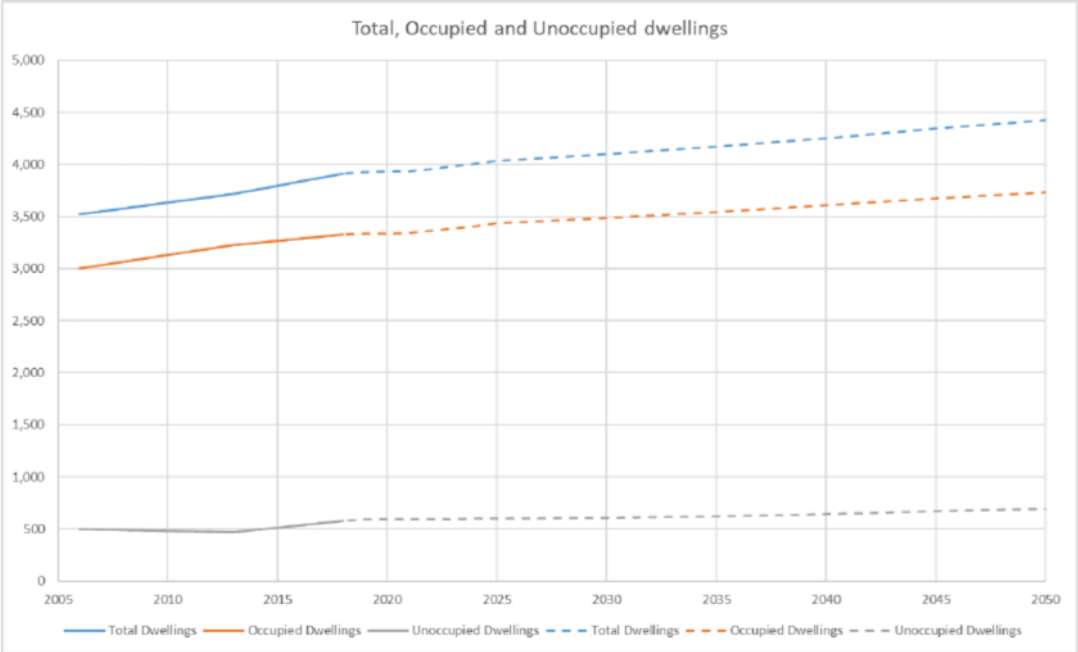


Figure 4. WDC – Dwellings.

1.7 Visitors

Whilst there is a short-term impact created by COVID-19, it is projected that the peak visitor nights will increase into the future.

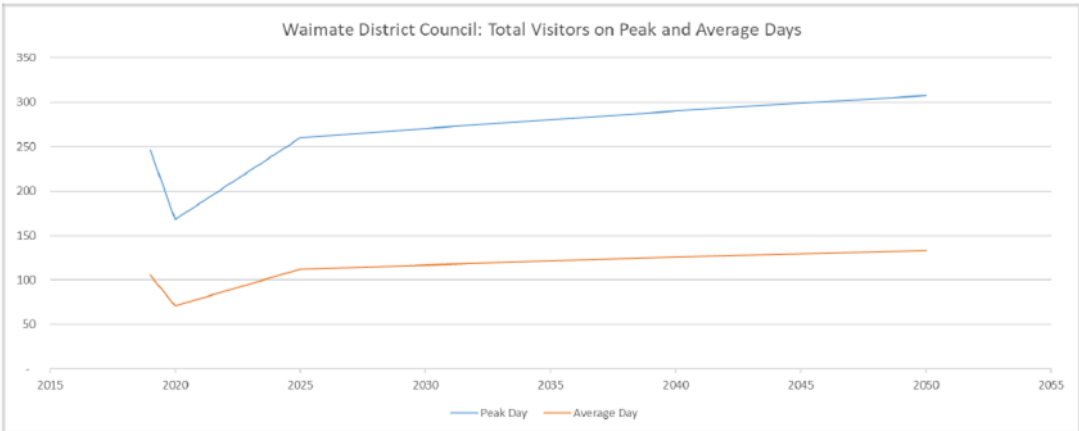


Figure 5. WDC – peak day vs. average day visitors.

1.8 Rating Units

The total number of rating units is predicted to continue to increase. Several assumptions have been made regarding future projections of Rating Units these are discussed in Section 5.

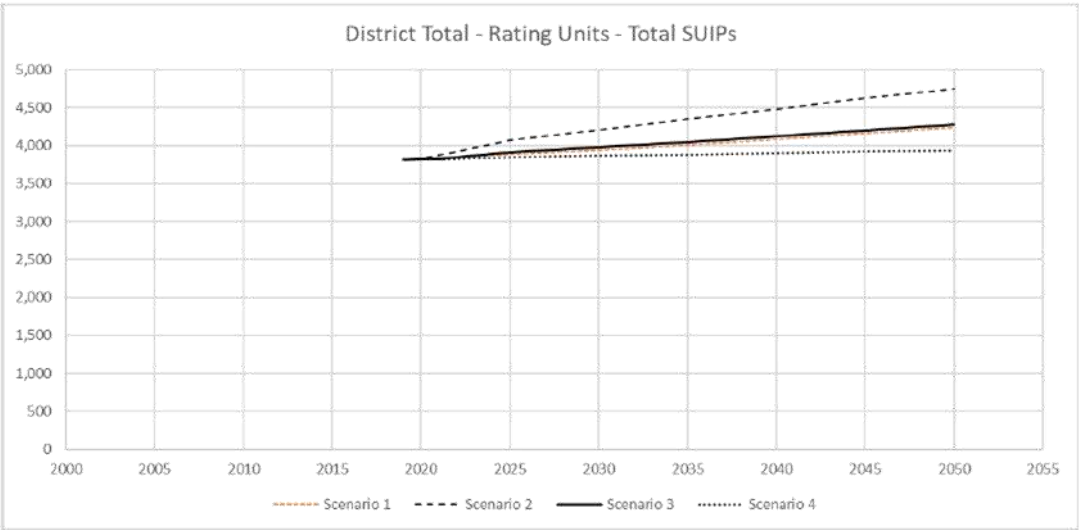


Figure 6. WDC- Rating Units – Total Separately used or inhabited part of a rating unit (SUIPs).

1.9 Recommendations

It is recommended that WDC adopt Scenario 3 as the expected level of growth in the next thirty years and use this information to inform key projects, plans and strategies.

Scenario 3 is recommended as there will be short term effects due to COVID-19. However, it is not yet known what, if any, long term effects there will be.

Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be re-projected, if necessary.

Since this growth projections model was developed it has become apparent that a bubble between New Zealand and Australia will not be forming in 2020. To offer best value for money to WDC, and due to the minimal impact on the final projections, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening.

2 Purpose

How much growth is going to occur in the Waimate District over the next 30 years?
Where is it going to occur? And what are its likely drivers?

Understanding how the Waimate District may grow over the next 30 years, in terms of population, number of dwellings, visitors and rating units is an extremely important component of the District's future planning.

This summary report and accompanying model explains the methodology used to calculate the predicted growth, including the data used and assumptions that have been made, and presents a number of outputs which can be used to inform a range of key projects, plans and strategies, including:

- District Plan Review
- Spatial planning
- Infrastructure Strategy
- Asset Management Plans
- District Plan changes
- Tourism Strategy

- Long Term Plan

3 Context

In the past Waimate District Council (WDC) have used the growth projections prepared by Stats NZ. WDC are now looking to have a more in-depth understanding of what their district might look like over the next 30 years. This coupled with the delayed release of the Stats NZ projections, following the 2018 Census, has led WDC to commission these growth projections to understand the future growth in their district.

Overall, the 2020 projections are slightly more optimistic than the 2013 Stats NZ projections, particularly for the long-term trends (2025 – 2050).

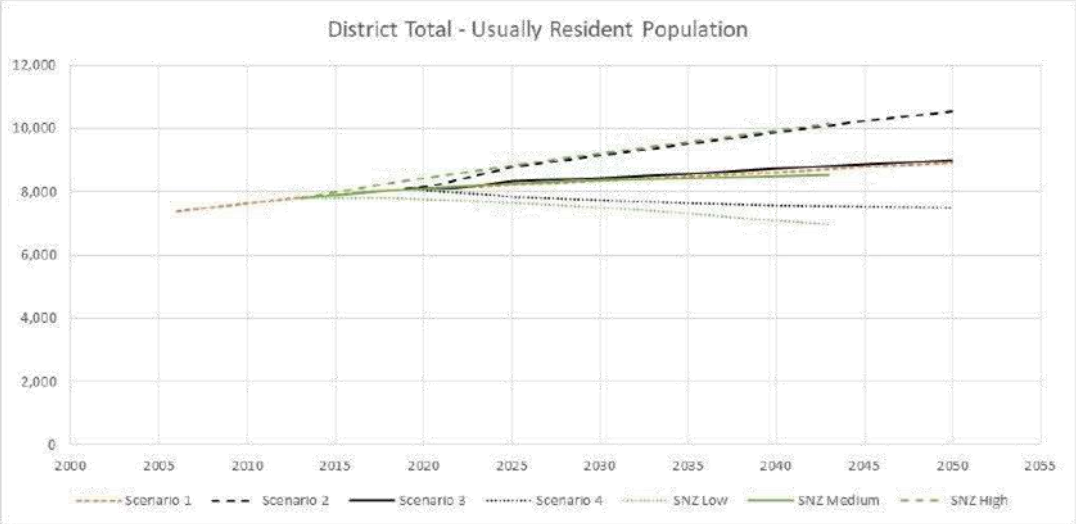


Figure 7. Comparison between Stats NZ 2013 projections and Rationale's 2020 projections.

3.1 Stats NZ

The release of data from the 2018 Census has been significantly delayed. High level insights were first released in September 2019, approximately one year later than expected. At the time of writing, July 2020, the Stats NZ growth projections had not been released, and are not expected until late 2020 or even 2021.

3.2 COVID-19

The COVID-19 pandemic and lockdown occurred in New Zealand concurrently with work on this project. The pandemic has had significant and lasting social and economic effects on New Zealand which will have some impact on the future growth in Waimate. The significance of this impact is discussed throughout the document.

4 Scope

The growth projections are built up based on areas in WDC. Different areas have different outputs depending on size. This is described and illustrated below.

Table 5. Areas of focus.

District	Statistical Area 2	Statistical Area 1
Waimate District Council	Hakataramea	
	Lyalldale	St Andrews
	Makikihi-Willowbridge	
	Maungati	
	Morven-Gelnavy-Ikawai	Glenavy
	Waimate – East, West and North	

Table 6. Modelling outputs by geographical area.

	Output	District	Statistical Area 2	Statistical Area 1
Population	Usually Resident Population	✓	✓	✓
Dwellings	Total Dwellings	✓	✓	✓
	Occupied Dwellings	✓	✓	✓
	Unoccupied Dwellings	✓	✓	✓
Employment	Filled Jobs	✓	✓	
Rating Units	Total SUIPs	✓		
	Urban SUIPs	✓		
	Rural 1 SUIPs	✓		
	Rural 2 SUIPs	✓		
	Business SUIPs	✓		
Visitors	Average Day Visitor Nights	✓	✓	
	Peak Day Visitor Nights	✓	✓	
	Average Day Visitor Numbers	✓	✓	
	Peak Day Visitor Numbers	✓	✓	

4.1 Statistical Area 2 Boundaries



Figure 8. Statistical Area 2 boundaries.



Figure 9. Rural Townships.

5 Methodology

These growth projections have been developed using a bottom up approach. Individual growth drivers were used for each Statistical Area 2 (SA2). These were then summed to understand the growth across the District.

The following figure described the process, at a high level, which was taken to develop the projections herein. A detailed diagram depicted the methodology has been appended.

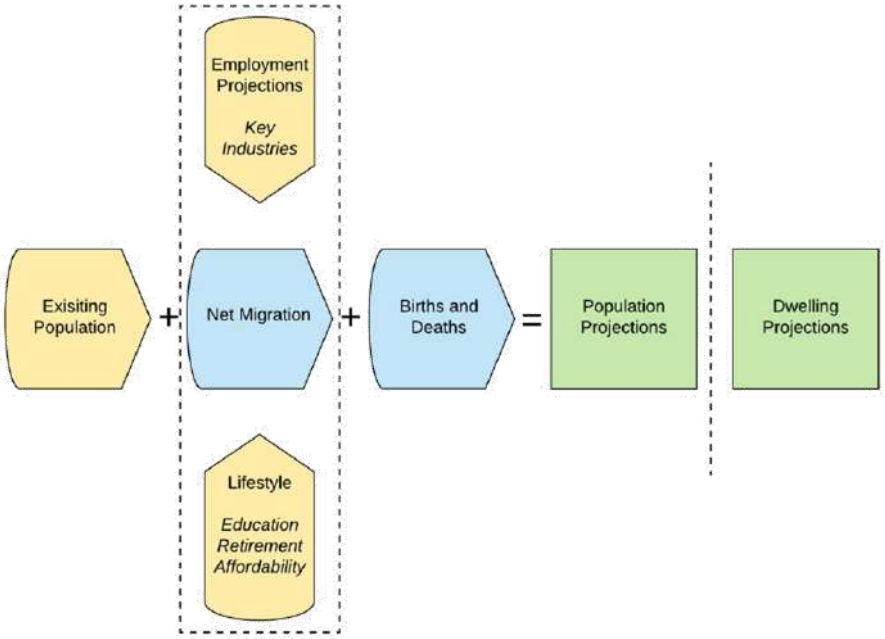


Figure 10. Growth Projections methodology – simplified.

5.1 Net Migration

The migration model has been derived from observed trends in people moving to or from the area. It has been assumed that people move to/away from the area for one of two reasons, either employment or lifestyle.

The predictions have then been corelated against the observed migration trends between 2013 and 2018.

5.1.1 EMPLOYMENT

Historic employment records were analysed and used to understand the key industries in each area and how these have changed and evolved since 2000.

To predict future growth in jobs, an annual growth rate was calculated using an average of the growth in each of the key industries over the past three years through to 2025, and the past ten years to 2050. The exception to this rule was agriculture where the MBIE forecast NZ Wide Annual Growth to 2028 of 0.3% growth has been applied. This is due to various instabilities in the sector.

The growth rate derived from this process has been applied to the number of jobs in the previous year.

In each area a percentage of migration was accounted for based on people moving in to fill new jobs or leaving as the number of jobs decreased. There was also allowance, in some areas, for dependents. These assumptions are detailed within the appendices for each area of focus.

5.1.2 LIFESTYLE

Migration for other reasons such as lifestyle, access to better care, education and career opportunities was accounted for based on the population's past propensity to move in or out for these reasons.

5.2 Births and deaths

Population was calculated as the previous year's population plus migration (for any reason) which was then overlaid by StatsNZ Births and Deaths data.

5.3 Dwellings

The number of occupied dwellings were projected by:

1. Taking the number of people per occupied household from the 2018 census
2. Occupied dwelling = usually resident population / people per occupied household

The total number of dwellings were projected by:

1. Using the ratio of total dwellings to occupied dwellings from 2018 census
2. Future total dwellings = Future occupied dwellings multiplied by the ratio (total dwellings to occupied dwellings)

Note:

- The total number of dwellings is not allowed to decrease year to year in the model, i.e. the model assumes that if a house/building is demolished it is replaced.
    - If population growth is negative, then the total number of dwellings is taken from the year before, i.e. the number of dwellings remain constant.
- Unoccupied Dwellings = total dwellings – occupied dwellings
- If the population (and occupied dwellings) decreases, unoccupied dwellings increase to make up the shortfall to keep total dwellings constant.

5.4 Visitor Projections

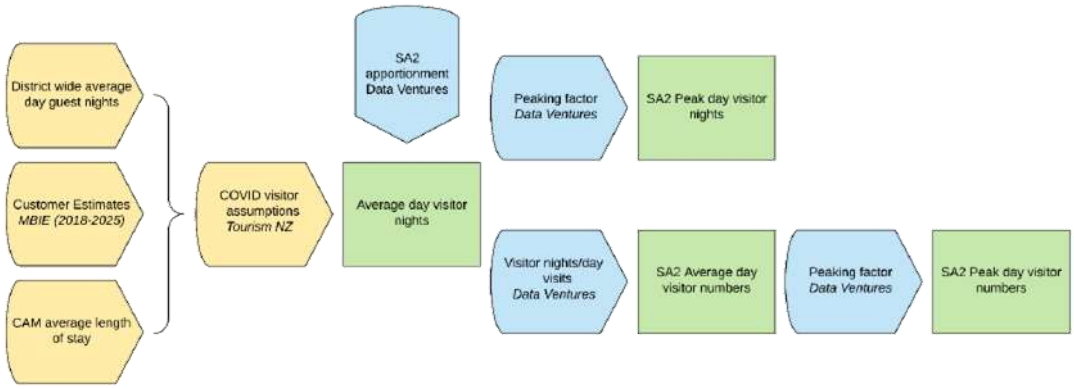


Figure 11. Visitor projections methodology.

The visitor projections methodology was calculated using the following steps which are illustrated below

1. The projections were based on the MBIE Customer forecasts (2018 – 2025).
2. The Commercial Accommodation Monitor (Stats NZ) average length of stay was used to calculate the average yearly visitor nights
3. Data from Data Ventures was used to apportion average visitor nights to the individual SA2s. This was used to calculate the average day visitor nights.
4. The Data Ventures data was also used to calculate the peaking factors (maximum visitor population/average visitor population)
5. The calculated peaking factors were applied to the average visitor nights to get peak day visitor nights

6. The Data Ventures data was used to calculate the day visitor to overnight visitor ratio (average visitor population/average 3am visitor population), to understand how many people were day-visitors.
7. This ratio was applied to the average day visitor nights and peak day visitor nights to calculate average and peak day visitor numbers.

5.5 Rateable Units

The Waimate rates database categorises land use using two measures:

- Type - Urban, Rural 1, Rural 2, Business
- Valuation New Zealand's Category Codes (VNZ Category)

The future projections for the number of rateable units in the Waimate District were calculated by assuming an appropriate level of growth for each VNZ Category, as shown below, then combining these to understand the growth of each Rating Unit per type to understand overall growth across the district.

It has been assumed that the number of rating units does not decrease.

Table 7. Source of assumed growth for each Valuation New Zealand Category Code.

Top Level VNZ Category	Modelled Growth
Arable	MBIE 2018 - 2028 agriculture growth forecast (0.3% pa)
Commercial	Job projections
Dairying	MBIE 2018 - 2028 agriculture growth forecast (0.3% pa)
Horticulture	MBIE 2018 - 2028 agriculture growth forecast (0.3% pa)
Industrial	Job projections
Lifestyle	Dwelling projections
Other	Assume no growth
Pastoral	MBIE 2018 - 2028 agriculture growth forecast (0.3% pa)
Residential	Dwelling projections
Specialist	Assume no growth

5.6 Data sources

Data was utilised from three key sources:

- Statistics New Zealand
- Data Ventures (commercial arm of Stats NZ)
- MBIE Tourism and Accommodation Data Sets

6 Scenarios

Four scenarios have been modelled each with their own assumptions and level of growth as described below. In all scenarios, it has been assumed that people will remain in the area if they lose their job due to COVID-19 due to comparable affordability.

6.1 Scenario 1: Business as Usual (Pre COVID-19)

The business as usual scenario is used as a baseline to compare the other three scenarios. It assumes that there has been no impact from COVID-19.

The employment and lifestyle assumptions are detailed below in the section 7.

6.2 Scenario 2: High

Scenario 2 assumes that COVID-19 has a minimal impact on the district. While there are some job losses, it expects that the district will recover to a level above the business as usual scenario. The employment and lifestyle assumptions are detailed below in the section 7.

Migration drivers and assumptions are also increased by 20% which means more people will move to WDC and less people will leave.

6.3 Scenario 3: Medium

Scenario 3, the medium prediction, models the expected impact from COVID-19. This assumes that all parameters will come back to the business as usual prediction by 2025. The employment and lifestyle assumptions are detailed below in the section 7.

Scenario three uses the business as usual migration drivers and assumptions.

6.4 Scenario 4: Low

Scenario 4, the low prediction, models a situation in which COVID-19 has a higher than expected impact on the district (such as more job losses) and recovers to a level less than the business as usual scenario by 2025. The employment and lifestyle assumptions are detailed below in the section 7.

Migration drivers and assumptions are also reduced by 20% which means less people will move to WDC and more people will leave.

7 District Assumptions and Outputs

7.1 Waimate District Growth Projections Summary

Table 8. Waimate District growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	7390	7810	8070	8093	8327	8448	8584	8730	8885	9005
Total Dwellings	3519	3714	3912	3931	4034	4096	4170	4254	4346	4424
Occupied Dwellings	3000	3228	3327	3336	3434	3485	3544	3608	3676	3729
Unoccupied Dwellings	501	468	576	594	600	611	625	646	670	694
Number of Jobs	2165	2435	2595	2489	2884	2979	3081	3190	3312	3442
Number of Businesses	1221	1215	1260	1212	1406	1445	1486	1530	1580	1633
Rating Units - Total SUIPs				3822	3917	3977	4045	4121	4202	4274
Rating Units - Urban SUIPs				1756	1804	1832	1865	1902	1944	1979
Rating Units - Rural 1 SUIPs				1700	1735	1761	1790	1821	1853	1883
Rating Units - Rural 2 SUIPs				282	286	289	293	297	301	305
Rating Units - Business SUIPs				84	93	95	98	100	103	107
Total Peak Day Visitor Nights			762	527	829	877	925	973	1020	1068
Total Average Day Visitor Nights			243	168	265	280	295	311	326	341
Total Peak Day Visitor Numbers			1408	979	1531	1617	1704	1791	1878	1964
Total Average Day Visitor Numbers			346	241	377	398	419	441	462	483

Table 9. Waimate District short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	700	54	0.7%	237	40	0.5%	915	30	0.3%
Total Dwellings	408	31	0.8%	107	18	0.4%	496	16	0.4%

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
Occupied Dwellings	336	26	0.8%	98	16	0.5%	394	13	0.4%
Unoccupied Dwellings	91	7	1.3%	9	1	0.2%	102	3	0.5%
Number of Jobs	450	35	1.5%	269	45	1.6%	827	27	0.9%
Number of Businesses	48	4	0.3%	137	23	1.7%	364	12	0.8%
Rating Units - Total SUIPs				100	17	0.4%	457	15	0.4%
Rating Units - Urban SUIPs				49	8	0.5%	224	7	0.4%
Rating Units - Rural 1 SUIPs				38	6	0.4%	186	6	0.3%
Rating Units - Rural 2 SUIPs				5	1	0.3%	24	1	0.3%
Rating Units - Business SUIPs				9	1	1.6%	23	1	0.8%
Total Peak Day Visitor Nights				58	10	1.2%	297	10	1.1%
Total Average Day Visitor Nights				18	3	1.2%	95	3	1.1%
Total Peak Day Visitor Numbers				105	17	1.2%	538	17	1.0%
Total Average Day Visitor Numbers				26	4	1.2%	133	4	1.0%

7.2 Employment Projections

7.2.1 KEY INDUSTRIES AND TRENDS

The top five industries employ 73% of those working within the district.

The growth model assumes the last three years average growth rate will continue through to 2025 and then the last ten years average growth rate through to 2050 except for agriculture, due to the instabilities in the industry the MBIE forecast NZ Wide Annual Growth to 2028 of 0.3% growth has been applied.

Table 10. Top five industries in WDC.

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate -last 3 years	Average Annual Growth Rate -last 10 years
Agriculture, Forestry and Fishing	1071	41%	-1%	1%
Manufacturing	360	14%	19%	7%
Education and Training	169	6%	1%	1%
Retail Trade	157	6%	1%	3%
Construction	157	6%	-2%	2%

7.2.2 COVID-19

Employment growth has been modelled using the below assumptions to consider various levels of impact and how quickly and strong the recovery is from COVID-19. These have been assumed to be constant across all areas in WDC.

Table 11. Employment assumptions.

Scenario	Description	Assumptions
Scenario 1	BAU (Pre COVID-19)	
Scenario 2	High	1. Reduced by 80% of the number of job losses forecasted in the district in 2020, in scenario 3. 2. Recovers to 110% of BAU forecasted jobs in 2025 and remains at this level.
Scenario 3	Medium	1. Reduced to the number of forecast jobs calculated via predicted job losses in the district.

Scenario	Description	Assumptions
		2. Recovers to 100% of BAU forecasted jobs in 2025 and remains at this level
Scenario 4	Low	1. Reduced by 120% of the number of job losses forecasted in the district in 2020, in scenario 3. 2. Recovers to 90% of BAU forecasted jobs in 2025 and remains at this level

7.2.3 OUTPUT

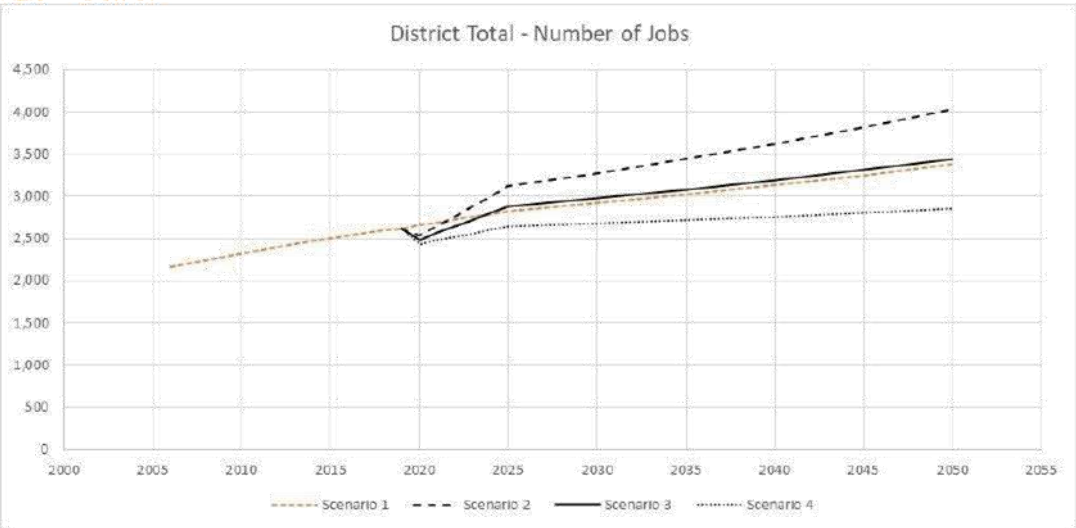


Figure 12. Number of Jobs.

7.3 Population Projections

7.3.1 KEY MIGRATION DRIVERS

The key characteristics of Waimate District's population are:

- Younger people leave the area for education and employment opportunities.
- People later in their working lives or early retirement are moving to the area for the lifestyle, affordability and/or retirement.
- Older people (over 70) are moving from the rural areas of the district to Waimate or leaving the area, likely in search of better healthcare or to be closer to family.

The key migration drivers for each area are discussed in detail in the appendices.

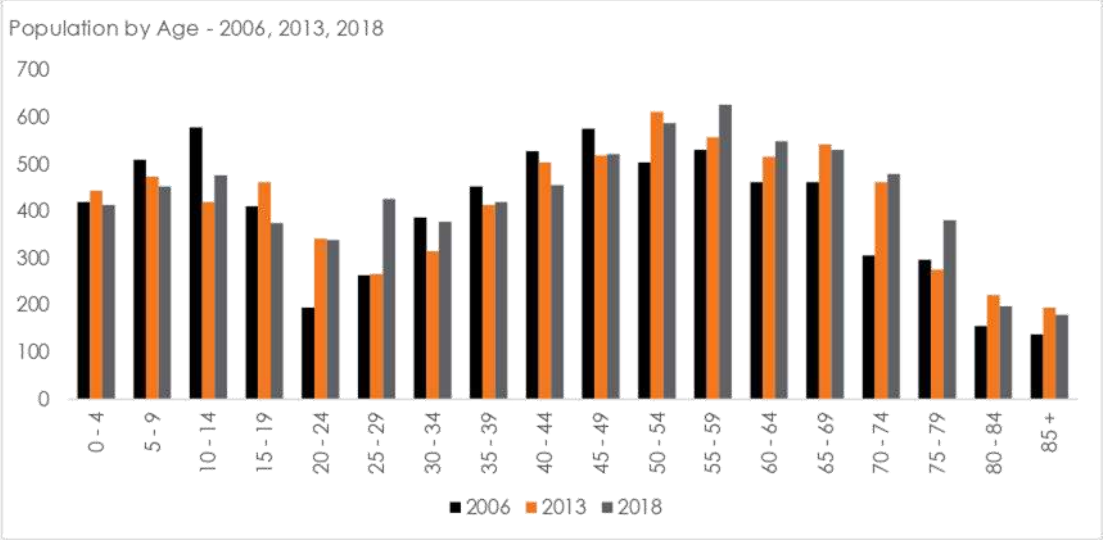


Figure 13. Waimate District's population by Age – 2006, 2013, 2018. Source: NZ Stats.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that has been occurring. This ensures that the model is accurate and reliable. Net migration is equal to inbound migration minus outbound migration.

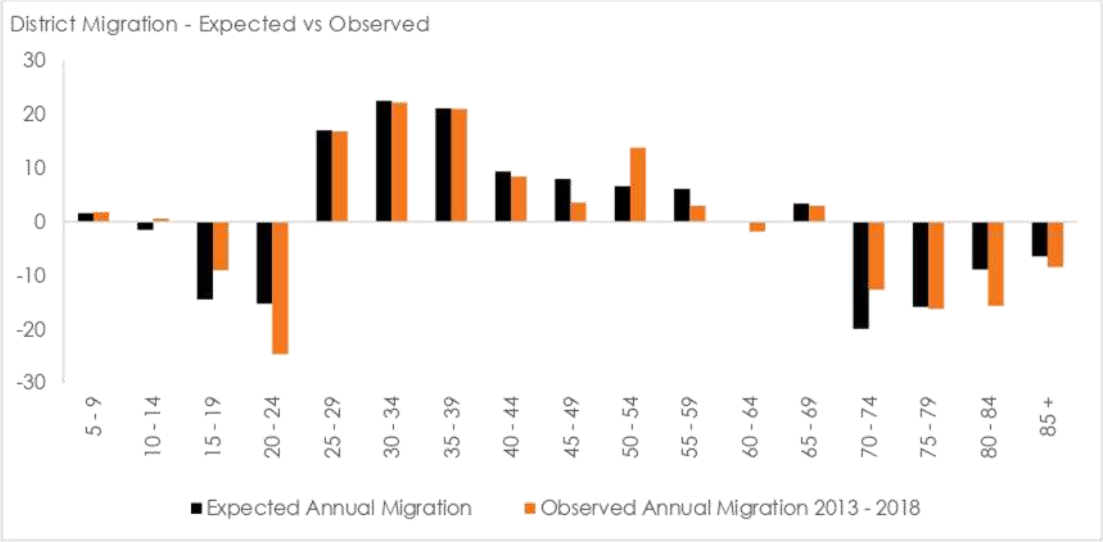


Figure 14. Net migration check.

7.3.2 COVID-19

As seen above, whilst COVID-19 has some impact on employment in the district, it is not expected that those who lose their jobs will move away. Typically, the most mobile and reactive portion of the population are those in their early working years, who don't have the necessary finances to "stick out" unemployment, or strong ties (family, property ownership etc) to the area. Waimate District has a relatively small proportion of the population in this age group, between 20 and 35. Therefore, modelling has assumed that if residents become unemployed, they find work elsewhere and commute or remain unemployed in the area.

7.3.3 OUTPUT

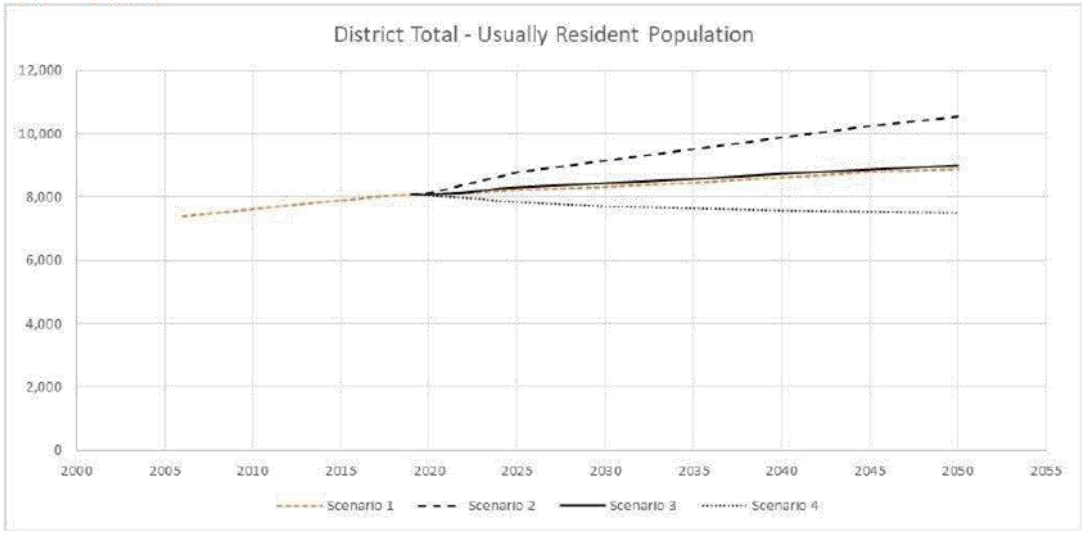


Figure 15. Usually resident population in WDC.

The average age of Waimate District's population is older than the national average of 37.3 years (Stats NZ). Looking across the district Waimate township has a significantly older average age of 48.6 years in 2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement.

Table 12. Average age of District Population.

	2020	2030	2040	2050
District Wide	43.8	43.4	43.3	43.5
Hakataramea	40.3	40.3	39.7	40.0
Lyalldale	41.7	43.9	44.8	45.5
Makikihi-Willowbridge	43.0	43.0	42.9	43.0
Maungati	36.8	39.0	40.4	41.5
Morven-Glenavy-Ikawai	37.8	39.8	40.6	41.4
Waimate	48.6	46.2	45.2	45.0

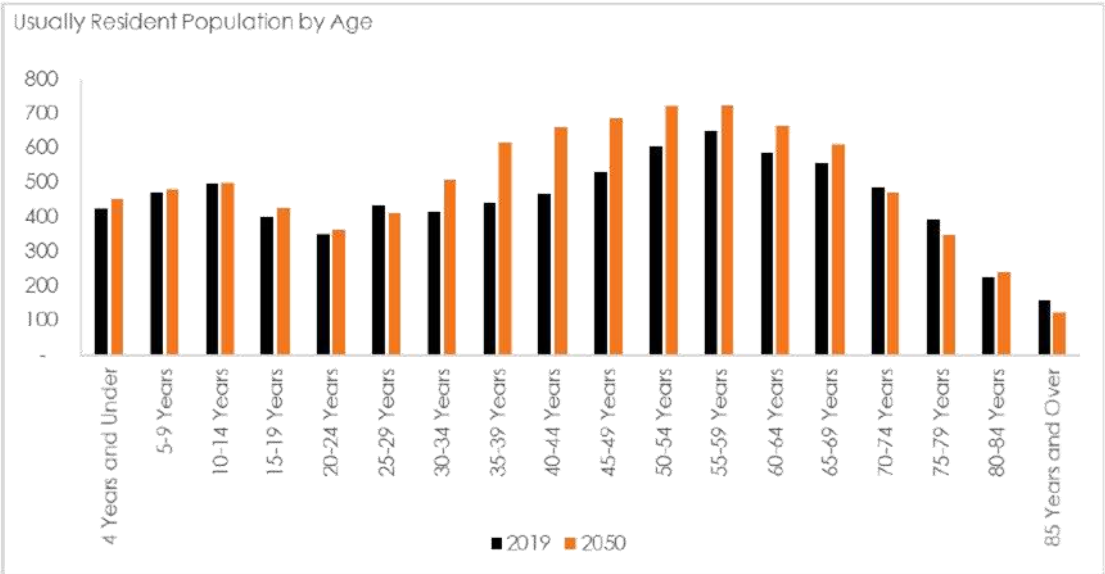


Figure 16. Age distribution of Waimate District's population in 2050.

7.4 Dwelling Projections

7.4.1 ASSUMPTIONS

It has been assumed that the number of dwellings does not decrease if population growth is negative, i.e. there will be an increase I the number of unoccupied homes if the population decreases.

7.4.2 OUTPUT

In Scenario 4 the number of unoccupied homes increases as the number of occupied dwellings decreases, this is in line with the decrease of the usually resident population.

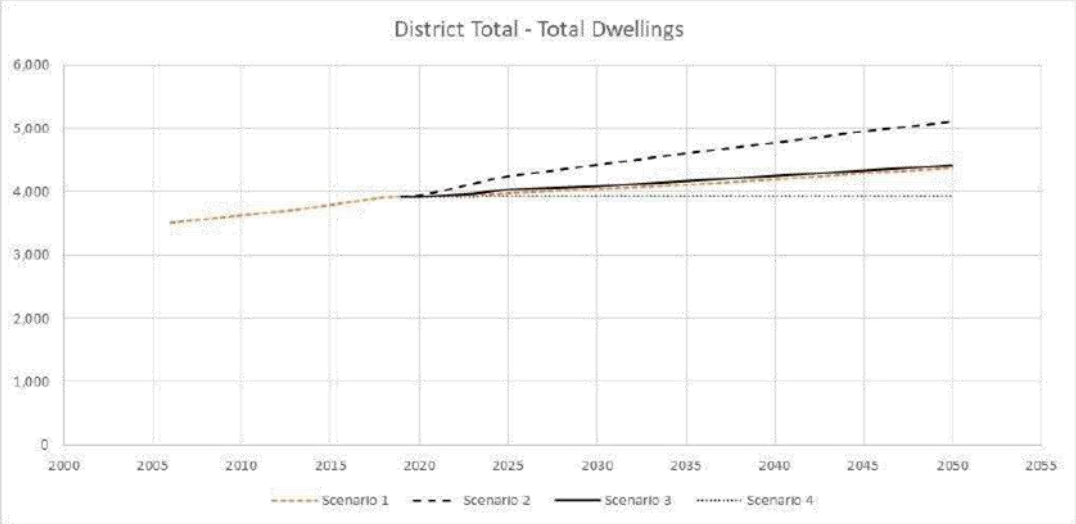


Figure 17. Total dwellings in WDC.

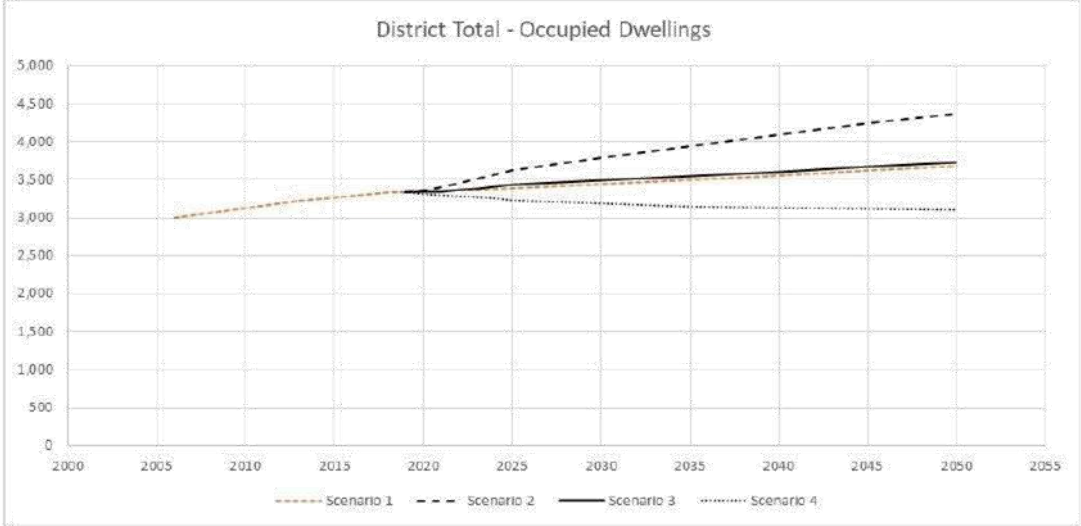


Figure 18. Occupied dwellings in WDC.

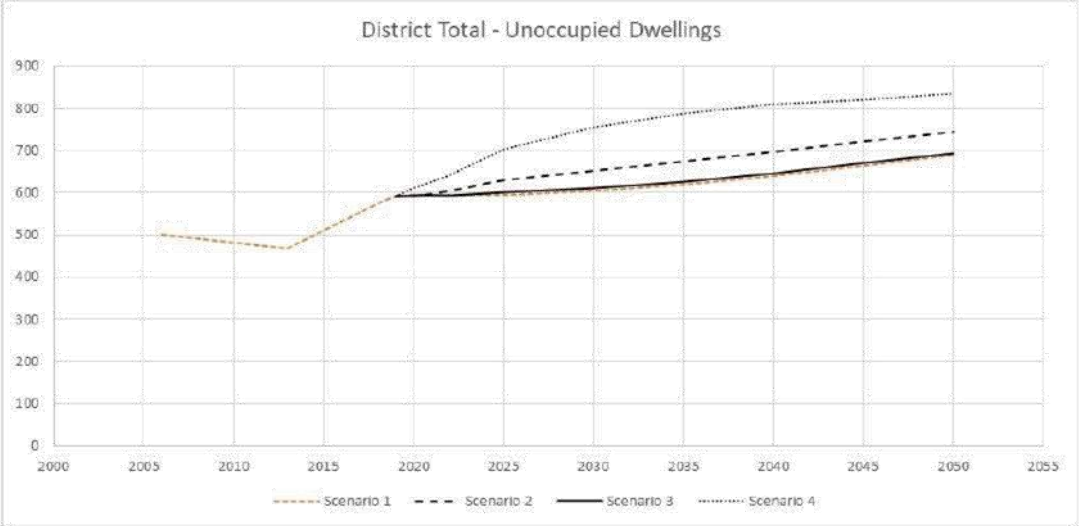


Figure 19. Unoccupied dwellings in WDC.

7.5 Visitor Projections

7.5.1 ASSUMPTIONS

In the wake of the COVID-19, New Zealand went into a domestic lockdown for six weeks and have closed borders indefinitely to non-residents. This has had a severe effect on tourism. Since the lockdown has lifted New Zealanders have reinvigorated the domestic tourism market. The following assumptions have been applied to understand how many people will visit WDC in the future.

These assumptions have been developed from Tourism New Zealand Scenario Models, April-May 2020. These scenarios have been updated to reflect the latest COVID-19 alert level restrictions, as at July 2019.

Since this growth projections model and the Tourism New Zealand Scenarios were developed it has become apparent that Scenario 2 is unrealistic as States within Australia go back into a COVID-19 Lockdown. However, to offer best value for money to WDC, and due to the minimal impact on the final

figures, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening.

Table 13. Visitor projection assumptions.

Scenario	Description	2025	2050
Scenario 1 - BAU (Pre COVID-19)	1. Assume that growth continues at that of 2020 - 2025	100%	100%
Scenario 2 - High	1. Level 1 in June 2020, domestic travel is allowed 2. Aus/NZ bubble opens in Sept 2020 3. NZ to rest of world opens in April 2021	102%	110%
Scenario 3 - Medium	1. Level 1 in June 2020, domestic travel is allowed 2. Aus/NZ bubble opens in Feb 2021 3. NZ to rest of world opens in April 2021	100%	100%
Scenario 4 - Low	1. Level 1 in June 2020, domestic travel is allowed 2. Aus/NZ bubble opens in April 2021 3. NZ to rest of world opens in Jan 2022	98%	90%

The percentages describe the amount of growth, or lack thereof, compared to Scenario 1 i.e. for Scenario 2 there is 2.5% more visitors in 2025 and 10% more visitors in 2050 than in Scenario 2.

7.5.2 OUTPUT

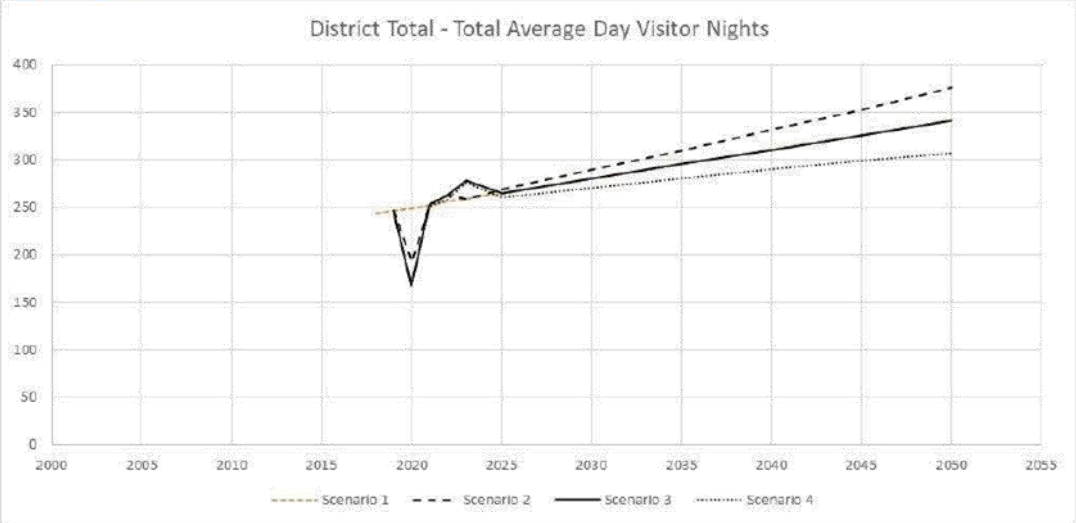


Figure 20. Average visitor nights in WDC.

7.6 Rating Units

7.6.1 ASSUMPTIONS

No assumptions have been made regarding projecting the rating units, refer to Section 5 for the methodology that has been used to calculate the projections.

7.6.2 OUTPUT

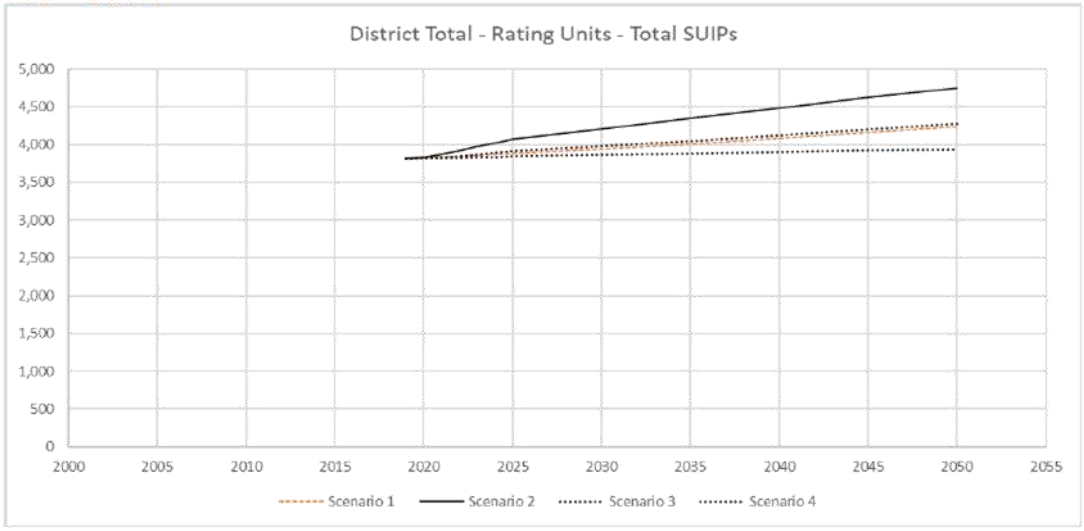


Figure 21. Rating units for WDC – Total Separately used or inhabited part of a rating unit.

8 Recommendation

It is recommended that WDC adopt Scenario 3 as the expected level of growth in the next thirty years and use this information to inform key projects, plans and strategies.

Scenario 3 is recommended as there will be short term effects due to COVID-19. However, it is not yet known what, if any, long term effects there will be.

Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be re-projected, if necessary.

Since this growth projections model was developed it has become apparent that a bubble between New Zealand and Australia will not be forming in 2020. To offer best value for money to WDC, and due to the minimal impact on the final projections, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening.

9 Addendum – Stats NZ Update

Stats NZ released their growth projections on March 31, 2021 significantly later than expected. The Stats NZ medium growth scenario is comparable to Rationale's Scenario 3, as shown below.

Note: The Rationale projections were produced prior to the release of the Stats NZ projections and were produced 100% independently.

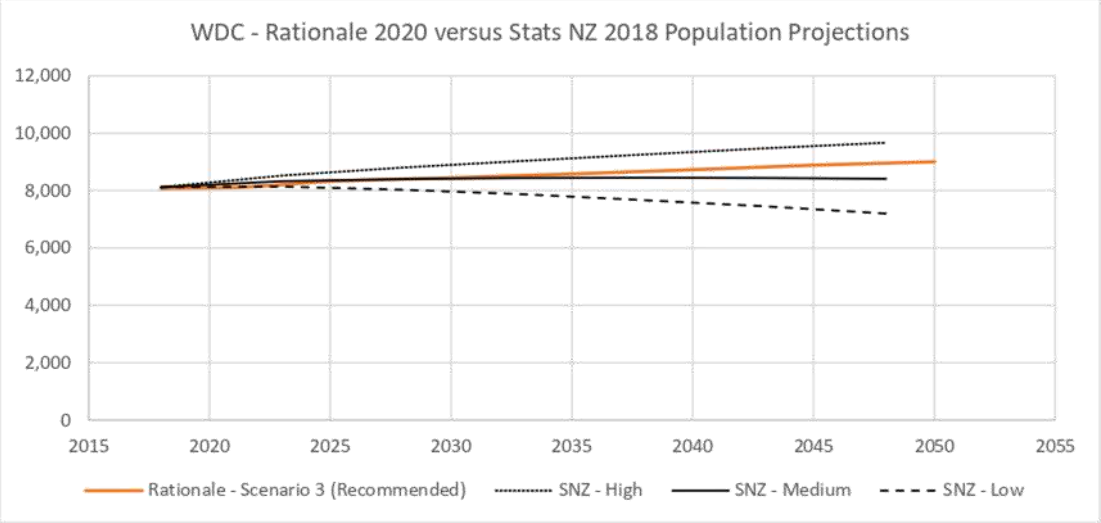


Figure 22. Waimate Growth Projections, comparison between Rationale 2020 and Stats NZ 2018 (released March 2021) projections.

Table 14. Summary of Projected Population.

	2018	2025	2030	2040	2050
Rationale - Scenario 3	8,070	8,327	8,448	8,730	9,005
SNZ - Medium	8,120	8,358	8,416	8,446	8,398
Difference	50	31	-32	-284	-607
Difference %	1%	0%	0%	-3%	-7%

Table 15. Summary of Population Growth.

	Short Term 2018 - 2030		Long Term 2018 - 2050	
	New People	Annual Growth %	New People	Annual Growth %
Rationale - Scenario 3	378	0.4%	935	0.3%
SNZ - Medium	296	0.3%	278	0.1%
Difference	-82	-0.1%	-657	-0.2%

10 Appendix A: Hakataramea

Hakataramea is a large rural area that is sparsely populated within the Waimate District. Whilst there has been growth in some industries the actual number of jobs is still very small.



Figure 23. SA2 boundaries of Waimate District.

10.1 Hakataramea Growth Projections Summary

Table 16. Hakataramea growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	750	790	860	873	899	914	927	944	969	1000
Total Dwellings	393	387	429	436	448	456	463	471	483	499
Occupied Dwellings	297	318	333	338	348	354	359	365	375	387
Unoccupied Dwellings	93	66	96	97	100	102	104	105	108	112
Number of Jobs	220	240	180	182	215	223	232	241	250	259
Number of Businesses	213	213	231	227	268	278	289	300	312	323
Total Peak Day Visitor Nights			310	217	337	356	374	393	412	431
Total Average Day Visitor Nights			65	46	71	75	79	83	87	91
Total Peak Day Visitor Numbers			390	273	424	447	471	494	518	541
Total Average Day Visitor Numbers			80	56	87	92	97	102	107	111

Table 17. Hakataramea short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	120	9	1.1%	29	5	0.5%	130	4	0.5%
Total Dwellings	41	3	0.8%	14	2	0.5%	65	2	0.5%
Occupied Dwellings	*40*	*3*	*1.0%*	*11*	*2*	*0.5%*	*50*	*2*	*0.5%*
Unoccupied Dwellings	*4*	*0*	*0.3%*	*3*	*1*	*0.5%*	*15*	*0*	*0.5%*
Number of Jobs	-30	-2	-1.1%	25	4	2.1%	69	2	1.0%
Number of Businesses	24	2	0.8%	31	5	2.1%	86	3	1.0%
Total Peak Day Visitor Nights				23	4	1.2%	117	4	1.0%
Total Average Day Visitor Nights				5	1	1.2%	25	1	1.0%
Total Peak Day Visitor Numbers				28	5	1.2%	146	5	1.0%
Total Average Day Visitor Numbers				6	1	1.2%	30	1	1.0%

10.2 Employment Projections

10.2.1 KEY INDUSTRIES AND TRENDS

The Hakataramea is a large farming area, which is reflected in the number and types of jobs available in the area. There has been minimal growth in the area in recent times.

Table 18. Top five industries in Hakataramea.

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Agriculture, Forestry and Fishing	140	73%	-8%	-3%
Arts and Recreation Services	15	8%	8%	3%
Construction	6	3%	33%	-
Education and Training	6	3%	33%	20%
Rental, Hiring and Real Estate Services	3	2%	-11%	-

10.2.2 OUTPUT

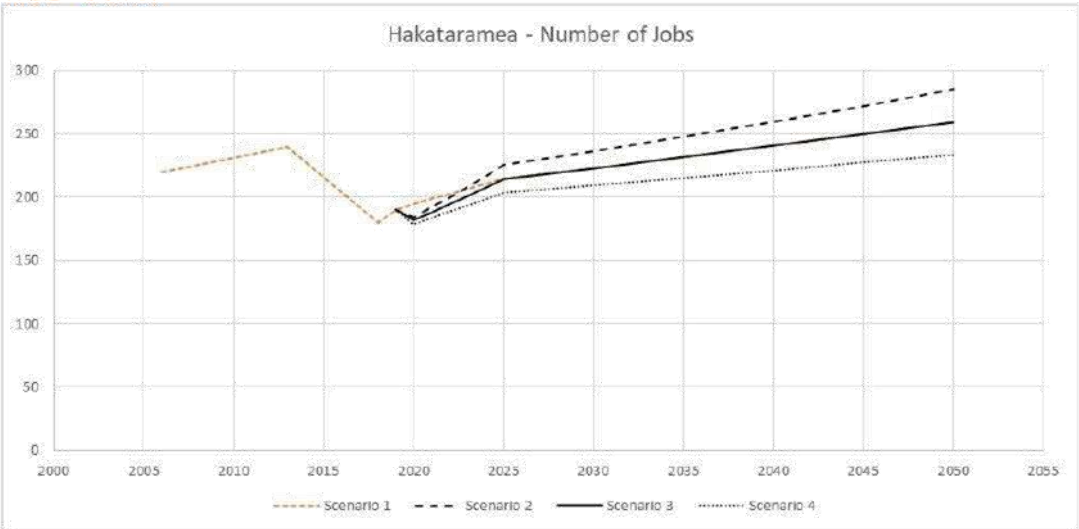


Figure 24. Number of jobs in Hakataramea.

10.3 Population Projections

10.3.1 KEY MIGRATION DRIVERS

- Young people leave the area for other opportunities such as education and employment.
- Families are moving to the area and commuting away for work.
- Later in life people tend to move away from the area for retirement and access to greater support and healthcare.

These trends are reflected below through the population by age and net migration figures.

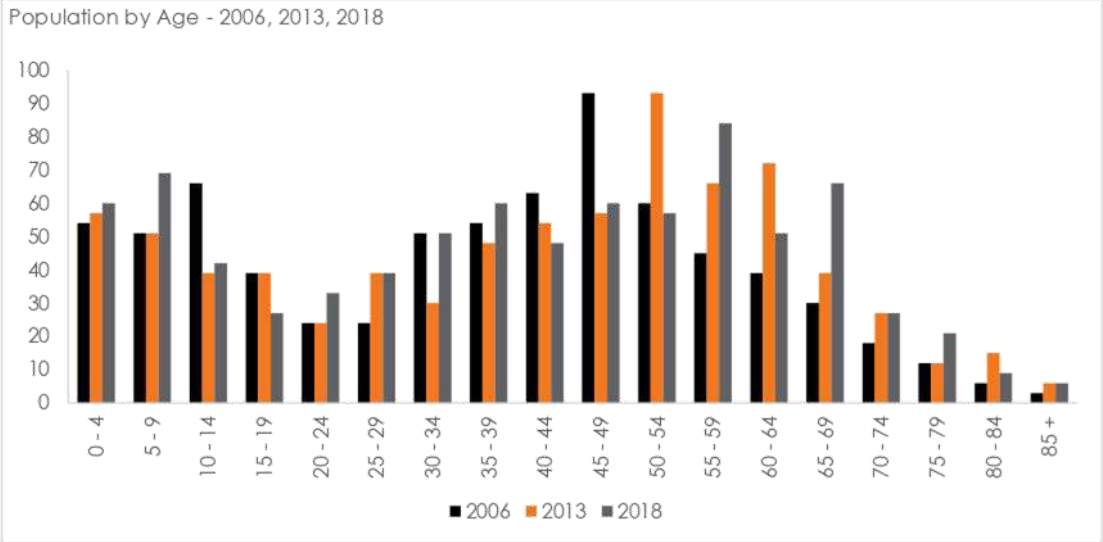


Figure 25. Hakataramea population by age, 2006, 2013, 2018. Source: Stats NZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This ensures that the modelling is accurate and reliable.

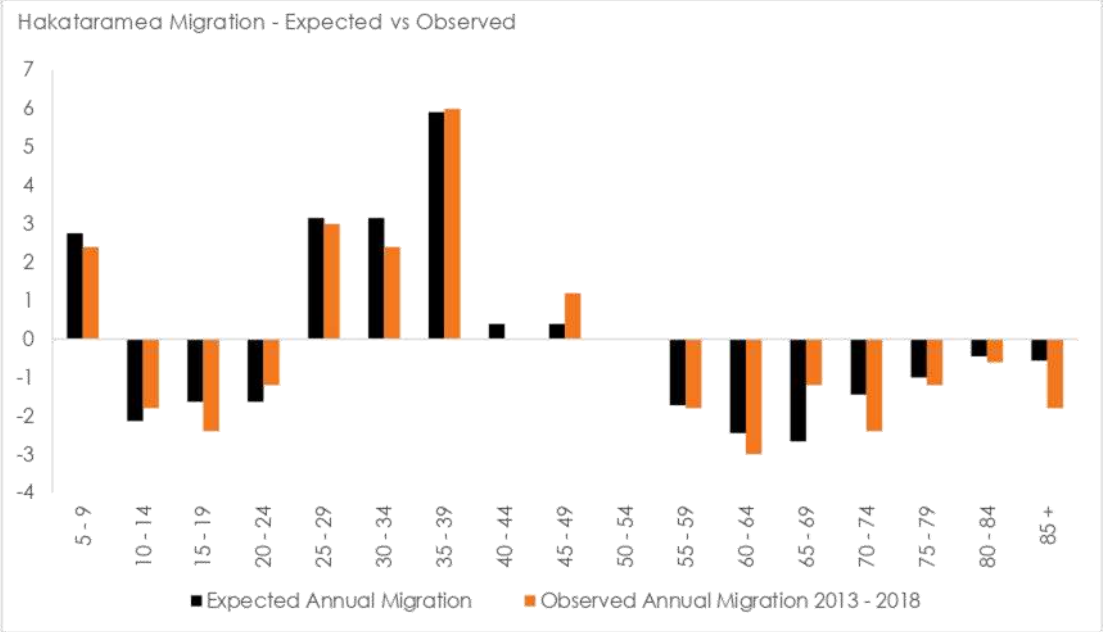


Figure 26. Net migration check.

10.3.2 COVID-19

It is unlikely that the population of Hakataramea will be significantly impacted due to COVID-19.

10.3.3 OUTPUT

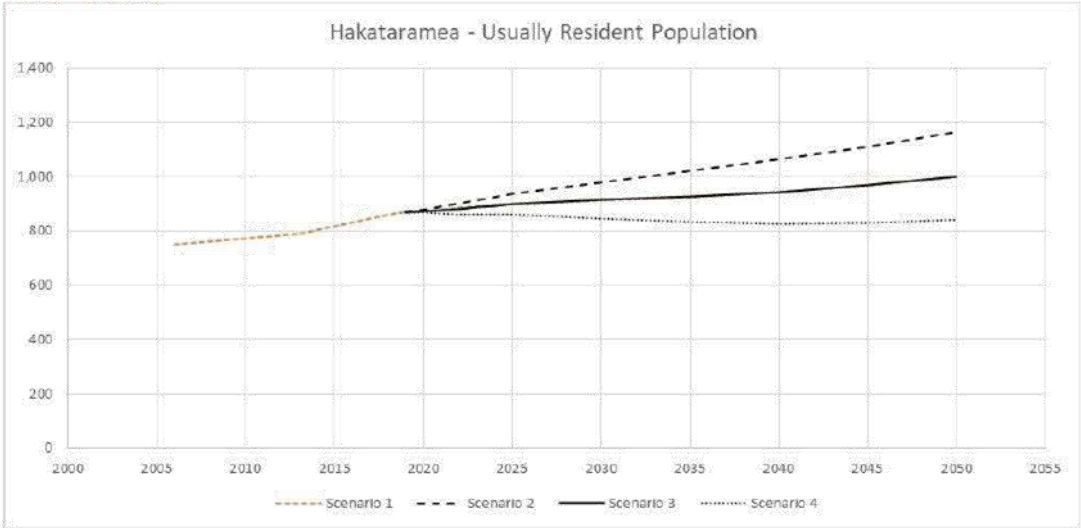


Figure 27. Hakataramea usually resident population.

10.4 Dwelling Projections

10.4.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the analysis in Hakataramea. These assumptions are available in Section 7.

10.4.2 OUTPUT

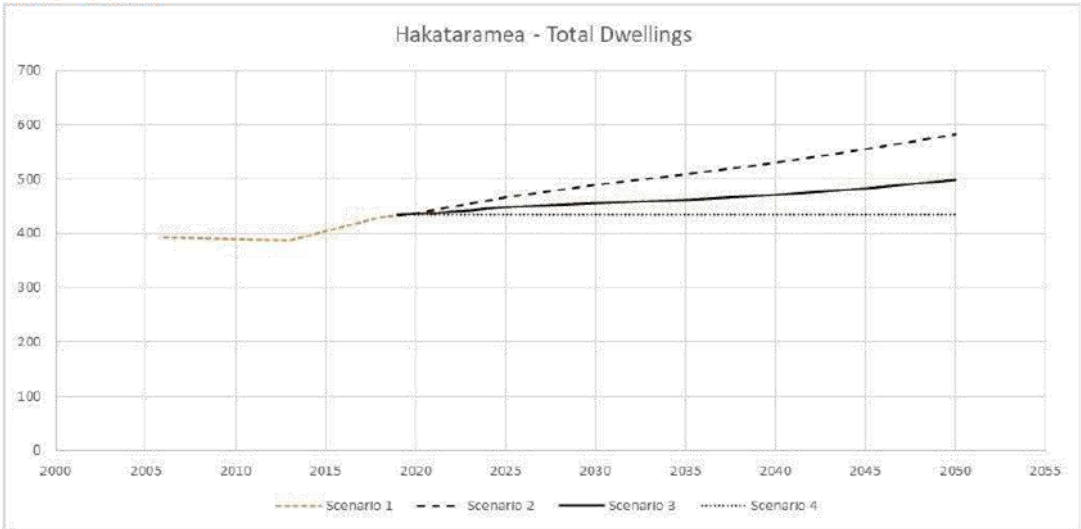


Figure 28. Total dwellings.

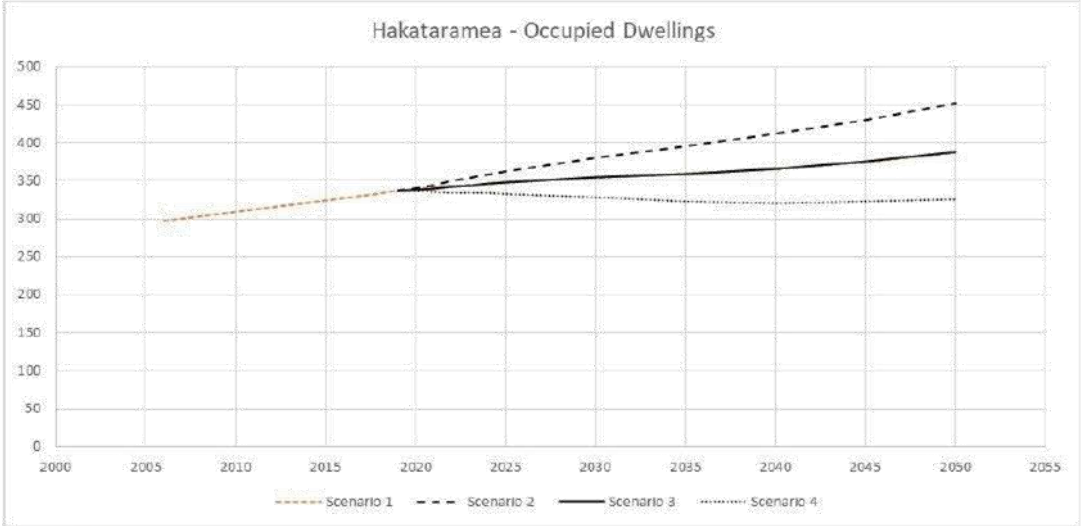


Figure 29. Occupied dwellings.

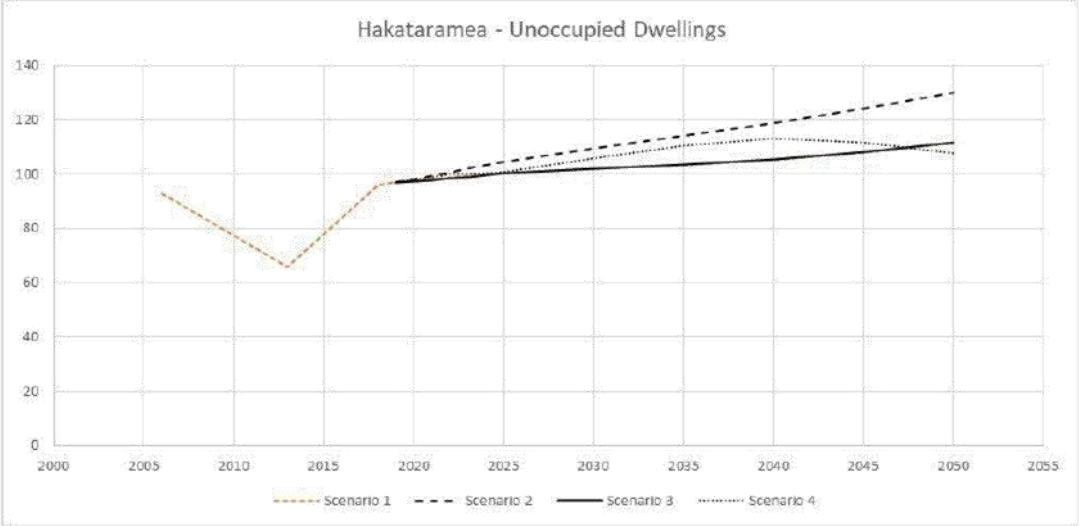


Figure 30. Unoccupied dwellings.

10.5 Visitor Projections

10.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the visitor projections analysis in Hakataramea. These assumptions are available in Section 7.

10.5.2 OUTPUT

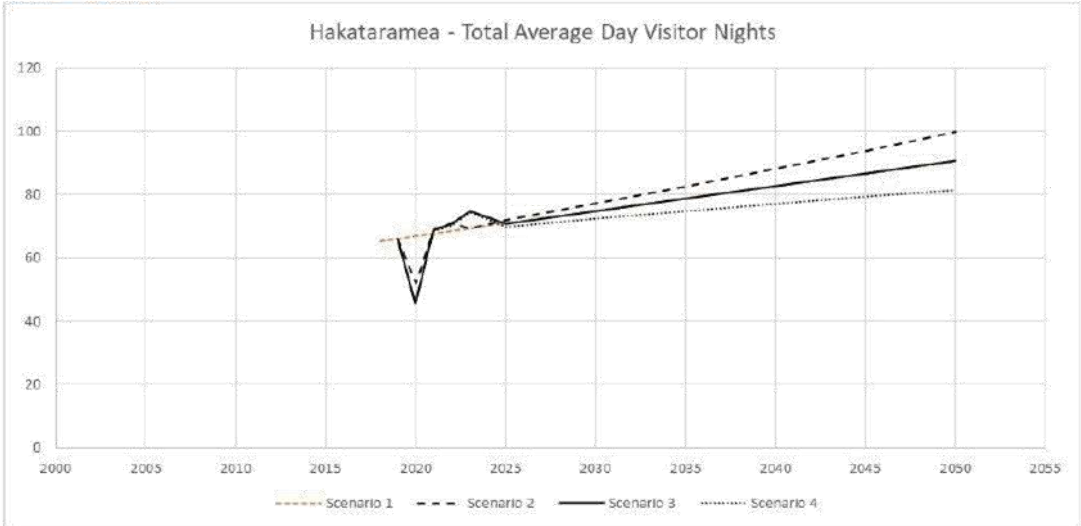


Figure 31. Hakataramea average day visitor nights.

11 Appendix B: Lyalldale

Lyalldale is a small, rural area in the north of the Waimate District. Employment trends are similar to the rest of the district.



Figure 32. SA2 boundaries of Waimate District.

11.1 Lyalldale Growth Projections Summary

Table 19. Lyalldale growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	600	660	710	715	768	791	814	838	858	865
Total Dwellings	237	255	267	269	289	298	306	315	323	325
Occupied Dwellings	219	237	243	245	263	271	278	287	294	296
Unoccupied Dwellings	18	15	24	24	26	27	28	28	29	29
Number of Jobs	100	85	130	99	134	135	136	137	138	139
Number of Businesses	105	87	87	86	117	117	118	119	120	120
Total Peak Day Visitor Nights			70	49	76	80	84	88	93	97
Total Average Day Visitor Nights			40	28	43	45	48	50	52	55
Total Peak Day Visitor Numbers			105	74	114	120	126	132	138	145
Total Average Day Visitor Numbers			47	33	51	54	57	59	62	65

Table 20. Lyalldale growth projections summary.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	110	8	1.3%	58	10	1.3%	155	5	0.6%
Total Dwellings	30	2	0.9%	22	4	1.3%	58	2	0.6%
Occupied Dwellings	24	2	0.8%	20	3	1.3%	53	2	0.6%
Unoccupied Dwellings	6	0	2.2%	2	0	1.3%	5	0	0.6%
Number of Jobs	0	0	0.0%	34	6	5.0%	39	1	1.1%
Number of Businesses	-18	-1	-1.4%	30	5	5.0%	33	1	1.1%
Total Peak Day Visitor Nights				5	1	1.2%	26	1	1.0%
Total Average Day Visitor Nights				3	0	1.2%	15	0	1.0%
Total Peak Day Visitor Numbers				8	1	1.1%	39	1	1.0%
Total Average Day Visitor Numbers				3	1	1.1%	17	1	1.0%

11.2 Employment Projections

Lyalldale is a smaller agricultural area to the north of the district. This is reflected in the number and type of jobs available. There has been minimal growth in the area.

There have been significant changes in the number of jobs in Lyalldale in the last 10 years.

A large proportion of residents commute out of the area for work, either to Waimate or Timaru.

11.2.1 KEY INDUSTRIES AND TRENDS

Table 21. Top five industries in Lyalldale.

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Agriculture, Forestry and Fishing	50	50%	-5%	5%
Education and Training	18	18%	50%	13%
Transport, Postal and Warehousing	15	15%	0%	1%
Construction	3	3%	110%	-
Wholesale Trade	3	3%	-	-

11.2.2 OUTPUT

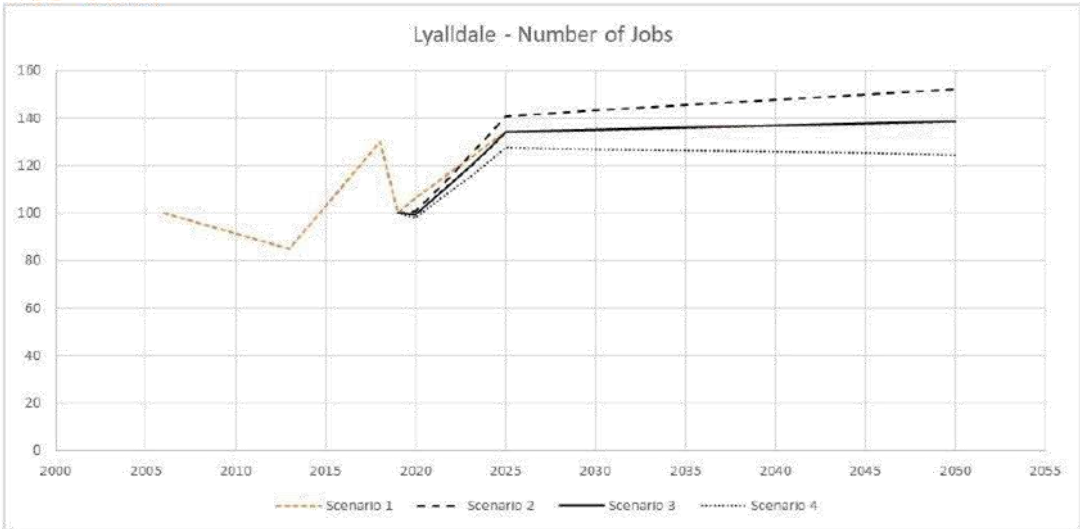


Figure 33. Number of jobs in Lyalldale.

11.3 Population Projections

11.3.1 KEY MIGRATION DRIVERS

- Migration to Lyalldale for more affordable housing compared to Timaru.
- A small number of younger people are attracted to the area for employment opportunities.
- Older people tend to leave the area for retirement and access to more support and healthcare.

These trends are reflected below through the population by age and net migration figures.

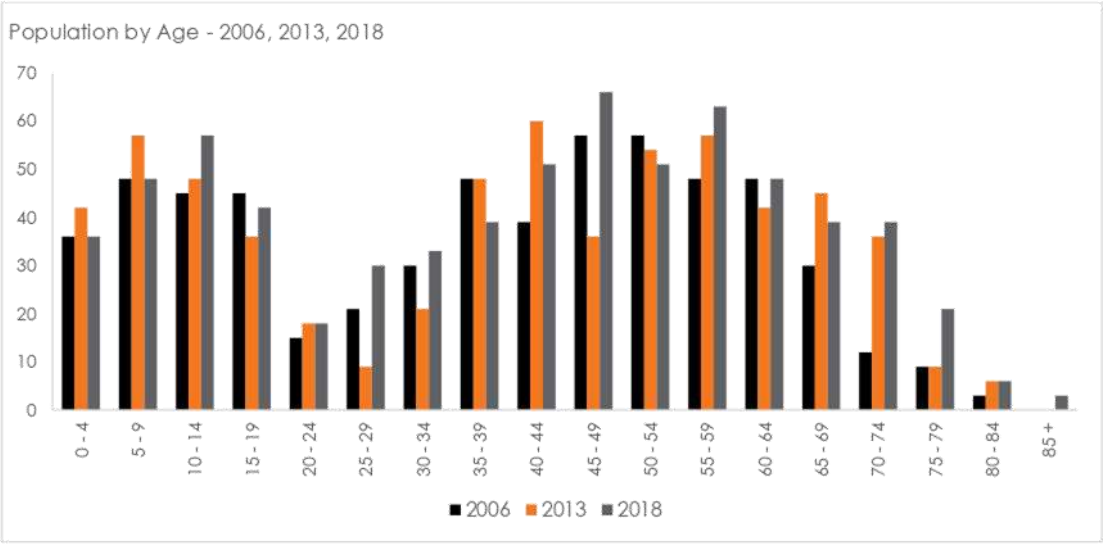


Figure 34. Lyalldale population by age, 2006, 2013, 2018. Source: Stats NZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This ensures that the modelling is accurate and reliable.

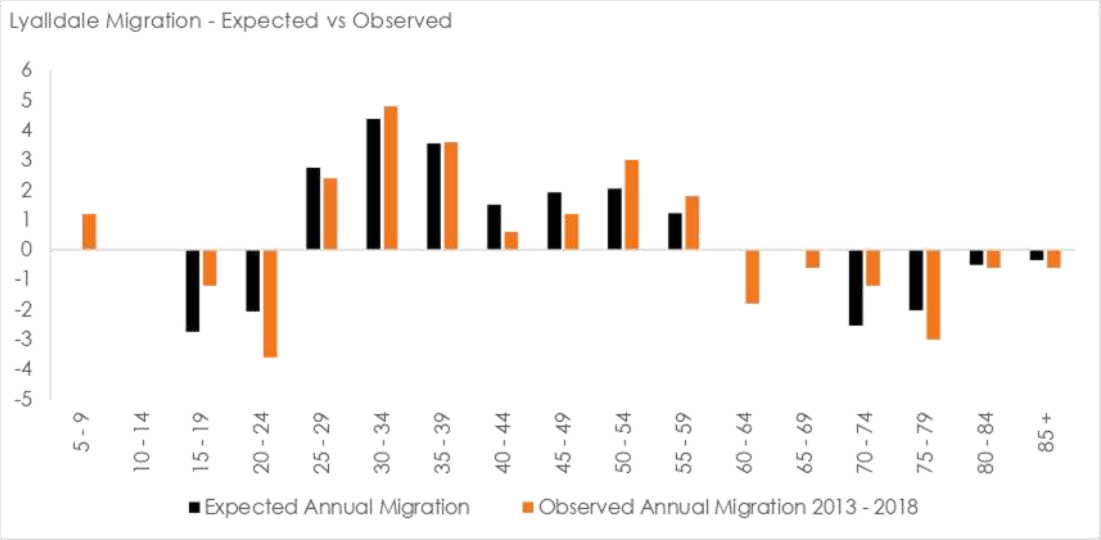


Figure 35. Net migration check.

11.3.2 COVID-19

It is unlikely that the population of Lyalldale will be significantly impacted due to COVID-19.

11.3.3 OUTPUT

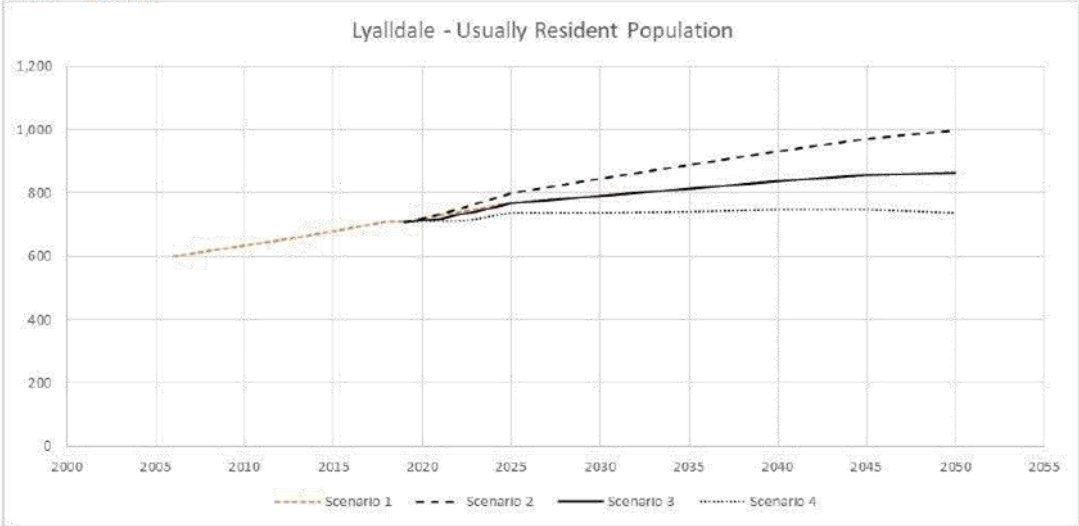


Figure 36. Lyalldale's usually resident population.

11.4 Dwelling Projections

11.4.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the dwelling projections analysis in Lyalldale. These assumptions are available in Section 7.

11.4.2 OUTPUT

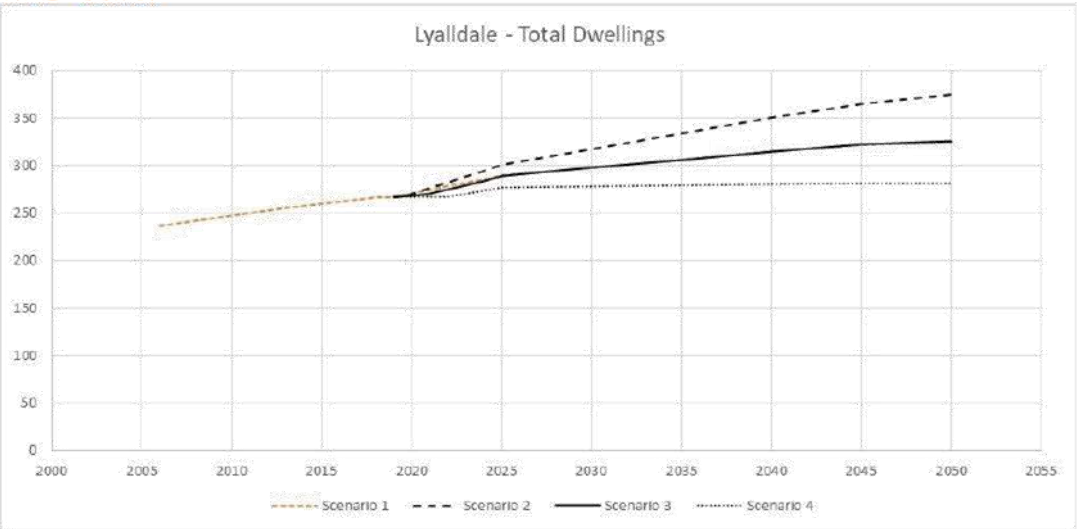


Figure 37. Total dwellings.

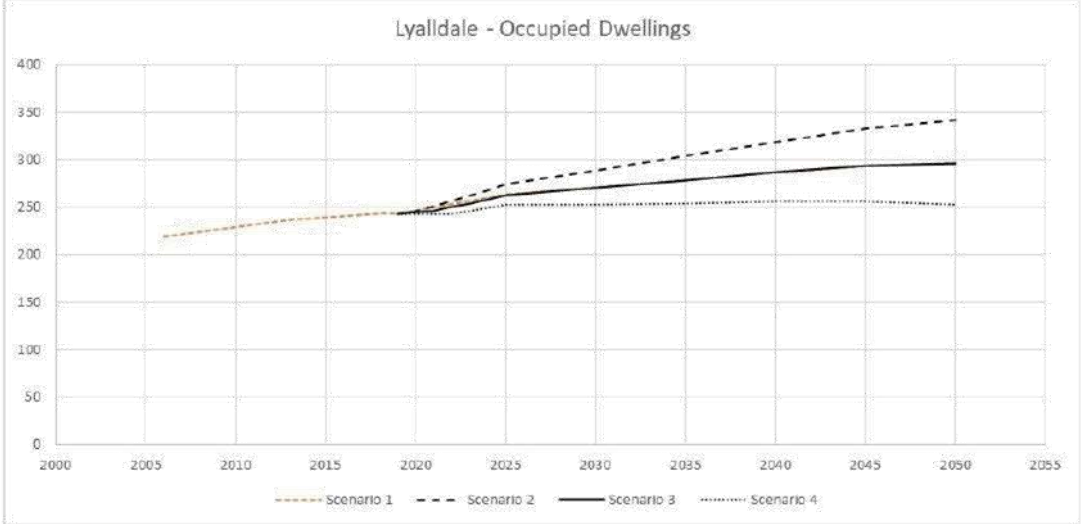


Figure 38. Occupied dwellings.

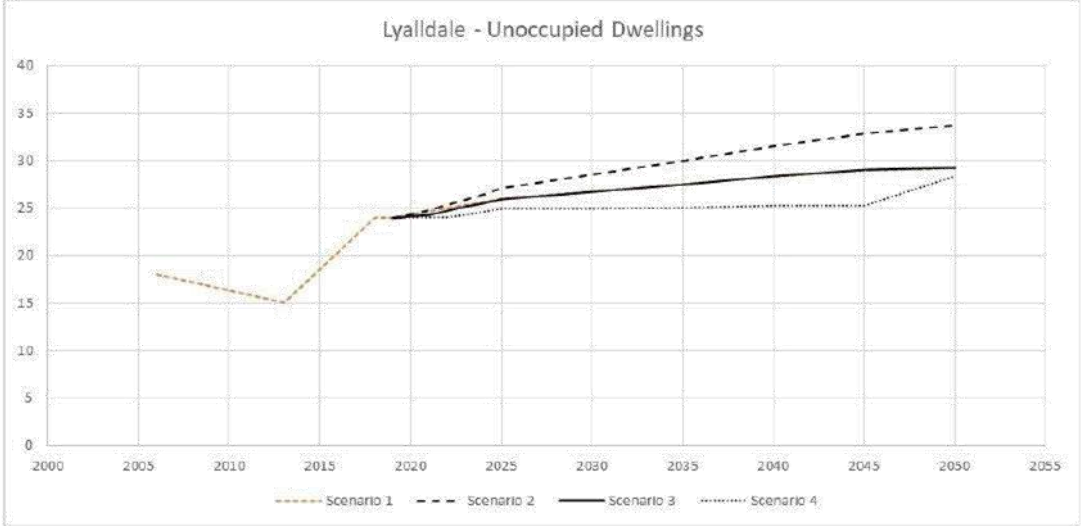


Figure 39. Unoccupied dwellings.

11.5 Visitor Projections

11.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the analysis of the visitor projections in Lyalldale. These assumptions are available in Section 7.

11.5.2 OUTPUT

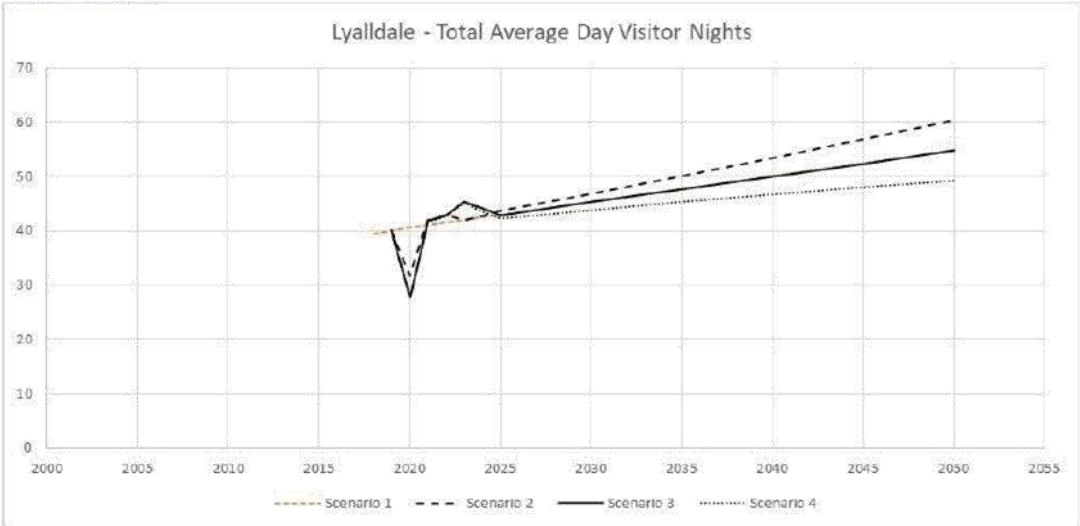


Figure 40. Lyalldale's average day visitor nights.

11.6 St Andrews

St Andrews is a small township on State Highway 1 in the north of the Waimate District. The town has experienced some population and hence dwelling growth over the last two decades. This is expected to increase through to 2050.

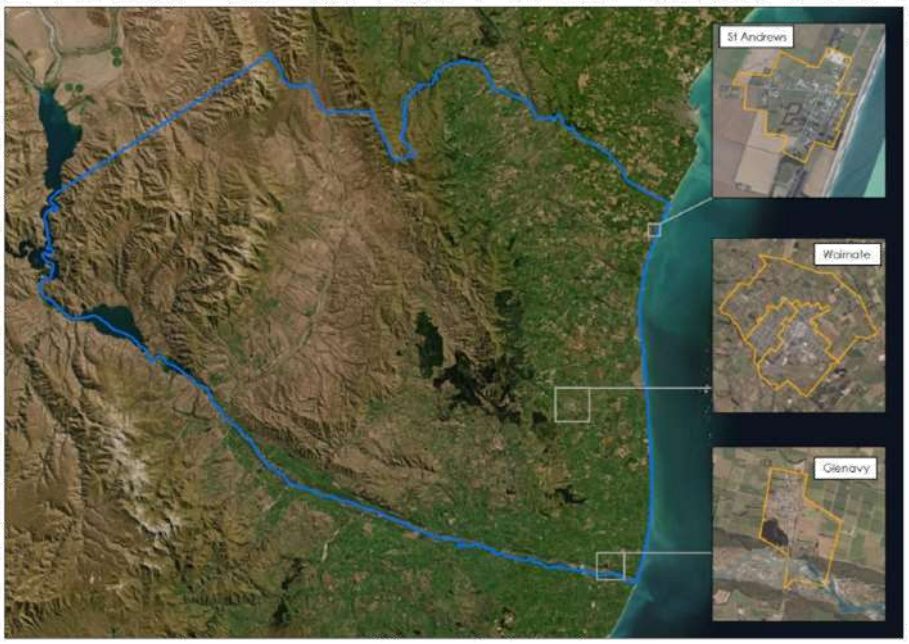


Figure 41. Township boundaries in the Waimate District.

Table 22. St Andrews growth projections.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	177	180	195	196	211	217	223	230	236	238
Total Dwellings	72	78	81	82	88	90	93	96	98	99
Occupied Dwellings	72	78	72	72	78	80	83	85	87	88
Unoccupied Dwellings	0	0	9	9	10	10	10	11	11	11

Table 23. St Andrews short- and long-term forecasts.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	18	1	0.7%	16	3	1.3%	43	1	0.6%
Total Dwellings	9	1	0.9%	7	1	1.3%	18	1	0.6%
Occupied Dwellings	*0*	*0*	*0.0%*	6	*1*	*1.3%*	*16*	*1*	*0.6%*
Unoccupied Dwellings	9	*1*		*1*	*0*	*1.3%*	2	*0*	*0.6%*

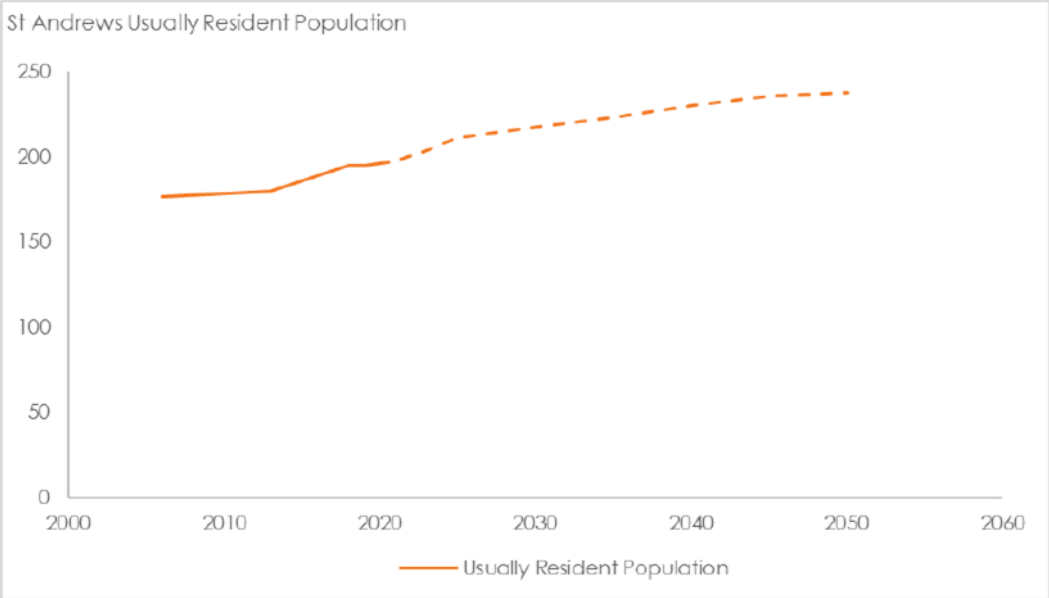


Figure 42. St Andrews usually resident population.

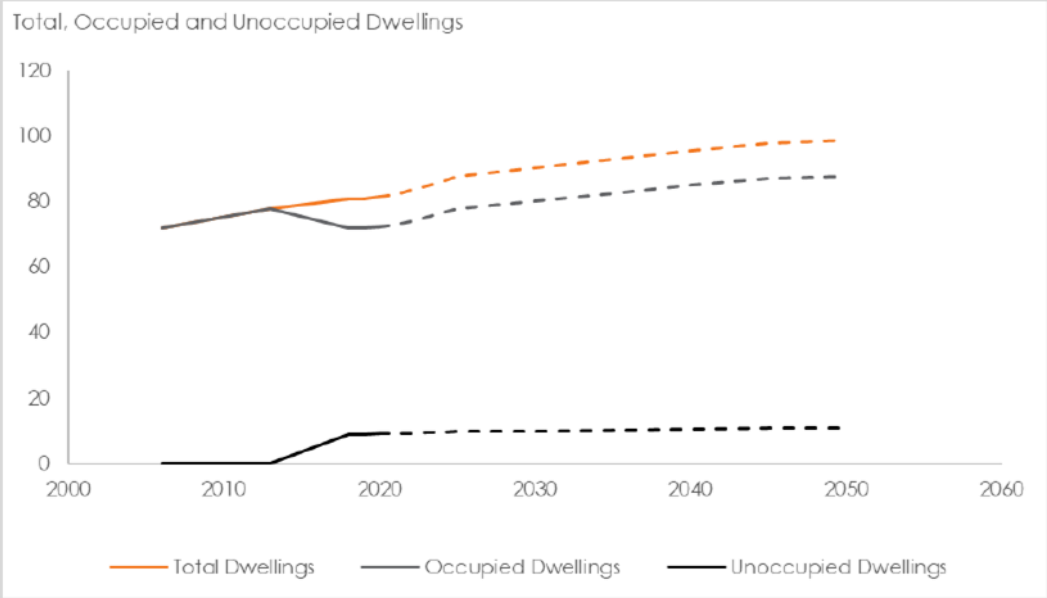


Figure 43. St Andrews total occupied and unoccupied dwellings.

12 Appendix C: Makikihi-Willowbridge

Makikihi-Wilowbridge is a small, coastal area in the Waimate District.



Figure 44. SA2 boundaries of Waimate District.

12.1 Makikihi-Willowbridge Growth Projections Summary

Table 24. Makikihi-Willowbridge growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	1010	1030	1040	1038	1046	1041	1041	1045	1052	1053
Total Dwellings	414	438	462	462	465	465	465	465	467	468
Occupied Dwellings	369	408	402	401	404	403	403	404	406	407
Unoccupied Dwellings	39	30	60	61	60	62	62	61	61	61
Number of Jobs	390	410	400	375	410	403	396	390	388	386
Number of Businesses	231	240	240	222	243	239	235	231	230	229
Total Peak Day Visitor Nights			63	43	68	73	77	81	85	89
Total Average Day Visitor Nights			25	17	28	29	31	32	34	36
Total Peak Day Visitor Numbers			206	144	225	237	250	263	275	288
Total Average Day Visitor Numbers			52	36	57	60	63	67	70	73

Table 25. Makikihi-Willowbridge short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2025)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	30	2	0.2%	6	1	0.1%	13	0	0.0%
Total Dwellings	48	4	0.8%	3	0	0.1%	6	0	0.0%
Occupied Dwellings	33	3	0.7%	2	0	0.1%	5	0	0.0%
Unoccupied Dwellings	21	2	3.4%	0	0	0.1%	1	0	0.0%
Number of Jobs	0	0	0.0%	20	3	0.8%	-4	0	0.0%
Number of Businesses	0	0	0.0%	12	2	0.8%	-2	0	0.0%
Total Peak Day Visitor Nights				5	1	1.2%	25	1	1.1%
Total Average Day Visitor Nights				2	0	1.2%	10	0	1.1%
Total Peak Day Visitor Numbers				15	3	1.2%	79	3	1.0%
Total Average Day Visitor Numbers				4	1	1.2%	20	1	1.0%

12.2 Employment Projections

12.2.1 KEY INDUSTRIES AND TRENDS

Employment trends in the Mikikihi-Willowbridge are similar to those elsewhere in the district.

Table 26. Top five industries in Makikihi - Willobridge

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Agriculture, Forestry and Fishing	240	60%	-1%	2%
Manufacturing	75	19%	3%	-6%
Accommodation and Food Services	25	6%	1%	1%
Transport, Postal and Warehousing	12	3%	0%	2%
Construction	9	2%	0%	-2%

12.2.2 OUTPUT

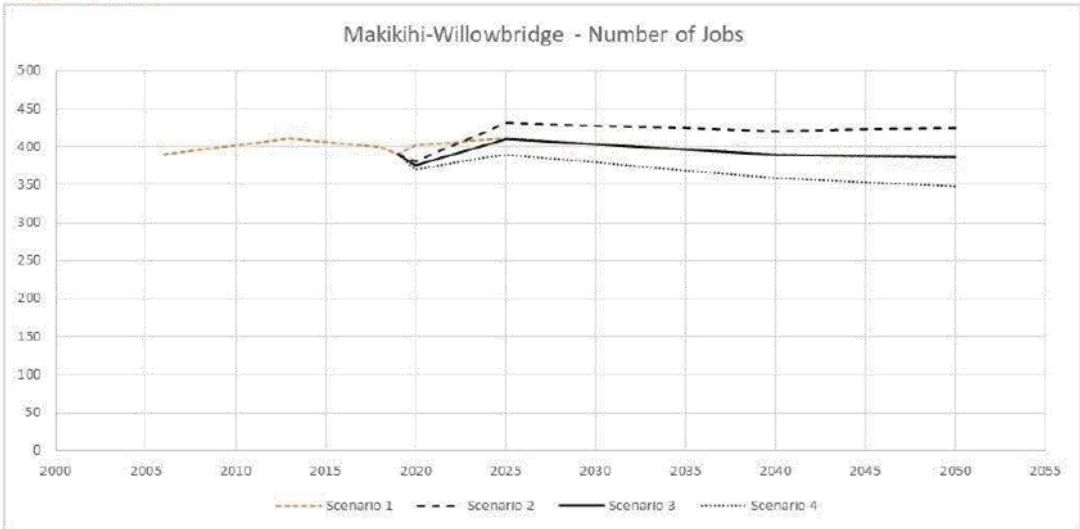


Figure 45. Number of jobs in Makikihi-Willowbridge.

12.3 Population Projections

12.3.1 KEY MIGRATION DRIVERS

- Migration to Makikihi-Willowbridge for more affordable housing compared to Timaru.
- A small number of younger people are attracted to the area for employment opportunities.
- Older people tend to leave the area for retirement and access to more support and healthcare.

These trends are reflected below through the population by age and net migration figures.

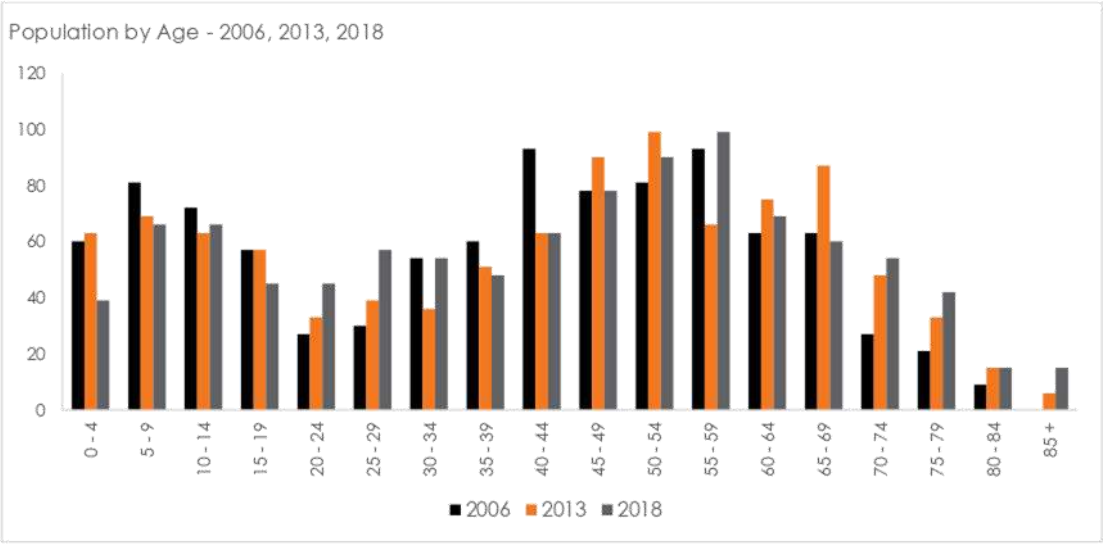


Figure 46. Makikihi-Willowbridge population by age, 2006, 2013, 2018. Source: Stats NZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This ensures that the modelling is accurate and reliable.

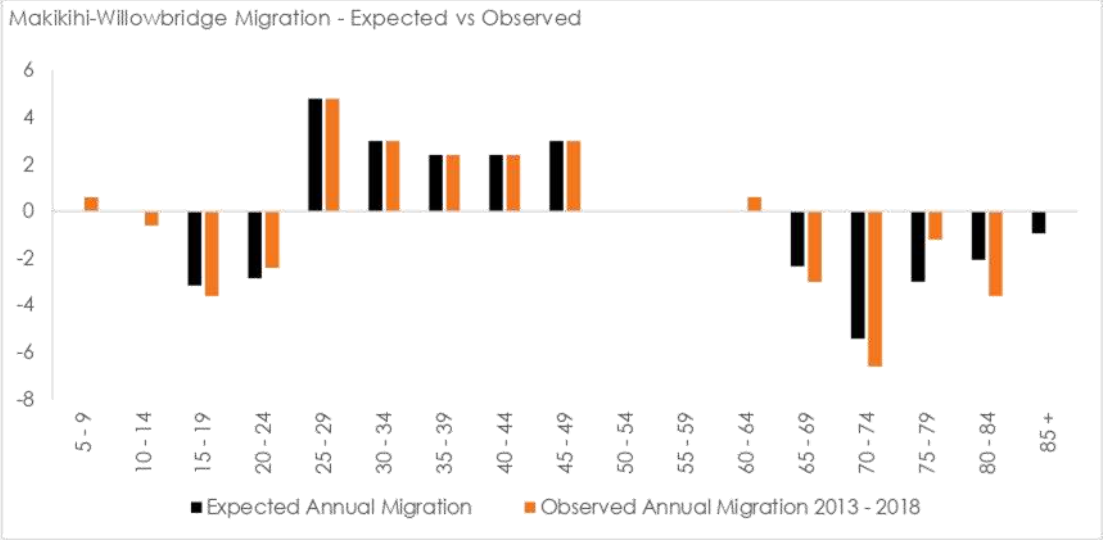


Figure 47. Net migration check.

12.3.2 COVID-19

It is unlikely that the population of Makikihi-Willowbridge will be significantly impacted due to COVID-19.

12.3.3 OUTPUT

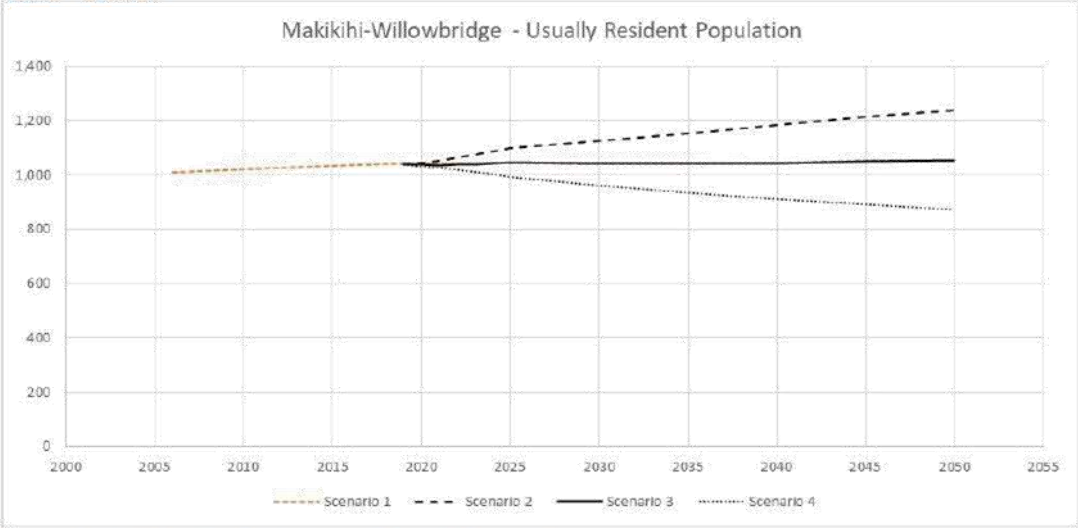


Figure 48. Makikihi-Willowbridge's usually resident population.

12.4 Dwelling Projections

12.4.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the analysis of dwelling projections in Makikihi-Willowbridge. These assumptions are available in Section 7.

12.4.2 OUTPUT

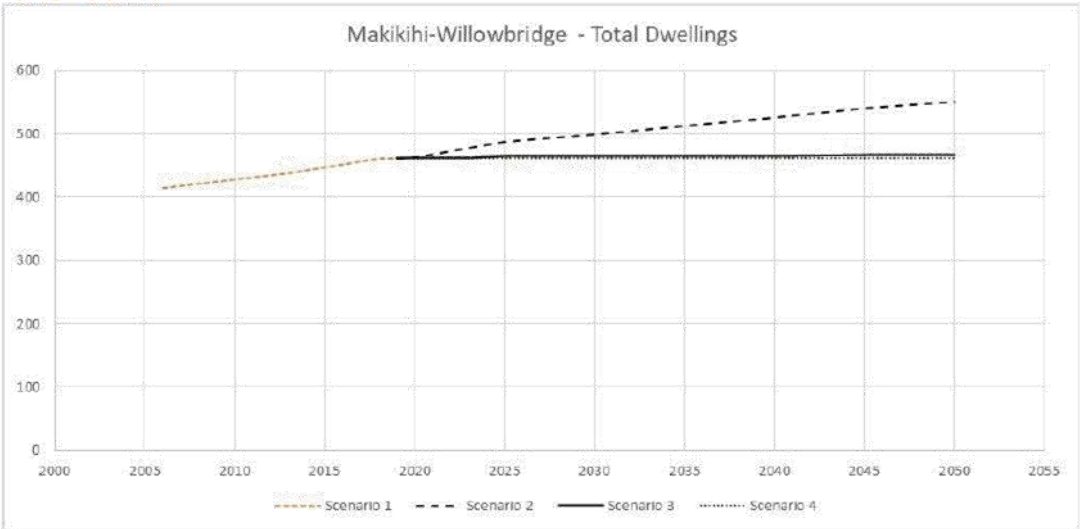


Figure 49. Total Dwellings.

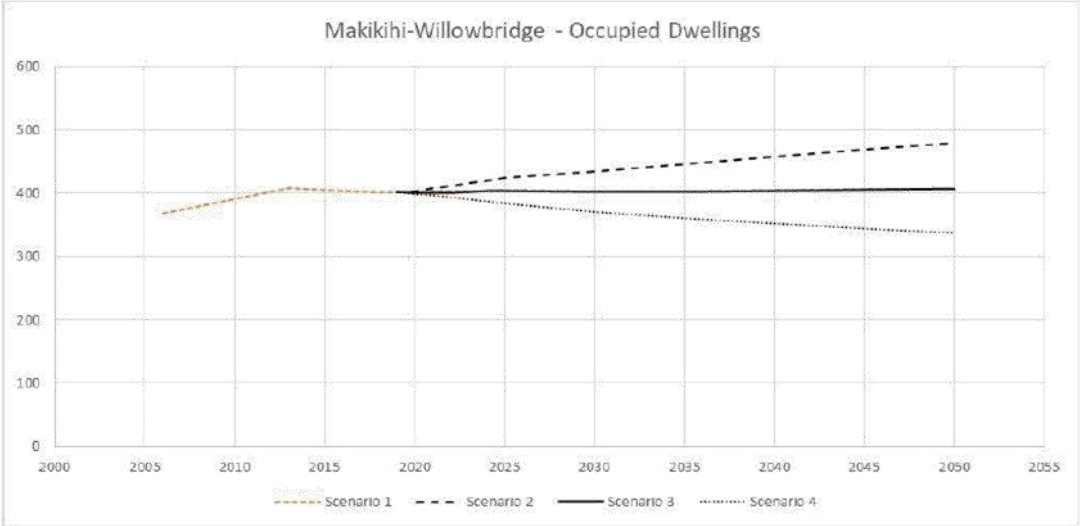


Figure 50. Occupied dwellings.

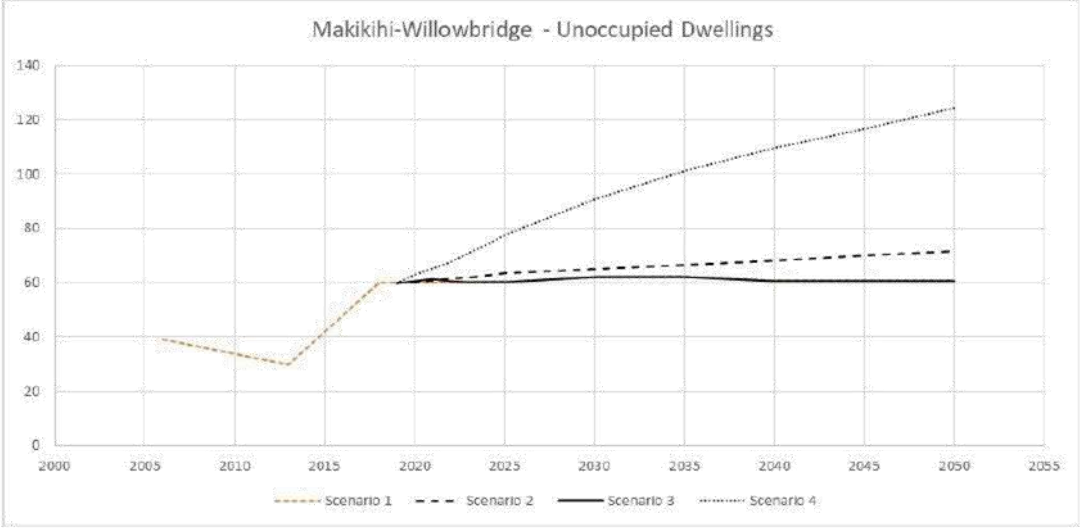


Figure 51. Unoccupied dwellings.

12.5 Visitor Projections

12.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the analysis of visitor projections in Makikihi-Willowbridge. These assumptions are available in Section 7.

12.5.2 OUTPUT

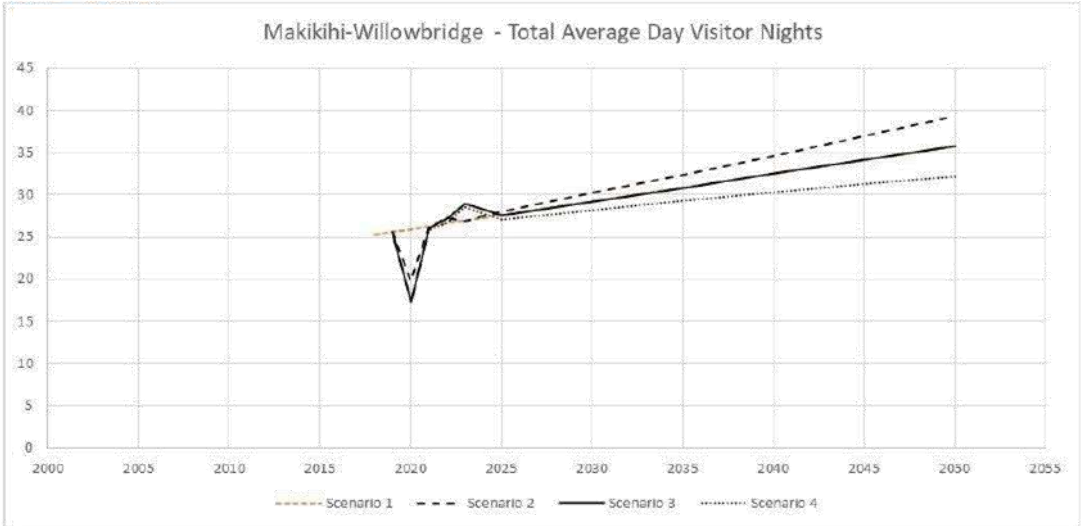


Figure 52. Makikihi-Willowbridge's average day visitor nights.

13 Appendix D: Maungati

Maungati is a predominately rural area, where much of the population commute out of the area for work.



Figure 53. SA2 boundaries of Waimate District.

13.1 Maungati Growth Projections Summary

Table 27. Maungati growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	690	760	760	751	760	764	767	772	775	774
Total Dwellings	339	348	366	366	366	368	369	372	373	373
Occupied Dwellings	252	273	282	279	282	283	284	286	287	287
Unoccupied Dwellings	87	72	81	87	84	84	85	85	86	86
Number of Jobs	150	230	200	189	209	213	218	222	227	232
Number of Businesses	174	177	183	176	194	198	202	207	211	216
Total Peak Day Visitor Nights			57	39	62	66	69	73	77	80
Total Average Day Visitor Nights			25	17	27	29	30	32	33	35
Total Peak Day Visitor Numbers			107	74	117	123	130	137	143	150
Total Average Day Visitor Numbers			40	28	43	46	48	51	53	56

Table 28. Maungati short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	60	5	0.6%	10	2	0.2%	24	1	0.1%
Total Dwellings	27	2	0.6%	0	0	0.0%	7	0	0.1%
Occupied Dwellings	26	2	0.8%	4	1	0.2%	9	0	0.1%
Unoccupied Dwellings	1	0	0.1%	-4	-1	-0.7%	-2	0	-0.1%
Number of Jobs	50	4	2.2%	9	1	0.7%	32	1	0.5%
Number of Businesses	12	1	0.5%	8	1	0.7%	30	1	0.5%
Total Peak Day Visitor Nights				4	1	1.2%	23	1	1.1%
Total Average Day Visitor Nights				2	0	1.2%	10	0	1.1%
Total Peak Day Visitor Numbers				8	1	1.2%	41	1	1.0%
Total Average Day Visitor Numbers				3	0	1.2%	15	0	1.0%

13.2 Employment Projections

Similarly, to other areas in the district the number of jobs in Maungati is variable depending on the activities in the area. These have been averaged in the future projections.

13.2.1 KEY INDUSTRIES AND TRENDS

Table 29. Top five industries in Maungati.

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Agriculture, Forestry and Fishing	190	94%	-2%	4%
Rental, Hiring and Real Estate Services	6	3%	33%	15%
Construction	3	2%	-17%	5%
Professional, Scientific and Technical Services	0	0%	-	-
Arts and Recreation Services	0	0%	-	-

13.2.2 OUTPUT

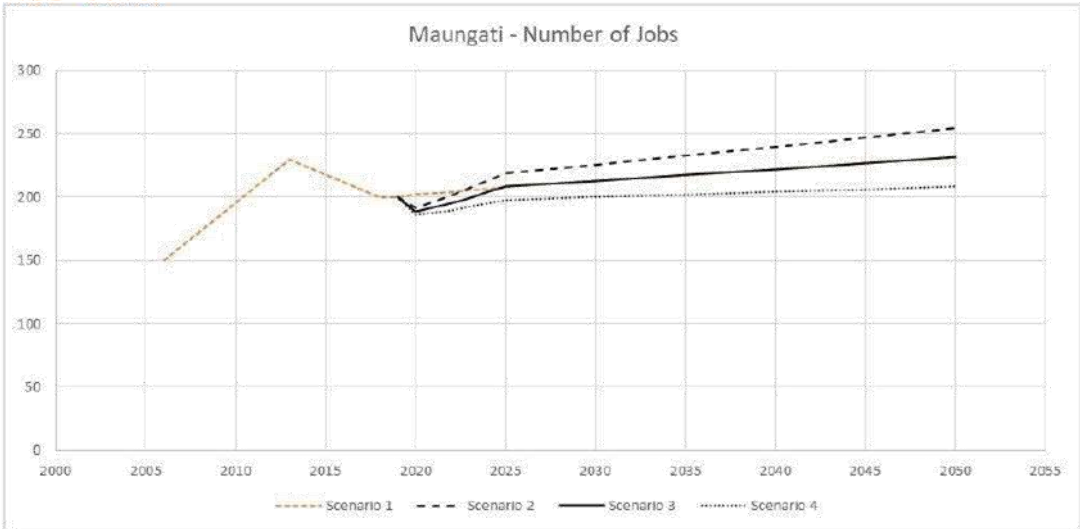


Figure 54. Number of jobs in Maungati.

13.3 Population Projections

13.3.1 KEY MIGRATION DRIVERS

- A small number of people move to the area for employment.
- There is a small amount of migration of people who commute away for work.
- Young people leave the area for other opportunities such as education and employment.
- Elderly tend to move away from the area in their later years, likely in search of better healthcare.

These trends are reflected below through the population by age and net migration figures.

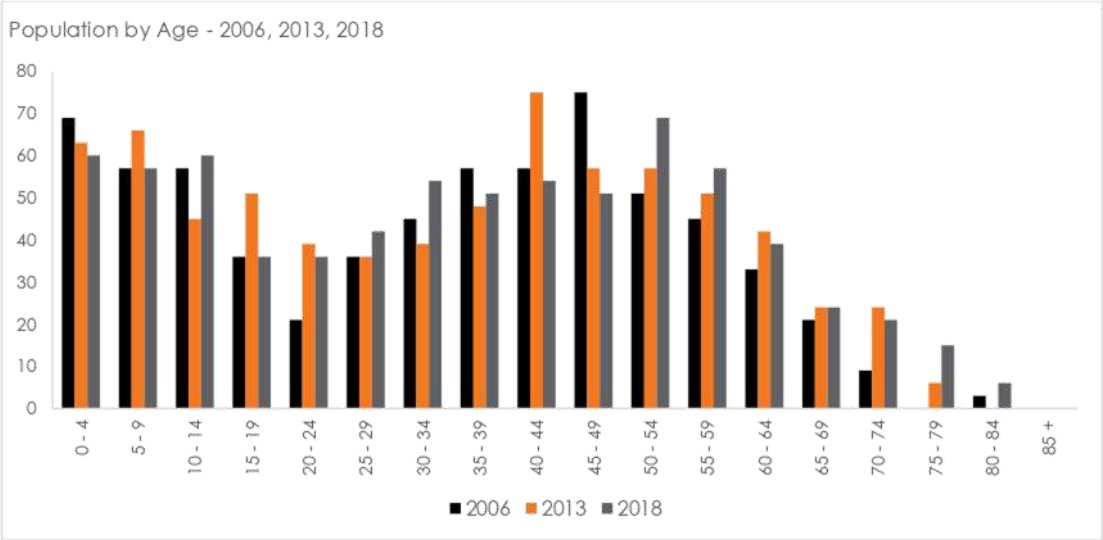


Figure 55. Maungati population by age, 2006, 2013, 2018. Source: Stats NZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This ensures that the modelling is accurate and reliable.

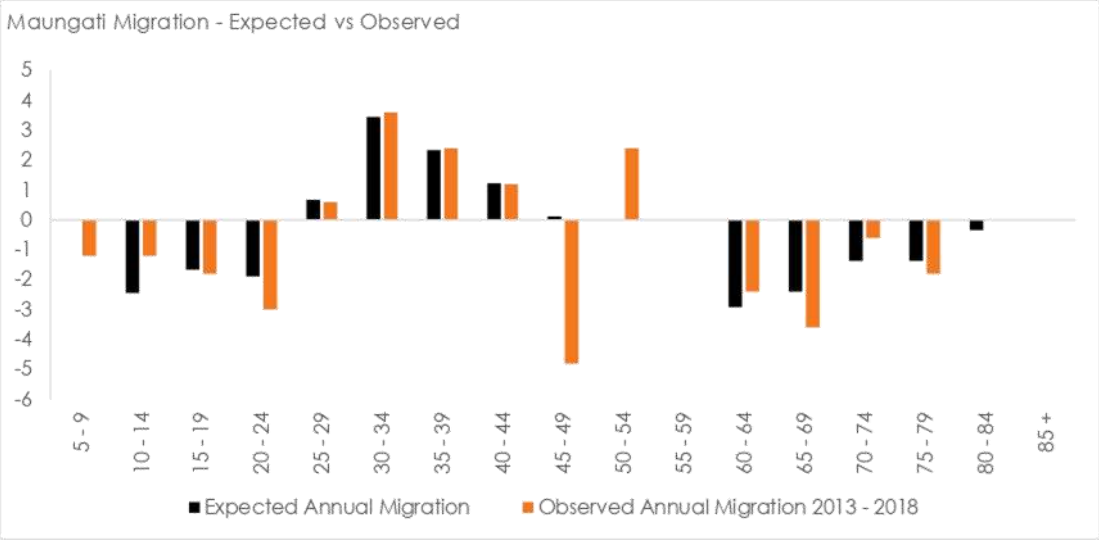


Figure 56. Net migration check

13.3.2 COVID-19

It is unlikely that the population of Maungati will be significantly impacted due to COVID-19.

13.3.3 OUTPUT

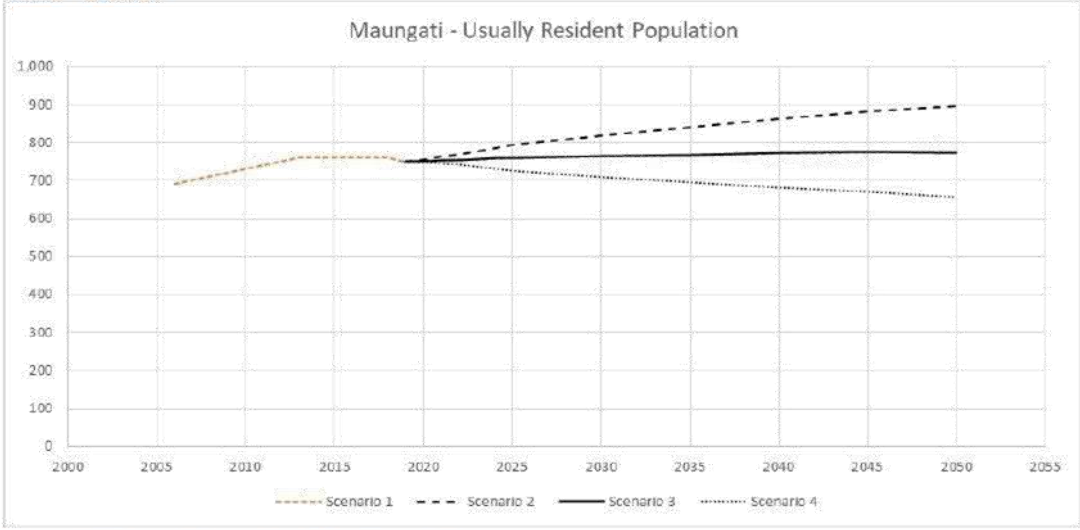


Figure 57. Maungati's usually resident population

13.4 Dwelling Projections

13.4.1 ASSUMPTIONS

It has been assumed that dwellings will not be demolished if there is negative population growth. Therefore, there is an increasing number of unoccupied dwellings in Scenario 4.

13.4.2 OUTPUT

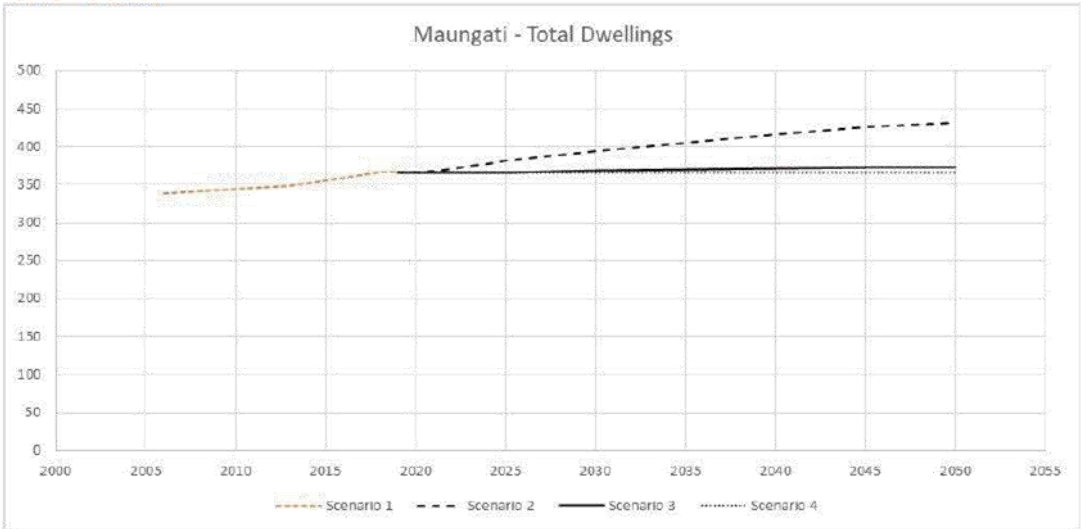


Figure 58. Total dwellings.

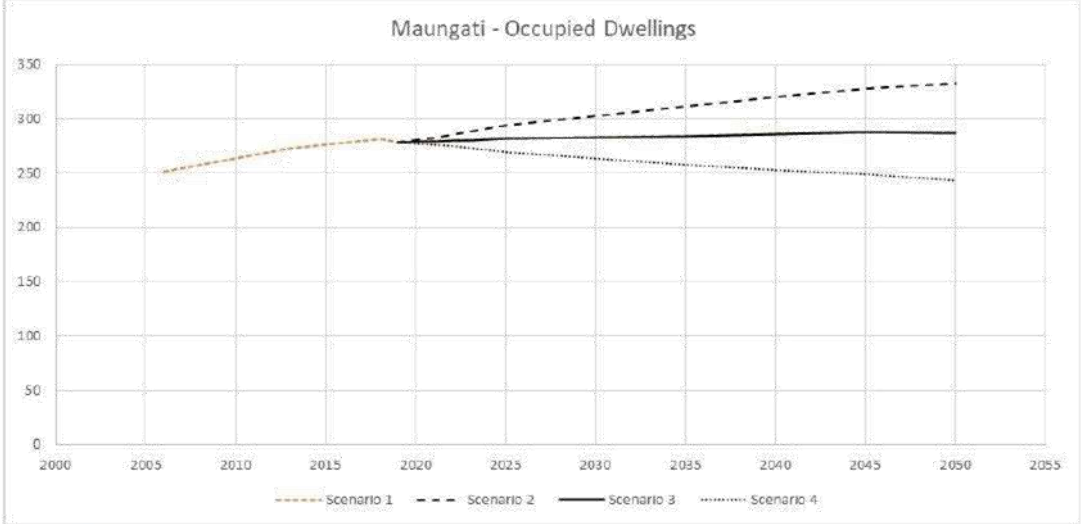


Figure 59. Occupied dwellings.

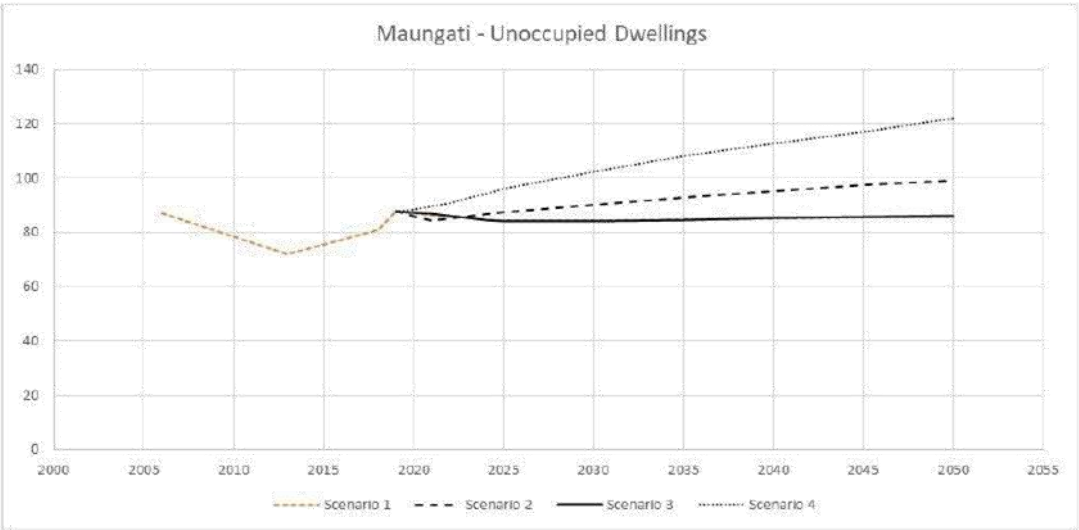


Figure 60. Unoccupied dwellings.

13.5 Visitor Projections

13.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made for the analysis of visitor projections in Maungati. These assumptions are available in Section 7.

13.5.2 OUTPUT

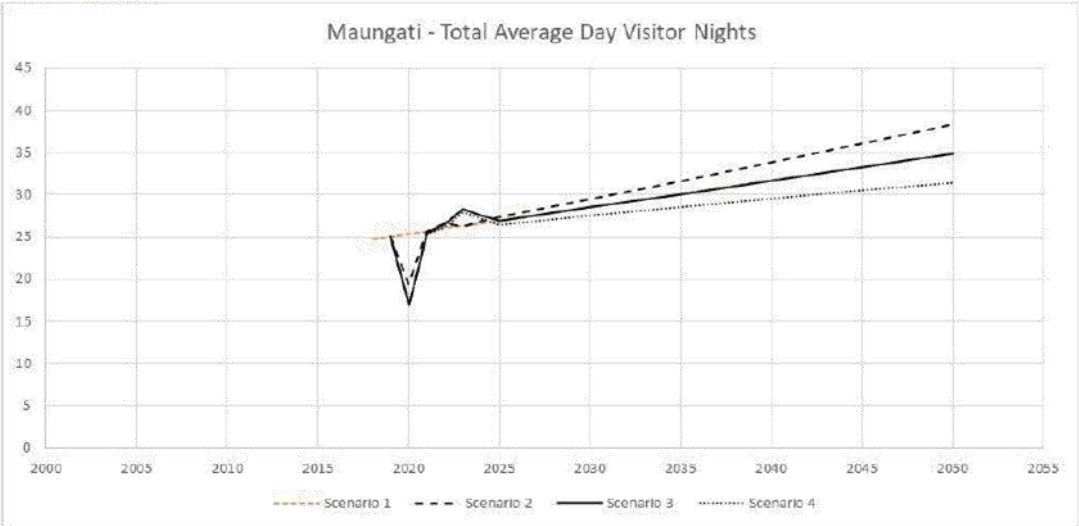


Figure 61. Maungati's average day visitor nights.

14 Appendix E: Morven-Glenavy-Ikawai

There has been significant employment growth in Morven-Glenavy-Ikawai over the last twenty years. A large amount of this growth can be attributed to the development of the Oceania Dairy plant in Morven.



Figure 62. SA2 boundaries of Waimate District.

14.1 Morven-Glenavy-Ikawai Growth Projections Summary

Table 30. Morven-Glenavy-Ikawai growth projections

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	970	1180	1130	1139	1138	1133	1116	1084	1046	1010
Total Dwellings	483	582	609	614	614	614	614	614	614	614
Occupied Dwellings	360	435	447	451	450	448	441	429	414	399
Unoccupied Dwellings	120	141	159	164	164	166	173	186	201	215
Number of Jobs	360	490	710	751	917	999	1087	1183	1285	1396
Number of Businesses	222	231	240	237	289	315	343	373	406	440
Total Peak Day Visitor Nights			105	71	114	121	128	135	142	148
Total Average Day Visitor Nights			58	39	63	67	70	74	78	82
Total Peak Day Visitor Numbers			178	122	194	205	216	228	239	250
Total Average Day Visitor Numbers			87	60	95	101	106	112	117	123

Table 31. Morven-Glenavy-Ikawai short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	170	13	1.2%	-2	0	0.0%	-130	-4	-0.4%
Total Dwellings	131	10	1.9%	0	0	0.0%	0	0	0.0%
Occupied Dwellings	91	7	1.7%	-1	0	0.0%	-51	-2	-0.4%
Unoccupied Dwellings	43	3	2.4%	1	0	0.1%	51	2	0.9%
Number of Jobs	410	32	6.0%	147	25	3.0%	626	20	1.9%
Number of Businesses	21	2	0.7%	46	8	3.0%	197	6	1.9%
Total Peak Day Visitor Nights				8	1	1.3%	43	1	1.1%
Total Average Day Visitor Nights				5	1	1.3%	23	1	1.1%
Total Peak Day Visitor Numbers				14	2	1.2%	70	2	1.1%
Total Average Day Visitor Numbers				7	1	1.2%	35	1	1.1%

14.2 Employment Projections

14.2.1 KEY INDUSTRIES AND TRENDS

A large amount of this growth can be attributed to the development of the Oceania Dairy plant in Morven. However, the factory buses employees from Timaru and Oamaru so does not have a substantial net effect on the population. In the coming years, the factory is likely to expand; a laboratory facility is likely to opening later in 2020 that will create new jobs. The table below details the assumptions that have been included in the model to account for future growth.

Table 32. Oceania Dairy Plant impact on employment.

Scenario	Description
Scenario 1 - BAU (Pre COVID-19)	Assume that the Oceania Dairy plant continues to employ people at a rate of 2% (from MBIE forecast for food productions) through to 2050.
Scenario 2 - High	Assume that the Oceania Dairy plant continues to employ people at a rate of 4% (twice the MBIE forecast for food productions) through to 2050.
Scenario 3 - Medium	Assume that the Oceania Dairy plant continues to employ people at a rate of 2% (from MBIE forecast for food productions) through to 2050.
Scenario 4 - Low	Assume that the Oceania Dairy plant stops expanding and ceases to employ people from now until 2050.

Table 33. Top five industries in Morven-Glenavy-Ikawai.

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Agriculture, Forestry and Fishing	400	51%	4%	2%
Manufacturing	260	33%	38%	-
Transport, Postal and Warehousing	60	8%	15%	11%

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Education and Training	21	3%	-2%	4%
Other Services	12	2%	-12%	-

14.2.2 OUTPUT

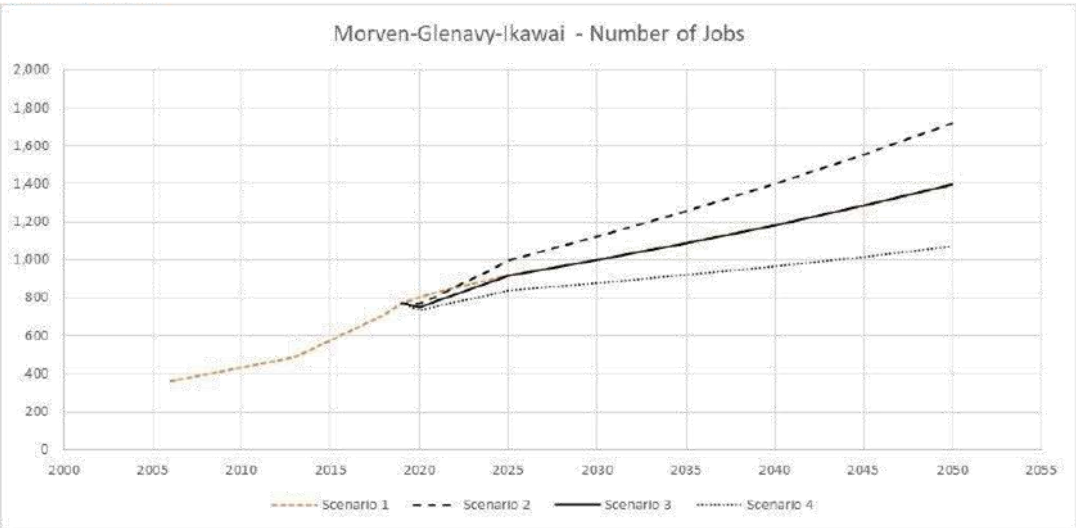


Figure 63. Number of jobs in Morven-Glenavy-Ikawai.

14.3 Population Projections

14.3.1 KEY MIGRATION DRIVERS

There is minimal migration into Morven-Glenavy-Ikawai despite the employment growth.

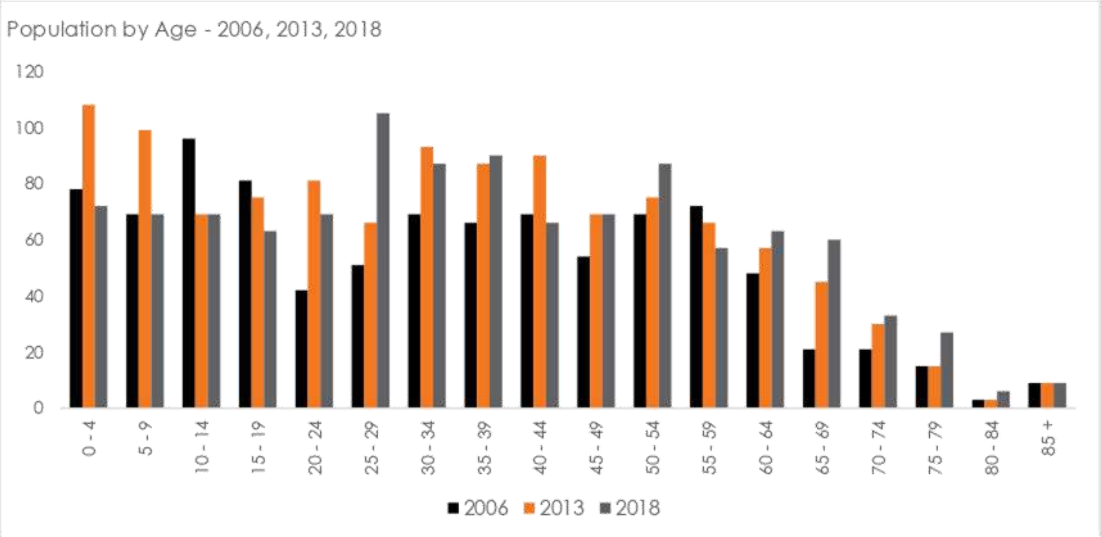


Figure 64. Morven-Glenavy-Ikawai. population by age, 2006, 2013, 2018. Source: Stats NZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This ensures that the modelling is accurate and reliable.

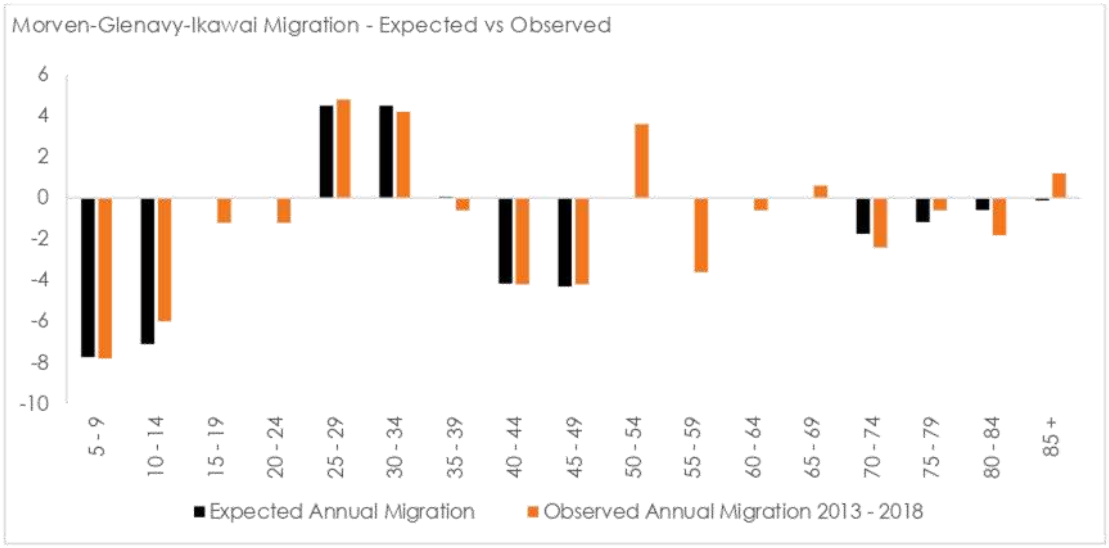


Figure 65. Net migration check.

14.3.2 COVID-19

It is unlikely that the population of Morven-Glenavy-Ikawai. will be significantly impacted due to COVID-19.

14.3.3 OUTPUT

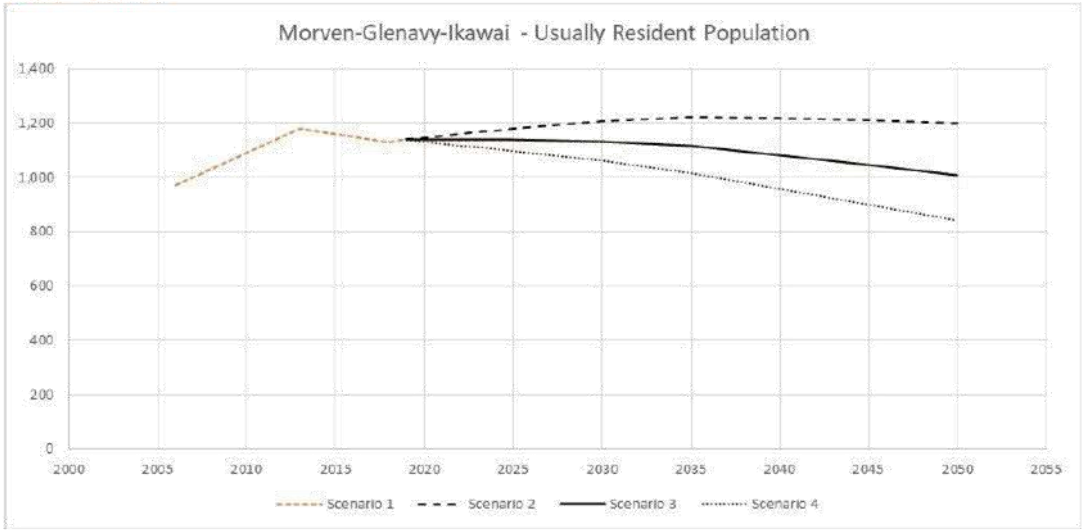


Figure 66. Morven-Glenavy-Ikawai.'s usually resident population.

14.4 Dwelling Projections

14.4.1 ASSUMPTIONS

It has been assumed that dwellings will not be demolished if there is negative population growth. These houses become unoccupied dwellings.

14.4.2 OUTPUT

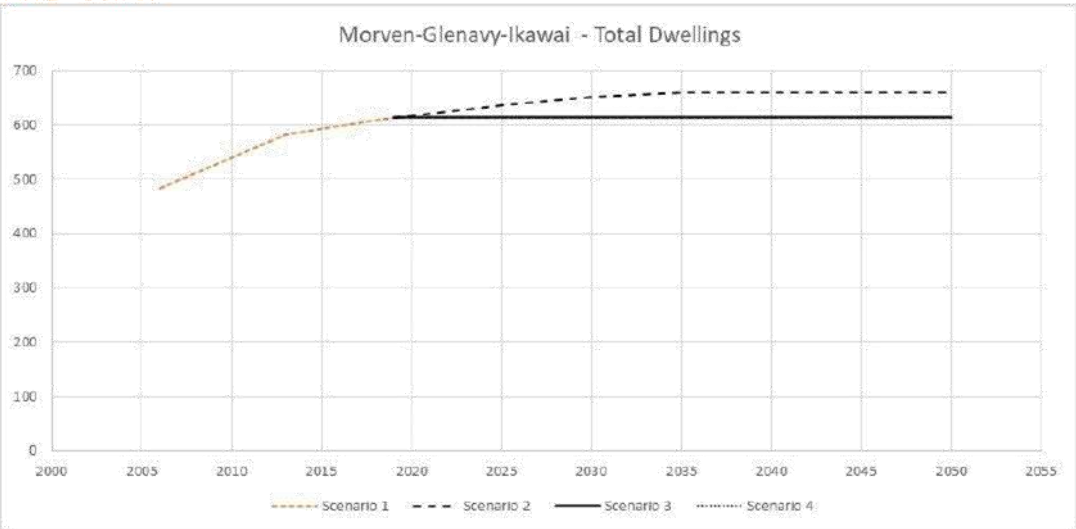


Figure 67. Total dwellings.

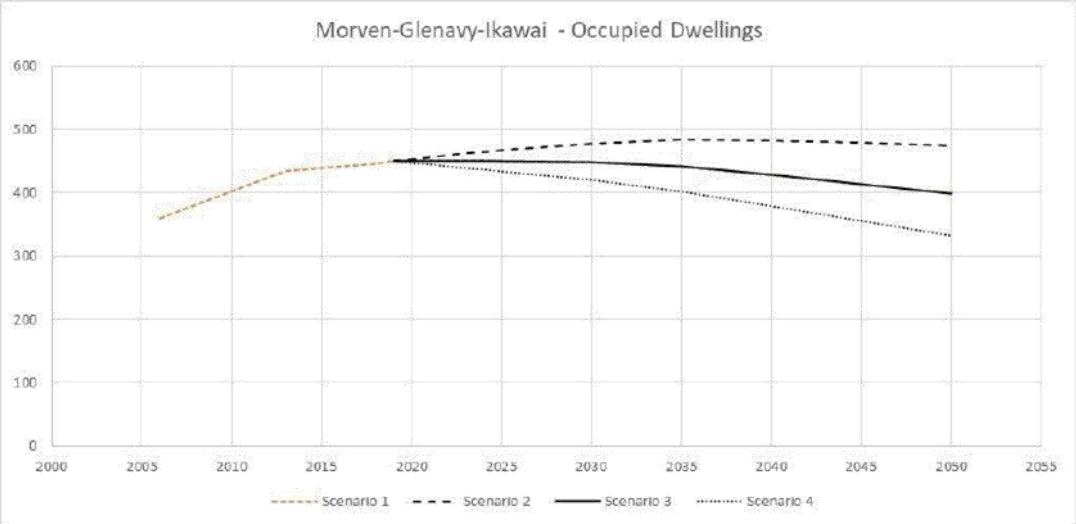


Figure 68. Occupied dwellings.

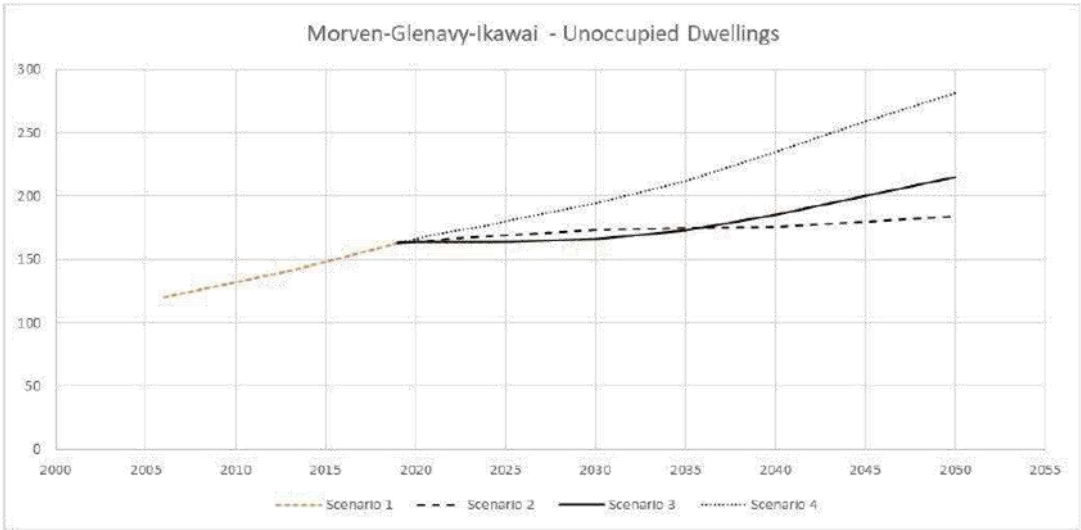


Figure 69. Unoccupied dwellings.

14.5 Visitor Projections

14.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made to the analysis of the visitor projections for Morven-Glenavy-Ikawai. These assumptions are available in Section 7.

14.5.2 OUTPUT

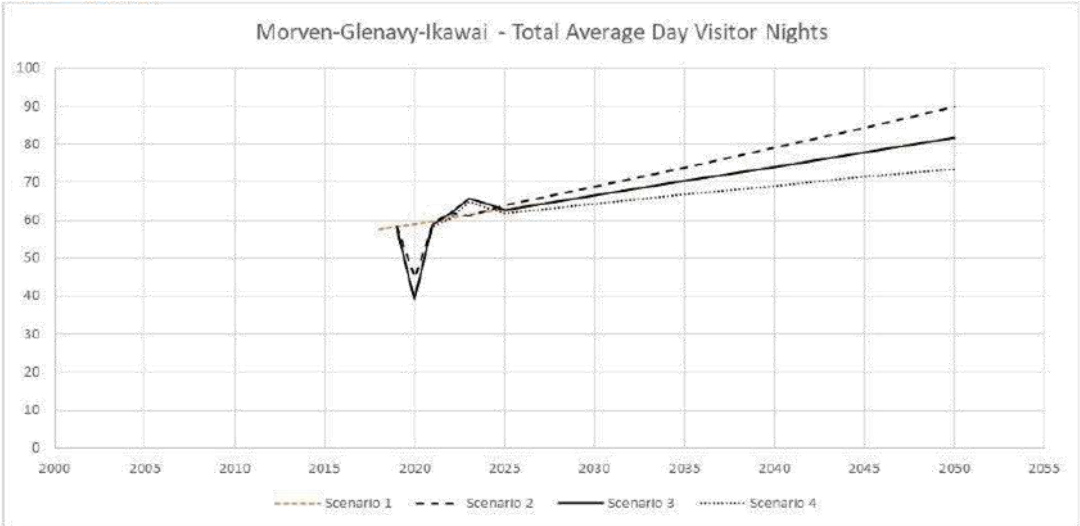


Figure 70. Morven-Glenavy-Ikawai's average day visitor nights.

14.6 Glenavy

Glenavy is a small township to the north of the Waitaki River in the south of the Waimate District. The population of the town is relatively steady.

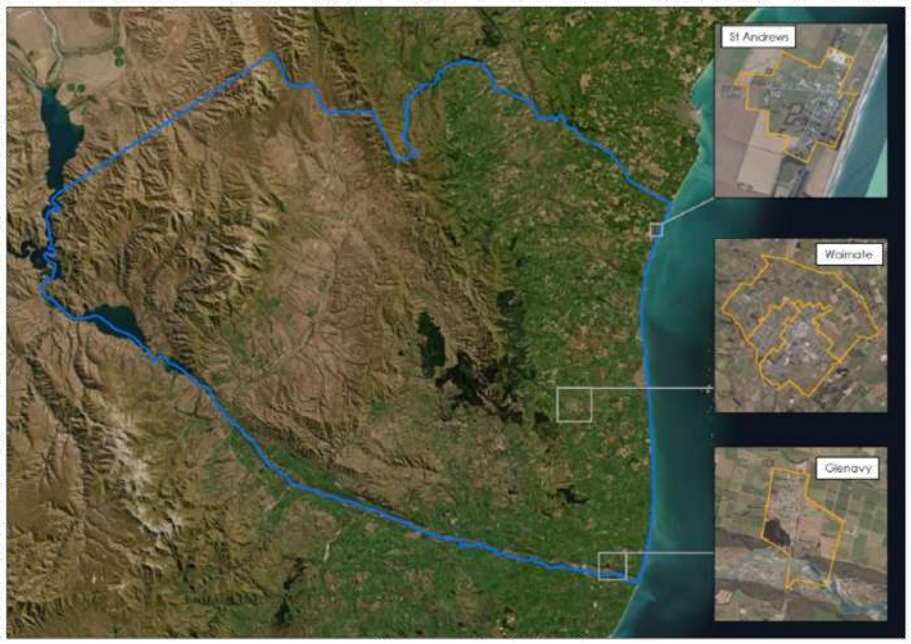


Figure 71. Township boundaries in the Waimate District.

Table 34. Glenavy detailed growth projections.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	129	201	195	197	196	196	193	187	181	174
Total Dwellings	84	126	138	139	139	139	139	139	139	139
Occupied Dwellings	60	102	108	109	109	108	107	104	100	97
Unoccupied Dwellings	24	24	30	30	30	31	33	36	39	43

Table 35. Glenavy short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	68	5	3.3%	0	0	0.0%	-22	-1	-0.4%
Occupied Dwellings	49	4	4.7%	0	0	0.0%	-12	0	-0.4%
Unoccupied Dwellings	6	0	1.8%	0	0	0.1%	12	0	1.1%

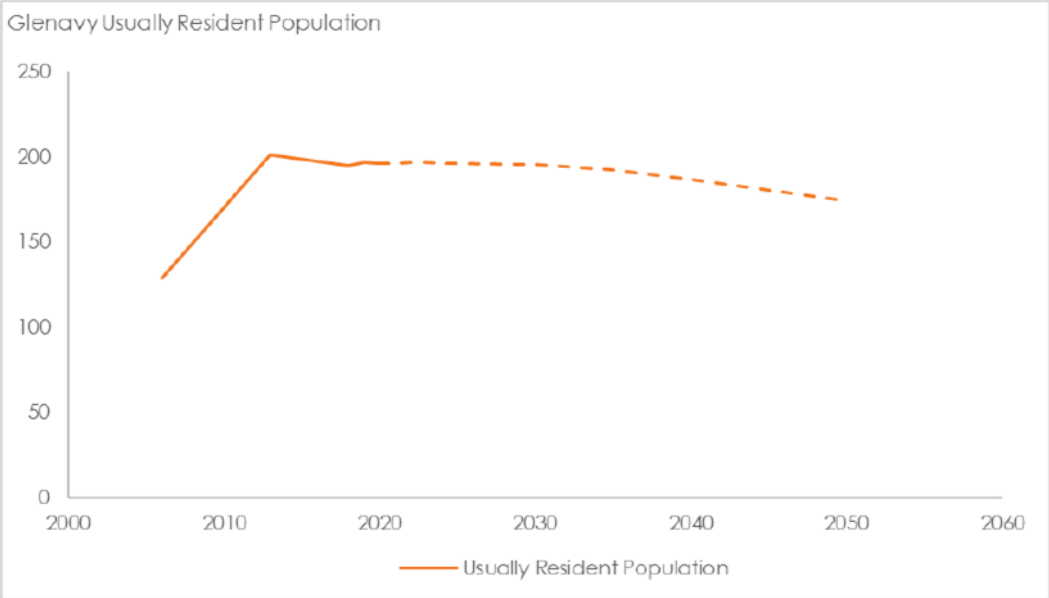


Figure 72. Glenavy usually resident population.

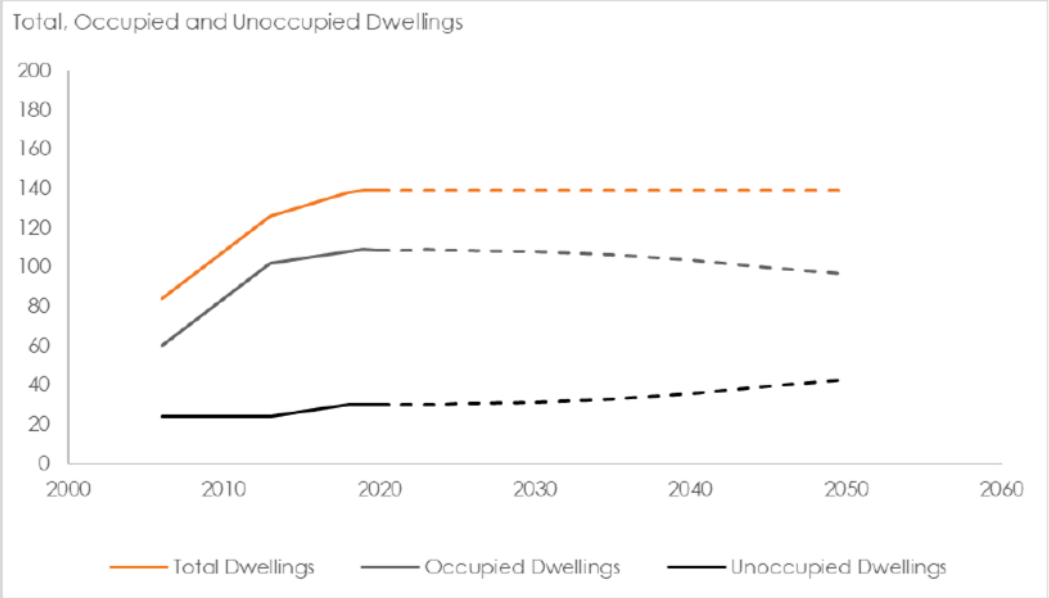


Figure 73. Glenavy total, occupied and unoccupied dwellings.

15 Appendix F: Waimate Township

Waimate township comprises three SA2 areas – Waimate East, Waimate West and Waimate North. For the purposes of projecting growth these have been treated as one area. This is due to the inextricable interactions between each SA2 area.



Figure 74. SA2 boundaries of Waimate District.

15.1 Waimate Township Growth Projections Summary

Table 36. Waimate township detailed growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	3370	3390	3570	3576	3716	3804	3919	4048	4186	4302
Total Dwellings	1653	1704	1779	1784	1852	1896	1953	2017	2086	2144
Occupied Dwellings	1503	1557	1620	1623	1686	1726	1778	1837	1899	1952
Unoccupied Dwellings	144	144	156	161	166	169	175	180	186	192
Number of Jobs	945	980	975	893	999	1005	1012	1018	1024	1031
Number of Businesses	276	267	279	264	295	297	299	301	302	304
Total Peak Day Visitor Nights			158	108	172	182	192	203	213	223
Total Average Day Visitor Nights			31	21	34	36	38	40	42	44
Total Peak Day Visitor Numbers			422	292	459	485	511	538	564	590
Total Average Day Visitor Numbers			39	27	43	45	48	50	53	55

Table 37. Waimate township short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	210	16	0.5%	136	23	0.6%	722	23	0.6%
Total Dwellings	131	10	0.6%	68	11	0.6%	360	12	0.6%
Occupied Dwellings	122	9	0.6%	62	10	0.6%	328	11	0.6%
Unoccupied Dwellings	15	1	0.8%	6	1	0.6%	32	1	0.6%
Number of Jobs	20	2	0.2%	34	6	0.6%	66	2	0.2%
Number of Businesses	9	1	0.2%	10	2	0.6%	19	1	0.2%
Total Peak Day Visitor Nights				12	2	1.3%	64	2	1.1%
Total Average Day Visitor Nights				2	0	1.3%	12	0	1.1%
Total Peak Day Visitor Numbers				32	5	1.2%	163	5	1.0%
Total Average Day Visitor Numbers				3	0	1.2%	15	0	1.0%

15.2 Employment Projections

15.2.1 KEY INDUSTRIES AND TRENDS

Traditionally, Waimate has been servicing the Waimate District's needs for generations providing secondary schooling, medical care, retail and the council's offices. Thus, Waimate small has a balance of industries.

In recent years there has been a significant amount of private investment into Waimate town centre. This is predicted to continue through the next 10 years. It has been assumed that in Scenario 3 (medium) the investment will create 10 jobs per year until 2025 and in Scenario 2 (high) 20 jobs per year until 2025. Additional migration to Waimate will fill these jobs.

Table 38. Top five industries in Waimate.

Industry	Number of Employees in 2019	% of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Retail Trade	142	15%	0%	3%
Health Care and Social Assistance	140	15%	0%	2%
Construction	136	14%	-3%	3%
Education and Training	109	11%	-1%	1%
Agriculture, Forestry and Fishing	51	5%	-9%	4%

15.2.2 OUTPUT

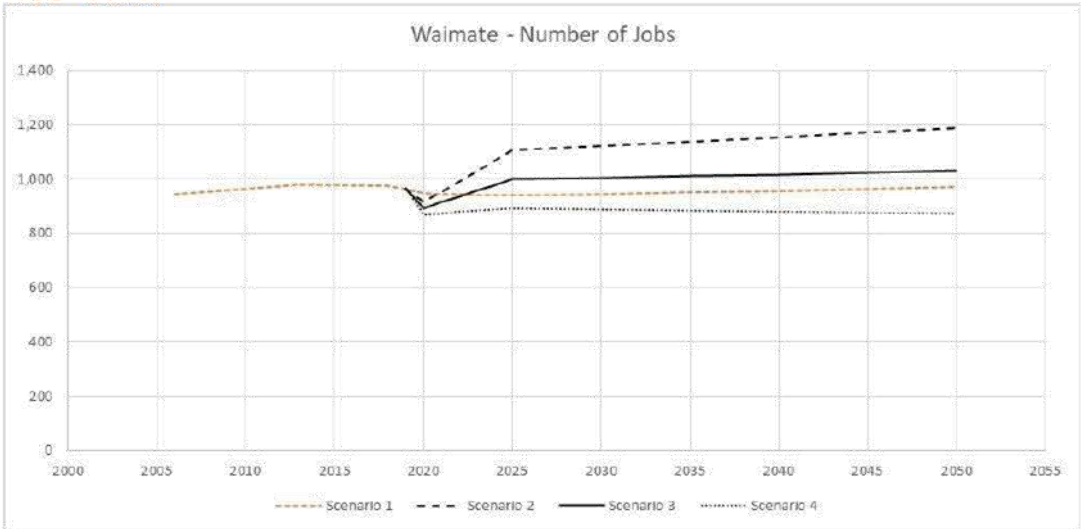


Figure 75. Number of jobs in Waimate.

15.3 Population Projections

15.3.1 KEY MIGRATION DRIVERS

- Migration to Waimate as housing is comparatively more affordable than Timaru.
- People late in their career move for work and lifestyle.
- Older population, who move to the area from other places in the district and might require care.

These trends are reflected below through the population by age and net migration figures.

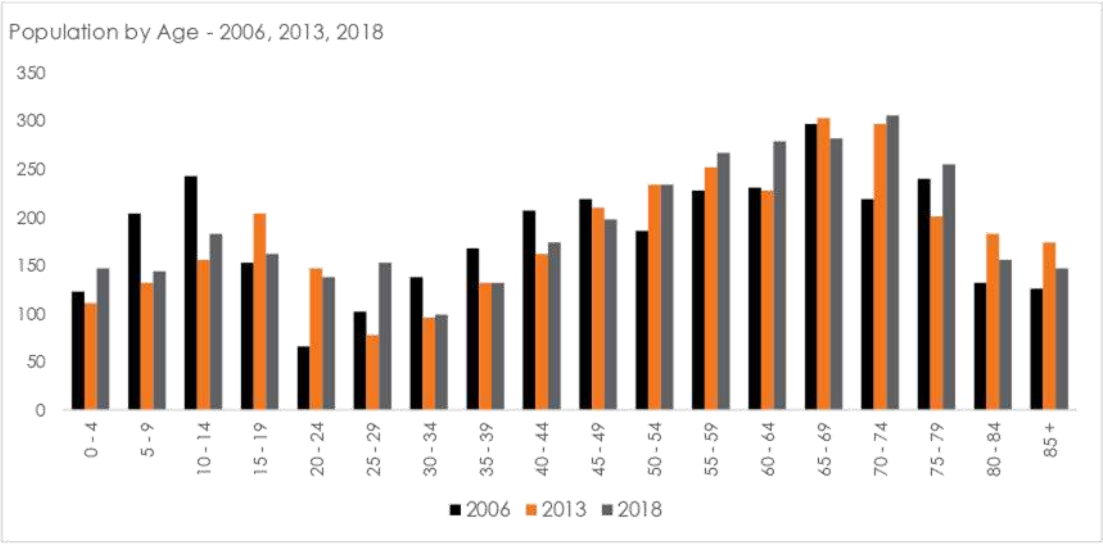


Figure 76. Waimate population by age, 2006, 2013, 2018. Source: Stats NZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This ensures that the modelling is accurate and reliable.

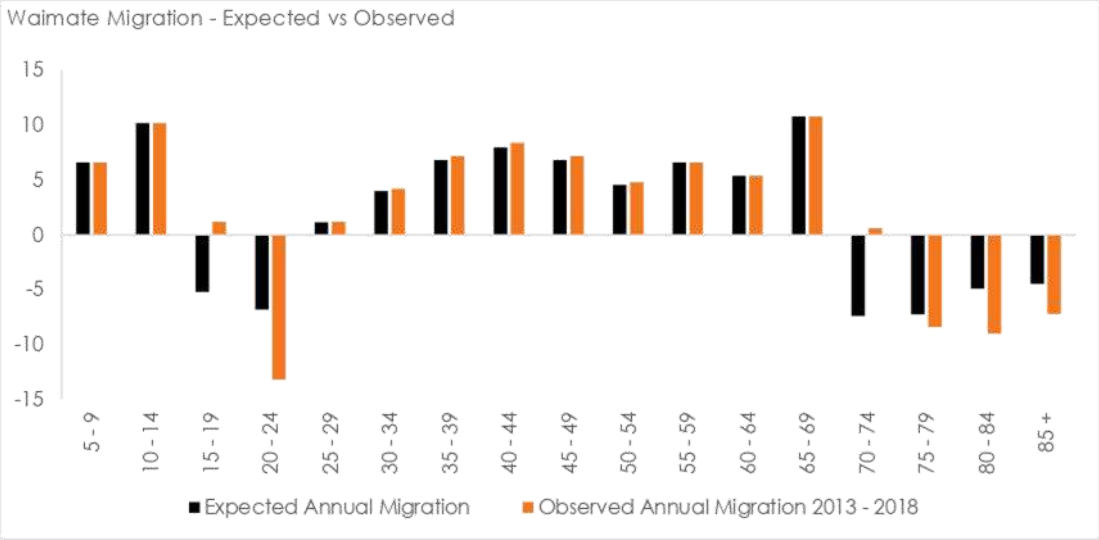


Figure 77. Net migration check

15.3.2 COVID-19

It is unlikely that the population of Waimate will be significantly impacted due to COVID-19.

15.3.3 OUTPUT

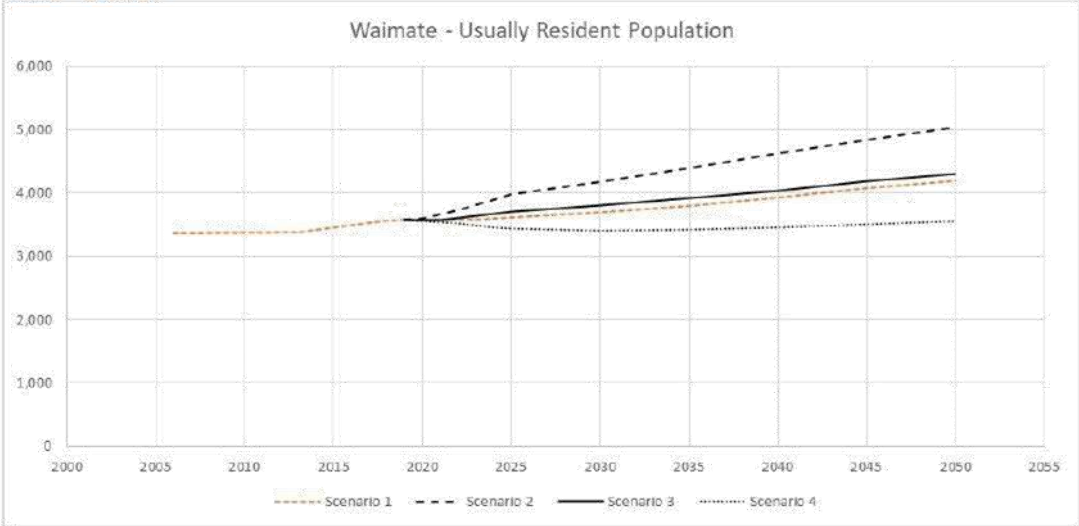


Figure 78. Waimate's usually resident population.

15.4 Dwelling Projections

15.4.1 ASSUMPTIONS

It has been assumed that dwellings will not be demolished if there is negative population growth. These houses become unoccupied dwellings.

In Scenario 4, the population decreases in 2030, this corresponds to fewer occupied dwellings and hence an increase in unoccupied dwellings.

15.4.2 OUTPUT

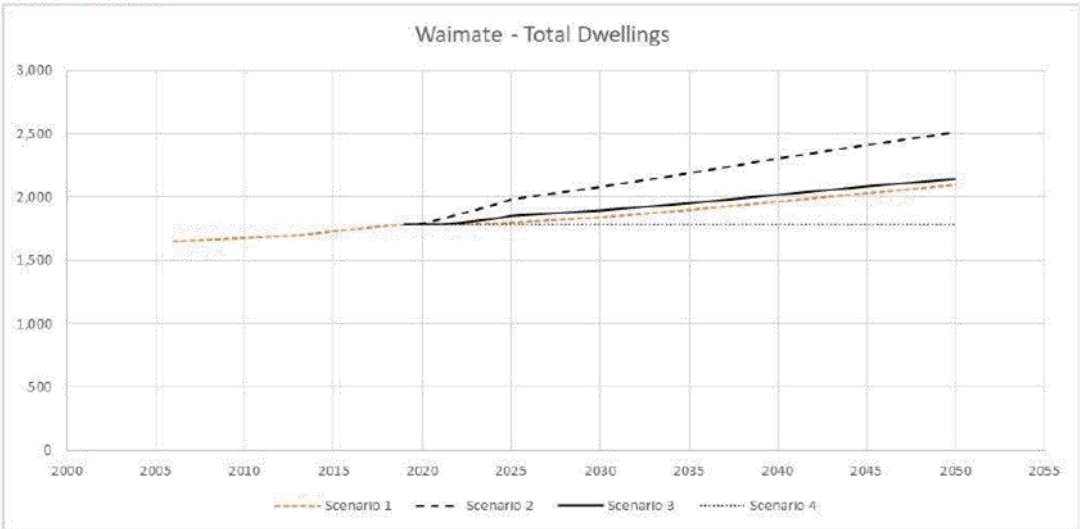


Figure 79. Total dwellings.

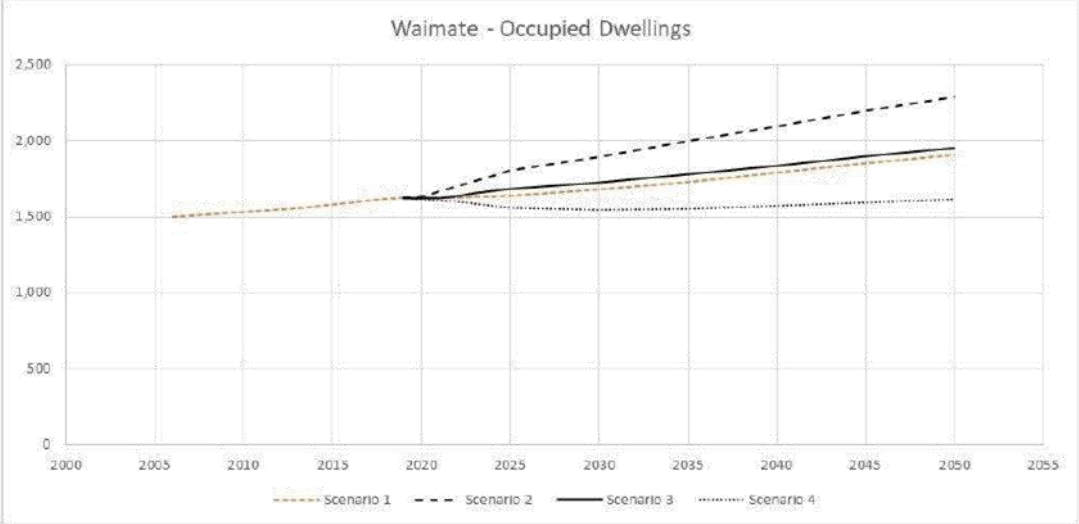


Figure 80. Occupied dwellings.

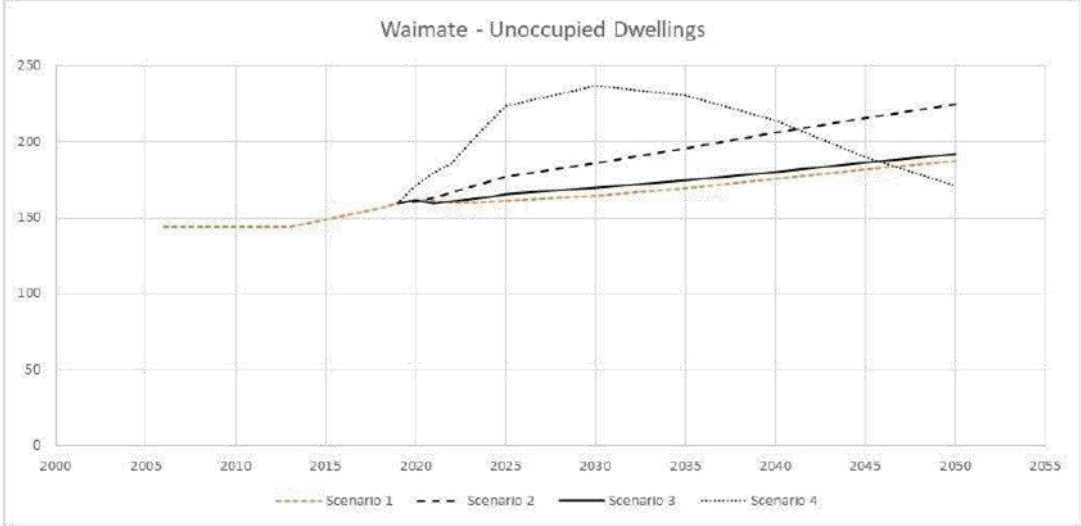


Figure 81. Unoccupied dwellings.

15.5 Visitor Projections

15.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made to the analysis of visitor projections in Waimate. These assumptions are available in Section 7.

15.5.2 OUTPUT

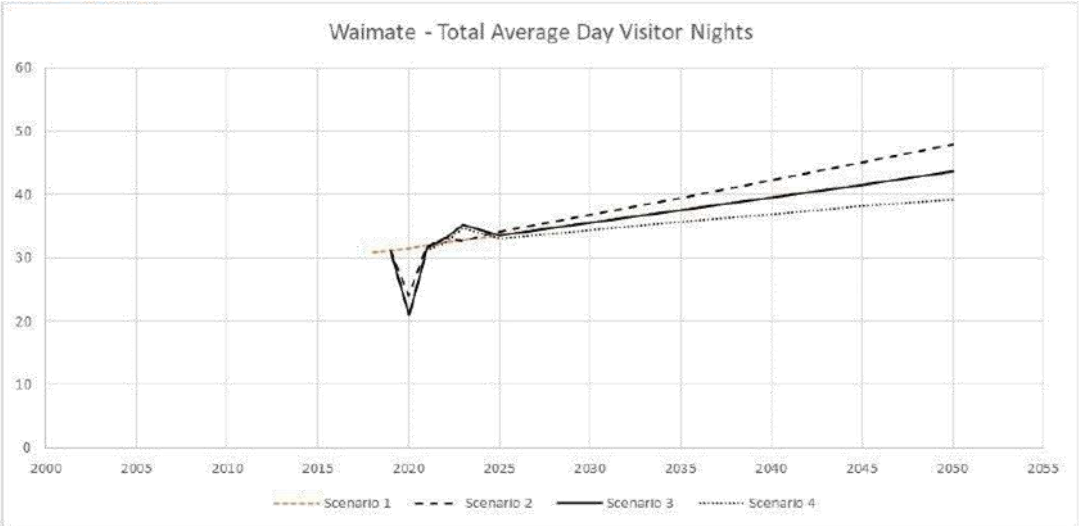
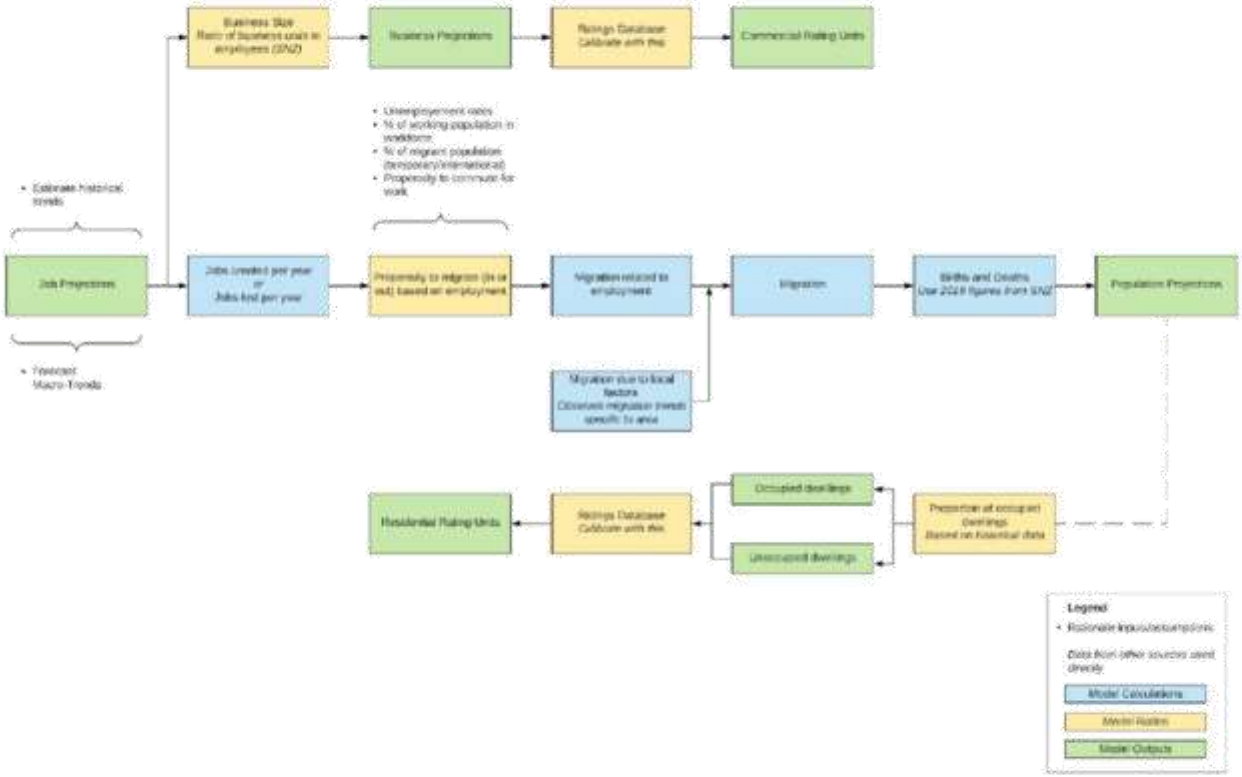


Figure 82. Waimate's average day visitor nights.

Appendix G: Growth Projections Methodology



Waimate District Council's Well-being Assessment Indicators

- ***Economic Well-being***
  - Gross domestic product (GDP) per capita
  - Major road traffic accident statistics
  - Compliant water and wastewater schemes
  - Number of building consents issued
  - Dollar figure spent by visitors in the Waimate District
  - Average accommodation occupancy rate

- ***Social Well-being***
  - Percentage of school leavers by NCEA Level
  - Percentage of residents tertiary educated
  - Employment rate
  - Average median household income
  - Housing affordability
  - Average weekly rent
  - Life expectancy
  - Percentage of residents who consider Waimate district a great place to live in
  - Percentage of residents feeling safe at home
  - Crime rate

- ***Environmental Well-being***
  - Water quality of monitored lakes, rivers, and swimming spots
  - Number of drinking water supplies that comply with water standards
  - Landfill waste-kilograms per capita
  - Rate of transition of Council-owned vehicles to hybrid/electric engines

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- ***Cultural Well-being***
  - Percentage of te reo Maori speakers
  - Ethnic diversity
  - Number of creative and cultural activities offered

Waimate
District Council

FINANCIAL CONTRIBUTIONS POLICY 404

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1.0 PURPOSE

1.1 To determine the purpose for which financial contributions may be required by the Waimate District Council (WDC).

1.2 To provide predictability and certainty in regard to the sources and levels of funding required for meeting increased demand for infrastructure and reserves resulting from growth.

1.3 Within the framework of the Waimate District Plan, to enable the WDC to recover contributions from those parties undertaking development, as a condition of a resource consent or permitted activity, or where the development or activity may have an adverse effect on the natural or physical environment.

2.0 RELEVANT LEGISLATION / INTERNAL POLICIES[1]

2.1 Local Government Act 2002 (LGA)
2.2 Resource Management Act 1991 (RMA)
2.3 Waimate District Plan
2.4 WDC Revenue and Financing Policy

3.0 APPLICABILITY

3.1 This policy applies to any party undertaking development where a contribution is able to be recovered within the provision of the Waimate District Plan, as a condition of a resource consent or permitted activity, or where the development or activity may have an adverse effect on the natural or physical environment.

4.0 DEFINITIONS

4.1 For the purpose of the present policy, the following terms are defined as below:

a. Development:
- Any subdivision, building, land use, or work that generates a demand for reserves, network infrastructure, or community infrastructure; excluded from the scope of this definition are the pipes or lines of a network utility operator.

b. Financial Contribution:
- any contribution of money; or
- any contribution of land - including an esplanade reserve or esplanade strip (other than in relation to a subdivision consent), but excluding Maori land within the meaning of Te Ture Whenua Maori Act 1993; or
- a combination of contribution of money and land.

[1] Includes, but not limited to.

5.0 POLICY STATEMENT

5.1 The present policy is prepared within the wider context of the WDC's financial management policies, and is consistent with the provisions of the WDC's Revenue and Financing Policy, providing for financial contributions to be used as part of the WDC's overall approach to funding capital expenditure.

5.2 Under the LGA, Section 102(1) and Section 102(2)(d) the WDC is required to adopt a policy on development or financial contributions.

5.3 Under the RMA, the WDC may require financial contributions as a condition of a resource consent.

5.4 WDC may require that a financial contribution be made to the WDC as a condition of a resource consent or permitted activity where that activity or development requires additional capacity from any of the following:

a. Public open space and recreation facilities of the District; and
b. Water, sewerage, stormwater, and roading networks.

5.5 In accordance with the RMA, Section 111, where WDC receives a cash contribution under Section 108(2)(a), the WDC shall deal with that money in reasonable accordance with the purpose for which the money was received.

5.6 In relation to capital expenditure, the LGA Section 106(2)(a) requires the Financial Contributions Policy to summarise and explain the total cost of capital expenditure identified in the Long Term Plan (LTP) that the WDC expects to incur to meet the increased demand for community facilities resulting from growth.

5.7 Whilst population growth is anticipated to be low with infill subdivision being catered for by the existing networks, some extended (growth) infrastructure is programmed within the urban area. Financial contributions relating to footpaths and reserves will be collected and capital contributions towards in ground services will be levied.

5.8 Financial contributions can only be required in accordance with the purposes specified in the Waimate District Plan, including the purpose of ensuring positive effects on the environment to offset any adverse effect. The level of contribution must be determined in the manner described in the District Plan.

5.9 A summary of the existing financial contributions provisions under the Waimate District Plan is included in the following sections. The full provisions can be found in the District Plan which is available from the WDC office, or the WDC website.[2]

[2] Waimate District Council, *Waimate District Plan*, <https://www.waimatedc.govt.nz/council/publications/district-plan>

6.0 CAPITAL EXPENDITURE FOR GROWTH

6.1 The following table lists the capital expenditure for growth, for each Activity Group. The table also shows the funding sources for these assets which Council has budgeted in the Long Term Plan 2021-31.

6.2

Activity	Description	2021-31 Total Amount	Funding Source
Cemeteries	Extension	$105,000	Rates
Sewerage	Extension – Point Bush Road	$312,000	Capital Contributions, Debt and Rates
Urban Water Supply	Extension – Point Bush Road	$800,000	Capital Contributions, Debt and Rates
Urban Water Supply	Extension Bakers/Court/Hunts/Fitzmaurice Roads	$980,000	Capital Contributions, Debt and Rates
Urban Water Supply	Booster Manchesters Pump	$30,000	Capital Contributions, Debt and Rates
Urban Water Supply	Extension – Bond Street	$75,000	Capital Contributions, Debt and Rates

6.3 All financial contributions collected are placed in one of the RMA contributions Reserves and are allocated by Council resolution or through a Long Term or Annual Plan.

6.4 *Funding Needs Analysis*:
These projects have been funded in accordance with Council's Revenue & Financing Policy, as contained in the Long Term Plan 2021-31.

Section 101(3) of the LGA 2002 requires that the following be considered:

The funding needs of the local authority must be met from those sources that the local authority determines to be appropriate, following consideration of,—
(a) in relation to each activity to be funded,—
(i) the community outcomes to which the activity primarily contributes; and
(ii) the distribution of benefits between the community as a whole, any identifiable part of the community, and individuals; and
(iii) the period in or over which those benefits are expected to occur; and

(iv) the extent to which the actions or inaction of particular individuals or a group contribute to the need to undertake the activity; and

(v) the costs and benefits, including consequences for transparency and accountability, of funding the activity distinctly from other activities; and

(b) the overall impact of any allocation of liability for revenue needs on the current and future social, economic, environmental, and cultural well-being of the community.

Responses to these requirements in relation to the Financial Contributions Policy are:

Community outcomes

This policy contributes to:

- District assets that provide recreation and leisure choice
- Our services, infrastructure and environment maintains quality of life
- A District that provides infrastructure for economic activity.

Distribution of benefits

Council apportions all capital expenditure into the classifications of growth, renewal, and level of service, by the areas of benefit. This apportionment represents the distribution of benefit to the community as a whole, to identifiable parts of the community and to individuals.

Period over which the benefits are expected to occur

Once a financial contribution has been paid in relation to a subdivision or development, the benefits of the asset, service, or environmental enhancement is expected to be on going and should occur indefinitely.

Action or inaction that contributes to the need for this activity

The provision of assets, services, or environmental standards that promote the community outcomes may not be willingly provided by the development community. In addition Council is often the only viable supplier (often legally required to provide services) of these services and therefore Council has a moral and legal obligation to supply additional assets, services to meet the new community needs.

Costs and benefits of funding this activity

The benefits to the existing community are significantly greater than the cost of policy making, calculations, collection, accounting and distribution of funding for development and financial contributions.

Allocation of liability for revenue needs

The liability for revenue falls directly with the development community. At the effective date of this policy, Council does not perceive any impact on the social, economic, environmental and cultural well-being of this particular sector of the community. At any stage in the future where there may be impacts of this nature, Council may revisit this policy.

7.0 PROVISION ON OPEN SPACE & RECREATION

7.1 Financial contributions may be collected for the provision and maintenance of open space and recreational facilities to meet the diverse needs of residents and visitors to the District.

7.2 Financial contributions may be required as a condition of an activity, whether or not it requires a resource consent, including any subdivision or development for residential, commercial or industrial purposes - including utilities, but excluding network utilities.

8.0 PROVISION ON STORMWATER DISPOSAL

8.1 Financial contributions may be collected to meet the costs of upgrading stormwater services which are attributable to the impacts of subdivision or development.

8.2 Financial contributions may be required where an activity, whether or not it requires resource consent, will discharge stormwater to a WDC reticulated stormwater system.

9.0 PROVISION ON WATER SUPPLY

9.1 Financial contributions may be collected to meet the costs of upgrading water supply services which are attributable to the impacts of subdivision or development.

9.2 Financial contributions may be required where an activity, whether or not it requires a resource consent, is to be connected to a WDC reticulated water supply system.

10.0 PROVISION ON SEWAGE DISPOSAL

10.1 Financial contributions may be collected to meet the costs of upgrading sewage disposal services which are attributable to the impacts of subdivision or development.

10.2 Financial Contributions may be required where an activity, whether or not it requires a resource consent, is to be connected to a WDC reticulated sewage disposal system.

11.0 PROVISION ON ROAD & PROPERTY ACCESS

11.1 Financial contributions may be collected to meet the costs of upgrading roading and property access which are attributable to the impacts of subdivision or development.

11.2 Financial Contributions may be required where an activity, whether or not it requires a resource consent, has access to a road which is not formed to the standards specified in Rule 9.2 in the Waimate District Plan Section 10, towards road widening, construction and/or formation including footpaths.

12.0 DEVELOPMENT CONTRIBUTIONS

12.1 WDC's policy in relation to Development Contributions is to not levy contributions under Section 106 of the LGA, but to collect Financial Contributions pursuant to Section 108 of the RMA.

13.0 DOCUMENT CONTROL

Queries:	Corporate Services Group Manager
Effective:	MMM 2021 (via the adoption of LTP 2021-2031)
Previous Review Date(s):	26 June 2018
Next Review Date:	June 2024
Document Owner:	Corporate Services Group Manager
To be only amended by:	Resolution of Council

Waimate District Council

INVESTMENT POLICY 403

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1. Purpose

To guide Council in the making of investment decisions and managing investments.

2. Scope

This policy applies to all financial assets, equity investments and investment properties.

3. Responsibility

The Chief Executive is responsible for implementing this policy.

4. Investment Mix

Council may maintain investments in the following:

- Loans Advances
- Equity Investments
- Property Investments
- Forestry Investments
- Financial Investments

5. Policy Statements

Council's philosophy in the management of investments is to optimise returns in the long term while balancing risk and return considerations. Council recognises that as a responsible public authority any investments that it does hold should be low risk, giving preference to conservative investment policies and avoiding speculative investments. It also recognises that lower risk generally means lower returns.

Any new investments are approved by the appropriate delegated authority, which provides that the Chief Executive may approve such cash investments with approved counterparties up to a value of $2,000,000 for a term of six months. Beyond this, Council resolution is required.

Council does not hold financial investments other than those involving general and specific reserves, and cash management balances. In its financial investment activity, Council's primary objective, when investing, is the protection of the investment capital value and to minimise the risk of loss. Accordingly, only credit worthy counterparties are acceptable. Council's policy on managing credit risk is contained in Section 10.

Within the credit constraints contained in Section 10, Council also seeks to:

- Optimise investment return.
- Ensure investments are liquid and sufficiently flexible.
- Diversify the mix of financial investments.
- Manage potential capital losses due to interest rate movements if investments need to be liquidated before maturity.

6. Equity Investments

Council's current equity investments and other shareholdings, are included in Council's most recent Annual Report.

Council's investments in such assets fulfil various strategic and financial objectives and comply fully with Council's statutory powers.

All income from Council's equity investments, including dividends, are credited to the Investment & Finance Activity, thereby included in general funds and used for the reduction of rates generally. Council is however aspiring to reduce reliance on investment income as a rates mitigating tool in order to alleviate the impact on rates when investment returns fluctuate.

Council receives annual financial statements and reviews performance of these investments to ensure that the stated performance objectives are being achieved.

Council will periodically review equity investments and reassess its reasons for ownership and consider whether the return on investment is acceptable, given these reasons for ownership, and whether continued ownership of the investment is prudent and in the best interest of the community.

Any disposition of equity investments requires Council approval. Proceeds from the disposition of equity investments are applied to, either:

- The repayment of general debt, or
- Capital development, or
- Alternative investment purposes.

Proceeds are not used for operational expenditure purposes, unless Council considers it prudent to do so.

7. Property Investments

Council's overall objective is to only own property (including land holdings, buildings and excluding operating assets), that is necessary to achieve its strategic objectives. Council reviews property ownership through assessing the benefits of continued ownership in comparison to other arrangements which could deliver the same results. This assessment is based on the most financially viable method of achieving the delivery of Council services. Council generally follows a similar assessment criterion in relation to acquiring new property and land investments.

Property rentals, excluding Community Housing and internal rents, are charged at commercial levels, and all income, including rentals and ground rent from property investments, is held in property reserves.

Council reviews the performance of its investment properties at least annually.

Any disposition of property over $40,000 requires the approval of Council. Any proceeds on disposition are firstly used to repay related debt and then allocated to capital development purposes. Council intends to dispose of all surplus land holdings by tender, or by such method that market value is achieved, whilst being cognisant of the requirements of legislation including to offer back under the Public Works Act 1981.

8. Forestry Investments

Forestry assets are primarily held as long term investments on the basis of their net positive discounted cashflows, factoring in projected market prices, annual maintenance and cutting costs; and to generate carbon credits. On-going costs are held in a reserve to be funded from forestry sales.

The management of forestry assets is contracted. The contractor will complete on-going plantation maintenance and six monthly reporting to Council. An annual audit of the plantation is completed by an independent forestry consultant.

Any disposition requires Council approval. Proceeds from the disposition of forestry investments, including real estate, leases, forestry sales, etc. may be applied to the repayment of the Forestry Reserve deficits, Forestry Loans, re-establishment of existing or new Council forests or such other use as Council specifically directs.

9. Financial Investments

Council maintains financial investments for the primary reasons:

- Investment proceeds from the sale of assets.
- Invest amounts allocated to general and specific reserves.
- Invest funds allocated for approved future expenditure.
- Invest surplus cash, and working capital funds.

Interest income earned on financial investments is accounted for within general reserves. The Environment Services and Finance Committee reviews financial investment performance through standard monthly reporting.

10. Objectives for Management of Financial Investments

Council's primary objective when investing is the protection of its investment. Accordingly, only credit worthy counterparties are acceptable. Credit worthy counterparties are selected on the basis of their current Standard and Poors (S & P) rating, which must be strong or better. Credit ratings are considered when a new investment is made and changes monitored by Council finance staff through updated S & P rating advice.

Council approves investment strategy, as recommended by the Treasury Management Team (as defined in the Liability Management Policy), who after seeking appropriate advice, incorporates plans for approved expenditure and strategic initiatives, and evaluates the outlook for interest rates and the shape of the yield curve.

The following principles capture the above objectives and form the key assumptions of the operating parameters contained in – Counterparty Exposure Limits:

- Credit risk is minimised by placing maximum limits for each broad class of non-Government issuer, and by limiting investments to local authorities, registered banks, strongly rated SOE's, and corporates within prescribed issuer and portfolio limits.
- Liquidity risk is minimised by ensuring that all investments must be capable of being liquidated in a readily available secondary market.

11. Procedures

Procedures to Manage Investments and Report to Council

Cash Management

From time to time, Council has daily cashflow surpluses and borrowing requirements due to the mismatch of daily receipts and payments. All cash inflows and expenses pass through bank accounts controlled by the finance function.

Any excess cash not expected to be needed in the short term is transferred to Council's Call Account, to ensure interest is earned at the most advantageous rate.

Cash management activities must be undertaken within the following parameters:

- Cash management instruments are limited to:
  - Call deposits and registered banks.
  - Negotiable instruments issued by banks with a maturity less than three months.
  - Term deposits with registered banks for an appropriate term which optimizes the return on investment, giving consideration to forecasted cashflow requirements. Not recommended if early break penalties are enforced.
  - Cash may only be invested with approved counterparties.
  - An optimal balance of $100,000 is targeted for in Council's main bank account.
  - Interest rate risk management on cash management balances is not permitted.

Procedures to Assess and Manage Risks Associated with Investment

Interest Rate Risk Management (for Investments)

Where Council's investments give rise to a direct exposure to a change in interest rates, impacting the return and capital value of its fixed rate investments, investment interest rate risk management is required..

The Treasury Management Team recommends interest rate risk management strategy by monitoring the interest rate markets on a regular basis, and after taking appropriate advice, evaluates the outlook and determines the interest rate profile to adopt for investments.

Finance staff implement interest rate risk management strategy by reviewing rolling cashflow forecasts and using risk management instruments to protect investment returns, and/or to change interest rate and maturity profile, within the strategy determined by the Treasury Management Team.

The following interest rate risk management instruments may be used for interest rate risk management activity, after formal prior approval of the Treasury Management Team:

- Forward rate agreements.
- Interest rate swaps.
- Purchase of interest rate options products including floors, bond options and swaptions.
- Interest rate collar type strategies.

Selling interest rate options for the purpose of generating premium income is not permitted.

12. Counterparty Exposure Limits

Council ensure that all investment, interest rate risk management as well as any foreign exchange activity is undertaken with institutions that are of high quality credit, to ensure amounts owing to Council are paid fully and on due date.

More specifically, Council minimises its credit exposure by:

- Transacting with entities that have a strong credit rating.
- Limiting total exposure to prescribed amounts and portfolio limits.
- Timely and rigorous compliance monitoring.

The following table summarises credit requirements and limits:

Institution	Minimum S&P Short Term Credit Rating 10	Minimum S&P Long Term Credit Rating 11	Total Exposure Limit for each Counterparty	Portfolio Limit (% of Total Portfolio)
Government	N.A.	N.A.	Unlimited	100%
Local Authorities	N.A.	N.A.	$2 million	100%
Registered Banks	A-1	A-	$12 million	100%
Strongly Rated Corporates and State Owned Enterprises	A-1	A-	$2 million	40%

Note:

- Short-term refers to securities with a remaining maturity of 12 months or less.
- Long term refers to securities with a remaining maturity of more than 12 months.

If any counterparty's credit rating falls below the minimum specified in the above table, then immediate steps are taken to reduce the credit exposure to that counterparty to zero.

13. Glossary

BKBM: The Forward Rate Agreement, (FRA) settlement rate as determined at 10.45 am each business day on Reuters page BKBM.

Bond Options: Council when purchasing a bond option, has the right but not the obligation to buy or sell a specified Government stock maturity on an agreed date and time, and at an agreed rate.

Forward Exchange Contract: Council when entering into a Forward Exchange Contract agrees a rate today at which one currency is sold or bought against another for delivery on a specified future date.

Forward Rate Agreement: An agreement between Council and a counterparty (usually a bank) protecting Council against a future adverse interest rate movement. Council and the counterparty agree to a notional future principal amount, the future interest rate, the benchmark dates and the benchmark rate (usually BKBM).

Interest Rate Collar Strategy: The combined purchase (or sale) of a cap or floor with the sale (or purchase) of another floor or cap.

Interest Rate Options: The purchase of an interest rate option gives the holder (in return for the payment of a premium) the right but not the obligation to borrow (described as a cap) or invest (described as a floor) at a future date. Council and the counterparty agree to a notional future principal amount, the future interest rate, the benchmark dates and the benchmark rate (usually BKBM).

Interest Rate Swap: An Interest Rate Swap is an agreement between Council and a counterparty (usually a bank) whereby Council pays (or receives) a fixed interest rate and receives (or pays) a floating interest rate. The parties to the contract agree notional principal, start date of the contract, duration of the contract, fixed interest rate and the benchmark rates (usually BKBM).

Liquidity Ratio: This ratio measures the ability of Council to generate cash from assets in order to meet its obligations. Council's liquidity or acid test ratio consists of the sum of cash, marketable securities, short term notes and receivables, supplemented by any unused bank overdraft facility that Council may have with its principle bankers, that is able to be called upon instantly, divided by current liabilities.

Swaption: The purchase of a swaption (swap option) gives Council the right but not the obligation to enter into an interest rate swap, at a future date, at a specific interest rate.

16. Publication Details

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LIABILITY MANAGEMENT POLICY 402

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1. Purpose

To state Council's policies in respect of the prudent management of both borrowing and other liabilities.

2. Scope

This policy covers all borrowings by Council, except where for hire purchase, credit, or the period of indebtedness is less than 91 days, or the goods or services are obtained in the ordinary course of operations on normal terms for amounts not exceeding in aggregate a total of $14,000,000.

3. Responsibility

The Chief Executive is responsible for implementing this policy.

The Chief Executive will be supported by a Treasury Management Team consisting of at least two of the following three positions:

- Corporate Services Group Manager
- Accountant
- Independent Treasury Advisor

4. Approved Borrowing Instruments

Council may borrow through a variety of market mechanisms, considered to be approved borrowing instruments. These primarily comprise:

Bank-Sourced Borrowing

Bank overdraft facilities are seen as the most flexible facility for day-to-day short term borrowings, but inevitably at a higher interest cost than longer term facilities. Therefore, they are primarily to be used where the term of borrowing is expected to be less than three months.

Revolving Credit Facilities (Flexible Rate Term Loan Facility)

Revolving credit facilities (or a Flexible Rate Term Loan) are similar to bank sourced borrowing from a borrower's perspective, except interest is paid in arrears rather than upfront as in the case of bank bills. Revolving credit facilities are usually for a term of up to three years but may be for as long as five years and like bank bills drawings under the facility are priced off the bank bill buy rate. Most facilities allow for the borrowers to draw up to the facility amount in various tranches of debt and for various terms out to a maximum term of the maturity date of the facility. Like bank bills most borrowers use these facilities to borrow on a 90 day basis.

Within Council's variable amount term loan limit, borrowing amounts may be separately identified and "ring fenced" to a known term and known interest rate cap, in order to align with the term and known interest income of a Council long term project by the use of a hedging instrument.

Costs

The principal costs are the same as with bank bills, the lending bank's yield sets the base rate at the time of lending, an arrangement fee, an acceptance fee and a line fee (expressed in basis points or percentage per annum) and the margin. Acceptance fees, arranger fees, line fees and margins in aggregate normally range between 35-300 basis points (i.e. 0.35% - 3.00%), depending on the credit worthiness of the borrower.

Short Term Money Market Lines

Short term money market loans or cash loans can be Committed or Uncommitted. A customer pays for a guarantee of the availability of the funds in a Committed Loan. In an Uncommitted Loan, funds are provided on a best endeavours basis and no line/commitment fee is payable. In addition to a line fee, a margin may be charged on any line usage.

The minimum amount for a cash loan is $1,000,000. Smaller loans can be arranged, although the interest rate quoted will be a reflection of the size of the loan.

The main usage of cash loans is to cover day-to-day shortfalls in funds. The interest rate is governed by the term of the borrowing and the implied or implicit credit rating of the borrower. Cash loans are short term only and are normally drawn for a term of one (overnight) to seven days. Interest collection can be daily.

Bank Bill Facilities

Council has a committed bank overdraft. Overdraft facilities are utilised as little as practical, (i.e. call funds are utilised to meet day-to-day expenses where possible).

An unconditional order in writing, addressed by one person to another signed by the person giving it, requiring the person to whom it is addressed to pay on demand, or at fixed or determinable future time, a sum certain in money to, or to the order of a specified person, or to bearer.

Bank bill facilities are normally for a term of up to three years but may be for as long as five years. Bank bills are bills of exchange, drawn or issued usually by the original borrower and accepted or endorsed by a bank.

For a Bank Accepted Bill, the bank makes the payment of the face value of the bill on maturity. Most bank bills traded in the New Zealand market are Bank Accepted Bills.

Bank Endorsed Bills have been endorsed by a bank with another part as acceptor. In the event of default of the original acceptor, payment can be sought through the chain of endorsers to the bill.

An investor in bank bills can sell the bills prior to maturity date and receive the cash. Bank bills are a longer term borrowing instrument than cash loans. Bills are normally drawn for terms of 30, 60, or 90 days with a few being drawn for 180 days. The 90 day bank bill is the underlying traded benchmark instrument for the short end of the market.

Costs

The principal costs to the borrower are the discounting bank's yield at which it discounts the bill at the time of drawdown, an arrangement fee, an acceptance fee and a line fee (expressed in basis points or percentage per annum) and margin. Acceptance fees, arranger fees, line fees and margins in aggregate normally range between 35 – 300 basis points (i.e. 0.35% - 3.00%), depending on the credit worthiness of the borrower.

Local Authority Bonds

Local Authority Bonds are issued by a variety of local governments by tender or private placement. The Bonds are registered securities. They are repayable on a fixed date, and are generally issued for terms ranging from one to fifteen years.

Local Authority Bonds are quoted on a semi-annual yield basis and priced on a discounted cashflow basis. A fixed coupon payment is made semi-annually to the holder of the security.

Structured and Project Finance

Project and structured financing matches up debt to suit the quantifiable income stream from the project. This type of financing is appropriate for the funding of standalone assets which are able to be ring-fenced and over which security can be taken. The sort of assets to which this usually applies are assets which are transferable, and for which an international equity market exists, e.g. infrastructural assets. The owner of the asset usually retains an equity interest in the asset.

5. Internal Borrowing

Objective

Council's primary objective in funding debt internally is to use cash held in capital replacement, depreciation, separate rate, and special and trust funds effectively by establishing an internal loan portfolio that provides funding to internal cost centres. This creates operational efficiencies as savings are created by eliminating the 'bankers margin' that would be owing through Council simultaneously investing and borrowing with the bank.

Legal Compliance

Internal borrowing was authorised by the Local Government (Rating) Act 2002. Council considers that by applying available funds against debt through an internal debt management process is using its funds to most efficient use at low risk.

General Policy

The internal loan portfolio is used as an input into determining Council's external debt requirements. Where possible, reserves are used to reduce external debt, effectively reducing Council's net interest cost. Where debt financing is approved by the Annual or Long Term Plan, Council in setting the treasury strategy will determine the effectiveness of using either external or internal debt.

Principles

The following principles apply to the management of Council's internal loan portfolio:

- The internal loan is recorded on a schedule of internal loans and reported to Council through the Annual Report.
- Principal amounts are repaid annually and interest repaid in quarterly instalments.
- Loan terms are agreed on establishment of the loan and determined on a table mortgage basis.
- Interest is charged to each internal loan and for short-term operational deficits in separate rate accounts.

- Interest will be paid to separate rate, depreciation reserves and special and trust funds quarterly, based on the prior 30 June end of year balance.
- All rate income collected for the purpose of a loan will be repaid to the loan. Where the actual interest rate varies from the budgeted interest rate, Council first applies the interest charge then holds the balance of the income in reserve.

Interest Rates

Interest rates applied to the internal investments and debt are calculated and set annually using the following guidelines:

- Council estimates the likely internal borrowing interest rate.
- The interest rate is based on Council's actual weighted average cost of funds and takes into account the following factors:
  - Estimated earnings on cash invested.
  - Estimated cost of external borrowings.

6. Policy

General Matters

Council will from time to time exercise its flexible and diversified borrowing powers within the terms of this policy, as provided for by the Local Government Act 2002 particularly the Principles of Good Financial Management as set out in the Local Government Act 2002 (Part 6, Subpart 3) in any borrowing decisions and aims to achieve the lowest possible net borrowing costs within these policy parameters.

Council raises borrowing for the primary purposes as set out in the Revenue and Financing Policy.

In evaluating any new or renewal borrowings (in relation to source, term, size and pricing) the following matters will be taken into account:

- The size and the economic life of the project.
- The impact of the new debt on the borrowing limits.
- Relevant margins under each borrowing source.
- Council's overall debt maturity profile, to ensure concentration of debt is avoided at reissue/rollover time.
- Prevailing interest rates relative to term for both stock issuance and bank borrowing and management's view of future interest rate movements.
- Available term from bank and stock issuance.
- Legal documentation and financial covenants.

Foreign Exchange

From time to time Council has foreign exchange exposure through the occasional purchase of foreign exchange denominated goods and services.

Where possible, all supplier invoices are raised in New Zealand Dollars. Where this is not possible, all significant commitments for foreign exchange are hedged using foreign exchange contracts, once expenditure is approved. Smaller payments are converted at the spot exchange rate on the date of payment. Both spot and forward foreign exchange contracts are used by Council.

Council does not borrow or enter into incidental arrangements within or outside New Zealand in currency other than NZ currency.

Interest Rate Exposure/Risk Management

Interest Rate Risk Management (for Borrowings)

Council's borrowing gives rise to direct exposure to interest rate movements. Generally, given the long term nature of Council's assets, projects and intergenerational factors, and Council's preference to avoid an adverse impact on rates, there is a general tendency to have a high percentage of long term fixed rate, or hedged borrowing.

The following table provides guidelines for achieving a floating rate mix, together with the appropriate discretionary authority:

For Debt Exceeding $2,000,000		
Term of Exposure	**Maximum Floating Rate Exposure**	**Revised Floating Rate Exposure Allowable Upon the Treasury Management Team Written Approval**
0-1 year	55%	75%
1-3 years	10%	30%
3-5 years	N.A	20%
5-7 years	N.A.	10%
7 years +	N.A.	N.A.

NOTE: Percentages in excess of these may be approved by Council. The table includes debt maturing in the current year, i.e. debt maturing in the current year is considered floating rate debt.

The Treasury Management Team recommends the interest rate risk management strategy by monitoring the interest rate markets on a regular basis and after undertaking appropriate research, evaluating the outlook for short term rates in comparison to the rates payable on its fixed rate borrowing.

Management then implements interest rate risk management strategy through the use of the following:

- Adjusting the average maturity of its borrowings, thereby managing interest rate risk within the confines of liquidity management.
- Interest rate risk management products (refer note below) to convert fixed rate borrowing into floating rate, floating rate borrowing into fixed or hedged borrowing, and to manage maturity mismatches between its borrowings and investments.
- The following interest rate risk management instruments (refer Section 4 for definitions) may be used for interest rate risk management activity, after seeking formal prior approval of Council:
    - Forward rate agreements
    - Interest rate swaps
    - Purchase of interest rate options products including caps, bond options and swaptions
    - Interest rate collar type option strategies

Selling interest rate options for the primary purpose of generating premium income is not permitted because of its speculative nature.

Liquidity

Council's ability to readily attract cost effective borrowing is largely driven by its ability to maintain a strong financial position as well as its ability to rate, manage its image in the market, and its relationship with its banker.

Council budgets to repay term debt payments as they fall due. Council's treasury management approach will ensure sufficient facilities are available to renew floating debt, at all times. The main tool for this is to ensure that funds are available through committed bank facilities. Furthermore, Council maintains a line of available credit in the form of a bank overdraft with its principal bankers of $200,000.

With an active internal borrowing portfolio the Treasury Management Team need to ensure that the facilities are sufficient to cover the transfer of a portion of internal debt to external should a reserve be required to be used.

To minimise the risk of large concentrations of term debt maturing or being reissued in periods where credit margins are high for reasons within or beyond Council's control, Council ensures debt is spread over a band of maturities and ensures that:

No more than 33% of total term debt is subject to refinancing in the next financial year. Total term debt includes existing and forecast borrowings. For the purposes of determining this ratio, total term debt does not include Revolving Credit Facilities, as they are negotiated with the Bank every three to six years and in the last year are then fully subject to refinancing the next financial year, nor does it include Structured and Project Finance which is a specific funding of standalone assets.

Liquidity Profile throughout Council's Typical Year

Significant Monthly Outgoings

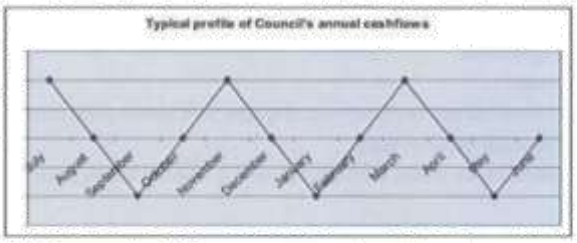
The most significant monthly outgoing for Council is accounts payable, in the form of sundry creditors. These are typically incurred at a relatively uniform rate for each month of the financial year with the exception that due to operational requirements for road construction and maintenance significant roading expenditures may be incurred in Council's last quarter (April/May/June). Furthermore, significant infrastructural project expenditure, such as Stimulus Funded projects, may also skew typical monthly outgoings.

Significant Monthly Incomings

Council's most significant income type is rates. Council rates are due to be paid in four instalments throughout the financial year, typically represented as follows:

For Period	Due
July/August/September	Last Friday in August
October/November/December	Last Friday in November
January/February/March	Last Friday in February
April/May/June	Last Friday in May

Note also that Council, in line with good Financial Management, promotes prompt payment and advance payments of its rating charges and typically achieves a very high proportion of rates instalments paid by month end in August, November, February and May.



Because of the patterns of cashflow incomings and outgoings above, Council typically operates with adequate liquidity from rates cashflow, to meet sundry creditors in the months of August, November, February and May. Any cashflow surplus to expenditure requirements in those months is deposited to a call account with Council's principle bankers, in order to maximise interest earned. In months where rates incoming cashflow is not sufficient to meet expenditure requirements, funding is drawn firstly from Council's interest bearing call account, and secondly, Council may draw on its bank overdraft facility.

Impact on Liquidity Ratio Requirement

For these reasons, the traditional measure of balance sheet solvency of current liabilities being matched by current assets on a 1:1 basis at all times is not appropriate or necessary

in order for Council to meet its obligations to pay sundry creditors.

For the purposes of liquidity management, Council uses its line of credit in the form of unused bank overdraft with its principal bankers, to meet financial outgoings.

Credit Exposure

Council may be exposed to credit risk in circumstances where deterioration occurs, of the credit rating of an entity with whom Council has placed investments or has concluded financial derivate contracts or has concluded a major supply, construction or service contract.

In order to safeguard Council against such risk the following guidelines have been adopted:

- Investments are only placed with parties that meet certain minimum credit ratings and only up to certain limits.
- Financial derivative contracts are only to be concluded with registered banks with certain minimum credit ratings.
- All parties with whom Council intends to conclude major contracts will be subject to formal credit approval.
- Tenders for contracts will note that unacceptable credit reviews of a tenderer will be grounds for discretionary rejection of a tender.

Debt Repayment

The term of debt repayment should be aligned with expected life of the intergenerational asset funded or the expected period of Council involvement in an economic development initiative.

Note that the funding will be so aligned but external borrowings may be repaid on a shorter term to minimise interest costs to the Council.

Council may repay borrowings from either asset sale proceeds or from general reserves, including accumulated depreciation reserves.

Specific Borrowing Limits

Council is required to set a limit on borrowing in its Financial Strategy every three years as part of the Long Term Plan. In that document Council sets its limits for the period of the plan, taking account of growth expectations, expenditure and funding needs as well as community views around acceptable debt levels. The limits below are limits that it is financially prudent to operate within. Council in setting its Long Term Plan should be guidedby these upper limits.

In order to protect Council from a heavily debt weighted balance sheet, the following borrowing limits will be observed:

Limit will be the lowest after considering each of the following:-

- The gross annual interest expense of all borrowings will not exceed 10% of total annual rates income; or
- Net cash inflow from operating activities exceed gross annual interest expense by two times; or
- Debt to be no more than 5% of total reported value of property, plant and equipment.

The Giving of Securities and Guarantees

Security

Council offers rates as security for its borrowing programmes. From time to time, with prior Council approval, security may be offered by providing a charge over one or more of Council's assets, or a charge over rates.

7. Glossary

BKBM: The Forward Rate Agreement (FRA) settlement rate as determined at 10.45 am each business day on Reuters page BKBM.

Bond Options: Council when purchasing a bond option, has the right but not the obligation to buy or sell a specified Government stock maturity on an agreed date and time, and at an agreed rate.

Forward Exchange Contract: Council when entering into a Forward Exchange Contract agrees a rate today at which one currency is sold or bought against another for delivery on a specified future date.

Forward Rate Agreement: An agreement between Council and a counterparty (usually a bank) protecting Council against a future adverse interest rate movement.

Council and the counterparty agree to a notional future principal amount, the future interest rate, the benchmark dates and the benchmark rate (usually BKBM).

Interest Rate Collar Strategy: The combined purchase (or sale) of a cap or floor with the sale (or purchase) of another floor or cap.

Interest Rate Options: The purchase of an interest rate option gives the holder (in return for the payment of a premium) the right but not the obligation to borrow (described as a cap) or invest (described as a floor) at a future date. Council and the counterparty agree to a notional future principal amount, the future interest rate, the benchmark dates and the benchmark rate (usually BKBM).

Interest Rate Swap: An Interest Rate Swap is an agreement between Council and a counterparty (usually a bank) whereby Council pays (or receives) a fixed interest rate and receives (or pays) a floating interest rate. The parties to the contract agree notional principal, start date of the contract, duration of the contract, fixed interest rate and the benchmark rates (usually BKBM).

Liquidity Ratio: This ratio measures the ability of Council to generate cash from assets in order to meet its obligations. Council's liquidity or acid test ratio consists of the sum of cash, marketable securities, short term notes and receivables, supplemented by any unused bank overdraft facility that Council may have with its principal bankers that is able to be called upon instantly, divided by current liabilities.

Swaption: The purchase of a swaption (swap option) gives Council the right but not the obligation to enter into an interest rate swap, at a future date, at a specific interest rate.

8. Publication Details

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Waimate
District Council

RATES REMISSION AND POSTPONEMENT POLICY 407

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POLICY OVERVIEW

1.0 PURPOSE

1.1 To provide rates relief through remissions in order to enable a fairer allocation of rates with regard to the district's social, cultural, environmental, and economic wellbeing, and to meet community outcomes. Parts of this policy extends the non-rateable provisions of schedule 1 of the Local Government (Rating) Act 2002.

1.2 To outline Waimate District Council's (WDC) policy towards remission or postponement of rates on Maori freehold land.

2.0 APPLICABILITY

2.1 This policy applies to any rate charges remitted by the WDC, and applies to the following types of rating units or under the following circumstances:

- Community and cultural organisations
- Halls and community centres
- Sporting clubs
- Land upon which the occupier has voluntarily preserved or enhanced natural, historical, or cultural features
- School sewerage charges
- Glenavy Hall Rate for the Glenavy Fishing Camp
- Community housing
- Rating units affected by natural calamity or fire
- Rates Penalties

3.0 HIERARCHY OF RESPONSIBILITIES

3.1 The Corporate Services Group Manager and Chief Executive have the authority to approve remissions which meet the requirements of this policy. The policy is implemented by the WDC Corporate Services Group Manager and Rates Officer. WDC may from time to time resolve to confirm the eligibility of a new applicant in terms of this policy.

4.0 APPLICATION FOR & REVIEW OF REMISSIONS

4.1 In order for WDC to correctly set the rates, written application for any remission must be received by 31 May of the year prior to the year that the rates are set for, where WDC determines an application is required.

4.2 Applications received during a rating year will apply to the following rating year.

4.3 WDC may consider granting a remission in the year it is applied for if the remission policy was adopted as part of that year's Long Term Plan or Annual Plan process and the ratepayer would otherwise have been eligible for the remission.

4.4 WDC will consider remissions annually and may require information to be provided by the ratepayer before the remission is granted.

4.5 Ratepayers receiving rates remission under this policy are required to notify Council of any changes in their situation that may alter their eligibility for ongoing remission.

4.6 Council may cancel a remission granted under this policy if it is found a property no longer qualifies for rates remission.

4.7 There is no right of appeal.

PROCEDURES - SPECIFIC POLICIES

5.0 COMMUNITY HALLS, CENTRES, SPORTING & RECREATION FACILITIES - WAIMATE URBAN WARD

5.1 Objective: The remission of rates for Community Halls, Centres, Sporting and Recreation facilities is to facilitate the ongoing provision of non-commercial community services and recreational opportunities for the residents of the Waimate District, and to meet community outcomes.
The purpose of granting rates remission to an organisation in this category is to recognise the public good made by such organisations, assist the organisations survival and to make membership of the organisation more accessible to the general public including disadvantaged groups.

5.2 Criteria & Conditions: The remission of rates may apply to a rating unit which is used exclusively or principally for sporting, recreation or community purposes. The policy does not apply to organisations operated for private pecuniary profit. The policy does not apply to groups or organisations whose primary purpose is to address the needs of adult members (over 18 years) for entertainment or social interaction, or who engage in recreational, sporting or community services as a secondary purpose only.

5.3 WDC will remit 50% of the General Rates, 50% of the Targeted Rate Roading and Footpaths, 50% of the Targeted Rate Civil Defence, and 50% of the Sewer Charge for all qualifying community halls, centres, sporting and recreation facilities within the Waimate Urban Ward. The following are examples of qualifying properties:

Presbyterian Church and Hall	*Shearman Street*
Catholic Church	*Timaru Road*
Anglican Church	*John Street*
Vintage Car Club	*Harris Street*
Waimate Bridge Club	*Augustine Street*
Waimate Croquet Club	*Shearman Street*
Waimate Silver Band Hall	*High Street*
Waimate Highland Pipe Band	*Paul Street*

5.4 This remission will be funded from within the General Rate Urban, Targeted Rate Roading and Footpaths Urban, Targeted Rate Civil Defence Urban, or Sewer Rate, as appropriate.

6.0 COMMUNITY HALLS, CENTRES, SPORTING & RECREATION FACILITIES - OUTSIDE THE WAIMATE URBAN RATING AREA QUALIFYING FOR RATES REMISSIONS

6.1 Objective: The remission of rates for Community Halls, Centres, Sporting and Recreation facilities is to facilitate the ongoing provision of non-commercial community services and recreational opportunities for the residents of the Waimate District, and to meet community outcomes.
The purpose of granting rates remission to an organisation in this category is to recognise the public good made by such organisations, assist the organisations survival and to make membership of the organisation more accessible to the general public including disadvantaged groups.

6.2 Criteria & Conditions: The remission of rates may apply to a rating unit which is used exclusively or principally for sporting, recreation or community purposes. The policy does not apply to organisations operated for private pecuniary profit. The policy does not apply to groups or organisations whose primary purpose is to address the needs of adult members (over 18 years) for entertainment or social interaction, or who engage in recreational, sporting or community services as a secondary purpose only.

6.3 WDC will remit 50% of the General Rates, 50% of the Targeted Rate Roading and Footpaths, and 50% of the Targeted Rate Civil Defence, for all qualifying community halls, centres, sporting and recreation facilities outside of the Waimate Urban rating area. The following are examples of qualifying properties:

Glenavy Community Hall	*Glenavy*
Hook Hall	*Hook*
Hunter Public Hall	*Hunter*
Makikihi Hall	*Makikihi*
St Andrews Public Hall	*St Andrews*
Studholme Hall	*Studholme*
Waituna Creek Hall	*Waituna*
Waihaorunga Hall	*Waihaorunga*
Willowbridge Hall	*Willowbridge*

6.4 This remission will be funded from within the General Rate Rural 1, General Rate Rural 2, Targeted Rate Roading and Footpaths Rural 1, Targeted Rate Roading and Footpaths Rural 2, Targeted Rate Civil Defence Rural 1, or Targeted Rate Civil Defence Rural 2, as appropriate.

7.0 REGENT THEATRE

7.1 Objective: The remission of rates for the Regent Theatre is to facilitate the ongoing provision of recreational opportunities for the residents of the Waimate District, and to meet community outcomes.
The purpose of granting rates remission to the Regent Theatre is to recognise the public good made by the organisation, assist the organisations survival and to make membership and use of the organisation more accessible to the general public including disadvantaged groups.

7.2 Criteria & Conditions: WDC will remit all rates on the Regent Theatre excluding that portion which is leased to a private concern.

7.3 This remission will be funded from within the General Rate Urban, Targeted Rate Roading and Footpaths Urban, Targeted Rate Civil Defence Urban, Water Scheme Urban, or Sewer Rate, as appropriate.

8.0 LAND OWNED BY PARTY VOLUNTARILY PRESERVING OR ENHANCING NATURAL / HISTORICAL / CULTURAL FEATURES

8.1 Objective: Rates remission is provided to preserve and promote natural resources and heritage by encouraging the protection of land for natural, historic or cultural purposes, and to meet community outcomes.

8.2 Criteria & Conditions: WDC will grant full remission of the General Rate, Targeted Rate Roading and Footpaths, and Targeted Rate Civil Defence where application is made to WDC and it is satisfied that the owner of the land has voluntarily preserved or enhanced natural, historical, or cultural features of the land. WDC may also consider the extent to which public access to the land is provided by the landowner and the extent to which commercial gain is derived by the landowner.

8.3 This remission will be funded from within the General Rate Urban, Targeted Rate Roading and Footpaths Urban, Targeted Rate Civil Defence Urban, General Rate Rural 1, General Rate Rural 2, Targeted Rate Roading and Footpaths Rural 1, Targeted Rate Civil Defence Rural 1, Targeted Rate Roading and Footpaths Rural 2, and Targeted Rate Civil Defence Rural 2, as appropriate.

9.0 SEWERAGE CHARGES ON SCHOOLS

9.1 Objective: To provide relief from sewerage charges for rating units used for educational establishments, so that educational establishments shall be required to pay no more for sewerage charges than previously determined under the Rating Powers (Special Provision for Certain Rates for Educational Establishments) Amendment Act 2001 ('the Donnelly Act'), and to meet community outcomes.

9.2 Criteria & Conditions: Rating Units that meet the criteria under this policy shall receive a remission of sewerage charges so that the total sewerage charges payable shall be no more than that previously determined under the Donnelly Act.
To be eligible for remission, the rating units must be used for the purposes of an educational establishment as defined in the Donnelly Act.

10.0 GLENAVY HALL RATE REMISSION FOR GLENAVY FISHING CAMP

10.1 Objective: This remission provides relief to the Glenavy Fishing Camp Incorporated (GFCI) for the Glenavy Hall Rate, to recognise the GFCI residents' primary use of the Camp's communal hall, and is provided to meet community outcomes.

10.2 Criteria & Conditions: From 1 July 2015, WDC shall remit two-thirds of the Glenavy Hall Rate for the Glenavy Fishing Camp Incorporated, located at 449 Fisheries Road, Glenavy.

10.3 This remission will not be funded from other Glenavy Hall rate ratepayers. Note also that other ratepayers in the district will not be funding this remission.

11.0 COMMUNITY HOUSING - WDC

11.1 Objective: This remission provides relief to Community Housing recognising the special circumstances and uniqueness of this property within the District, and is provided to meet community outcomes.
11.2 Criteria & Conditions: WDC shall remit 50% of Civic Amenities Charges (per separately used or inhabitable part) at the Community Housing located at 8–16 Kennedy Crescent, Waimate. The level of remission will be reviewed at each Long Term Plan (LTP).
11.3 This remission will be funded from within the Civic Amenities Rate Urban.

12.0 TARGETED URBAN SEWERAGE RATE REMISSION - BUSHTOWN WAIMATE INC.

12.1 Objective: This remission provides relief to Bushtown Waimate Inc. recognising that Bushtown Waimate Inc. is under development and use of the sewerage system will be sporadic, and is provided to meet community outcomes.
12.2 Criteria & Conditions: WDC will remit 50% of the Targeted Urban Sewerage charge.
12.3 This remission will be reviewed when Bushtown Waimate Inc moves to its commercial stage.
12.4 This remission will be funded from within the Targeted Urban Sewerage Rate.

13.0 RATING UNITS AFFECTED BY NATURAL CALAMITY OR FIRE

13.1 Objective: This remission provides relief to ratepayers where there is significant loss incurred thereby effecting the use of the property, and is provided to meet community outcomes.
13.2 Criteria & Conditions: This remission may apply where there is significant loss incurred due to a natural calamity, such as earthquake, flood or wildfire, and fire that is not deliberately lit by the owner, occupier, or related party.
13.3 WDC may, on written application, remit wholly or in part, any rate or charge, where in the opinion of the WDC or its delegate it is fair and reasonable to do so, taking account of the individual ratepayers circumstances and the impact on the district.
13.4 This remission will be funded from within the rate type where the remission is granted.

14.0 RATES PENALTIES

14.1 Objective: To provide WDC with the option to respond to extraordinary events that affect a ratepayer or group of ratepayers that could not be foreseen or mitigated at the start of the rating year and to act reasonably in response to these circumstances outside the ratepayers control, and to meet community outcomes.
14.2 Criteria & Conditions: Applications should be made in writing. The application should outline the circumstance and impact on the ratepayer(s). WDC will consider all applications on their merits with remissions granted where WDC considers it fair and reasonable to do so, at WDC's discretion.

14.3 WDC may approve upon receipt of an application, the remission of penalty charges which have been incurred by any ratepayer as a consequence of their payment being received after the due date:

- On compassionate grounds such as significant family disruption, illness or accident.
- In the case of a deceased estate, WDC may remit rates penalties from the time of death upon receipt of a letter from a Solicitor who has been granted probate, provided full payment of outstanding rates is expected within 6 months of the date of the letter.
- As part of an agreed repayment plan. Penalty remission may be considered as part of an agreed repayment plan for ratepayers with significant arrears as a result of financial hardship or difficulties, with remission limited to the agreement period. An agreed repayment plan requires all rates to be paid within 18 months of the agreement commencement. The remission will apply at the completion of the repayment plan, provided the terms of the plan have been adhered to.
- WDC error. Remission of penalties may be automatically applied, without application, if the penalty is the result of a WDC error.

14.4 WDC will consider one remission of rates penalties per applicant within a 24 month period, applicable to a single rates instalment, provided all outstanding rates are paid within 10 working days of the instalment due date where no other penalty remission criteria applies. This may be applied automatically.

15.0 RATES POSTPONEMENT

15.1 WDC does not allow postponements of rates for any reason.

16.0 REMISSION & POSTPONEMENT OF RATES ON MAORI FREEHOLD LAND

16.1 WDC does not provide for the remission or postponement of rates on Maori freehold land unless it qualifies under another remission provision contained in this policy.

17.0 REMISSION OF ENVIRONMENT CANTERBURY RATES

Where WDC has been appointed by Environment Canterbury to collect their rates on their behalf, WDC will apply remissions consistent with Timaru District Council, to ensure consistency with the application of the policy at the commencement of the collection arrangement from July 2015.

18.0 DOCUMENT CONTROL

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Waimate District Council

Revenue and Financing Policy 401

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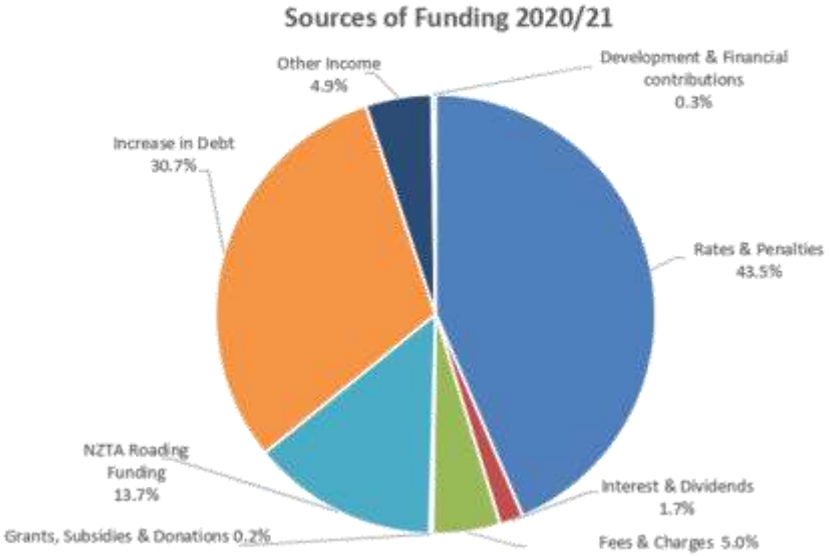
1. Purpose

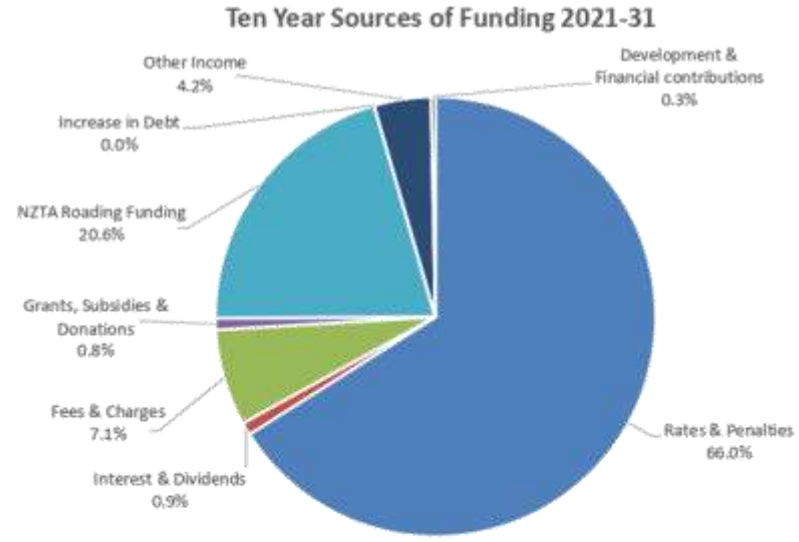
The Revenue and Financing Policy summarises Waimate District Council's (Council) view on the equitable funding of Council's activities. It addresses all potential revenue and funding sources open to Council and how and when Council may use such sources. In choosing funding sources, Council is primarily concerned with enhancing the social, cultural, economic, and environmental wellbeing of the district and its residents, and takes account of many factors in its decision-making, including community outcomes, benefit, affordability, equity, simplicity, efficiency, transparency, accountability, and overall community wellbeing. The policy addresses Council's assessment of equity between current and future generations.

In Council's assessment, this policy represents the fairest and most equitable use of the funding sources available to meet operating expenses.

The charts in table 1 show the sources of funds for the year ended 30 June 2021 compared with all 10 years (2021/31) of this Long Term Plan (LTP). While Council's primary source of funding is rates, there remains a high and increasing reliance on subsidy. The comparison of the funding from the increase in debt does not represent any change in approach, but is representative of the one and ten year periods covered by each graph, with the use of forestry returns to repay debt during the ten years. The changes shown in the charts do not represent significant shifts in Council's funding approach, but are reflective of the areas of focus highlighted in the Infrastructure and Financial Strategies.

Table 1. Overall Sources of Funds





2. Funding Principles

Council has determined the following basic principles to guide the assessment of fairness and equity in choosing funding sources:

1. Each generation of ratepayers should pay for the services they receive,
2. Rates are the funding source of last resort,
3. Rates increases should be within the limits as set in the Waimate District Council Financial Strategy,
4. User charges are preferred whenever a private benefit can be identified and it is efficient to collect the revenue,
5. Subsidies, grants, and other income options are fully explored prior to rates being used, and
6. Borrowing should be within the limits as set in the Financial Strategy

Complying with these principles can at times be challenging. Council must exercise prudent judgment in assessing many options to determine fairness in its development of budgets and the choice of funding sources to implement these budgets.

3. Operating Costs

Operating costs are the day to day spending that maintains the services delivered by Council. This includes a contribution to the wear and tear on assets used. Principle 1 (above) requires that operating costs should be met from operating income; in other words, 'a balanced budget'. This ensures fairness, in that the users of the service pay for their use.

An unbalanced budget occurs when we smooth the impact of significant swings in income and expenditure, over a number of years, using debt. Council has determined that this is an acceptable funding strategy.

4. Operating Costs Funding Sources

User Fees and Charges

User fees and charges are used for services where there is a benefit to an individual or group. The price of the service is set by taking account of a number of factors. These may include:

- The cost of providing the service,
- The estimation of the users' private benefit from using the service,
- The impact the cost has to encourage or discourage behaviours,
- The impact the cost has on demand for the service,
- Market pricing, including comparability with other local authorities,
- The impact of rates subsidies if competing with local businesses,

- The cost and efficiency of revenue collection mechanisms,
- The impact of affordability on users, and
- Other matters as determined by Council

Grants, Sponsorships, and Subsidies

Grants, sponsorships, and subsidies are used wherever they are available. Council expects to continue receiving substantial subsidies for road maintenance. Some services can only be continued so long as funding from this source continues. Council rarely budgets for grants income unless it has determined a likelihood of success in reaching the budget goal.

Investment Income: Dividends, Interest

This includes income from investment activities such as dividends, interest, forestry returns and reserve funds. The income from these activities is generally used to offset the costs of the investing activity. Surplus revenues will be allocated by Council to operating or capital costs at each Annual Plan. For some activities Council applies funds held in reserve in order to reduce the rates contribution in that activity.

Investment Income: Rents

Income from Council-owned properties is recorded in the Property Activity. Such income offsets the cost of operating these properties and, should a surplus be achieved, any portion of that surplus not required for reinvestment is distributed to the general rate. Community Housing surpluses are placed in a reserve for asset renewal.

Rates

Having exhausted all other funding sources, Council funds its remaining operating expenses from rates. For many activities, this is the main funding source (see Table 2), reflecting Council's view that the collective benefit to the District is greater than any identifiable individual benefit.

To assess the allocation of rates, Council has reviewed each activity of Council and considered the following factors to be the determinants of the fairness of an allocation:

- Level of alignment with the overall objective of enhancement of social, cultural, economic, and environmental wellbeing of the district,
- Community outcomes,
- Distribution of benefits to individuals, groups, or the district as a whole,
- When the benefit will occur,
- The impact of individuals or groups on the need to undertake the activity,
- The costs and benefits of funding the activity separately, and
- Affordability, transparency, accountability.

Having considered these factors Council recognises that rates are a tax on property owners and each property will use a different mix of services than represented by the rate charge.

In considering the overall impact of the liability to pay rates, Council is of the view that it is neither possible nor fair to allocate the cost solely on individuals' benefits (i.e. as if rates replicated user pays). It is through the collective contribution of the whole district that the District is best able to develop and prosper.

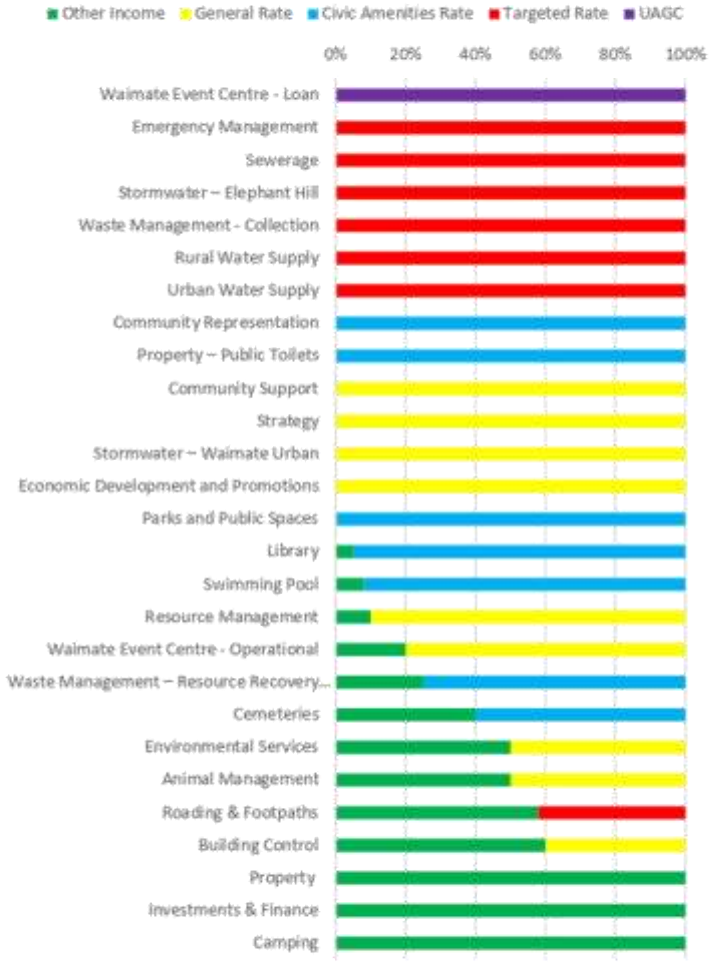
For these reasons Council prefers to fund activities based on a combination of general rates (based on capital values), targeted rates and separately used or inhabited parts (i.e. residential dwellings). Categories of rateable land have been defined to balance the imposition of the tax on rural properties with the assessed benefit that urban properties get, mainly through proximity to services or to higher levels of service.

Council considers that a rating structure that fairly attributes user pays on appropriate activities and is also relatively easy for ratepayers to understand is preferable. To this end, Council uses four main rates to fairly and equitably distribute the rate:

1. General rate - allocated on capital value,
2. Civic amenities rate - allocated as a uniform targeted rate,
3. Targeted rates - allocated based on usage or capital value as appropriate, and
4. Uniform targeted rate - the only rate set on a uniform basis is the Waimate Event Centre Loan Targeted Rate.

These rates are modified following a funding needs analysis of the share of each activity the Urban area and Rural areas should fairly pay.

Table 2 - List of Activities and Summary of Funding Sources



Targeted Rates

Council uses targeted rates to fund services where Council has determined the cost of the service should be targeted to the group which benefits much more than the general benefit

most ratepayers receive. Targeted rates may be set on a uniform basis and/or a value basis (either land or capital), or Separately Used or Inhabited Parts basis.

Council uses "separately used or inhabited parts" of rating units for charging some rates. Council's definition of this term is contained within the Funding Impact Statement.

Council has one Uniform Targeted Rate, which supports the funding of the Waimate Event Centre Loan repayment.

Details of the rates charged are included in the Funding Impact Statement.

Capital Costs

Capital costs, for the purpose of this policy, is spending on assets that provide the community with a service over a longer period of time than operating expenditure. As at 30 June 2020 Council owns $427 million worth of assets (Property, Plant & Equipment) and plans to spend $65.5 million (between $5.3 million and $11.5 million each year) over the next 10 years on a mix of renewal, additional demand and service-improvement.

Council has a mix of funding tools available to purchase and improve assets.

5. Capital Cost Funding Sources

User Fees and Charges

User fees and charges are used for services where there is a benefit to an individual or group. Generally these funds are not used to pay for asset purchases, as the amount to pay is unaffordable and generally the beneficiaries are many and change over the long period of the asset's life. This makes user charges impractical and unfair. As such, borrowing and charging users annually for financing costs using rates is often a more affordable method of charging users contribution.

Grants, Subsidies, and other Income

Grants and subsidies are used wherever they are available. Council expects to continue to receive substantial subsidies for the development of new and existing roads. Council looks to maximise the subsidies and grants that are available, at all times.

Grants are often available for capital projects. Council rarely budgets for grants income unless it has determined there is a strong likelihood of success in reaching the budget goal. Some capital projects are dependent on successful grant income for these projects to be undertaken.

Financial Contributions

Council has adopted a Financial Contributions Policy. The funds collected under this policy will be applied to the projects as identified by those policies or where not identified as resolved by Council. Funds are held in reserve should they be received in advance of a project.

Proceeds from the Sale of Assets

From time to time Council sells assets as per the Property or Land Sale, Purchase and Lease Policy 410.

When major asset sales are made Council will determine the best allocation of those funds taking account of the Financial Strategy. Some assets have restrictions on how the proceeds may be used; for example endowment property proceeds must be placed in the District Endowment Reserve Fund.

Borrowing

For larger capital costs that provide a long term benefit to the community, Council may determine that borrowing the funds is the fairest method of allocating the costs of a project over time to users. The financing costs, including principal and interest, are charged as operating expenses and funded under the operating expense funding policy unless funded otherwise as determined by this policy.

Council will manage its borrowing within Council's rate and debt limits as defined in the Financial Strategy.

Reserves

From time to time Council will have reserve funds accumulated specifically for the purchase of assets. Council allocates portions of the funds to asset purchases in accordance with the purpose of the fund. In making the allocation, Council will have regard to current and future calls on the fund and make allocations that are fair to current and future ratepayers.

Rates

Rates are used firstly to fund the day to day expenses of Council. This normally includes funding an annual amount (depreciation) toward the ongoing replacement of existing assets, and the funding of its financing costs on debt created to purchase assets.

As a last resort, rates may be required to fund the balance of the capital cost of a new asset. Council will make an assessment on each major project and determine:

- How much the rates contribution will be,
- Which group of ratepayers should pay, and
- Whether to include that in the General Rate or some other targeted rate as determined by Council

Council may consider the establishment of targeted rates to collect funds to repay loans. In doing so Council will also consider the options for remission, postponement, early repayment, or lump sum repayment that are available to assist with the fair allocation of the rates.

6. Additional Information

This policy represents the high level revenue and financing policies of Council. Council has separately completed a funding needs analysis (S101 (3) LGA) for each activity and major capital project. Further information relevant to this policy is contained in the Financial Strategy, Rating Policies and Funding Impact Statement.

The current S101 analysis giving rise to the rates allocation by activity and differential is attached in the next table.

2021-31 Long Term Plan

			General Rate					Roading & Civil Defence - Targeted Rate						Civic Amenities Target Rate							Services Target Rate			Flat Rate- Waimate Event Centre	total
	User Pays	Rate payer Funded	Urban	Rural 1	Rural 2	Electricity generators and other transmission providers	Forestry operators and forest blocks	Urban	Business 1 and Business 2	Rural 1	Rural 2	Electricity generators and other transmission providers	Forestry operators and forest blocks	Urban	Business 1 and Business 2	Rural 1	Rural 2	Electricity generators and other transmission providers	Large Industrials	Forestry operators and forest blocks	Urban	Rural	Both Urban & Rural	UAC	
District Planning & Regulatory Services																									
Building Control	60%	40%	10%	77.5%	12.5%	0.0%	0.0%																		100%
Animal Management	50%	50%	10%	77.5%	12.5%	0.0%	0.0%																		100%
Environmental Services	50%	50%	40%	51.6%	8.4%	0.0%	0.0%																		100%
Resource Management	10%	90%	10%	66.9%	10.8%	12.32%	0.0%																		100%
Organisation and Governance																									
Community Representation	0%	100%												41.9%		41.6%	6.8%	8.4%	1.1%	0.2%					100%
Strategy	0%	100%	30%	60.3%	9.7%	0.0%	0.0%																		100%
Investments and Finance	0%	100%	40.0%	46.0%	7.5%	6.3%	0.2%																		100%
Central Administration	100%	0%																							0%
Community Services																									
Economic Development and Promotions	0%	100%	42.9%	49.0%	8.1%	0.0%	0.0%																		100%
Emergency Management	0%	100%						10.4%	0.0%	66.5%	10.8%	12.32%	0.0%												100%
Community Support	0%	100%	42.9%	49.0%	8.1%	0.0%	0.0%																		100%
Library	5%	95%												46.6%	0.0%	45.7%	7.6%	0.00%	0.0%	0.0%					100%
Community Facilities																									
Camping	100%	0%																							0%
Cemeteries	40%	60%												46.6%	0.0%	45.7%	7.6%	0.00%	0.0%	0.0%					100%
Waimate Event Centre - Operational	20%	80%	42.9%	49.0%	8.1%	0.0%	0.0%																		100%
Waimate Event Centre - Loan	0%	100%																						100%	100%
Parks and Public Spaces	0.5%	99.5%												46.6%	0.0%	45.7%	7.6%	0.00%	0.0%	0.0%					100%
Property (exc Public Toilets)	100%	0%	40%	46.0%	7.5%	6.4%	0.2%																		100%
Property - Public Toilets	0%	100%												34.0%	15.0%	46.4%	4.6%	0.00%	0.0%	0.0%					100%
Swimming Pools	8%	92%												50.0%	0.0%	45.4%	4.6%	0.00%	0.0%	0.0%					100%
Roading & Footpaths																									
Roading & Footpaths	58%	42%						9.9%	0.0%	62.7%	10.1%	12.32%	5.0%												100%
Sewerage																									
Sewerage	0%	100%																			100%	0%			100%
Stormwater																									
Stormwater- Waimate Urban	0%	100%	100%	0.0%	0.0%	0.0%	0.0%																		100%
Stormwater- Elephant Hill Drain	0%	100%																			0%	100%			100%
Waste Management																									
Waste Management - Collection	n/a	100%																					100%		100%
Waste Management - Recycling Drop Off	n/a	n/a																					100%		100%
Waste Management - Resource Recovery Park	25%	75%												60.0%	0.0%	34.3%	5.7%	0.00%	0.0%	0.0%					100%
Water Supply																									
Rural Water Supplies Managed by Council																									
Hook/Waituna - Irrigation is 55% of Domestic Supply	100%	0%																			0%	100%			100%
Otaio/Makikihi	100%	0%																			0%	100%			100%
Waihaorunga	100%	0%																			0%	100%			100%
Cannington/Motukaika	100%	0%																			0%	100%			100%
Lower Waihao	100%	0%																			0%	100%			100%
Waikakihi	100%	0%																			0%	100%			100%
Cattle Creek Water Supply	0%	100%	0%	86.1%	13.9%	0.0%	0.0%																		100%
Downlands Water Supply	100%	0%																			0%	100%			100%
Hakataramea Water Supply	0%	100%	0%	86.1%	13.9%	0.0%	0.0%																		100%
Waimate Urban Water Supply	100%	0%																			100%	0%			100%

7. DOCUMENT CONTROL

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Waimate
District Council

SIGNIFICANCE & ENGAGEMENT POLICY 301

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1. Purpose

Waimate District Council has developed the Significance and Engagement Policy (the Policy) to determine the significance of issues/proposals/decisions within the District, and on how to align our engagement with the public based on the degree of significance of any such matters. The Policy aligns with the provisions of the Local Government Act 2002 (the Act), especially Sections 76-82.

This policy exists:

- To inform you, the public, what you can expect from the Waimate District Council regarding community engagement and the ways you can influence, and participate in, the decision-making process of the Council, and
- To provide Council with a tool that guides the assessment of significance during the decision-making process. A decision on significance and engagement provides direction on the most optimal and appropriate level of community engagement in order to enable Council to develop a clear understanding of community views and preferences on an issue/proposal/decision.

2. Definitions

Consultation- Denotes a subset of engagement; a formal process where members of the community can present their views to the Council on a specific decision or matter that is proposed and made public. The Council must consult in compliance with the consultation principles outlined in the Local Government Act 2002, Section 82 (1), and any other legislation relevant to the decision/matter proposed.

Decision- Refers to all decisions made by, or on behalf of, the Council, including decisions made by Council officers under delegation.

Engagement- Denotes the essential process of establishing relationships with, and seeking information from, the community, as to inform and assist the decision-making process. Engagement constitutes a vital aspect of the democratic model of governance, and is comprised of a continuum of community involvement.

Significance- in relation to any issue, proposal, decision, or other matter that concerns, or is before, a local authority, means the degree of importance of the issue, proposal, decision, or matter, as assessed by the local authority, in terms of its likely impact on, and likely consequences for:

a The district or region;
b Any persons who are likely to be particularly affected by, or interested in, the issue, proposal, decision, or matter;
c The capacity of the local authority to perform its role, and the financial and other costs of doing so.

Significant- in relation to any issue/proposal/decision, means that any such matter has a high degree of significance.

Special Consultative Procedure- Refers to a formal consultation process prescribed in Local Government Act 2002, Section 83, that either must be implemented to consult on certain matters, or can be utilised by the Council to consult on other matters as considered appropriate.

Strategic Asset- in relation to the assets held by an authority, means an asset or group of assets that the local authority needs to retain if the local authority is to maintain its capacity to achieve or promote any outcome that it determines to be important to the current or future well-being of the community.

3. General Approach to Determining Significance and Decision-making

3.1 Determining Significance

On every issue requiring a policy or strategic decision- other than the issues which require processes specified under legislation (refer to Section 7 below)- Council will determine the degree of significance of the issue and the corresponding level of engagement.

The significance of the issue and appropriate forms of engagement will be considered at the earliest possible stages of a proposal or process, before decision-making occurs. If necessary, levels of significance and engagement will be reviewed as the proposal develops and as the community's views, preferences, and values evolve and/or are better revealed.

3.2 Compliance with Sections 76-82 of Local Government Act 2002

In making any decision, Council will comply with the decision-making requirements of the Act, regardless of the degree of significance of the decision or issue. The relevant sections of the Act prescribe procedural steps to be followed as may be applicable, and ensure that Council:

- Is clear about why it is making the decision, and comprehends issues involved;
- Has considered and evaluated all reasonably practical options for achieving the objective for which the decision is being made; and
- Invests appropriate time, money, and effort into researching and evaluating the issues and options, proportionate with the significance of the matter, including its importance to the community.

3.3 Decision-making Checks

In making any decision, Council will be satisfied that:

- It has necessary and sufficient information on the relevant issues and options; and
- It knows enough about, and has given adequate consideration to, the views and preferences of affected and/or interested parties.

3.4 Proportionality

The significance of the issue, proposal, or decision will determine how much time, money, and effort Council will invest in exploring and evaluating options and obtaining the view of affected and/or interested parties.

3.5 Implications for Maori

Special consideration is to be given to assess the implications of an issue/decision for Ngai Tahu as tangata whenua and kaitiaki of the natural resources.

3.6 Covering Diversity

There may also be issues or decisions where there are diverse groups within the community with different concerns, interests, views, and preferences, where multiple processes will be necessary and/or appropriate to distinguish and recognise the range of positions.

3.7 Limitations

The commitment to invest in exploring options and in obtaining views of the communities and affected and/or interested parties does not mean that Council will have to fully consult with the public for every decision it makes, nor does it bind Council to the views of communities and interested and/or affected parties.

3.8 Other Influences

As well as the views of the communities and affected and/or interested parties, there are a wide range of information sources, considerations, and perspectives that will inform Council's decision-making, including the requirements of Government policy, technical matters, and financial implications.

4. Criteria and Procedures for Assessing Significance

4.1 Degree of Significance

In considering whether any issue/proposal/decision is of significance under this Policy, Council will be guided by the following criteria:

Criteria	Measure
The degree to which the issue affects the District	Major and/or long term effect on one or more town/ward/District.
The degree to which the issue affects the community	Major and/or long term effect on a demographic/community/district.
The degree to which the issue affects the level of service of a significant activity	Results in isolation of, or limited access to, core service(s).
The degree to which the issue has a financial impact on Council, or on the rating levels of communities	>10% of Council revenue (exclusive of investment assets).
The degree to which the issue has cultural relevance	Major and/or long term effect on ethnic or cultural fabric of the community.
The degree to which the issue has potential effect(s) on the delivery of Council policy and/or strategy	Results in major and/or long-term disruption in the delivery of Council's policies and/or strategies.
The degree to which the decision promotes Council's Community Outcomes and Vision, and contributes to the enhancement of the social, cultural, environmental, and economic well-being of the community	Produces major and/or long-term negative impact on the community outcomes and/or the well-being factors.
The degree of the reversibility of the decision	The decision is irreversible.

A matter will be considered significant when one or more of the above criteria are met.

If an issue exceeds one or more of the above criteria measures, the matter is more likely to have a high degree of significance.

All decisions will be made with sensitivity to a decision's potential impact on, and interest held within, the community.

While this Policy sets out a distinct financial threshold, there may be financial decisions that do not trigger this threshold but need to be considered as significant due to triggering some, or all, of the other criteria listed.

Generally, the greater the amount of money concerned, the higher the impact on the community, and subsequently a higher degree of public interest, and therefore a higher degree of significance. However, this is not necessarily definitive. There may be some cases in which small financial transactions may attract great public interest, while some large financial transactions may accrue very little attention at all.

Council may take into account the knowledge it has previously gained about community opinion, as expressed via different channels and mediums (e.g. Long Term Plan consultation, Community Outcomes, previous public debate, media coverage, public submissions to assess significance, etc.).

4.2 Procedure

Council will balance the requirements of efficient decision-making, with the requirements of Sections 76-82 of the Act, as well as any other legislative requirement/consideration, across the different levels of significance from minor to major.

Reports to Council and Committees proposing policy or strategy decisions will include a statement of Assessment of Significance, comprised of an assessment of level of significance, and recommendation on appropriate and corresponding methods of engagement, where applicable, as outlined in Appendix 3.

This statement will include:

- whether or not the matter being reported on is considered significant in accordance with this Policy;

And if required:

- an outline of what has been done to ensure compliance with the decision-making requirements of the Act; and
- a recommendation of further actions required to ensure compliance; and
- discussion of any issues, and views and preferences of affected and/or interested parties; and
- a recommendation that Council or the Committee determines the degree of significance of the particular issue or decision.

In accordance with Section 77(1)(c) of the Act, when significant proposals or decisions relate to land or a body of water, Council will take into account the relationship of Maori and their culture and traditions with their ancestral land, water, sites, waahi tapu, valued flora and fauna and, other taonga.

Council officers preparing these reports will have regard to the Significance & Engagement Policy 301 and to all relevant legislative requirements.

5. Strategic Assets

In respect to strategic assets, a key consideration is whether the assets are essential to the continued delivery of Council's Community Outcomes, especially in terms of enhancement of social, cultural, environmental, and economic well-being factors. Decisions to transfer ownership or control of a strategic asset to, or from, Council, or to construct, replace, or abandon a strategic asset cannot be made unless they are first included in the Long Term Plan, or consulted through a Long Term Plan amendment.

For the purpose of Section 76AA (3) of the Act, Council considers the following assets to be strategic assets:

Waimate District Council's Strategic Assets
Regent Theatre
Waimate Public Library - building and collections
Resource Recovery Park
Parks and Reserves as a whole
Knottingley Park & Arboretum, and Victoria Park
Cemeteries
Roading Networks and connected infrastructure
Sewerage Networks and Treatment Plants
Norman Kirk Memorial Pool
Stormwater Networks
Water Treatment, Storage, and Supply Networks
Community Housing
Local Government Centre
Waimate Event Centre

6 Engagement

Once Council has determined the level of significance of a matter and has determined it needs more information on the range of views held, Council will determine how and when it should engage with the community. Depending on the matter being considered, and identified stakeholders involved, the preferred method(s) or combination of engagement tools will be identified and applied to meet the goals of the specific engagement.

In determining the processes and methods appropriate for engaging with communities on particular proposals and decisions, Council will be guided by the following:

- the degree of significance of the issue, decision, proposal, or other matters, as determined by the criteria set out in this Policy;

- the objectives of the engagement- the level of information sought from residents and affected and/or interested parties;
- the preferences, capacities, views, and values of the community groups and individuals affected by and/or interested in the decision or proposal;
- the plurality of preferences, capacities, views, and values of the community groups and individuals affected by and/or interested in the decision or proposal;
- the benefits, limitations, and costs of range of possible processes and methods for engaging with the community groups and individuals affected by and/or interested in the decision or proposal;
- timing issues, including any concurrent engagement processes on other matters involving the same or similar groups or communities; and
- opportunities provided by innovative technologies (e.g. modern information technologies, social networking platforms, etc.) for efficient and effective engagement.

6.1 Methods of Engagement

Many methods of engagement can be used by Council, subject to the degree of significance of the issue. It is essential that Council not to use a homogenous approach to engagement, and instead to utilise engagement tools appropriate to the nature and significance of the issue, and to the community affected.

Council will use an 'engagement spectrum' approach to determine the most appropriate process and methods for engagement on particular decisions or issues. See Appendix 2, *Community Engagement Spectrum*, and Appendix 3, *Toolbox for Engagement.* These are guidelines for approaching engagement and do not limit, nor determine, the methods or degree of engagement.

6.2 Inform Communities

These methods are generally one-way communication approaches that are efficient and practical means to raise public awareness regarding significant issues. The aim is to provide basic information about an issue, and to build community interest accordingly, by means such as:

- distribution of media releases, advertising, pamphlets, or other material;
- providing information on Council's website and through social media.

As the result, communities are kept up to date with developing issues and new proposals, and communications can be targeted to interested and/or affected groups. These methods are essentially a one-way process out to communities, and as such are more useful in the earliest stages of proposals or processes. Other limitations of these methods include the costs of printing and distribution, and the challenges in reaching as widely within the communities as may be necessary.

6.3 Consult and Involve

A range of community engagement tools and methods can be used to have communities and particular interested and/or affected groups contribute their views, priorities, and preferences as part of Council's decision-making process.

For relatively straightforward issues or proposals, methods such as surveys conducted via various media platforms or focus groups may be effective.

For more complex issues, particularly significant planning documents and strategies, more comprehensive engagement is required. Engagement approaches used for these types of processes will include printed consultation documents, information on the Council website and social media sites, and community meetings to engage with residents and interested parties. These processes can be costly and time-consuming, and can result in low participation rates with a narrow range of people and groups engaging.

Council will continue to look for ways to effectively include opportunities for residents and affected groups and organizations to provide feedback on key planning documents.

Online engagement tools that offer cost-effective and timely feedback channels are likely to enable Council to seek community feedback more frequently on issues being considered by Council.

6.4 Collaborate and Empower

The value of a collaborative approach is increasingly recognised in a wide range of policy and decision-making contexts. The collaborative approach, and its associated methods, are particularly useful when there is a high degree of significance of the issue or proposal, and when there is strong community interest, capacity, and commitment associated with the issue in question. These kinds of issues and proposals tend to be complex with multiple values, perspectives, and interests at stake, and often involve complex technical or scientific questions.

Methods include, but are not limited to:

- collaborative working groups including Council and other representatives;
- multi-stakeholder processes such as citizen juries or panels;
- multi-stakeholder groups;
- interactive online tools.

These methods allow for more comprehensive research, and facilitate the exploration of a wide diversity of implications.

These processes do require on-going skilled facilitation and considerable time and resourcing in order to be effective.

7 Engaging with Communities on other Matters

7.1 Local Government Act 2002

The Act prescribes the particular processes for councils to follow to consult and engage with communities on particular matters.

Special Consultative Procedure:

The Act specifies that a Special Consultative Procedure (SCP), as defined under Section 83, must be followed for community engagement on certain plans and processes including:

- Long Term Plan;
- Annual Plan (if the Annual Plan includes significant new proposals not included in the Long Term Plan); and
- Bylaws of significant interest.

Other provisions in the Act specify particular decisions or activities when community engagement is to be addressed through the public consultation for a Long Term Plan. These include:

- a decision to transfer the ownership or control of a strategic asset to, or from, Waimate District Council; or a decision to construct, replace, or abandon a strategic asset;
- a decision to significantly alter the intended level of service provision for any significant activity undertaken by, or on behalf, of Waimate District Council, including a decision to commence or cease any such activity.

7.2 Other Legislation

Many decisions made by Council will be made under legislation that prescribes the consultation and decision-making procedures required, including the procedures that must be used for public notification, considering submissions, and making decisions. Such legislation include:

- Resource Management Act 1991;
- Reserves Act 1977;
- Civil Defence Emergency Management Act 2002;
- Land Transport Act 1998.

Even if a decision is clearly a significant one within the meaning of the Act, where procedures for decision-making are set out in other legislation, these will be used.

8 Engaging with Iwi/Maori

The Act provides principles and requirements for Council that are intended to facilitate participation by Maori in local authority decision-making processes.

Section 81 of the Act states that a local authority must —

1. establish and maintain processes to provide opportunities for Maori to contribute to the decision-making process of the local authority; and

2. consider ways in which it may foster the development of Maori capacity to contribute to the decision-making process of the local authority; and

3. provide relevant information to Maori for the purposes of paragraphs (a) and (b)

Section 82(2) of the Act states that Council must ensure that it has in place processes for consulting with Maori in accordance with the principles of consultation (as detailed in Subsection 82 (1) of the Act).

In compliance with such requirements, Council implements the process outlined in the Waimate District Long Term Plan 2021-2031, Section 'Statement on Involvement of Maori'.

9 When Council may not Consult

Information is always necessary for the decision-making process. However, there are times Council will not consult because the issue is routine, operational, or because there is an

emergency. If Council chooses not to consult on a matter, this determination will be made in accordance with the criteria below.

The Council may not consult when:

- the matter is not of a nature or significance that requires consultation (S82(4)(c)of the Act); or
- the Council already has a sound understanding of the views and preferences of the parties likely to be affected by, or interested in, the matter (Section 82(4)(b) of the Act); or
- there is a need for confidentiality or commercial sensitivity (Section 82(4)(d) of the Act); or
- the costs of consultation outweigh the benefits of it (Section 82(4)(e) of the Act); or
- the matter has already been addressed by the Council's policies or plans, which have previously been consulted on; or
- Emergency Management activities during a state of emergency (Civil Defence Emergency Management Act 2002); or
- an immediate or quick response/decision is needed, or it is not reasonably practicable to engage given the required response timeframe; or
- works are required unexpectedly, or following further investigations on projects, already approved by the Council; or
- the works required are related to the operation and maintenance of a Council asset, and responsible management requires the works to take place (i.e. overall constituting a case of 'business as usual'); or
- when Council has consulted on the issue in the last 24 months, where there has been no material change to the issue over this period.

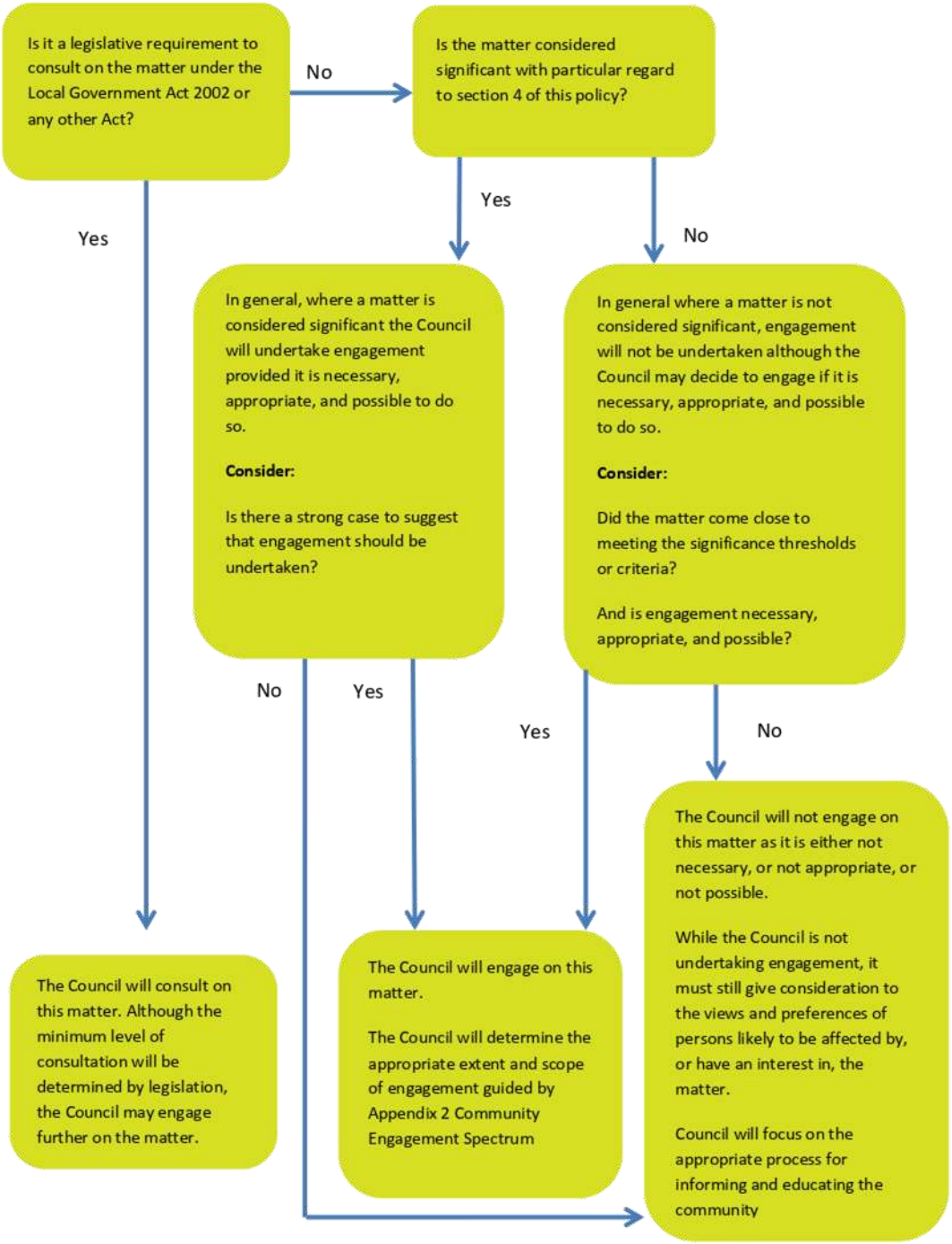
Where the above listed circumstances apply and consultation is not to be undertaken, the Council is still required to give consideration to the views and preferences of parties likely to be affected by, or to have an interest in, the matter (Section 78 (1) of the Act). The Act requires that this consideration be in proportion to the significance of the matters affected by the decision (Section 79 (1)).

10 Identification of Inconsistent Decisions

When Council makes a decision that is inconsistent with this policy, the steps identified in Section 80 of the Act will be undertaken. In such a situation, Council will clearly identify:

1. the inconsistency; and
2. the reason for the inconsistency; and
3. any intention of Council to amend the policy or plan to accommodate the decision.

Appendix 1: Significance and Engagement Flowchart



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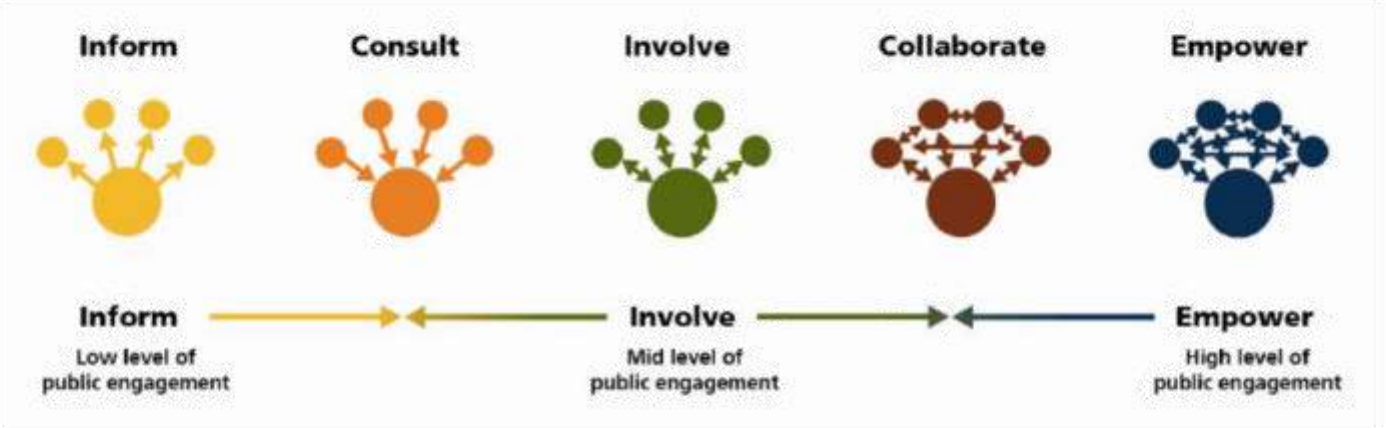
Appendix 2: Community Engagement Spectrum

This diagram details how Council may engage with the public based on the level of significance. Both significance and engagement are flexible along the spectrum, and Council is not limited to these methods of engagement with the public.



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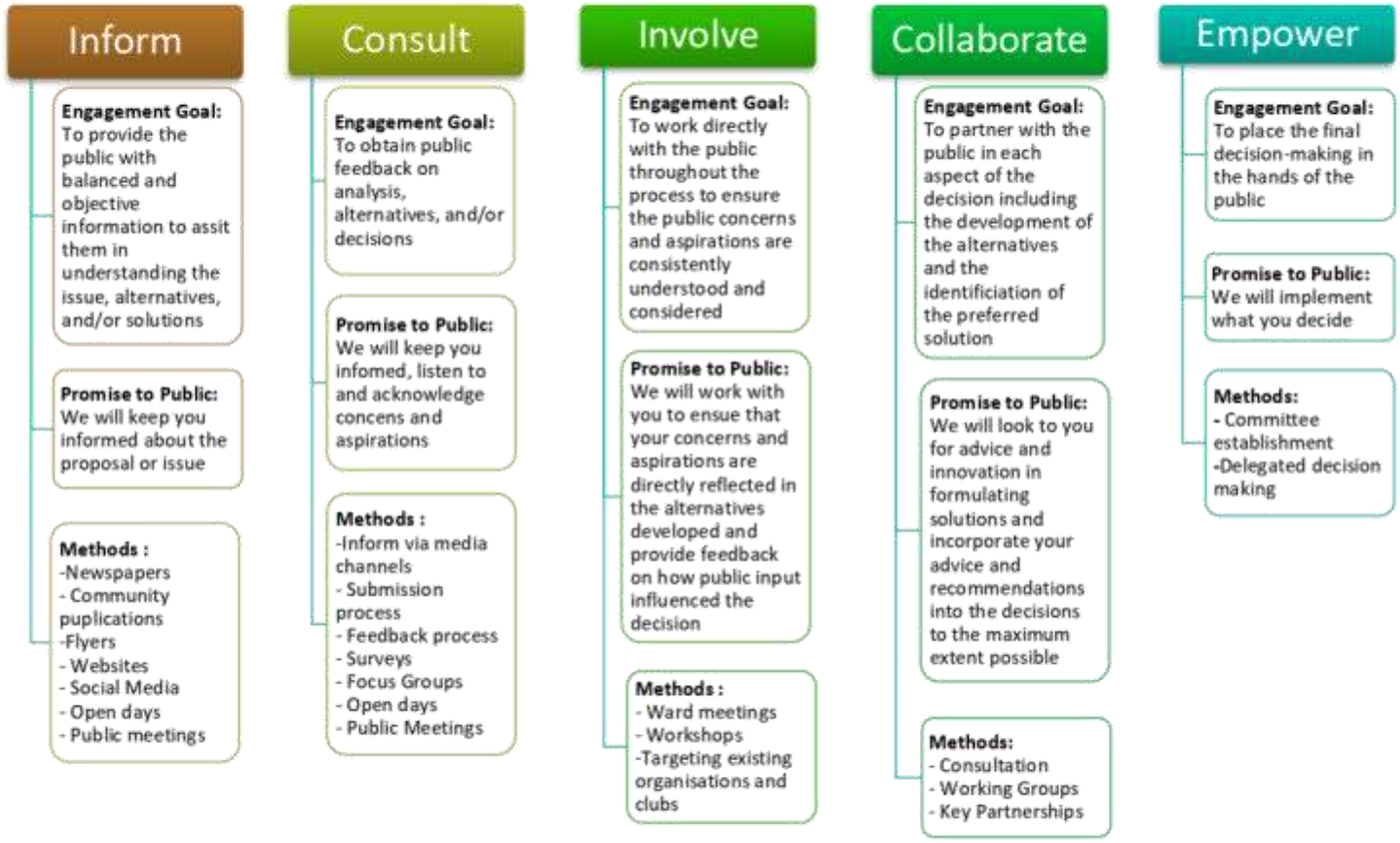
Appendix 3: Toolbox for Engagement



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2021-24

Roading Activity Management Plan

for the Waimate District Council





Waimate District Council

Version 6 – May 2021

Roading Activity Management Plan

for the Waimate District Council

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UPDATE REGISTER

Number	Date	Description of Update	Updated by
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Version 4	24 December 2014	Updates throughout document Waimate DC and Waugh Infrastructure Management Ltd	Robert Moffat Grant Holland
	18 June 2015	Budget reduction adjustment	R Moffat
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	20 June 2018	NZTA Indicative investment of maintenance and renewal programme added Financial Assistance Rate (FAR) increase from 57% to 60%. Footpath maintenance as now being eligible for NLTF funding.	R Moffat
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	25 May 2021	Budget Internal Charges added, assumptions updated, Service Delivery Review added.	Robert Moffat
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Glossary of Terms

The following terms and acronyms (in brackets) are used in this Plan.

ACCRUAL ACCOUNTING
The recognition of revenues as they are earned and expenses as they are incurred.

ANNUAL PLAN
A document produced annually by an organisation to inform stakeholders of its objectives, intended activities, performance, income and expenditure required for a period of one financial year. It may also indicate anticipated future short-term income and expenditure

APPROPRIATE ASSET MANAGEMENT PRACTICE
The level of AM practice development (minimum to advanced) which is considered optimal for the specific organisation.

ASSET
A physical component of a facility, which has value, enables services to be provided and has an economic life of greater than 12 months. Dynamic assets have some moving parts, while passive assets have none.

ASSET MANAGEMENT (AM)
The systematic and coordinated activities and practices of an organisation to optimally and sustainably deliver on its objectives through the cost-effective lifecycle management of assets.

ACTIVITY MANAGEMENT PLAN
Long term plans (usually 10-20 years or more for infrastructure assets) that outline the asset activities and programmes for each service area and resources applied to provide a defined level of service in the most cost effective way.

ASSET MANAGEMENT STRATEGY
A strategy for asset management covering the development and implementation of plans and programmes for asset creation, operation, maintenance, rehabilitation/ replacement, disposal and performance monitoring to ensure that the desired levels of service and other operational objectives are achieved at optimum cost.

ASSET REGISTER
A record of asset information considered worthy of separate identification including inventory, historical, financial, condition, construction, technical and financial information about each.

BENEFIT-COST RATIO (BCR)
The sum of the present values of all benefits (including residual value, if any) over a specified period, or the lifecycle, of the asset or facility, divided by the sum of the present value of all cost.

CAPITAL EXPENDITURE (CAPEX)
Expenditure used to create new assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of asset stock.

COMPONENTS
Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

CURRENT REPLACEMENT COST
The cost of replacing the service potential of an existing asset, by reference to some measure of capacity with an appropriate modern equivalent asset.

CUSTOMER PERFORMANCE MEASURE
Specific indicators that are used to demonstrate how the organisation is doing in relation to delivering levels of service. Customer performance measures the service the customer receives. Customer measures are generally those that would be used in public documents.

DEFERRED APPROACH
The shortfall in rehabilitation work required to maintain the service potential of an asset.

DEPRECIATED REPLACEMENT COST (DRC)
The replacement cost of an existing asset less an allowance for wear or consumption having regard for the remaining economic life of the existing asset.

DEPRECIATION
The wearing out, consumption or other loss of value of an asset whether arising from use, passing of time or obsolescence through technological and market changes. It is accounted for by the allocation of the cost (or

revalued amount) of the asset less its residual value over its useful life.

DETERIORATION RATE
The rate at which an asset approaches failure.

DISPOSAL
Activities necessary to dispose of decommissioned assets.

ECONOMIC LIFE
The period from the acquisition of the asset to the time when the asset, while physically able to provide a service, ceases to be the lowest cost alternative to satisfy a particular level of service. The economic life is at the maximum when equal to the physical life; however, obsolescence will often ensure that the economic life is less than the physical life.

FACILITY
A complex comprising many assets (e.g. a hospital, water treatment plant, recreation complex, etc.) which represents a single management unit for financial, operational, maintenance or other purposes.

FINANCIAL STATEMENTS
Balance sheets, profit and loss accounts, statements of changes in financial position, notes another statements which collectively are intended to give a true and fair view of the state of affairs and profit or loss for an entity for a defined period.

GAP ANALYSIS
A method of assessing the gap between a business's current asset management practices and the future desirable asset management practices. Also called needs analysis or improvement planning.

INFRASTRUCTURE ASSETS
Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components. The network may include normally recognised ordinary assets as components.

LEVELS OF SERVICE
LOS are outputs a customer receives from the organisation. They describe what the organisation is intending to deliver. Service levels relate to service attributes such as quality, reliability, responsiveness, sustainability, timeliness, accessibility and cost. Levels of service describe attributes of the service from a customer point of view.

LIFE
A measure of the anticipated life of an asset or component; such as time, number of cycles, distance intervals etc.

LIFECYCLE
The cycle of activities that an asset (or facility) goes through while it retains an identity as a particular asset i.e. from planning and design to decommissioning or disposal.

LIFECYCLE COST
The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.

LIFECYCLE COST ANALYSIS
Any technique which allows assessment of a given solution, or choice from among alternative solution, on the basis of all relevant economic consequences over the service life of the asses

MAINTENANCE
All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal. Fixed interval maintenance is used to express the maximum interval between maintenance tasks. On-condition maintenance is where the maintenance action depends upon the item reaching some predetermined condition.

MAINTENANCE PLAN
Collated information policies and procedures for the optimum maintenance of an asset or group of assets.

MAINTENANCE STANDARDS
The standards set for the maintenance service, usually contained in preventive maintenance schedules, operation and maintenance manuals,

codes of practise, estimating criteria, statutory regulations and mandatory requirements, in accordance with maintenance quality objectives.

OPERATION
The active process of utilising an asset, which will consume resources such as manpower, energy, chemicals and materials. Operation costs are part of the lifecycle costs of an asset.

OPTIMISED DEPRECIATED REPLACEMENT COST (ODRC)
The optimised replacement cost after deducting an allowance for wear or consumption to reflect the remaining economic or service life of an existing asset. ODRC is the surrogate for valuing assets in use where there are no competitive markets for assets, or for their services or outputs.

PERFORMANCE MONITORING
Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.

PLANNED MAINTENANCE
Planned maintenance activities fall into three categories:

i) Periodic – necessary to ensure the reliability or to sustain the design life of an asset.
ii) Predictive – condition-monitoring activities used to predict failure.
iii) Preventive – maintenance that can be initiated without routine or continuous checking (e.g. using information contained in maintenance manuals or manufacturers' recommendations) and is not condition based.

REHABILITATION
Works to rebuild or replace parts or components or an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally, involves repairing the asset to deliver its original level of service (i.e. heavy patching of roads, slip-lining of sewer mains, etc.) without resorting to significant upgrading or renewal, using available techniques and standards.

RENEWAL
Works to upgrade refurbish or replace existing facilities with facilities of equivalent capacity or performance capability.

REMAINING ECONOMIC LIFE
The time remaining until an asset ceases to provide the required service level or economic usefulness.

REPAIR
Action to restore an item to its previous condition after failure or damage.

REPLACEMENT
The complete replacement of an asset that has reached the end of its life, so as to provide a similar or agreed alternative, level of service.

REPLACEMENT COST
The cost of replacing an existing asset with a substantially identical new asset.

RESIDUAL VALUE
The net market or recoverable value that would be realised from disposal of an asset or facility at the end of its life.

RISK MANAGEMENT
The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

ROAD ASSESSMENT MAINTENANCE MANAGEMENT SYSTEM (RAMM)
The computerised road maintenance management software system developed by Transit New Zealand for use nationally by all New Zealand road asset managers.

ROUTINE MAINTENANCE
Day-to-day operational activities to keep the asset operating (replacement of light bulbs, cleaning of drains, repairing leaks, etc.) and which form part of the nual operating budget, including preventive maintenance.

SERVICE POTENTIAL

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset.

STATEMENT OF FINANCIAL PERFORMANCE
A report on the net surplus/deficit, and its components, arising from activities or events during a given period, that is significant for the assessment of both past and future financial performance.

STRATEGIC PLAN
A plan containing the long-term goals and strategies of an organisation. Strategic plans have a strong external focus, cover major portions of the organisation and identify major targets, actions and resource allocations relating to the long-term survival, value and growth of the organisation.

TECHNICAL PERFORMANCE MEASURE
Specific indicators that are used to demonstrate how the organisation is doing in relation to delivering levels of service. Technical performance measures how effectively the organisation provides the service. These measures support customer measures and tend to be used internally to measure performance against service levels.

UNPLANNED MAINTENANCE
Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

USEFUL LIFE
May be expressed as either:

a) The period over which a depreciable asset is expected to be used, or
b) The number of production or similar units (i.e. intervals, cycles) that is expected to be obtained from the asset.

VALUATION
Assessed asset value, which may depend on the purpose for which the valuation is required, i.e. replacement value for determining maintenance levels, market value for lifecycle costing and optimised deprival value for tariff setting.

1. EXECUTIVE SUMMARY

1.1 PURPOSE OF ROADING ASSET MANAGEMENT PLANNING



This Activity Management Plan for Roading 2021-24 (AMP) has been developed to provide the Waimate District Council (WDC) with a long-term management tool for roading activities. It documents management, planning, financial, engineering, and technical best-practices to ensure that the level of service required by customers is provided cost-effectively to the current and future community. The plan is intended to demonstrate to customers that Council is managing their assets responsibly, and that they will be regularly consulted over the trade-offs between the costs of roading activities and Council's service delivery.

1.2 PLAN LEVEL

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Roading assets (Section 2.1.1). This has been adopted by Council through the Asset Management Policy Statement. **Analysis of factors suggests that asset management practice should be at a 'Core' level for Roading**. This AMP has previously been reviewed and updated to move towards "Core" level Asset Management. The following principles will be used by Council to guide asset management planning and decision making:

- Effective consultation to determine appropriate Levels of Service
- Ensuring service delivery needs form the basis of asset management
- Integration of asset management with corporate, financial, business and budgetary planning using Asset Management Plans and Council's Long Term Plan to demonstrate this
- Collaboration with neighbouring authorities and other agencies including Waka Kotahi NZTA and Environment Canterbury.
- Transparent and accountable asset management decision making
- Informed decision making, taking a lifecycle management and inter-generational approach to asset planning
- Sustainable management providing for present needs whilst sustaining resources for future generations

1.3 ASSETS INCLUDED IN THIS PLAN

The transport asset includes all Council-owned and maintained roads, streets, bridges, footpaths and related infrastructure within the District, as shown in Table 1.1. **There is currently just under 1,350 kilometres of maintained roading. 52% of the network is unsealed.**

Table 1.2 summarises the Waimate District Council 2020 valuation of the Roading assets, **assessed as having a replacement value of $496 million**. A value for land under roads is provided, based on an assessment of the area of road reserve within the District, which has formed (or partially-formed) and maintained roads. Unformed roads (sometimes referred to as 'paper roads') are not included. Annual depreciation - or **decline in service potential has been valued at $3 million per annum, is used to determine an affordable programme of work necessary to maintain the network** within pre-determined financial constraints. This represents a $0.3 million annual increase from 2017.

Table 1.1 – Roading assets included in this plan

Asset	Number	Length
Length of Road		1339 km
Sealed Road		646 km
Unsealed Road		693 km
Bridges	182	3364 m
Culverts	3482	36485 m
Concrete Fords	85	1696 m
Kerb & Channel		48462 m
Signs	Over 5000 individual signs	
Street Lights	495	
Footpaths		63 km

Table 1.2 - Waimate District Council Road Asset Valuation Summary 2020

Asset	Optimised Replacement Cost	Optimised Depreciated Replacement Cost	Annual Depreciation
Land	$81,285,250	$81,285,250	$0
Formation	$168,271,591	$168,271,591	$0
Unsealed Pavement Structure	$40,921,210	$40,921,210	$0
Seal Pavement Structure	$118,194,370	$66,007,099	$934,831
Sealed Pavement Surface	$18,233,189	$9,679,797	$1,052,707
Bridges	$28,080,257	$13,610,689	$293,111
Drainage	$17,156,987	$7,650,472	$171,887
Drain Fords	$2,760,930	$725,150	$61,799
Footpaths	$7,313,312	$2,426,139	$248,072
Signs	$601,565	$421,096	$35,752
Street Lighting	$419,922	$100,532	$13,206
Surface Water Channels	$12,571,669	$5,261,931	$130,309
Traffic Facilities	$80,246	$38,329	$2,687
Total Road Assets	**$495,890,498**	**$396,399,285**	**$2,944,361**

All data is taken from Waimate District Council's RAMM database for roading assets.

Waimate District Council has identified **the key challenges faced by the Organisation in continuing to deliver roading services that meet the level of service required by customers in the most cost-effective way**, at an asset activity management level. These are detailed in Table 1.3, and form the strategic context of this AMP for the Council:

Table 1.3 - Waimate District Council Roading Problem Statements and Benefits

Problem Statement	Impacts on the Network	Benefits to Customer	Management Benefits
The operating environment, and climate change predictions, require the existing network management strategies in Waimate to adapt	• Limited strength for pavements • Drainage important • Flood damage • Pavement damage • Road user safety	• Low costs of damage • Levels of service and expectations met • Safer roads	• Meeting levels of service • Providing safer network • Minimising storm disruptions to network • *Progressive climate change adaptation* • Effect of the soils on the network are understood and appropriate solutions developed.
The existing network and driver behaviour contribute to an unacceptable number of serious injuries and fatalities in Waimate	• Infrastructure improvements and speed management required • Regional approaches to informing road user choices and system management	• Improved road safety • 'Road to Zero' objectives progressively achieved	• Contribution to 'Road to Zero' infrastructure achievements • Contribution to 'Road to Zero' regional initiatives
There are a diverse range of road users in Waimate, whose needs inform provision of a fit-for-purpose network	• *Suitability for different users (including pedestrians and cyclists)* • *Larger and oversized vehicles*	• *All users considered and safety improvements for pedestrians and cyclists given greater priority*	• *Meeting levels of service* • *Providing safer network*
We operate a 'Budget' network which is challenged by changes in demand. • minimal widths • limited pavement depth • 1963-73 rapid construction (Seal extension 30km per year)	• Performance • 'Gaps' becoming evident No longer fit for purpose across all of network • cheap to maintain metrics good	• Low costs to date • Levels of service and expectations met	• Rates and NZTA investment has been minimised • Changing levels of service and expectations will be met • Efficiencies sought through ONRC based differentiation
• Intensive land use – more heavies Intensive land use – reshaping of watercourses	• Pavement strength challenged • Natural water courses lost, surface flooding	• Changing levels of service and expectations will be met • Pavement strength challenged	
• Irrigation – higher water tables and moisture in pavement subgrades • Vehicle types – large • Vehicle types – heavier • Vehicle types - more	• Width of pavements & bridges • Pavement strength challenged	• Efficiency for Operators	• Bridge capacity prioritisation (ONRC)

1.4 KEY STAKEHOLDERS AND CUSTOMERS

Key Stakeholders

The Council is the ultimate owner of assets, as the designated Road Controlling Authority. The Crown entity established to manage Roading activities is Waka Kotahi NZ Transport Agency (NZTA). Other key stakeholders of the roading network include:

- Environment Canterbury (ECan) Regional Council
- Owners and operators of inter-connecting or co-located networks, including NZTA State Highways and NZTA-appointed representatives, such as network contractors
- Representative road-user groups such as Road Transport Association (RTA), Federated Farmers, etc. These are distinct from users (Council's customers)
- Council employees, and Council-appointed consultants and contractors who manage and work on the District's roading assets

Customer Groups

Waimate District Council's customers fall into three different groups, detailed in Table 1.3.

Table 1.3 – WDC Roading Customer Groups

Customer Group	Description	Customers
Associated Service Providers	These are other service providers who rely on the Roading network	• Contractors • Utilities service providers – use the road corridor to co-locate and access their assets • Transport operators • Emergency Services
Users	Those who directly use the service	• Private drivers • Commercial road users • Drivers of public and other transport services (e.g. tourist buses) • Pedestrians and cyclists
The Wider Community	Non-users that are affected if the service is not provided	• Citizens • Tourists • Residents who live beside the roads • Local businesses – requiring access

Aoraki Mid-South Canterbury Roading Collaboration *(Waimate, Mackenzie, Timaru and Ashburton District Councils)*

Since 2014, a strong collaboration has developed across Mid-South Canterbury Councils. The development of a common maintenance contract document between Waimate, Mackenzie, Timaru and Ashburton District Councils has formed an excellent platform for greater alignment of transportation services delivery. It has also supported cost-effective procurement of physical works and professional services.

Funding Partners

Funding is provided by two significant parties:

- **Waka Kotahi NZ Transport Agency** – The District's Maintenance, Operations and Renewals, and minor Improvements "Continuous Programmes" are co-funded by NZTA in accordance with operational requirements. **The Financial Assistance Rate is currently 64%**
- **Ratepayers – Rates provide funding for all roading non-subsidised activities and the remaining "local share" of roading costs** qualifying for Financial Assistance from NZTA

1.5 LEVEL OF SERVICE

The Roading asset comprises a diversity of components including road pavements, surfaces, bridges, footpaths, drainage, signs, and streetlighting assets. **Levels of Service in this AMP cover key service attributes, such as accessibility, affordability, efficiency, quality, reliability, responsiveness and safety.**

Levels of service measures are expressed in terms of both "Customer Performance Measures", which measure the service received by the user, and "Technical Performance Measures" which measure how the organisation provides the service. Section 5.9 sets-out a framework for defining Levels of Service. There is still a significant effort required to bring the definitions up to standard and define appropriate target levels. This is included in the Improvement Plan (Section 12).

1.6 GROWTH AND FUTURE DEMAND

The Waimate District Roading network caters predominantly for low volume rural traffic on unsealed roads. There are only 40 kilometres of urban streets.
Just eight kilometres caters for a traffic loading greater than 800vpd, classified as Secondary Collector in the One Network Road Classification hierarchy.
The Waimate District's resident population of 7,815 (2018) is projected to increase to 9,000 in 2050, at an average rate of 0.4% growth per year). Due to issues with the 2018 Census, the Council has changed to an alternative method of establishing growth projections. This change has also strengthened the Council's ability to plan and respond to effects due to COVID-19. Growth projections currently anticipate short term effects. However, it is not yet known what, if any, long term effects there will be. Due to this uncertainty, it is recommended that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery.

Population growth itself is likely to have minimal impact on future demand on the roading network. **Trends in the mix of heavy traffic associated with land use changes within the District are likely to have a greater effect on Council's roading assets.** To get a better prediction of likely demand, Council is reviewing their traffic counting policy, and developing a strategy for Traffic Counting. This allows the Council to assess asset performance as utilisation of the asset changes, and review whether key assets provide sufficient capacity for current and future use.

1.7 SUSTAINABILITY

Transport legislation and policy in New Zealand calls for an affordable, integrated, responsive, safe and sustainable land transport network. A sustainable transport system should provide for our own economic and social wellbeing in a way that will not prevent our children and grandchildren from being able to provide for theirs. This now requires roading services to ensure that works and network management is delivered in a manner which can mitigate the likely impacts of climate change. Whilst **there are no significant negative effects assessed as resulting from the Council's roading activities**, opportunities exist to deliver road asset development and management services to reduce the negative impact for Waimate's residents on the social, economic, environmental, or cultural well-being of the community.

Sustainability also considers the management of Council's staff and resourcing to ensure continued cost-effective delivery of roading activities. There is a need to build-in a means of succession

planning for roading's engineering (technical) and physical works (contracting) practices and procedures.

1.8 RISK MANAGEMENT

Risk management is "the systematic application of management policies, procedures and practices to the task of identifying, analysing, evaluating, treating and monitoring those risks that could prevent a Local Authority from achieving its strategic or operational objectives or plans, or from complying with its legal obligations". There is currently no formal Risk Management process being implemented for the Roading activity within the Council, which poses a significant risk. A Risk Management strategy has been described in Section 8 of this AMP. The use of this strategy as outlined in the Improvement Plan should be adopted with high priority. Planning for climate change adaptation, network resilience, emergency management response and recovery, and insurances of assets require full review and inclusion in this plan.

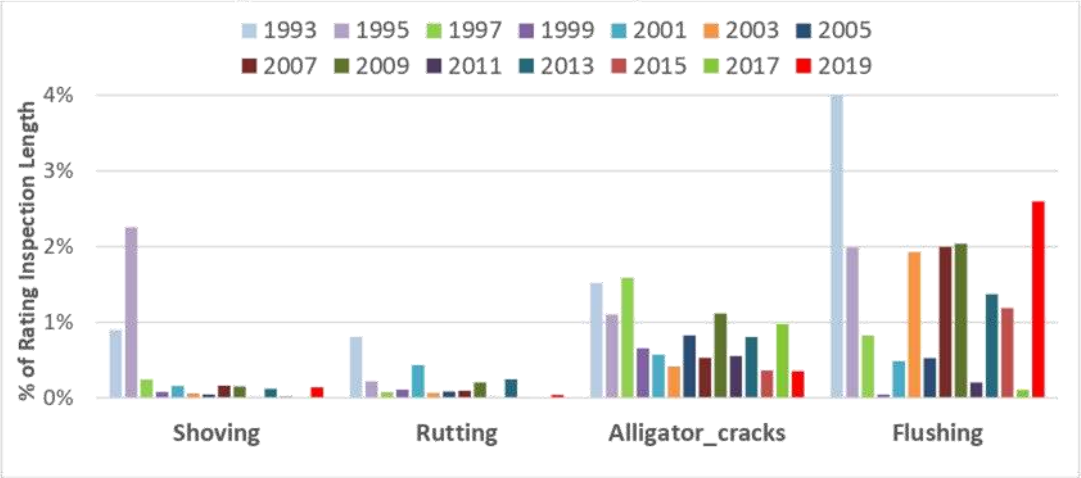
1.9 LIFECYCLE MANAGEMENT PLANS

Council's Lifecycle management planning identifies the maintenance, renewals and operations activities required to keep the assets operating at the currently established levels of service in the most cost-effective manner. **The Lifecycle Management Plan included in Section 9 of the AMP ensures that current strategies do not consume the asset, leading to an unexpected increase in maintenance/renewal expenditure in the future.**

Waimate District Council undertakes condition and performance analysis of the network relying on the practical experience and knowledge of engineering staff to provide a gauge of network performance. This knowledge is used extensively for planning purposes. Regular condition surveys of the asset components need to be undertaken and the results recorded to ensure that an improved understanding of asset capacity at current service levels is developed.

Figure 1.1 shows the historical results from visual condition rating for sealed roads. This shows that the overall network condition was improved significantly in the 1990's. Since then, it has remained relatively stable. This is indicating that maintenance and renewal levels for sealed roads are appropriate to maintain the condition of the pavements at an acceptable level, against the increase in heavy traffic mix and ages of parts of the network.

Figure 1.1 – Historical Visual Condition Rating Data for Sealed Roads



Current asset management practice applies a combination of "reactive" condition driven and network lifecycle depreciation techniques to determine the work necessary to maintain the network within pre-determined financial constraints. The majority of maintenance is reactive, so budgets have been based on historical quantities. Similarly, some asset groups are being periodically renewed on the basis of existing long term planning of work. This plan recommends increasing renewal works to the following transport infrastructure asset groups:

- **Sealed road resurfacing** - Actual resurfacing over the last 10 years has been lower than targeted 'average' annual reseal quantities. There is a backlog of work accumulating. Due to this there is a need over the next five years to address the current resealing backlog.
- **Pavement renewal**– The 'average' annual quantities of pavement renewal required - based on the assumed age, condition and capacity of the assets - needs to be increased in future. Given the large proportion of pavements that were constructed in the same periods Council is aware of the potential 'bow-wave' of rehabilitation and resealing works. While there is an acknowledgement of this, a small increase in funding is proposed initially as monitoring and modelling is undertaken to gain a more robust understanding of this issue.
  The Council plans to carry-out further testing and deterioration modelling to determine a sustainable level for future pavement renewals, with any changes implemented in the 2024-27 Activity Management Plan.
- **Drainage** – Roadside drainage is key to maximising the life of pavements by protecting them from ingress of water. The current amount of work is too low, especially given the change in groundwater conditions arising from irrigation. Some drainage assets are at or nearing the end of their life and provide insufficient capacity in extreme weather events. These assets will need to be progressively replaced for pavement protection, safety and amenity purposes.
- **Bridges** - WDC's Bridge Replacement/Upgrade Strategy lists the bridges which are prioritised for structural component replacements over the next 6-10 years.

This plan recommends a minimal investment in capital improvements to the existing transport infrastructure – focussing on minor safety improvements and level of service gaps for footpaths.
In general, Council has no specific plans for disposal of any Roading asset.

1.10 FINANCIAL FORECASTS

Table 1.4 – WDC Roading Forecast Expenditure

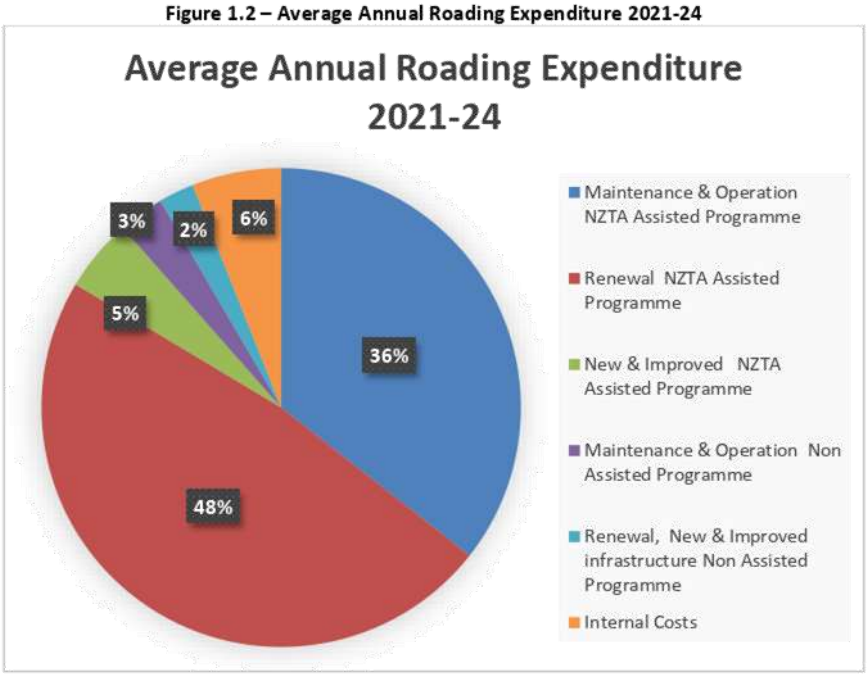
Draft Roading Budget Summary	2021-22	2022-23	2023-24	3 year Programme Totals
Maintenance & Operation NZTA Assisted Programme	$2,319,923	$2,391,841	$2,463,758	$7,175,522
Renewal NZTA Assisted Programme	$3,126,495	$3,223,416	$3,320,338	$9,670,249
New & Improved NZTA Assisted Programme	$330,000	$330,000	$330,000	$990,000
				$17,835,772
Maintenance & Operation Non Assisted Programme	$201,000	$207,231	$213,462	$621,693
Renewal, New & Improved infrastructure Non Assisted Programme	$155,000	$159,805	$164,610	$479,415
Internal Costs	$390,121	$411,838	$412,619	$1,214,577
				$2,315,685
	$6,522,539	**$6,724,132**	**$6,904,786**	**$20,151,457**

Table 1.5 – Waka Kotahi NZTA "Continuous Programmes" Investment

Activity area	2018-21	2021-24	Change	Change
Maintenance & Operations	$6,305,943	$7,175,522	$869,579	14%
Renewals	$8,651,004	$9,670,249	$1,019,245	12%
Improvement Projects'(Road to Zero; Walking and Cycling Bridges)	$1,480,190	$990,000	-$490,190	-33%
	$16,437,137	**$17,835,772**	**$1,398,635**	**10%**

The full budget and forecasts are shown in Sections 9 and 10. Funding for the management and maintenance and renewals of the road network is provided from the District roading rate and Financial Assistance received from Waka Kotahi NZTA.

Figure 1.2 – Average Annual Roading Expenditure 2021-24



1.11 PROCESSES AND ASSET MANAGEMENT PRACTICES

Asset Management Practices

Waimate District Council employ a Roading Manager, a Roading Officer, and a Roading Technician who are responsible for the management of the road asset. The Roading Manager is responsible for the maintenance management of the Roading network. Occasionally some elements of the work are competitively tendered to consultancy services to manage (e.g. AMP preparation, bridging asset management). **Roading staff and the Road Maintenance Contractor regularly inspect and monitor the network.**

Roading Procurement Processes

Routine maintenance and renewals are undertaken through a competitively tendered, collaborative contract. The previous contracting arrangements had been in-place for five years, extended to the 30 June 2021. A three to five year contract is proposed. Other works, such as sealed road resurfacing, pavement rehabilitation and major drainage renewals and upgrades are generally let as competitively priced contracts on an annual or biennial basis.

1.12 PLAN IMPROVEMENT AND MONITORING

Waimate District Council has developed this AMP based on its current knowledge of **customer requirements, the configuration of the existing and future network to meet customer requirements, current asset information and the strategies being adopted to achieve customer outcomes.** To further develop the AMP to support asset management processes, systems and data, Council recognises the need for a more structured approach, which includes:

- Council's firm commitment to implement and develop the AMP
- Incorporate this AMP as a tactical plan within Council's planning framework
- Review of the plans by internal staff and suitably qualified external consultants
- Developing an AMP that meets the requirements of the community
- Benchmarking key performance indicators against similar external TLAs
- A corporate commitment to implementing and maintaining suitable AM information systems
- Adopting a team approach to the preparation of future AMPs in order to maximise the buy-in of internal staff and sharing of specialised knowledge

Historically Asset Management Plans have been carried out for regulatory requirements and not used on an on-going basis. Sections 11 and 12 detail the processes and procedures for the on-going implementation, improvement and updating of the Roading Asset Management Plan. Council is committed to continuous improvements as outlined in Section 12.

1.13 KEY ASSUMPTIONS AND CONFIDENCE LEVEL

There **are significant assumptions that have been made in the development of this AMP** as outlined below:

- In preparing the plan, asset data in the RAMM database as at June 2020 has been taken as the verified network asset.
- Changes in government requirements in future may affect future Level of Service.
- No specific consultation or research has been completed to determine future demand on the network. There is a moderate level of confidence in future demand based on limited input information.
- The knowledge of the practitioners directly providing this activity has been been relied upon in preparation of this AMP. These practitioners include Council's Roading Department staff, Council's consultants and staff of the physical works contractors.

The key assumptions made in the financial forecasts are as follows:

- NZTA will continue to provide subsidised funding to Council for the road network
- Council will continue to fund the level of service currently set out in this AMP
- The dollar values shown in this Plan are June 2021 dollars adjusted for inflation applicable to this Activity.
- Some renewal costs are rough order of cost estimates that will need to be further researched and refined
- No account has been taken of the impacts related to the development, acceptance and implementation of the Risk Management Plan
- Assumptions made on Total Useful Life and Residual Useful Lives of the assets in relation to the asset valuation.
- The asset data is considered to be reliable and fit for the purpose for developing the long term financial forecasts.
- NZTA Funding Assistance Rate (FAR) subsidy will stay the same for 10-year period and there will be no other NZTA funding changes.

2. INTRODUCTION

2.1 PURPOSE OF THE PLAN

The objective of Asset Management planning is:

"To provide the required level of service, in the most cost effective manner, through management of assets for existing and future customers."

The purpose of this AMP is to:

i. Deliver on local government's purpose to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future
ii. Demonstrate that the Roading assets are operated and maintained in a sustainable, prudent and cost effective manner, so that they provide the required level of service for current and future customers
iii. Demonstrate regulatory compliance, which includes ensuring the LTP is supported by:
    - Quality information and assumptions underlying forecast information
    - Framework for forecast information and performance measures are appropriate to assess meaningful Levels of Service
iv. Demonstrate that the AM level will be achieved

The Plan has been prepared with the intention of a yearly review of the financial statements and a three yearly review of the remainder of the Plan.

2.1.1 Asset Management policy statement for roading

The Waimate District Council Asset Management Policy Statement for the Roading Asset is outlined below. This Policy Statement sets the direction of the Roading Asset Management process.

The objective of the Waimate District Council's Asset Management Policy for the Roading Asset is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and levels of service, manage related risks, and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets as required.

This Asset Management Policy sets the appropriate level of asset management practice for Council's Roading Activity as 'Core' practice, with some intermediate elements as highlighted by the AM Maturity Assessment.
Definition: 'Core' asset management practice is basic technical asset management planning undertaken at a level designed to meet minimum legislative and organisational requirements for financial planning and reporting. 'Core' practice provides technical management outputs for current levels of service, demand management, asset lifecycles, asset forward replacement programmes, new capital expenditure and associated cash flow projections.

Policy Linkages to Other Plans
This Asset Management Policy links to, Council's LTP, the Canterbury Regional Land Transport Strategy, and Roading Activity Plan. New Zealand Transportation Agency asset management requirements form this Policy's minimum asset management practice requirements. The Mid-South Canterbury Roading Collaboration Group is also developing practice and producing numerous documents together.

Structured Assessment of Asset Management Practice

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Roading assets (March 2017). This structured assessment follows the guidance provided in Section 2.1 of the International Infrastructure Management Manual (2015) and Table 2.1.2 International Infrastructure Management Manual (2015).

Table 2.1: Roading Activity Asset Management Practice Assessment

Criteria	Assessment	Commentary
Population	Core	The initial population risk screen for urban areas, all township populations, and total district population showed that asset management practice should be 'Core'
District Wide Risks	Core	Based on the identified district wide risk factors, the suggested level of appropriate asset management practice should be 'Core'
Costs and Benefits	$6.3 M (28% of total expenditure)	The roading budget is the largest in Council and represent higher risks if AM practice is not at an appropriate level. These budgets also allow more scope to develop asset management practice as appropriate
Legislative Requirements	Compliance approach	Waimate District Council policy is to meet minimum legislative requirements and Council follows clear directives within timeframes acceptable to the community. Council will advocate on behalf of the community where legislation is deemed inappropriate
Size, Condition, Complexity of Assets	Typical of a small urban and rural authority	There are a range of assets spread across the large district. In particular, the roading network and rural water supplies are extensive with only a small rating base. While the assets are not highly complex the isolated nature of the communities requires a
Risks Associated with Failures	Moderate level of risk	Overall risks associated with asset failure have been assessed to be moderate. There are some critical routes, bridges and demand issues pending
Organisational Skills and Resources	Average	Waimate District Council comprises a small organisation serving one main urban centre, small communities and a large rural area. The success of the organisation relies on key staff. Experienced managers cover operations and planning roles. Specialist technical work is outsourced Services are delivered through a combination of in-house teams and Contractors. This approach would be consistent with a 'Core' approach
Customer Expectations	Average	The District has a range of community assets that are of a high standard and the community is justifiably proud of them, and has high expectations of the development and maintenance. There is some variation in expectations across the district, particularly between Waimate township and more remote rural areas Overall customer expectations are judged to be medium and the trend of increasing customer expectation is likely. This suggests a requirement for well-developed asset management practice to consistently meet community expectations in the long term
Sustainability	No Corporate Policy at this stage, part of AMP and planning process at activity level	Waimate District Council is following the sustainability regimes of the Land Transport Management Act 2003, NZTS and RLTS requirements (including subsequent amendments and revisions) for Roading; otherwise Council is still in the process of developing its sustainability policies. This will include incorporating legislative changes and the any national or regional policies or plans Any impact of these on asset management practice will be incorporated into the next review of Asset Management Policies
Final AM Level	**Core**	**Analysis of factors suggests that asset management practice should be Core**
AM Maturity Assessment	**Core with some Intermediate**	**Generally, core practice. Intermediate practice identified for Demand Forecasting, Asset Register Data, Asset Condition, Operational Planning, Capital Works Planning, Financial and Funding Strategies and Service Delivery Models in line with national directives and requirements**

2.2 ASSETS INCLUDED IN THIS PLAN

2.2.1 Location

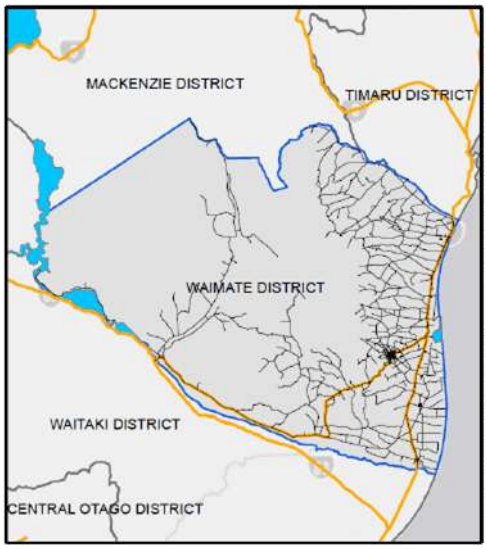


Figure 1.1 – Map of Waimate District Council Boundary

The general topography of the Waimate District is described as flat to rolling. The network has been split into 428 km in flat topography, 853 km in rolling topography and 55 km in mountainous topography. The district is bounded by the Pacific Ocean to the east, the Kirkliston Range to the west, the Pareora River to the north and the Waitaki River to the south. Figure 1.1 shows the boundary of the Waimate District alongside neighbouring authorities.

State Highway 1 and State Highway 82 provide the principal regional connections for the Roading network within the Waimate District. Figure 2.1 shows both the location of the district within the Canterbury Region and extent of the State Highway and District roading network.

Figure 2.1 – Map of Waimate District



2.2.2 The Asset

The transport asset includes all Council-owned and maintained roads, streets, bridges, footpaths and related infrastructure within the District as shown in Table 2.2. Unformed roads are not included.

Table 2.2 – Roading assets included in this plan

Asset	Number	Length
Length of Road		1339 km
Sealed Road		646 km
Unsealed Road		693 km
Bridges	182	3364 m
Culverts	3482	36485 m
Concrete Fords	85	1696 m
Kerb & Channel		48462 m
Signs	Over 5000 individual signs	
Street Lights	495	
Footpaths		63 km

The condition of the roads is dynamic over periods of time due to the District's topography, and the seasonal variations in climatic conditions and traffic.

2.3 RELATIONSHIP WITH OTHER PLANS

The Asset Management Planning process analyses the impact of the Levels of Service on the business and should be structured to be compatible with other key planning mechanisms and documents, including:

LTP: Council's LTP 2021 – 2031 sets out the broad strategic direction for the period of the plan, defining the District Vision, Outcomes, Strategic Objectives, Projects and Tasks and the Financial Framework that will be required. The outcomes are directly related to Governance, Community Well-Being, Environment Protection, Sustainability, Economic Development, and Organisation Performance.

District Plan: The Waimate District Plan assists the Council in carrying out its functions under the Resource Management Act 1991 so that it may achieve the purpose of the Act which is to "promote the sustainable management of natural and physical resources." The Plan was developed in consultation with local communities and interest groups. The Plan controls such activities as:

- Erection, relocation, or demolition of structures, buildings, network utilities and signs
- Commercial activities
- Earthworks
- Hazardous substances
- Planting, trimming or removing vegetation
- Subdivision and development

Other Related Asset Management Plans: Council has other activities each managed through the production and use of Asset Management Plans. Of particular relevance to the Roading Asset are

the Water, Waste Water and Storm Water Asset Management Plans. Cooperation with these Asset groups is required as their works in the road corridor will have impact on Roading assets.

Infrastructure Strategy: This plan will provide the inputs required for the roading portion of the 30-year Infrastructure Strategy as required by the 2014 amendment to the Local Government Act 2002.

Annual Plan and Budget: The works identified in this AMP will form the basis on which future annual plans are prepared.

Procurement Strategy: This is required by the Land Transport Management Act and signals Council's intentions for procurement of subsidised land transport activities.

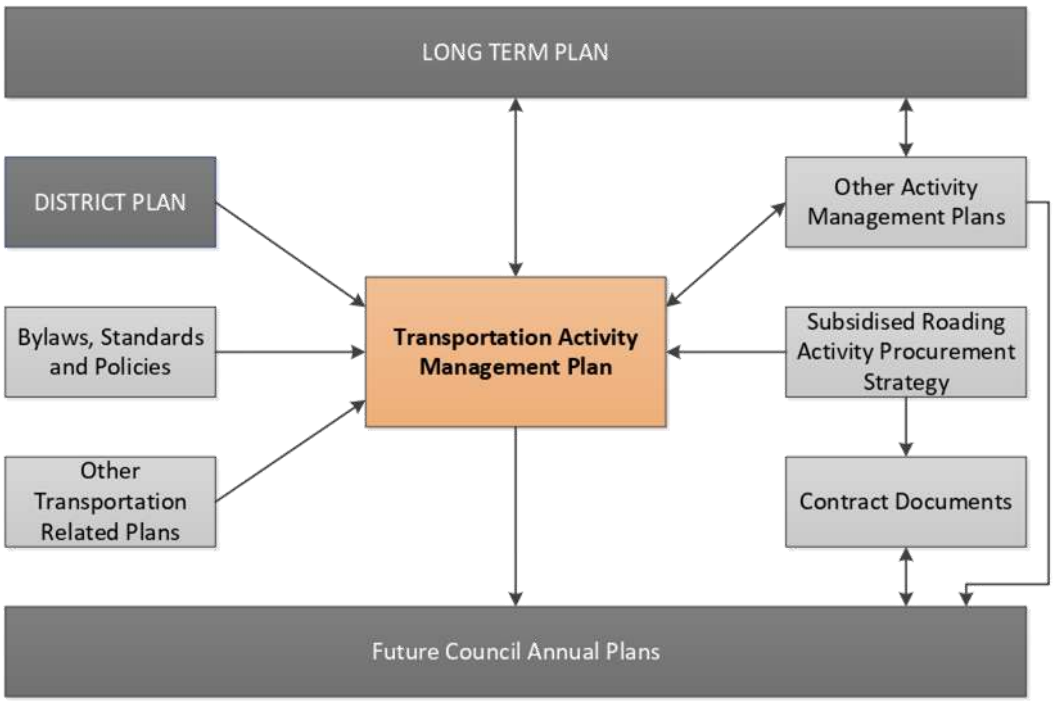
Contracts: The levels of service, strategies and information requirements contained in AMP's are translated into contract specifications and reporting requirements.

Bylaws, standards and policies: These tools for asset creation and subsequent management are needed to support AM tactics.

Other Roading Related Plans: These include:

- Walking and Cycling Strategies
- Regional Policy Statements
- Regional Land Transport Strategy
- Regional Passenger Transport Plan
- New Zealand Transport Strategy
- New Zealand Walking and Cycling Strategy; Getting there on foot, by cycle.

.Figure 2.2 – Relationship between the Roading Asset Management Plan and Other Plans



2.4 HOW THIS PLAN WILL BE USED

This plan should be used in the following ways:

- To support funding applications to NZTA
- To provide a key input into the LTCP and future Annual Plans, by providing a business case for why and how the Council will deliver its roading service and key programmes and funding required to deliver it.
- To help council meet its goals and objectives in a way that best serves customers, including measuring Council's performance against Levels of Service identified.
- To document existing and planned work practices and procedures

2.5 ROADING ASSET OUTCOMES

WDC's community outcomes for 2021-2031 and Roading rationale are outlined in Table 2.2.

These outcomes have been translated into various targets for maintenance and renewals to be achieved in each financial year. The outcomes will be reported in each Annual Report.

The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.

Table 2.3 – Community Outcomes and Roading Rationale

Community Outcomes		Rationale
Thriving Community	A district that provides infrastructure for economic activity	*Efficient and safe roading networks are part of the essential infrastructure for economic growth and development*
	A District that encourages development	
	A District that actively promote itself and its businesses	
Safe and Healthy People	A place where people are safe in their homes, work and public spaces	*Safe and well maintained roads, footpaths and road verges promote safety of all road users, including pedestrians*
	Our services, infrastructure and environment enhance quality of life	
Sustainable District and Environment	A district that is enhanced through sustainable and diverse development	*A well-managed roading network minimises the adverse effects on the Environment*
	We value the natural environment, biodiversity and landscapes	
	Our heritage is valued and protected	
Active, Diverse and Supportive Community	District assets provide recreation and leisure choice	*Roads and footpaths are an important element in both the residential and rural environment for physical exercise, leisure activities and social contact*
	We celebrate and support the good things in our community	

2.6 KEY STAKEHOLDERS

Key Stakeholders

The Council as the ultimate owner of assets. The Crown entity established to manage Roading activities is the NZ Transport Agency (NZTA). Other key stakeholders of the roading network include:

- Regional council
- Owners and operators of inter-connecting or co-located networks, including NZTA state highways
- Significant representative user-groups such as Road Transport Association (RTA), Forestry Contractors, Irrigation Companies and Waimate 50 (motorsport) Committee.

Funding Partners

Funding is provided by several parties and in particular the following are significant contributors:

- NZ Transport Agency – The District Roading Programme is funded by NZTA in accordance with operational requirements set out in NZTA Programme and Funding Manual.
- Ratepayers – Rates provide funding for non-subsidised activities and part of subsidised works

Partners Aoraki Collaboration

Since 2014, strong collaboration has developed across Mid-South Canterbury. The development of a common maintenance contract document meant Waimate, Mackenzie, Timaru and Ashburton District Councils had to work together and resolve differences. This has formed an excellent platform for combined work, as well as procuring physical works and professional services.

Customer Groups

WDC's customers fall into three different groups: associated service providers, users and the wider community. These are shown in Figure 3.3 and further detailed in Table 3.4.

Figure 2.3 – Customer Groups (Source: IIMM Figure 2.1.5)

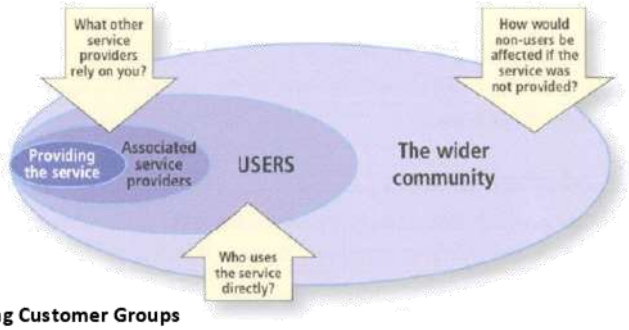


Table 2.4 – WDC Roading Customer Groups

Customer Group	Description	Customers
Associated Service Providers	These are other service providers who rely on the Roading network	• Contractors • Utilities service providers – use the road corridor to access their assets • Transport operators • Emergency Services
Users	Those who directly use the service	• Private drivers • Commercial road users • Drivers of public and other transport services (e.g. tourist buses) • Pedestrians and cyclists
The Wider Community	Non-users that are affected if the service is not provided	• Citizens • Tourists • Residents who live beside the roads • Local businesses – requiring access

Other Parties
Other parties with an interest in WDC's AMP include Council employees, consultants and contractors who manage and work on the asset.

2.7 PROGRESS SINCE LAST AMP

This is the sixth version of the Roading Asset Management Plan produced by Waimate District Council. It provides a medium to long term indication of asset management requirements and specific work programmes over the planning period from 1 July 2021 to 30 June 2031 and beyond.

This version of the plan includes the Business Case Approach which was initially developed during 2016 and 2017, and has been updated since. The strategic and Programme Business Cases can be read as a standalone document form this AMP, but much of the content has been incorporated into this plan.
The Business case approach brings a new thinking approach to the plan and this is particularly clear in section 9 lifecycle management.

The plan will be periodically reviewed to incorporate further improvements and as appropriate new asset information. A significant objective is to optimise life cycle asset management activities and provide a greater degree of confidence in financial forecasts.

2.8 THE PLAN FORMAT

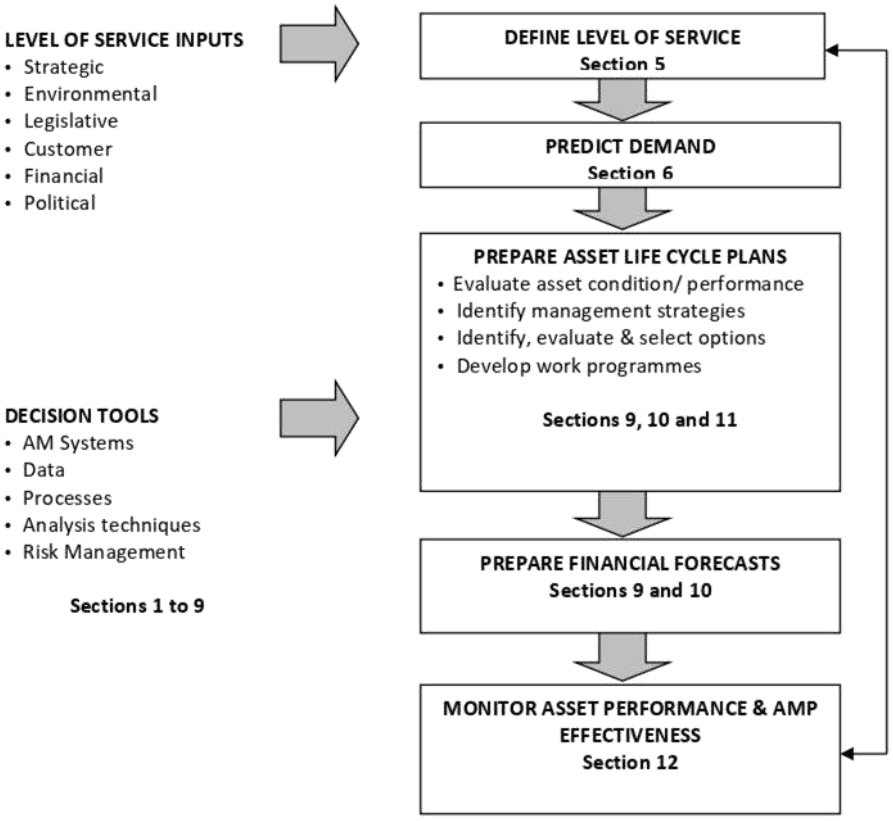
This AMP is structured around the current asset inventories, the existing levels of service and consequential financial management plan for the next ten years. The LTFS includes Maintenance requirements, Renewals, and Capital improvements in terms of NZTA and Council requirements.

This AMP generally follows the format recommended in the International Infrastructure Management Manual (IIMM) 2015 to a core level. The general Roading AMP framework is included in Figure 3.4.

This has been modified to integrate the business case approach (Strategic Case and Programme Case).

This AMP assumes that the current road network will be maintained in perpetuity.

Figure 2.4 – Roading AMP Framework



3. PROBLEM & BENEFIT STATEMENTS

3.1 PROBLEM STATEMENTS, IMPACTS, RESPONSES AND BENEFITS

Through the revision of the AMP and regional workshops problem statements have been developed. Over time these have been refined and simplified into the statements below. *Changes are indicated in italics*

Former Problem Statement	Revised Problem Statement	Impacts on the Network	Evidence
Much of the network is located on difficult Soils which are poorly drained	*The operating environment, and climate change predictions, require the existing network management strategies in Waimate to adapt*	• Limited strength for pavements • Drainage important	• Soils and drainage maps • Site works and pits
The network is impacted by storm related flooding that is predicted to gradually increase	***(Combine with above)***	• Flood damage • Pavement damage • Road user safety	• Post event analysis • Post event network damage
	The existing network and driver behaviour contribute to an unacceptable number of serious injuries and fatalities in Waimate	• Infrastructure improvements and speed management required • Regional approaches to informing road user choices and system management	• Regional accident and fatality statistics
	There are a diverse range of road users in Waimate, whose needs inform provision of a fit-for-purpose network	• *Suitability for different users (including pedestrians and cyclists)* • *Larger and oversized vehicles*	• *Traffic counting* • *Request form the community* • *Observations*
We operate a 'Budget' network which is challenged by changes in demand • minimal widths • limited pavement depth • 1963-73 rapid construction (Seal extension 30km per year)	***Retain***	• No longer fit for purpose across all of network • Performance • 'Gaps' becoming evident • cheap to maintain • metrics good	• Pavement defects where drainage poor • Backlog of drainage work • RAMM rating FWD's
• Intensive land use – more heavies • Intensive land use – reshaping of farmland • Irrigation – higher water tables and moisture in pavement subgrades		• Pavement strength challenged • Natural water courses lost, surface flooding • Pavement strength challenged	
• Vehicle types – large • Vehicle types – heavier • Vehicle types - more		• Width of pavements & bridges too narrow • Pavement strength challenged • Bridge capacity prioritisation (ONRC) • Efficiency for operators	• Increase in Heavy vehicle traffic counts

The issue of the difficult soils which are poorly drained is contextual and not a problem requiring a solution. However, it is regarded as core to the management of the roading network.

The benefits associated with addressing these problems were ascertained as follows.

Problem Statement	Impacts on the Network	Benefits to Customer	Management Benefits
The operating environment, and climate change predictions, require the existing network management strategies in Waimate to adapt.	• Limited strength for pavements • Drainage important • Flood damage • Pavement damage • Road user safety	• - Low costs of damage • Levels of service and expectations met Safer roads	• Meeting levels of service • Providing safer network • Minimising storm disruptions to network • *Progressive climate change adaptation* • Effect of the soils on the network are understood and appropriate solutions developed.
The existing network and driver behaviour contribute to an unacceptable number of serious injuries and fatalities in Waimate	• Infrastructure improvements and speed management required • Regional approaches to informing road user choices and system management	• Improved road safety • 'Road to Zero' objectives progressively achieved	• Contribution to 'Road to Zero' infrastructure achievements • Contribution to 'Road to Zero' regional initiatives
There are a diverse range of road users in Waimate, whose needs inform provision of a fit-for-purpose network	• *Suitability for different users (including pedestrians and cyclists)* • *Larger and oversized vehicles*	• *All users considered and safety improvements for pedestrians and cyclists given greater priority*	• *Meeting levels of service* • *Providing safer network*
We operate a 'Budget' network which is challenged by changes in demand. • minimal widths • limited pavement depth • 1963-73 rapid construction (Seal extension 30km per year)	• Performance • 'Gaps' becoming evident No longer fit for purpose across all of network • cheap to maintain metrics good	• Low costs to date • Levels of service and expectations met	• Rates and NZTA investment has been minimised • Changing levels of service and expectations will be met • Efficiencies sought through ONRC based differentiation
• Intensive land use – more heavies Intensive land use – reshaping of watercourses	• Pavement strength challenged • Natural water courses lost, surface flooding	• Changing levels of service and expectations will be met • Pavement strength challenged	
• Irrigation – higher water tables and moisture in pavement subgrades • Vehicle types – large • Vehicle types – heavier • Vehicle types - more	• Width of pavements & bridges • Pavement strength challenged	• Efficiency for Operators	• Bridge capacity prioritisation (ONRC)

3.2 ALIGNMENT OF PROBLEMS TO STRATEGIC DIRECTIONS

The following chart shows the alignment of these problems identified above to National Statements, Regional and Local Directions. Nationally the GPS provides clear objectives and regionally, Canterbury has identified issues that are common; locally community outcome indicates desires and expectations. Local problems are primarily associated with increased agricultural activity, which in turn supports the economy.

Problem & Benefit Statements

National: GPS	National: Transport Outcomes Framework	Canterbury RLTP 2020 Problem Statements	Problem Statement	Community Outcome Contribution
Climate Change Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access	**Environmental sustainability** **Resilience and security**	Planning and investment do not always support sustainable transport choices, resulting in **high greenhouse gas emissions and adverse health impacts**. Lack of resilience of the network to **unknown stresses, severe events and climate change** are resulting in community severance and infrastructure being damaged or destroyed.	*The operating environment, and climate change predictions, require the existing network management strategies in Waimate to adapt*	**Sustainable District and Environment** • A district that is enhanced through sustainable and diverse development • Our heritage is valued and protected • We value the natural environment, biodiversity and landscapes
Safety Developing a transport system where no-one is killed or seriously injured	**Healthy and safe people**	Unforgiving network provision, deficiencies in design and vehicle quality, and poor decision making by transport users, are leading to **deaths and serious injuries** on our transport network	*The existing network and driver behaviour contribute to an unacceptable number of serious injuries and fatalities in Waimate*	**Safe and Healthy People** A place where people are safe in their homes, work and public spaces • Our services, infrastructure and environment enhance quality of life
Better Travel Options Providing people with better transport options to access social and economic opportunities **Improving Freight Connections** Improving freight connections for economic development	**Inclusive access** **Economic prosperity**	Planning and investment do not always support **sustainable transport choices**, resulting in high greenhouse gas emissions and adverse health impacts Land use change, and increased freight and tourism demand, can result in inefficiency and reduce the condition and suitability of infrastructure.	*There are a diverse range of road users in Waimate, whose needs inform provision of a fit-for-purpose network* We operate a 'Budget' network which is challenged by changes in demand.	**Active, Diverse and Supportive Community** • All people are encouraged to participate in our democratic processes • District assets provide recreation and leisure choice • We celebrate and support the good things about our community **Thriving Community** • A district that provides infrastructure for economic activity • A district that encourages development • A district that actively promotes itself and its businesses

3.3 BENEFITS

The benefits associated with the problem statements discussed are management or community focussed.

An improved understanding of the issues that affect network performance assisted in optimising the work programme and delivering appropriate levels of service in a value for money manner. Council is used to operating lean budgets and a move to greater prioritisation is not a step-change.

As the demands on the network increase and the land-use adjacent to the network changes, it is clear that levels of service will be challenged. It is timely to acquire knowledge and invest to protect the existing asset and ensure that levels of service remain satisfactory.

Road safety initiatives contribute to the national 'Road to Zero' road safety strategy and critical and urgent changes required as part of the strategy.

The consequences of not addressing these problems and an associated programme may mean

- No longer fit for purpose across all of the network
- Pavement strength challenged
- Performance "gaps" become evident

The programme needs to reflect the changing situation and proposes a greater investment in improving pavements to meet the changing needs of customers.

4. DESCRIPTION OF ROADING ASSET

4.1 WAIMATE DISTRICT OVERVIEW

The Road Assessment and Maintenance Management System (RAMM) system asset component is the main information system used in the management of the Roading network. RAMM provides an asset register for storage of primary asset attributes including all roads in the network, hierarchy, carriageway widths, surfacing types and ages, pavement composition, traffic volumes and loadings and road condition data. Basic information on structures such as drainage facilities, footpaths, bridges, Streetlights and signs is also stored on the RAMM system.

The information held on RAMM is continually being updated and improved following the completion of roading maintenance and renewal treatments, capital improvements, traffic counts and road rating condition assessments.

4.2 DESCRIPTION OF ASSET

Roading is the largest Council activity, involving over one-quarter of rates income and totalling around one-third of Council's expenditure is devoted to this activity. Costs are expected to remain high to ensure that we can deliver the present service level.

The Waimate District Council is responsible for the day-to-day operation, maintenance, renewal and improvement of the District's local roading network excluding State Highways No 1 and 82 which are managed by the New Zealand Transport Agency. The Council also provides other assets such as footpaths and street lights. The New Zealand Transport Agency is responsible for State Highways 1 and 82 which service the district. They are an important part of the overall roading network of the District. The Council works with New Zealand Transport Agency and the Regional Transport Committee to meet its obligations with regard to roading and to be consistent with the Regional Land Transport Strategy.

The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.

The Roading asset is made up of the following components, which are described in more detail in the sections below.

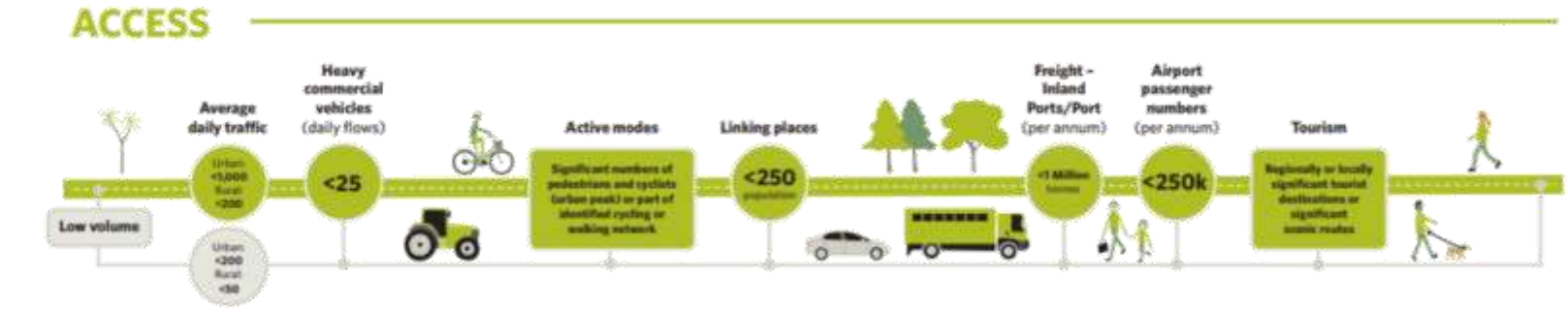
- Land
- Road pavements - sealed and unsealed
- Bridges.
- Drainage (Culverts, Concrete fords and Surface Water Channels)
- Traffic services
- Footpaths
- Street lighting

4.2.1 One Network Roading Classification (ONRC)

A joint initiative between the New Zealand Transport Agency and Local Government New Zealand has introduced a road classification system for all roads in New Zealand. The classification system aims:

- to deliver similar driving experience across New Zealand,
- To support more consistent asset management across the country
- to make collaboration and prioritisation between those organisations responsible for the planning, delivery, operation and maintenance of the nation's roading network, leading to a more efficient and safer network and improved value for money.

The ONRC categories are described below.


ACCESS
Average daily traffic
Heavy commercial vehicles (daily flows)
Active modes
Linking places
Freight – Inland Ports/Port (per annum)
Airport passenger numbers (per annum)
Tourism
Low volume
<25
<250
<250k


SECONDARY COLLECTOR
Average daily traffic
Heavy commercial vehicles (daily flows)
Active modes
Linking places
Freight – Inland Ports/Port (per annum)
Airport passenger numbers (per annum)
Tourism
>25
>250
<250k

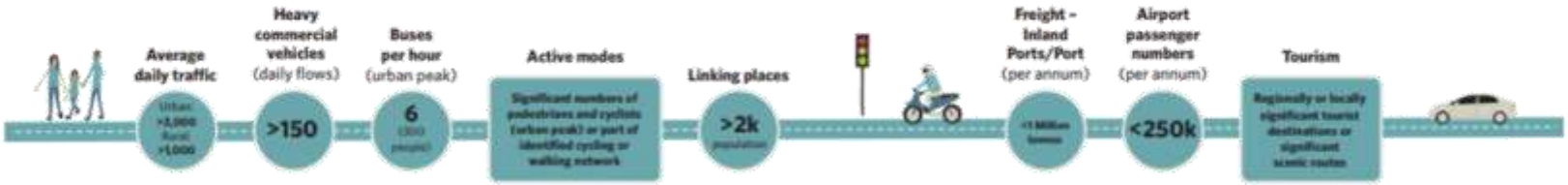
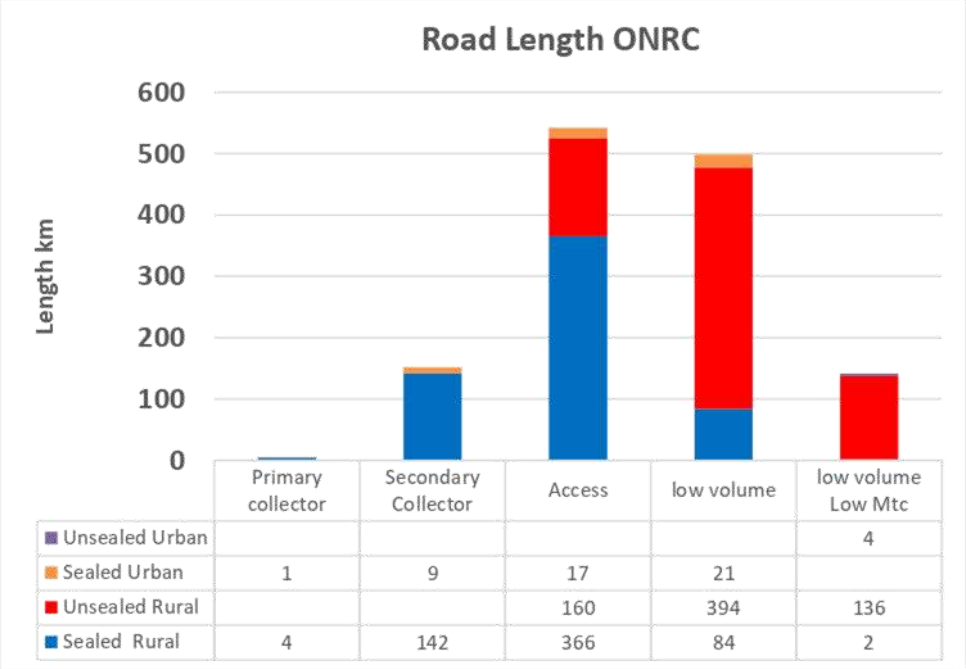
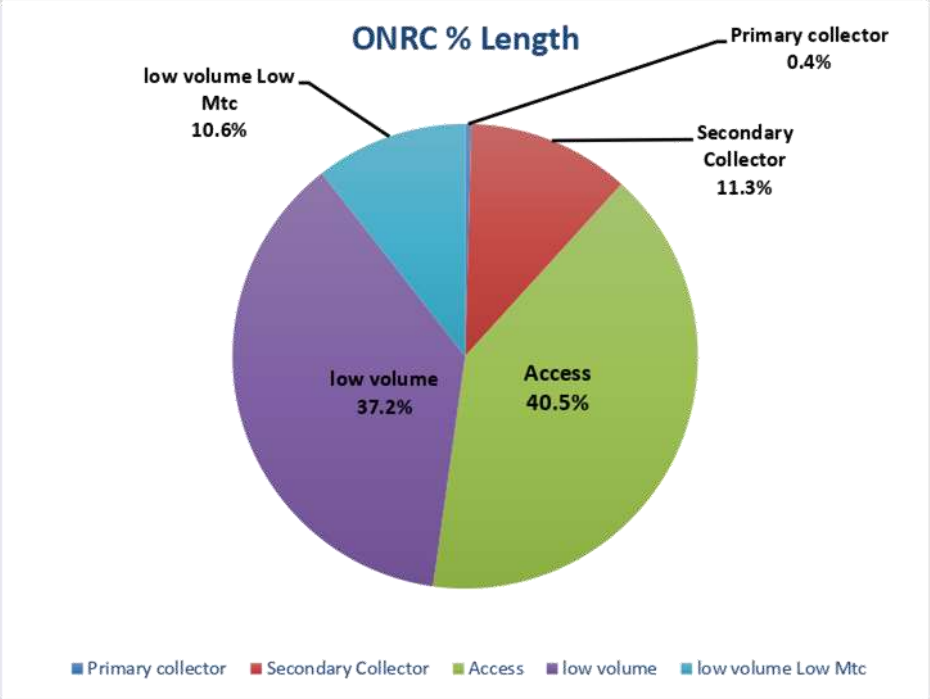

PRIMARY COLLECTOR
Average daily traffic
Heavy commercial vehicles (daily flows)
Buses per hour (urban peak)
Active modes
Linking places
Freight – Inland Ports/Port (per annum)
Airport passenger numbers (per annum)
Tourism
>150
6
>2k
<250k

Table 4.1 – Sealed and unsealed pavement quantities

Road Type	ONRC Category	Typical Daily Traffic	Heavy Commercials Vehicles	Length km	% of network by Length	Total
Sealed Rural	Primary collector	> 1000	>150	4	0.3%	
	Secondary Collector	>200	>25	142	10.6%	
	Access	<200	<25	366	27.3%	
	low volume	<50	<25	84	6.3%	
	low volume Low Mtc	<10		2	0.1%	598
Unsealed Rural	Access	<200	<25	160	11.9%	
	low volume	<50	<25	394	29.4%	
	low volume Low Mtc	<10		136	10.1%	689
Sealed Urban	Primary collector	> 3000		1	0.1%	
	Secondary Collector	> 1000		9	0.7%	
	Access	<1000		17	1.2%	
	low volume	<200		21	1.6%	48
Unsealed Urban	low volume	<200		4	0.3%	4
				1339		





WDC has elected to identify an additional division within the ONRC's access road low volume category - low volume low maintenance.
The total lengths of road classified as "low volume and low volume low maintenance" is 640 km (48%)
The combined total of access and the access-low volume groups is 1182km (or 88%) of the network

4.3 BRIDGES

WDC manages a total of 182 bridges with a combined length of 3352m (includes large culverts that are considered bridges as they have a waterway area over 3.4m^2). The types of bridges include:

- 145 single lane bridges (92% length)
- 25 Timber bridges (12% length)
- 27 speed and weight restricted bridges (12% length)
- 1 speed only restricted bridges

The Optimised Replacement Cost (ORC) for bridges is $28,080,257as at 1 July 2020

Bridge Asset Type	Number	Length m
Major Culvert		
Concrete Box Culvert	9	41
Concrete Precast Box Culvert	9	43
Conc. pipes Culvert	6	37
Steel multi-plate Culvert	12	56
Concrete		
Concrete, HC units	10	475
Concrete, I beams	1	51
Concrete	11	84
Steel & Concrete		
Steel , Precast Conc. Deck	75	1548
Steel, Insitu. Conc. Deck	8	306
Steel, Timber		
Steel, Timber deck	18	416
Steel, Steel deck	1	4
Timber		
Timber	18	231
Timber light truss	3	49
Stone Arch		
Stone Arch	1	11
Total	**182**	**3352**

Bridge Length range metres	No of	Total Length	No of Spans
2 to 5	35	135	39
6 to 13	79	775	105
14 to 29	42	882	94
30 to 60	16	648	56
61 to 161	10	912	71
	182	**3352**	**365**

4.4 DRAINAGE

Waimate District Council own, operate and maintain drainage assets associated with the road pavements. The quantities of each type of drainage asset is detailed in Table 4.2.

Table 4.2 – Drainage asset quantities

Drainage Type	Quantity	
Culvert	Length m	No. of
0-300mm Dia.	22472	2293
300-440mm Dia.	3671	350
440-500mm Dia.	2942	241
500-600mm Dia.	4167	335
600-760mm Dia.	584	48
760-990mm Dia.	1335	105
990-1190mm Dia.	353	30
1190-1300mm Dia.	607	48
>1300mm Dia.	356	32
Total	36485	3482

Concrete Fords	Length m	No. of
Concrete Fords	**1696**	**85**

Kerb & Channel	Length km
Kerb & Channel	41.288
Kerb only	0.406
Dished Channel	1.125
Kerb & Dished Channel	5.453
Mountable Kerb & Channel	0.105
Mountable Kerb Only	0.085
Total	48.462

The Optimised Replacement Cost (ORC) for drainage is $17,156,987 as at 1 July 2020.

4.5 TRAFFIC SERVICES

WDC owns and maintains approximately 5000 signs, 70km of road marking and road marking symbols, 1800 Edge Marker Posts and 240 metres of guard and site railing.

The Optimised Replacement Cost (ORC) is $601,565 for signs and $419,922 for Street Lighting (as at 1 July 2020).

4.6 FOOTPATHS

There are 62.7km of footpath on the Roading network principally designed for and used by pedestrians. The majority (56.3km) of the footpath is within the Waimate Township area and a relatively small amount (3.4km) is in the small townships of St Andrews, Glenavy and Makikihi etc. Footpaths on State Highways are included in this asset group, as they are the maintenance responsibility of the Waimate District Council.

The current inventory of formed footpath is included in Table 4.3.

Table 4.3 – Footpath assets

Footpath Material	Length km	Area m^2
Asphaltic concrete (black)	22.23	45,672.60
Concrete	0.13	302.80
Interlocking blocks	0.58	878.40
Metal	4.17	7,161.50
Opengrade Emulsion mix	3.12	7,682.70
Seal	34.7	66,610.30
Total	**62.69**	**128,308.30**

The Optimised Replacement Cost (ORC) for footpaths is $7,313,312 as at 1 July 2020.

4.7 STREET LIGHTING

WDC manages the maintenance and renewal of street lights throughout the district including those on the state highways owned by NZ Transport Agency. Street lighting asset details (excluding NZTA owned assets) are summarised Table 4.4.

Table 4.4 – Street Light assets

Lanterns	Number
150W HP Sodium	23
160W SBMV	20
17 Watt LED	10
70W HP Sodium	438
Blank	8
Total	**495**
Columns	**114**

The Optimised Replacement Cost (ORC) for street lighting is $419,922 as at 1 July 2020.

4.8 FUTURE IMPROVEMENTS

Along with implementing the amended road classification system the most significant input proposed into management of the Roading asset is improving knowledge of the current age and remaining life of all assets. This will allow Council to better optimise the lifecycle of their assets, getting the most out of the life of the Roading assets.

5. LEVELS OF SERVICE

5.1 INTRODUCTION

Asset management planning requires a clear understanding of customer needs and preferences and the minimum obligations that must be met. A key objective of this Asset plan is to match the levels of service provided by the asset with the expectations of the customers, given legislative, financial, technical and safety constraints. Service standards, which are set to meet this objective, provide the basis for the life cycle management strategies and work programmes identified in Section 9.

The selection of appropriate Levels of Service is a key determinant of the cost of maintaining a network. The desire of a community is always for the highest possible levels of service, but this needs to be balanced against the cost and what can be afforded. In NZ, this balancing process is required to be undertaken in consultation with the community, to ensure that the wishes of the community are reflected in what is provided.

The WDC levels of service for the Roading Asset reflect current industry standards and are based on:

- **Statutory Requirements:** Environmental standards, regulations and acts that impact on the way assets are managed (i.e. resource consents, building regulations, health and safety legislation, Local Government Act)
- **Customer Research and Expectations:** Information gained from the community through service complaints and feedback
- **Strategic Goals:** Provide guidelines for the scope of current and future services offered, the manner of service delivery and define specific levels of service which the WDC wishes to achieve
- **Demands on the Roading Network:** Service demands that are placed on the network by the mix of road users and the way this demand varies across the District.

5.2 COMMUNITY OUTCOMES

Community consultation is undertaken in terms of determining desired community outcomes. The challenge of the consultation process is to ensure that the community understands the cost implications of the outcomes they are requesting. The Levels of Service in this Asset Management Plan are linked back to the community outcomes using Roading rationale. WDC's community outcomes for 2021-2031 and Roading rationale are outlined in Table 5.3.

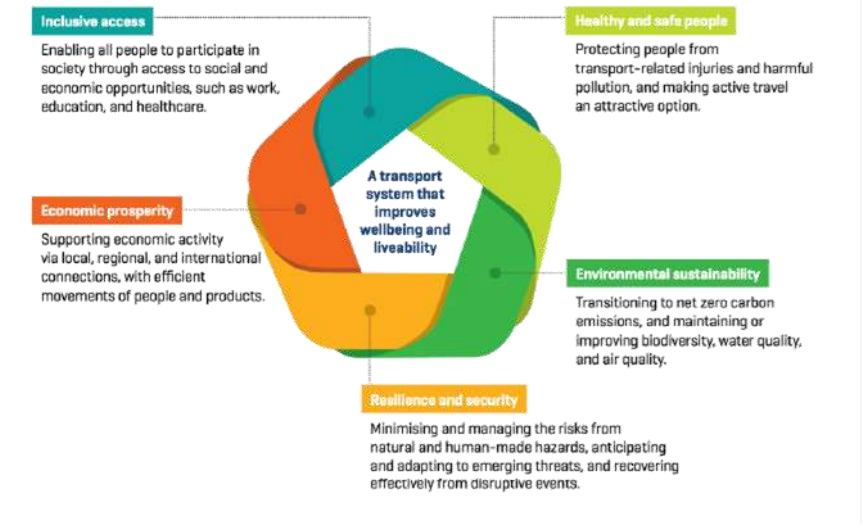
5.3 NATIONAL STRATEGIES AND PLANS

Management of the transport network is subject to various strategies and plans determined at a national level. The Government's transport policy directions are set out in a number of guidance documents, including the ***National Infrastructure Plan (NIP), Government Policy Statement on Land Transport 20212/22–2030/31 (GPS2021)*** and ***Road to Zero: New Zealand's Road Safety Strategy 2020–2030***. Together these documents outline the Government's strategic direction and priorities for transport.

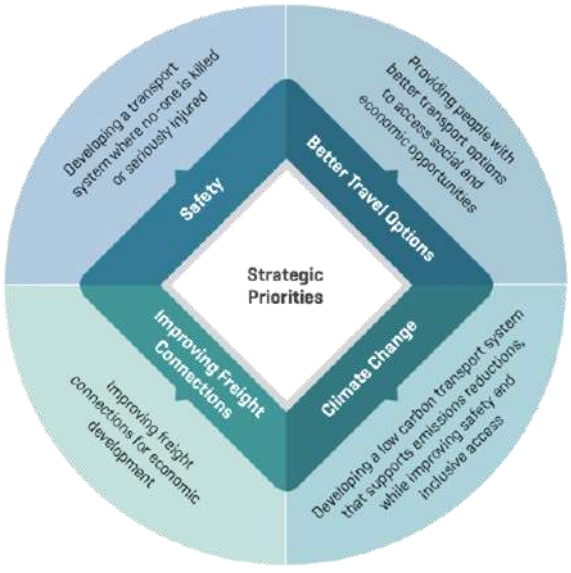
Government's overall objective for transport as set out in the **GPS2021** is:

The purpose of the transport system is to improve people's wellbeing, and the liveability of places. It does this by contributing to five key outcomes, identified in the Ministry of Transport's Transport Outcomes Framework.

Transport Outcomes Framework



The GPS2021 is a high-level Government statement on desired outcomes and funding priorities for transportation activities to achieve national and regional targets, such as supporting growth and economic activity or increasing walking and cycling and public transport. The Government's investment will be guided by four strategic priorities:



The third ***National Infrastructure Plan (NIP)*** was released in 2015. The NIP outlines the government's 30-year vision for New Zealand's infrastructure. It builds on the previous plans, by outlining the government's vision for New Zealand's infrastructure and the role infrastructure will play in supporting our economic growth. The overall purpose of this version of the NIP is to improve investment certainty for businesses by giving confidence over current and future infrastructure provision. The chapter dedicated to the transport sector assesses the current situation, current work programme, and key issues for transport infrastructure.

Linkages between land transport documents are shown in Figure 3.1 below

Figure A: Linkages between land transport documents

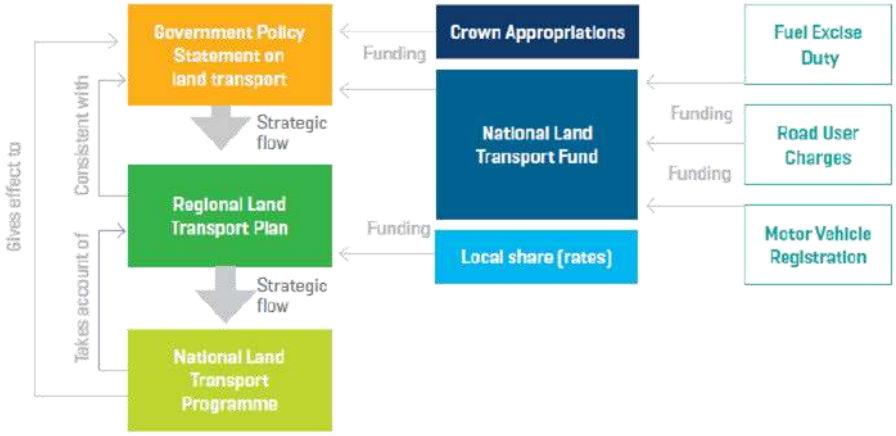


Figure 3.1: Strategic Context of Government Policy Statement on Land Transport Funding

Road to Zero: New Zealand's Road Safety Strategy 2020–2030 is the government's strategy to guide improvements in road safety. The strategy's vision is a safe road system increasingly free of death and serious injury and introduces the Safe System approach to New Zealand.

5.4 KEY LEGISLATION AND REGULATION – IMPLICATIONS FOR ASSET MANAGEMENT

Legislative requirements set the framework for the minimum standards of service that Council as the Road Controlling Authority has to meet. The key legislation relating to the Council's responsibility to manage the Roading asset is:

- Local Government Act 2002
- Land Transport Management Act
- Resource Management Act 1991
- Building Act 2004 and 2005 Amendment
- Health & Safety Act in Employment Act 1992
- Civil Defence Emergency Management Act 2002

- Traffic Regulations Act 1976
- Public Works Act 1981
- Land Transport Rule: Setting of Speed Limits 2003
- Land Transport Rule: Traffic Control Devices 2004
- Climate Change Response (Zero Carbon) Amendment Act 2019

The ***Local Government Act 2002*** gives local authorities the full capacity, and full rights, powers and privileges, to carry on or undertake any activity or business, do any act, or enter into any transaction wholly or principally for the benefit of its district.

Along with these wide sweeping powers comes the requirement to identify practicable options before making a decision, and to assess the benefits and costs of each option against the likely economic, environmental, social and cultural impacts.

Local authorities are also required to consult widely, effectively and appropriately with the community to determine the communities' wishes and to seek feedback on all potentially significant activities – not only when a particular course of action is proposed, but at the various stages of the decision-making process.

The WDC has determined that it will consult its communities where practical, reasonable and within the resources available to it. A significant aspect of this consultation process is the development of the LTP, which forms the long-term (not less than ten years) direction for all Council's activities.

The ***Land Transport Management Act (LTMA)*** requires Council to prepare a three-year land transport programme (which is reviewed annually and fully redeveloped at the completion of the three-year period) through a special consultative procedure, unless the local authority includes the matters that are required to be in such a programme in its LTCP or Annual Plan, and provide details of those matters in a form acceptable to Land Transport New Zealand (NZTA).

When preparing its land transport programme Council must take into account how road maintenance:

- assists economic development
- assists safety and personal security
- improves access and mobility
- protects and promotes public health
- ensures environmental sustainability

Levels of service provided and maintenance practices used should be in line with the objectives of the New Zealand Transport Strategy and the requirements of the Land Transport Management Act 2003.

The ***Resource Management Act 1991*** requires Council to:

- sustain the potential of natural and physical resources to meet the reasonably foreseeable needs of current and future generations
- comply with the District and Regional Plans

- avoid, remedy or mitigate any adverse effect on the environment and structures (e.g. adverse effect of surface run-off from roads)

The ***Building Act 2004*** requires Council to:

- Ensure all buildings and facilities constructed comply with the Act
- Produce Project Information Memoranda (PIM's) which supply all available information relating to an individual property. For the roading network the relevant information may include details of access restrictions, approvals, leases, plans, relevant records, notices, etc.

The ***Health and Safety at Work Act 2015*** requires Council to:

- protecting workers and other persons against harm to their health, safety and welfare by eliminating or minimising risks arising from work
- providing for fair and effective workplace representation, consultation, co-operation, and resolution of issues
- encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices and assisting PCBUs and workers to achieve a healthier and safer working environment
- promoting the provision of advice, information, education, and training in relation to work health and safety
- securing compliance with the Act through effective and appropriate compliance and enforcement measures
- ensuring appropriate scrutiny and review of actions taken by persons performing functions or exercising powers under the Act
- providing a framework for continuous improvement and progressively higher standards of work health and safety.

The ***Civil Defence Emergency Management Act 2002*** requires Council to:

- Establish and be a member of a Civil Defence Emergency Management Group
- Co-ordinate, through regional groups, planning, programmes and activities related to civil defence emergency management across the areas of reduction, readiness, response and recovery, and encourage co-operation and joint action within those regional groups
- Improve and promote the sustainable management of hazards in a way that contributes to the well-being and safety of the public and also to the protection of property

The ***Traffic Regulations Act 1976*** requires Council to:

- Comply with the rules for pedestrian crossings, traffic islands, road markings etc.
- Plan activities such that the network complies with driving rules

The ***Public Works Act 1981*** requires Council to:

- Set requirements for the acquisition of land by local authorities for roading works
- Sets requirements for stopping of roads and removal of trees on adjacent land

Land Transport Rule: Setting of Speed Limits 2017 and its amendments requires Council to:

- The Rule establishes procedures and requirements whereby RCAs may set enforceable speed limits on roads within their jurisdictions.

Land Transport Rule: Traffic Control Devices 2004 and its amendments requires Council to:

- Authorise and install traffic control devices in accordance with the rule;
- Ensure safe practice in the design and installation of traffic control devices and how they are used for traffic management.

Climate Change Response (Zero Carbon) Amendment Act 2019 does four key things.

- set a new domestic greenhouse gas emissions reduction target for New Zealand to:
  - reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050
  - reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
- establish a system of emissions budgets to act as stepping stones towards the long-term target
- require the Government to develop and implement policies for climate change adaptation and mitigation
- establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals

Council will be required to contribute to emissions reductions.

Legislation (e.g. Resource Management Act) requires Council to consult with the Tangata Whenua and take into account the principles of the ***Treaty of Waitangi*** in the management of road infrastructural assets.

5.5 STANDARDS, CODES OF PRACTICE AND GUIDELINES

A list of standards, codes of practice and guidelines adopted for use by Council are included below.

Bridge Inspection and Maintenance Manual
Bridge Manual, NZTA
Chipsealing in New Zealand, TNZ, 2005
Code of Practice for Temporary Traffic Management (CoPTTM), NZTA
Economic Evaluation Manual:, NZTA
Guide to the Geometric Design of Rural Roads; AUSTROADS,
High-risk rural roads guide
International Infrastructure Management Manual, NAMS,2015
Investment knowledge - base
RAMM Database Operation Manual and Road Condition Rating and Roughness Manual
Manual of Traffic Signs and Markings NZTA
National Code of Practice for Utility Operators Access to Transport Corridors
NZS 4404:2010 Land Development and Subdivision Engineering
NZS 3910:2013 Conditions of Contract for Building and Civil Engineering Construction
Procurement manual NZTA
NZTA Specifications
Overweight Permit Manual (OPM)
Project Evaluation Manual, NZTA
Waterway Design: A guide to the Hydraulic Design of Bridges, Culverts and Flood ways Austroads

5.6 REGIONAL PLANS

The **Draft Canterbury Regional Land Transport Plan 2021-31** outlines the investment priorities into land transport within the region.
The plan identifies the future transport challenges as:

- Providing for freight demand
- Providing choice for people
- Safety
- Canterbury earthquake recovery
- Resilience and long-term sustainability
- The role of technology

The objectives are listed as follows.

Objective 1: A transport network that addresses current and future transport demand
Objective 2: A land transport system that is increasing free from death and serious injury
Objective 3: The Canterbury earthquakes recovery is supported
Objective 4: The land transport network that is resilient and supports long term sustainability
Objective 5: Investment in land transport infrastructure and services is efficient

A monitoring and performance indicator framework has been established with 2024 and 2042 targets.

The statement of priorities for 2018-28 are detailed as follows.

Priority One: Looking after what we have
Priority Two: Finishing what we have started (existing commitments)
Priority Three: Improvements with high strategic alignment

The **Canterbury Land & Water Regional Plan (LWRP)**
The community-driven priorities being developed by zone committees under the Canterbury Water Management Strategy will be actioned through the Land and Water Regional Plan, which will build on, improve, and in some instances replace, Chapters 4 to 8 of the NRRP. This new plan will also embed the provisions of the Chapter 2 in the NRRP.

There are higher standards for Stormwater control and treatment will be needed to be considered in drainage and environmental management going forward.

5.7 WAIMATE DISTRICT COUNCIL STRATEGIES, PLANS AND BYLAWS

Bylaws and Policy
Waimate District Council has a number of bylaws and policy documents that come under the heading of Roading Policy. The Roading Policy has an overall objective of:

> ***The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.***

To support this objective WDC has a number of Roading related policies in place to help regulate activities undertaken on the roading network. These Roading policies achieve a number of purposes:

- To protect the asset from Ad Hoc development
- To provide stakeholders with clear expectation on right of use
- To enable council to provide consistent guidance for its stake holders

Table 5.1 lists those policies related to the Roading Asset.

Table 5.1 - Roading Policy

Policy
District Plan 2014
Waimate District Council Consolidated Bylaw 2018
Asset Management Policy Statement for Roading 2017
Waimate District Council Procurement Strategy 2019

5.8 LEVEL OF SERVICE CONSULTATION

Customer consultation has occurred as part of Council-wide discussion and Roading specific; from this approach information on customer expectations has been gathered from the following:

- Customer Surveys
- LTP and Annual Plan consultation
- Customer feedback database
- Public meetings

A summary of the service requests made to council over the year 2010/11-2018/19 is included in Table 5.2. A total of 192 requests were made, with the most frequent being operational requests followed by drainage (flooding affecting the road network and adjacent properties) and street lighting (not working).

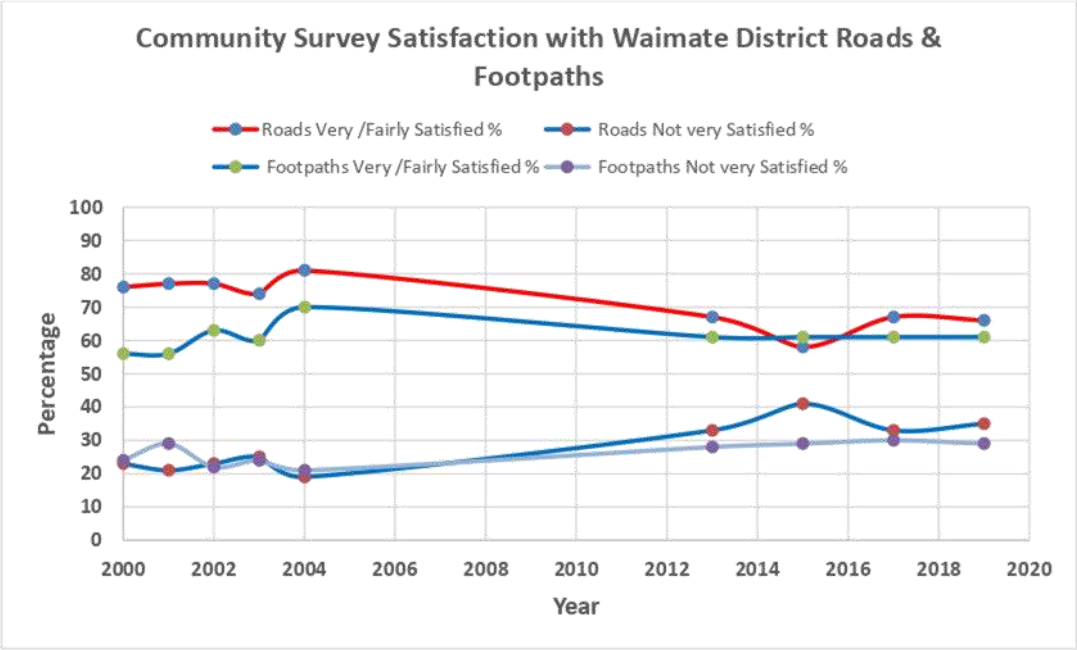


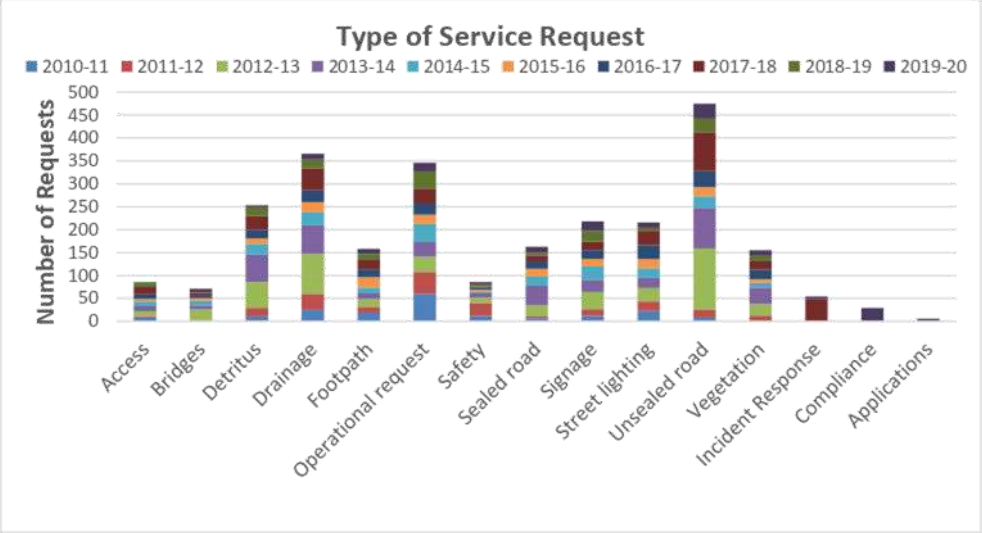
Table 5.2 - Roading Services Requests 2010-11 – 2019-20

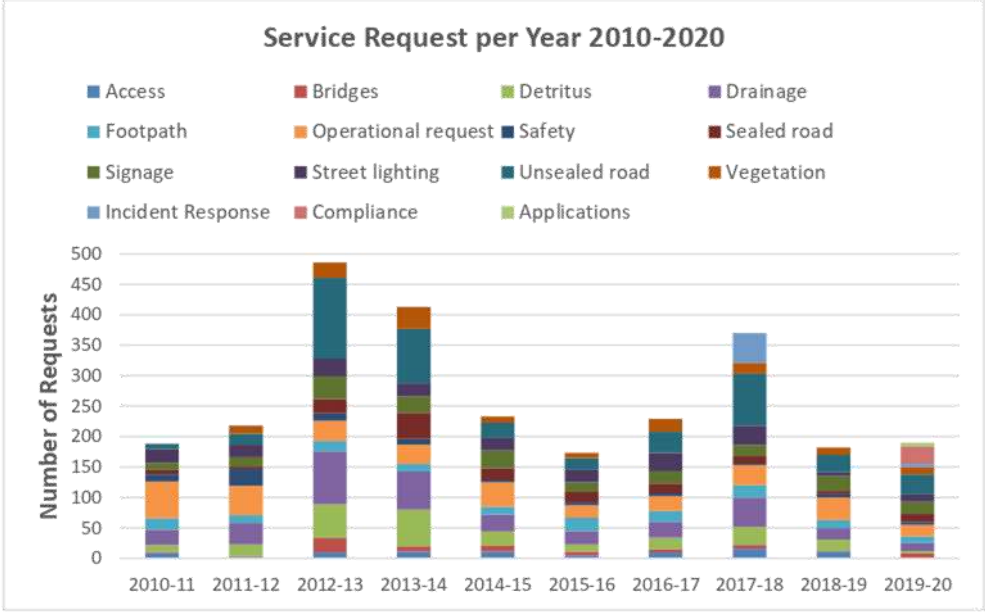
Type of Service Request	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Access	9	3	10	11	11	5	10	16	11	
Bridges	2	1	23	9	10	6	5	6	1	8
Detritus	11	19	56	60	23	12	19	30	19	4
Drainage	25	35	87	63	28	22	26	48	19	13
Footpath	19	13	17	12	13	22	18	20	13	11
Operational request	60	48	33	32	40	20	24	33	37	19
Safety	12	28	12	9	3	5	5	2	5	5
Sealed road	7	4	24	43	20	17	16	13	6	13
Signage	12	15	37	27	29	16	20	18	24	20
Street lighting	23	21	29	22	21	20	30	32	6	12
Unsealed road	8	18	133	89	25	20	35	85	29	33
Vegetation		13	25	36	10	8	21	18	12	12
Incident Response								49		5
Compliance										29
Applications										6
Total	**188**	**218**	**486**	**413**	**233**	**173**	**229**	**370**	**182**	**190**

In general, road users want roads which are operational, safe and adjacent land owners/occupiers want to minimise the impact these roads have on their properties but retain maximum benefit from the access and convenience that the roads provide.

Flooding is often raised as an issue and this needs to be considered carefully as there are limitations on Council's responsibility for surface water on State Highways and private property.

Unsealed roads attract comment for a range of reasons. The performance of unsealed roads is rapidly changeable. This is affected by changes in demand, road users' activities, weather patterns and contractor performance. Council will continue to balance value for money with performance in maintaining a suitable programme. Some residents expect to see a grader on a regular a prescribed circuit regardless of if grading is required); while some will lodge complaints with the intent of seeking a sealed road, irrespective of the condition of an unsealed road.





Customer expectations are one of the key considerations used to determine the acceptable target levels of service prescribed for Roading in the Waimate District. The community's expectations can be summarised as being:

- Roads address the needs of network continuity
- Roads serve demands for access consistent with the needs of the time
- Roads can be traversed at a level of safety, comfort and speed appropriate with their use
- Roads are constructed and maintained to avoid unjustified or avoidable expenditure
- Minimal interruption to use of roads

5.9 CURRENT AND TARGET LEVELS OF SERVICE

5.9.1 Overview

Levels of Service cover a number of key service attributes, such as accessibility, affordability, efficiency, quality, reliability, responsiveness and safety. For this AMP, levels of service measures are expressed in terms of both "Customer Performance Measures", which measure the service received by the user, and "Technical Performance Measures" which measure how the organisation provides the service.

The design and layout of the Levels of Service is based on the terminology and recommendations in the 2015 **International Infrastructure Management Manual (IIMM)**. The following statements from the IIMM outline the principles used in determining levels of service:

- Levels of service statements typically focus on describing the organisation's outputs rather than an outcome
- Each level of service statement is supported by one or more performance measures
- Customer and technical performance measures have different purposes. In setting customer performance measures, the focus is on measuring how the customer receives the service and making sure that the organisation is providing customer value. Technical measures are focussed more on technical criteria that demonstrate effective organisational performance.
- Asset Managers should plan, implement and control technical service levels to influence the customer service levels. The customer and technical dimensions are usually dependent on each other.

Council's community outcomes and Roading rationale are shown in Table 5.3.

Table 5.3 – Community Outcomes and Roading Rationale

Community Outcomes		Rationale
Thriving Community	A district that provides infrastructure for economic activity	*Efficient and safe roading networks are part of the essential infrastructure for economic growth and development*
	A District that encourages development	
	A District that actively promote itself and its businesses	
Safe and Healthy People	A place where people are safe in their homes, work and public spaces	*Safe and well-maintained roads, footpaths and road verges promote safety of all road users, including pedestrians*
	Our services, infrastructure and environment enhance quality of life	
Sustainable District and Environment	A district that is enhanced through sustainable and diverse development	*A well-managed roading network minimises the adverse effects on the Environment*
	We value the natural environment, biodiversity and landscapes	
	Our heritage is valued and protected	
Active, Diverse and Supportive Community	District assets provide recreation and leisure choice	*Roads and footpaths are an important element in both the residential and rural environment for physical exercise, leisure activities and social contact*
	We celebrate and support the good things in our community	

5.9.2 Mandatory Performance Measures

Established by the Department of Internal Affairs in 2013, the Non-Financial Performance Measures Rules 2013 are to be reported by Council on an annual basis. The measures are listed below:

Performance measure one (road safety):
The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number.

Performance measure two (condition of the sealed road network):
The average quality of ride on a sealed local road network, measured by smooth travel exposure.

Performance measure three (maintenance of a sealed local road network):
The percentage of the sealed local road network that is resurfaced.

Performance measure four (condition of footpaths within the local road network):
The percentage of footpaths within a territorial authority district that fall within the level of service or service standard for the condition of footpaths that is set out in the territorial authority's relevant document (such as its annual plan, Asset management plan, asset management plan, annual works program or long term plan).

Performance measure five (response to service requests):
The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the time frame specified in the long term plan.

All of these measures can be accommodated within existing WDC processes, and some existing measures have been aligned to reflect the Non-Financial Performance Measures Rules 2013, which are inflexible. These are integrated into the Customer Levels of Service. The linkages between the Levels of Service to 2015 and Roading rationale are shown in Tables 5.4 and 5.5.

Table 5.4 –Customer Levels of Service and Performance Measures

What we do:	The purpose of this activity is to provide for the safe, convenient, and efficient movement of people and goods around and through the district. This is achieved by providing a network of roads, footpaths, bridges, signs and markers, streetlights, and associated drainage systems. The Roading Activity is managed by Waimate District Councils Roading Team, who manage most aspects of the activity internally, although the physical maintenance of the Roading assets is externally contracted. Waka Kotahi NZ Transport Agency (NZTA) is Council's co - investment partner for roading and the works programme which is approved on a three-yearly cycle in the National Land Transport Plan.

1. Provide quality roads and footpaths			
How we do it:	• Planned and Reactive maintenance • Replacement (renewal) of assets • Manage Inspection and condition rating of network assets • Manage Road Assessment and Maintenance Management (RAMM) data. • Work collaboratively with neighbouring Councils. • Undertake Activity Management planning to demonstrate that the roading assets are operated and maintained in a sustainable and cost-effective manner. • Investigate improvement projects and long-term network needs		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Resident satisfaction with sealed roads	*≥66%*	*≥66%*
	Resident satisfaction with unsealed roads	*≥55%*	*≥55%*
	Average quality of ride on sealed local roads (Mandatory)	*Smooth Travel Exposure: 93%*	*Smooth Travel Exposure: 93%*

2. Respond to customer complaints and requests in a timely manner			
How we do it:	• Provide customer service request system 24 hours a day, 7 days a week • Investigate and rectify roading and footpaths complaints		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Percentage of customer service requests relating to roads and footpaths responded to within 10 working days (Mandatory)	*≥95%*	*≥95%*

3. Provide a safe transport environment			
How we do it:	• Conduct safety audits on aspects of the district's roading network • Deliver quality community road safety campaigns with Timaru and Mackenzie Districts to improve road behaviour and awareness • Monitor road accident statistics and locations • Ensure traffic management plans are in place for all road works sites which effect roads and footpaths • Ensure that private activities undertaken on the road corridor don't adversely compromise road safety or the road condition • License and monitor all cow crossings		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	The change from the previous year in the number of fatalities and serious injury crashes on local road network (Mandatory)	*Number of fatalities and serious injury crashes is less than the previous year on an annual basis*	*Number of fatalities and serious injury crashes is less than the previous year on an annual basis*

4. Provide well maintained footpaths			
How we do it:	• Inspection and condition rating of footpath assets • Manage footpath renewals and maintenance projects • Determine future footpath projects based on defined prioritisation approach and future demand		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Compliance with footpath prioritisation model	*No more than 7km non- complaint*	*No more than 7km non- complaint*
	Resident satisfaction with footpaths	*≥58%*	*≥58%*
	Percentage of footpaths that fall within a condition rating of 1-3 (Mandatory)*	*≥85%*	*≥90%*

*As detailed in the Roading Asset Management Plan

5. Provide Adequate Asset Renewal			
How we do it:	• Monitor and inspect the state of the roading network, including traffic counts, pavement roughness and condition • Renewals implemented at the right time with the right treatment		
How we measure performance		Years 1—3 Target	Years 4—10 Target
	Percentage of the sealed local road network that is resurfaced (Mandatory)	*>5.5%*	*>5.5%*
	Annual quantity of metal spread on unsealed roads	*13,000 m³*	*13,000 m³*

There is still a significant effort required to bring the definitions up to standard and define appropriate target levels, so should be regarded as work in progress. Required improvements include:

- Establish current levels of service by measurement, referenced to contract specifications
- Align current customer levels of service to the One Network Road Classification hierarchy
- Establish target levels of service through consultation
- Extend levels of service targets to cover 3 year and 10 year periods. These will identify Council's aims for long-term improvement, managed reduction of service levels (for affordability) or maintaining the same levels of service
- Align contract specifications with level of service targets

Some of the measures suggested are conceptual only and require further definition; e.g. crash severity and signs visibility. More work is required in developing corresponding customer and technical performance measures, as part of improvement planning.The following technical levels of service will remain in place as the ONRC technical levels of service are implemented, providing consistency in measurement for the interim.

Table 5.5 – Roading Rationale Linked to Technical Levels of Service

Service Attribute	Technical Level of Service	Technical Performance Measure	Measurement Procedure	Current Level of Service	Target Level of Service
Safety	Structural integrity of structures is not diminished by lack of maintenance.	Percentage of structures inspected and faults remedied within appropriate timeframe	Scheduled bridge inspections.	?	>=95%
Safety (continued)	Adequate provision of traffic services.	Signs, edge marker posts raised pavement markers and road markings will be provided in acceptance with Council traffic Service Standard.	Network Audit	New measure	>=90%
	Adequate maintenance of traffic services.	Compliance with maintenance contract	Network Audit	New measure	>=90%
	Carriageway lanterns are maintained in effective operational condition to ensure road safety.	Percentage of defective or non-operating lanterns	Streetlight Contract Inspection Report	N/A	<=5%
Efficiency	Adequate destination and directional signs	Compliance with schedule of road names and destination signs.	Network manager annual audit.	New Measure	>=95%
Quality	Provide smooth roads	Smooth travel exposure.	Annual RAMM NZTA Report	All Rural 98% All Urban 85%	>=95% >=82%
	Road drainage system Flood design capacity	Culvert shall cater for a ARI of 10 years. Bridges shall cater for a ARI of 100 years.	Roading Asset Manager approval of all new works.		100% (compliance for new works)
Quality Safety	Minimise the surface defect on unsealed roads.	Compliance with road grading schedule.	Monthly Contractor's report	90%	>=90%
Asset preservation	Maintain good pavement condition	Surface Condition Index (CI) Pavement Condition Index (PII)	Annual RAMM NZTA Report	All roads 98% All Roads 96%	SCI>=98% PII>=96%
Asset Renewal	Adequate metal cover is maintained.	Adequate metal replacement for unsealed roads is programmed.	Annual quantity of metal spread	11500 m^3	Metal spread is equal to estimated loss

5.9.3 One Network Road Classification System

A joint initiative between the New Zealand Transport Agency and Local Government New Zealand has introduced a road classification system for all roads in New Zealand. The classification system aims

- to deliver similar driving experience across New Zealand,
- To support more consistent asset management across the country
- to make collaboration and prioritisation between those organisations responsible for the planning, delivery, operation and maintenance of the nation's roading network, leading to a more efficient and safer network and improved value for money.

This will introduce different levels of service across roads of different classification. This allows the Agency and the Road Controlling Authority better information on which to make better investment decisions.
As with the Mandatory Performance Measures, these levels of service are now integrated into council's suite of Customer Levels of service (publicly reported) and the technical levels of service (for internal management).

The ONRC performance measures are listed below along with a commentary on achievement.
The REG ONRC Summary report is appended to this document.

ONRC Performance Measures

Measures	Measure	Primary Collector	Secondary Collector	Access	Low Volume	Comments
Safety Measures						
Safety Customer Outcome 1 – Serious Injuries and Fatalities	Injury Counts					Reduction over time
Safety Customer Outcome 2 – Collective Risk	Injures per km	Low	Low	Low	Low	Very low
Safety Customer Outcome 3 – Personal Risk	Injuries per 100M Vehicle km	Low	Medium-High	High	High	Access and low volume high due to low volumes
Safety Technical Outcome 1 – Permanent Hazards	Permanent hazards not marked in accordance with national standards					Data collection process to be established
Safety Technical Outcome 2 – Temporary Hazards	% audits compliant with COPTTM					Data collection process to be established
Safety Technical Outcome 3 – Sight Distances	% locations where sight distance or signs are obstructed					Data collection process to be established
Safety Technical Outcome 4 – Loss of control on Wet Roads	Trend of serious and fatal injuries due to loss of control in the wet.					Only two incidents recorded on 2012, no trend available
Safety Technical Outcome 5 – Loss of Driver Control at Night	Trend of serious and fatal injuries due to loss of driver control at night					6 records in 2014/15 only , no trend available
Safety Technical Outcome 6 - Intersection	Trend of serious and fatal injuries at intersections					One or two records per annum for some classifications, no trend available
Safety Technical Outcome 7 – Hazardous Faults	Number of hazardous faults which require evasive action by road users					Data collection process to be established
Safety Technical Outcome 8 – Cycle Path Faults	Number of cycle path hazards requiring evasive action by cyclists					Data collection process to be established
Safety Technical Outcome 9 – Vulnerable Users	Trend in the number of serious and fatal injuries to vulnerable road users.					Data incomplete due to CAS/RAMM issues
Safety Technical Outcome 10 – Roadside Obstructions	Number of locations where there are unauthorised items placed within the road reserve.					Data collection process to be established

Measures	Measure	Primary Collector	Secondary Collector	Access	Low Volume	Comments
Resilience Measures						
Resilience Customer Outcome 1 – The Number of Vehicles Impacted by Unplanned Events	Number of unplanned road closures and the number of vehicles affected by those closures annually					Data collection process to be established
Resilience Customer Outcome 2 – The Number of Instances Where Road Access is Lost	Number of unplanned road closures and the number of vehicles affected by those closures annually					Data collection process to be established
Amenity Measures						
Amenity Customer Outcome 1 – Smooth Travel Exposure (STE)	% Journeys on smooth roads	100%	97%	98%	97%	Network smoother than peers
Amenity Customer Outcome 2 – Peak Roughness (Urban)	NAASRA Counts per km	118	180	152	140	Network similar to peers except secondary collectors that are worse
Amenity Customer Outcome 2 – Peak Roughness (Rural Sealed Roads)	NAASRA Counts per km	80	96	95	96	Network similar to/smoother than peers
Amenity Technical Outcome 1 – Roughness of the Road (Median)	NAASRA Counts per km					Considerable variation between urban and rural roads
Amenity Technical Outcome 2 - Aesthetic Faults	The number of aesthetic faults that detract from the customer experience					Data collection process to be established
Accessibility Measures						
Accessibility Customer Outcome 1 – Proportion of Network not Available to Heavy Vehicles					No class I access 16km 50MAX (and HPMV) restricted routes total 11km.	Need to take an alternative route of ten minutes or more
Accessibility Technical Output 1 - Wayfinding						Data collection process to be established

5.10 PERFORMANCE GAPS

Establishing performance gaps will be undertaken once the ONRC levels of service and performance measures are finalised and integrated into WDCs documentation. This is expected to lead into amendments to the maintenance specification, public information and the development of business cases for future funding submissions.

One area where a significant gap exists is the provision of footpaths. Accordingly, a prioritisation process has been developed which is expected to take ten to fifteen years to implement. The detail of this process is included in the section 9

5.11 MONITORING ACHIEVEMENT

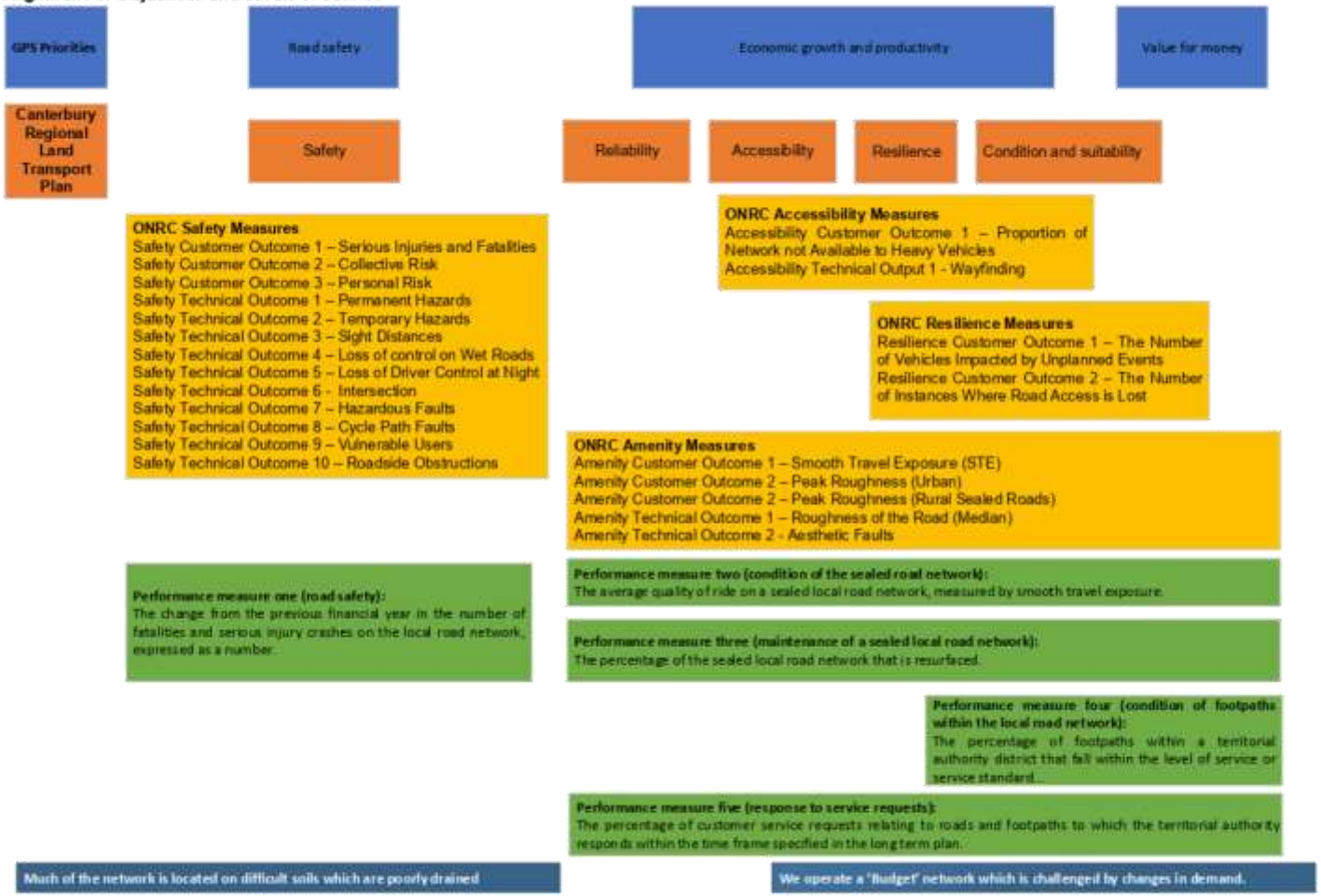
The combined Mandatory Levels of service, ONRC performance measures and technical measures combine to provide a performance management framework (see chart following).

It is important to ensure the 'work on the ground' is contributing to echeloning the outcomes sought by the community. The following diagram illustrates the alignment from the GPS through the RLTP to the combination of WDC and ONRC performance measures. The framework of measures is sufficient to ensure the objectives sought are monitored, with the possible exception of value for money. Tracking value for money will be undertaken using the ONRC measures once finalised, and using the normalised costs provided by NZTA.

Monitoring Benefits

Problem Statement	Impacts on the Network	Benefits to Customer	Management Benefits
Much of the network is located on difficult soils which are poorly drained	• Limited strength for pavements • Drainage important	-	• Effect of the soils on the network are understood and appropriate solutions developed.
Tracking the interventions effected, and the cost to maintain the network will indicate if works are fit for purpose in terms of the topography. Undertaking testing (e.g. FWD) will help grow knowledge of the network performance in relation to geology.			
We operate a 'Budget' network which is challenged by changes in demand. • minimal widths • limited pavement depth • 1963-73 rapid construction (Seal extension 30km per year)	• Performance • 'Gaps' becoming evident No longer fit for purpose across all of network • cheap to maintain • metrics good	• Low costs to date • Levels of service and expectations met	• Rates and NZTA investment has been minimised • Changing levels of service and expectations will be met • Efficiencies sought through ONRC based differentiation
• Intensive land use – more heavies • Intensive land use – reshaping of watercourses	• Pavement strength challenged • Natural water courses lost, surface flooding	• Changing levels of service and expectations will be met • Pavement strength challenged	
Tracking benefits of a fit for purpose network can be achieved through the accessibility measures, public feedback			
• Irrigation – higher water tables and moisture in pavement subgrades • Vehicle types – large • Vehicle types – heavier • Vehicle types - more	• Width of pavements & bridges • Pavement strength challenged	• Efficiency for Operators	• Bridge capacity prioritisation (ONRC)
Tracking benefits of a fit for purpose network can be achieved through the accessibility measures, public feedback			

Alignment of Objectives and Levels of Service

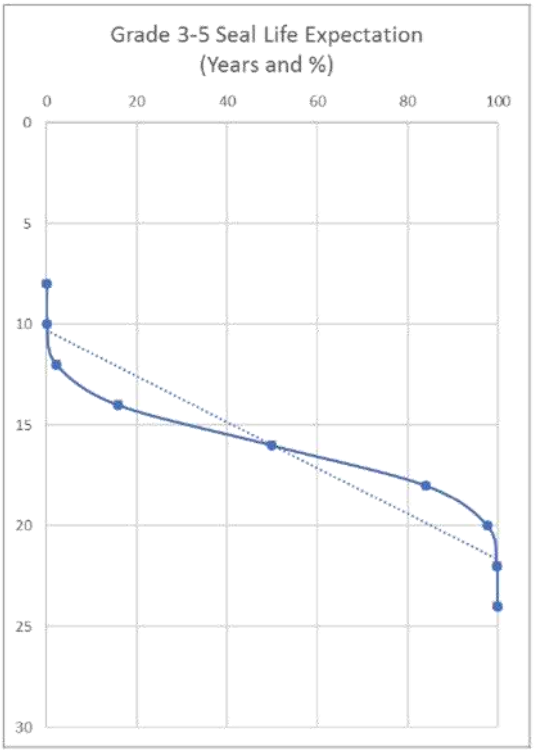


5.12 SERVICE LIFE OF THE NETWORK

The service life of the network is the period over which the asset is expected to be available for use. There is limited confidence in the service life information currently held by council. This data needs to be reviewed and more information needs to be gathered to better determine the service life.

In the 2014 Valuation Report each asset (component, sub-component) was assigned a base life (estimate of average useful life). An initial assessment of remaining life was calculated as the difference between economic life and age of the asset. Where information is available further adjustments are then made to the useful life estimate to take into account condition and use of the asset. The methodology for calculating economic and remaining lives is summarised in Appendix A – Methodology and Assumptions for Roading Assets of the Valuation report.

A review of achieved lives was undertaken in 2017 based on observations of the network. The analysis indicated that grade 3-5 surfacing (the most common surfacing on the network) can regularly achieve 20 years, however the average life expected is only 16 years.



5.13 FUTURE IMPROVEMENTS

The tables in Section 5.9 are based on similar Levels of Service frameworks provided in Council's other AMPs to feed into the Rationale associated with delivery of Waimate's Community Outcomes for roading. There is still work required to bring the definitions up to standard and define appropriate target levels. The target levels may need further refinement as performance measurements are reviewed.

Required improvements include:

- Establish current levels of service by measurement, reference to contract specifications
- Refine target levels of service through consultation
- Extend levels of service targets to cover 3 years and 10 year periods; i.e. long-term improvement, deterioration (for affordability) or stay the same
- Align contract specifications with level of service targets
- More work is required to assess the validity of the technical levels of service for the purposes of supporting Customer levels of service.

5.13.1 Levels of Service Development With Users And Stakeholders

The current and target Level of Service included in Section 5.9 have not been developed in consultation with users and stakeholders. This next step in the process is vitally important. Options to further examine this issue could include:

(a) Monitor and interpret customer feedback through customer feedback and complaints. This information can be analysed for any trends or common factors related to current service levels (e.g. number of complaints received from identified road sections can be compared to current conditions)

(b) Review agreed (with Stakeholders) Levels of Service on other local authority road networks as a means of benching these on this network as there may be opportunities to consider some reduction in service levels where any reduction would result in savings or enable some reallocation of expenditure between activities

(c) Engage customers in a formal process. There are a number of mechanisms to achieve this from public meetings to surveys to focus groups. This may include the use of documented feedback processes. In all methods the clear description of different Level of Service options, fully costed, is a prerequisite to meaningful feedback

(d) Engagement with key stakeholders. These include the Regional Council, NZTA, transport operator groups, Automobile Association and others. Again good input information to these engagements will produce valuable feedback.

5.13.2 Affordability and willingness to pay

Hand in hand with the current Level of Service vs. Desired Level of Service is the issue of cost. This needs to be addressed at two levels:

(a) Cost for different Levels of Service options within the Roading Activity
(b) Cost of the Roading activity within the total Council programme.

The first level can be addressed using the options outlined above where fully described and costed service level options are consulted with the community.

The second level needs to be addressed as an assessment of the relative contribution the Roading Activity makes towards the achievements of Community Outcomes at the current level vs. greater or lesser levels of service.

6. GROWTH AND DEMAND MANAGEMENT

6.1 DRIVERS FOR DEMAND

The significant future demands affecting Roading in Waimate District to be considered are:

- **Growth Trends –** Trends in population growth or decline give a good indication of future growth and in turn demand on the network.
- **Economic Changes** – Changes in land use, industry, freight movements and tourism can all affect the demand on the Roading asset.
- **Vehicle Mix and Use Changes** – The available modes of transport, vehicle ownership and heavy vehicle trends can all impact on future demand on the network.
- **Improvements to Levels of Service -** Continual demand for improvements in the levels of service. This can result from:
  - Advances in available technology
  - A greater understanding of customers' perceptions and expectations
  - A higher level of road safety conscientiousness
  - Changing legislative requirements
  - Funding organisations setting higher standards

Table 6.1 indicates how these factors are expected to be reflected in changes in use of the roading network.

Table 6.1: Roading Demand Drivers

Transport Demand Drivers	Urban - Sealed	Urban - unsealed	Rural - sealed	Rural - Unsealed
Growth	Population changes	Not significant	Not significant	Not significant
Economic	Not significant	Not significant	Changes in land use	Changes in land use
Vehicle Mix and Use	Changes in vehicle ownership	Not significant	Increased heavy vehicle usage	Increased heavy vehicle usage
Improvements to Levels of service	Expectation to maintain current standards			

6.2 OVERVIEW OF WAIMATE DISTRICT

6.2.1 Growth Trend

Introduction

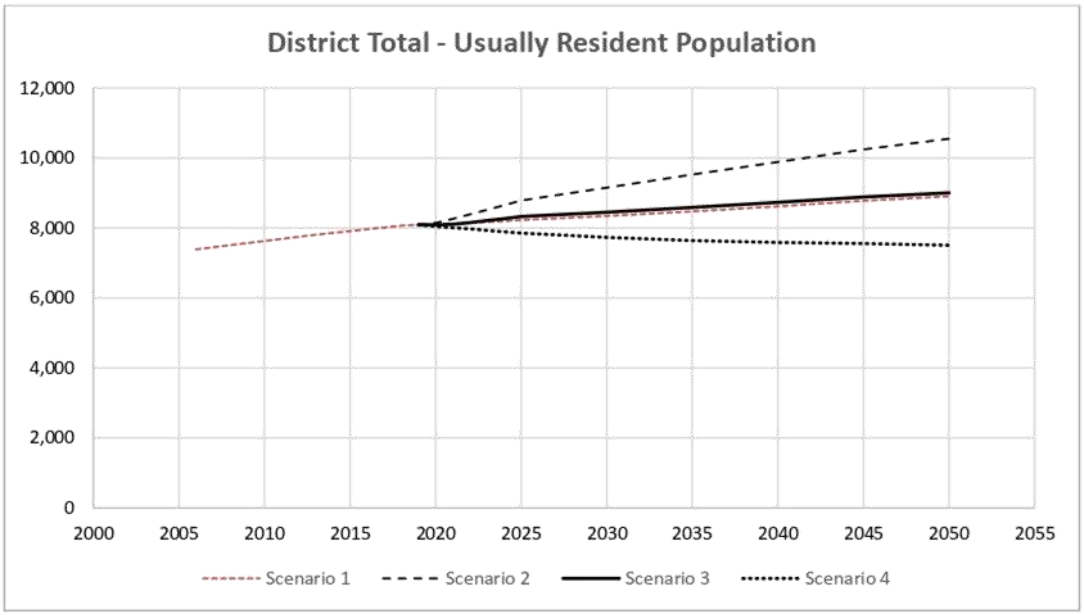
Population growth (or decline), age structure and distribution (spread), and the number and type of households and families in our district affects:

- Demand for local services
- The willingness and ability of ratepayers to pay for them
- Representation and participation in local democracy
- Interactions between human activity and the environment.

It is therefore an essential for asset management planning that sound information is used regarding population, demographic and geographic change.

Methodology

In the past Waimate District Council (WDC) have used the growth projections prepared by Stats NZ. WDC are now looking for a more in-depth understanding of what their district might look like over the next 30 years. This coupled with the delayed release of the Stats NZ projections, following the 2018 Census, has led WDC to commission these growth projections from an external specialist. The 2020 projections have been developed using a bottom up approach. Individual growth drivers for each Statistical Area 2 (SA2) have been developed using migration for employment and lifestyle as the basis of the modelling. The 'Waimate District Council Growth Projections, August 2020' reporting prepared by Rationale enables the organisation to understand the future growth in their district and provide a single source of the truth for the Council.



Growth scenarios

Four growth scenarios have been modelled for each parameter representing different levels of ambition in terms of the district's growth over the next thirty years.

Table 6.2: Summary of the four growth scenarios.

	Scenario	Description
Scenario 1	Business as Usual (Pre COVID-19)	Used as a baseline to compare the other three scenarios. It assumes that there has been no impact from COVID-19 and there is no limit on the number of dwellings that can be constructed.
Scenario 2	High	Assumes that COVID-19 has a minimal impact on the district. While there are some job losses, the district recovers to a level above the business as usual scenario. Migration drivers and assumptions are also increased by 20% which means more people will move to Waimate and less people will leave. Investment in the town centre of Waimate is expected to generate an additional 20 long term jobs per year, from 2020 to 2025.
Scenario 3	Medium	Models the expected impact from COVID-19. This assumes that all parameters return to the business as usual prediction by 2025. Investment in the town centre of Waimate is expected to generate an additional 10 long term jobs per year, from 2020 to 2025.
Scenario 4	Low	Models a situation in which COVID-19 has a higher than expected impact on the district, i.e. more job losses, and only recovers to 5% less than the business as usual scenario by 2025. Migration drivers and assumptions are also reduced by 20% which means less people will move to Waimate and more people will leave.

Recommendation – Growth Scenario 3

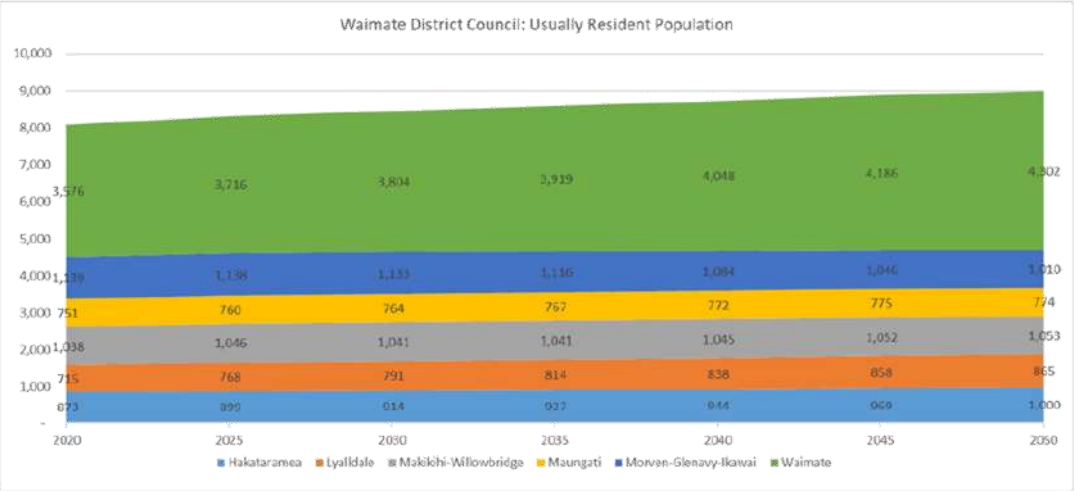
It is recommended that WDC adopt Scenario 3 as the expected level of growth in the next thirty years and use this information to inform key projects, plans and strategies.

Scenario 3 is recommended as there will be short term effects due to COVID-19. However, it is not yet known what, if any, long term effects there will be.

Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be re-projected, if necessary.

Since this growth projections model was developed it has become apparent that a bubble between New Zealand and Australia will not be forming in 2020. To offer best value for money to WDC, and due to the minimal impact on the final projections, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening.

Population Projections (Usually Resident Population)



Over the next thirty years, the usually resident population of Waimate District is predicted to increase slightly.

The average age of Waimate District's population is older than the national average of 37.3 years (Stats NZ). Looking across the district Waimate township has a significantly older average age of 48.6 years in 2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement later in life.

The 2017 estimated population of Waimate was 7,900[1]. The recommended medium growth scenario projects the District's population to increase to 9,000 by 2050.

Based on the medium projection, the population of the Waimate District is projected to grow by, on average, 0.4% a year between 2017 and 2050. This is less than the projected 1.0% a year growth rate of the Canterbury region and New Zealand's total population.

The high projection would see Waimate District population of 10,500 by 2050. This is not the recommended growth scenario but does demonstrate the upper bound of modelled growth.

With a low base population, significant industrial projects are capable of having an impact of the District's population. Expansions of both Oceania and Fonterra Dairy Factories in the next ten years could increase job opportunities in the District.[2] The potential future Hunter Downs Irrigation Scheme (currently suspended) could also see an increase in on-farm jobs in the District and the creation of secondary jobs as a result of increased agricultural production in wider South Canterbury.[3] Should all of these projects proceed the District may see population growth trending more towards the high projection. While this may appear conservative, it is important that Council

[1] Statistics New Zealand, Subnational population estimates 2017)
[2] Oceania anticipate an additional 67 jobs in the next twelve months though a number of expansion projects and a further 43 jobs in two or three years with the addition of another dryer. Fonterra estimates a sizeable expansion of its Studholme factory should plans proceed - 70-80 new jobs on site with potentially 500 persons involved in the construction.
[3] Original Hunter Downs predictions (published in 2011) detailed the creation of between 1400 and 1800 jobs in wider South Canterbury and approximately 450 on-farm jobs. The latest information provided by Hunter Downs Water was that construction of the scheme would start late 2017 and would take approximately 27 months.

does not overestimate population growth and the associated infrastructure provision required. Also reflects that a considerable number of employees from both dairy factories live in either the Waitaki or Timaru Districts.[4] Given the close proximity of both Timaru and Oamaru to these sites, increased job opportunities may not necessarily equate to comparable population increase in the Waimate District. Growth over the next 30 years of between 1,000 and 2,000 people is likely.

Natural Decrease

As New Zealand's population continues to age, more and more areas will consistently experience a natural decrease, i.e. more deaths than births (3 territorial authorities experienced this between 2010-2014). For areas that have traditionally relied on a natural increase for population growth (including Waimate), a natural decrease will mean a shrinking population unless offset by net migration gains. Within the Waimate District, natural decrease is projected to occur by 2038. Without net migration gains, the population proper will decrease.

Table 6.3: Average age of District Population

	2020	2030	2040	2050
District Wide	43.8	43.4	43.3	43.5
Hakataramea	40.3	40.3	39.7	40.0
Lyalldale	41.7	43.9	44.8	45.5
Makikihi-Willowbridge	43.0	43.0	42.9	43.0
Maungati	36.8	39.0	40.4	41.5
Morven-Glenavy-Ikawai	37.8	39.8	40.6	41.4
Waimate	48.6	46.2	45.2	45.0

Higher Median Age

The median age for the Waimate District population is set to increase from 45.5 years in 2013 (census figure)(46.4 2018) to 47.1 years by 2043. Canterbury region is projected to increase from 39.4 years in 2013 to 43.5 years in 2043, and New Zealand from 37.5 years in 2013 to 42.7 years in 2043.

Larger proportion of older people

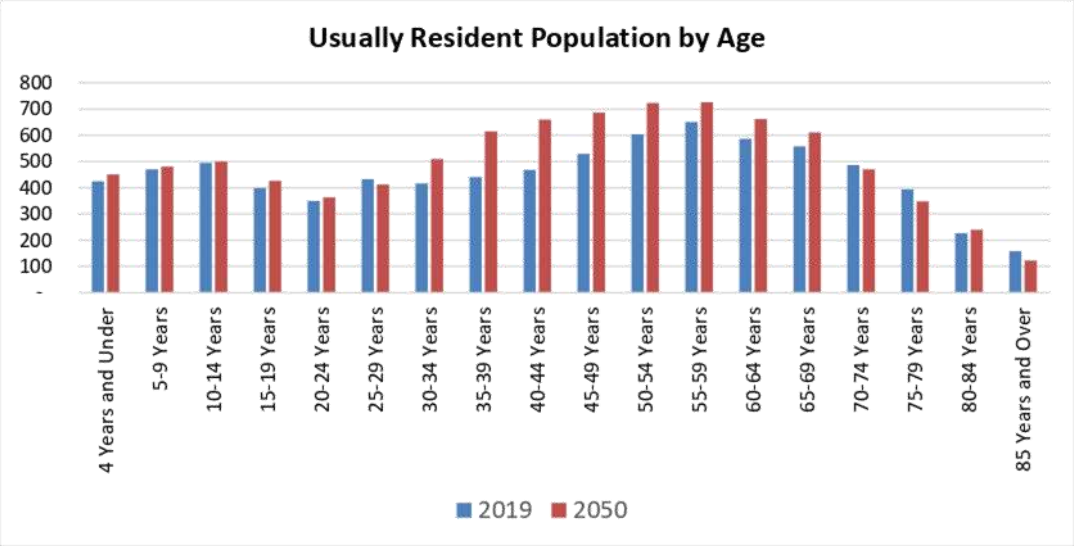
Under all projection series (high, medium and low), all 67 territorial authorities in New Zealand are projected to have a higher proportion of older people (aged 65 and over) in 2043 compared with 2013.

In 2013 19.5% of the Waimate District population was aged 65 and older. Using the medium projection series, by 2043 29.6% of the Waimate District population will be aged 65 and over.

[4] Employment data provided by Fonterra shows approximately a third of staff live in the Timaru District. Oceania Dairy report that 79% of their staff live outside of the Waimate District.

Urban Rural Split

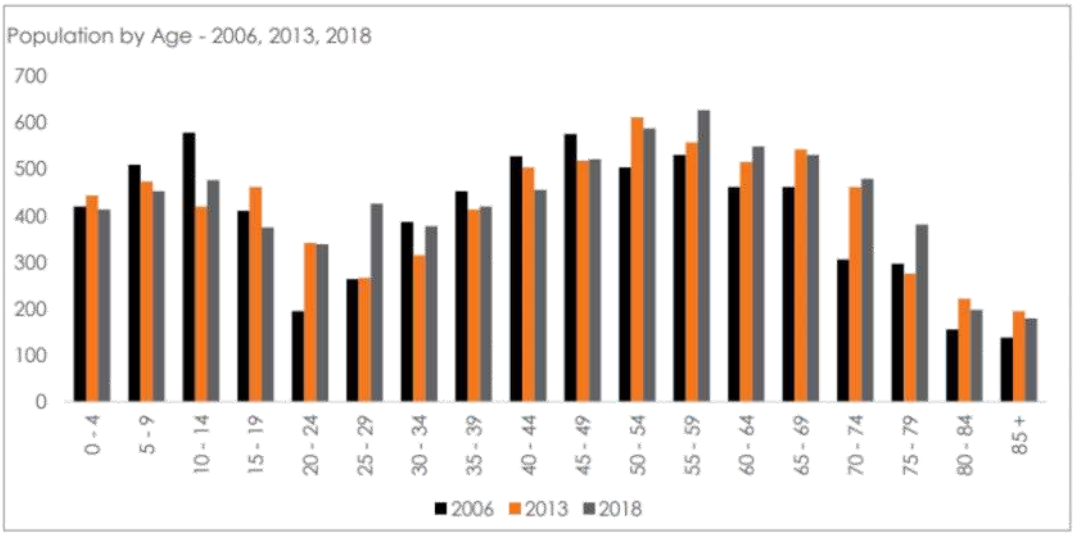
Projections also suggest a change in the age composition of the urban and rural populations. While the 0-14 years, 15-39 years' age brackets remain relatively stable across the 25-year period in all areas, there is a considerable increase in the number of residents over the age of 65 living in the rural areas of the District and a decrease in the number of residents aged 40-64 years. The proportion of people aged over 65 living in the Waihao area unit is projected to nearly double, from 8.7% to 16.4% of the total district population. While the number of residents over the age of 65 living in urban Waimate is also projected to increase over the 25 years, by 2038 it is projected there will be more over 65s living rurally than in the urban centre of Waimate.



Key migration drivers

The key characteristics of Waimate District's population are:

- Younger people leave the area for education and employment opportunities.
- People later in their working lives or early retirement are moving to the area for the lifestyle, affordability and/or retirement.
- Older people (over 70) are moving from the rural areas of the district to Waimate or leaving the area, likely in search of better healthcare or to be closer to family.

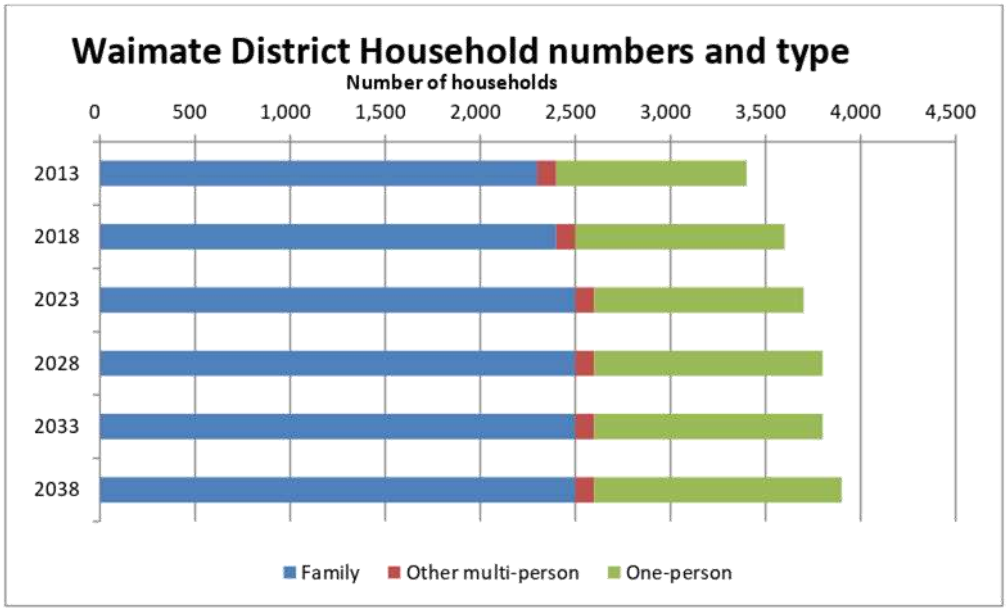


Waimate District's population by Age – 2006, 2013, 2018. Source: NZ Stats.

Households

The number of households in the District is projected to increase by an average of 0.7% a year, lower than the national and Canterbury regional increase of 1.1%.

The average household size in the Waimate District is set to decline from 2.3 people in 2013 to 2.1 people by 2038. This will follow the national and regional trends (NZ – decrease from 2.64 people to 2.50 people. Canterbury - decrease from 2.4 to 2.3 people). Smaller households may contribute to demand for housing over and above the impact of population growth.



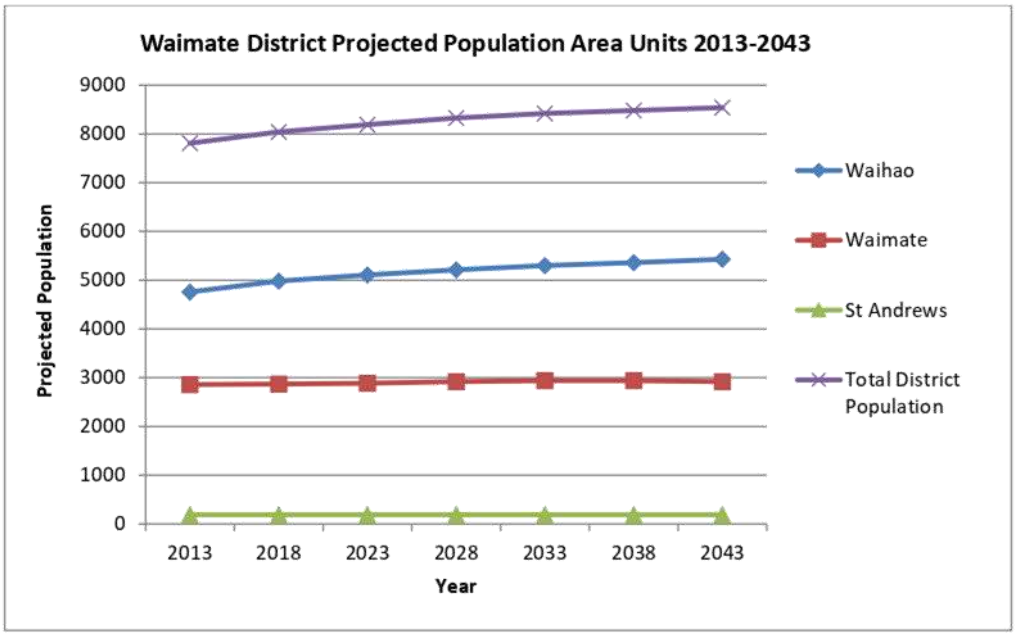
The number of one person households is the fastest growing household type in the Waimate District, increasing by an average of 1.2% per year. By 2038 33% of Waimate households will be one-person households and over 15% of Waimate residents will be living alone.

The number of families in the Waimate District is projected to increase by an average of 0.34% per year between 2013 and 2038.

Population Location

Statistics New Zealand provides population breakdowns for area units within territorial authority boundaries for the period 2013-2043. For the Waimate District the area units provided are for urban Waimate, St Andrews township, and Waihao (covering the rest of the district).

The projections show that the majority of the growth in the Waimate District will occur in the rural areas with a 14.1% growth in the Waihao area unit over the 30-year period 2013-2043 (an average of 0.46% a year). Rural growth, in keeping with the District-wide trends, is projected to be decrease over the 30-year period. In comparison, the Waimate area unit (which is urban) will grow by 2.1% (.06% on average per year). This urban growth will also slow over the 30-year period, and between 2033 and 2043 the population of the Waimate area unit is projected to decline.



6.2.2 Economic Changes

Changes in Land Use, Practices and Resource Use

There are numerous changes in land use or practices that may affect the performance of the network. These include:

- Forestry development
- Dairying development
- Project development including irrigation schemes
- Changes in agricultural land use
- Changes in industrial activity
- Changes in tourism

The nature of each change and its impact on the network are difficult to monitor and predict. Each change will affect the type and volume of goods transported on the network, thus altering the impact on the pavements in the network.

Forestry

The district's forestry is primarily owned by Blakely Pacific Ltd after Council sold its forestry interests in 2010.

Over the last five years, the majority of forestry within the district has reached harvesting age. Since this time harvesting has continued at a steady rate and it is understood that there has been no increase in forestry size through additional planting. It is unlikely that there will be any increase in planted areas in future, however existing forestry areas that are harvested are likely to be replanted. There are a limited number of district roads which are impacted by harvesting. A higher level of maintenance is required on these roads. Figure 6.2 shows the roads that are affected by forestry.

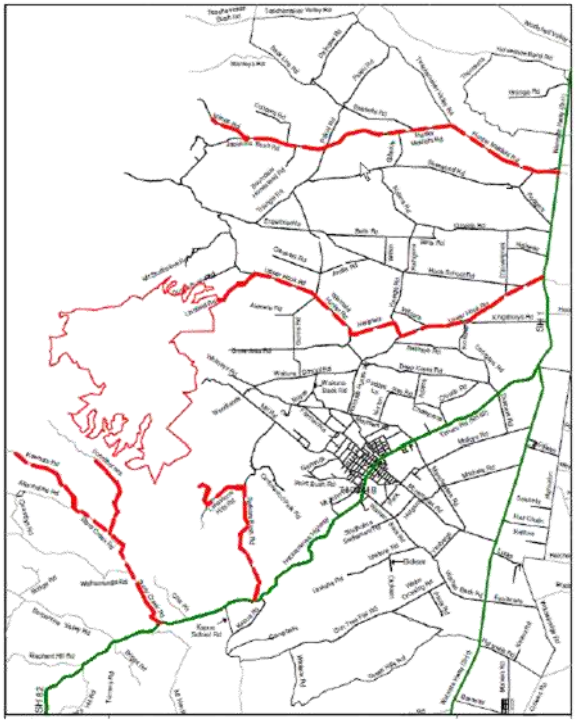
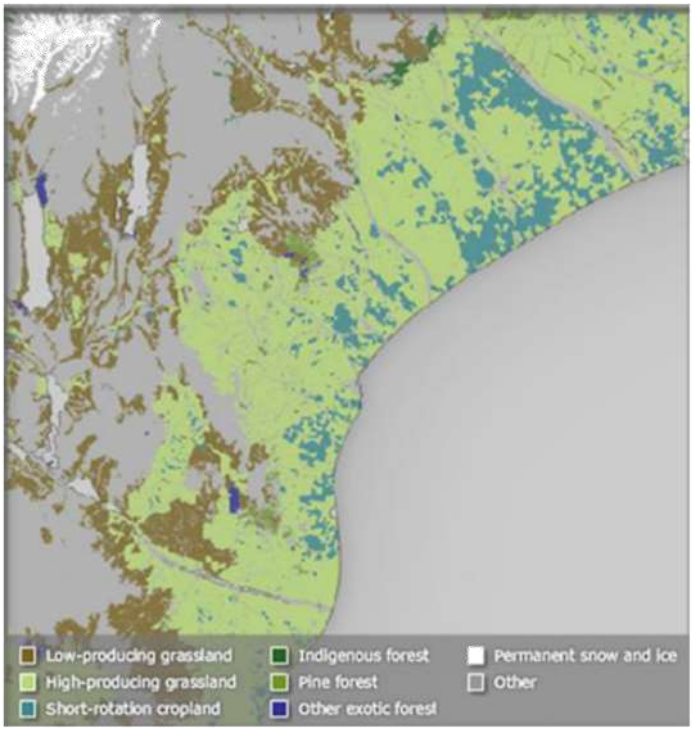


Figure 6.2 – Roads Used by Forestry Traffic

Most logging trucks travel to processing facilities outside of the district using the same road for travel to the State Highway, so limited change in demand on the district road. The only other timber processor in the district is Waimate Timber, which only processes a small amount of timber with approximately three heavy vehicle movements a day. This mill is also close to the State highway so has limited impact on district roads.

Figure 6.3 – Forestry Area



Forestry

There are large areas of forestry in the district. Some of the access roads receive minimal attention, but Council needs to work with logging operators to ensure roads are adequate for trucks and other users.

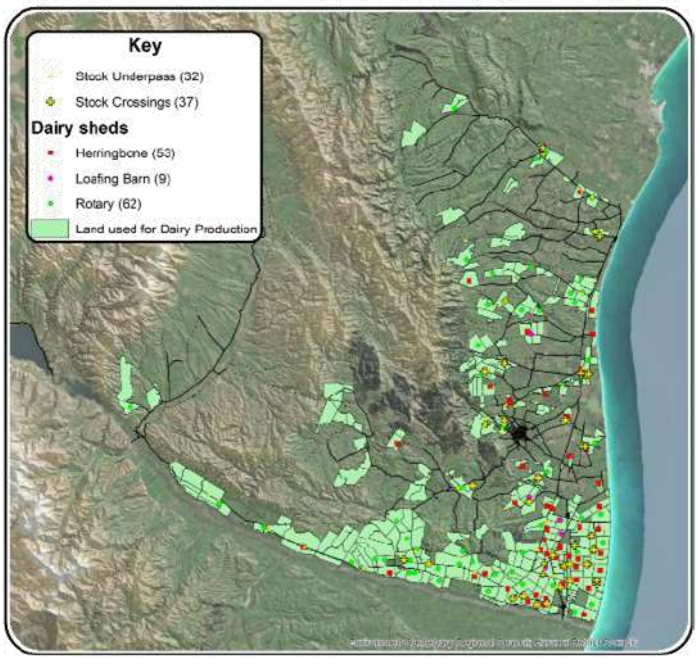
Forecasts of Vehicle Movements Carrying the Selected Commodities by District (Heavy vehicle movements pa) (Richard Paling Consulting and GHD. 2012)

Area	Logs		Liquid Milk		Arable Products		Total		
	2009	2041	2009	2041	2009	2041	2009	2041	Growth 2009-2041
Kaikoura District	300	100	3700	4500	1700	4900	5700	9400	65%
Hurunui District	15300	28200	22100	76500	12600	53200	50000	157900	216%
Waimakariri District	2700	3200	18300	22300	7600	22000	28600	47600	66%
Christchurch City	3300	1800	3000	3700	16100	46700	22400	52200	133%
Selwyn District	2500	1400	52000	112600	20600	78200	75100	192200	156%
Ashburton District	1600	1400	95500	157500	16800	64100	113900	223100	96%
Timaru District	1300	1800	36900	54800	9300	30600	47400	87200	84%
Mackenzie District	1900	3600	4000	12500	4100	14400	10000	30500	205%
Waimate District	7200	5000	28000	62800	5800	30500	40900	98300	140%
Total	36000	46400	263500	507300	94500	344500	394000	898200	128%

Legend: increasing and decreasing traffic loading

Dairy Conversion

Figure 6.4 – Dairy Farmland in the Waimate District



As irrigation is improved throughout the district, more land is being converted for dairy farming. Over the last five years, there have been 2-3 dairy conversions each year North of Waimate. Subject to further irrigation projects going ahead this trend will continue. However, dairy conversions can only continue at a slow rate until there is any further increase in irrigation.

Dairy conversions have a large impact on the roading network during construction of the conversion due to carting gravel. There is then an ongoing increase in freight traffic to and from each new dairy farm (i.e. milk tankers, increase in fertiliser, feed requirements). There is also a significant increase in use of agricultural vehicles on the roading network as many other district farms support the dairy farm by harvesting and transporting grass for feed. Some dairy conversions are using loafing barns with cows fed inside during winter and requiring all feed to be carted in. This will require intense road use at certain times of the year.

Dairy conversions do not currently require any resource consent so there is often no warning that the conversion is going to go ahead until a building consent request is lodged. Each conversion is variable in terms of impacts, which are dependent on feed and freight cartage routes. Therefore, maintenance and renewals associated with an increase in demand are very reactive. Generally, the impact is on shoulder issues and general pavement maintenance. Two farm conversions each year may contribute an extra 4kms of maintenance metalling and grading of unsealed roads to be included in the works programme.

Studholme Dairy Factory

New Zealand Dairies' Ltd plant at Studholme was opened in October 2007, in 2013 it was purchased by Fonterra. To date the majority of heavy traffic movements generated by the plant enter via the state highway system and only impact upon roads immediately adjacent to the facility.

In 2016 Fonterra obtained a resource consent for an expansion on the site to a new drier to process an extra 4.5million litres of milk. The number of vehicles, mainly trucks, serving the site would rise from 162 per day to 529 per day.

There is no time frame announced for the development. This development is expected to increase the numbers and of heavy vehicle movements on local collector roads, especially the Pareora River, Pareora Gorge route and the Old Ferry

Figure 6.5 - Studholme Dairy Factory



Glenavy Dairy Factory

The Oceania Dairy Factory at Glenavy opened in November 2014 with suppliers in the South Canterbury and North Otago region. Oceania Dairy Limited is a wholly-owned subsidiary of Inner Mongolia Yili Industrial Group (Yili). Stage one is delivering more than 70 jobs.

Yili has announced details of a further five-year, $400 million development project on the Glenavy site. It is expected that the completed project will add a further 150 staff to the Oceania Dairy roster at Glenavy. The first phase of the expansion project commenced in 2015 and the remaining phases have been scheduled through to completion in 2019.

This comprehensive project will add capacity to output a wide range of additional products from the Glenavy factory. That will include a whole milk powder dryer, an infant formula canning line, and facilities to manufacture UHT milk products and lactoferrin.

By the end of the expansion project in 2019 Glenavy is expected to be handling more than 630 million litres of milk from local farm suppliers, generating export revenues in excess of $700 million.

This development is also expected to increase the numbers and of heavy vehicle movements on local collector roads, especially the Pareora River, Pareora Gorge route and the Old Ferry



Figure 6.6 - Oceania Dairy Factory (Cooneys Road, Glenavy)

Hunter Downs Irrigation Scheme (Development SUSPENDED)
September 2020 Status – development of the scheme is suspended

Hunter Downs Irrigation scheme (HDI) is an irrigation proposal to take water from the Waitaki River and deliver the water by a series of canals, pipes and pump stations to the north of Waimate.
The scheme now has been redesigned to irrigate up to 12,000 hectares. It will provide opportunities for land use diversification, including horticulture, sheep, beef and dairy farming.
The impacts on demand from this projects are expected to be sustained in the long term. There will be a short term increase in the usage of the network as the infrastructure is constructed. A sustained increase in economic activity driven by the improved water resource will bring an increase in traffic volumes. It is possible that there would be further dairy conversions meaning higher heavy traffic volumes to transport increased production.
This section has been left in the AMP for future reference, and potential future development.

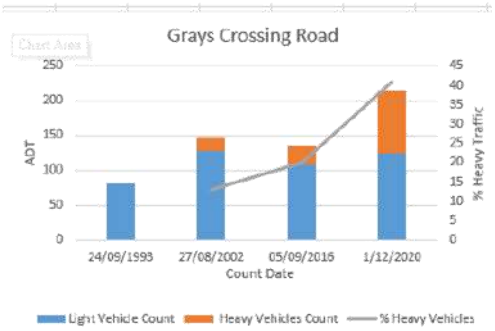
Tourism
September 2020: Domestic Tourism only due to pandemic travel restrictions. Section to be revisited in future revisions of the AMP

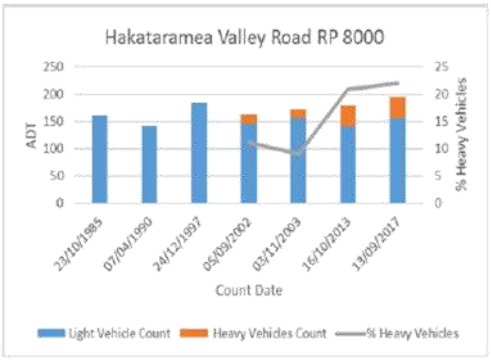
Tourism makes up a small component of Roading demand within the district. Reported visitor numbers stood at 8,330 in 2006, which accounted for approximately 25 light vehicles per day. Such small traffic volumes have minimal impact on the Roading infrastructure in terms of pavement quality; however, tourist traffic is likely to have a greater impact on safety issues.

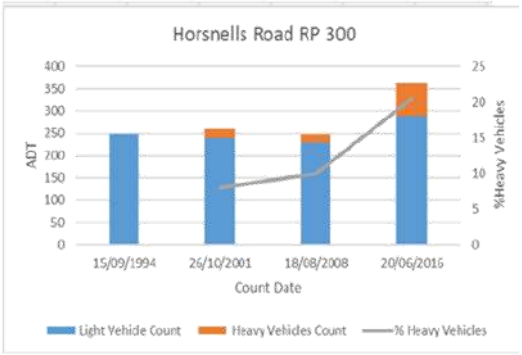
The Bushtown historic complex is expected to continue to be developed within the next ten years, but the potential impact on the network will be negligible.

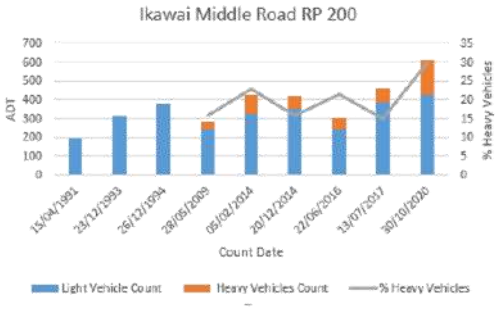
6.2.3 Vehicle Mix And Use Changes

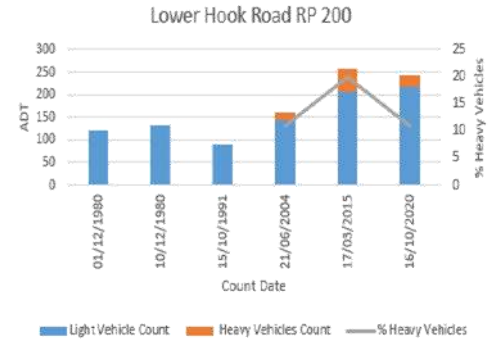
Traffic Count Data
WDC is Implementing a traffic counting strategy to improve the quality of our traffic count estimates. Council has recently increased and replaced its traffic counting equipment. This allows for regular annual traffic counts to be completed on at least a representative sample of Council roads, particularly highly trafficked roads, to allow historic comparisons and from this prediction on future growth. Analysing existing records shows a steady increase in heavy traffic. See count data below.

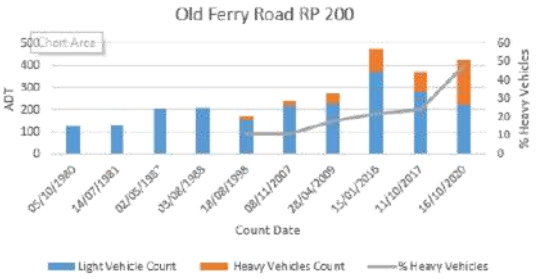

Grays Crossing Road
ADT
% Heavy Traffic
24/09/1993
27/08/2002
05/09/2015
1/12/2020
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles

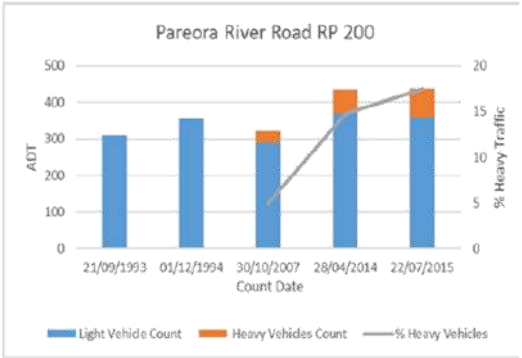

Hakataramea Valley Road RP 8000
ADT
% Heavy Vehicles
23/10/1985
07/04/1990
24/12/1997
05/09/2002
03/13/2003
16/10/2013
13/09/2017
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles

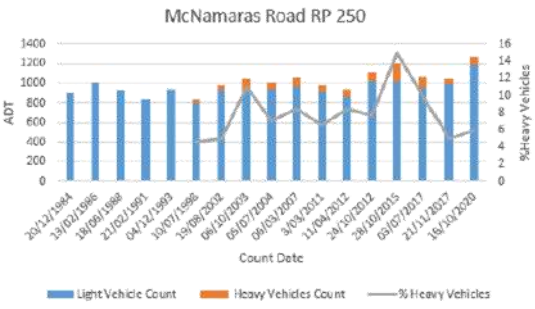

Horsnells Road RP 300
ADT
%Heavy Vehicles
15/09/1994
26/10/2001
18/08/2008
20/06/2016
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles


Ikawai Middle Road RP 200
ADT
% Heavy Vehicles
15/04/1991
23/12/1993
26/12/1994
28/05/2009
05/02/2014
20/12/2014
22/04/2016
13/07/2017
30/10/2020
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles


Lower Hook Road RP 200
ADT
% Heavy Vehicles
01/12/1980
10/12/1980
15/10/1991
21/06/2004
17/03/2015
16/10/2020
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles


Old Ferry Road RP 200
ADT
% Heavy Vehicles
05/10/1980
14/07/1981
02/05/1985
03/08/1989
19/08/1998
08/11/2007
28/04/2009
15/01/2016
11/10/2017
16/10/2020
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles


Pareora River Road RP 200
ADT
% Heavy Traffic
21/09/1993
01/12/1994
30/10/2007
28/04/2014
22/07/2015
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles


McNamaras Road RP 250
ADT
%Heavy Vehicles
20/12/1984
13/02/1986
18/09/1988
21/02/1991
04/12/1992
10/07/1996
19/08/2002
06/10/2003
05/07/2004
08/03/2007
3/03/2011
11/04/2012
24/10/2012
28/10/2015
03/07/2017
21/11/2017
16/10/2020
Count Date
Light Vehicle Count
Heavy Vehicles Count
% Heavy Vehicles

High Productivity Motor Vehicles (HPMVs)

The Land Transport Rule: Vehicle Dimensions and Mass Amendment 2016 (**VDaM Rule Amendment**), allows for High Productivity Motor Vehicles (HPMVs) to travel on approved roads within New Zealand. The VDaM Rule Amendment makes changes to both the 2002 and 2010 Rule for some heavy vehicles requirements and allows for long-term permits to be issued for HPMVs to operate (with divisible loads) on approved roads. The main changes affecting the road network are:

- All standard vehicles can operate as-of-right at an increased gross mass of 46 tonnes without a permit.
- HPMVs can operate by permit at a gross mass above 44 tonnes up to a maximum of 62 tonnes.
- HPMVs can operate by permit at lengths greater than 20m.

Because specific HPMV routes have to be approved with input from road controlling authorities, Wimate District Council has some control over the impacts of this rule change on the district's roading network. However, there is likely to be increased pressure in future from local industry to approve some routes within the district.

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Specific trucks with a gross mass of 50 tonnes (known as 50Max vehicles) are permitted on roading networks unless limitations on bridge capacity are identified. The axle configuration results in little change in terms of Equivalent Standard Axles (the measure of loading affecting road pavements) but has an impact where the entire load is supported by a bridge structure. An evaluation of bridges is therefore essential.

Table 6. - Waimate District 50MAX HPMV Non Accepted Bridges

Road Name	RP	Bridge Name	Reason
Bridge with No ford			
Armstrongs	1055	Armstrongs	Condition
Bluecliffs	13696	Drinnans	Condition
Brasells Bridge	1372	Brasells	Condition
Champions	125	Champions No 1	Condition
Champions	635	Champions No 2	Condition
Davidsons	4463	Parrys	Uncertain Design
Deep Creek	3685	Adams	Posted bridge
Dons	3390	Dons	Condition
Flemings	3360	Kanes	Condition
Galways	7710	Galways	Uncertain Design
Hakataramea Downs	470	Hakataramea Downs	Posted bridge
Hannatons	581	Cunninghams	Condition
Hook Beach	1825	Hook Beach	
Kaiwarua	1780	Lanes	Condition/alignment
Meyers Pass		Meyers Pass	Inappropriate route
Molloys	5340	Molloys	Uncertain Design
Morven	1060	Murphys	Condition
Old Horseshoe Bend	462	Old Horseshoe Bend	Posted bridge
Otaio Cemetery	70	Otaio Cemetery	Condition
Pakihi	420	Hunter	Posted bridge
Poigndestres	1250	Poigndestres	Posted bridge
Woodlands	276	Becketts	Condition

22

Road Name	RP	Bridge Name	Reason
Bridges with a Ford			
Bournedale Homestead	690	Bournedale Homestead	Posted bridge
Bridge	1970	Ponsonbys	Posted bridge
Cliffs	2905	McKenzies	Posted bridge
Crowes	7082	Lundys	Posted bridge
Esk Bank	2515	Ryans	Posted bridge
Farm Road	2904	Farm Road	Posted bridge
Fletchers	1008	Scarletts	Posted bridge
Forrests	678	Forrests No 2	Condition
Gunns	1995	Meyers	Posted bridge
Homestead	5160	Hakataramea Station	Posted bridge
Hursts	1150	Hursts	Posted bridge
Menzies	2110	Frazers	Posted bridge
Menzies	2450	Menzies	Posted bridge
Milne	11270	Cleeves	Posted bridge
Milnes	180	Jacksons	Posted bridge
Moores	126	Frewens	Posted bridge
Pareora River	1220	Holme Station Corner	Posted bridge
Pareora River	9562	Maidens	Other
Redcliffs Back	2063	Waihuna	Posted bridge
Waihaorunga Back	6750	McKees	Posted bridge
Waitaki Valley	104	Rickmans	Posted bridge
Whites	158	Whites	Posted bridge
Woolshed Valley	1287	Spring Bank	Posted bridge
Woolshed Valley	12984	Taylors	Posted bridge
Youngs	1356	Crouches	Posted bridge
25			
47			

Overweight and over-dimension vehicles are still subject to individual permitting issued by the Road Controlling Authority, or under delegation.

Agricultural Vehicles

The size and number of agricultural vehicles on the network is increasing and this is causing a unique set of issues as discussed below.

- Vehicle weight and configuration – vehicles are not subject to or actively in compliance with normal requirements for road-going vehicles
- Vehicle width – dual wheeled tractors and trailer (fodder wagons/implements etc.) are often oversize and create safety and road damage issues
- Distance and frequency of travel – distances travelled are greater than in the past, particularly given the higher speeds modern tractors are capable of; and intensive farms are using roads for regular (daily) access.
- Mud on roads is an even greater issue with larger and more frequent use by agricultural machinery
- Remoteness of location- sometime unacceptable use of the road may go unnoticed by staff or contractors and therefore there is no opportunity for timely intervention
- Funding – due to the agricultural licencing rules, the contribution to the funding is limited

Council may opt to provide controls on such vehicles through education and bylaws if the current regime is insufficient.

Figure 6.7 - Large Agricultural Vehicles using the network



Vehicle Ownership and Use Changes

Although the population is effectively static people are tending to use their cars more and there are more vehicles per household and more households with vehicles. It is apparent that people are prepared to travel longer distances to and from work, again contributing to higher traffic volumes. Such an increase is expected to be constrained in the medium to long-term by an ageing population and increased Roading and fuel costs.

6.2.4 Improvements To Levels Of Service

Changes in Technology

Changes in technology can be considered in relation to road construction and changes in the vehicle fleet. The following are considered the most likely technology advancements affecting future demand on the network:

➔ Stabilising and recycling for road construction and maintenance. Where there is sufficient pavement depth this will reduce the need for heavy vehicles to carry aggregate and waste material over the network.

➔ In recent years the vehicle fleet in New Zealand has changed markedly. Some of the changes that will continue to have an effect on driver expectation or road performance have included:

- Increased power of trucks leads to greater potential damage on steep hills and intersections as trucks change gear, accelerate and decelerate.
- Larger agricultural machinery for harvesting and feeding out fodder crops
- The improvements to power steering leads to greater damage with turning vehicles entering and leaving the roadway and at intersections.
- Larger Trucks require wider intersections and corners to accommodate increasing turning circles.
- Cars with thinner metal on the body that are more prone to damage from loose metal and lower chassis requiring unsealed roads to be graded more frequently.

With these changes road users expect a higher standard of road with fewer changes in standards across a network.

Changes in Customer Expectations

In recent years there has been an increasing awareness on the part of drivers with respect to safety issues. It is anticipated that the following safety issues will become an increasing priority for Council in determining design and operational standards.

- Increased carriageway and shoulder widths
- Improved surface condition of unsealed roads
- Upgraded Intersection controls
- Bridge end protection
- Destination signage for tourists
- Reduction in the number of loss of control crashes

Changing Level of Service Demands

The intended Levels of Service defined in Section 3 are considered to be representative of the service demands of the current and the future community. With the lack of growth in the rating base the following factors may need to be considered:

- reduction in maintenance of low trafficked roads
- disposal of asset components not being significantly used (e.g. bridges, sections of roads)

Policy or Management Changes

Changes to Roading policies may be driven from a number of directions. They could be internally driven (e.g. Development Impact Levy policies) or externally driven (e.g. changes driven by national organisations like NZTA). Monitoring and being aware of possible implications of these changes enables the impacts of such changes to be anticipated and predicted. While there is no certainty, it is important to consider them when developing asset management risk forecasts and strategies.

Government Policy Statement on Land Transport Funding (GPS) – September 2020

GPS 2021/22-2030/31 directs funding for the New Zealand land transport networks. The GPS 2021/22-2030/31 has considered priorities across New Zealand's diverse communities acknowledging that urban, regional, and remote communities have very different needs. GPS 2021/22-2030/31 has four strategic priorities, which are to direct land transport investment into activity that:

- safety (Road to Zero)
- better travel options
- climate change
- improving freight connections

Development Contributions

Development Contributions are another means of funding network infrastructure, reserves or community infrastructure. Waimate District Council does not currently have a development contributions policy. A contribution policy should include a methodology for calculating the cost of the impact a development will have on existing community infrastructure including roads. This should ensure that the negative impact of development is in part funded by the developer rather than the ratepayer.

Failure to develop this policy will impact on future development within the District. Assets may not meet Council standards and/or a portion of ratepayer funding in excess of the developers contribution may be required to upgrade asset components to the desired standard.

6.3 DEMAND IMPACTS ON ASSETS

Overall implications for the network of population growth, continual demand for improvement in levels of service and potentially increasing numbers of heavy vehicles on the road are:

- An increased rate of deterioration on road pavements
- An increasing focus on road user safety
- An increased level of expenditure to attain the desired levels of service
- A minimal increase in ratepayer base to fund Waimate District Council's contribution to the roading budget

Given the limited data available, it is only possible to make qualitative projections about future levels of demand in the Waimate District. Any projections made must be based on an understanding of the composition of the district's roading network. The network has 640km of sealed and 696 km of unsealed road. Given that increases in demand are expected mainly from heavy vehicles and that only 4% of the network is in an urban environment, demand most affects the rural portion of the network.

Generally current demand issues are focused on the standard of roading and in particular the sealing of unsealed roads to remove dust nuisance and to provide a better level of roading service. Satisfying this demand through seal extensions is being carried out to the greatest extent that Council can manage. It is limited by the availability of NZTA financial assistance and the affordability of matching those funds locally. Whilst the Council is committed to continue with seal extension projects, problems with obtaining the local funding may impede this endeavour.

The majority of the district's roads were originally constructed with thin pavements; these pavements were not expected to carry the heavy vehicles they presently do nor any projected increases. There is little understanding of the rate of failure of these pavements under heavy loading, as most analyses are based on the assumption of strong pavements constructed to best practice. Many rural roads only carry a small volume of heavy traffic and small changes can result in rapid deterioration. In the case of on-farm development projects, in particular dairy conversions, it will be necessary to closely monitor individual developments. The location of aggregate sources and the route to the farm must be known so that maintenance can be undertaken prior to the

development rather than more expensive remedial work that would be needed after the heavy traffic has damaged the road.

6.4 DEMAND MANAGEMENT

There are three recognised components to a demand management strategy:

- ***Transport demand management*** – a transport system approach which seeks to achieve modal shift (i.e. to low impact modes such as cycling and walking)
- ***Traffic demand management*** – a single network approach which seeks to optimise or reduce traffic flows
- ***Travel demand management*** – focuses on the individual travellers and seeks to change travel behaviour through various initiatives (such as education and marketing).

6.4.1 Asset Based Demand Management

This encompasses traffic demand management and for this network it is managed through "Pavement Use" Hierarchy. The adoption of a roading hierarchy, which identifies a tiered roading system based on road function and planned levels of service, is important to enable the effective management of traffic. The hierarchy of WDC roads is defined and classified in Table 4.1. This has been further developed through the implementation of the One Network Road Classification system which includes the numbers of heavy vehicles as a parameter.
The adopted hierarchy needs to be physically implemented to ensure that traffic patterns match traffic planning. Therefore, in order to manage traffic demand on the network design standards and a level of service is set against the road hierarchy classification. Road design widths and traffic services requirements provide us with a mechanism for providing an appropriate standard for the use of various road sections. Table 6.3 sets out the design widths and traffic services requirements to be used for the different road hierarchies in the district.

Table 6.2 – Design Width Standards and Traffic Services Requirements

Group	Traffic Volumes Range for Group (ADT)	Desired Width (m)	Length (km)	Other Requirements
Rural				
Primary collector	> 1000	7.0	4	Reflective 100mm centreline, Raised Reflective Pavement Markers (RRPMs)
Secondary Collector	>200	6 - 7	134	Centreline marking
Access	<200	4-6	375	Partial centrelines on hills/ corners as appropriate
low volume	<50	4-5	80	
Urban				
Primary collector	> 3000	12	2	
Secondary Collector	> 1000	12	3	
Access	<1000	10	19	

Group	Traffic Volumes Range for Group (ADT)	Desired Width (m)	Length (km)	Other Requirements
low volume	< 200	6	29	

These targets will be reviewed once the ONRC details are further advanced.

As with any design standard there is an economic and cost implication of achieving it. It is important where physical or other constraints exist that impedes Council's ability to meet a standard, that there is a rational mechanism for the use of lower standards.

6.4.2 Non-Asset Based Demand Management

Non-asset based solutions for managing demand are available as alternatives to asset based solutions and generally fall into the transport and travel demand management categories. Possible non-asset based solutions for the District are:

- Traffic Bylaws on heavy commercial vehicles on sub-standard roads within the district
- Threshold and speed hump installation
- Education communication programmes targeted at stakeholder expectation
- Setting speed restrictions
- Subdivision bylaws restricting development from existing roads that are of sub-standard width and safety
- The use of development impact fees (DIF)
- Manage failure of roads to disposal

National non-asset based demand management solutions include **alternative transport modes**. Although vehicle ownership and usage is high in Waimate district due to the rural nature of the district, it is important to consider the use of other modes of transport as ways to manage demand on the network where possible. Public transport systems, car-pooling or alternative Roading (including cycling and walking) are sustainable and environmentally friendly Roading modes as convenient pedestrian, bicycle, and public transport networks can reduce reliance on vehicle transport. However, low volumes of population, combined with dispersed communities, means that public Roading is not a cost effective option at present and is unlikely to be so in future given the relatively low growth of population in the district.

6.5 ASSET PROGRAMMES TO MEET DEMAND

The **Canterbury Land Transport Plan 2015-25 (Revised 2018)** acknowledges that in rural Canterbury the focus of implementation of the strategy will be on improving safety and the efficient use of motor vehicles as there are limited opportunities to use other modes. Given the highly dispersed population and low volumes of traffic on most rural roads there is little need for large scale improvements to infrastructure or services. Because of the relatively small numbers of people living in rural Canterbury there are significant challenges surrounding the funding of transport initiatives. The focus of implementation in rural Canterbury will be on maintaining and renewing road networks to retain community connectedness and reliable travel times. Low cost measures that help remote communities maintain affordable access to key services are also considered.

The capital works programme includes works that will assist with meeting the current and future demands on the network.

The capital improvement works improvements for the next 10 years include:

- **Bridge Component Renewal** – this will ensure that accessibility to all parts of the network is maintained
- **Low Cost Low Risk Projects** – provides for the construction/implementation of low-cost/low-risk improvements to the transport system to a maximum total cost for approval per project of $1,000,000
- **Footpath development** – to extend and improve footpath where demand or safety issues dictate

Details of the costs associated with these works are outlined in Section 10.

6.6 FUTURE IMPROVEMENTS

In order to have a more accurate idea of the impacts of demand on the network and managing any growth, Council should review the following:

Traffic Count Data
Council will review their traffic counting policy and develop a strategy for Traffic Counting that allows for regular annual traffic counts to be completed on at least a representative sample of council roads, particularly highly trafficked roads, to allow historic comparisons and from this prediction on future growth. This allows council to assess and report on utilisation of the asset and review whether the asset actually provides sufficient capacity for current and future use.

Development contributions policy
Development Contributions policy needs to be developed to ensure that the negative impact of development is in part funded by the developer rather than the ratepayer.

Land Use Research Study
Further research should be conducted to review changes to land use which may impact on demand. This should include a review of the impact of District Plan changes and future predictions of development and asset creation within the WDC area, which potentially could impact on the Roading asset. This would involve developing relationships and surveying key stakeholders and land users so they can report on any forward planning that may affect the Roading asset in future.

Customer Demand Changes
Complete a Customer Survey, including local industry, to establish any changes in customer expectations as they relate to demand on the network.

Monitoring of Post-Pandemic Economic and Behavioural Demand Changes
The September 2020 release of the New Zealand Treasury PREFU showed modelling of low growth (average 1.6% per annum) in the NZ economy through a forecast 5-year period. The modelling assumed opening of New Zealand's boarders in January 2022. Given the predominant agricultural use of the Waimate transport network this projected low growth represents a business as usual scenario.

Consumer, tourism and community behavioural demand changes may be more wide ranging following the 2020 pandemic shocks. There is potential for more adoption of stay-local, communicate remotely behaviours. Council will continue to monitor changes in demand because of any observed community behaviour change and adjust network management strategies as necessary following any observed changes.

Climate Change Risk and Adaptation

7. SUSTAINABILITY

Sustainability can be defined as meeting the needs of the current generation without compromising the ability of future generations to meet their own needs.

7.1 OVERVIEW OF SUSTAINABILITY

Transport legislation and policy in New Zealand calls for an affordable, integrated, responsive, safe and sustainable land transport network. The Resource Management Act (RMA) 1991 is the guiding piece of legislation in New Zealand for the sustainable management of natural and physical resources.

A sustainable transport system should provide for our own economic and social wellbeing in a way that will not prevent our children and grandchildren from being able to provide for theirs.

The transport sector has an impact on every aspect of life and business. It directly affects quality of life through its movement of people, goods and services. However, transport systems can both enhance and detract from quality of life and the quality of physical and natural environments. For the NZ Ministry for the Environment sustainable transport means finding ways to move people, goods and information in ways that reduce its impact on the environment, the economy, and society.

A number of issues and concepts form the building blocks of a sustainable land transport system. These sustainable 'building blocks' represent the outcomes sought to achieve a sustainable land transport system and can be summarised as:

- environmental sustainability
- accessibility
- improved health
- functional transport networks
- economic development
- integrated urban form
- safety

7.2 SUSTAINABILITY AND LIFECYCLE

Asset management is designed to improve decision-making about assets to enable the better manage existing and future assets. Effective asset management ensures that agreed levels of service are met and risks, including public health, financial and environmental are minimised, while costs are optimised. Improved decision-making is crucial to achieve asset management and sustainability goals. Therefore, having the correct asset information available is important to support the decision-making process. It is thus clear that lifecycle costs are part of and supports asset management and sustainability.

Asset management practises include actions that recognise the need for environmental, Economic, Social and Cultural sustainability, that is -

- The natural environment needs to be preserved for future generations and not degraded as a result of Council's asset management operations and development projects.

- Financially, there is a limit to what ratepayers, developers, and therefore Council, can afford. Expenditure needs to remain within this limit and the costs need to fall equitably on the generations which derive the benefits.
- Social relationships between individuals, interest groups and local government are valuable, and Council needs to facilitate and encourage this by providing infrastructure.
- Our history, customs and creativity are valuable to us. Their preservation and enhancement over time is facilitated by providing venues where they can be practiced, preserved and displayed.

7.3 SUSTAINABLE DEVELOPMENT

Opportunities exist to complete road asset development and management services in a manner which reduces the negative impact of roading on the environment and simultaneously enhances economic, social and cultural outcomes.

Below are some (not all) of the sustainability elements that Council should address on roading projects through planning, design, construction and operation.

Environmental

- Emissions
- Run-off (erosion & water quality)
- Resource efficiency (recycled aggregates and fuel efficiency)
- Ecosystems & Habitat
- Climate change
- Urban design
- Land use

Social

- Access
- Community cohesion
- Safety
- Health (air quality & non-motorised transport modes)
- Noise, vibration, lighting
- Visual Amenity
- Community Viability
- Urban design

Economic

- Congestion
- Safety
- Health
- Life cycle cost (cradle to grave of the construction)
- Climate change
- Economic Development
- Access

Cultural

- Heritage
- Local and regional culture
- Indigenous cultural values

The NZ Energy Strategy and the NZ Energy Efficiency & Conservation Strategy

The NZ Energy Strategy, and the NZ Energy Efficiency and Conservation Strategy are statutory documents and are and referenced in the GPS.

Released in 2011, the revised New Zealand Energy Strategy provides the government's direction for energy and the role energy will play in New Zealand's economy. It replaces the 2007 New Zealand Energy Strategy. It covers the supply, delivery and use of energy. It offers direction for the energy industry; for energy-related aspects of transport, housing, research and development; and infrastructure. The last section is the New Zealand Energy Efficiency and Conservation Strategy, which provides direction more specifically for energy efficiency, renewable energy and energy conservation.

Source: New Zealand Energy Strategy

The New Zealand Energy Efficiency and Conservation Strategy (NZEECS) was written in 2007, and was a key part of the government's response to meeting its energy, climate change, sustainability and economic transformation goals. It has been written as a companion document to, and will give effect to a number of the objectives set out in, the New Zealand Energy Strategy (NZES).

Source: EECA.govt.nz

The New Zealand Energy Strategy 2011–2021 and the New Zealand Energy Efficiency and Conservation Strategy 2011–2016 will add a focus on energy efficiency to these goals. New Zealand's per capita energy use for transport is high compared to many other OECD countries. Improving transport energy efficiency offers major opportunities to improve the productivity of the overall economy.

To do this these strategies will focus on improving vehicle fuel efficiency, and increasing the uptake of low-carbon fuels and technologies. They will highlight the potential to reduce energy use in urban areas through walking and cycling and greater use of public transport. The strategies will place an expectation on local authorities to ensure integrated travel options through their transport and planning roles. Local authorities will also be expected to improve the efficiency of local transport networks and layouts so that people and freight can move about with greater ease and energy efficiency.

Source: GPS 2011

The Canterbury Land and Water Plan

Adopted in 2014 this plan runs alongside the Natural Resources Regional Plan until fully in force. These plans provide a framework for sustainability objectives and policies throughout Canterbury.

Introduction of a Council Sustainability Policy

Council is currently developing a sustainability policy to be adopted late 2020

Energy Efficiencies

The Waimate District Council is committed to implementing environmental best practices. This includes being more energy efficient. Where technologies exist that allows Council to operate in a more energy efficient manner it will be investigated and if there is a significant cost and environmental benefit it will be considered for implementation.

7.4 NEGATIVE EFFECTS

Table 7.1 below identifies the negative effects for the Waimate Community that the Roading Activity may have on the social, economic, environmental, or cultural well-being of the community. It indicates how the existing approach mitigates these negative effects or highlights proposed action to address these in the future Whilst there are no significant (critical) negative impacts assessed as resulting from the Council's roading activities, opportunities exist to deliver road asset development and management services in a manner which reduces the negative impact for the Waimate Community on the social, economic, environmental, or cultural well-being of the community.

Table 7.1 – Negative Effects – Roading Activity

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Pavements							
Runoff from sealed roads	+	+	Minor	Minor	Mod	Nil	• Capture runoff, e.g. concrete cutting or bitumen before it enters waterways, esp. sumps in urban areas. • Temporary erosion and sediment control during works including weed matting, hydro-seeding, silt traps and settling ponds. • Comply with Regional Council rules and/or consents for working within waterways.
Dust from unsealed roads	o	-	Mod	Minor	Mod	Nil	By sharing the cost of sealing all or part of the road causing the problem 50-50 with any property owner who wishes to reduce the effects of dust on their property. By requiring developers whose projects will significantly increase adverse effects of vehicle to seal road.
Noise in urban situations	+	+	Minor	Nil	Nil	Nil	• Comply with District rules, e.g. working hours and maximum noise levels. • Size of chip/type of resurfacing, e.g. thin asphalt quieter. • Smooth repairs, i.e. no bumps at joins, Service covers flush with surface.
Drainage							
Undersize culverts causing flooding	+	+	Mod	Minor	Minor	Nil	Replace undersize culverts with appropriate size to flood event frequency agreed by Council

+ Increasing o Remaining the same - Decreasing

7.5 SUSTAINABILITY WITHIN COUNCIL

In addition to managing the assets in an economically sustainable way, Council will also manage its internal operations to optimise their cost, efficiency and effectiveness, so that in the long term the costs of administering the infrastructure are sustainable. While the overall view of this is not a subject for this plan, the management of the asset services delivery unit is relevant.

7.5.1 Staffing Levels

Currently the Roading Group has 3.5 Full Time Equivalent (FTE) employees.

The greater emphasis being placed on the responsible management, distribution, operation and maintenance of existing and future resources will add to the tasks of the Roading Group. Compliance with the requirements of the Local Government Act requires a great deal of effort and prudent decision making from the Roading Group staff.

The current staffing levels are supplemented by outsourcing. However, outsourcing still requires scoping, input and supervision from Council staff and does not exonerate staff from outsourced work.

Because of this, assessment of staffing requirements will be required on an annual basis to ascertain the appropriate requirements for the increased workload. Assessment needs to consider the level of staffing coverage required to implement all of the Roading Group functions including internal management, information systems management, project management, design, supervision, construction, operations and maintenance.

7.5.2 Skills

In addition to staffing numbers, assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate. A review of Council policy on resourcing the operations and maintenance is required to ascertain the most appropriate method for delivery of the required levels of service should be considered.

7.5.3 Training

Training of staff is presently on an ad-hoc basis with no structured long term development plans for the individual staff members in the asset management field. The link between asset life, and the ability to deliver of levels of service with the skills of the people who plan, design, install, operate and maintain the assets is inevitable. It is crucial that the skill gaps of staff, contractors and service providers are identified; that there are structured training programmes to close these gaps; and that the effectiveness of the training provided is evaluated. Training programmes should be designed and reviewed for each individual – not for a business unit, contractor or service provider as an entity.

7.5.4 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

Local Authorities have traditionally not been particularly successful at implementing succession planning techniques and practices. In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning were not experienced. With a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities. Whilst there is always potential for staff in key positions to move on to further their careers, succession planning can help to mitigate the effects of this.

Succession planning techniques can include:

- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can include identifying weaknesses in training and experience and attempting to address those weaknesses by use of mentoring, relevant projects and continuing professional development programmes etc.
- Identifying likely staff retirements, promotions, resignations or position changes on an annual basis. Identifying potential internal staff to fill those positions, providing those staff with projects that extend them, and giving them relevant experience for filling the positions

No formal succession planning is implemented at present by Waimate District Council.

7.6 CLIMATE CHANGE

The following summary has been extracted for the Environment Canterbury website https://www.ecan.govt.nz/your-region/your-environment/climate-change/climate-change-in-canterbury/climate-change-projections-for-canterbury/, September 2020.

7.6.1 New Climate Projections for Canterbury

Environment Canterbury are committed to helping our communities to understand and be resilient to natural hazards risk, including climate change, and we asked the National Institute of Water and Atmospheric Research (NIWA), to analyse projected climate changes for our region.

Canterbury Plains Published in 2020, NIWA's report looks at how aspects of our climate such as temperature, precipitation (rain, snow, drought potential), wind and sea levels might change between now and 2100. It is based on global climate model simulations from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment, scaled down for New Zealand, with a focus on Canterbury.

This is a technical report (not for the faint-hearted!) but it is the most detailed information we have. Each chapter has a helpful summary, and key projections are set out below.

7.6.2 Understanding Emissions Scenarios

A little bit of technical knowledge goes a long way. Remember the thickness of the blanket?

Assessing future climate change due to human activity is difficult, because projections depend on greenhouse gas concentrations, which in turn depend on how we respond as a society. Climate scientists have dealt with those dependencies by developing different possible 'scenarios', based on different amounts of greenhouse gases in the atmosphere. These scenarios are called

Representative Concentrations Pathways (RCPs), abbreviated as RCP2.6, RCP4.5, RP6.0, and RCP8.5. RCP8.5 is the highest level.

The NIWA report looks at two scenarios: RCP4.5 (which could be realistic if immediate global action is taken towards mitigating climate change) and RCP8.5 (sometimes called the 'business-as-usual', where emissions continue at current rates).

7.6.3 Projections for Canterbury

To keep it simple here, we've described these two scenarios as whether we cut emissions, or if we do

Average Temperatures

- Increase with time and greenhouse gas concentrations.
- By 2040, annual mean temperature up 0.5 to 1.5°C.
- By 2090, up 0.5 to 2°C (if we cut emissions) or up 1.5 to 3.5°C (if we don't).

Maximum Daytime Temperatures

- By 2040, annual mean maximum temperature up 0.5 to 2°C.
- By 2090, up 1 to 3°C (if we cut emissions) and up 2 to 5°C (if we don't).
- By 2090, western Canterbury's alpine and sub-alpine areas could be 5 to 6°C warmer in spring and summer (if we don't).

Maximum Night-time Temperatures

- By 2040, annual mean minimum temperature up zero to 1°C.
- By 2090, up 0.5 to 1.5°C (if we cut emissions) and up 1 to 2.5°C (if we don't).
- The difference between a day's high and low increases with time and greenhouse gas concentrations.

Hot Days (25C or more)

- By 2090, expect 20 to 60 more hot days in most of Canterbury (if we don't cut emissions).
- Inland areas feel it the most, particularly the southern Mackenzie Basin, which could have 60 to 85 more hot days.
- Most of these hot days would happen in summer.
- Our warmer season could get longer in relatively low-elevation areas, with 5 to 10 more hot days in autumn and spring.

Cold Days (Frosts)

- Expect fewer frost days throughout the region.
- Inland areas and higher elevations warm the most, with 10 to 30 fewer annual frost days by 2040, and 20 to 50 fewer by 2090.
- The frost season (the time between a year's first and last frost) will likely get shorter.

Rainfall

- Most of the region can expect small changes in annual rainfall, up or down 5%.
- By 2040, autumn might be dryer in the Mackenzie Basin, with up to 10% less rain.
- By 2090, winters could be wetter in many eastern, western and southern parts of the region, with 15 to 40% more rain.
- By 2090, Banks Peninsula and many inland areas might get 5 to 15% less rain (if we don't cut emissions).

Snow

- Expect fewer snow days everywhere, especially in the mountains.

Drought

- Expect more potential for drought across most of Canterbury.

Windspeed

- Annual mean wind speeds up slightly, by nil to 5%.
- By 2090, winter and spring could be windier (up 5 to15%, if we don't cut emissions).
- That seasonal change might be more keenly felt in inland areas north and west of Rangiora (up 15 to 25%).

Sea Level Rise

- Sea level rise projections for Canterbury are the same as for New Zealand.
- Up by 0.4m in the next 50 years and up 0.6 to 0.7m in 100 years (if we cut emissions).
- Up 0.5m in 50 years and up 1.2 metres in 100 years (if we don't).
- High tides get higher. At 0.65 metres of sea level rise, every high tide is above the spring tide mark (compared to 10% now).

7.6.4 Extreme Climate Changes

In reality, the average climate change will be affected most greatly by changes at the extreme end of the range of weather experienced. Projections for extreme climate changes are outlined below. Daily temperature extremes: Modelling suggests a significant decrease in the number of frost days experienced in the region, and an increase in the number of hot days, or those days exceeding 25°C. Extreme climate change includes:

- **Extreme rainfall:** A warmer atmosphere can hold more moisture (about 8% for every 1oC increase in temperature). Therefore, there is likely to be increased rainfall depth and intensity associated with climate change. In addition, the heat that comes from the condensation of this increased moisture will make storms more intense.
- **Drought:** The modelling indicates that by the 2080s, there will be a significant increase in the average water deficit across Canterbury, with increases of between 2 weeks and over 6 weeks of pasture deficit as an average climate condition. By the 2030s, current drought events that are so severe that they only occur in 1 out of 20 years are projected to occur more frequently.
- **Fire:** Studies and modelling suggest that there is likely to be an increased fire risk. This will include longer fire seasons, increases in fuel drying, easier ignition, and faster fire spread due to wind. Potential increases in thunderstorms and lightning may also play a role.

7.6.5 Climate CHANGE EFFECTS

Specific effects that may impact on the Roading Activity are set out below along with potential mitigation options.

Dust from Unsealed Roads: Hotter temperatures and associated drought conditions could have detrimental effects in terms of increased dust from unsealed roads. This may mean that in future areas of unsealed roads need to be sealed, particularly close to residential properties.

Changes in Demand: An overall decrease in the mean rainfall for the district could impact on land use and in turn demand on certain areas of the road network.

Drainage Capacity: Extreme rainfall events in a generally dry region may cause surface flooding affects due to poor capacity of drainage assets. The cost of upgrading drainage assets for these extreme events is likely to be prohibitive for Council.

Increased Flood Damage Repair Work: Extreme rainfall events in a generally dry region may cause surface flooding affects and in turn increase requirements for flood damage repair works. Consideration will need to be given to design and location aspects for council roads to reduce the risk of damage or loss of service due to extreme weather events.

Water availability for Construction: Increasing demand for water is currently an important issue for Canterbury. This increased demand is likely to become increasingly critical in a future characterised by drier average conditions, and an associated increase in both drought frequency and intensity. This may mean, as an example, that it will be more difficult to obtain the required water to complete construction works.

Council will continue to maintain a weather eye on the effects of climate change.

7.7 FUTURE IMPROVEMENTS

A full assessment of negative effects created by the Roading network should be completed. Details of resulting strategies and operations to enable greater sustainability in both the short and long term can then be developed for use.

- Include MFE National Climate Risk Assessment, August 2020 summary information
- Include NIWA Climate change projections for the Canterbury Region, February 2020 summary information

8. RISK MANAGEMENT

8.1 RISK MANAGEMENT STRATEGY

The approach taken in the 2015 AMP has been advanced due to the collaborative effort of the Aoraki Roading Collaboration. As well as undertaking risk management assessment jointly, critical rotes have been identified.

The following sub-sections of this plan describe the issues considered and the outputs achieved to date.

Appendix 13.2 described the risk management procedure for the WDC road network in more detail. The process has not been completed at this stage and is a priority for the 2014-15 and 2015-16 financial years.

8.2 UNDERSTANDING THE CONTEXT

As for the levels of service, the context for the application and development of risk must be set to ensure that risk development is not completed in isolation, as the identification analysis and treatment of risk will impact at all levels in the management of the asset; from community outcomes through to service level delivery, strategic goals and operational delivery.

8.2.1 Strategic Context

This AMP for Roading sets out the strategic context as it relates to risk management. It outlines the relationship to identified community outcomes, activity rationale, strategic result and strategic action. Further the plan sets out the relationship to other plans, legal requirements, financial strategies, regulatory and policy obligations of the Roading activity.

8.2.2 Organisational Context

The organisational context is approached through the identified activities of managing the Roading asset, as the activity identifies the risk associated with staffing, the elected representatives and work areas, location and IT systems.

8.2.3 Risk Management Context

The risk management context refers to the risk-related activities undertaken within the Roading activity. The remainder of this section sets out the risk management context in terms of risk management activities, likelihood scale, and consequence scale. A risk assessment matrix and risk register are introduced, as are the required analysis and format for a risk treatment plan.

8.2.4 Considered Risks

The risks considered in this edition of the AMP reflect the framework discussed in NZTA Research Report 415: Case studies and best-practice guidelines for risk management on road networks.

This approach identifies risk groups and provides a thorough representation of the type of risks that should be considered.

Under these groups, risks have been identified as follows:



The **Planning risks** identified are relevant to WDC are:

- Insufficient business continuity planning for disruptive events
- Ineffective input into regional strategic planning
- Risks associated with council-owned roads and bridges on private land – e.g. council-owned bridges and walls on private (minor)
- Underestimating the effects of climate change
- Lack of transport alternatives – e.g. cycleways and walkways
- Moderate natural hazards –
- Dust nuisance
- Hazardous materials
- Surface water contamination (minor)

The **Management risks** identified are relevant to WDC are:

- Lack of staff resources (limited)
- Loss of system knowledge – e.g. inability to retain knowledge, loss of institutional knowledge; insufficient systems in place to manage data/information
- External economic influences
- Inability to utilise funding options
- Diminishing funding allocation
- Insufficient technology (minor)
- Lack of political alignment (minor)
- Handover of low-quality assets from property developers or council (limited)

The **Delivery risks** identified are relevant to WDC are:

- Inadequate project management
- Inadequate portfolio management
- Inadequate maintenance contract management
- Inadequate capital works contract management (limited)
- Non-compliance with legislation and legal requirements
- Inadequate procurement practices

The Physical Asset risks identified are relevant to WDC are:

All assets
- Damage to Infrastructure through vandalism

Roads/pavements
- Inadequate road design
- Inadequate road maintenance
- Low-lying road inundated by floods during heavy-rainfall events
- Loss of amenity and visibility caused by roadside vegetation
- Road-user conflicts

Streetlights
- Inadequate street lighting
- Damage to streetlights

Footpaths/accessways
- Inadequate footpath quality
- Inadequate accessibility

Signage
- Inadequate signage/markings causing accident/damage – vandalism)

Guard rails/medians
- Guard rails/medians damaged and/or missing

Drainage
- Flooding affecting roads

Bridges and structures
- Wall failure resulting from a natural hazard
- Bridge collapse/damage/deterioration/erosion/blockage
- Structure damage from overloading

8.3 RISK SUMMARY

A review of the risk types jointly undertaken is shown below.

8.3.1 Consequences Rating

Consequence	Code		1	2	3	4	5
	Level		Insignificant	Minor	Moderate	Major	Extreme/ Catastrophic
Interpretation	Image, Reputation and Public Trust and Council Trust		No media attention or damage to reputation.	No media attention, but minor damage to image to a small group of people.	Negative local media coverage, community concerned about company performance.	Negative national media coverage, major decrease in community support.	Negative international media coverage, Significant political outfall, loss of community support, loss of several key staff.
	Financial/ Economic (Sum of)	Financial Direct Costs (Repair, Lost Revenue, 3rd party damage, legal costs)	< $10,000	$10,000 to $50,000	$50,000 – $200,000	$200,000 – $1,000,000	>$1,000,000
		Economic impacts on users and businesses	Equivalent to < $10,000	Equivalent to $1,000 to $50,000	Equivalent to $50,000 – $200,000	Equivalent to $200,000 – $1,000,000	Equivalent to > $1,000,000
	Environmental		No breaches	Minor breaches affecting very small part of the network	One-off major breach, affecting a small part of the network	Several major breaches affecting a significant part of the network	Widespread and major breaches of standards, failure to meet legislative requirements over most of system area / network
	Public health and safety		No health or safety impact.	Minor safety impact on small number of people.	Serious safety impact on small number or minor impact on large number of people.	Extensive injuries or significant safety impacts, single or several fatalities.	Widespread safety impacts; large numbers of fatalities.
	Service level/ Effectiveness		One-off minor failure to meet levels of service	Minor failures to meet levels of service.	One-off major failure or widespread minor failures.	Some major performance failures.	Major, widespread, unacceptable performance failure.

8.3.2 Likelihood Rating

Likelihood		Interpretation	Probability
Code	Name		
5	Almost Certain	Is expected to occur several times a year	0.8
4	Likely	Could occur once a year	0.6
3	Possible	Could occur at some time in the next 10 years	0.4
2	Unlikely	Could occur at some time in the next 50 years	0.2
1	Rare	Could occur only in exceptional circumstances (unlikely next 50 years)	0.05

8.3.3 Risk Score

		Consequences				
	Likelihood	1	2	3	4	5
		Insignificant	Minor	Moderate	Major	Severe
5	Almost Certain	M	H	H	E	E
4	Likely	M	M	H	H	E
3	Possible	L	M	M	H	E
2	Unlikely	L	M	M	M	H
1	Rare	L	L	M	M	H

8.3.4 Planning Risk

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Lo	Funded?	Data Items	Reference
		/Corporate image	Financial / economic	Environment	Health & Safety	level/ Service Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Compliance	Non-compliance with legislation and legal requirements	5	4	2	3	2	4	4	16	Training & awareness		4	2	8	No	M			
	Inability to comply with council's own standards	4	2	2	2	2	4	4	16	Training & awareness		4	2	8	No	M			
Planning Status	Inadequate asset management/infrastructure strategy planning	4	3	2	1	4	4	2	8	Ensure adequate resources are available ARC collaboration	80k	2	2	4	No	L			
	Insufficient business continuity planning for disruptive events	3	3	1	1	2	3	5	15	Ensure adequate resources are available Link risk to resilience planning		2	4	8	yes	M			
	Ineffective input into regional strategic planning	2	2	3	1	2	4	4	16	Ensure adequate resources are available		4	2	8	No	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Lo	Funded?	Data Items	Reference
		/Corporate image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Climate	Underestimating/understanding the effects of climate change	1	3	3	1	3	2	4	8	Ensure appropriate advice is sought available		2	2	4	No	L			
	Overestimating the effects of climate change	1	4	3	1	1	2	4	8	Ensure appropriate advice is sought available		2	2	4	No	L			
Assumptions and Projections	Poorly defined levels of service	2	1	2	1	1	3	4	12	Included in AMP processes		4	2	8	No	M			
	Level of Service	2	1	2	1	1	3	4	12	Included in AMP processes		2	3	6	No	M			
	Population Projection	2	1	2	1	1	3	4	12	Included in AMP processes		2	3	6	No	M			
	Demand Change	2	1	3	1	2	3	4	12	Included in AMP processes		3	3	9	No	M			

8.3.5 Delivery Risk

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate Image	Financial / economic	Environment	Health & Safety	Service level / Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Management Processes	Inadequate portfolio management	3	4	2	4	3	4	3	12	• Structure (management) • Appropriately trained personnel • Have technical audits • Have independent review network • Work in-line with contract documents • Ensure quality control • Monitor contractor	$150k	2	2	4	N	M			
	Inadequate capital works contract management	4	4	2	4	3-4	4	3	12	• Appropriate supervision • Contract documents in place • Appropriate/qualified civil works contractor • Documentation • Technical knowledge • Design / drawing / spec • Photos • Site inspection at critical times	$100k	2	2	4	N	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
	Inadequate maintenance contract management	3	3	2	4	4	3	3	9	• Appropriate staffing levels • Holding contractor accountable for their contractual obligations • Auditing • Contract document • Site inspections • Technical knowledge • Data collection	≥ $50k	2	2	4	N	M			
Relationships	Service level agreements between transport/roading and other parties	3	3	2	2	3	3	3	9	• Have a written agreement • Communicate issues • Monitor agreed levels • Spot check • Monitor vehicles • Have defined measures • Adjust/be aware of seasons • Prescribe maintenance regime • Discuss/communicate variances	$3k	2	2	4	N	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
	Unsatisfactory working relationships with utilities	3	4	3	2	3	3	5	15	• Provide training • Provide maintenance intervention strategy • Communicate • Reason/work in together • Agree on an integrated FWP • Address conflicts • Have standards • Try to time works effectively • Discuss issues civilly with facts up front	$10k	2	2	4	N	M			
	Unsatisfactory public relationship management and communication	4	4	1	2	3	4	3	12	• Involved in process early • Follow up complaints/enquiries • Put customer first • Communicate plans and changes • Reasons for decision/provide facts where possible	≥ $5k	2	2	4	N	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate Image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Resources	Inadequate procurement practices	4	4	2	2	4	4	3	12	• Mixture of age and experience in workforce • Succession plan • Maintain asset/training/ recommendation • Support resources • Performance reviews • Sharing of knowledge • Record processes/methodology	$20k	2	1	2	N	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
	Shortage of local contractors and consultants	4	4	3	3	4	4	3	12	**Address through procurement strategy including:** • Approach larger players to establish forward workload • Keep in competitive marks • Keep works local where possible • Discuss with key stakeholders • Early involvement • Design builds • Collaboration • Share work around • Have a good spread of short/long term contracts • Don't package to larger portions of work over great terms.	$5-10k	2	3	6	N	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate Image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Control	Inadequate event management	3	3	–	4	4	4	3	12	**Address through resilience strategy including:** • Run scenarios • Monitor costs • Right equipment for job • Work out entire picture • Monitor landform changes – e.g. loss of overland footpaths • Warning signage/road closures • Carry out preventative works as soon as practicable to limit further damage • Have completed preventative prior to event • Communication • Experienced decision makers	≥ $100k	2	3	6	N	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/ Low)	Funded?	Data Items	Reference
		Corporate Image	Financial / economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
	Poor Workmanship	3	2	2	3	3	3	4	12	**Address through procurement strategy including:** • Quality Control • Appropriate materials • Well training staff • Appropriate weather • Partnership	≥ $5k	2	2	4	N	M			
	Ineffective enforcement measures	3	3	–	2	3	3	3	9	**Address through procurement strategy including:** • Work to policies/plans and introduce new • Limit/no exceptions • Random audit • Rectify exceptions/hazards • Discuss why with public • Have approved standards	≥ $5k	2	3	6	N	M			

8.3.6 Asset Risks

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
		Corporate Image	Financial/Economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Performance	Sub-optimal condition level Unsealed Roads	2	2	3	3	2	3	3	9	Ensure adequate resources are available to adequately monitor	$60k	2	2	4		M			
	Failure Risk Bridges	4	4	4	5	3	5	2	10	Bridge Management Strategy Engage qualified structural bridge engineer to undertake regular inspections	$6k	5	1	5		H			
	Over Loading Pavements (significant issue)	1	3	2	2	2	3	5	15	Encourage law enforcement Work with transport providers		3	3	9	Y	M			
	Inadequate Functional Performance	2	2	2	1	2	2	4	8	Maintenance and Operational Management		2	2	4		M			
	Poor Amenity Performance	3	1	1	1	2	2	4	8	Address through LCC planning		2	2	4		M			
	External Damage E.g. Bridge	3	3	3	2	3	3	5	15	Maintenance and Operational Management		1	5	5		H			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
		Corporate Image	Financial/Economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Natural Hazards	Geo-hazards	5	5	4	4	4	5	3	15	Life lines strategy Resilience/adaptation strategy		2	5	10	Y	H			
	Floods	2	4	3	2	3	4	3	12	Life lines strategy Resilience/adaptation strategy Drainage investment		2	3	6	Y	M			
	Snow	2	3	1	2	3	3	2	6	Have adequate plans and resources in place to deal with it	$20k	1	3	3		L			
	Wind	1	2	1	2	2	2	4	8	Maintenance and Operational responses to clear roads (e.g. fallen trees)		1	4	4		L			
	Fire/others	3	2	2	3	2	3	5	15	Life lines strategy Resilience/adaptation strategy Work with forestry		4	2	8		M			)
Safety/Security	Crashes	1	1	1	2	1	2	5	10	Safety programme		2	4	8	Y	M			

Risk Type	Specific Risk Description	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
		Corporate Image	Financial/Economic	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
	Sabotage – Signs	1	1	1	2	1	1	3	3	Maintenance and Operational Management		1	3	3		L			
	Spills	1	2	3	3	2	3	3	9	Maintenance and Operational Management, incident response		2	3	6		L			

The most critical risks on the roading network have been identified by practitioner knowledge, as a formal assessment and identification process to establish a risk register has not yet been completed. Bridges have been acknowledged to be the determining factor in the resilience of the network.

Critical Structures – The Waimate District Council Disaster Resilience Summary Report 2006 provides a useful assessment of the risk and impacts on the network.

This has been improved on through an assessment in 2020 by the Roading Manager as part of considering the resilience of the network.

38 bridges have been identified where there is no alternative route. These are listed below. Of these one bridge is rated as 'high risk' in terms of likelihood and consequence (O'Briens Bridge on Hakataramea Road). Options for addressing the resilience for this part of the network are limited as sections of the road within this valley are also prone to flooding.

BRIDGE No	BRIDGE NAME	ROAD NAME	Likelihood	Consequence	Risk
52	Ryans	Esk Bank	Rare	Minor	low
59	Forrests No 2	Forrests	Rare	Minor	low
81	Bournedale Homestead	Bournedale Homestead	Rare	Minor	low
90	Hook Beach	Hook Beach	Rare	Minor	low
104	Frewens	Moores	Rare	Minor	low
116	Cunninghams	Hannatons	Rare	Minor	low
117	Poigndestres	Poigndestres	Rare	Minor	low
130	Lundys	Crowes	Rare	Minor	low
135	Glenavy	Te Maiharoa	Rare	Minor	low
148	Dons	Dons	Rare	Minor	low
153	Whites	Whites	Rare	Minor	low
172	Cleeves	Milne	Rare	Minor	low
186	Menzies	Menzies	Rare	Minor	low
51	Church Hill	Church Hill	Rare	Moderate	low
80	Coopers	Coopers	Rare	Moderate	low
92	Hook Gap	Upper Hook	Rare	Moderate	low
129	Sinclairs Creek	Maori	Rare	Moderate	low
157	Hursts	Hursts	Rare	Moderate	low
160	Bursens	Pentland Hills	Rare	Moderate	low
161	Meyers Creek	Kaiwarua	Rare	Moderate	low
163	Lanes	Kaiwarua	Rare	Moderate	low
170	Farm Road	Farm Road	Rare	Moderate	low
174	Hakataramea Station	Homestead	Rare	Moderate	low
176	Hurstlea	McHenrys	Rare	Moderate	low
181	Mt Florence	Mt Florence	Rare	Moderate	low
185	Frazers	Menzies	Rare	Moderate	low
192	Scour Stream	Moorland Farm Settlement	Unlikely	Moderate	low
156	Rickmans	Waitaki Valley	Unlikely	Minor	Medium
79	Jacksons	Milnes	Unlikely	Moderate	Medium
74	Stanleys	Stanleys	Possible	Moderate	Medium
175	Wrights Crossing	Hakataramea Valley	Likely	Moderate	Medium
177	Station Creek	Hakataramea Valley	Rare	Major	Medium
178	Little McKay	Hakataramea Valley	Rare	Major	Medium
179	Middle McKay	Hakataramea Valley	Rare	Major	Medium
180	Big McKay	Hakataramea Valley	Rare	Major	Medium
182	Rocky Point	Hakataramea Valley	Rare	Major	Medium
169	O'Briens	Hakataramea Valley	Possible	Major	HIGH

In order to better define critical risks, Council will need to:

- Identify and agree the risk management context, i.e. consequence/likelihood frame work. Without this agreement the risk rating process may lead to an extensive number of high to very high risks requiring funding to mitigate or fix
- Complete management and supervision of the risk management activity. This is likely to require some additional staff resources.

8.3.7 Management Risks

Risk Type	Specific Risk Description	(my) Comments	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
			Corporate image	Financial /	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Finances	Inadequate Funding		4	5		3	5	5	2	10	• Sufficient AMP process • Strong funding applications • Adequacy in rates charged • Not over invest • CPI adjustment		5	1	5		M			
	Financial Response to Disasters		3	5	4	4	5	5	3	15	• Resilient network • Property resilience	$500k	4	3	12		H			
	External economic influences			4		4	4	4	2	8	• AMP • Cash reserves	$100k	4	2	8		M			
	Consumer Costs		3	4	–	–	3	4	3	12	• Maintaining network effectively • Sound asset management • Holding levels of service with finances		2	2	4		M			
People Resources	Staff Skills/Knowledge Base		4	4			4	4	3	12	• Succession plan • Training on job • Policies / records • Processes written up	$10k	4	2	4		M			

Risk Type	Specific Risk Description	(my) Comments	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
			Corporate image	Financial / ------?-	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
	Critical Council Size	Section 17a reviews	3	4	–	–	4	4	4	16	• Multi party funding agreement • Collaboration contract (ARC) • Consultants (external) help		4	2	8		M			
	Loss of System / Institutional Knowledge		4	4	–	–	4	4	3	12	• Standard operating procedures • Off-site storage/Cloud base system • Electronic that than paper based	$300k	1	2	3		L			
	Technology		2	3	2	–	3	3	3	9	• Resources reviewed remotely • Paper copies/rept • Generator • Internal (closed base) system	$10k	1	3	3		M			
	Shortage of local contractors and consultants		3	4	–	–	4	2	4	8	• Open tenders • Collaboration • Larger contracts • Multi party funding agreement	$70k	2	3	6		M			

Risk Type	Specific Risk Description	(my) Comments	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk			Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
			Corporate image	Financial / ------?-	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk					
Politics	Lack of political alignment		4	3	–	2	4	4	3	12	• PR with council • Provide answers rather than options • Present issues and associated costs indicating 'do nothing'	$5k $20k	3	2	6	N	M			
	Inadequate Governance /Policy		4	4	4	4	3	4	2	8	• Have policies in place and operate under • Operate under governing legislation	$10k	4	1	4	N	M			
	Public Satisfaction		3	2	–	–	3	3	3	9	• Carry out public surveys • Answer/follow-up/action public complaints	$20k	2	2	4	N	M			
	Loss of public trust		5	3	2	5	5	5	1	5	• Risk management process • Governance/management		5	1	5		H			
	Loss of political trust/dysfunctional organisation		5	4	3	4	4	5	1	5	• Risk management process • Governance/management		5	1	5		H			
	Rating		4	4	–	–	3	4	3	12	• Plan in advance • Communicate with public • Advertise make people	$30k	3	3	9	N	M			

Risk Type	Specific Risk Description	(my) Comments	Consequences					Consequence Rating	Likelihood	Level of Gross Risk	Mitigation Strategy (Existing Controls)		Residual Risk								
			Corporate image	Financial	Environment	Health & Safety	Service level/ Effectiveness				Action	Costs	Consequence Rating	Likelihood Rating	Net Risk	Further Action Req?	Priority (Extreme/High/Medium/Low)	Funded?	Data Items	Reference
	Background/Influence –Bias/Elective Members		3	4	–	–	3	3	4	12	• Educate elected members • Provide supporting information • Discuss pros and cons individually	$5k	2	3	6	N	M			
	Lack of Supporting Economic Growth (Tourism)		4	4	3-4	2	4	4	3	12	• Adjust infrastructure where possible • Recognise needs • Apply for additional funding with supporting info • Get community/elected members on board • Form forward plan		4	2	6	N	M			
	In-adequate Communications Plan		3	2	1	1	3	3	3	9	• Commit sufficient resources at this risk		2	3	6	N	M			

WDC Contract Procedures Manual

The various contracts for the operation and maintenance of this activity require the contractors to provide Quality Plans for the execution of the contract requirements. The Quality Plans include procedures for work to be carried out. The risk is that the WDC and contractor's procedures are not followed.

Health and Safety

Healthy and safety risks are identified and managed using the following:

- Council has a comprehensive Health and Safety Programme for its operations.
- The various contractors involved in this activity have Health and Safety Programmes in operation. Reports are received from the contractors about any incidents relating to health and safety. Council's risk is that no inspection of work sites is undertaken by Council staff or their consultant to ensure that the requirements of the Council's and the contractors' Health and Safety Programmes are being carried out on site.
- Traffic management – Council has adopted the NZTA's Code of Practice for Temporary Traffic Management Edition 4 (COPTTM). All contractors working within district council road reserve are to use this code.

General Management Issues

General management risks include the following:

- **Contract Observation** - The various contractors are not being observed sufficiently to ensure that all aspects of the contracts are being carried out or met.
- **Legislative Compliance** - Council staff practitioners supported by their experience and training, believe that all legislative requirements that impact on this activity are being complied with.
- **Resources** - The financial provisions shown in this Plan should be sufficient to provide the service required for this activity.
- **Service Agreements** - There are no specific service agreements in place between each department to ensure everyone is aware of their roles in this activity. However, being a small Council with a small staffing level, interdepartmental discussion in relation to any facet of this activity is normal practice.
- **Ensuring Clear Council Policies** - Council's policies are held in the Policy Manual. In particular, roading policies have been incorporated into the Waimate District Consolidated Bylaw 2008. The Roading content (in particular Chapter 11) of the bylaw was written by the Roading Group.

Financial

Financial risks include the following:

Cost 'Overruns' - Council staff manage expenditure by:

- ordering work only if finance is available and approved
- reviewing expenditure monthly
- reporting exceptions

Ensuring True Costs – Costs Not 'Manipulated' - The financial forecasts that have been made in this Plan portray the true cost of this activity, given the assumptions made in making those forecasts.

Financial Assistance - for this Activity is received from NZTA in accordance with their policies. The current financial assistance rates is 64% and calculated as per NZTA formula for emergency works.

8.4 INSURANCE

There is no current insurance cover for roads or bridges within the Waimate District. There is an expectation that Council will use NZTA emergency funds and council reserves and/or loans for local share. This is a risk in itself given NZTA has indicated that emergency works will be subject to a stricter regime in the future.

8.5 EMERGENCY MANAGEMENT

8.5.1 Operational Emergency Management

Operational Emergency Risks are those associated with the day to day operation of the District, including incident response and winter maintenance. Initial response to all these events is managed through the Road Maintenance Contract, and is covered in the road maintenance contract specification. This specification covers response times, liaison, notifications, plant and personnel requirements. The snow clearance requirements ensure high risk/use areas are cleared initially with the lower priority areas then being cleared.

Where the size of an event extends beyond the capability of the Contractor (generally requires more than 6 staff to respond/manage) Council staff will take over management of the event. Where necessary Council will engage additional resources directly to manage and respond to events.

8.5.2 Lifelines Emergency Management

The Waimate District Council Disaster Resilience Summary Report was completed in 2006 by the Manager of the Canterbury Engineering Lifelines Group with support from the national Engineering Lifelines Committee. Although this is five years old, it still provides a summary of the processes for responding to a large scale emergency event. This includes personnel responsibilities and contact details for outside organisations.

Council has also participated in an Engineering Lifelines project, Earthquake Hazard Assessment, and the summary of the assessment is outlined below.

8.5.3 Earthquake Damage Assessment

Table 8.1 Damage Assessment Chart has been compiled for use in conjunction with the Waimate, Mackenzie and North Waitaki Districts Engineering Lifelines Project, Earthquake Hazard Assessment, Report to Environment Canterbury, May 2008, (Ecan Report No. U/08/18) prepared by Geotech Consulting Ltd. It should be read in conjunction with Sections 6, 7 and 8 of that report. Section 9 outlines three earthquake scenarios, and it is recommended that these also be read to provide a perspective on the contents of Table 6.8.

Chart Zones

Table 8.1 has been set out for each of the three Ground Shaking Zones as shown in Figure 6.13 of the above report. Because of the large area of the Districts, and the range of expected earthquake shaking intensities for any single earthquake event, or on a probabilistic basis, indicative damage is shown for a range of shaking intensities for each zone. The damage is indicative only and a wide variation can be expected within each zone due to variations in subsurface conditions, geology, terrain and orientation of the site with respect to the earthquake source.

Chart Limitation

The Damage Assessment Chart is an indicative guide only. This table is derived from a similar chart originally prepared for the Christchurch Engineering Lifelines Study (Risks and Realities, 1997). It is based on damage reports from historical earthquakes in New Zealand and overseas. There is little information on damage ratios for structures or infrastructure other than buildings, (this particularly applies to in ground pipework) and the relative damage is necessarily somewhat subjective. The damage to structures should be read in conjunction with the description of damage in the Modified Mercalli Intensity Scale, Appendix C of the Report. It may be used for coarse screening of effects, but must not be used as the basis for any design. Any decision involving expenditure or engineering design requires a more detailed evaluation of the conditions pertaining at that particular site.

Liquefaction

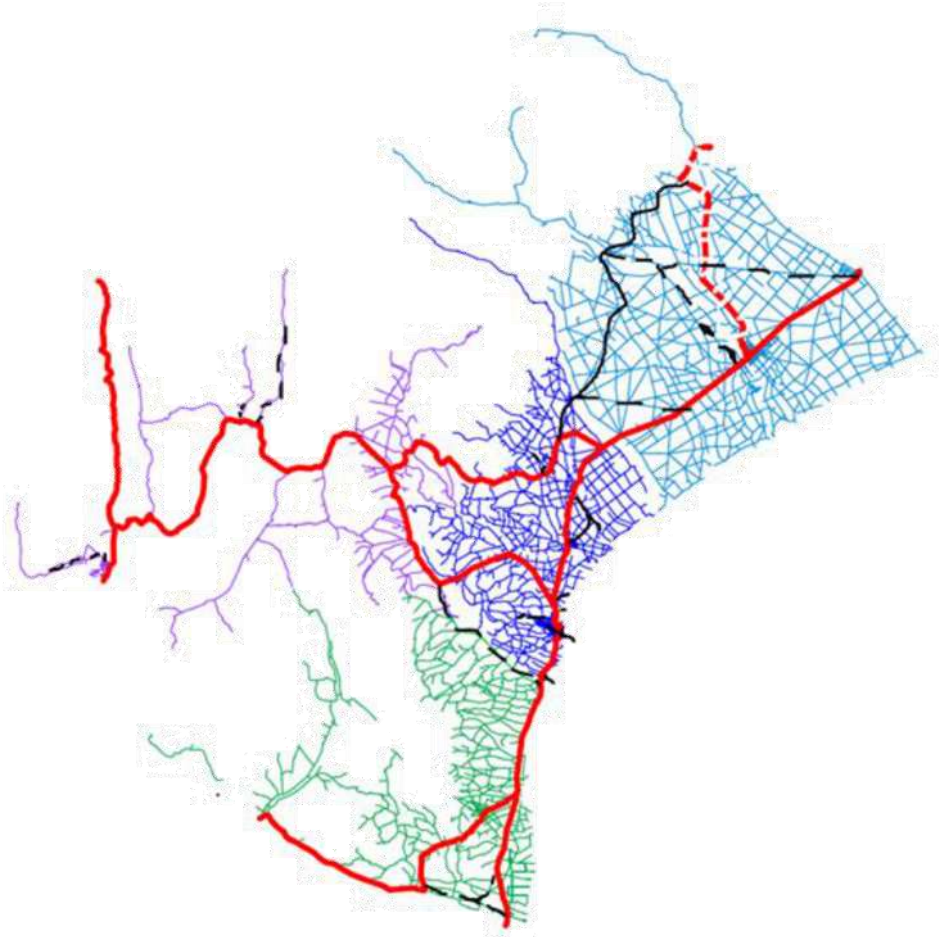
The Damage Assessment Chart does not include reference to liquefaction. Areas of significant liquefaction hazard in the Districts are limited. The majority of the areas are underlain with alluvium are older Pleistocene surfaces. Both the relatively old age and the predominantly coarse grading of this gravel make widespread liquefaction very unlikely. Liquefaction is more likely to occur within the ground shaking Zone 3 areas. If liquefaction occurs, the damage outlined in the chart could be significantly greater. For an indication of the effect of liquefaction, refer to Table 2.2, page 28 of Risks and Realities, report of the Christchurch Engineering Lifelines Group, CAE, 1997.

Table 8.1 – Damage Assessment Chart

Zone	Shaking Intensity	Roading	Railway	Bridge Structure	Bridge Abutments
1	MM VI	Little to no damage	Little to no damage	Refer section A - Structures	Little to no damage
	MM VII	Minor damage to kerbs and cracking of seal	Minor damage to alignment		Minor slumping
	MM VIII	Some damage to kerbs. Some distortion and cracking of seal.	Distortion of rail lines, some fissuring and spreading of embankments		Some slumping of abutment fill common
	MM IX	Widespread damage to kerbs, Distortion and cracking of seal, some ground fissuring. Permanent ground distortion and settlement.	Marked distortion of rail lines, both horizontal and vertical, significant embankment damage		Slumping of abutment fill at nearly all bridges, many of significant magnitude. Translational or rotational movement at some abutments.
2	MM VI	Little to no damage	Little to no damage		Little to no damage
	MM VII	Minor damage to kerbs and cracking of seal. Small slips on steep batters.	Minor damage to alignment		Minor slumping
	MM VIII	Some damage to kerbs. Some distortion and cracking of seal. Slips in batters	Distortion of rail lines, some spreading of embankments		Some slumping of abutment fill common
	MM IX	Damage to kerbs, distortion and cracking of seal, Land sliding in steep slopes and batters, cracking of ground	Distortion of rail lines, both horizontal and vertical, significant embankment damage		Slumping of abutment fill at most bridges, many of significant magnitude. Translational or rotational movement at some abutments.
3	MM VI	Little to no damage	Little to no damage		Little to no damage
	MM VII	Rock fall and small slips on steep batters.	Minor damage to alignment		Minor slumping
	MM VIII	Rock fall and slips in steep batters	Distortion of rail lines, some spreading of embankments		Some slumping of abutment fill common
	MM IX	Land sliding in steep slopes and batters, cracking of ground, large volume rock fall possible	Distortion of rail lines, both horizontal and vertical, significant embankment damage		Significant slumping of abutment fill at most bridges. Translational or rotational movement at some abutments.

8.6 CRITICAL ASSETS

Together the Aoraki Roading Collaboration have identified the critical routes for mid-south Canterbury.



These are predominantly the major state highways, supported by key resilient routes. Waimate District roads identified include:

District	RCA	Criticality level	Description
Waimate	NZTA	Critical 1	SH1
Waimate	NZTA	Critical 1	SH82
Waimate	WDC	Critical 1	Pareora River Road Pareora Gorge Road
Waimate	WDC	Critical 2	Old Ferry Road Tawai Ikawai Road Ikawai Middle Road
Waimate	WDC	Critical 2	Glenavy Tawai Road

8.7 ASSUMPTIONS AND UNCERTAINTIES

Waimate District faces a similar level of risk from natural hazards as other Canterbury local Authorities. Flooding is the most common issue and Council is well-prepared for these events. It is

assumed that Council will be able to manage the vast majority of events through normal business practices and beyond that there will be access to emergency works funding.

8.8 FUTURE IMPROVEMENTS

8.8.1 Development of Risk Management

It is important to have input from a broad range of people and organisations so that the risk register is as comprehensive as possible. Often the greatest risks arise from events that were not anticipated or considered beforehand. Initially the risk register and assessment should be created in a workshop environment from a number of stake holders including Council staff and input from other stakeholders (e.g. contractors). Once the risks have been identified these should then be analysed in the consequence / likelihood frame work to assess the validity of the scales. If the risk outcome for all identified areas of risk is too great, then the consequence and likelihood scales may need to be adjusted. At this stage a second review of the scales and reassessment of the identified risk can be completed. From this overall assessment critical risks and assets can be identified.

After rating the risks and creating the risk register, Council will need to determine which parties are in the best position to carry out risk treatment planning for each of the high and very high risks, so that the appropriate actions may be taken.

8.8.2 Cross-Asset Risk Management Process

Risk Management procedures set out in AS/NZS 4360:2004 and SNZ HB 4360:2000 are generic for a wide range of activities and organisations. The Risk Management system proposed in this Asset Management Plan is based on the assessment of Council values and goals for its road Roading network. Council will need to review the risk management process and provide feedback on the proposed risk rating criteria.

To ensure a robust and fair approach is taken with all of these assets, it is recommended that Council consider the development of a Cross-Asset Risk Management process in the future. This would then provide a greater level of assurance to Council that the prioritisation of the risks associated with its entire asset base, along the allocation of Council funds required to manage them, has been based upon an approach that is both rational and equitable.

8.8.3 On-Going Review

To ensure that emerging risks are identified and captured and that the Risk Treatment Plans are monitored for effectiveness over time, both the register and treatment plans must be reviewed on a regular basis by Council and other stake holders. The frequency for these reviews should be agreed and included in the Councils Operating Procedures.
Any significant additions or changes to the risk register will be noted as they occur through regular reporting procedures. It is recommended that the risk register should have a comprehensive update at each amp review.

9. LIFECYCLE MANAGEMENT PLANS

9.1 LIFECYCLE MANAGEMENT – AN OVERVIEW

This section of the AMP outlines what is work planned to keep the assets operating at the current levels of service defined in Section 5 while optimising lifecycle costs. The overall objective of the Life Cycle Management Plan is:

> ***To maintain performance measures to ensure that the current strategies do not consume the asset leading to an unexpected increase in maintenance/renewal expenditure in the future.***

This lifecycle management plan covers the following:

➔ **Background Data** identifying where possible:

- Physical parameters of the assets
- Current capacity and performance of the asset relative to the levels of service defined in Section 5 and demand projections of Section 6
- Current condition of assets
- Asset valuations
- Historical data

➔ **Operations and Maintenance Plan**: This covers planning for on-going day to day operation and maintenance to keep assets serviceable and prevent premature deterioration or failure. This plan includes:

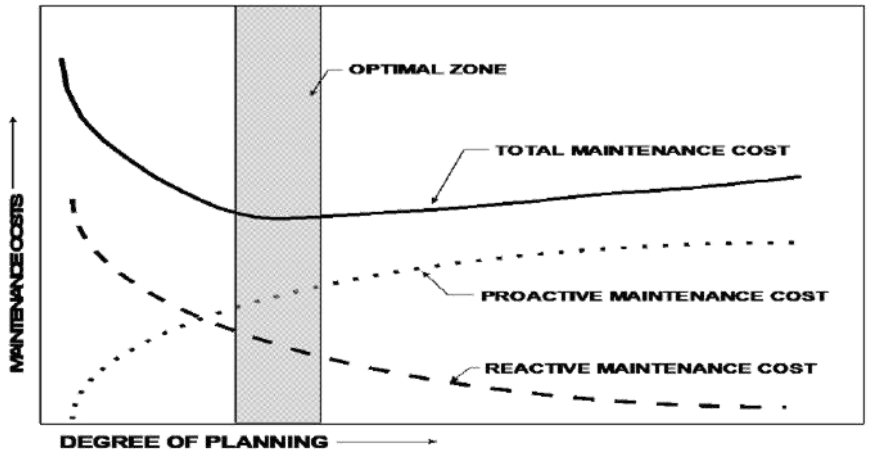
- Current trends and issues
- Maintenance decision making process
- Strategies required to meet levels of service
- How tasks are prioritised
- Summary of future costs
- Any deferred work and associated risks

Two categories of maintenance are carried out:

- Unplanned Maintenance: Reactive work carried out in response to reported problems or defects (e.g. pothole repair, dig-outs)
- Planned Maintenance: Proactive work carried out to a predetermined schedule (e.g. metalling, grading, bridge inspections).

A key element of asset management planning is determining the most cost effective blend of planned and unplanned maintenance as illustrated in Figure 9.1.

Figure 9.1 – Balancing Proactive and Reactive Maintenance



➔ **Renewal/Replacement Plan**: This covers Major work which restores an existing asset to its original capacity or its required condition (e.g. resurfacing, rehabilitation or footpath reconstruction). This plan includes:

- End of life projections
- Renewal decision making process
- Renewals strategies and methods to meet required Level of Service
- How renewals are identified, prioritised and to what standard they are replaced
- Summary of future costs

➔ **Asset Development Plan**: This section of the plan covers the creation of new assets (including those created through subdivision and other development) or works which upgrade or improve an existing asset beyond its existing capacity or performance in response to changes in usage or customer expectations (e.g. forestry harvesting routes).

➔ **Disposal Plan**: This covers activities associated with the disposal of a decommissioned asset. Assets may become surplus to requirements for any of the following reasons:

- Under utilisation
- Obsolescence
- Provision exceeds required level of service
- Uneconomic to upgrade or operate
- Policy change
- Service provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social, vandalism).

9.1.1 NZ Transport Agency Work Categories

NZTA's Work Categories (WCs) are outlined in Planning & Investment Knowledge Base https://www.pikb.co.nz/ shown in Table 9.1. These are the WCs used for all financial reporting. This Life Cycle Management Plan reports on work within these WCs. For clarity we have identified the WC numbers for the work within each section of the Life Cycle Management Plan.

Table 9.1 – NZ Transport Agency Work Category Structure

Work Category	Work Category Name
	Maintenance and Operations of Local Roads
111	Sealed pavement maintenance
112	Unsealed pavement maintenance
113	Routine drainage maintenance
114	Structures maintenance
121	Environmental maintenance
122	Traffic services maintenance
123	Operational traffic management
124	Cycle path maintenance
125	Footpath maintenance
131	Level crossing warning devices
140	Minor Events
141	Emergency reinstatement
151	Network and asset management
171	Financial grants
	Renewals of Local Roads
211	Unsealed road metalling
212	Sealed road resurfacing
213	Drainage renewals
214	Sealed Pavement rehabilitation
215	Structures component replacements
221	Environmental renewals
222	Traffic services renewals
225	Footpath Renewal
	Local Road Improvements
321	New Traffic Management Facilities
322	Replacement of bridges and other structures
323	New roads
324	Road improvements
325	Seal extension
332	Property purchase - local roads
333	Advance property purchase - local roads
341	Low cost, low risk roading improvements
351	Resilience improvements

9.2 MANAGEMENT PROGRAMME AND BACKGROUND DATA

9.2.1 Council's Procurement Strategy

Waimate District Council seeks to procure goods and services to support the community in an affordable and efficient manner. The Waimate Long Term Plan states the aspiration that *the District has top quality services at an affordable price.*

The Waimate District Council Procurement Strategy was revised in 2019.
The objectives are:

- Supporting the achievement of Council's Community Outcomes and the Waimate District Council Long Term Plan programme, through efficient and realistic procurement processes to meet Waimate District's needs
- Integration of Council's organisational goals into the procurement process
- Delivery of the agreed levels of service to the community that represent value for money
- Encouraging appropriate and equitable levels of competition across suppliers
- Ensuring procurement is fair and transparent with effective accountability measures
- Ensuring procurement is efficient and appropriate to the scale of the activity

In general, Waimate District Council will utilise the guidance provided by the NZTA Procurement Manual Procurement for activities funded through the National Land Transport Programme. However, a departure to this is where Council has varied the limit for closed contests (selected tender) to $250,000.

Within this approach Council will consider the most appropriate bundling of work for maintenance and construction (renewal and improvement) in terms of Council's objectives and the market's ability, capacity and competitiveness.
While retaining scope for in-house teams and small local suppliers along with the benefits to the local economy they can provide, Council also has a responsibility to recognise the efficiencies and benefits derived from larger and longer term maintenance and construction contracts. Competitive tendering where price and quality are evaluated will be used to select suppliers for road maintenance and capital projects.
In some cases, direct appointment may be the most effective approach and this will be considered in terms of specialisation, market competitiveness and the overall cost and efficiency to Council.

9.2.2 Method of Service Delivery

Council staff manage the roading network with some assistance from consultants. The maintenance on the network is completed through a competitively tendered multi-year contract. Other works such as resealing and large renewal projects are let as competitively priced contractors on an annual basis. The current contracts let are included in Table 9.2.

Table 9.2 – 2011 Physical Works Contracts

Contract No.	Contract Name	Length (Years)	Responsibilities	Contractor
15/1	Road Network Operations & Maintenance – ends 30 June 2021	5	▪ Sealed pavement maintenance including pre-seal repairs ▪ Unsealed pavement grading & metalling ▪ Vegetation control ▪ Traffic services maintenance ▪ Pavement Marking ▪ Drainage maintenance ▪ Footpath maintenance ▪ Minor Pavement rehabilitation ▪ Street cleaning ▪ Routine Bridge Maintenance	Whitestone Contracting Ltd
	Timaru, Waimate & Mackenzie Road Resurfacing 2019-21	2	All resurfacing (chip seals)	Fulton Hogan Ltd
	Street Lighting Maintenance	Annual	All lighting maintenance	Netcon - negotiated
	Major Seal Pavement Rehabilitation /	Annual	Rehabilitation sealed roads d	Tendered
	Major Drainage	Annual	Major K&C renewals	Direct appointment or tendered depending on size & value
	Improvement Works	Annual	▪ Minor Improvements	Direct appointment or tendered depending on size & value

Other Works

There are a number of other outputs that are carried out on the roading network each year that are not listed above. They are outputs that have a variable quantum each year but still form an essential part of the maintenance regime. They are outputs such as:

- Major bridge works
- River control works at bridges
- Seal extensions

Roading Network Operations and Maintenance Contract 2015-20

Ashburton, Timaru, Waimate and Mackenzie District Councils jointly prepared a Road Network Operations and Maintenance Contracts as part of the roading collaboration. The contracts were tendered concurrently as four individual contracts. The Conditions of Tendering allowed for contractors to submit conditional tenders which would enable them to factor any scale related savings and efficiencies with combinations of tenders.

Waimate DC and Mackenzie DC agreed accept the Conditional Tender of Whitestone Contracting Ltd which offered a discount price if they were awarded both contacts

Network Operations and Maintenance Contracts Renewal

Timaru, Waimate and Mackenzie District Councils have extended the contract period to 30 June 2021.

Ashburton District Council has not extended their contract. They has let their own contract are with work to start on 1 December 2020.
Timaru, Waimate and Mackenzie District Councils Timaru are jointly preparing a new Road Network Operations and Maintenance Contracts as part of the roading collaboration.

Collaborative Contract for Road Resurfacing
Two collaborative contracts for the road resurfacing in the Waimate, Timaru and Mackenzie Districts has been awarded, Downer NZ Ltd. (Dunedin) for a two-year period 2015-17 and Fulton Hogan Ltd for a two-year period 2017-19. New contracts are scheduled to be let in 2021.
The result of the collaboration between ARC Councils has provided a range of benefits. To continue to access these benefits WDC is working towards having common contract documentation with Mackenzie and Timaru District Councils.

9.2.3 Forward Works Programme

Information obtained from network inspections, RAMM condition rating, RAMM roughness surveys, and maintenance inputs are used to develop forward works programmes for the pavement asset. Specific details of individual component FWPs is as follows:

Reseals – Intervention is primarily based on age, condition and maintenance history. RAMM data is used to develop an inspection list, which is then used as the basis for a detailed inspection once a year of aged seals. A detailed rolling three-year programme has been developed for Years 1, 2, and 3. Future work requirements beyond this period are based on historical need.

Unsealed Road Metalling – This is generally treated as a maintenance operation. The FWP is based on historical quantities and inspection, which have used set spread rates.

Bridges - A Bridge Replacement and Upgrade Strategy has been developed. The priority of this work is indicated (see 9.12.5 Bridge Structures Component Replacement /Renewals Strategy)

Drainage Assets – Council has assessed condition of all culverts on the roading network, verifying RAMM data and estimating construction dates and condition of culvert itself. This information is being used to form a replacement programme.

Other asset groups do not have formal FWPs recorded for use in programming future works.

9.2.4 Asset Valuation

A valuation is undertaken every three years in order to assess the value of the network, the depreciated value and the annual depreciation. Details on Asset Valuation and Depreciation are held in Section 10 Financial Summary.

9.2.5 Historical Data

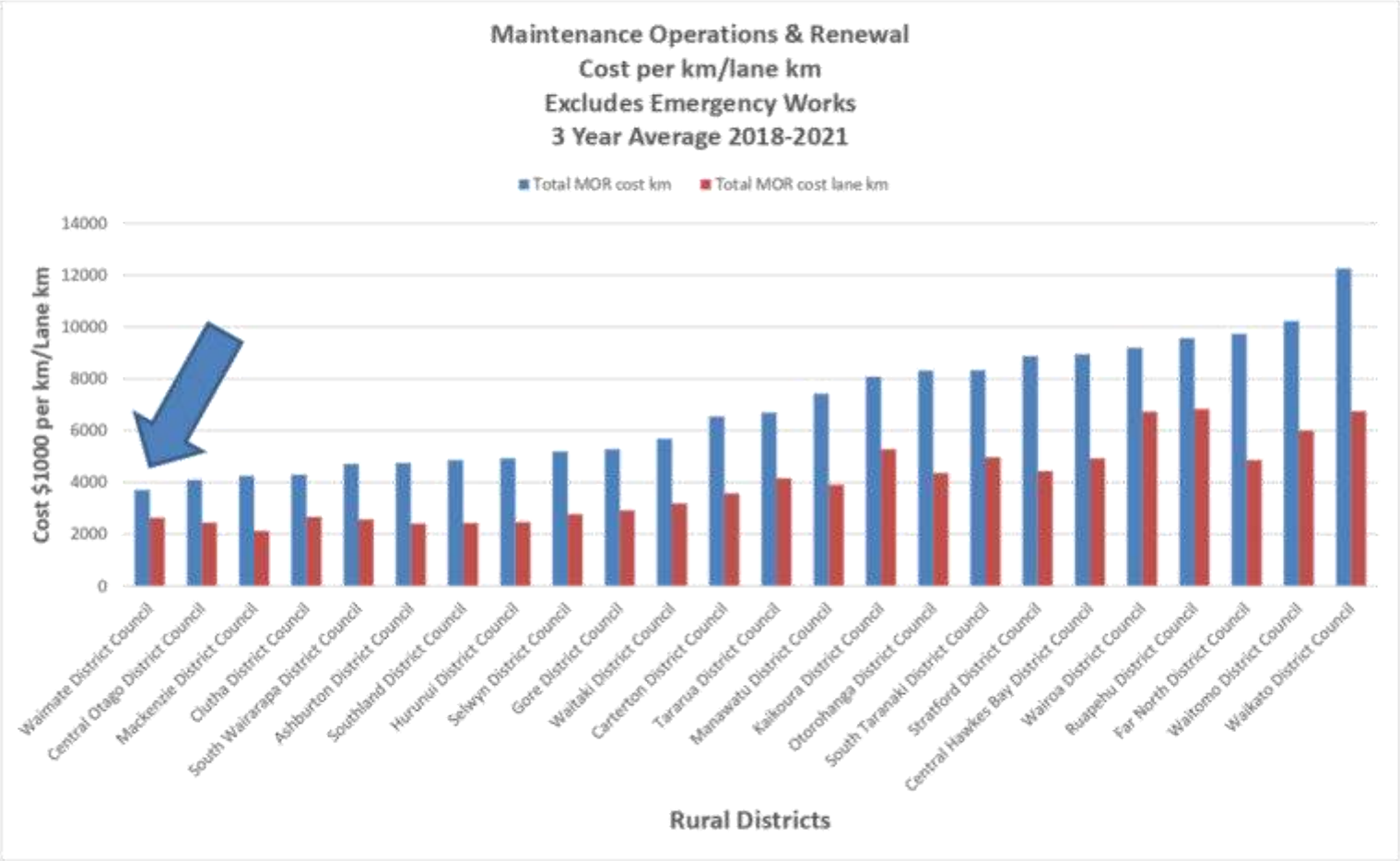
Network Condition
Historical data is used to make an assessment of past performance and to see if future trends can be applied. At a network level, these trends can indicate if the condition of the network is deteriorating or improving. The different forms of historical data and their location are outlined in Table 9.3.

Table 9.3 – Historical Data

Type	Location	Comment
Roughness	RAMM	Survey every 2 years from 1990
Sealed Rating Data	RAMM	visual condition rating
Carriageway surfacing data	RAMM	Holds surfacing history for all roads.
Past Maintenance Costs	Roading Office	Record of maintenance quantity's for 20 years
Present Maintenance Costs	RAMM contractor	Maintains location, quantity, cost, fault activity and cost group. 11 year data
As Built Drawings	Roading Office	Road project and Bridge Plans
Pavement Structure	RAMM	Holds pavement history for all roads.

Historic expenditure summaries have been produced by NZTA. The most useful comparisons are made with other areas or authorities with similar characteristics, rather than with the whole country. The data for WDC is compared with a peer group of similar council authorities.

Figure 9.4: Maintenance Operations & Renewal Costs by Peer Group



Safety Standards

State Highway
There were 13 deaths, 34 serious injuries, and 78* minor injury crashes over the past five financial years at a social cost of over $70 million.

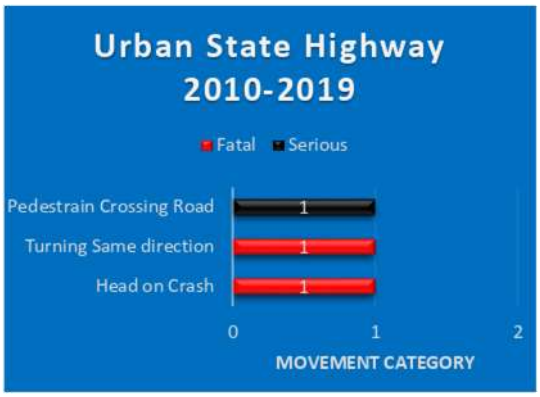
Local road crashes:
There were 3 deaths, 11 serious injuries, and 20* minor injury crashes over the past five financial years at a social cost of over $21 million.

South Canterbury Road safety strategy and Action Plan
See Appendices 13.2

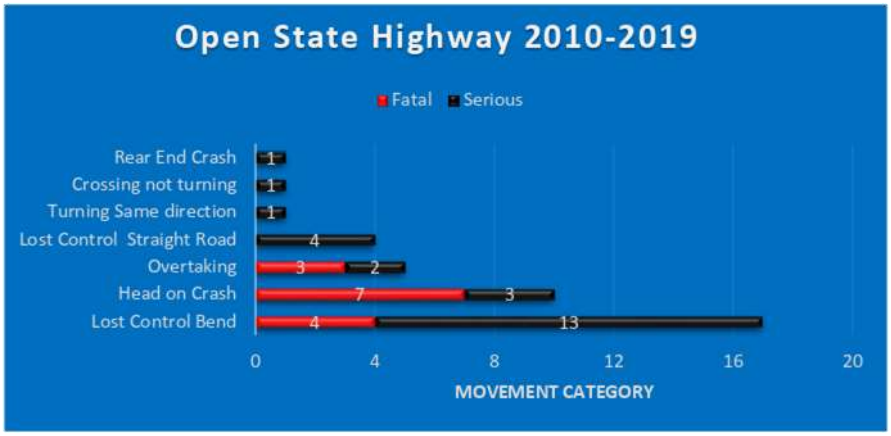
Council's involvement in Road Safety and the national Road to Zero programme involves ongoing maintenance of the road network in appropriate condition, small improvement projects (NZTA low cost, low risk roading improvements category) and the combined Road Safety Education programme with Timaru and Mackenzie District Council.

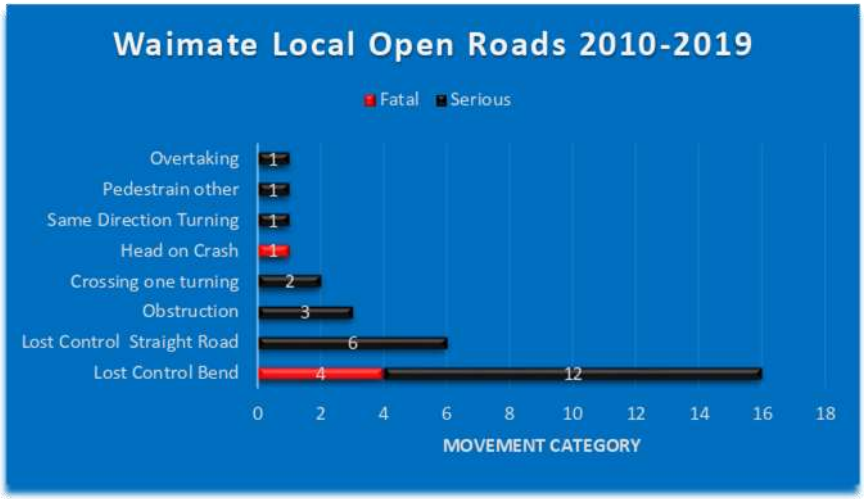
The Council will also meet and coordinate operations with other Councils, agencies and the private sector {e.g. NZTA, Police, NZTA, South Canterbury Road Safety Liaising Group) to improve road safety out comes.

Figure 9.5 – Crash types in Waimate District









9.3 OPERATIONS AND MAINTENANCE PLAN

9.3.1 In Perpetuity Maintenance

This Maintenance and Operations Plan sets the level of work that needs to be carried out for "in perpetuity" maintenance. "In perpetuity" maintenance is defined as maintenance, which is of such a nature that it does not allow the physical deterioration of the road. Hence the condition of the road is maintained. It does not consider changes in service requirements (e.g. increase in or decrease in traffic, enhanced safety standards, consent requirements etc.). These other factors may require capital works to create a higher service level asset. In effect, "in perpetuity" maintenance incorporates incremental and sustained asset **renewal** into the maintenance function and therefore will indefinitely provide the **current levels of service.**

Yearly, the monetary value of work carried out will be affected by the following:

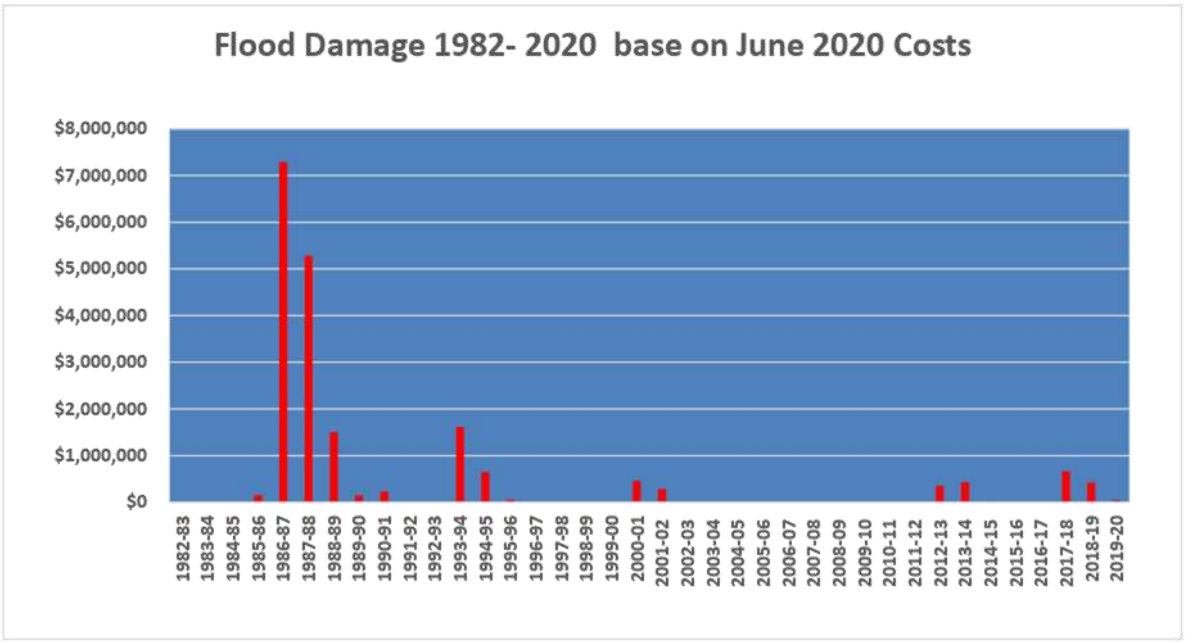
- Actual contract prices received for the work specified

- The scheduled length of resealing for the next year. As Council's proactive maintenance strategy is to attend to all pavement maintenance in reseal sites the year prior.
- The effect of deferred resurfacing work from previous years, therefore deferred maintenance

Therefore, each year the expenditure for the same volume of work may differ. An annual reconciliation of physical work done against the in perpetuity level of work will indicate either deferred maintenance is being accrued, or improvements are being made to the network. The cost of these variations can then be determined and used in Council's balance sheet.

9.3.2 Storms and Other Events

The level of maintenance described in this Maintenance Plan is adequate for normal climatic events in Waimate District. The remedial works required after emergency events will be assessed at the time, and the funding for repairs will be met from adverse events funds and catastrophic events funds held by Council, combined with subsidy money from NZTA.



9.4 RENEWAL/REPLACEMENT PLAN

Renewal expenditure is major work, which does not increase the assets design capacity but restores, rehabilitates, or renews an existing asset to its original capacity.

The activity and work category requirements included in this renewal/replacement plan are as shown in Table 9.1.

Renewals may be impacted by other stakeholders wanting to utilise the roading corridor, particularly Council water and wastewater assets and other utilities buried in road reserve. The Roading group need to collaborate with other stakeholders to ensure that the timing of all works is optimum and presents the lowest cost option to ratepayers.

9.4.1 Storms and Other Events

The level of renewals described in this Renewal/Replacement Plan is adequate for normal climatic events in Waimate District. The remedial works required after emergency events will be assessed at the time, and the funding for repairs will be met from adverse events funds and catastrophic events funds held by Council, combined with subsidy money from NZTA.

9.4.2 Base Asset Lives

As outlined in Section 4 Description of the Asset better optimisation of the asset lifecycle can be achieved by improving knowledge of the current age and remaining life of all assets. As this is currently not well understood, the base asset lives used in the 30 June 2020 Valuation detailed in Table 9.7 have been used throughout the renewal/replacement plan.

Table 9.4 – Base asset lives from Roading Infrastructure Valuation (30 June 2020)

Asset	Base Life (years)	Comment on Actual Life
First coat seals	5	Dependent on seal type
Second coat/reseals	12-18	Dependent on seal type
Pavement Unsealed	35	Highly trafficked roads may have significantly lower life
Pavement Sealed	100	
Bridges	70-100	
Large Culvert Bridges	100	Some existing steel Armco culverts are 50 year old and in good condition
Drain Fords	40	
Drainage (steel, concrete culverts)	20-100	Helcor steel pipes have significantly lower life.
SWC (Earth, concrete)	50-80	
Signs (including posts)	14-30	Many will achieve less life due to damage out of Council's control
Footpaths	25-50	Dependent on surfacing type
Traffic Facilities (including street lighting)	15-50	

9.5 SEALED ROADS (WC111)

9.5.1 Current Trends and Issues

Scope and Nature of Asset

The purpose of a sealed road is:
To provide a paved network suitable for the efficient movement of vehicles and people, with an all-weather surface appropriate to its location and function in terms of skid resistance, noise reduction and smoothness, and that has a structure suitable for legal traffic loading requirements.

Only 640 km or 48% of the districts roads are sealed – 48 km of urban roads and 598 km of rural roads.

The key issues relating to the sealed pavements are:

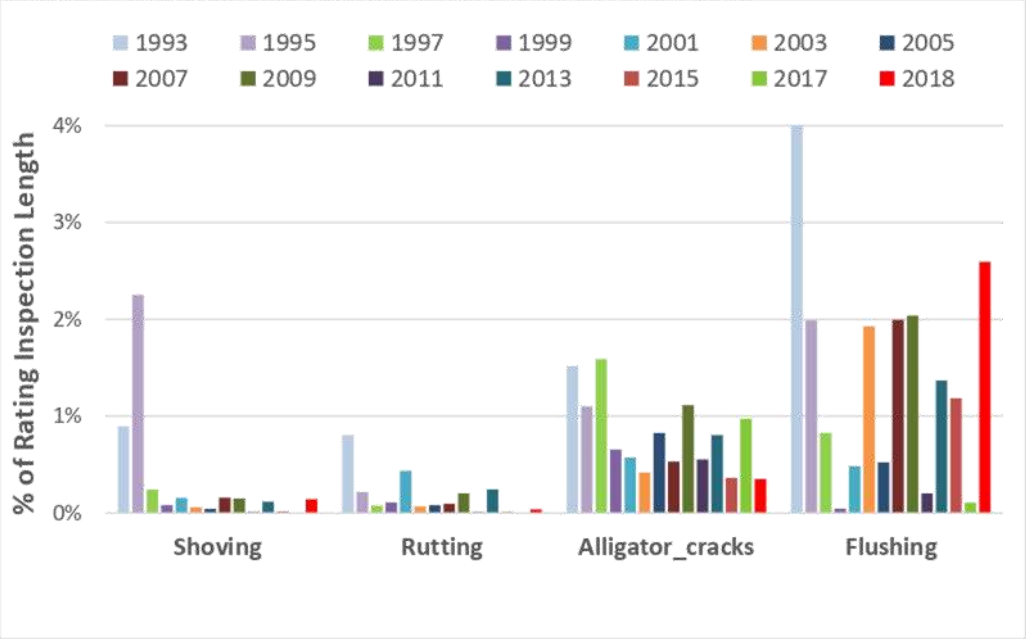
- Setting Levels of Service that align financial restrictions with road user expectation
- Optimising the use of limited funds to maintain the condition of the asset
- Deterioration of sealed pavements due to use by Agricultural industry including machines on road, stock on road etc.
- Ageing pavements

Current Condition

Many of the District's roads evolved from tracks to unsealed roads that were constructed to absolute minimum standards in terms of pavement strength, width and drainage facilities. As traffic volumes increased individual roads were widened, extra metal added as considered appropriate and then sealed. Construction consisted of river run gravel subbase under a thin layer of crushed aggregate basecourse with a single coat chip seal surface. The metal courses were often laid over silty clay subgrade of unknown bearing capacity with little or no consideration given to whole of life strength requirements needed to satisfactorily carry the expected traffic loads over the roads expected life. It has only been since the 1970's that pavements have been designed to carry expected traffic loading over a projected 25-year design life.The condition of this sealed road network is currently monitored by:

- Regular routine inspections by Council and contractor personnel with any defects found included in the proposed programme of works to be undertaken by the maintenance contractor. The number and location of defects are logged to provide a measure of conformance with key performance measures required within the contract
- A formal bi-annual road condition rating survey. The information from this survey is recorded in RAMM and used to:
    - Assist with the development of a forward reseal and reconstruction work programme
    - Provide surface and pavement condition data for the "Treatment Selection Algorithm" in RAMM
    - Calculate surface condition indices that provide a measure of the performance of the sealed surface
- Bi-annual roughness surveys of the sealed network to ascertain the current condition and provide a measure of performance against the required levels of service
- Annual maintenance costs per kilometre for work types are calculated from the costs recorded within the maintenance contract and the trends used to establish relative network surface condition
- The safety of the network is gauged by recording accident information, analysing accident trends and the statistical data produced in the NZTA "Road Safety Issues" reports

Figure 9.6 – Historical Visual Condition Rating Data for Sealed Roads



Overall trends for the last five rating years are noted below:

- The rates per kilometre for shoving and flushing have increased in 2019 compared to the previous 4 rating years, this increase is more prominent in flushing.
- Compared to 2017, results show that in general the road condition has improved. There were increases in average rates per kilometre in five out of the eleven faults types with flushing having the most significant increase.

Reviewing individual faults:

- Alligator cracking showed a large improvement compared to 2017. Alligator cracking is generally load related and often results from insufficient road strength. The reduction in alligator cracking may be due to resurfacing and rehabilitation works being completed, and/or efficient maintenance programming.
- Longitudinal and transverse cracking improved by a small amount since 2017 which is in contrast to the historic steady increase from 2011 to 2015. Joint cracking isn't very substantial however it has improved since 2017. These faults are often caused by poor service trench reinstatement or poor construction. Transverse cracking is typically due to thermal factors or reflection of older cracks. These types of faults may not be load related.
- Flushing increased significantly since 2017. Some of the contributing factors to flushing are aggregate abrasion and breakdown, compaction and reorientation of the seal layer under traffic, binder to stone ratio affecting layer instability, and water venting and sub-surface stripping in seal layers. Other factors include thermal expansion of bitumen, excess bitumen application and binder viscosity.
- Scabbing increased in 2019. This fault may occur if there is not enough binder, or if the binder does not adhere to the chip due to poor material or

construction practices. Chip loss can also occur on older surfacing when the binder oxidises or becomes hard and loses its grip on the chips.

Cracking

Alligator cracking is the primary driver for surface renewal in the NZ IDS dTIMS template. Figure 9.7 shows the alligator and L&T cracking separately and combined. Both alligator and L&T cracking have been up and down over the past 5 surveys. These types of cracks could be mistaken for each other, and some cracking that starts out as L&T can later turn into alligator type cracks. Looking at the two combined, the quantities have been steady from 2011 to 2017. There is a considerable improvement in 2019

Figure 9.7 - Visual Condition Rating - Cracking Data

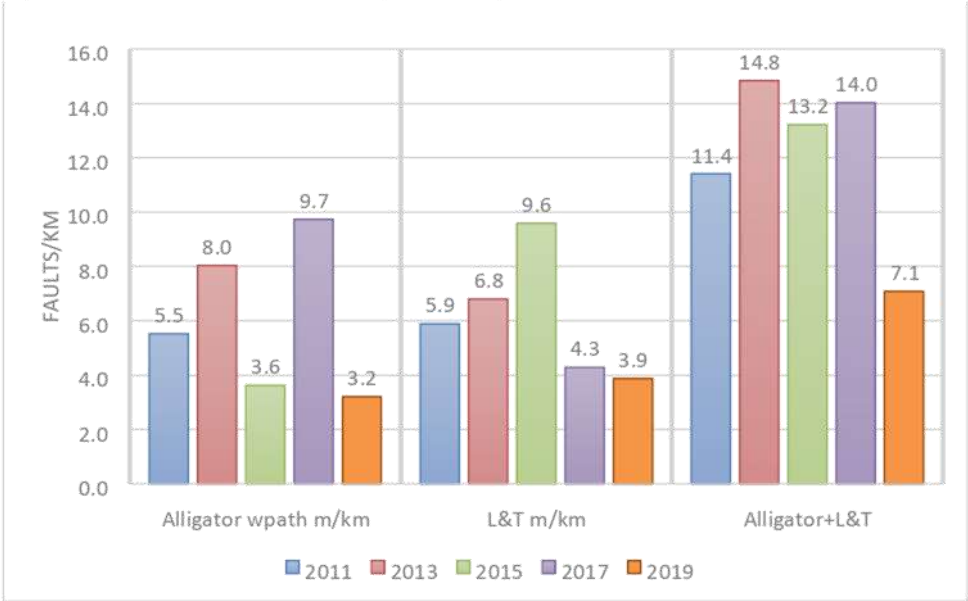


Figure 9.8 - Visual Condition - Rutting and Shoving Data

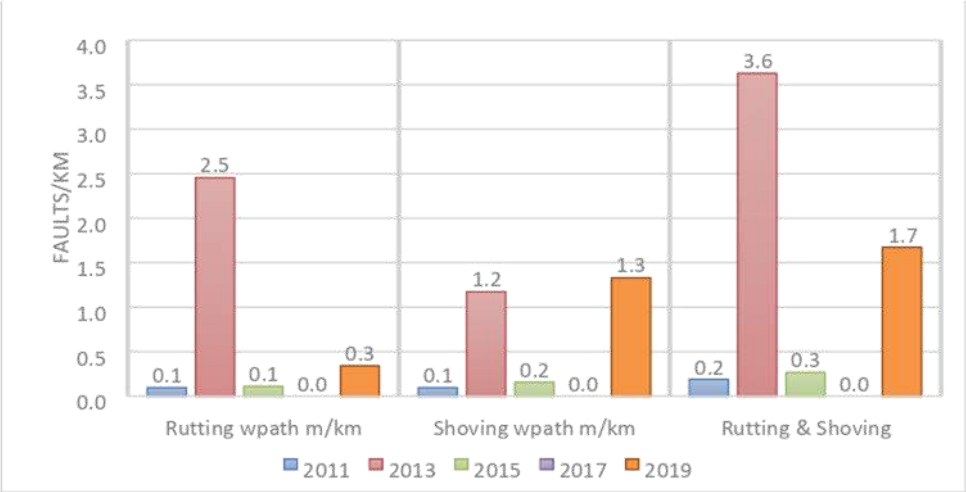


Figure 9.8 shows that rutting on the network appears to be minimal, with the 2013 survey showing an exception. Shoving is another measure of pavement failure which can sometimes be mistaken for rutting. Where shoving is recorded, no other faults are. Shoving also has a high quantity in 2013. Both faults have increased in 2019.

Figure 9.7 – Roughness Distribution by Length

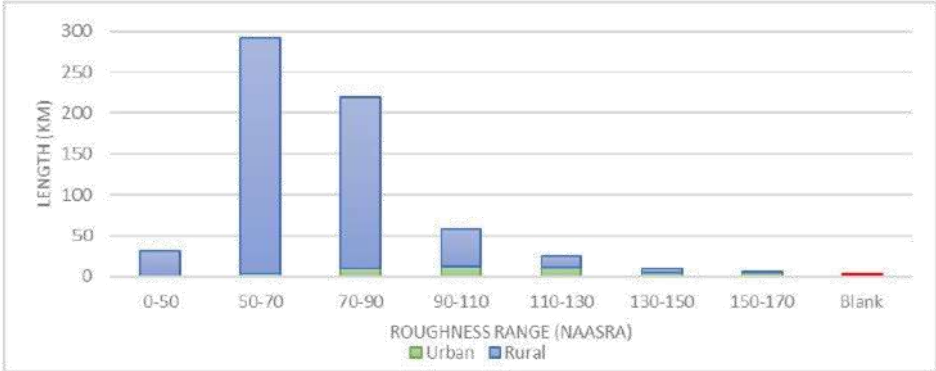


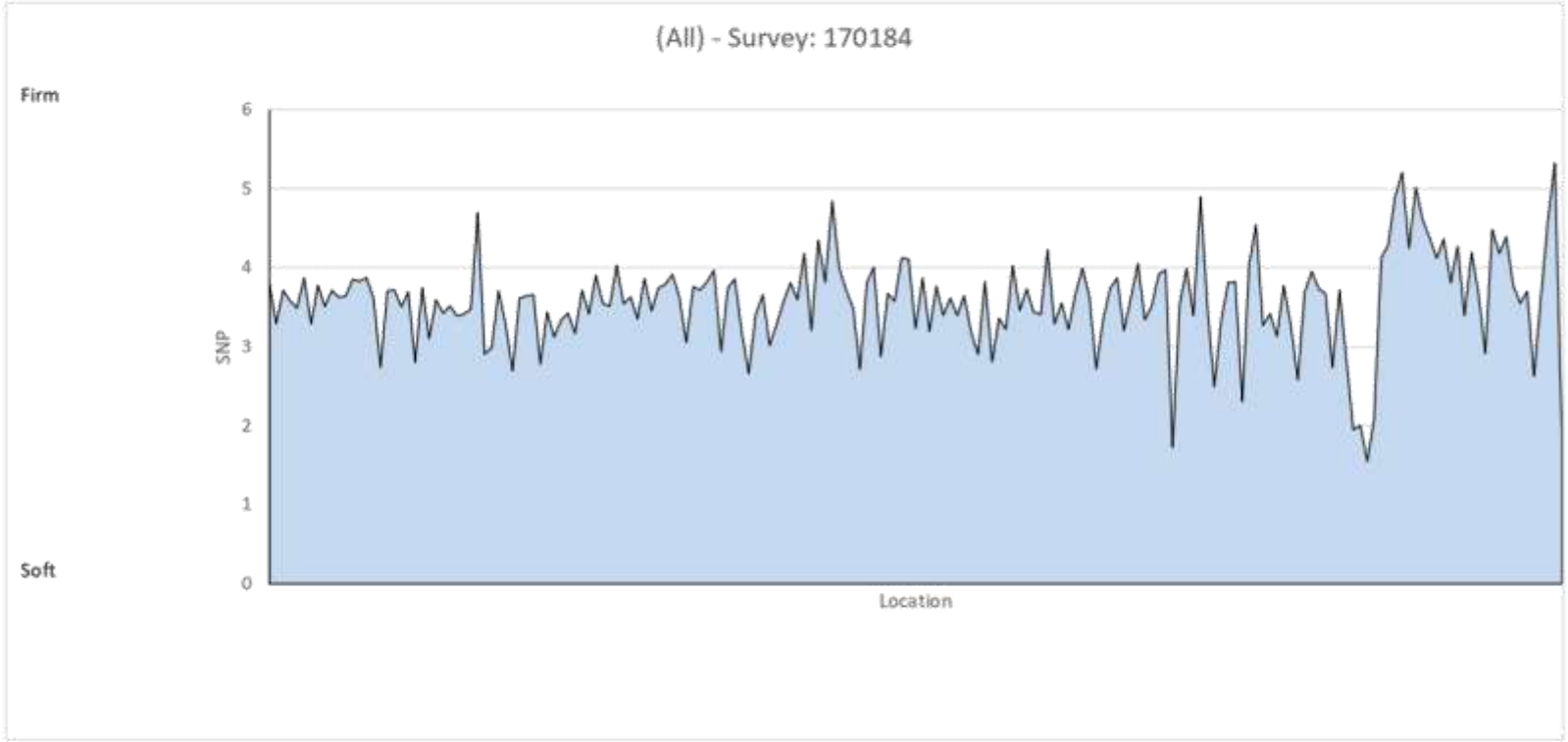
Figure 9.7 shows the distribution of roughness across the network. The network generally shows low roughness, with 50% of the length having a NAASRA less than 70



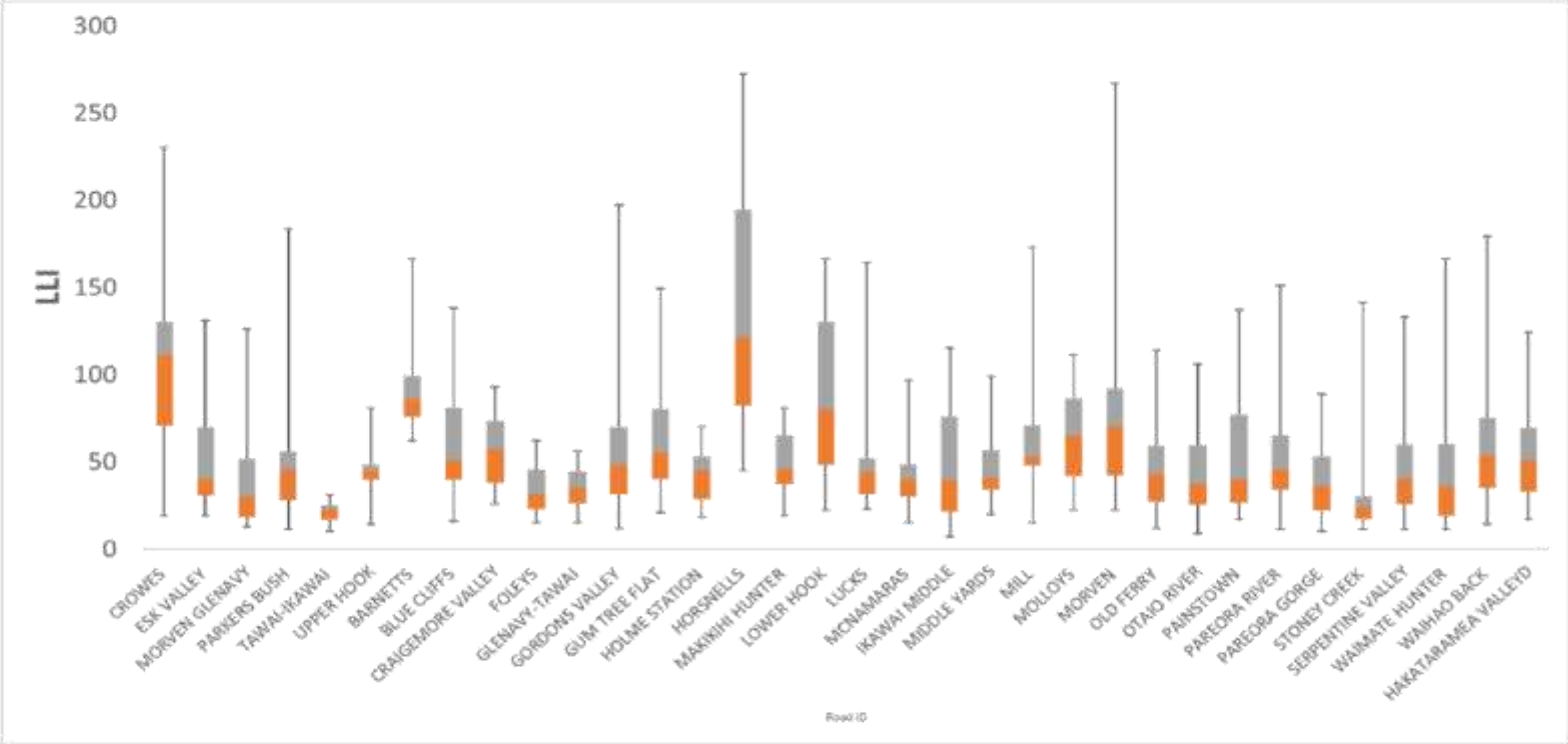
In 2017 WDC undertook a Falling Weight Reflectometer survey across key rotes to ascertain the pavement strength and identify where there may be pavement risk should there be a change in demand or ground conditions. The lower layer index (LLI) indicates areas where stronger pavements may be needed or where attention should be given towards drainage provision.

The following graphs illustrate the SNP of the roads surveyed and the lifecycle strategy that will involve protecting vulnerable routes and rehabilitating those where the SNP indicates resurfacing will not maintain the requires level of service.

Pavement Strength – Composite of all roads surveyed (2017)



Lower Layer Index


300
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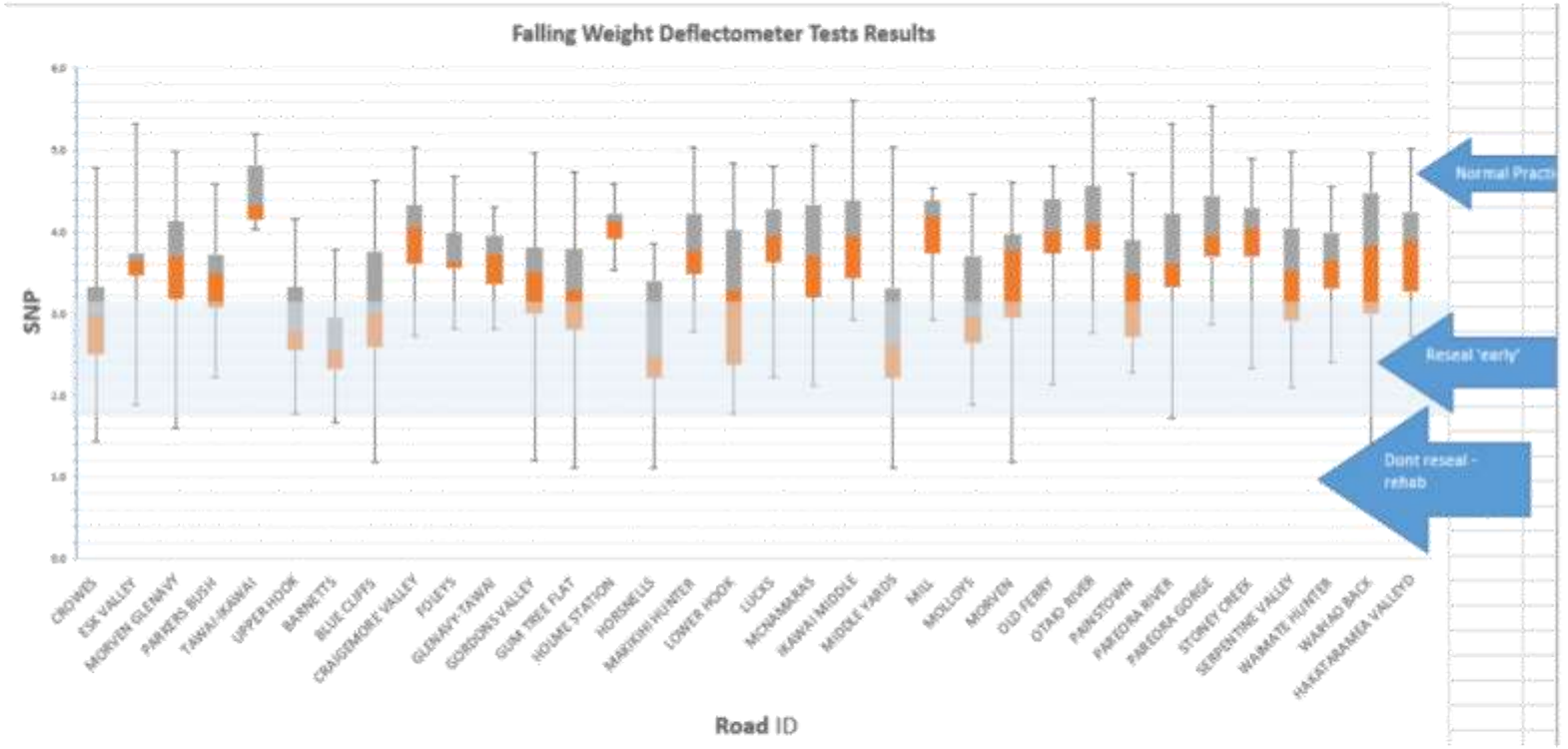
LLI
CROWES
ESK VALLEY
MORVEN GLENAVY
PARKERS BUSH
TAWAI-IKAWAI
UPPER HOOK
BARNETTS
BLUE CLIFFS
CRAIGMORE VALLEY
FOLEYS
GLENAVY-TAWAI
GORDONS VALLEY
GUM TREE FLAT
HOLME STATION
HORSNELLS
MAKIKIHI HUNTER
LOWER HOOK
LUCKS
MCNAMARAS
IKAWAI MIDDLE
MIDDLE YARDS
MILL
MOLLOYS
MORVEN
OLD FERRY
OTAIO RIVER
PAINSTOWN
PAREORA RIVER
PAREORA GORGE
STONEY CREEK
SERPENTINE VALLEY
WAIMATE HUNTER
WAIHAO BACK
HAKATARAMEA VALLEY
Road ID

Falling Weight Deflectometer Tests Results



Current Capacity and Performance

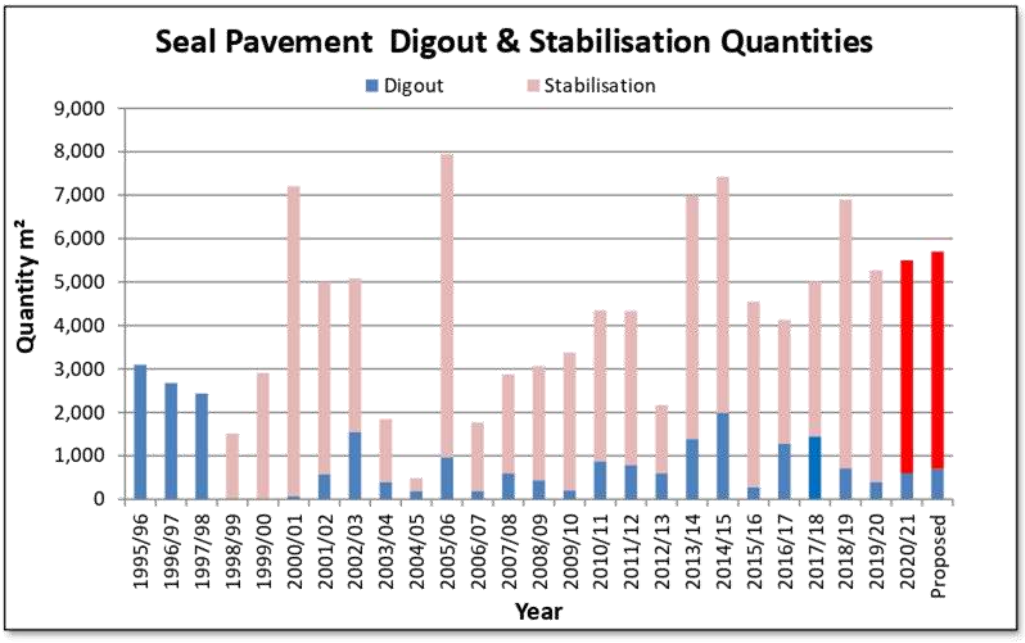
The assets capacity and performance is a measure of its ability to meet its design standard, agreed levels of service and any perceived future demand that may be placed on the asset.

As the levels of service are currently being developed there is limited information to show whether or not the current asset is providing sufficient capacity and performance.

Historic Maintenance Data

Historic repair quantities and costs have been accurately tracked and recorded over a period of 21 years. Figure 9.8 shows the trends in Pavement Digout and Stabilisation repair quantities for the last 22 years. This average quantity over 22 years is 3873 m², over the last five years the average is 5050 m². The Estimated ongoing annual Pavement Digout and Stabilisation repair quantity is 5000m².

Figure 9.8 – Historic Repair Quantities



Historic Maintenance Costs

Over the years 2015/18 the average expenditure has been $475,500 for sealed pavement maintenance (WC111). This expenditure has increased to an indicative average budget of $574,000 for the period 2021/24 reflecting current costs and network maintenance trends.

9.5.2 Maintenance Decision Making Process

Current practice is to apply a combination of "reactive" condition driven and network lifecycle depreciation techniques to determine the work necessary to maintain the network within pre-determined financial constraints (see chart Appendix VII). These methods rely heavily on:

- The Roading Manager's knowledge of the network
- annual or biennial inspections to obtain the condition data as included in RAMM
- accurate base inventory
- life and cost information of each asset component

9.5.3 Strategy to Meet Levels of Service

The maintenance standards to be achieved and response times required are set out in WDC specifications contained in the road maintenance contract. These standards will need to be reviewed in light of the new Levels of Service outlined NZTA ONRC.

Pre Seal - Maintenance work is carried out to a high level to ensure all pavement and drainage repairs are done before the reseal.

Holding - A minimum amount of work is undertaken for the one to two years preceding a rehabilitation.

Normal/General Maintenance - Network locations are inspected at regular intervals, defects identified; treatment selections agreed, prioritised and scheduled to fit within the budgets allocated.

Reseal - Road section is to be resealed. Pre seal repairs completed in the prior year/season if possible. Programme based on the age and condition of the seal coat

Rehabilitation - Road section is to be reconstructed. Holding strategy in place in prior years. Programme developed based on the condition of the pavement and maintenance costs.

9.5.4 How Tasks Are Prioritised

The Contractor is required to use RAMM Contractor software, for contract management tasks such as entering jobs, creating work programmes, prioritising work, entering claims, producing reports, monitoring job progress and recording maintenance cost etc. Programmes of work are submitted by the Contractor in priority order for approval by Council roading staff

The mechanism for prioritisation used by Contractors as outlined in the road maintenance contract specification is outlined in Table 9.6.

Table 9.5 – Prioritisation of Maintenance Tasks

Priority	Description
Priority 1: Urgent Maintenance	Immediate action to ensure the safety and integrity of the road network. Upon notification of a hazard the Contractor shall immediately inspect and make safe the site until permanent repair is affected.
Priority 2: Essential Maintenance	Must be completed to ensure the safety and integrity of the road network. (Generally completed within one month)
Priority 3: Less Essential Maintenance	May be delayed without unduly compromising the safety and integrity of the road network or inconveniencing road users. (Generally programmed and completed within 3 months)
Priority 4: Desirable Maintenance Works	Less urgent to be completed for the safety and integrity of the network but will potentially enhance the road environment, improve safety and the integrity of the road network.

9.5.5 Summary of Future Costs

Over the last three years, the maintenance budget has increased annually with the resulting condition showing some deterioration. This indicates that in order to keep the network at the same condition level, future maintenance cost increases will be required. However, further work would be required to analyse maintenance costs requirements at a detailed level, to ensure that maintenance works remain as efficient and effective as possible.

Future costs have been based on historic quantities and rates for sealed pavement maintenance items completed under the Road Network Maintenance contract. Pre-reseal repair quantities and costs have also been estimated and included within the future funding requests.

9.5.6 Deferred Maintenance and Associated Risks

The current level of investment is considered adequate to maintain the current condition of the roading assets and so long as this is sustainable then the risk of any future accumulation of deferred maintenance is considered to be low.

111 Seal Pavement Maintenance	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Sealed Road - Potholes	12	$633.36	$7,600				
Stabilisation	5000	$41.25	$206,248				
Digouts	800	$70.84	$56,673				
Digouts Additional Depth below 400 mm (solid)	50	$73.31	$3,665				
Geotextile	500	$3.88	$1,939				
Subsoil Drainage	100	$31.25	$3,125				
Premix Reshaping	500	$37.76	$18,879				
Rip and Remake	1000	$32.33	$32,332				
Single coat Chipseal <200 m2	500	$18.39	$9,194				
Single coat Chipseal >200 m2	1000	$11.54	$11,536				
Double coat Chipseal <200 m2	1500	$19.88	$29,818				
Double coat Chipseal >200 m2	1500	$8.54	$12,812				
Edge Break Repair m	2000	$7.15	$14,299				
Raise Low Shoulder m	3500	$3.99	$13,962				
Grade and Compact Shoulders km	10	$44.20	$442				
Localised Seal Widening	300	$61.68	$18,504				
Excavation and backfill below 100mm (solid)	50	$108.06	$5,403				
Priced & Day Work	$30,000	1.00	$30,000				
Share of Monthly Costs inspection Programming Etc.	0.25	$297,216.67	$74,304				
Administration	0.12	$90,000.00	$10,800				
111 Seal Pavement Maintenance Total			$561,537	**$561,537**	**$578,945**	**$596,352**	**$1,736,834**
	Pre-seal Repairs			**$155,504**	**$160,325**	**$165,145**	**$480,974**
	Other Seal Repairs			**$406,033**	**$418,620**	**$431,207**	**$1,255,860**

9.6 SEALED ROADS RENEWAL/REPLACEMENT PLAN (WC 212 & 214)

Renewals include resurfacing, smoothing and pavement rehabilitation.

9.6.1 End of Life Projections surfacing

Figure 9.9 shows the amount of renewal activity achieved since 1971.

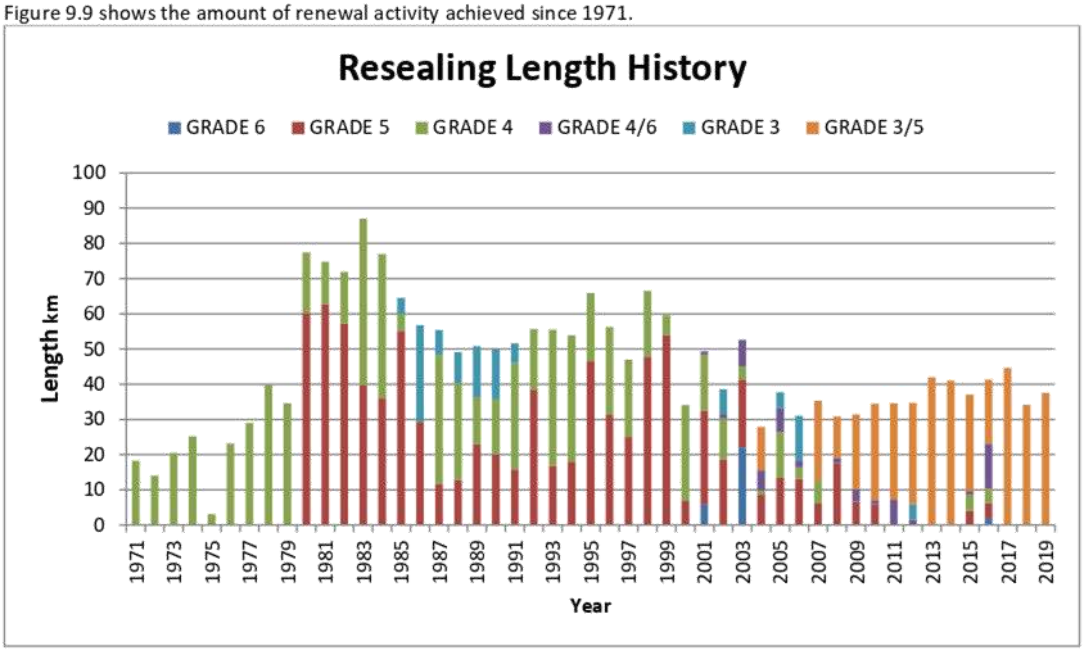


Figure 9.10 shows the amount of renewal life activity achieved since 1971.

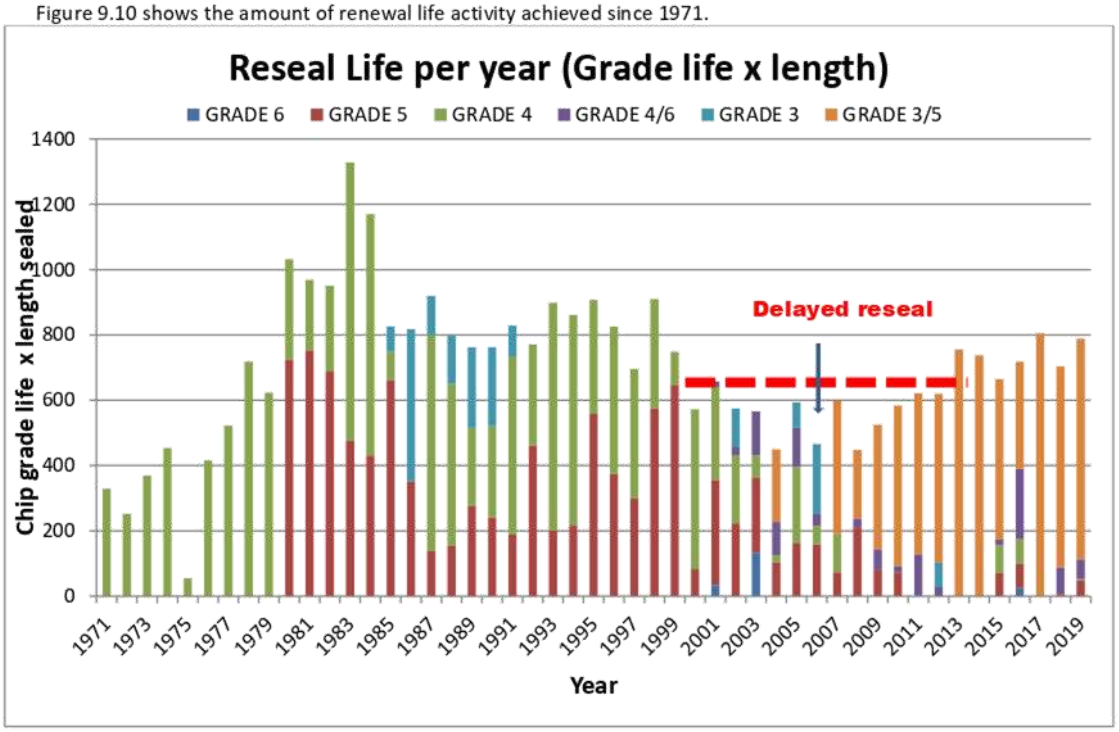


Figure 9.12 seal length over expected life

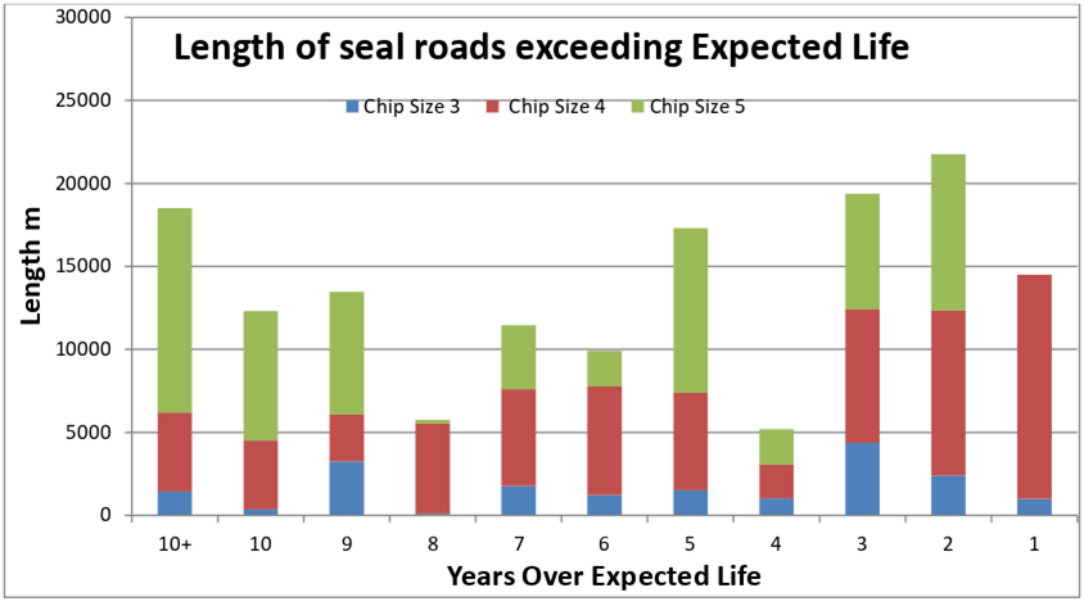
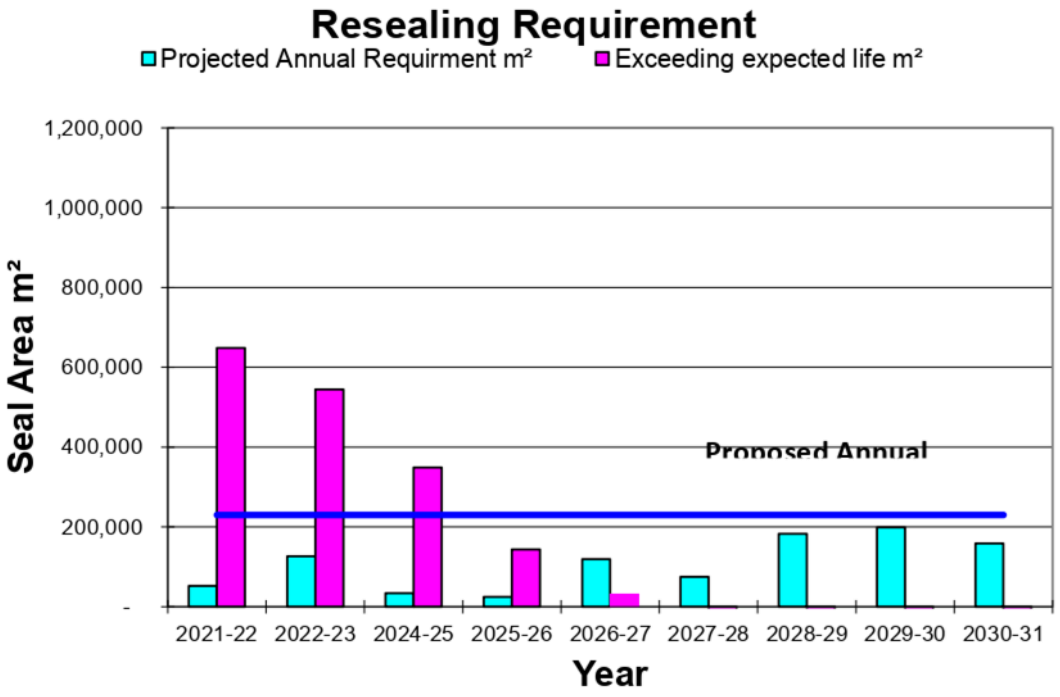


Figure 9.11 Resealing requirement to remove backlog



Resurfacing

Resealing is undertaken periodically to retain the waterproofing qualities of the sealed surface and provide good skid resistance. The type of surfacing used is determined using the NZTA 'Bituminous Sealing Manual' and is dependent on-site specific factors such as the existing surface texture, surface defects, traffic stresses and traffic volumes. The types of surfacing commonly used include single and two-coat chip seals.

An annual programme of resealing is developed using seal age data and the results of field inspections to identify surface defects such as potholes, cracking, scabbing and flushing. The programme also includes second coat seals which are normally undertaken within 5 years of a First Coat Seal which are never entirely waterproof.

The average resurfacing achieved over the 10-year timeframe is 36km with the last 5 years averaging 39km. Based on the expected life as shown and a sealed pavement length of 640, a target average annual reseal length of at least 36 km of grade 3/5 chip could be regarded as the average annual need. Actual resurfacing over the last 10 years has been lower than this average and there is a backlog of work accumulating. Due to this there is a need over the next five to seven years to address the current resealing backlog

Grade of Chip	Expected Life Years
GRADE 6	6
GRADE 5	12
GRADE 4	16
GRADE 4/6	18
GRADE 3	17
GRADE 3/5	18

9.6.2 End of Life Projections Pavement

Figure 9.13 Year of seal road construction

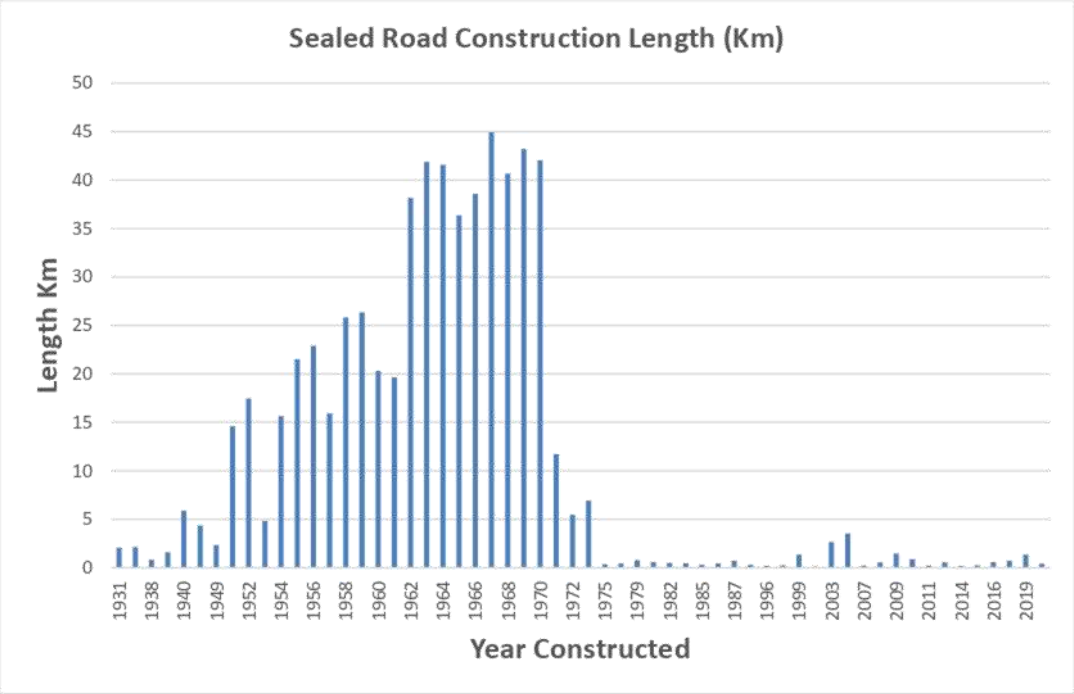
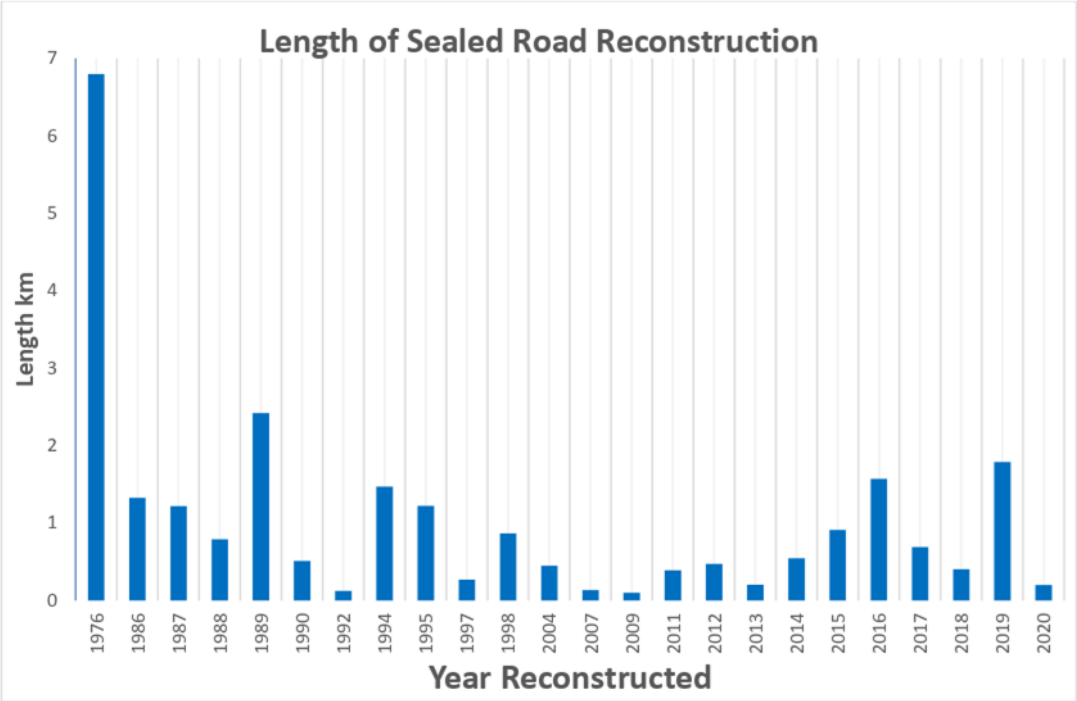


Figure 9.14 Year of seal road reconstruction



Pavement Rehabilitation

The average pavement renewal required based on the assumed life of 75 years currently used in the asset valuation, is in the order of 8.5km per annum. This is significantly more than the average of 700m for the past 10 years. 25km per year of pavement has been renewed over the last 43 years.

The sealed road network was mostly constructed since the 1930's. The pre 1960 roads are generally higher traffic roads and were built to higher standard. In the 1960-1970's a significant portion of the unsealed network was sealed (approximately 38 km a year for about 10 years). Construction was not to such a high standard and these pavements appear to be more susceptible to traffic loading. It is expected that these pavements will start coming up for renewal in the next 10-year period (beyond 2025). For the next 3 years up to 1.5km per year has been budgeted and for the following 7 years 2 km per year has been budgeted for renewal.

It is proposed to assess the expected lives for all pavement and surfacing treatment lengths and input this into RAMM. It would also be beneficial for council to further develop their FWP to incorporate this information for pavement renewals as well as resurfacing.

9.6.3 Renewal Decision Making Process

The required level of renewal varies depending on:

- The age profile of carriageway surfacing and structure
- The condition profile of the carriageways
- The deterioration of the top surface
- The level of ongoing maintenance demand
- The likely future demand on the road

In terms of reseals, intervention is primarily based on age and maintenance history. RAMM data is used to develop an inspection list, which is then used as the basis for a detailed inspection once a year of aged seals. A detailed rolling three-year programme has been developed for Years 1, 2, and 3. Future work requirements beyond this period are based on historical need.

9.6.4 Renewals Strategies to Meet Levels of Service

Maintenance Chip Seals

Maintenance chip seals are pavement resurfacing where the reseal is to be applied to an established sealed road. Examples of these activities include:

- Conventional chip reseals, including second coat seals
- Void filling seal coats
- Texturising seals
- Other special purpose surfacing (polymer modified seals) that fall into the maintenance chip seal NZTA category

In the past there was a trend alternating between Grade 3 and Grade 5 reseals. However, the older seals on the network are now getting varying texture and there are thicker seal layers. Also there are a lot of older grade 4 seals on the network that now getting too smooth to take another Grade 5, and some of the recent Grade 5 seals are not performing as a result. Therefore, the strategy has changed to completing more two coats Grade 3/5 on rural roads and Grade 4/6 on Urban Roads to increase texture.

Emulsion has been used for the District resealing for the last 5 seasons with excellent results. Emulsion is safer and environmental emissions are significantly reduced (almost 50% less) .

Pavement Renewals

Road Rehabilitations

Road rehabilitation of pavements is actioned to maintain pavement structural integrity and to benefit road users. This work category allows construction of:

- Thin asphaltic overlays
- Granular overlays
- Treatments involving ripping and/or reshaping
- Pavement Stabilisation

Basic rehabilitation works are not to increase the existing seal width or provide a seal width greater than the standard for the traffic use of the road. Formation widening may be permitted where it is required for support or structural integrity.

Seal Widening

Seal widening allows for the widening of existing seals where this is the least cost maintenance treatment necessary to overcome edge break or to reduce shoulder maintenance. Work may include shoulder strengthening and/or formation widening where this is necessary to maintain the structural integrity of the pavement. This work may also be carried out to improve safety.

9.6.5 Identification and Prioritisation of Work

The identification of sealed pavement requiring renewals is brought about in a number of ways:

- Annual drive-over survey
- RAMM rating surveys
- Ratepayer service requests
- Contractor inspections
- Annual maintenance costs

This information is used as base data in the generation of road condition forecasts, forward works programmes and road renewal programmes.

Proposed reseals are field checked by the Roading Engineer and current condition determines whether the reseal proceeds or is deferred. The proposed surface treatment is also verified during this field check.

In terms of pavement renewals Roading staff monitor problem roads. Where there is not sufficient percentage of a road failed to complete a full rehabilitation, a maintenance type area treatment will be completed. This is expected to continue, however forecast budgets allow for increased length. This may create a bow wave of renewals work for the future.Rehabilitation sites are then analysed using NZTA simplified benefit cost procedures to determine the economic net present value (NPV) of each project. All projects are then ranked by NPV. This procedure determines whether rehabilitation/ reconstruction is a better economic solution than on-going maintenance.

Formal ranking of projects is based on either benefit cost ratios or net present values depending on the funding mechanism.

9.6.6 Replacement Standards

NZTA standards see section 5.5

9.6.7 Summary of Future Costs

Future costs have been based on the forward work programme and assessed need.

The FWP amounts are escalated to produce the annual budgets for the 10-year period to 2031/32.

212 Sealed Road Resurfacing	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Resealing Chip seals have a limited useful life, Resealing is programmed on as needed basis to arrest and prevent the deterioration of the road surface.	230000	$5.20	$1,195,999				
Professional Services Resealing	$25,000	1	$25,000				
Administration	0.26	$90,000.00	$23,400				
212 Sealed Road Resurfacing Total			**$1,244,399**	**$1,244,399**	**$1,282,976**	**$1,321,552**	**$3,848,927**

214 Pavement Rehabilitation.	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Replacement / restoration of strength to pavement. Project must be the long-term least -cost option . 1700 m 3.4 lane km	11050	$33.00	$364,650				
Professional Services	$15,000	1	$18,000				
Administration	0.07	$90,000.00	$6,300				
214 Pavement Rehabilitation Total		$0	**$388,950**	**$388,950**	**$401,007**	**$413,065**	**$1,203,022**

9.7 UNSEALED ROADS (WC 112)

9.7.1 Current Trends and Issues

Scope and nature of the Asset

Unsealed roads have generally evolved over the past one hundred years from tracks which over time and increasing use have had vegetation removed and gravel progressively added to obtain the current road pavement width and strength.

The unsealed road network in Waimate District comprises 52% of the districts road asset and carries 20% of the total vehicles travelling on the network.

Design standards have not been specifically set for the unsealed road network as many roads were gradually developed over the years rather than specifically designed and constructed.

The roads are surfaced with a range of locally obtained and imported materials. The maintenance contracts specifications are aimed at maintaining this surface into perpetuity.

Current Condition

The unsealed road asset is in a constantly changing condition depending on traffic use, weather, position in its maintenance cycle etc. This condition is monitored through Contractor and Roading Engineer inspections as well as complaints and queries from users. No formal condition rating information is currently collected.

Use by Agricultural industry including machines on road, stock on road etc. contributes to increased deterioration of condition.

Current Capacity and Performance

Performance

The road user perception of unsealed roads is that they are of inferior quality to sealed roads due to issues with carriageway width, roughness, dust, mud, corrugations, potholes and soft areas. These issues, except for the width of carriageway, are being continually assessed by the maintenance contractor with work programmed and executed to keep the deficiencies within acceptable limits.

Some unsealed road users may never be satisfied until their road is sealed, but this is not possible given the large network, low use and cost involved. A sealed road costs far more to construct and maintain, so cannot be justified in lightly trafficked situations. Despite this there is ongoing pressure for seal extensions.

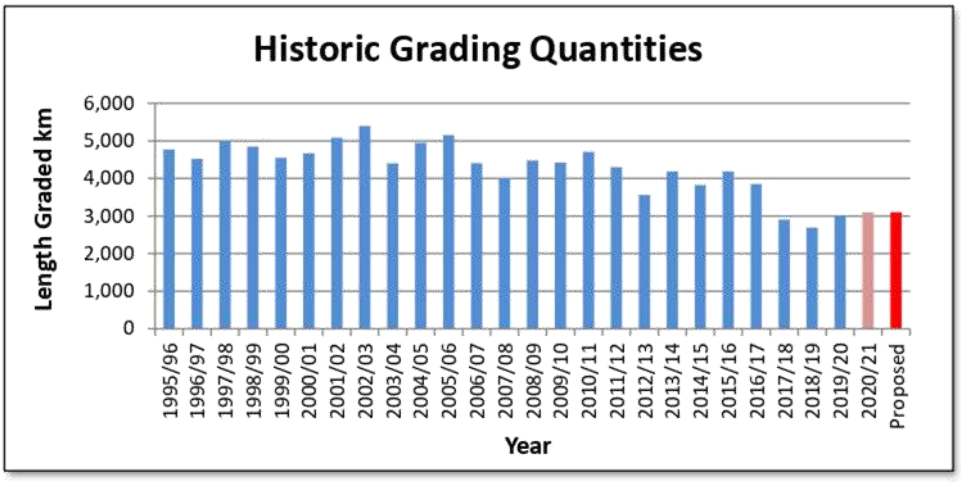
Capacity

The current capacity of the unsealed carriageway component of the Waimate District Roading network is measured by adequate metal cover. This aspect changes over time and needs to be measured on an ongoing basis, and is monitored through the road maintenance contract.

Historic Maintenance Data

Maintenance records for grading over the last 22 years show relatively static maintenance requirements, although there has been a slightly reducing trend over this period. Figure 9.9 shows the annual maintenance need over the last 22 years.

Figure 9.15 – Historic Grading Quantities



Historic Maintenance Costs

Over the years 2018/21 the average expenditure estimate has been $369700 for unsealed pavement maintenance

9.7.2 Maintenance Decision Making Process

Unsealed road maintenance comprises regular grading and spot metalling to;

- Maintain cross-falls and pavement width
- Remove potholes, corrugations, ruts clay spots and exposed sub-grade.

Resources are applied to unsealed roads on a needs basis. -The more highly trafficked roads will attract the most attention.

9.7.3 Strategy to Meet Levels of Service

The maintenance standards to be achieved are set out in WDC specifications contained in the road maintenance contracts

9.7.4 How Tasks Are Prioritised

The grading frequency is used as a guide to which locations will need maintenance and the timing. Inspections, moisture conditions, road use, and metalling programme are taken into account when programming unsealed pavement maintenance.

9.7.5 Summary of Future Costs

Future costs have been based on estimated grading requirements as well as general pavement maintenance requirements including scour repair, digouts, unsealed fords maintenance and additional grading due to storms. Rates from the existing Network Maintenance contract have been applied to estimated quantities.
Costs has been escalated to produce the annual budgets for the 10-year period.

112 Unsealed Pavement Repairs	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Grading The grading frequency is used a guide , inspections, moisture conditions, road use, Metalling programme are taken into account when	3300	$50.24	$165,806				
Grades per year	**km**	**Quantity**					
6.5	366	2379					
3.5	222	777					
2	35	70					
1	25	25					
	648	3251					
Share of Monthly Costs inspection Programming Etc.	0.15	$297,216.67	$44,583				
Administration	0.06	$90,000.00	$5,400				
			$215,789	**$215,789**	**$222,478**	**$229,168**	**$667,435**
Unsealed Pavement Repairs							
Unsealed Roads - Potholes	12	$633.36	$7,600				
Repair of scours /digouts etc.	$45,000	1	$45,000				
Unsealed River Fords Maintenance	$20,000	1	$20,000				
Additional Grading	$15,000	1	$15,000				
			$87,600	**$87,600**	**$90,316**	**$93,032**	**$270,948**
112 Unsealed Pavement Repairs Total			**$303,389**	**$303,389**	**$312,794**	**$322,199**	**$938,383**

9.7.6 Deferred Maintenance and Associated Risks

Current maintenance funding levels appear adequate and there is no significant backlog of routine maintenance.

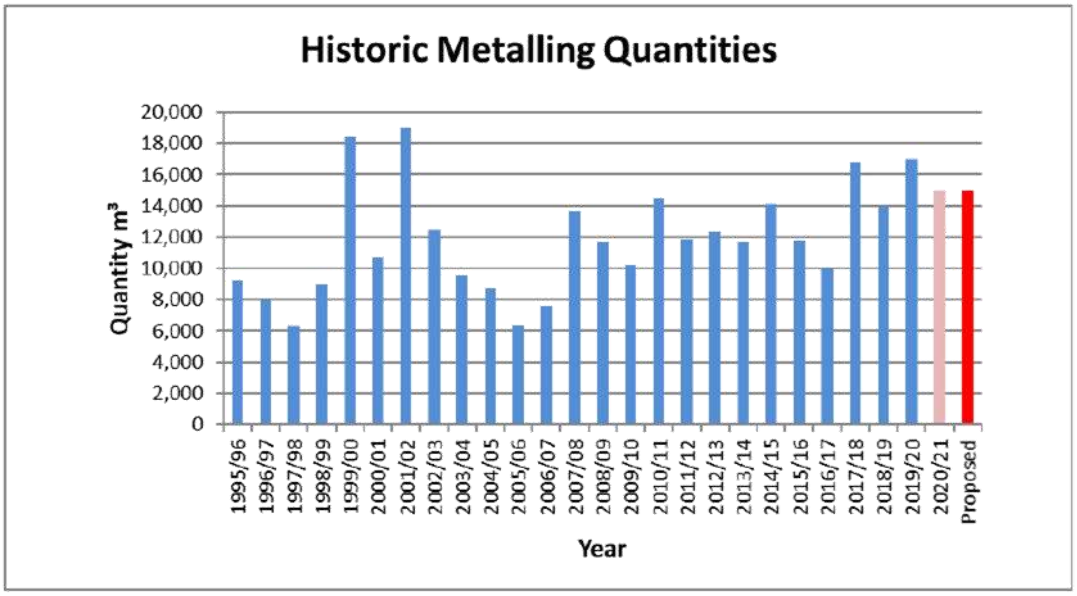
9.8 UNSEALED ROADS RENEWAL/REPLACEMENT PLAN (WC 212)

On unsealed roads renewals includes area wide pavement treatment, unsealed smoothing and replacement of wearing course metal. The unsealed pavements are generally renewed by replacement of wearing course (metalling). This is treated as a maintenance operation and is completed under the Road Maintenance contract.

9.8.1 End of Life Projections

In the 2020 Valuation report the assumed unsealed road pavements life is 35 years. However, as metalling is the main mode of renewal rather than using end of life predictions to quantify future work requirements, the FWP is based on historical quantities, which have used set spread rates. Figure 9.14 shows the historic trend for metalling quantities.

Figure 9.16 – Historic Metalling Quantities



9.8.2 Renewal Decision Making Process

Metalling is based on the requirement to ensure that there is no loss of pavement depth on any road. The work is programmed according to the effects on the safety of road users, the severity and assessed rate of deterioration of the pavement depth, and the location in relation to the carrying out of other works in the area.

9.8.3 Renewals Strategies to Meet Levels of Service

The WDC emphasis is on wearing course metal replacement and this is budgeted for on an annual basis. Rehabilitation and smoothing projects are included as a need is identified from regular network inspections.

The current strategy is to complete spot metalling on noticeable bare sections and then complete a thin spread over the full length to be remetalled. The management approach is very hands on by the inspector out on the road rather than planned in the office.

9.8.4 Identification and Prioritisation of Work

Currently the identification and prioritisation of work is mostly completed by the contractor and a programme of work put forward to the Engineer for approval each month. However, work is very reactive and areas of pavement can deteriorate very quickly if intervention is delayed. Therefore, Council Roading unit has a robust overview of the metalling requirements.

9.8.5 Replacement Standards

Requirements and standards for materials and replacement methodology for the wearing course metal are specified in the Road Maintenance contract.

9.8.6 Summary of Future Costs

Future costs have been based on estimated metalling requirements. Rates from the existing Network Maintenance contract have been applied to estimated quantities.

211 Unsealed Road Metalling	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
	300 km						
Replacement of wearing and running course metal on unsealed roads. (m³ per year)	12000	$24.33	$291,985				
Heavy Metalling	2000	$33.42	$66,830				
Share of Monthly Costs inspection Programming Etc.	0.15	$297,216.67	$44,583				
Administration	0.09	$90,000.00	$8,100				
211 Unsealed Road Metalling Total			$411,498	**$411,498**	**$424,255**	**$437,011**	**$1,272,764**

9.9 DRAINAGE CONTROL FACILITIES (WC 113)

9.9.1 Current Trends and Issues

Scope and Nature of Asset

Drainage is vital to the performance of pavements, as well as customer level of service for safety and resilience.
Drainage control assets consist of kerb and channel, culverts of less than 3.4 m2 cross sectional area and fords. The purpose of these assets is to provide a storm water carrying capacity for runoff from the carriageway, footpaths, berms and adjacent properties to:

- allow the convenient and safe movement of pedestrians and traffic
- protect paved areas from water ingress and resulting structural deterioration

The use of concrete kerb and channels, as opposed to open drains, is a recognised and accepted sign of urban development. With the flat profile of the districts urban areas, ponding and stagnant water can easily eventuate if well-formed channels are not used.

The key issues relating to drainage control are:

- Poor inlet detail capacity within areas of Waimate urban
- Blockages causing high maintenance in Waimate urban
- Quantity of aged kerb and channel within the Waimate urban area
- Original watercourse disrupted by irrigation/border dykes causing flood prone areas

Roadside drainage is key to maximising the life of pavements by protecting them from ingress of water. Better targeting of drainage maintenance and construction has a significant effect on reducing pavement renewal quantity and cost

The quantity of drainage undertaken has been reduced since the large quantities of the early 2000's. The current amount of work is too low, especially given the change in groundwater conditions arising from irrigation.

Some portions of the urban kerb and channel network are at or nearing the end of their life, these sections will need to be replaced for pavement protection, safety and amenity purposes.



Figure 9.17 - Very poor condition rated K&C

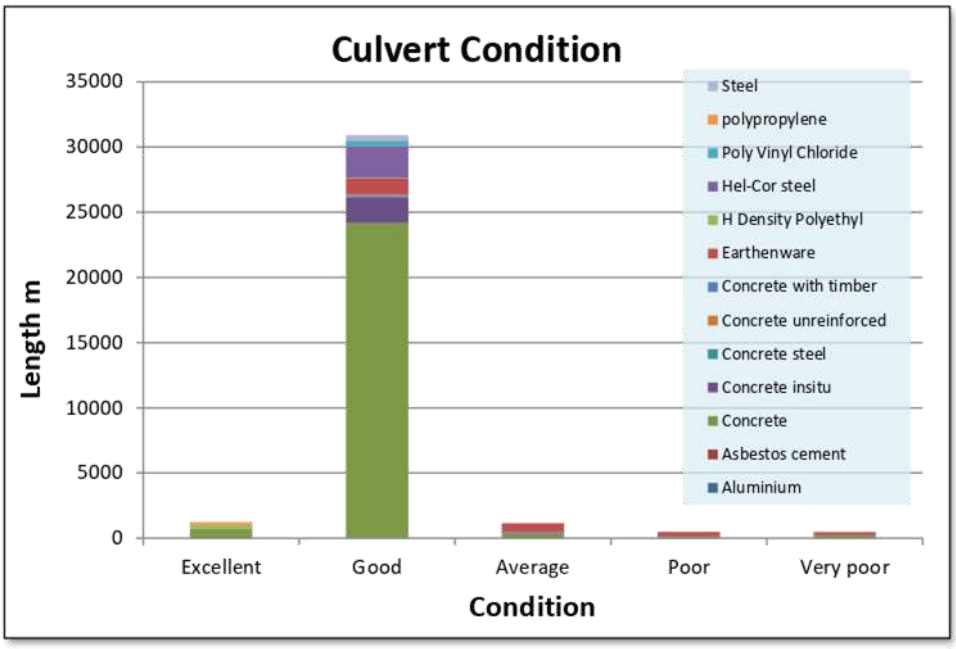
Drainage Type	Quantity	
Culvert	Length m	No. of
0-300mm Dia.	22472	2293
300-440mm Dia.	3671	350
440-500mm Dia.	2942	241
500-600mm Dia.	4167	335
600-760mm Dia.	584	48
760-990mm Dia.	1335	105
990-1190mm Dia.	353	30
1190-1300mm Dia.	607	48
>1300mm Dia.	356	32
Total	**36485**	**3482**

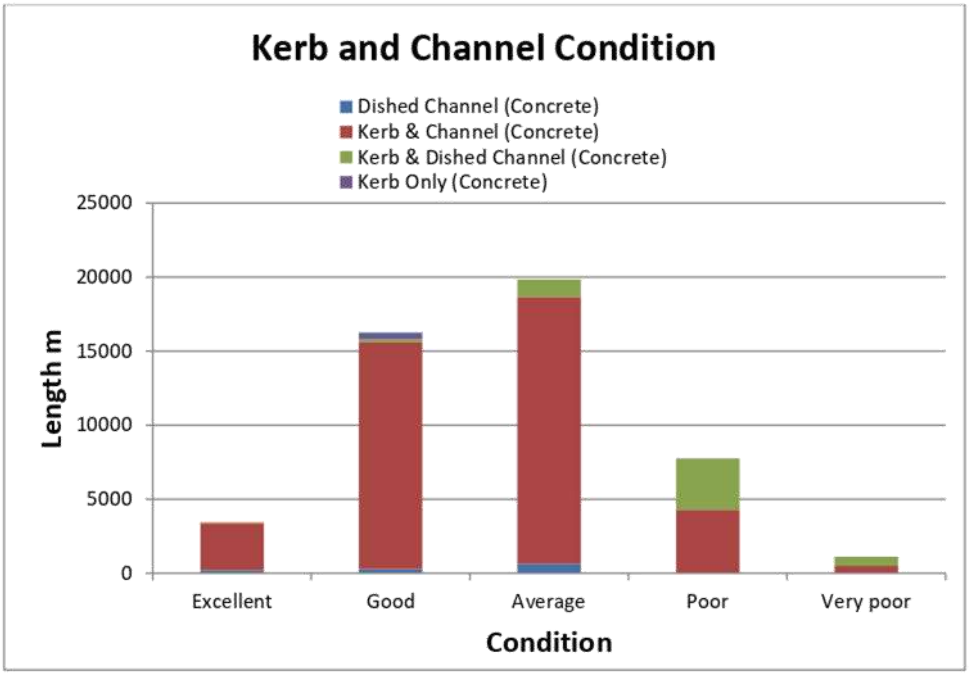
Concrete Fords	Length m	No. of
Concrete Fords	**1696**	**85**

Kerb & Channel	Length km
Kerb & Channel	41.288
Kerb only	0.406
Dished Channel	1.125
Kerb & Dished Channel	5.453
Mountable Kerb & Channel	0.105
Mountable Kerb Only	0.085
Total	**48.462**

Current Condition

. The kerb and channel and dished channels are inspected and classed as being in "good", "poor" or "very poor" condition. There is also an ongoing inspection and maintenance regime under the routine maintenance contract.





Current Capacity and Performance

Performance issues for drainage control assets relate to:

- Coverage (i.e. are there open water tables or ponding areas that should be serviced by pipe drains or formed channels)
- Focusing on pavement damage due to drainage problems

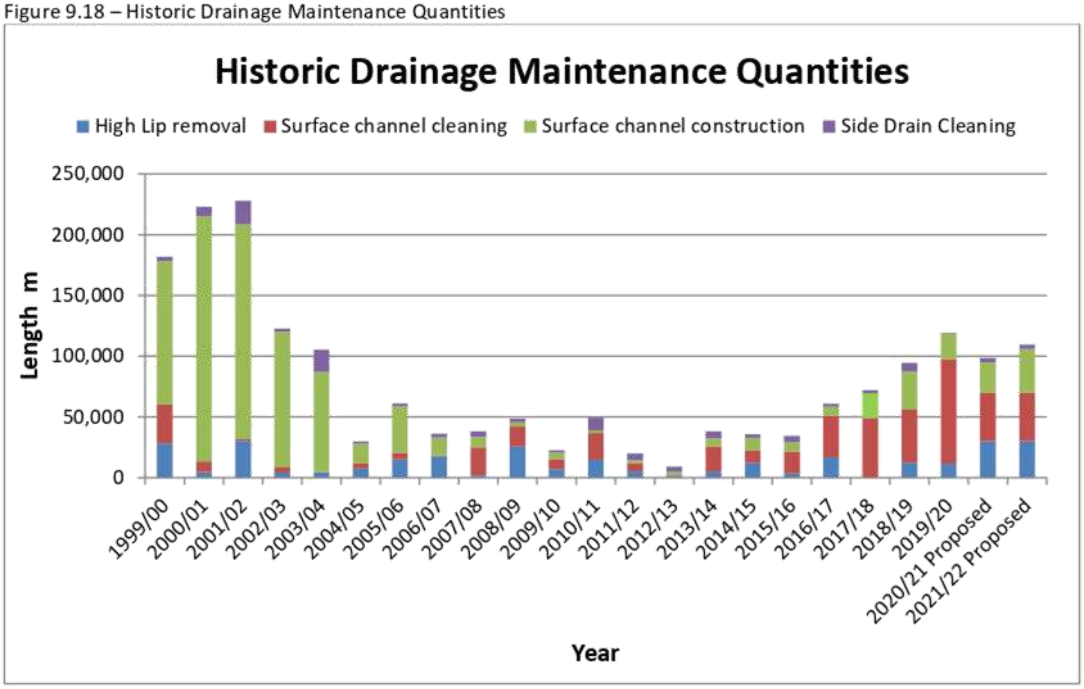
- Improving drainage where storm events cause continual scour problems
- Stormwater entrance capacity
- A large quantity of wash over culverts/fords
- River fords may require closing numerous times per year
- Conformity with standards (kerb and channel in all urban streets)

Surface water drainage requires regular maintenance and renewal. Recent quantities of surface water channels maintenance and renewals have been inadequate, some of our surface water channels have deteriorated to a point where they need to be reconstructed; this will be a priority.

Historic Maintenance Data

Figure 9.10 shows the annual maintenance quantities over the last 18 years. Quantities of drainage work completed have reduced since 2003/04 year due to budget constraints.

Figure 9.18 – Historic Drainage Maintenance Quantities



Historic Maintenance Costs

Over the years 2015/18 the average expenditure estimate was $240,000 for drainage maintenance
2018/21 the average expenditure estimate is $365,800
(WC113), including culvert, drainage channels and kerb &channel maintenance.

9.9.2 Maintenance Decision Making Process

Drainage maintenance is included under the main road maintenance contract covering:

- minimum maintenance standards
- frequency of routine inspections
- response times to correct defects

Condition inspections: The maintenance contractor is required to report any defects observed during day to day road maintenance activity.

Unplanned condition assessment of critical drainage assets is required after each heavy downpour to assess the number of culverts, drains and sumps affected by blockages.

The Contractor is required to maintain an effective communication system and level of preparedness to ensure emergency works are undertaken within the specified response timeframes.

9.9.3 Strategy to Meet Levels of Service

Poor maintenance of the drainage system can lead to blocked drainage and can cause the pavement layers to be submerged with excess water leading to pavement failure

The maintenance strategy is based on Identifying areas on the network where inadequate drainage can have a significant effect on to both road users and Council.

- **Pavement performance**
  Poor drainage and moisture is a main contributor to permanent deformation problems on roads. The most important factor triggering the need pavement repairs is poor quality drainage. Improving the drainage in critical sections, and maintaining it in good condition, increases the pavement life.
- **Traffic risk**
  Poor drainage is a traffic safety risk. Water may accumulate on the road like ponds. The accumulated water creates a risk of aquaplaning during rain. A wet surface reduces friction which leads to longer braking distances. Surface water can freeze during the night in winter causing ice.
- **Storm damage and gravel loss**
  Uncontrolled water flows on the road pavement and shoulders causes erosion and gravel loss. Improving the drainage will reduce storm damage repairs.

The maintenance standards to be achieved are set out in WDC's specifications contained in the road maintenance contracts.

All critical drainage assets are required to be inspected and cleaned following major storm events.

The WDC preference is for a minimum diameter of 300mm concrete culverts under roads. Metal culverts are not used due to premature corrosion failure.

9.9.4 How Tasks Are Prioritised

The mechanism for prioritisation used by Contractors as outlined in the road maintenance contract specification is outlined in Table 9.5. Also damaged and malfunctioning drainage assets identified by public complaint or contractor reports are programmed for repair according to the following additional priority:

- public safety
- accelerated deterioration of pavement likely to occur

- inconvenience occurring to road users, pedestrians and/ or property owners
- untidy appearance

9.9.5 Summary of Future Costs

The majority of the drainage maintenance are reactive so budgets are mainly based on historical expenditure.

113 Routine Drainage Maintenance	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Culvert & Concrete ford Maintenance.							
Regular inspections and cleaning of culverts Rural	12	$2,564.05	$30,769				
Regular inspections and cleaning of culverts Urban	12	$1,100.00	$13,200				
Concrete Ford Maintenance	$15,000	1	$15,000				
Culvert Maintenance	$40,000	1	$40,000				
			$98,969	$98,969	$102,037	$105,105	$306,110
Drainage Maintenance							
Vegetation control Kerb & Channel	12	$497.54	$5,970				
High lip removal (m)	30,000	$1.80	$54,035				
Surface water Channel clearing (m one side)	45,000	$2.57	$115,859				
Side drain cleaning	3,500	$2.93	$10,249				
Priced & Day Work Maintenance	$35,000	1	$35,000				
River maintenance schemes Council share	$8,000	1	$8,000				
Share of Monthly Costs inspection Programming Etc.	0.15	$297,216.67	$44,583				
Administration	0.08	$90,000.00	$7,200				
			$280,896	$280,896	$289,603	$298,311	$868,810
Kerb & Channel Cleaning 30% of cost	12	$2,000	$24,000	$24,000	$24,744	$25,488	$74,232
113 Routine Drainage Maintenance Total			$403,864	$403,864	$416,384	$428,904	$1,249,152

9.9.6 Deferred Maintenance and Associated Risks

Council completing a Risk assessment culverts on the roading network and verifying RAMM data. This information will be used to with condition data and to form a replacement programme. Ongoing attention will be directed to the impacts on drainage of climate change rainfall and drought changes and effects.

9.10 DRAINAGE RENEWAL/REPLACEMENT PLAN (WC 213)

9.10.1 End of Life Projections

There is 36.4 km of culvert length on the network. Based on an average 75-year life (Valuation assumes 40-100 years), 4850m would need to be replaced every year. The requested programme is for 260m per year that will replace the poor and very poor culverts in 5 years.
A risk Assessment of culvert will be completed to provide additional data for replacement projections. Therefore, based on end of life projections, council is possibly under investing in culvert renewals.

The kerb and channel (K&C) on the network is getting very aged. A substantial amount of it is deep K&C which is very expensive to replace. The requested programme is for 600m per year. This is a modest programme and will take 15 years to replace over 8000m of poor and very poor channel.

Culvert Material	Culvert Condition						
	Excellent	Good	Average	Poor	Very poor	Unknown	Grand Total
Aluminium		56					56
Asbestos cement		23				7	31
Concrete	713	24089	357	106	215	630	26109
Concrete insitu	20	2004	97	25	24	54	2224
Concrete steel		110	7				118
Concrete unreinforced		15	8				23
Concrete with timber		29	8				37
Earthenware		1265	645	338	232	106	2586
H Density Polyethyl	289	39				16	343
Hel-Cor steel		2455	16	9		30	2510
Poly Vinyl Chloride	12	420					432
polypropylene	195	12				18	225
Steel		389	5		8	39	440
Stone		338	622	203	137	14	1314
Timber construction		7				8	15
Unknown						22	22
Length Total m	**1229**	**31250**	**1765**	**680**	**617**	**944**	**36485**

9.10.2 Renewal Decision Making Process

WC 213 provides for drainage work which is not routine in nature but clearly demonstrated to reduce future maintenance costs to the roading agency.

Examples of qualifying work include:

- Renewal or installation of culverts with a diameter greater than 600mm, but having a waterway less than or equal to 3.4m^2
- Repair and replacement of kerb and channel, provided that the deterioration is likely to adversely affect the performance of the pavement
- Installation of water channels, sub-soil drainage, or kerb and channel, where this is shown to be necessary to protect adjacent property from run-off from the road surface and the most cost-effective form of drainage control for the purpose of protecting the pavement

9.10.3 Renewals Strategies to Meet Levels of Service

Council has a process of assessing condition of all culverts, verifying RAMM data and estimating construction dates of culvert itself so that a replacement programme can be determined. Along with the review of this asset information, the current size of the culvert is being reviewed against the waterway area need. Any culvert inlet and outlets are also being inspected to determine if they present a shoulder hazard.

9.10.4 Identification and Prioritisation of Work

The renewal programme is prioritised on the basis of overall condition, road group, proximity of street trees and extent of adjacent carriageway failure. Full renewal of kerb and dish channel is justified economically when more than 30% of the length of the channel is broken.

Contractors and council inspections are used to identify culverts and K&C for replacement.

9.10.5 Replacement Standards

Requirements and standards for materials and replacement methodology for culverts and K&C are specified in the Road Maintenance contract. All new culverts shall be installed in accordance with NZTA F3 specification.

The WDC preference is for a minimum diameter of 300mm concrete culverts under roads. Steel culverts are not now used due to corrosion.

9.10.6 Summary of Future Costs

Future costs have been based on estimated renewal requirements. Rates from the existing Network Maintenance contract have been applied to estimated quantities.

Increase level of drainage Renewal have been identified to provide

213 Drainage Renewals	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Drainage Construction							
Surface water Channel Construction m	32,000	$5.07	$162,302				
Soak Pit Construction	8	$637.29	$5,098				
Misc. drainage Construction Side drains etc.	$35,000	1	$35,000				
Share of Monthly Costs inspection Programming Etc.	0.15	$297,216.67	$44,583				
Professional Services	$8,000	1	$8,000				
Administration	0.12	$90,000.00	$10,800				
			$265,783	$265,783	$274,022	$282,262	$822,067
Concrete Ford Renewal	$40,000	1	$40,000				
Professional Services	$5,000	1	$5,000				
			$45,000	$45,000	$46,395	$47,790	$139,185
Culvert Replacement - Renewal or installation of culverts							
300/375 mm diameter m 20 road crossings	200	$294.05	$58,810				
450/600 mm diameter m 5 road crossings	50	$382.61	$19,130				
>600 mm die 2 road crossings	24	$1,337.05	$32,089				
Large culvert < 3.5 m² 1 crossing	12	$2,500.00	$30,000				
Additional work	$20,000	1	$20,000				
Share of Monthly Costs inspection Programming Etc.	0.05	$297,216.67	$14,861				
Professional Services	$12,000	1	$12,000				
			$186,891	$186,891	$192,684	$198,478	$578,053
Kerb & Channel Renewal Inc. renewal of sumps	600	$200.00	$120,000				
Professional Services	$10,000	1	$10,000				
			$130,000	$130,000	$134,030	$138,060	$402,090
213 Drainage Renewals Total			$627,674	$627,674	$647,132	$666,590	$1,941,395



Deep type kerb & Channel



Shallow Type Kerb& Channel



Hillboro Culvert Replacement



McNamaras Road Culvert | Replacement

Proposed large culverts Replacement.

9.11 BRIDGES (WC 114)

9.11.1 Current Trends and issues

Scope and Nature of Asset

The purpose of road bridges is to provide continuous all weather access over rivers and streams. They include culverts with a waterway area greater than or equal to 3.4m^2.

The key issues relating to the management of road bridges are:

- Council's lack of available funds to replace bridges
- The need to develop a policy on disposal of uneconomic bridges
- Ensuring the bridge foundations are protected against scour, degradation and aggradations
- Maintaining the structural integrity of the bridge

Bridge Asset Type	Number	Length m
Major Culvert		
Concrete Box Culvert	9	41
Concrete Precast Box Culvert	9	43
Conc. pipes Culvert	6	37
Steel multi-plate Culvert	12	56
Concrete		
Concrete, HC units	10	475
Concrete, I beams	1	51
Concrete	11	84
Steel & Concrete		
Steel , Precast Conc. Deck	75	1548
Steel, Insitu. Conc. Deck	8	306
Steel, Timber		
Steel, Timber deck	18	416
Steel, Steel deck	1	4
Timber		
Timber	18	231
Timber light truss	3	49
Stone Arch		
Stone Arch	1	11
Total	**182**	**3352**

Waimate District has 24 timber bridges (excluding deck). The expected life of timber structures is 70 years and 19 of the timber bridges are over 70 years old. However, 11 of these bridges have had major strengthening or bridge component replacement works completed within the last 30 years. Structure Component Replacement is planned for 10 bridges and replacement for 2 bridges.

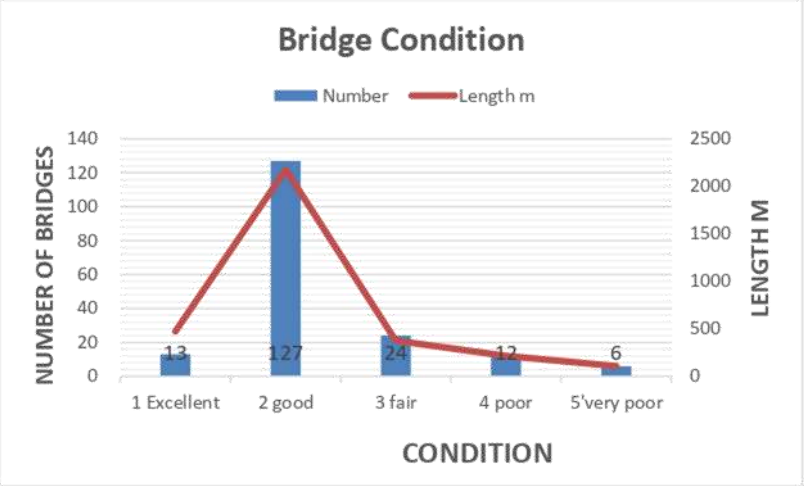
Timber Bridges Excluding Deck

BRIDGE No	BRIDGE NAME	KERB WIDTH	LENGTH metres	SPANS	Year	Beams Year	Deck Year	SINGLE LANE	Posted Bridge	Timber Structural Element
9	McKenzies	2.67	9.75	2	*1930*	*1930*	*1930*	Yes	Yes	Beam
29	Holme Station Corner	2.62	22.40	3	1924	1924	1994	Yes	Yes	Beam
41	Drinnans	3.70	66.40	9	1924	1988	1988	Yes		Piles
52	Ryans	2.03	11.90	2	1986			Yes	Yes	Beam
66	Old Horseshoe Bend	4.57	7.90	1	*1920*	*1920*	*1980*	Yes	Yes	Beam
79	Jacksons	2.54	19.70	3	1923	1923	1923	Yes	Yes	Beam
81	Bournedale Homestead	2.54	14.60	3	*1930*	*1930*	*1930*	Yes	Yes	Beam
96	Crouches	2.54	27.40	4	*1920*	*1920*	1997	Yes	Yes	Beam
99	Adams	5.03	4.80	1	1890	1990	1980	Yes	Yes	Beam
106	Golf Course	7.00	2.00	1	*1920*	-	1985			Beam
108	Becketts	3.80	20.10	3	*1930*	1992	1992	Yes		Piles
115	McNamaras	9.50	5.50	2	1898	-	-			Beam
116	Cunninghams	3.91	5.80	1	1992		1992	Yes		Beam
117	Poigndestres	4.57	33.80	7	*1920*	-	*1984*	Yes	Yes	Beam
120	Scarletts	2.36	12.20	2	*1920*	*1920*	*1920*	Yes	Yes	Beam
130	Lundys	2.10	7.30	1	1960	1960	1960	Yes	Yes	Beam
131	Murphys	4.27	10.50	2	1929		1981	Yes		Beam
142	Waihuna	2.54	11.00	2	*1920*	-	2009	Yes	Yes	Beam
152	Ponsonbys	2.69	14.60	3	1988	-	1988	Yes	Yes	Beam
156	Rickmans	3.35	11.30	2	1969	-		Yes	Yes	Beam
170	Farm Road	2.72	24.40	5	*1920*	-	*1988*	Yes	Yes	Beam
172	Cleeves	4.06	3.80	1	1986	-	*1986*	Yes	Yes	Beam
174	Hakataramea Station	3.10	14.60	3	*1930*	-	*1990*	Yes	Yes	Truss
191	Hakataramea Downs	3.70	42.10	5	*1920*	1994	1994	Yes	Yes	Piles
	24		404					22	18	

Current Condition

All bridges have a condition rating. Condition inspections are undertaken by both the maintenance contractor and the bridge maintenance professional services contractor. A third of the bridge stock is inspected each year (additionally after flood, earthquakes and overload events that may have had some effect on the bridges integrity) taking into account such factors as structural integrity, defects, safety and appearance. The Condition Rating Summary for all bridges is included in Figure 9.12. Condition equal to 1 is excellent and Condition equal to 5 is poor. Generally annual expenditure is keeping the asset in a fair to good condition.

Figure 9.19 – Condition Rating Summary for Bridges



Timber is a less durable material suffering from rot and insect attack (which can be controlled by chemical treatment), natural defects such as cracking and splitting and, in the case of timber decks, surface abrasion from traffic.

Current Capacity and Performance

Load Capacity

Design loadings have increased as vehicle sizes and carrying capacity have been increased. Appendix IV details of 27 bridges that do not meet current standard class 1 loads and are weight and/or speed restricted.

BRIDGE No	BRIDGE NAME	ROAD NAME	LENGTH metres	Year	axle/gross/speed
9	McKenzies	Cliffs	9.75	1930	1600/3000/10
29	Holme Station Corner	Pareora River	22.40	1924	2000/3500/30
52	Ryans	Esk Bank	11.90	1986	-/3000/30
58	Taylors	Woolshed Valley	8.00	1993	80% / 30
64	Spring Bank	Woolshed Valley	11.00	1923	---/6500/10
66	Old Horseshoe Bend	Old Horseshoe Bend	7.90	1920	5000/5000/30
79	Jacksons	Milnes	19.70	1923	1500/2000/30
81	Bournedale Homestead	Bournedale Homestead	14.60	1930	60%/4500/30
82	Hunter	Pakihi	24.40	1960	80% class1
93	Meyers	Gunns	7.30	1999	axle3500/30
96	Crouches	Youngs	27.40	1920	3500/3500/30
99	Adams	Deep Creek	4.80	1890	10km
104	Frewens	Moores	6.00	1950	6000/9000/30
117	Poigndestres	Poigndestres	33.80	1920	5500/8500/30
120	Scarletts	Fletchers	12.20	1920	3000/5000/10
130	Lundys	Crowes	7.30	1960	1500/3000/30
142	Waihuna	Redcliffs Back	11.00	1920	4500/4500/30
152	Ponsonbys	Bridge	14.60	1988	gross3000/30
153	Whites	Whites	7.30	2000	60%/60%/30
156	Rickmans	Waitaki Valley	11.30	1969	3000/4000/30
157	Hursts	Hursts	14.60	1930	---/6500/10
158	McKees	Waihaorunga Back	15.20	1930	gross5000/30
170	Farm Road	Farm Road	24.40	1920	1600/3000/30
172	Cleeves	Milne	3.80	1986	6000/90%/30
174	Hakataramea Station	Homestead	14.60	1930	2000/4000/30
186	Menzies	Menzies	9.80	1930	---/6500/10
191	Hakataramea Downs	Hakataramea Downs	42.10	1920	70% 10km/hr
27			397		

Traffic Capacity

144 bridges are single lane bridges, however given the low traffic volumes on the network this is considered appropriate for capacity purposes based on existing traffic volumes.

Natural Hazards

Bridges are at risk from natural hazard events such as floods, earthquakes, slips, and the failure of adjacent services (e.g. water mains). It is only in recent times that earthquake standards have been incorporated into bridge design. Most bridges were designed to have sufficient waterway area capacity to handle design flood flows. Erosion and scour of piers is a concern for some bridges. WDC have a number of bridges that are at risk from natural flood disasters and earthquakes.

Bridges being out of services has an impact on the performance of the network as a whole. The critical bridges have been identified through a risk management process (as detailed in section 8.3).

Historic Maintenance Costs

Over the years 2018/21 expenditure has been $132,000 for structures maintenance (WC114). The projected average annual expenditure for the period 2021/24 is $158,700 and is based on condition inspections and identified maintenance needs.

9.11.2 Maintenance Decision Making Process

Bridge inspections are completed as follows:

- On-going superficial inspections co-ordinated with other routine maintenance work
- General inspections and a full structural inspection of a third of the asset undertaken each year on a three-year cycle by a Bridge Engineer, taking into account such factors as structural integrity, defects, safety and appearance
- Special inspections after specific events such as earthquakes, severe floods or instances of overloading

Inspection outcomes include recommendations for maintenance and prioritisation for timing of repairs. Each item of the bridge maintenance programme is the most cost effective response to the defect identified, except where a shorter term but lower cost remedy is selected when budget limitations apply and all maintenance items are assessed as equally urgent. Standard NZTA economic evaluation criteria are used to evaluate treatment options.

The routine maintenance contract includes the routine inspection, maintenance and repair of bridges.

The type of maintenance work activity undertaken includes:

- planned maintenance inspections
- repairing structural defects (e.g. concrete spalling, corroded fastenings, rotten timber, undermining of foundations)
- repairing/replacing damaged components (e.g. handrails and guard-rails)
- restoring protective coatings (e.g. painting)
- maintaining drainage
- waterway area clearing
  The Waimate district has 98 bridges with steel beams (70% of the bridge length) 16 of these bridges require steel beam painting. It is proposed to complete this work in 5 years to preserve the life of the beams.

Maintenance Standards include:

- NZTA Bridge Maintenance Manual

9.11.3 Strategy to Meet Levels of Service

The maintenance standards to be achieved are set out in WDC specifications contained in the road maintenance contracts. These standards will need to be reviewed in light of the new Levels of Service outlined in Section 5.

9.11.4 How Tasks Are Prioritised

Maintenance programmes are developed from the schedules of defects identified during the inspections. Repair treatments and priorities are determined by considering the impact on:

- public safety (top priority)
- traffic movement
- future costs if the work is not done

9.11.5 Summary of Future Costs

Future costs have been based on estimated routine maintenance needs including inspections.

114 Structures Maintenances	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Provides for the work necessary to maintain the structural condition and appearance of all bridges							
Routine Maintenance -inspection clearing deck, drainage holes .	12	$2,604.40	$31,253				
Painting handrails 109 bridges 2150m 15 year programme 150m per year	150	$110	$16,500				
Painting Steel Beams (3 year prog. To treat unpainted steel beams)	$28,250	1	$28,250				
General Repairs	$55,000	1	$55,000				
Waterway Maintenance	$20,000	1	$20,000				
Administration	0.03	$90,000.00	$2,700				
114 Structures Maintenances Total			**$153,703**	**$153,703**	**$158,468**	**$163,232**	**$475,403**

9.11.6 Deferred Maintenance and Associated Risks

Current maintenance funding levels appear adequate and there is no significant backlog of routine maintenance.

9.12 BRIDGES RENEWAL/REPLACEMENT PLAN (WC 215 & 341)

9.12.1 End of Life Projections

The bridge schedule provides details of the actual age of most structures and the estimated age of those where the construction date is not known. This information is detailed in the bridge Operations and Maintenance Plan.

9.12.2 Renewal Decision Making Process

Asset renewal is undertaken when a structure, or significant components of a structure, has reached the end of their economic life. Renewal provides for the following work:

- replacing a structurally inadequate bridge
- replacing a bridge for non-structural reasons such as inadequate width or waterway area
- structurally modifying an existing bridge to increase its standard capacity to a level higher than originally provided

9.12.3 Renewals Strategies to Meet Levels of Service

A Bridge Replacement and Upgrade Strategy has been developed by the Bridging professional services consultant. This strategy details those bridges that need to be upgraded to Class 1, those

that require beam and/or deck replacement and those that need full replacement. A copy of this strategy is included in Appendix IV.

9.12.4 Identification and Prioritisation of Work

The timing for replacement and upgrade works is indicated in the strategy for some bridges, but is generally left to the Council to decide based on the information given and forecast budgets.

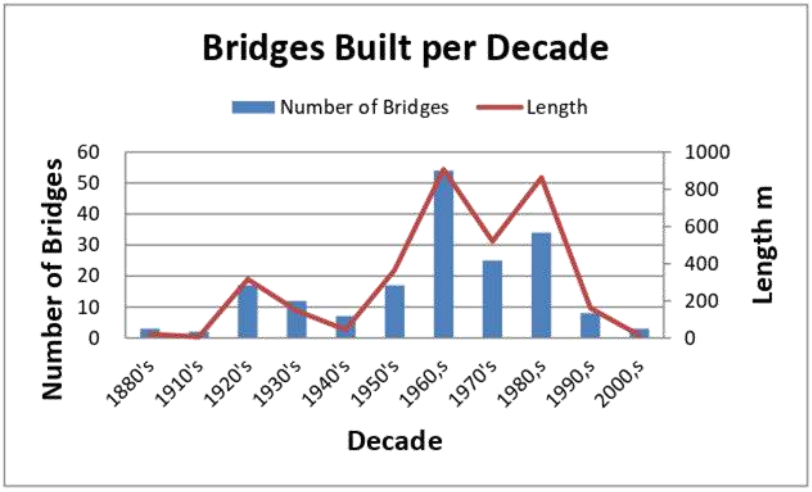
Prioritisation of works and the selection of renewal options are made on the basis of an economic evaluation using NZTA criteria. Cost/benefit calculations include an assessment of risks associated with earthquakes and floods. The lowest cost option, considering all life cycle costs over a 30-year period, is selected except where funding limitations necessitate shorter term (lower cost) options for works that cannot be deferred.

River crossing projects which cannot be economically justified in terms of NZTA criteria shall be considered by the Engineering and Works Committee on a case-by-case basis for recommendation to Council if additional funding is deemed appropriate.

9.12.5 Replacement Standards

The NZTA Manual is adopted for the design of new structures and for the evaluation of existing structures.

Figure 9.20 – Bridge built per decade





Scarletts Bridge Replace superstructure.

9.12.5 BRIDGE STRUCTURES COMPONENT REPLACEMENT /RENEWALS

Bridge		Existing Bridge Materials								Dimensions (m)		Component Replacement				Bridge Replacement Estimate
No	Name	Deck	Beams	Piers	Abuts	Condition	axle gross speed	Traffic Volume & Use	Notes	Width	Length	Option	ESTIMATE	Priority	Year	
170	Farm Road	Timber Fair	Timber Truss Poor	Rail iron/ timber	Rail iron/ timber	Very Poor	1000 3000 30	45 vpd	Gravel Ford ,Side bridge	3.0	24.0	Replace Superstructure ex SH 82 Waitaki Br 2x 12m span Replace Piles	$135,000	1.0	2021	$450,000
65	Otaio Cemetery.	Timber	Steel	Nil	Concrete	Fair	C1	farm & Cemetary access	No alternative access, no Ford	4.3	4.0	Replace deck and beams	$15,000	1.0	2021	$45,000
190	Smiths	Culvert Steel multi-plate				Good		40vpd	Concrete invert too low corrision on side of culvert	6.0		Construct concrete invert	$18,000	4.0	2022	$200,000
192	Scour Stream	Culvert Steel multi-plate				Good		1 farm access	Invert of culvert wearing	6.0		Construct concrete invert	$30,000	4.0	2022	$150,000
81	Bournedale Homestead.	Timber	Timber	Rail iron/ timber	Rail iron/ timber	Poor	60% 4500 30	1 farm access	No alternative access, gravel Ford	2.5	14.6	Replace superstructure with steel beams timber deck	$50,000	1.0	2022	$200,000
120	Scarletts	Timber 1920	Timber	Rail iron/ timber	Concrete	Poor	3000 5000 10	60vpd	Concrete Ford, Side bridge	2.4	12.2	Replace superstructure.	$40,000	2.0	2022	$250,000
130	Lundys	Timber	Timber	Nil	Concrete	poor	1500 3000 30	1 farm access	Concrete Ford, Side bridge flood channel	2.1	7.3	Replace superstructure with steel beams timber deck	$25,000	2.0	2022	$130,000
82	Hunter	Precast	Steel	Nil	Concrete	Good	80% 30	95 vpd	Existing 22"beams requires 24" to be class 1	4.0	24.4	strengthen beams to remove posting.	$45,000	2.0	2023	$500,000
191	Hakataramea Downs	Timber Laminated 1994 Good Condition	Steel	Timber Piles poor	Timber Piles	average	70% 10	40vpd	Steel beams & new deck 1994. Timber piles poor	37.0	42.1	Replace Piles	$140,000	4.0	2023	$650,000
142	Waihuna	Timber 2010	Timber	Rail iron/ timber	Concrete	Poor	4500 4500 30	110 vpd	Concrete Ford, Side bridge	2.5	11.0	Replace beams, pier & deck. Retain Abutments	$45,000	2.0	2024	$200,000
117	Poigndestres	Timber	Timber	Timber Piles	Concrete	Fair	5500 8500 30	low Access to Beach only	Major structure access to beach walkway one farm Evaluate timber by boring. Develop strategy for the bridge.	4.6	33.8	**Develop Options** (Engineering Cost)	$8,000	4.0	2024	$650,000
156	Rickmans	Timber	Timber	Rail iron/ timber	Rail iron/ timber	Fair	3000 4000 30	1 large farm access	Rebuilt 1986. Ford bypass.	3.4	11.3	Replace timber beams in steel	$40,000	4.0	2024	$200,000
99	Adams	Timber 1990	Timber	Nil	Concrete	Fair	10km	35 vpd	no ford, Beams cracked, deck receives heavy traffic damage	5.0	4.8	**Replace superstructure with RC concrete**	$35,000	1.0	2024	$135,000

Bridge		Existing Bridge Materials								Dimensions (m)		Component Replacement				Bridge Replacement Estimate
No	Name	Deck	Beams	Piers	Abuts	Condition	gross speed	Traffic Volume &	Notes	Width	Length	Option	ESTIMATE	Priority	Year	
106	Golf Course.	Timber	Timber	Nil	Concrete	Fair		510 vpd	Review capacity and condition prior to committing to replacement	7.0	2.0	Replace superstructure with RC concrete	$20,000	4.0	2024	$150,000
103	Molloys	Concrete	Concrete	Nil	Concrete	Good		260 vpd	Uncertain Design	7.3	4.0	Strengthen deck	$20,000	7.0	2025	$110,000
52	Ryans	Timber	Timber	Rail iron/ timber	Rail iron/ timber	Fair	gross 3000 30	1 farm access	Gravel Ford Side Bridge Abutments Rebuilt 1988	2.0	11.9	Replace deck and beams.	$35,000	5.0	2025	$200,000
131	Murphys	Timber Baulk 1981	Timber	Concrete	Concrete	Fair		250 vpd	No Ford	4.3	10.5	Replace timber beams in steel Reuse deck	$35,000	4.0	2025	$200,000
29	Holme Station Corner	Timber Laminated 1994 Good	Timber	Rail iron/ timber	Concrete	fair	2000 3500 30	35 vpd	Side bridge, Arterial Road,site requires 2 lane, Existing concrete ford for	9.0	23.0	Replace superstructure with steel beams timber deck	$60,000	9.0	2025	$1,300,000
158	McKees	Timber	Steel	Steel Piles	Steel Piles	Fair	gross 5000 30	40 vpd	Concrete Ford, Side bridge Centre Pire is leaning	2.5	15.2	Replace pier	$20,000	4.0	2026	$300,000
152	Ponsonbys	Timber 1988	Timber/ Steel	Steel Piles 1988	Steel Piles	Fair	gross 3000 30	1 farm access	Gravel Ford Side Bridge Rebuilt 1988	2.7	14.6	Replace superstructure.	$40,000	6.0	2026	$35,000
172	Cleeves	Timber	Timber	Nil	Bearer.	Fair		1 farm access	Rebuilt 1987. Ford bypass.	4.1	3.8	Replace timber beams in steel	$10,000	8.0	2026	$40,000
1	Brasells	Timber 1981,1986, 1994	Steel 1986 & 1994	Steel Piles	Steel Piles	average		60 vpd	Bridge rebuilt following flood damage in 1986 & 1994 some 1981 deck used	3.9	161.3	Replace plank deck spans with laminated timber deck	$150,000	10.0	2027	
108	Becketts	Timber	Steel	Timber Piles	Timber Piles	average		25 vpd	Provide props between piers. Inspect annually. Evidence of ground movement. Piers leaning	3.8	20.1	Remove Bridge				$650,000
174	Hakataramea Station	Timber Fair	Timber Truss Poor	Rail iron/ timber	Rail iron/ timber	Poor	2000 4000 30	1 large farm access	Gravel Ford ,Side bridge	3.0	12.0	Bridge Not on Public Road Discontinue Maintenance		12.0		$200,000

9.12.6 Summary of Future Costs

The renewals budget for structures is based on the Bridge replacement and upgrade strategy.

215 Structures component replacement	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Bridge Upgrade -Deck , beam replacement etc.			$165,000				
Professional Services Structures component Replacement	$10,000	1	$10,000				
Administration	0.03	$90,000.00	$2,700				
215 Structures component replacement Total			**$177,700**	**$177,700**	**$183,564**	**$189,251**	**$550,515**

9.13 TRAFFIC SERVICES (WC 122)

9.13.1 Current Trends and Issues

Scope and Nature of Signs and Marking Asset

Traffic services are devices used for the orderly control of vehicles and people on public roads. Their function is to: Regulate, Warn, Guide and Inform.

They consist of road signs, road markings, edge marker posts (EMPs) and railings.

The key issues relating to traffic services are:

- Replacing deteriorated signs
- Repairing sign damage due to vandalism and traffic accidents

Within RAMM there is an inventory for these traffic services asset components: signs, traffic, features, markings and railings.

Sign Type	No
Bridge Warning	286
Bridge Weight Limit	52
Chevron Board	151
Intersection Control	293
Parking	41
Permanent Warning	959
Speed limit	116
Street/Road Name	1451
Width marker /Hazard marker	715
Total	**4064**

Scope and Nature of Street Lights Asset

The purpose of street lighting is to provide sufficient lighting levels in streets to allow the safe and efficient movement of vehicles, cyclists and pedestrians.

The asset has been developed over a number of years such that all of the light fittings are now high pressure sodium (which has a high output for a relatively low wattage, making them efficient and cost effective to use) and have been standardised to match makes in use in the surrounding districts to reduce maintenance expenditure.

WDC manages the maintenance and renewal of street lights throughout the district including those on the state highways owned by NZTA. Council's streetlights are attached to poles either owned by the Council or by Alpine Energy Limited. Alpine Energy Limited maintains their poles. The demarcation point is the pole fuse which is the supply point to the Alpine Energy Limited power network.

The maintenance contractor provides Council with reports as requested and keeps records of the extent of the asset components.

Maintenance of streetlights covers regular inspections, the replacement of failed bulbs, and repair of damage. Maintenance works are undertaken to:

- ensure safety to the public
- protect the investment in assets by extending the life of the assets
- minimise repair costs

As NetCon Limited also maintains streetlights for the neighbouring districts of Timaru and Mackenzie it is cost effective to standardise on lanterns and fittings common to all three districts. This has largely been achieved with the majority of lanterns being either Goughlite or Sylvania.

Current Condition, Capacity and Performance Signs and Marking

The condition of signs and road markings is assessed in routine inspections undertaken by the maintenance contractor, with the results reported to the Engineer. There is no formal condition rating system for traffic services, with condition assessed visually against the relevant NZTA standards.

The extent of deterioration of road markings depends on age, traffic volume, the materials used and the condition of the road (oil and grit reduce adhesion).

Most signs are replaced as a result of damage resulting from vandalism and vehicle accidents. Loss of reflectivity through weathering is the most significant cause of deterioration. Performance issues for signs and road marking relate to coverage, accuracy of placement, visibility and conformity with standards. Overall the condition of traffic services assets is considered to be good.

Current Condition, Capacity and Performance Street Lights

As 92% of the streetlight lanterns are less than 14 years old and will not reach the end of their expected life for another 3 or more years, therefore minimal maintenance only should be required over the until 2020
Streetlight capacity and performance issues relate to light intensity, reliability and safety.

The current level of complaints is directed at light outage. The current level of maintenance and renewal is adequate and satisfies the public demand.

The Waimate District street lighting other than on the state highways has evolved from perceived need rather than being based on standard performance design requirements. Older fluorescent and mercury vapour lanterns have been upgraded (1999) to high pressure sodium. The network performance however has not been assessed.

To date the management of the street lighting asset has been largely left to the maintenance contractor. Data is held by the contractor and Council and the position of all light has been recorded on GPS

Historic Maintenance Costs

Over the years 2018-21 the annual expenditure has been $141,800 for traffic services maintenance (WC122), including pavement marking and signage.

9.13.2 Maintenance Decision Making Process

Signs and marking

The maintenance strategy includes:

Planned inspections: The maintenance contractor is required to routinely inspect all assets and repair any defects within the following timeframes:

- Regulatory Traffic Signs 2 days, Warnings signs 6 days, Information signs 10 days to one month.
- Road marking: markings are re-marked every 2 years

Unplanned Maintenance: The Contractor is required to maintain an effective communication system, level of preparedness and stocks to ensure emergency works are undertaken within the specified response timeframes.

Street Lights

All replacement lamps shall be compatible with the lantern and control gear, and shall have characteristics compatible with the original lamp.

All maintenance work must comply with the current Electricity Act and Regulations.

The current maintenance strategy is:

- Identify failed assets through inspections by contractors, staff observations, and customer complaints.
- Repair on demand and within the specified response timeframes faulty, accident damaged or vandalised lanterns, lamps, control gear columns and associated equipment, providing an immediate response to hazards. WDC seeks to recover the cost of accident damage from those responsible.
- Develop maintenance programmes from the schedules of defects identified during routine inspections.

9.13.3 Strategy to Meet Levels of Service

All traffic services maintenance is competitively tendered. NZTA specifications and standards have been adopted for maintenance work.

Traffic Signs

RSMA "Standard for the Manufacture and Maintenance of Traffic Signs, Posts and Fittings".
NZTA "Manual of Traffic Signs and Markings" Part 1.
NZTA Specification M/14: Marker Posts
NZS 5414: 1977 “Specification for Construction of Traffic Signs”
NZTA Specification P/12: Paint Application - Signs.

Road Markings

NZTA "Manual of Traffic Signs and Markings" Part 2.
NZTA Specification P/22: Road Markings

9.13.4 How Tasks Are Prioritised

The mechanism for prioritisation used by Contractors as outlined in the road maintenance contract specification is outlined in Table 9.5. Obsolete, damaged, sub-standard and non-conforming assets identified during routine inspections are programmed for replacement according to the following additional priority:

- public safety
- traffic volumes
- convenience of road users

9.13.5 Summary of Future Costs

The maintenance budget is primarily based on historical levels of expenditure.

122 Traffic Service Maintenance	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Pavement Marking	$45,000		$45,000	$45,000	$46,395	$47,790	$139,185
Sign Repairs							
Sign Inspection & Routine maintenance cleaning etc.	12	$2,604.40	$31,253				
Repairs signs, markers etc.	$12,000	1	$12,000				
Post and Sight Rail Painting m	$300	$15.01	$4,502				
Share of Monthly Costs inspection Programming Etc.	0.05	$297,216.67	$14,861				
Administration	0.03	$90,000.00	$2,700				
			$65,315	$65,315	$67,340	$69,365	$202,020
Carriageway Lighting							
Maintenance			$18,000	$18,000	$18,558	$19,116	$55,674
Power	$21,334	$13,227.08	$13,000	$13,000	$13,403	$13,806	$40,209
			$31,000	$31,000	$31,961	$32,922	$95,883
122 Traffic Service Maintenance Total			$141,315	$141,315	$145,696	$150,077	$437,088

131 Level Crossing Total	Estimate Annual Quantity		Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Kiwi rail Maintenance & Inspection		$10,500	$10,500	$10,500	$10,826	$11,150	$32,476

9.13.6 Deferred Maintenance and Associated Risks

Current maintenance funding levels appear adequate and there is no significant backlog of routine maintenance.

9.14 TRAFFIC SERVICES RENEWAL/REPLACEMENT PLAN (WC 222)

9.14.1 End of Life Projections

Signs and Marking

Signs have an assumed life of 15 years There are over 5,000 individual signs, which based on a 15-year life cycle would require 300 replacements each year due to overall sign deterioration. However, much of the sign replacement in the district is due to damage rather than deterioration, vandalism of signs often results in their replacement ahead of their usual renewal requirements.

Street Lights

Waimate District Council is converting all 70w high-pressure sodium vapour street light luminaires on the local road network to LED luminaires to be completed in 2021.

Asset renewal is undertaken when a streetlight, or significant component of a light, has reached the end of its economic life. Renewal works involve the replacement of either the complete pole and lantern or individual components (e.g. lantern, controllers or pole).

The assumed average economic life for streetlights is:

- all lanterns 25 years
- light columns 30 years
- streetlight outreach 50 years

9.14.2 Renewal Decision Making Process

Signs will be renewed where they are found to be missing or ineffective (due to damage or deterioration).

The installation of additional street lights will be assessed on the basis of road safety benefits, together with an amenity value related to security in townships. New subdivisions are to install lighting to AS/NZS 1158:2005 Road Lighting.

9.14.3 Renewals Strategies to Meet Levels of Service

Council also has a current strategy for making sure that all intersections have appropriate destination signs. A list of intersections has been included in RAMM, which is being used to review and check if signs are present. Replacement or installation of new signs will form part of ongoing programme.

The strategy relating to the renewal of streetlight assets, or components of those assets, is to:

- Replace faulty or damaged assets when replacement is more economic than repair.
- Replace faulty or damaged lanterns which cannot be repaired because of obsolescence or replacement parts are unobtainable.
- Replace existing asset that does not meet current design/safety standards.

The required level of renewal will depend on:

- the age profile of streetlights
- the condition profile of streetlights
- the level of ongoing maintenance
- the economical lives of the materials and components used
  In order to save energy and maintenance costs Council is considering moving to LED lights in future. Changes to existing lanterns will be made when they next need to be replaced, but any significant savings are not likely to be realised within the next 10 years

9.14.4 Identification and Prioritisation of Work

Identification and prioritisation are specified in the Road Maintenance contract and as outlined in the Operations and Maintenance Plan.

9.14.5 Replacement Standards

Sign Replacement standards are specified in the Road Maintenance contract.
Streetlight replacement standard use appropriate AS/NZ standards

9.14.6 Summary of Future Costs

The renewals budget for signs renewals is based on historical levels of expenditure. This amount has been escalated to produce the annual budgets for the 10-year period.

222 Traffic Services Renewal	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Sign Renewal							
Edge & Culvert Marker post replacement	800	$12.72	$10,175				
Sign posts & Poles	100	$77.99	$7,799				
Signs new & replacement	$40,000	1	$40,000				
Professional Services	$2,000	1	$2,000				
Administration	0.01	$90,000.00	$900				
			$60,874	$60,874	$62,761	$64,648	$188,283
Lighting Renewal					$0	$0	$0
222 Traffic Services Renewal Total				**$60,874**	**$62,761**	**$64,648**	**$188,283**

9.15 ENVIRONMENTAL MAINTENANCE (WC121)

9.15.1 Current Trends and Issues

This work category is operations focussed, and keeps other assets in service.

The Case for Change

The sight line corridor is crucial to ensure road user safety by allowing an unobstructed view of oncoming hazards. Trees on the road reserve have been identified as a safety and resilience issue.

Costs associated with vegetation control; and managing events such as flooding have increased and larger budgets need to be sought.

Historic Maintenance Cost

Over the years 2015-18 the average expenditure has been $172,000 for environmental maintenance category WC121. In the period 2021/24 the average annual expenditure is projected to be $195,800 which reflects current identified work and costs.

Preferred Programme

Vegetation management needs and responding to environmental events are difficult to predict. With climate change there is a risk of a greater frequency and severity of storms. Trees have been identified for removal to improve the safety and resilience of the network. Some trees are quite large and require specialist arborists.

Summary of Future costs

Future costs have been based on estimated mowing quantities and lump sum amounts from the network maintenance contract.

121 Environmental Maintenance	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Normal care of the road corridor to maintain the safety , aesthetic and environmental Standards							
Vegetation Control							
Vegetation Control Roadside Furniture	12	$1,809.57	$21,715				
Vegetation Control Bridge Approaches/Railway Cros	12	$166.60	$1,999				
Vegetation Control Bridge Wilding Trees	12	$183.99	$2,208				
Vegetation Control Rural Intersections	12	$82.81	$994				
Removal of vegetation hazards includes trees	$20,000	1	$20,000				
Plant pests including , control after Road Works	$20,000	1	$20,000				
Shoulder Mowing 176 km 4 x per year, 241 km 2 x	2250	$18.53	$41,694				
Vegetation Control Sub Total			$108,610	$108,610	$111,977	$115,344	$335,931
Rural Detritus/litter removal	12	$195.11	$2,341				
Remove mud etc.	$5,000	1	$5,000				
Rock Fall slips	$10,000	1	$10,000				
Sub Total Debris Litter			$17,341	$17,341	$17,879	$18,416	$53,637
Snow and Ice Control ,Signs (Subject to weather)	$15,000	1	$15,000				
Emergency Preparedness & Winter Monitoring	12	$447.33	$5,368				
Sub Total Winter			$20,368	$20,368	$20,999	$21,631	$62,998
Flood patrol Signs (subject to Storms 5 days)	$10,000	1	$10,000				
Share of Monthly Costs inspection Programming Etc.	0.1	$297,216.67	$29,722				
Administration	0.04	$90,000.00	$3,600				
Sub Total Balance			$43,322	$43,322	$44,665	$46,008	$133,994
121 Environmental Maintenance Total			$189,641	$189,641	$195,520	$201,399	$586,560

9.16 NETWORK & ASSET MANAGEMENT (WC 151)

9.16.1 Current Trends and Issues

Currently work is undertaken using a combination of in-house and out-sourced resources.

Professional Services In-House
- Strategy
- Asset Management Part
- Network Management
- Network Maintenance Contract
- Traffic Management
- Traffic Counting
- Some design & Contract management

Professional Outsourced
- Bridge inspections
- Pavement condition rating
- Pavement roughness rating
- Asset Management
- Capital works design and contract management

Historic Maintenance Cost

Over the years 2015-18 the average expenditure has been $422,000 for Network & Asset Management

The Case for Change

WDC is benefitting from the Aoraki Roading Collaboration and this is strengthening the resource available. At the same time the reliance on evidence is increasing and this means investment in better data

Preferred Programme

The programme proposed allows an increase resource to that currently in place and but focusses on data improvements. A continued commitment to better data collection and RAMM management is proposed as part of the 2021-24 programme.

Summary of Future costs

	151 Network & Asset Management				Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
	General management & control of the road network & management of road assets								
	In-house Roading Technical Unit.								
411047801	Network Management & inspections				$285,000				
	Asset inventory system, Data Improvement,ONF				$110,000				
	Temporary Traffic Management Approval/Audit				$25,000				
					$420,000	$420,000	$433,020	$446,040	$1,299,060
411047802	**Consultant**								
	Seal Road Condition Rating/ Valuations				$30,000				
	Bridge Inspection				$30,000				
	Road Collaboration				$20,000				
					$80,000	$80,000	$82,480	$84,960	$247,440
	151 Network & Asset Management Total					$500,000	$515,500	$531,000	$1,546,500

9.17 FOOTPATH MAINTENANCE (NEW WC 125)

9.17.1 Current Trends and Issues

Scope and Nature of Asset

The purpose of footpaths is to provide a safe and efficient network of accessways catering for the movement of pedestrians. The need to provide footpaths is based on a combination of the traffic volume, road/seal width and pedestrian demand. They also fulfil a social function providing areas with a sense of community.

Footpaths on State Highways are included in this asset as they are the maintenance responsibility of the Waimate District Council.

The key issues relating to footpath management are:

- Accuracy of footpath age profile
- Condition of existing asset
- Adequacy of pedestrian facilities near schools, shopping centres, residential and recreational areas
- Adequate provision of safety footpaths

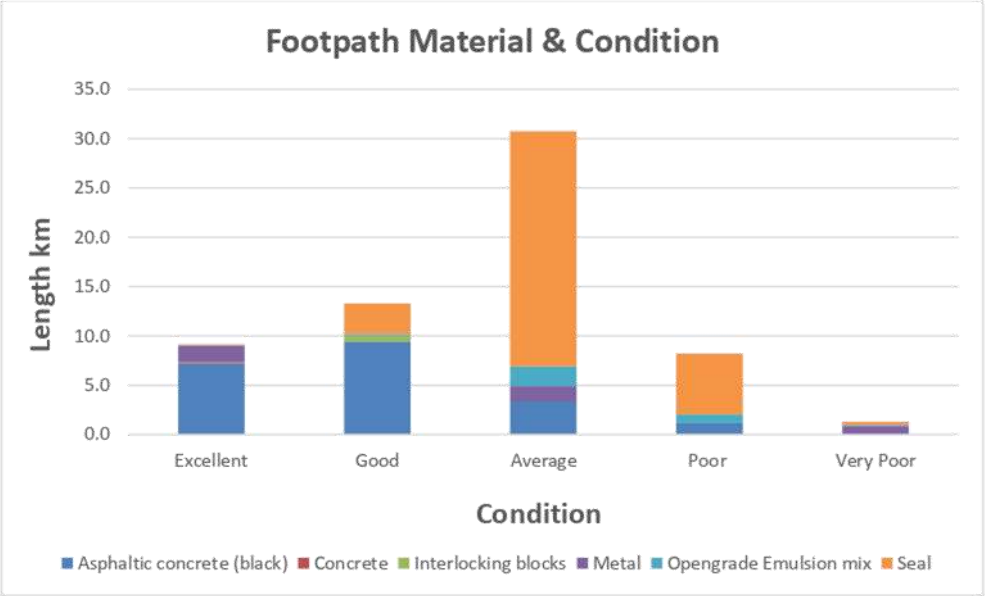
There is around 63km of footpaths, predominantly in Waimate town, with small quantities in St.Andrews, Makikihi and Glenavy townships.

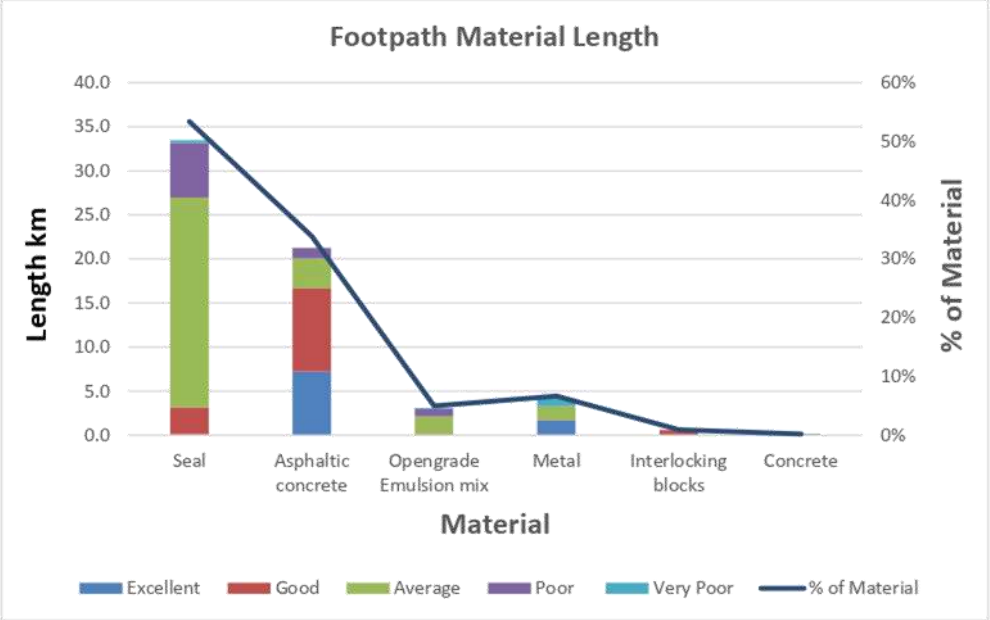
Footpath Material	Length km	Area m^2
Asphaltic concrete (black)	22.2	45,672
Concrete	0.1	302
Interlocking blocks	0.6	878
Metal	4	7,161
Opengrade Emulsion mix	3	7,682
Seal	35	66,610
Total	**62.7**	**128,308**

Current Condition

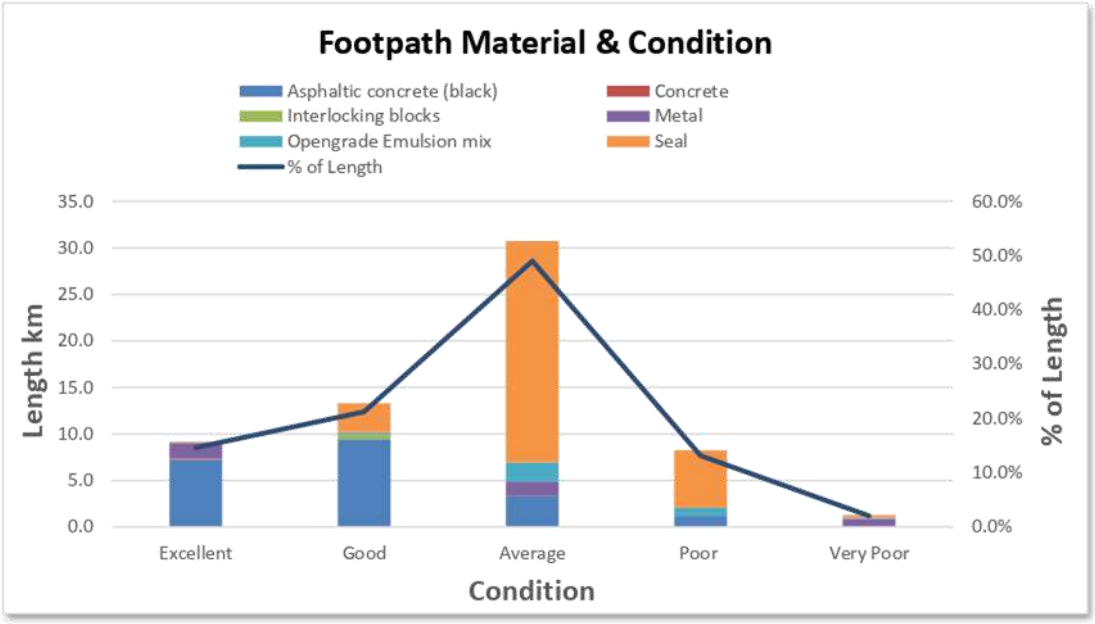
The footpath network has been inspected to determine condition. It is council's intention to undertake inspections every year, to ensure they are safe and to inform the renewal programme. The following graph illustrates the distribution of materials and condition as at 2020.

Condition rating is carried out for all footpaths with a condition scale of 1 to 5, 1 being excellent and 5 being very poor.





The level of service relates to the condition of the footpath assets. The following graph illustrates both condition and material, as well as the combined percentage of footpath length that is at or worse than that condition level (e.g. 15.1% of the network is poor or very poor)



Current Capacity and Performance

New and replacement Footpaths construction in urban residential areas 1.5- 1.8m wide and surfaced in AC. However, due to poor performance of AC overlays due to subbase quality (not achieving required life) there is now full AC reconstruction for footpath renewal.
Footpaths in the urban/Rural fringe will be 1.5m wide with a chip sealed or gravel surface.

Historic Maintenance Work and Costs

Over the years 2018/21 the average annual expenditure was $28,600 for footpath maintenance. For the period 2021/24 the forecast average annual expenditure is $69,900 and reflects the current commitment for an improved level of maintenance performance.

9.17.2 Maintenance Decision Making Process

Repairs are undertaken on an as required basis by the road maintenance contractor.

Footpath maintenance includes:

- Repairing damaged sections of footpath, usually broken by heavy vehicles
- Pothole repair on sealed paths
- Relaying uneven pavers
- Repairs around utility services
- Old trench repairs
- Removing weed or grass growth from the footpaths

The maintenance standards to be achieved are set out in WDC's specifications contained in the main road maintenance contract. The consequences of lowering these standards are:

- Reduced safety
- Accelerated footpath deterioration and additional consequential costs

- Lower level of service (ease of use, appearance)

9.17.3 Strategy to Meet Levels of Service

A 24-hour customer complaints service is provided. The maintenance contract requires the contractor to maintain a suitable level of preparedness for prompt and effective response to asset failures and emergencies and specifies maximum response times.

Asset failures are responded to with the initial objective of making safe as quickly as possible by the most economic method available and/or making temporary repairs if major repairs or renewals are required. Temporary repairs are made when an asset renewal is programme or is more cost effective
Level of service achievement is a combination of overall footpath provisions and the management of the asset on the ground

9.17.4 How Tasks Are Prioritised

The mechanism for prioritisation used by Contractors as outlined in the road maintenance contract specification is outlined in Table 9.5.
The priorities are:

- Priority 1: Urgent Maintenance
- Priority 2: Essential Maintenance
- Priority 3: Less Essential Maintenance
- Priority 4: Desirable Maintenance Works

Works are also prioritised using the following additional criteria;

- The safety of pedestrians may be compromised (Priority 1 or 2)
- If it is likely that the area of distress may expand or the methods of repair change such that the cost of any repair will increase (Priority 3)
- Subsequent maintenance or renewal work depends on the completion of the maintenance repair
- Aesthetics (e.g. minor water ponding/untidy appearance)

9.17.5 Summary of Future Costs

The maintenance budget is primarily based on assessment of required repairs required This amount has been escalated to produce the annual budgets for the 10-year period

125 Footpath Maintenance	Estimate Annual Quantity		Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Footpaths Maintenance							
Footpaths Pavement repairs	$50,000	1	$50,000				
Vegetation control footpaths	12	$497.82	$5,974				
125 Footpath Maintenance Total			$55,974	$55,974	$57,709	$59,444	$173,127

Deferred Maintenance and Associated Risks

Current maintenance expenditure appears inadequate and there is a backlog of routine maintenance.

9.18 FOOTPATH RENEWAL/REPLACEMENT PLAN

The types of renewal work undertaken to restore footpaths to the required condition are;

- Resurfacing to provide a smooth waterproof surface by overlaying with a thin layer of asphaltic concrete, chip or sand seal coat OR removing the existing surfacing and laying new surface (where the footpath profile is such that the surface level can't be built up with an overlay).

- Reconstruction: Reconstruct new basecourse and surfacing

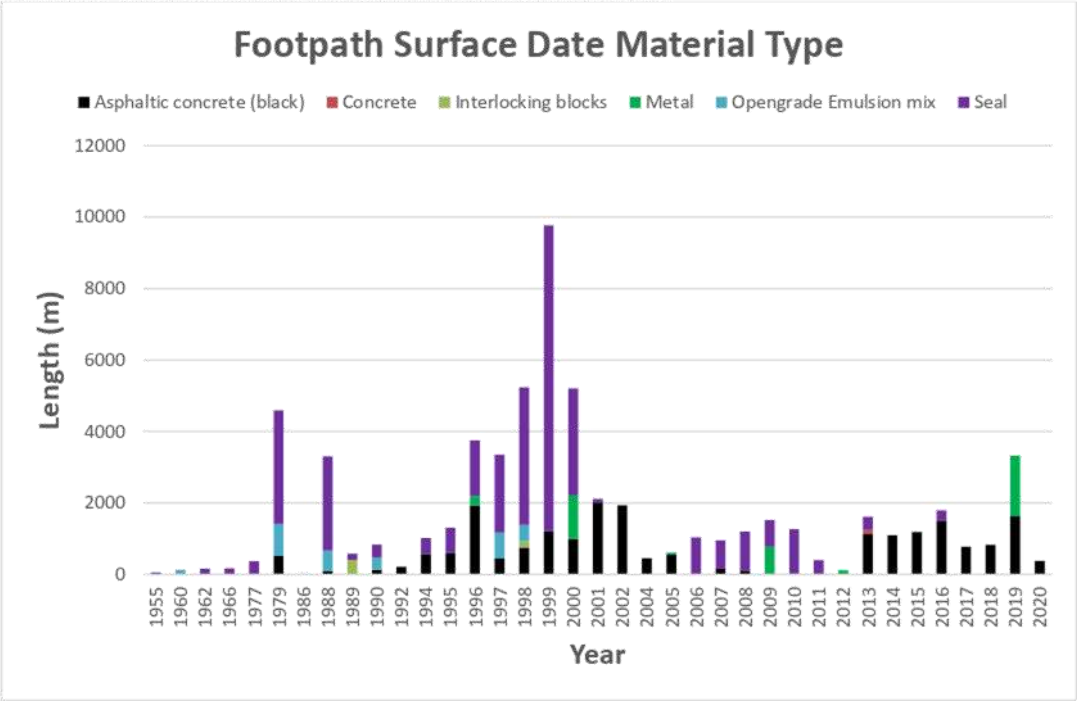
Historic Renewal Work and Costs

Footpath resurfacing and reconstruction is undertaken through direct appointment, where possible this is integrated with other work such as Kerb & Channel replacement to optimise the expenditure.

Over the years 2018/21 average annual expenditure was $176,500 for footpath reconstruction.

9.18.1 End of Life Projections

Figure 9.21 – Footpath surface date & Remaining Useful Life of Footpath



Reviewing the asset lives for different materials as well as the condition, enables Council to develop a logical renewal programme
Chipseal is the most common surfacing (approx 50%), and while relatively inexpensive to construct the asset life is shorter, meaning more regular renewal actions. Council now requires the smoother AC surface especially with increased use of mobility scooters by the elderly.

From the age of footpaths and expected life of the different materials, the remaining useful life of footpaths can be modelled. This a theoretical approach that does not include the actual condition of the assets in the network.

Actual footpath construction dates are shown recorded in RAMM.
There is spike in the RUL in 6 years' time. Strategies for replacement of this area of footpath should be considered, especially if 3m wide footpath on some streets are still required.
The theoretical renewal model can be tested against the depreciation calculation. This ensures that the investment in the asset through renewals is appropriate, and that it is not being consumed at a rate greater than that of renewals. This is discussed in section 10,3

9.18.2 Renewal Decision Making Process

Reconstruction is completed when the footpath structure has deteriorated to an extent where resurfacing is not practical. Justification for work is based on the condition of the kerb and channel or the condition of the carriageway rather than the footpath condition (particularly where the footpath is to be reconstructed on a new alignment).

9.18.3 Renewals Strategies to Meet Levels of Service

As mentioned in 9.17.3, level of service achievement is a combination of overall footpath provisions and the management of the asset on the ground. While the existing assets need to be renewed in a timely manner this can cause some tension when compared to areas with no footpath. Accordingly, Council has programmes for new footpaths as well and maintenance of and renewal of existing footpaths.

Levels of service requirements are for all footpaths to be a minimum of 1.5m wide. They are optional in rural roads, Footpaths are required on both sides along collector street where the vacant sites are 25% or less and one side on other streets if the vacant sites between 25to 50 % if the street is a school walking route. (See Appendix Footpath Periodization flowchart)
These requirements are applied to renewals as well as new paths,

Asphalt is the preferred surface material used for new construction because of its longer life and superior surface.

9.18.4 Identification and Prioritisation of Work

Work needs are identified through inspections by staff and contractors with improvements programmed. Priorities are based on condition, pedestrian volume, and location to schools and public areas. In residential areas each street is to have a good footpath on at least one side.

Kerb and channel replacement requirements are used to drive footpath replacement, the priority being set by consideration of existing standards and pedestrian volumes.

Council notifies residents in the street before any works are undertaken to confirm requirements.

9.18.5 Replacement Standards

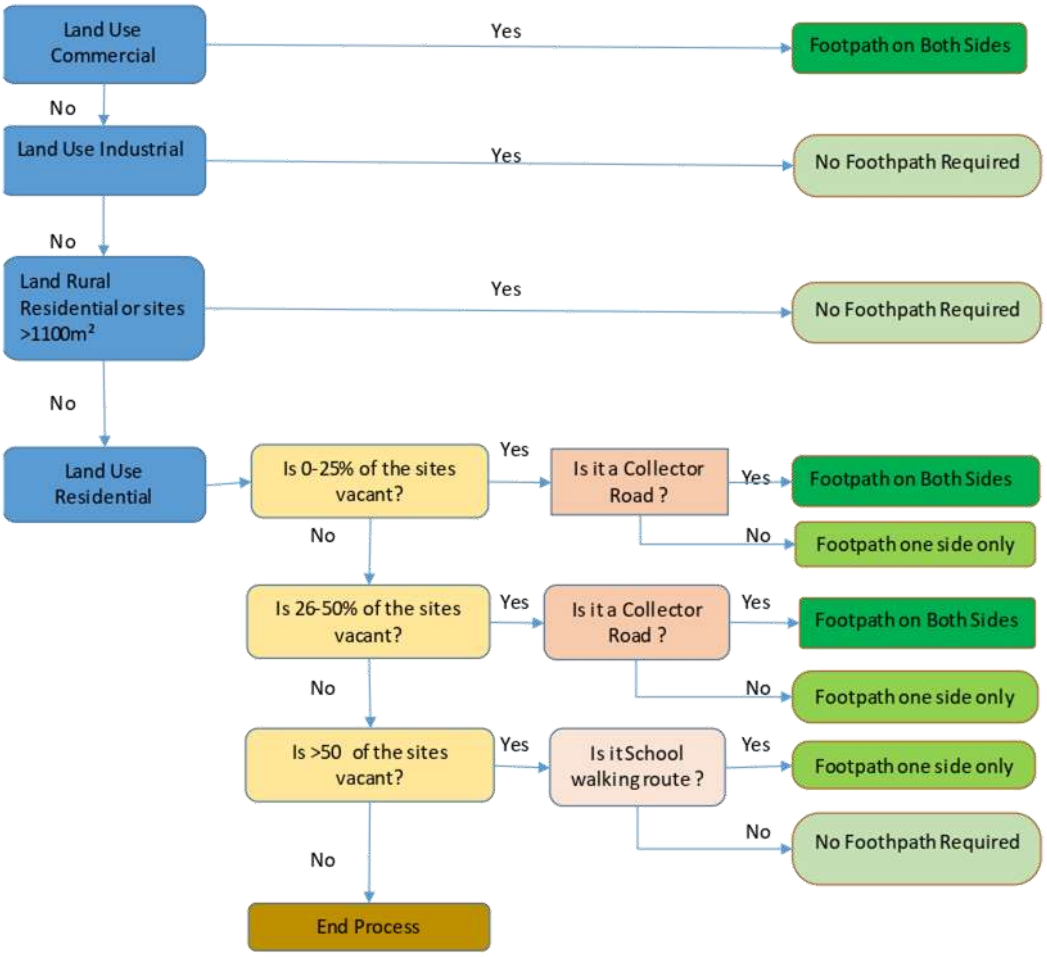
Asphalt is the preferred surface material used for new construction because of its longer life and superior surface, especially with increased use of mobility scooters by the elderly.

Replacement standards are detailed in construction contract specifications.

9.18.6 Summary of Future Costs

225 Footpath Renewal	Estimate Annual Quantity	Rate Estimate	Estimate	2021-22	2022-23	2023-24	3 year Programme Totals
Footpath Renewal	3500	$60.00	$210,000				
Administration	0.06	$90,000.00	$5,400				
225 Footpath Renewal Total			**$215,400**	**$215,400**	**$222,077**	**$228,755**	**$666,232**

Footpath Priorisation Flowchart



9.19 ASSET DEVELOPMENT PLAN

This section of the plan covers the creation of new assets (including those created through subdivision and other development) or works which upgrade or improve an existing asset beyond its existing capacity or performance in response to changes in usage or customer expectations (e.g. forestry harvesting routes).

9.19.1 Selection criteria

Asset development projects are generally justified and prioritised using NZTA Benefit/Cost Ratio (BCR) procedures which accounts for:

- The benefit to the road user for reducing delays in the time to travel along a given route
- Vehicle operating savings
- Safety benefits
- Maintenance cost savings
- Intangible benefits including community dislocation, environmental issues (including noise and vibrations) and other possible local, regional and national issues.

Roads which may meet the benefit conditions usually have high heavy traffic volumes such as the major routes to production forests or roads which have high maintenance costs (e.g. due to steep grades).

Generally, only those projects meeting NZTA criteria and attracting subsidy are carried out. Occasionally there is some input from Council where roads are considered to have a community benefit above that identified through the BCR analysis and this may result in non-subsidised works being progressed by Council without NZTA subsidy.

9.19.2 Capital Investment Strategies

NZTA documented project management procedures are used as a guide but no specific procedures are formally documented for WDC. However, there is confidence that suitable procedures are used during the project evaluation and design phase. Project design is standardised by use of the Pavement Design Manual and Road Geometric Design Manual recognised nationally and internationally and backed by long term research.

Developer Created Assets

Waimate District Council uses the Land Subdivision Standard NZS4404: 2010.

The construction of roads within new subdivisions is generally funded by the developers and must be constructed in accordance with the Council's Engineering Standards. On completion, provided the roads and associated assets comply with the Engineering Standards, they are vested in the Council (i.e. Council takes over ownership). There are few capital expenditure implications with this type of asset creation; the more significant implications are maintenance and renewal related.

The supervision of assets constructed within sub-divisional development and subsequently taken over by WDC should be reviewed and processes formally documented. This is included in the improvement programme.

Capital investment Strategies by Asset Types

Council's investment strategies for capital investment are detailed in table 9.8.

Table 9.8 – Capital Investment Strategies

Asset Description	Type of Project	Summary & Investment Strategy
Sealed roads	**Low Cost Low Risk Improvement**	Provides for the construction/implementation of low-cost/low-risk improvements to the transport system to a maximum total cost for approval per project of $2,000,000 Typically, they include: • small, isolated geometric road and intersection improvements • traffic calming measures • lighting improvements for safety • installation of new traffic signs and pavement markings, • provision of guard-railing • sight benching to improve visibility • walking facilities • Seal widening
	Seal Widening	Widening of existing seals where this is the least cost maintenance treatment necessary to overcome edge break or to reduce shoulder maintenance. Seal widening may also be promoted as a safety improvement project where crashes can be attributed to the narrow width of a road
	Road reconstruction	The road reconstruction category provides for the reconstruction of existing pavements within the existing or widened road reserve or deviations onto a new road reserve where the original road is closed. Examples of qualifying work include: • Realignment • Regrading • Widening • Intersection improvements • Approaches to bridge renewals costing in excess of $50,000. This category includes retaining structures, tunnels, all signs, pavement markings, traffic signals, lighting etc., necessary to bring the improved facility into service.
	New or upgraded roads for development (excluding private subdivision developments)	This can be an issue in Waimate District especially with development involving clusters of life style units. It is recognised that development within the District adds to the demands on the infrastructure of the District. The provision of major capital works ahead of developments, presents difficulties in who should provide the funding. Council in communication with the community needs to formulate a policy to provide a guiding framework for road improvement decisions and funding within the Waimate District.

Asset Description	Type of Project	Summary & Investment Strategy
Unsealed roads	**Seal extensions**	The District has a large number of unsealed roads and there is continual pressure to seal them, predominantly by the rural community. The policy to invest in seal extensions changes over time depending on the community and land use. WDC should consider adopting a ranking system to determine the relative priority for seal extension options. The advantages of a ranking system are: • it can take into account many factors with a weighting solely applicable to the Waimate District • provides relativity to assist in deciding the seal extension priorities Subsidised Seal Extensions are subject to NZTA benefit/cost procedures that must show benefit to the road user. Benefits include safety, travel time cost savings, reduced roughness, reduced vehicle operating costs and maintenance cost savings. Roads which may meet the benefit conditions usually have high heavy traffic volumes such as the major routes to production forests or roads which have high maintenance costs (e.g. due to steep grades). Dust Suppression Seal WDC will consider written applications for seal extending a maximum of 200 metres to suppress dust in front of dwellings. To gain approval the work must: • applicant to fund 50% of the remaining cost • WDC must have funds available Applicants will be prioritised by the severity of the nuisance and preference will be given to cases where the use of the road has markedly changed. WDC will undertake seal extensions when NZTA funding can be secured and the local share of the funding is available. Non-Subsidised Seal Extensions do not qualify for NZTA financial assistance will require 100% rate funding. Sealing can provide tangible (for which a monetary value can be assessed) and intangible (cannot usually be easily quantified in monetary terms e.g. improvements to air and water quality etc.) benefits. Tangible benefits generally fit into four main categories: • productivity gains for properties alongside the road to be sealed • improvements to ride for driver and passengers • vehicle operating cost savings • travel time savings
Bridges	**Bridge replacement**	Bridge development funding when and if required is included Bridge Renewal Budget.
Drainage	**General**	The cost of drainage renewal and development works is included in the Council structural renewal programme.
	Kerb and Channel	The construction of new kerb and channels is driven by the urban services stormwater upgrading programme and, to a lesser extent, in response to customer/resident requests.
Traffic Services	**New Signs**	All renewals and minor improvements are funded under 'Traffic Services Renewal'.

Asset Description	Type of Project	Summary & Investment Strategy
Footpaths	**Footpath construction**	The addition to the network of footpaths and pedestrian accessways occurs in one of the following ways: • Extensions constructed by Council where no footpath previously existed - Taking over new footpaths constructed within sub divisional development (constructed at the developer's expense) - Upgrading work to improve the level of service (particularly in relation to special treatments in high profile commercial areas) • Requests form Councillors, Public, and Staff • Safety improvements • Pedestrian demand Council has developed a prioritisation model for determining where footpaths should be added. This will also affect if footpaths will be renewed once they have reached the end of their survivable life. (see appendix)
Street Lighting		Streetlights are acquired or upgraded as part of: • power under-grounding work • minor safety works • upgrading work to improve the level of service (e.g. spacing) • extensions constructed by Council where no streetlights previously existed • taking over new streetlights installed with sub-divisional development (constructed at the developer's expense) • in association with the street upgrading programme <u>Development Strategy</u> Candidates for minor street lighting and footpath lighting are ranked according to the criteria of: • Night time foot traffic • Night time vehicular traffic • Existing lantern spacing • Geometry of the road and intersection • Special features (trees, parks, bridges, lack of footpaths, social conditions) <u>Development Programme</u> Currently development works are included under maintenance and renewals.

9.20 LOW RISK LOW COST IMPROVEMENTS (WC 341)

9.20.1 The Case for Change

This work category now allows for Improvements less than $ 2,000,000 to address safety concerns and enhance safe travel.

This includes realignments and reshaping corners to improve sight distance; removal of vertical curves by cut or fill; and bridge improvements e.g. widening or improved approaches or exits.

With increase in project size, there greater scope to complete project such and intersection improvements and bridge works which were previously of too higher value.

A regional approach is taken in combination with the Road Safety Action Plan.

9.20.2 Preferred Programme

Seal Widening

We will continue to carry out targeted seal widening where there is a high risk of head-on crashes due to the narrow carriageway and the increased volume of heavy vehicle and over width vehicle traffic on low volume rural roads. The investment will reduce the reactive maintenance costs associated with the edge break on these carriageways.



Seal Widen Talbots Road – Blind brow



Proposed Safety Footpath on Point Bush Road Bridge



Holme Station Intersection Realignment



Princess Street Footpath



Edinburgh Street Footpath

9.20.3 Minor Safety Improvements

Minor improvements are completed to eliminate safety deficiencies. Safety deficiencies are identified by the roading team, and or the contractor and prioritised in terms of likelihood and consequences to the road user. Types of projects include:

- Clear zone improvements
- Guardrail improvements
- Intersection improvements
- Lighting improvements
- Minor geometric improvements
- Seal widening
- Sight benching
- Signage / delineation / pavement marking
- Sealing Railway Crossings and intersections
- Safety Footpaths

9.20.4 Summary of Future Costs

341 Low Risk- Low Cost Improvements		2021-22	2022-23	2023-24	3 year Programme Totals
Project	**Details**				
Holme Station Intersection Realignment	Intersection upgrade "Convert "Y" intersection to "T" intersection	$160,000			$160,000
John /Victoria Intersection	Intersection and pedestrian crossing , reconfiguration and speed reduction		$50,000		$50,000
John /Goldsmith Intersection			$50,000		$50,000
Edinburgh Street Footpath	Construct footpath for pedestrian safety and to encourage active modes.	$36,000			$36,000
John Street Footpath		$8,000			$8,000
King Street Footpath		$29,000		$59,000	$88,000
Princess Street Footpath				$70,000	$70,000
Parker Street Footpath				$16,000	$16,000
White Street Footpath				$17,000	$17,000
Talbots Road Widening	Targeted seal widening of 1.9 km section of Tabolts Road where there is a high risk of head- on crashes due to narrow seal and blind brows, Also reduction in edge repairs.		$200,000		$200,000
Mill Road Curve Realignment	Realign curve undertaken with pavement renewal	$32,000			$32,000
Parkers Bush Road Guard Rail	Install 80m of Guardrail to protect road uses from drop into stream in narrow section of road.			$20,000	$20,000
Point Bush Bridge Footpath add-on	Install 24m Footway on the side of Point Bush Bridge. The aim of the project is to improve pedestrian safety on a single lane bridge with limited sight distance.			$48,000	$48,000
Enhanced Delineation on Horizontal Curves	Improved and consistent signage and delineation to reduce crashes	$20,000	$20,000	$20,000	$60,000
Geometric improvements	Eliminate safety deficiencies. Including sight benching, clear zone, minor widening, intersection improvement and intersection sealing.	$45,000	$10,000	$80,000	$135,000
		$330,000	$330,000	$330,000	**$990,000**

9.21 DISPOSAL PLAN

For Council to dispose of an asset it must comply with the legal obligations outlined in the Local Government Act which covers:

- Public notification procedures required prior to sale
- Restrictions on the minimum value to be recovered
- Use of revenue received from asset disposal

In general Council has no specific plans for disposal of components of the roading asset. Details for specific assets are included in Table 9.10.

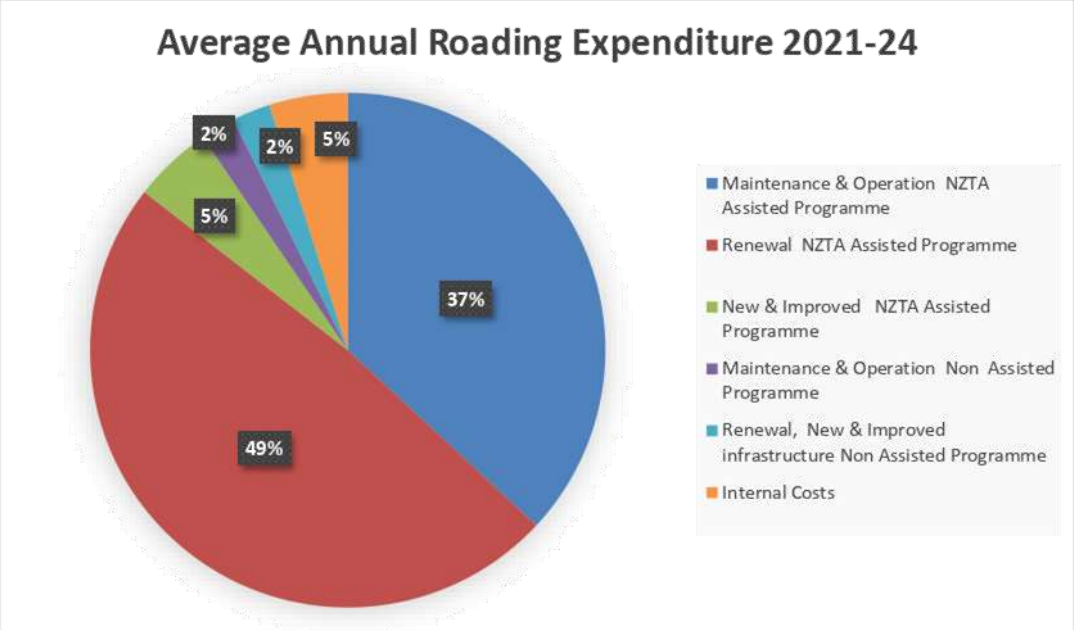
Table 9.10 – Disposal of Assets Summary

Asset Description	Disposal Plan	Comments
Land	**None**	Areas of unformed legal road reserve, berm areas surplus to requirements or areas being informally occupied by adjoining landowners may be identified for disposal in future.
Sealed Roads	**None**	Council may for financial reasons convert sealed road to an unsealed road.
Unsealed Roads	**None**	
Bridges	**None**	Bridges that are on no-exit roads, providing property access only (not to residences) that have reached the end of their economic life and that NZTA share of replacement funding is in doubt will be considered for disposal. Ownership may be transferred to the main users (local property owners).
Drainage	**None**	
Traffic Services	**None**	
Footpaths	**None**	
Street Lighting	**None**	Disposal activity for streetlights relates to lanterns, controls and poles which have been replaced with new components. Components which can be used as spare parts are retained in storage. Other surplus assets have no commercial value, and are disposed of.

10. FINANCIAL SUMMARY

10.1 FINANCIAL STRATEGY

The first priority is to maintain and operate the existing network in its current condition then allow for renewal expenditure that revitalises a component of the network that has worn out.



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Funding for the management and maintenance of the Roading network is provided from the District Roading rate and funding received from NZTA. Funding for improvements is provided from NZTA, financial contributions paid by developers and the Roading rate.

In determining the projects to be undertaken the benefit/cost ratio is the governing criteria used with preference being given to projects which can be shown to be economically justified, attract subsidy and have Council funding available.

10.2 VALUATION

10.2.1 Valuation 2020

The most recent valuation of the Roading network and associated assets was undertaken in August 2020 for all assets owned by Council as at 30 June 2020. This valuation is summarised in the table 10.1. The valuation is generally updated on a 3 yearly cycle to take into account capital works and additions to the Roading network.

The valuation consists of an assessment of the replacement cost, depreciated replacement cost and the annual depreciation or decline in service potential of the network. The annual depreciation or decline in service potential is the amount the asset declines in value over a year as a result of the remaining life of the asset reducing. Provision is required to be made to fund this depreciation so as to make suitable allowance for the future replacement or renewal of the asset.

Depreciation is provided on a straight-line basis on all physical assets at rates which write off the cost of the asset to the estimated residual value at the end of its assumed effective life.

Expenditure on renewing or improving the capacity of the asset is capitalised annually as are assets which are vested in Council by developers. Capital work in progress is not depreciated. The total cost of this work is capitalised at the end of the financial year in which it is completed and depreciated from then onwards.

1. **Table 10.1 – Roading Infrastructure Valuation (30 June 2020)**

Asset	Optimised Replacement Cost	Optimised Depreciated Replacement Cost	Annual Depreciation
Land	$81,285,250	$81,285,250	$0
Formation	$168,271,591	$168,271,591	$0
Unsealed Pavement Structure	$40,921,210	$40,921,210	$0
Seal Pavement Structure	$118,194,370	$66,007,099	$934,831
Sealed Pavement Surface	$18,233,189	$9,679,797	$1,052,707
Bridges	$28,080,257	$13,610,689	$293,111
Drainage	$17,156,987	$7,650,472	$171,887
Drain Fords	$2,760,930	$725,150	$61,799
Footpaths	$7,313,312	$2,426,139	$248,072
Signs	$601,565	$421,096	$35,752
Street Lighting	$419,922	$100,532	$13,206
Surface Water Channels	$12,571,669	$5,261,931	$130,309
Traffic Facilities	$80,246	$38,329	$2,687
Total Road Assets	**$495,890,498**	**$396,399,285**	**$2,944,361**

2. **Table 10.2 – Roading Infrastructure Valuation Comparison 2017-2020**

	Replacement Cost		Depreciated Replacement Cost		Annual Depreciation	
Year	**2020**	**2017**	**2020**	**2017**	**2020**	**2017**
Value	$495,890.498	$455,890,163	$396,399,285	$368,854,914	$2,944,360	$2,680,758
Increase	8.8%		7.5%		9.8%	

10.2.2 Valuation methodology

Every recorded component has been valued in terms of its replacement and depreciated replacement value. The valuation process has been performed in accordance with generally accepted accounting standards (IPSAS 17), valuation standards and NZ local authority asset management practice (NZ Infrastructure Asset - Management Manual and Valuation/Depreciation Guidelines). The RAMM valuation module has been used to complete the valuation. Continued enhancement has occurred in the RAMM module that now allows a more flexible approach to methods of depreciation reporting and the recording of assumptions during the valuation process.

10.2.3 Valuation improvement recommendations

a) Continue to maintain, develop and improve the asset component register.
b) Ensure installation/construction/replacement dates are applied to all assets. This is a critical input into determining Depreciated Replacement Cost.
c) Ensure asset owners are applied to all assets. This will ensure that all assets belonging to Council are valued and only assets belonging to Council are valued.
d) Add drainage headwalls to the drainage walls table (Inlet/Outlet tab in the drainage window) to allow valuation of drainage headwalls and wingwalls.
e) Add retaining walls to the retaining walls table to ensure these are valued also.
Add railings to the railings table to ensure these are valued also.
f) Ensure all treatment lengths have terrain assigned as this is used as a selection criterion for the valuation of formation.
g) Ensure all carriageways have reserve width populated as this is used in the calculation for the valuation of land.
h) Update treatment lengths that are bridges to Pavement Type 'Bridge' so that these sections do not have an allowance for pavement as well.
i) Where assets are recorded as side 'Both', separate into 2 records – one for each side, so that these assets are valued as 2 assets instead of 1. (This is preferred over the other option of updating the selection criteria in the valuation module as it will make other interrogations of the data clearer.)

10.3 ESTIMATED REQUIRED ASSET EXPENDITURE

When assessing the expected annual renewal expenditure an indication of the appropriate level of expenditure required can be gauged by comparing the estimated renewal requirement against the Annual Depreciation for each asset component in light of the average age of that asset component. If the asset is "young" then an amount less than the Annual Depreciation (AD) would be a likely requirement and as the asset ages a larger amount, probably greater than the AD would be likely. The 30 June 2020 WDC Valuation report is summarised in table 10.1.

The AD is an amount of money which represents the estimated annual renewal needs of the asset. It does not include the amount required to cover routine or unplanned reactive maintenance or running costs such as electricity for streetlights. On this basis, the AD will always be less than the theoretical total maintenance and renewal cost.

In considering the above it is possible to identify whether the current renewal expenditure is:

- approximately matching the theoretical renewal requirement
- less than the theoretical renewal requirement
- greater than the theoretical renewal requirement

Each Roading Asset component has been looked at to determine the outcome in relation to its budgeted expenditure. A comparison between forecast expenditure for 2021-24 and the Annual Depreciation for each asset type is shown in Table 10.3.

Table 10.3 – Comparison between Forecast Expenditure and Annual Depreciation

Asset	Annual Depreciation Consumption of the Asset	2021-24 Renewals	Annual Renewal	% renewals vs. Annual Depreciation
Seal Pavement Structure	$934,831	$1,203,022	$401,007	43%
Sealed Pavement Surface	$1,052,707	$3,848,927	$1,282,976	122%
Bridges	$293,111	$549,626	$183,209	63%
Drainage	$171,887	$578,053	$192,684	112%
Drain Fords	$61,799	$139,185	$46,395	75%
Footpaths	$248,072	$666,232	$222,077	90%
Signs	$35,752	$188,283	$62,761	176%
Street Lighting	$13,206	$0	$0	0%
Surface Water Channels (K&C)	$130,309	$402,090	$134,030	103%
Traffic Facilities	$2,687		$0	0%
Total Road Assets	**$2,944,361**	**$7,575,418**	**$2,525,139**	**86%**

From the comparison shown in Table 10.3, it can be seen that expenditure is probably appropriate for most assets in relation to the Annual Depreciation. However, underinvestment is indicated for Footpath assets. Council and roading staff will also need to assess the budgeted expenditure level and ascertain whether this is an appropriate level given the current age and condition of the network components.

10.4 HOW WE FUND OUR ACTIVITY

Waka Kotahi NZ Transport Agency Board have set the Funding Assistance Rates (FAR) for the 2021-National Land Transport Programme. The Waimate District rate is 64%. This is a 4% increase from the 2018-21 National Land Transport Programme.
The Board has provided certainty about funding arrangements so Council can complete the planning and budgeting required by the Regional Land Transport Plans (RLTPs), and Long Term Plan.
NZTA use the following inputs for each council to calculate FAR rates:

- Centreline kilometres divided by net equalised capital value provides a measure for the core transport task faced by a council relative to a measure of the asset base from which local authorities raise local share.
- Inverse of rating units identifies local authorities that have the smallest number of ratepayers from which to source local share.
- Index of deprivation is a demographic index published by the University of Otago and used by the Ministry of Health, which provides a measure of the relative wealth of communities.
- Total cost of all activities for a recent period is the actual total costs incurred by approved organisations for the last three to five years.

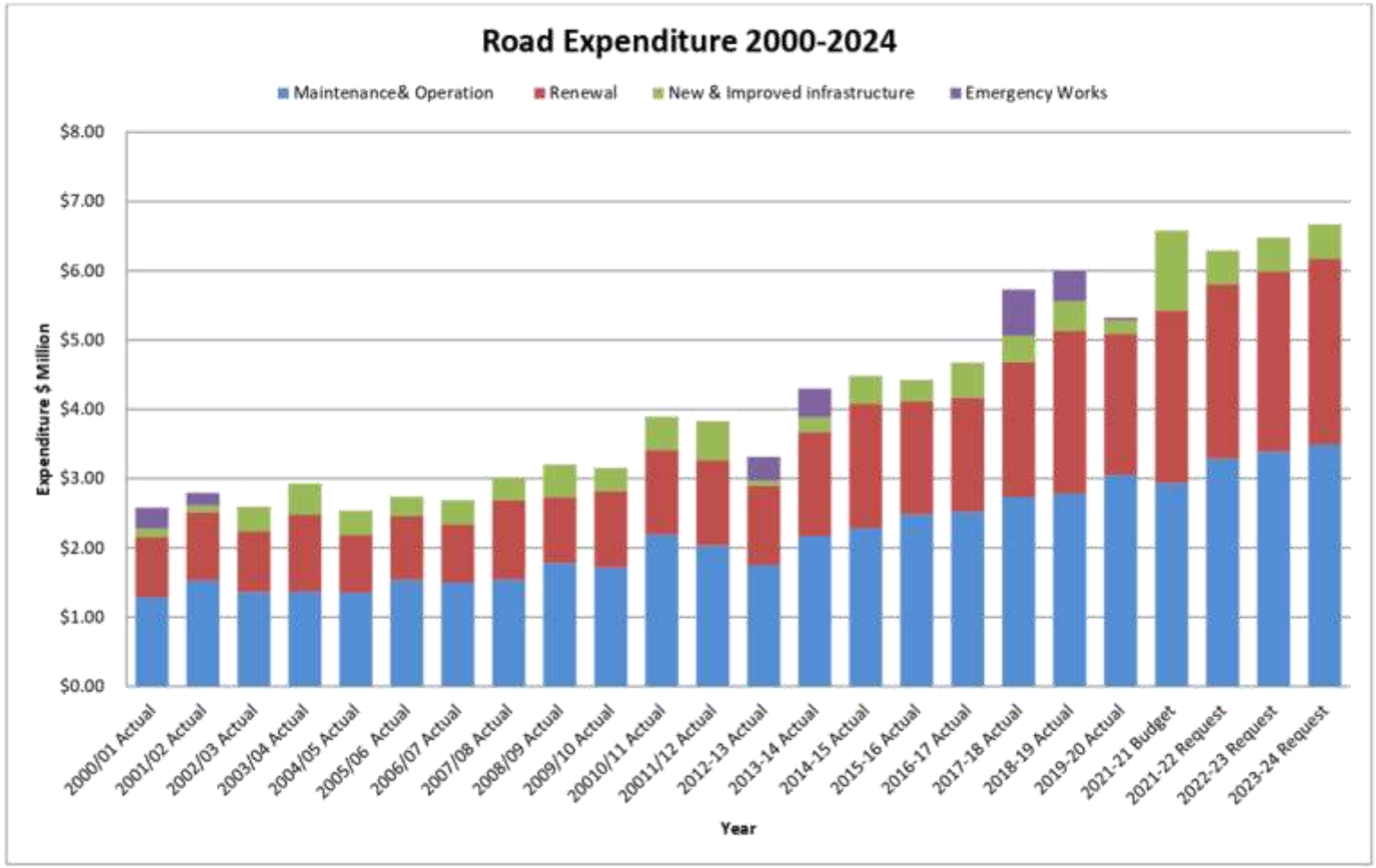
10.5 ROADING EXPENDITURE 2021-31

Waimate District Council Forecast Expenditure for 2021-31

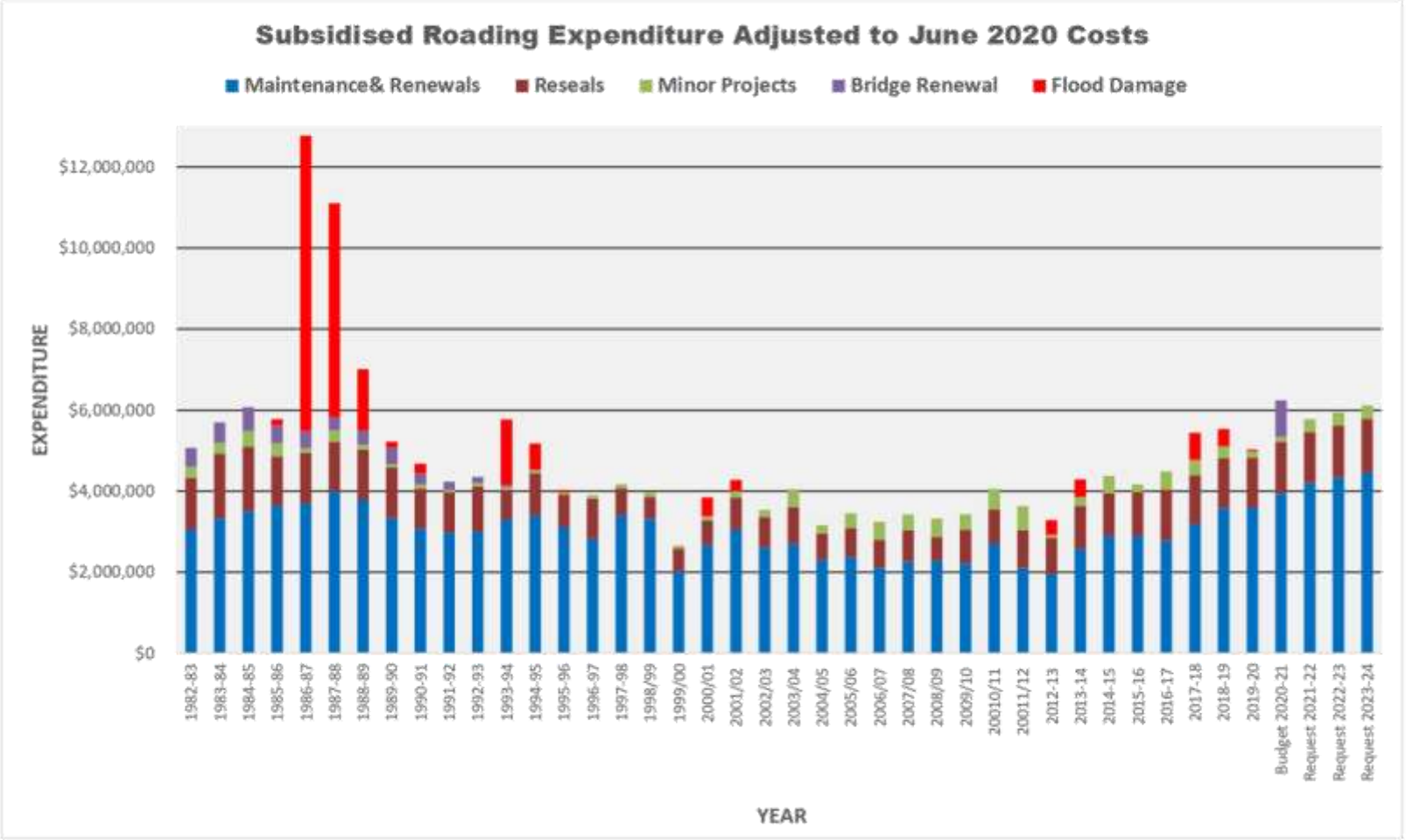
WC	Activities	Expenditure Category	GL Code	2021-22	2022-23	2023-24	3 year Programme Totals	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Maintenance, Operation & Renewal of Local Roads NZTA assisted Programme													
111	Seal Pavement Maintenance	Seal Pavement Maintenance	411047001	$561,537	$578,945	$596,352	$1,736,834	$613,760	$631,168	$649,696	$668,791	$682,268	$708,098
112	Unsealed pavement maintenance	Grading	411047101	$215,789	$222,478	$229,168	$667,435	$235,857	$242,547	$249,668	$257,005	$262,183	$272,110
		Unsealed Pavement Repairs	411047102	$87,600	$90,316	$93,032	$270,948	$95,747	$98,463	$101,354	$104,332	$106,434	$110,464
113	Routine Drainage Maintenance	Culvert Maintenance	411047201	$98,969	$102,037	$105,105	$306,110	$108,173	$111,241	$114,507	$117,872	$120,247	$124,799
		Drainage Maintenance	411047202	$280,896	$289,603	$298,311	$868,810	$307,019	$315,727	$324,996	$334,547	$341,288	$354,209
		K&C Cleaning	411047203	$24,000	$24,744	$25,488	$74,232	$26,232	$26,976	$27,768	$28,584	$29,160	$30,264
114	Structures Maintenance	Structures Maintenance	4110473	$153,703	$158,468	$163,232	$475,403	$167,997	$172,762	$177,834	$183,060	$186,749	$193,819
121	Environmental maintenance	Environmental maintenance	4110474	$189,641	$195,520	$201,399	$586,560	$234,201	$240,844	$247,915	$255,200	$260,343	$270,199
122	Traffic Service Maintenance	Pavement Marking	411047501	$45,000	$46,395	$47,790	$139,185	$45,908	$47,208	$48,594	$50,022	$51,030	$52,962
		Sign Repairs	411047502	$65,315	$67,340	$69,365	$202,020	$71,390	$73,414	$75,570	$77,791	$79,358	$82,363
		Carriageway Lighting	411047503	$31,000	$31,961	$32,922	$95,883	$37,818	$38,890	$40,032	$41,209	$42,039	$43,631
125	Footpath Maintenance	Footpath Maintenance		$55,974	$57,709	$59,444	$173,127	$61,179	$62,915	$64,762	$66,665	$68,008	$70,583
131	Level Crossing Warning Devices	Level Crossing Warning Devices	4110476	$10,500	$10,826	$11,150	$32,476	$13,116	$13,488	$13,884	$14,292	$14,580	$15,132
140	Minor Events	Minor Events	4110477	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
151	Network & Asset Management & 003 Asset Planning	Council Prof Services	411047801	$420,000	$433,020	$446,040	$1,299,060	$448,130	$460,840	$474,370	$488,310	$498,150	$517,010
		Consultant	411047802	$80,000	$82,480	$84,960	$247,440	$98,370	$101,160	$104,130	$107,190	$109,350	$113,490
Sub Total Maintenance, Operation				$2,319,923	$2,391,841	$2,463,758	$7,175,522	$2,564,895	$2,637,642	$2,715,081	$2,794,868	$2,851,187	$2,959,133
211	Unsealed Road Metalling	Unsealed Rd Metalling	4110480	$411,498	$424,255	$437,011	$1,272,764	$449,767	$462,524	$476,103	$490,094	$499,970	$518,889
212	Sealed Road Resurfacing	Sealed Rd Resurfacing	4110481	$1,244,399	$1,282,976	$1,321,552	$3,848,927	$1,246,457	$1,281,810	$1,319,443	$1,358,216	$1,385,586	$1,438,044
213	Drainage Renewals	Drainage Construction	411048201	$265,783	$274,022	$282,262	$822,067	$334,850	$344,347	$354,457	$364,873	$372,226	$386,318
		Culvert Renewal	411048202	$186,891	$192,684	$198,478	$578,053	$214,881	$220,976	$227,464	$234,148	$238,866	$247,910
		K&C Renewal	411048203	$130,000	$134,030	$138,060	$402,090	$196,740	$202,320	$208,260	$214,380	$218,700	$226,980
		Concrete Ford Renewal	411048204	$45,000	$46,395	$47,790	$139,185	$49,185	$50,580	$52,065	$53,595	$54,675	$56,745
214	Sealed Rd Pavement Rehabilitation	Sealed Road Pavement Rehabilitation	4110483	$388,950	$401,007	$413,065	$1,203,022	$737,556	$758,475	$780,744	$803,687	$819,882	$850,923
215	Structures component replacement	Structures component replacement	4110484	$177,700	$183,209	$188,717	$549,626	$194,226	$199,735	$205,599	$211,641	$215,906	$224,080
222	Traffic Service Renewal	Sign Renewal	411048501	$80,874	$62,761	$64,648	$188,283	$66,535	$68,422	$70,431	$72,501	$73,962	$76,762
		Lighting Renewal	411048502	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
225	Footpath Renewal	Footpath Renewal		$215,400	$222,077	$228,755	$666,232	$235,432	$242,110	$249,218	$256,541	$261,711	$271,619
Sub Total Renewal of Local Roads NZTA assisted				$3,126,495	$3,223,416	$3,320,338	[illegible]	$3,725,831	$3,831,299	$3,943,783	$4,059,677	$4,141,484	$4,296,281
Total Maintenance, Operation & Renewal				$5,446,419	$5,615,258	$5,784,096	[illegible]	$6,290,526	$6,468,940	$6,658,864	$6,854,544	$6,992,671	$7,257,414
New & Improved infrastructure for Local Roads NZTA Assisted Programme													
341		Minor Improvements	411048701	$330,000	$330,000	$330,000	$990,000	$360,690	$370,920	$381,810	$393,030	$400,950	$416,130
		Replacement of Bridges	411048702	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sub Total New & Improved Infrastructure				$330,000	$330,000	$330,000	[illegible]	$360,690	$370,920	$381,810	$393,030	$400,950	$416,130
Total Local Roads NZTA assisted Programme				**$5,776,419**	**$5,945,258**	**$6,114,096**	**$17,835,772**	**$6,651,216**	**$6,839,860**	**$7,040,674**	**$7,247,574**	**$7,393,621**	**$7,673,544**
		NZTA Subsidy		64%	64%	64%		64%	64%	64%	64%	64%	64%
				$3,696,908	$3,804,965	$3,913,021	$11,414,894	$4,256,778	$4,377,510	$4,506,032	$4,638,447	$4,731,917	$4,911,068

WC Activities	Expenditure Category	GL Code	2021-22	2022-23	2023-24	3 year Programme Totals	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Maintenance & Operation of Local Roads Non Assisted Programme													
	Street Cleaning	411049001	$90,000	$92,790	$95,580	$278,370	$98,370	$101,160	$104,130	$107,190	$109,350	$113,490	$116,730
	Car parks ,Street furniture	new	$4,000	$4,124	$4,248	$12,372	$4,372	$4,496	$4,628	$4,764	$4,860	$5,044	$5,188
	Road Safety TDC	411019003	$40,000	$41,240	$42,480	$123,720	$43,720	$44,960	$46,280	$47,640	$48,600	$50,440	$51,880
	Stock Effluent Disposal Scheme	411019004	$8,000	$8,186	$8,372	$18,558	$8,558	$8,744	$8,942	$7,148	$7,290	$7,566	$7,782
			$140,000	$144,340	$148,680	$433,020	$153,020	$157,360	$161,980	$166,740	$170,100	$176,540	$181,580
Renewal, New & Improved infrastructure for Local Roads Non Assisted Programme													
	Development	411090202	$50,000	$51,550	$53,100	$154,650	$54,650	$56,200	$57,850	$59,550	$60,750	$63,050	$64,850
	Seal Extension	411090203	$60,000	$61,860	$63,720	$185,580	$65,580	$67,440	$69,420	$71,460	$72,900	$75,660	$77,820
	Minor Improvements N/S	411090204	$45,000	$46,395	$47,790	$139,185	$49,185	$50,580	$52,065	$53,595	$54,675	$56,745	$58,365
			$155,000	$159,805	$164,610	$479,415	$169,415	$174,220	$179,335	$184,605	$188,325	$195,455	$201,035
Administration & Internal Costs													
			$390,121	$411,838	$413,619	$1,214,577	$429,599	$434,306	$440,092	$449,643	$459,783	$467,288	$488,307
Rechargeable Works													
	Recharge General	411049301	$30,000	$30,930	$31,860	$92,790	$32,790	$33,720	$34,710	$35,730	$36,450	$37,830	$38,910
Rechargeable Works	SH street lighting	411049302	$25,500	$26,291	$27,081	$78,872	$27,872	$28,662	$29,504	$30,371	$30,983	$32,156	$33,074
	SH street cleaning	411049303	$5,500	$5,671	$5,841	$17,012	$6,012	$6,182	$6,364	$6,551	$6,683	$6,936	$7,134
			$61,000	$62,891	$64,782	$188,673	$66,673	$68,564	$70,577	$72,651	$74,116	$76,921	$79,117
Total Local Roads Non Assisted Programme			$746,121	$778,874	$790,891	$2,315,685	$814,706	$834,450	$851,984	$873,639	$892,293	$916,204	$947,039
Total Roading Programme			**$6,522,539**	**$6,724,132**	**$6,904,796**	**$20,151,457**	**$7,465,923**	**$7,674,319**	**$7,892,658**	**$8,121,213**	**$8,285,914**	**$8,589,748**	**$8,839,653**

10.6 ROADING EXPENDITURE 2000/01 COMPARED WITH PROPOSED 2021/24



10.7 SUBSIDISED ROADING EXPENDITURE 1982-2020



10.8 KEY FINANCIAL FORECASTS ASSUMPTIONS

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
POPULATION CHANGE						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
DEMOGRAPHIC CHANGES						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups
OIL PRICE						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum market has historically demonstrated a tendency to stabilise rapidly, where possible.	WDC	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater frequency and/or greater severity.	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase demand for alternative methods of transport.	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
CLIMATE CHANGE						
The effects of climate change are expected to manifest in three categories: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) general socio-economic consequences of such changes, and c) socio-economic consequences of policies/ measures designed to curb the adverse effects of climate change.	WDC	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY (NZTA) REVENUE						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidized works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths
GRANTS AND SUBSIDIES						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.	WDC	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in reduced level of service.	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
NEW ZEALAND DRINKING WATER STANDARDS & SERVICE DELIVERY						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	WDC Central Government	Legislation changes under urgency in Parliament that must be implemented immediately.	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply
RESOURCE CONSETS						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	WDC	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply
WATER IRRIGATION SCHEMES						
Council does not expect major irrigation schemes to be introduced into the district over the period of the Long Term Plan.	WDC	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal impact on Council, but a more considerable impact on the district's agricultural sector.	Council will monitor the environment in regard to any potential development, and seeks to remain involved in discussions/proposals.	Roading and Footpaths, Rural Water Supply, Sewerage

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
EMERGENCY EVENT						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	WDC	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups
DEVELOPMENT CONTRIBUTIONS						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable under each system will be broadly similar.	WDC	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
DISTRICT ECONOMY						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	WDC	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices- the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups
USEFUL LIVES OF SIGNIFICANT ASSETS AND DEPRECIATION						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support WDC asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply
REVALUATION OF NON-CURRENT ASSETS						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets: Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%	WDC	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FUNDS FOR FUTURE REPLACEMENT OF SIGNIFICANT ASSETS						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	WDC	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage
RETURN ON INVESTMENT- ALPINE ENERGY						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it is assumed the dividend will remain at 6c.	WDC (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be unlikely to maintain dividends at the proposed level.	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FORESTRY ASSETS VALUES						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	WDC	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance
CAPITAL DELIVERY						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	WDC	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in any given year, and carried over to subsequent years.	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. Due to the nature of the rates smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	Water Supply & all other activities

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
RETURN ON INVESTMENTS- OTHER						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	WDC (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance
INFLATION						
Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL).	Business and Economic Research Ltd.	Inflation will be higher or lower than anticipated.	Moderate	A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.	Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan. In the event of significant changes to the underlying costs supporting	All activity groups

Year	Roading %	Property and Parks %	Water %	Staff %	Other %	Wastewater %	Capital Expenditure %
June 2022	3.3	1.7	7.2	4.8	1.7	7.2	4.0
June 2023	3.1	2.0	3.4	2.4	2.0	3.4	3.0
June 2024	3.0	2.0	2.1	1.5	2.0	2.1	2.6
June 2025	2.9	1.9	2.3	1.7	1.9	2.3	2.6
June 2026	2.9	1.8	2.6	2.0	1.8	2.6	2.7
June 2027	2.9	1.8	2.3	2.2	1.8	2.3	2.6
June 2028	2.9	1.7	3.0	2.3	1.7	3.0	2.8
June 2029	2.9	1.7	3.3	2.4	1.7	3.3	2.8
June 2030	2.9	1.7	3.3	2.6	1.7	3.3	2.9
June 2031	2.9	1.6	2.7	2.7	1.6	2.7	2.7

work in the activity areas, mitigation planning will feature in the Annual Plan.

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
BORROWING COSTS						
Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.	WDC (in conjunction with its financial advisors)	Interest rates will differ significantly from those estimated.	Low	If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.	Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.	Investment and Finance
UNIDENTIFIED LIABILITIES						
It is assumed that Council does not have any unidentified liabilities.	WDC	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

10.9 CONFIDENCE LEVELS

The 10-year funding forecast has been based on current contract rates tendered September 2015.

The confidence level of the first three years of the programme is high as this is based on actual assessed need on the network, which is unlikely to change significantly over this period. The forecast for the remainder of the 10-year period is based on general annual quantity projections and not a robust forward works programme, so the confidence level is lower.

11. PROCESSES AND ASSET MANAGEMENT PRACTICES

This section outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP.

11.1 ORGANISATION STRUCTURE

Council's organisation structure is shown in Figure 11.1. The Roading Group structure is included in Figure 11.2.

Figure 11.1 – Waimate District Council Organisation Structure

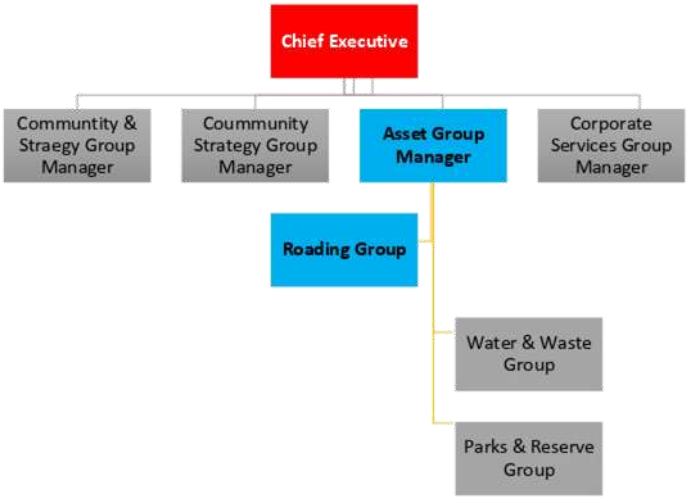
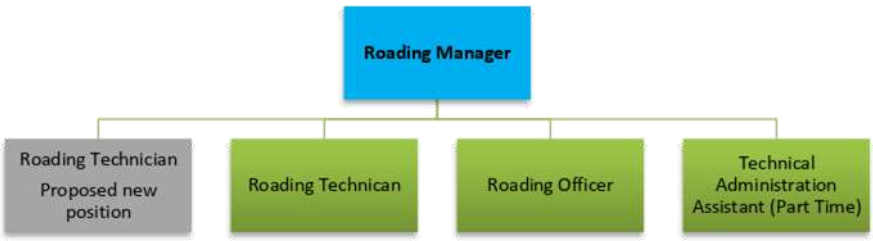


Figure 11.2 – Waimate District Council Roading Group Structure



WDC employ a Roading Manager, a Roading Technician and Roading Officer who are responsible for the management of the road asset. The Roading manager is responsible for the maintenance management of the Roading network. Occasionally some elements of the work are competitively tendered to consultancy services to manage (e.g. AMP preparation, bridging asset management). Council Roading Staff and the Road Maintenance Contractor regularly inspect and monitor the network. It is proposed to employ an additional Roading Technician.

11.2 PLAN REVIEW AND MONITORING

11.2.1 Monitoring Approach

Waimate District Council has developed this AMP based on its current knowledge of customer requirements, the configuration of the existing and future network to meet customer requirements, current asset information and the strategies to achieve customer requirements.

To further develop a meaningful AMP, including supporting processes, systems and data, Council recognise the need for a more structured approach. This approach includes:

- Council's firm commitment to implement and develop the AMP
- Incorporate this AMP as a tactical plan within Council's planning framework
- Review of the plans by internal staff and suitably qualified external consultants
- Aiming to produce an AMP that meets the requirements of the community
- Benchmarking key performance indicators against similar external TLAs
- A corporate commitment to implementing and maintaining suitable AM information systems
- Adopting a team approach to the preparation of future AMPs in order to maximise the buy-in of internal staff and sharing of specialised knowledge
- On-going dialogue with NZTA to ensure the plan reflects NZTA priorities and expectations

11.2.2 Timetable for Audit and Review

The programme for future AM reviews of this plan is in Table 11.1 below:

Table 11.1 - Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 July each year
Internal AMP peer review by staff not directly involved in preparation of AMP	30 August each year
Adoption of AMP by Council	Determined by LTP programme, typically December the year preceding LTP consultation
External benchmarking by internal staff	Annually
Audit NZ external audit	As required by Audit NZ

11.2.3 Utilisation of AMP

Historically Asset Management Plans have been carried out for regulatory requirements and not used on an on-going basis. Table 11.2 details the methodologies for the on-going implementation and updating of the AMP within WDC to ensure the Roading Activity Management Plan is used to its full potential.

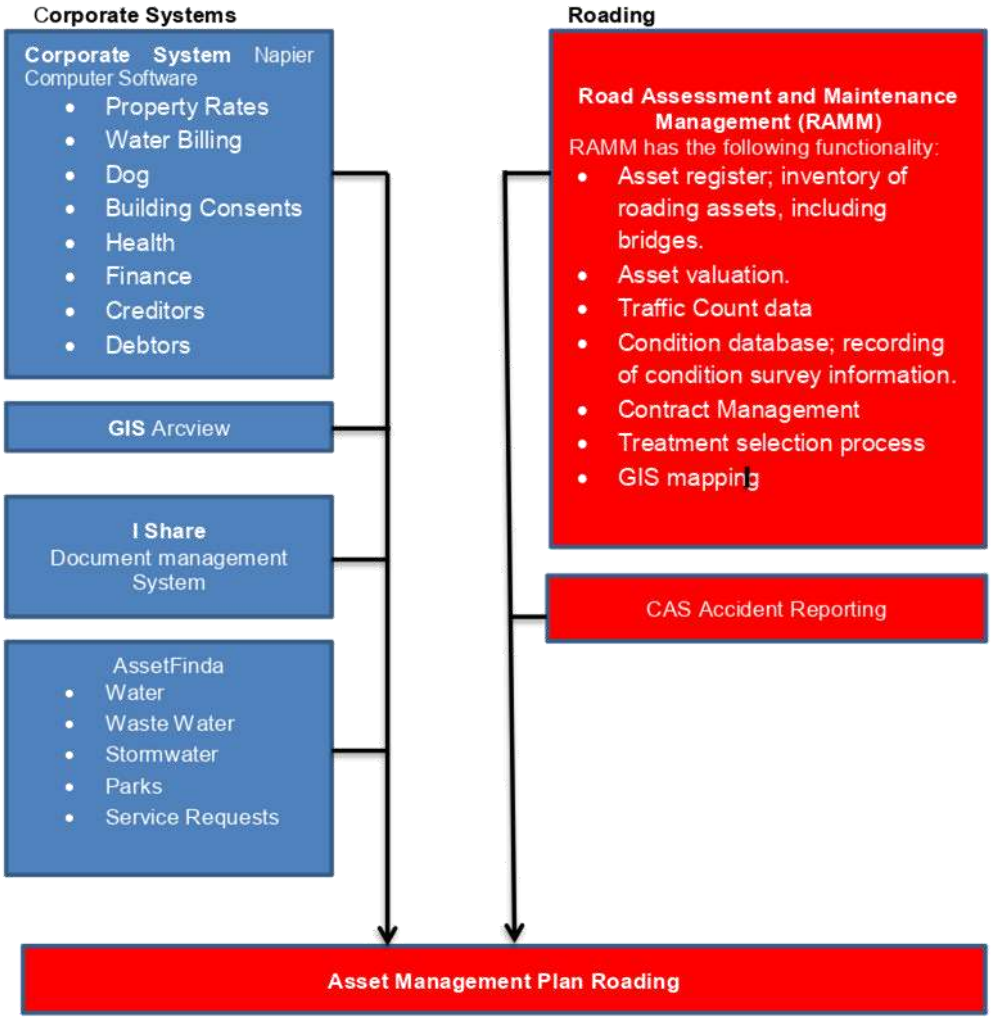
Table 11.2 - Methodologies for the On-going Implementation and Updating of AMP's

Methodologies	Output
Continuation of the organisational culture of asset management	The asset management culture needs be supported by the Chief Executive and senior managers in conjunction with the elected Council. Effective stewardship and management of WDC major investment (assets) will not occur in the long term without a culture of asset management.
Resourcing of Asset Management Programmes	Activity management programmes must be adequately resourced
Roles and Responsibilities of Council Staff	The roles and responsibilities of Council staff as they relate to the AMP's implementation need to be defined in respect to the ongoing use of the plans as this will assist the Plan to remain relevant and current. To enable this to occur the following is required • The Activity Management Plans adopted/accepted by staff down to a defined level • Council Staff to know what's in the plans and how it could affect their day to day work • Council Staff to understand the reasons for the plan and the implications for the long term use of them • Understand all the reporting requirements for Levels of Service and Internal Benchmarking • Training required in the use of the Plan (what's in it, how work is done, on-going requirements for monitoring, review and updating) • Instigation of processes to encourage Council Staff to use the Plan

11.3 BUSINESS PROCESSES

Figure 11.3 details the data systems that are presently used within WDC and their relationship with other systems.

Figure 11.3 - WDC Data Systems



Data management systems used to assist in the decision making process for Roading network issues are detailed below.

11.3.1 Road Assessment and Maintenance Management System (RAMM)

The use of RAMM or an equivalent asset management system is mandatory to obtain financial assistance from NZTA. The RAMM system is the main information systems used in the management of the Roading network. RAMM contains a schedule of all roads in the network and information on carriageway widths, surfacing types and ages, pavement composition, traffic volumes and loadings and road condition data. Information drainage facilities, footpaths, bridges, Streetlights and signs is also stored on the RAMM system.

The information held on RAMM is continually being updated and improved following the completion of roading maintenance and renewal treatments, capital improvements, traffic counts and road rating condition assessments.

General maintenance and renewal work is continuous throughout the year and responds to the needs of the network. The data from the maintenance carried out is entered into RAMM on a regular basis. Traffic count data is entered into the RAMM database as it become available.

Confidence levels used to assess the accuracy of the Waimate District Council RAMM data tables are described in the 2020 Roading Asset Valuation report and shown in Table 11.3. These confidence ratings are assigned to the source data and unit cost rates and to other items as appropriate. Data from the RAMM database was generally considered to have a **confidence rating of B**

Table 11.3 – Data Confidence Ratings

Grade	Label	Description	Accuracy
A	Highly Reliable	Data based on sound records, procedures, investigation, and analysis which is properly documented and recognised as the best method of assessment.	± 5-10%
B	Reliable	Data based on sound records, procedures, investigation and analysis which is properly documented but has minor shortcomings, for example, the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.	± 10-15%
C	Uncertain	Data based on sound records, procedures, investigation, and analysis which is incomplete or unsupported, or extrapolation from a limited sample for which grade A or B data is available.	± 15-25%
D	Very Uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.	± 25-40%
E	Unknown	Based on a best guess from an experienced person.	± 50-60%

Our judgment of the overall accuracy of the data used in this valuation is tabulated below.

Confidence Grading					
Asset	ORC		ODRC		Overall Value
	Quantity	Unit Cost	Life	Remaining Life	
Land	B	A	-	-	A-B
Formation	B	B	-	-	B
Unsealed Pavement Structure	B	B	-	-	B
Sealed Pavement Structure	B	B	B	B	B
Sealed Pavement Surface	B	A	B	B	B
Bridges	A	B	A	B	A-B
Drainage	B	B	B	B	B
Drain Fords	B	A	B	B	B
Footpath	B	B	B	B	B
Signs	B	A	B	B	B
Street Lights	B	B	B	B	B
Surface Water Channel	B	A	B	B	B
Traffic Facilities	B	B	B	B	B
Overall					B

Data on road condition is collected through the carrying out of road roughness and condition rating surveys.

Roughness surveys that measure the quality of ride experienced by motorists when travelling on the road are undertaken bi-annually. The measurements are obtained using a vehicle mounted response meter which records the vertical displacement or roughness of each 100 metres of traffic

lane. These measurements are then converted to NAASRA and IRI counts which are the standard measure of road roughness and stored on the RAMM database.

Condition rating surveys involve a visual assessment of pavement surface condition and are undertaken bi-annually over the sealed network. They involve a detailed walkover and identification of defects on the carriageway over 100% of the roads. Drainage assets are not rated. The defects recorded include the number of potholes and the area or length of other defects such as rutting, shoving, flushing, scabbing, cracking, edge break.

11.3.2 Road Efficiency Group DATA QUALITY REPORT

The Road Efficiency Group (REG) Data Quality Report provides a useful insight into the standard of the asset data.
A copy of the latest report is available at https://www.nzta.govt.nz/resources/rca-data-quality-reports/waimate/

The report indicates the network data is reasonably good, improvement in traffic Counts and traffic loading are being implemented and well as centre line mapping.
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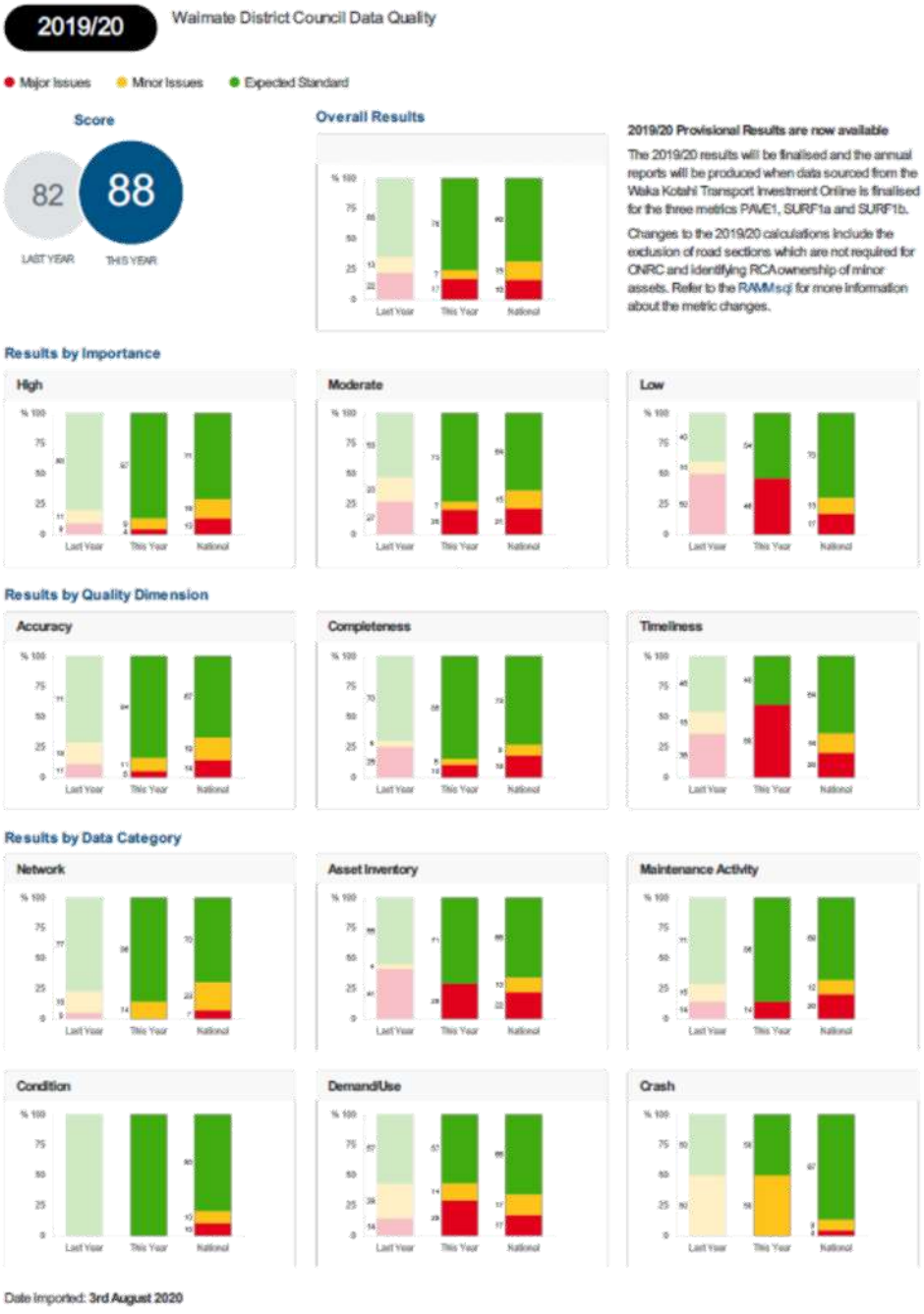

2019/20
Waimate District Council Data Quality
Major Issues
Minor Issues
Expected Standard
Score
82
88
LAST YEAR
THIS YEAR
Overall Results
2019/20 Provisional Results are now available
The 2019/20 results will be finalised and the annual reports will be produced when data sourced from the Waka Kotahi Transport Investment Online is finalised for the three metrics PAVE1, SURF1a and SURF1b.
Changes to the 2019/20 calculations include the exclusion of road sections which are not required for ONRC and identifying RCA ownership of minor assets. Refer to the RAMMsoj for more information about the metric changes.
Results by Importance
High
Moderate
Low
Results by Quality Dimension
Accuracy
Completeness
Timeliness
Results by Data Category
Network
Asset Inventory
Maintenance Activity
Condition
Demand/Use
Crash
Last Year
This Year
National
Date Imported: 3rd August 2020

11.3.3 RAMM -Treatment Selection Algorithm (TSA)

The RAMM system contains a treatment selection algorithm that utilises the condition data and other road inventory data to make recommendations as to preferred treatments on the network. The outputs from the treatment selection are utilised at a network level and also at an individual treatment section level.

At a network level the treatment selection summary report identifies the length of the network recommended for resealing in the current and following year and also makes recommendations as to the length of the network requiring major treatments such as smoothing or strengthening. The treatment selection algorithm undertakes an economic analysis of the maintenance options for each treatment length to identify the most cost-effective treatment option. This is based on the ongoing cost of maintenance and the unit costs of the various maintenance and renewal treatments.

The treatment selection summary report is a useful tool in assessing the effectiveness of the maintenance and renewal strategies being followed and is an indicator of the future maintenance needs of the network. The treatment selection output identifies sections of road with various faults and makes recommendations as to which specific road sections should undergo resealing or rehabilitation. These outputs are used in the preparation of the annual resealing and rehabilitation programmes.

The treatment selection algorithm is run after updating of the RAMM database to reflect completed physical work.

11.3.4 GIS

GIS is used as a tool to present roading asset management data as required. For example, bridges, signs, and culvert locations can be mapped. The systems also allow for mapping of other information such as State Highway detours etc.
RAMM also includes a GIS mapping function.

11.3.5 CAS Database

CAS is an online NZTA live database of official crash data and includes sophisticated spatial, analysis and reporting capability. Access to this data is available by direct enquiry to NZTA.

11.3.6 Bridge Data

Sufficient bridge data is currently held in the RAMM database such that the bridge valuation using RAMM Valuation module can be undertaken. Waimate District Council has more bridge information in a separate spreadsheet database and files including a large number of engineering drawings.

Processes for regularly monitoring the performance of bridges are well documented and the information is used for identifying and prioritising upgrading and development of projects.

11.3.7 Complaints and Service Requests Database

The Council operates a Complaints and Service Requests database (a module within AssetFinda). This records all complaints and service requests associated with the Roading activity and provides useful information for trending and analysis of system performance and highlights issues.

11.3.8 Accounting Processes

Waimate District Council accounts for revenue and expenditure on an accrual basis. All work under the Works Programme is identified through a General ledger code. The costs are summarised into where operational/maintenance costs are identified separately to capital/renewal items. Valuations are currently based on straight line depreciation and assumed effective life's.

There are a range of reports prepared in order to comply with the requirements of Council, NZTA and the Auditors. All reports are prepared in compliance with Generally Accepted Accounting Principles (GAAP)

11.3.9 Contracts

All contract works are claimed monthly against each of the contract item numbers by the physical works and professional services contractors. Waimate District Council and/or consultants confirm the payment value for all physical works and the Waimate District Council confirms the payment of any professional services. The accounts codes are included on the payment certificate. These certificates are forwarded to Waimate District Council for payment.

11.3.10 As-Built Data

The process of capturing as-built records for the on-going enhancement of asset registers is included as a requirement of the maintenance contract. The information is supplied to Council staff for them to upgrade the relevant registers. Projects undertaken outside the maintenance contract have a requirement within the contract for the relevant information to be collected and forwarded to Council for them to upgrade the registers.

Asset data is collected for New subdivisions and recorded in the appropriate location (e.g. RAMM) and available for ongoing effective Roading asset management.

11.3.11 Smart Buyer Principles

11.3.12 Future Improvements

RAMM database
The current status of the WDC RAMM database should also be reviewed and reported accordingly in the "Confidence Ratings for Roading Asset Data".
Improve Data Quality in RAMM to Grade 1 level

Traffic Counting
Implement traffic counting strategy.

Systems
Develop and Implement information storage system,
Improve service requests
Provide Roading information for the public on Council Web site.

11.4 SERVICE DELIVERY REVIEWS

Service Delivery Reviews are a legislative requirement for local authorities under Section 17A of the Local Government Act (2002) (the Act). This states:
"A local authority must review the cost-effectiveness of current arrangements for meeting the needs of communities within its district or region for good-quality local infrastructure, local public services and performance of regulatory functions."

The Act goes on to specify that a review must be undertaken in the following circumstances:

- When a significant change to the level of service is proposed
- Within two years of a contract or binding agreement expiring
- At any other time, but no less than six years following the last review.

A Review has been completed in2017 and again in August 2020 prior to The Maintenance contract renewal in 2021

Roading service delivery
Council manages roading activity through a mixture of in-house and contracted professional services providers. All Physical works are completed by a long term maintenance contract some projects by project contracts for capital works.

Service delivery Review Recommendation 2020
The service delivery options were assessed as part of the 2017 service delivery review. WDC decided to pursue the enhanced status quo for professional services delivery. There have been no changes in the internal or external environment since 2017 that would have a material impact on the most effective and efficient service delivery option. In the physical works space, delivery by another agency (private sector) remains the only option for physical works delivery under the LTMA.

12. IMPROVEMENT PLAN

12.1 ASSET MANAGEMENT IMPROVEMENT PROCESS

This section provides details of how Council plans to improve this version of the Roading AMP.

This AMP has previously been reviewed and updates incorporated including improvements to move towards "Core" level Asset Management. Council is committed to a continual improvement as outlined in this section of the AMP. A key objective is to dovetail the asset management planning process with the other key planning processes particularly the Community Plan (LTP).

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Roading assets. This assessment follows the guidance provided in Section 2.2.4 of the international Infrastructure Management Manual (IIMM). The results of this assessment are shown in Table 3.3. **Analysis of factors suggests that asset management practice should be 'Core'.** This has been adopted by Council through Council's Asset Management Policy Statement for Roading states that the following principles will be used by Council to guide asset management planning and decision making:

- Effective consultation to determine appropriate Levels of Service
- Ensuring service delivery needs form the basis of asset management
- Integration of asset management with corporate, financial, business and budgetary planning using Asset management plans and Council's LTP to demonstrate this
- Integration with neighbouring authorities and other agencies including NZ Transport Strategy, National Land Transport Programme, and the Regional Land Transport Strategy
- Integration of asset management within Council's strategic, tactical and operational planning frameworks
- Informed decision making taking a lifecycle management and inter-generational approach to asset planning
- Transparent and accountable asset management decision making
- Sustainable management providing for present needs whilst sustaining resources for future generations

12.2 MONITORING AND REVIEW PROCEDURES

12.2.1 Three Year Review

This AMP is to be reviewed on a 3-yearly basis, with the next full review taking place as part of the development of the 2021 LTP. During the three-year period leading up to this review, the items in the Improvement Programme should be addressed within the timeframes provided. These improvements can then be incorporated into the next review of the AMP.

This AMP is also audited externally with the review including process, data integrity and Levels of Service.

12.2.2 Annual Review

At the completion of each annual budgeting period the financial forecasts are to be updated to include the new Year 10 figures and any changes made to the intervening budgets by the Council.

By the end of July each year asset inventory data to be updated in RAMM to reflect the previous financial year's maintenance and renewal activities. Data accuracy is to be verified by completing a random 10% audit.

12.3 AMP IMPROVEMENT PROGRAMME

The review and improvement of this AMP requires resource and budget in order to complete the selected improvement tasks. Table 12.1 outlines the items for improvement, relative urgency, resource, priority, budget and the authority sought to give approval to complete each item.

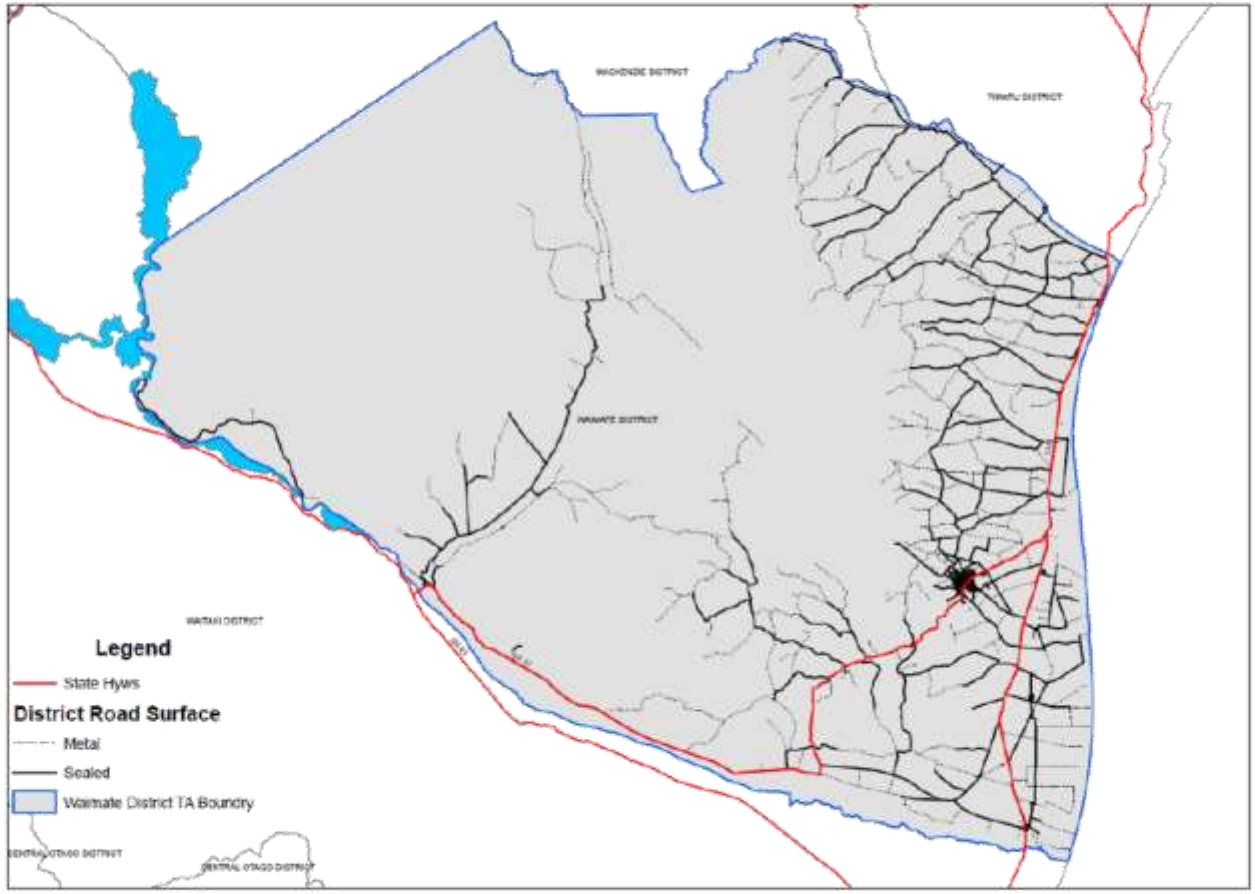
Table 12.1 –Improvement Programme (Yet to be updated Sept 2020)

Task Description	Action	Resource	Priority	Estimated Cost	Timing
One Network performance Measures Reporting	Data collection plan to be established for reporting against ONRC performance measures.	Roading Team	High		31/06/2018
Data Quality	Implement traffic counting strategy	Roading Team	High		31/06/2018
	Improve Data Quality in RAMM to Grade 1 level	Roading Team	High		31/06/2018
Sealed Pavement Management	Carry out further falling weight deflectometer (FWD) testing	External	Medium	$20k	30/01/2020
	Consider limited dTIMS modelling subject to business Case	External	Medium	$20k	30/06/2020
	Consider HSD if this is being done by other agencies in the area subject to business Case	External	Medium	$20k	30/06/2020
	Monitor land use changes and impact on network performance	Roading Team	Medium		Ongoing
	Model drainage issues and pavement performance	Roading Team	Medium	$5k	Ongoing
Maintenance Contract	ONRC implemented in contract	Aoraki Roading Collaboration	High		30/01/20
	ONRC based maintenance intervention strategy	Aoraki Roading Collaboration	High		31/12/2018

Task Description	Action	Resource	Priority	Estimated Cost	Timing
	Develop Strategy for renewal of Maintenance Contracts. Including engagement with contractors	Aoraki Roading Collaboration	High		30/01/2020
Risk Assessment	Complete risk assessment of culvert assets	Roading Team	**Medium**	**$10k**	1/12/2020
Bridge Evaluations	Review valuation data and confirm actual value of bridge assets	Roading Team External	**Medium**	**$10k**	1/12/2019
Review existing communications plans for managing emergency events	Review communication protocols and procedures with respect to keeping the public and emergency services informed of road closures and the management of emergency events	Roading Team Council	**Medium**		
Forward Works Programme	A full 10 year forward Works Programme needs to be developed for renewals especially sealed road surfacing, drainage assets, sealed pavement and footpaths.	Roading Team	**Medium**		1/12/2020
Systems	Develop information storage, service requests and communication systems	Roading Team Asset Group Council	**Medium**		1/12/2020

13. APPENDICES

13.1 ROAD MAP



13.2 ROAD SAFETY STRATEGY AND ACTION PLANP

Road Safety Strategy and Action Plan

South Canterbury, July 2021 – June 2024

Our Call to Action - ***"Despite previous efforts, there have been no material improvements to road safety over the past two decades. Loss of life and serious injury should not be an inevitable cost of travelling through South Canterbury."***

Introduction

South Canterbury includes over 3,700 kilometres of roads, providing the primary transportation linkage through the Waimate, Mackenzie and Timaru Districts. This road network is largely rural, much of it unsealed and characterised by many long, straight roads.

From 2010 – 2019, there were on average 8 fatal crashes and 30 serious injury crashes every year.

In 2020, there were 7 fatal crashes and 25 fatal injury crashes in our region – even though there was a marked reduction in traffic during the nationwide COVID-19 lockdown.

Despite previous efforts to improve road safety, there have been no material improvements to road safety over the past two decades. Loss of life and serious injury should not be an inevitable cost of travelling through South Canterbury.

With new national targets to reduce fatal and serious injury crashes by 40% over the next decade, South Canterbury needs to be bold and take a high level of responsibility for improving local road safety.

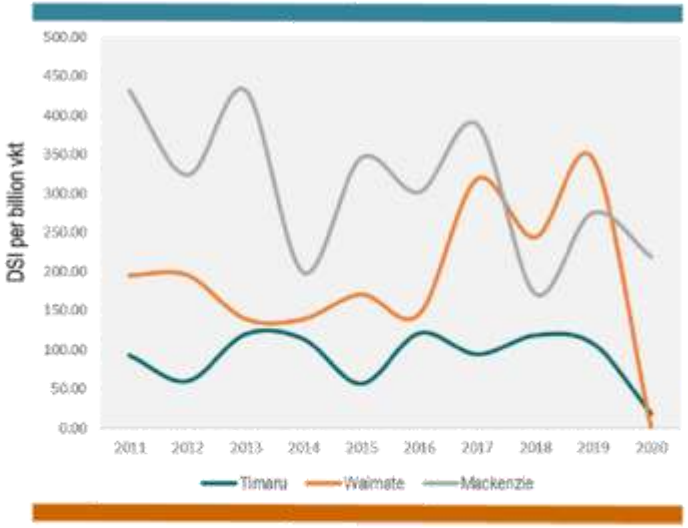
In the rear view – the case for change

Reflecting on South Canterbury's road safety track record, the following is clear:

- Road safety is not improving
- South Canterbury experiences more than its fair share of New Zealand's fatal and serious injury crashes
- The same key factors are contributing to fatal and serious injury crashes year upon year
- Certain demographics are more at risk than others
- We need a step change in our road safety activity, reinforced by improved collaboration on, accountability for and commitment to road safety targets.

2000 - 2009	2010 - 2019	2020
7 fatal crashes and 35 serious injury crashes on average, every year.	8 fatal crashes and 30 serious injury crashes on average, every year.	7 fatal crashes and 25 serious injury crashes in 2020

OVER **$51m** → The estimated social cost of crashes in South Canterbury in 2020



Key Facts

Road safety is not improving in South Canterbury

In Timaru and Mackenzie Districts, crash trends have peaked and troughed over various years between 2010 and 2019, but over the decade have remained at a relatively constant level - 2019 metrics show little change from those recorded in 2010.

In Waimate District, the number of fatal and serious injury crashes has increased approximately twofold since 2010, though this dropped in 2020 with no fatal or serious injury crashes recorded.

Last year alone the estimated social cost of crashes in South Canterbury was over $51Million

The social cost of crashes and injuries is huge, with an estimated cost of $51Million in 2020. This is based on an estimated average social cost of $5,374,100 per fatal crash, $551,700 per serious injury crash and $30,800 per minor injury crash. [1]

[1] https://www.transport.govt.nz/assets/Uploads/Report/SocialCostof-RoadCrashesandInjuries2019.pdf

South Canterbury experiences more than its fair share of New Zealand's fatal and serious injury crashes



	POPULATION 2018	DSI CRASHES EVERY YEAR ON AVERAGE 2010-2019
SOUTH CANTERBURY	58,977	8 fatal crashes 30 serious injury crashes
NZ	4.886m	283 fatal crashes 1932 serious injury crashes

South Canterbury has 1.2% of NZ's population, but 2.7% of NZ's fatal crashes and 1.7% serious injury crashes

A disproportionate number of people are dying or being seriously injured on our roads.

We're not learning

The same group of contributing factors are repeatedly recorded in relation to crashes in our region. In other words, we are making the same mistakes over and over.

Strong contributing factors to crashes in South Canterbury include:

- Loss of control around bends
- Loss of control on stationary roads
- Alcohol/drugs
- Failure to give way
- Speed
- Road position
- A strong portion of fatalities are attributed to head on crashes. [5]

Certain demographics are more at risk than others

Male drivers aged 15-29 are overrepresented in nearly all crash types in all Districts of South Canterbury.

In the Waimate District, male drivers aged 45-49 also show a stronger correlation with DSI crashes compared to other age/gender groups.

Only 29.7% of crashes are attributed to females on average across all Districts, compared to 70.3% attributed to males on average across all Districts. [6]

[5] Daniel has these stats
[6] Daniel has these stats

We need a step change in our road safety activity, reinforced by improved collaboration on, accountability for and commitment to road safety targets

A South Canterbury Road Safety Co-ordinator has been appointed since the 1990s to coordinate, facilitate and manage local efforts to reduce identified road safety issues across the region. Supported by the coordinator, the Waimate, Mackenzie and Timaru District Councils have collaborated in recent years to promote road safety with particular focuses on rural driving, speed, fatigue and education on intersection safety.

Despite these strong efforts, road safety in our region has not improved.

A workshop held in December 2020 identified that while engagement and collaboration on road safety in South Canterbury has been successful, there is a need for a step change in the level and form of road safety activity undertaken. In particular, there is a need to:

- Incorporate more engineering and enforcement interventions alongside existing education interventions
- Critically analyse audiences and stakeholders for/to road safety activity, and tailor activity, communications and communications channels to those particular groups (acknowledging that one size doesn't fit all)
- Align strategically with national road safety initiatives
- Actively monitor and report on progress of road safety activity
- Focus on engagement, and not just awareness, of the community in road safety activity – with a view to shifting community perception of road safety.

A coordinated programme for delivering engineering, education and enforcement for road safety needs to be developed, including a framework for accountability. Limited funding is available to support implementation of community road safety programmes, so collaboration across the region is essential to ensure best use of resources and optimal positive impact from activity.

National context

Nationally, the New Zealand statistics show that while some progress has been made, there is still a long way to go. In the past 20 years there has not been a significant reduction in deaths and injuries:

- 2000 – 2009 – 372 fatal crashes, 2070 serious injury crashes[7] *is this 372 per year, or for the total nine year period?*
- 2010 – 2019 – 293 fatal crashes, 1932 serious injury crashes *same question*

In 2019 the NZ government announced its new road safety strategy, *Road to Zero: New Zealand's Road Safety Strategy 2020 -2030*. The strategy sets out the Government's vision for a New Zealand where no one is killed or seriously injured in road crashes. It includes principles for designing the road network, making road safety decisions and sets national targets for 2030. It contains 5 key focus areas:

- Infrastructure improvements and speed management
- Vehicle safety
- Work-related road safety
- Road user choices
- System management

The strategy targets an overall 40% national reduction in fatal and injury crashes by 2030, using 2018 figures as the starting threshold.

The challenge for South Canterbury is to take responsibility for the part local crashes play in the national statistics and be accountable for achieving the 40% reduction target.

The road ahead – our vision

"South Canterbury road users demand high standards of road safety and are fully supported by road safety agencies on the Road to Zero target."

How we will get there?

The goal of the Road Safety Strategy is to enable collaborative planning across road safety partner agencies to reduce deaths and serious injuries on South Canterbury roads.

The South Canterbury Road Safety Working Group has contributing members representing the Timaru, Mackenzie and Waimate District Councils, Canterbury Road Policing, Waka Kotahi NZ Transport Agency, Fire and Emergency NZ and the Automobile Association.

The Road Safety Action Plan (see page 9) is our vehicle for implementation of the strategy across the South Canterbury district councils and various road safety agencies. This provides the mechanism to ensure co-ordination initiatives to target road safety problems at a local level. Our three focus areas are:

- Education and engagement
- Engineering
- Enforcement

Target for 2029

- **South Canterbury has a Road to Zero target of reducing the number of fatal and serious injury crashes by 40% by 2029.**
- **South Canterbury need to have three less fatal crashes and 12 fewer serious injury crashed every year for the next nine years.***

*Based on average annual figures from 2010-2019.

Graph of target against National target – need raw data from CAS

Road Safety Action Plan

Focus area 1: Education and Engagement

Education and Engagement activities include awareness raising, formal education and training to ensure that all road users have the appropriate attitudes, knowledge and skills to ensure safe road behaviours and reduce the chance of committing errors.

Through the Road Safety Action Plan we will support South Canterbury communities to demand high standard for local road safety.

Achieving this goal will require focus on four key focus areas chosen because of their impact on improving South Canterbury Road Safety. These will include:

- *Providing thought leadership for achieving Road to Zero in South Canterbury.*
- *Integrating with NZ Police national media and enforcement campaigns.*
- *Targeting the 15-29 and 40-44 year age groups.*
- *Developing safe road behaviours in younger people.*

Initiatives will include:

Thought leadership – This programme will be key to raising local awareness of the importance of safe driving behaviours, ensuring local drivers are aware of how South Canterbury is progressing on the Road to Zero. This will include:

- Road to Zero updates, including an annual report and progress reports throughout the year. Explains our goals and how we are progressing in those areas.
- Also sharing road safety updates and related current affairs. Implemented via multiple channels, *including* regional online social media, radio and local media advertising.

Current Year	Action	Lead Agency	Support Agency	Timing
1. Provide thought leadership for Road to Zero in South Canterbury				
Target: • **Growing commitment to South Canterbury's progress in Road to Zero** – *Council survey.*				
a.	Road to Zero updates	SC Road Safety Co-ordinator	District Councils	3x a year
b.	Identify one thought leadership event annually 2021 – High School VR technology launch, rally driver Haydon Paddon.	SC Road Safety Co-ordinator	District Councils	Annual
2. Integrate South Canterbury public education and awareness activities with NZ Police national media and enforcement campaigns				
Target • **Annual campaigns to align with national campaigns**				
a.	Campaigns for three current year: - Drink driving - Driving distractions - Safe speeds	SC Road Safety Committee	NZ Police	14-30 April 2021 1-26 July 2021 4-30 October 2021

Current Year	Action	Lead Agency	Support Agency	Timing
3. Deliver education programmes targeting the 15-29 and 40-44 year age groups				
Targets • **Implement … VR.. in all South Canterbury high schools** • **Car safety rating programme reaches ..** • **XX number restricted/learner drivers participate in Leading Learners programme annually**				
2021	Senior high school VR in x schools reaching x pupils			
	Car safety rating programme			
	Leading Learners Restricted/learner driver education programme for x drivers			
	Work places VR game for 40-44 year olds			
	Drug driving…			
4. Develop safe road behaviours in the next generation				
Targets				
	Punch and Judy for x children – numbers in MDC< TDC, WDC			
c.				
d.				

Focus area 2: Engineering

Engineering activities cover the work undertaken to maintain and improve the roading network. Much of the opportunity for working in this area involves collaboration across the different stakeholders involved. Land transport work is carried out by the three District Councils and Waka Kotahi NZ Transport Agency. Multiple other agencies are also involved in engineering initiatives, including NZ Police.

Our three priority areas for action will include:

- *Focus on the leading causes of crashes in South Canterbury.*
- *Proactive engagement with Council planning and regulatory functions and funding processes.*
- *Fostering a road safety culture across Council and Waka Kotahi contractors.*

Current Year	Action	Lead Agency	Support Agency	Timing
1. Focus on leading causes of crashes in South Canterbury				
Target: • *Co-ordinated engineering initiatives supported by community engagement in key areas.*				
a.	Response to crashes on bends - Joint Delineation and Signage Strategy developed and implemented across South Canterbury	Council Engineers, Comms	Aoraki Roading Collaboration, Waka Kotahi NZ Transport Agency	July 2021 for Joint Project Plan – Suzy/Josie Implementation in next three years
b.	Visibility – identify joint maintenance programmes to target problem areas e.g. drop offs, vegetation, planting to meet visibility standards, sight benchmarking treatments	Council Engineers, Road Safety Co-ordinator, Comms	NZ Police	July 2021 for Joint Project Plan - Kevin
c.	Identifying hazardous faults and marking hazards	Councils, Road Safety Co-ordinator	Automobile Association, NZ Police	
2. Proactive engagement with Council planning and regulatory functions and funding processes				
Target • *Better co-ordination between engineering and other council functions*				

Current Year	Action	Lead Agency	Support Agency	Timing
a.	Work collaboratively with council regulatory units, with joint focus areas identified across the three councils e.g. verge and roadside activities	Councils' engineering and regulatory units		July 2021 for Joint Project Plan – Selina and council staff x3
b.	Improve district plan linkages with road safety e.g. new house requirements for driveways, rural mail access, school bus stops	Councils' engineering and planning units		July 2021 for Joint Project Plan – Kevin and council staff x3
3. Fostering a road safety culture across Council and Waka Kotahi roading contractors				
Target • *Staged approach to bringing Council and State Highway contractors on board*				
a.	Council Road Maintenance contracts have Health and Safety KRAs with measures for logging network hazards and contributing to safe road use	Council Engineers, Waka Kotahi		Starts 1 July 2021 with new contracts
b.	Development of network Health and Safety focus for other Council contracts – introducing KPIs to monitor	Council engineers – land transport, utilities		Ongoing
c.	Temporary Traffic Management contributes to road safety outcomes	Council TMCs, Waka Kotahi		July 2021 for Joint Project Plan
d.	Review safety pre-renewals and improvements to ensure safer network e.g. culvert length safety review			

Focus area 2: Enforcement

- Recognition that Police activities are not the only levers for enforcing road safety
- Recognition that enforcement, along with education, changes behaviour. Need to align enforcement activity with education activity to maximise effectiveness
- Investigate use of local bylaws to enforce safer roadsides. The foundation for change can be laid now, and should include all four Councils in the South Canterbury Aoraki Roading Collaboration
- Speed
    - Boldness of Senior Leadership/elected members to support lower speeds
    - Opportunity to be a national leader in speed management
- Delineation as a form of enforcement (low volume roads are the most unsafe)

Current Year	Action	Lead Agency	Support Agency	Timing
4. Provide thought leadership for Road to Zero in South Canterbury				
Target: • .				
d.				
e.				
f.				
5. Integrate South Canterbury public education and awareness activities with NZ Police national media and enforcement campaigns				
Target •				
	-			
6. Deliver education programmes targeting the 15-29 and 40-44 year age groups				
Targets				

Current Year	Action	Lead Agency	Support Agency	Timing
•				
2021				



Stormwater Asset Management Plan

2021-2031

Waimate District Council

Waimate
District Council

Quality Record Sheet

Waimate District Council

Stormwater AMP

2021-2031

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1.0 EXECUTIVE SUMMARY

STORMWATER 	The stormwater activity is a core Council activity that contributes towards the provision of good quality infrastructure and helps ensure public health and safeguards the environment. The stormwater system comprises pipes, manholes, open drains and other assets that represent a significant council investment over many years.
FOCUS 	**New Capital and Growth** – to improve stormwater collection, treatment and disposal across the district and comply with the ever-increasing environmental compliance framework -to provide capacity to meet the required standards, future demand and support the expansion of development areas as identified by Council. **Renewals** – develop and implement a renewals strategy; including condition and criticality assessments. Ensure appropriate budgets are available to replace aging and/or deteriorating assets and align renewals with other infrastructure upgrades/renewals.
COMPLIANCE	**Resource Consents** - Council has a number of stormwater related resource consents and aims to achieve compliance with all resource consent conditions. Regular compliance monitoring and reporting is undertaken
SERVICE DELIVERY 	**Service Delivery** - the stormwater activity is delivered via a combination of in-house resources and contracted services with the operation and maintenance activities undertaken by inhouse resources. Operation and maintenance costs will increase due to: • increased environmental compliance requirements including erosion and sediment control, • response to climate change impacts, • expanding asset base, • increased community expectations
PERFORMANCE	**Performance** - a comprehensive performance monitoring and reporting framework ensures that legislative requirements and other KPIs are regularly assessed and reported on.
RISK & RESILIENCE	The ability to deliver capital projects on time may be affected by the skills shortage and increased consultation processes required as part of Te Mana o te Wai processes **Understand** our communities, the hazards and risks and acknowledge that failure will occur. **Ensure** early detection and recovery through connecting communities, supporting community organisations and robust infrastructure assets.

1.1 What are we doing



Council owns and operates stormwater systems in four community areas in the Waimate District which provide a degree of protection against rainfalls of a moderate intensity (Typically between 10 – 20% AEP). There is one significant system servicing:

- Waimate township

Three very minor systems (kerb and channel and minor pipework) servicing:

- St Andrews
- Makikihi
- Morven

Council supports this service by:

- Providing, operating and maintaining of the stormwater infrastructure
- Responding to call outs and service disruptions quickly and efficiently
- Planning for future development and needs.

The stormwater activity excludes roads, kerb and channels, road catchpits and the infrastructure necessary to connect these items to the stormwater drains, as these form part of the Roading activity.

1.2 Why are we doing it?

Council has a legal obligation under the Health Act 1956 to improve, promote, and protect public health within the District. This includes identifying the need for stormwater services and either providing these directly or to oversee the service if it is provided by others. The Local Government Act 2002 requires ongoing stormwater services unless specific approval is sought to withdraw from this. Council-issued building consents require that plans comply with the Building Regulations for drainage, which specify standards for protection of buildings against flood inundation. Council owned stormwater assets in urban areas must also comply with the Building Regulations.

Council's stormwater activity contributes primarily to the following community outcomes

Community outcome	How it contributes
Thriving Community – A District that provides infrastructure for economic activity	The timely provision of utility services is essential to supporting growth
Safe and Healthy People A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Flooding is adequately managed within urban areas We have reliable, efficient and well planned water, wastewater, stormwater and solid waste infrastructure that meet the needs of residents
Sustainable District and Environment We value the natural environment, biodiversity and landscapes	We preserve the environment by ensuring the quality and quantity of discharges to the environment

Council identified a number of negative effects that the stormwater activity may have on the well being of the community and the environment. Council developed appropriate mitigation measures to eliminate or minimise these effects.

1.3 Where are we headed?

Council's strategic goals for stormwater over the next ten years is:

- To ensure that adequate Stormwater drainage is provided and maintained for the wellbeing of the public
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Council owned Stormwater assets

There are a number of key issues facing Council over the next ten years and beyond:

- Environmental compliance – Historically Council operated the stormwater systems as permitted activities. Increased environmental standards as a result of the Canterbury Land and Water Regional Plan required Council to obtain a resource consent for Waimate stormwater systems. This consent applies to stormwater collection and discharge and requires:
    - an approved Stormwater Management Plan
    - stormwater discharges to meet regional rules and water quality parameters
    - appropriate Erosion and Sediment Control measures
    - minimising adverse effects of stormwater discharges on the environment
- Central Government's 3 Waters Reform Programme and funding package to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure.
- Central Government's 3Waters Review is considering
    - New obligations on wastewater and stormwater network operators to implement a risk management plan
    - Nationally consistent monitoring and reporting requirements for wastewater and stormwater networks
    - Stronger Central oversight
    - Network operators to
        - adopt industry good practices and minimising risks to public health and the environment, while meeting local community/iwi values
        - implement a certified risk management plan that specifies how they will: –
            - Operate and maintain networks to meet current and future regulatory requirements; e.g. freshwater objectives and limits
            - Proactively manage risks to public health and environment
            - Address community and Māori cultural expectations for wastewater disposal
            - Support integrated planning of stormwater networks and land-use
- The paradigm shift in stormwater management moves from "to collect, convey, discharge" to a more integrated approach of "slow it down, spread it out, and soak it in". This approach includes quantity and quality considerations, multiple use facilities, riparian corridors, recreation, wetland preservation and groundwater recharge. This introduce a range of issues including changes in stormwater planning, design, operation and maintenance, construction, and financing.
- Climate Change –Greater intensity and frequency of events are expected and appropriate response is to be developed. The potential impacts and the appropriate mitigation measures are yet to be defined.
- Separated wastewater and stormwater systems (inflow/infiltration/exfiltration)
- Increased Community Expectation – the community has an increased expectation on Council's responsibility to provide adequate protection on properties through either improved infrastructure, improved planning, or both.
- Ensure adequate in-house staff resource capacity and capability

The stormwater system represents a significant community investment. With age, asset condition and service potential reduce, and an important aspect of asset management is determining the right time and right level of renewals investment in order to maintain the agreed levels of service over the long term. Council will continue implementing the appropriate intervention strategies i.e. a combination of maintenance, repair and renewal activities to maintain the service.

1.4 How will we get there?

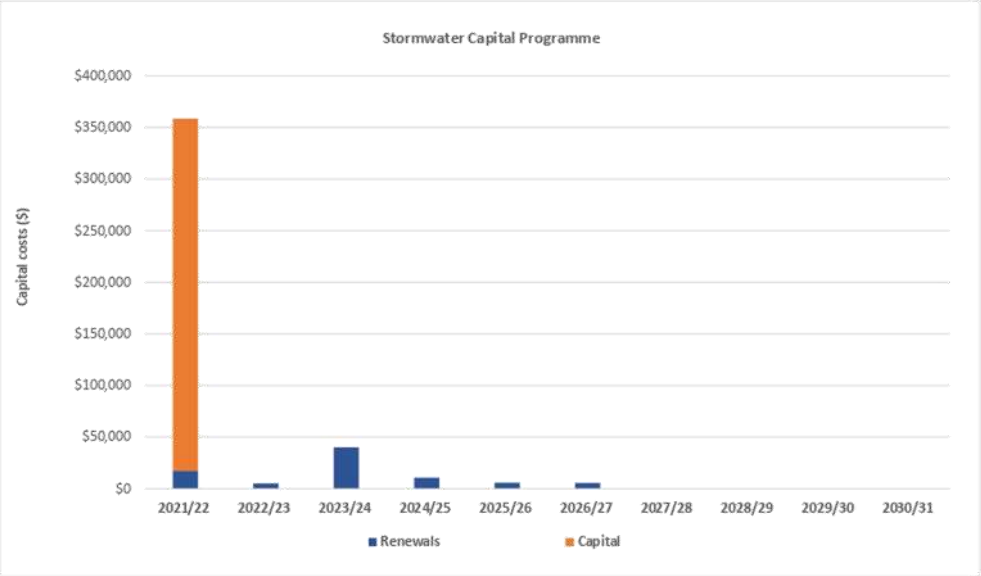
Council plans to maintain current levels of service for the life of this plan, unless legislation, consent conditions, or community expectations change. Over the next ten years Council plans to:

- Continue to collect, treat, and dispose of stormwater
- Separate stormwater and wastewater systems
- Upgrade systems to meet the required standards (minimum 20% AEP)
- Implement appropriate Erosion & Sediment Control measures
- Develop Risk Management Plans (MfE - Action for Healthy Waterways)
- Plan for future development and needs
- Protect the environment through resource consent compliance
- Consult with the community on issues such as health and legislative compliance issues

This vision is supported by a detailed stormwater asset management plan.

Significant projects and their funding sources are summarised in the following table and chart:

Project Description	Year	Amount
New Capital works -		
Queen Street Upgrade	2021/22	341,167
Total		**$341,167**
Renewals		
Belt Street main renewal	2021/22	12,200
CCTV Assessment of Mains	2021/22	5,265
	2022/23	5,170
	2024/25	5,400
	2026/27	5,668
Manse Street crossing renewal	2023/24	40,117
SW Manhole SW171 Replacement	2024/25	5,400
	2025/26	5,762
Total		**$84,982**



Key projects:

- Upgrades
  - Queen Street ($341,167)
- Renewals – refurbishment, replacement of stormwater assets estimated to be $84,982 over the next 10 years. All stormwater system renewal work will be funded by the annual depreciation provision where funds are available

To ensure on-going affordability of the stormwater service Council will continue to consider options in delivering the service.

1.5 How well are we doing and how well do we measure progress?

Council will continue to report on the non financial performance measures, in accordance with 261B of the Local Government Act 2002, as this covers the key expectations in terms of the delivery of the service.

Council have reviewed and updated its systems and processes to ensure alignment and compliance with these rules.

The linkage between community outcomes, how the activity contributes, levels of service and performance measurement is shown in the following table.

Community outcome	Level of Service	Performance Measure
Thriving Community – A District that provides infrastructure for economic activity	Council respond to problems quickly	Response & Resolution times (NFPM3)
Safe and Healthy People A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Council provide reliable and efficient stormwater disposal systems	Number of complaints (NFPM4)
		Number of flooding events (NFPM1)
Sustainable District and Environment We value the natural environment, biodiversity and landscapes	Council provide stormwater systems that protect the natural environment	Compliance with Resource Consent conditions (NFPM 2)

1.6 What resources do we have and what resources do we need?

People –
The Water and Waste Unit has seven full time equivalent staff, including operational staff. The Water and Wastes Unit provides management and engineering expertise to the Asset Group. The Unit utilises Council in-house unit and contractors to maintain, renew, and construct assets through various contractual agreements. The Unit augments its skill base through the engagement of specialist consultants as required to undertake specific projects and works. The Waters and Wastes Unit is adequately resourced but the outcomes of the new regulatory framework and Government 3Waters Review will place even greater demands on already stretched resources.

It is likely that a shortage of technically skilled people to design, construct and manage water assets will continue to have an impact on this activity in future years. This is a global issue which is also affecting other local authorities.

Physical Assets -
Council manages four urban drainage systems. These systems consist of pipes, pump stations, open waterways, retention/treatment systems and other assets.

Length of stormwater mains = 10.4km
Length of open drains = 5.1km
Number of manholes = 65
Number of pump stations = zero

The latest valuation, August 2020, estimates the replacement value of the stormwater system to be $6.2m.

1.7 Who pays for it?

This activity is funded by targeted rates from properties that have access to stormwater systems.

2.0 INTRODUCTION

This section sets out the scope and objectives of this Asset Management Plan (AMP), describes the interrelationships with other planning documents of the Waimate District Council (Council) and shows the plan framework and describes the asset management progress over the last 15 years.

2.1 Purpose of the Plan

The purpose of this AMP is to outline and to summarise in a coordinated manner the Council's long-term management approach (more commonly called Asset Management) for the provision and maintenance of Stormwater Services throughout the District.

This AMP demonstrates how Council will:

- Detail the extent and quality of services demanded (or required) by the community and legislation now and in the future
- Have clear linkage to community agreed outcomes and the agreed Levels of Service
- Prudently manage the acquisition, maintenance, operation, renewal and disposal of stormwater assets in ways that optimise the value of services delivered to the community
- Assess the risks of failing to deliver levels of service for its activities and provide appropriate means of mitigating those risks
- Justify short, medium and long term funding requirements
- Manage the risk of asset failure
- Provide adequate funding to manage the assets according to assessed priorities
- Proactively improve knowledge of its assets

This AMP is intended to be read in conjunction with the 2021-2031 Waimate Long Term Plan (LTP) and fulfils requirements of the Local Government Act 2002 (and amendments), Schedule 10.

Asset Management
The overall objective of Asset Management is to:

Deliver the required level of service to existing and future customers in the most cost effective manner.

2.2 Assets Included in This Plan

The inventory of public stormwater assets (from the 2017 valuation), owned by the Waimate District Council and managed by the Water Services division is shown in Table 2-1 below:

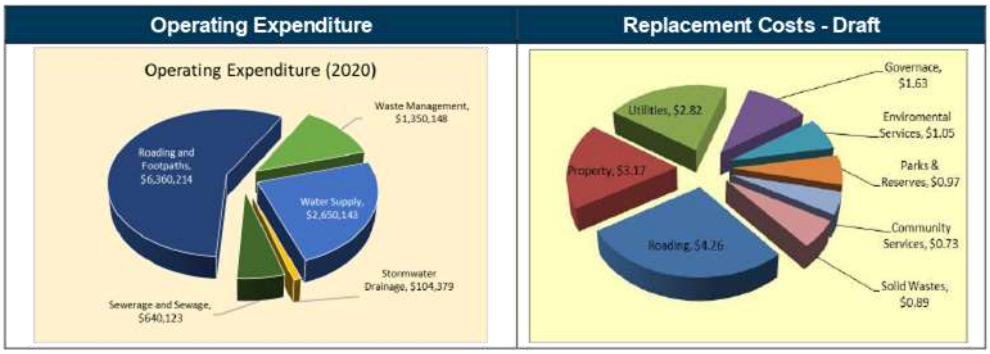
Table 2-1: Summary of Stormwater Service Assets 2020 Valuation

Asset Type	Length metres	Replacement Costs
Pipe	10,232	$5,225,054
Open Drain	5,002	$325,133
Nodes	-	$620,725
Total		**$6,170,912**

Comparison with Council Other Services

The following details the extent of the operating (2020) and replacement costs for the services supplied by the Council.

Figure 2-1: Services Operating and Renewal Costs



2.3 Relationship with other Plans

The AMP relates to the LTP and other key Council plans, documents, policies and processes. These are mainly driven by legislation and obligations that central government, through legislation, assign to local authorities. The community outcomes guide the strategic and day-to-day decision making for the Council.

2.4 How This Plan will be Used

Development of an Asset Management Culture

The on-going development and successful implementation of asset management requires an organisational culture of asset management. To be successful the asset management culture needs to be consistently modelled and supported by the Chief Executive and Leadership Team in conjunction with the elected Council. This process has been reinforced by the establishment of the Councils AM policy in 2009 and the AMP policy process included in Section 2.6.

Roles and Responsibilities of Council Staff

The roles and responsibilities of Council staff as they relate to the AMP enactment have been defined in respect to the on-going use of the plan as this will enable the AMP to remain relevant and current. Table 2-2 details how this is and will be carried out within Council:

Table 2-2: AMP Enactment

	Item	How is this done
1	Organisational culture of asset management developed	AM policy in 2020
2	Council Staff understand the reasons for the plans and the implications for the long term use of them	On department basis
3	The AMPs are adopted / accepted by staff	Adopted by Council
4	Council staff understand what is in the plans and how it could affect their day to day work including their responsibilities and reporting requirements as detailed in the different sections within the AMP	Training Programme / inputs required to develop and update the AMP's
5	Understand all the reporting requirements for Levels of Service and Internal Benchmarking	Training Programme and Implementation of LGA 2002 amendments

Resourcing of Asset Management Programmes

To be effective, asset management programmes must be adequately resourced and therefore require on-going budget to deliver identified improvements and keep plans and processes current with evolving practice. For asset management to be successful in Waimate District there must be a commitment recognised across the organisation. This commitment must translate into budget, human resources, and management accountability.

2.4.1 Implementation

This AMP includes improvement and expenditure programmes that will be implemented with the objective of achieving community outcomes and delivering the stated levels of service for this Activity.

2.5 Stormwater Activity Outcomes

Public Stormwater Services

The Council provides stormwater facilities for the following reasons:

The Stormwater Activity promotes health and wellbeing for the community by ensuring the public stormwater drainage system owned and operated by Council provides efficient drainage with affordable cost in accordance with current legislation. To ensure this objective, Council continues to develop, operate and monitor these stormwater drainage facilities constantly

Efficient stormwater drainage indirectly promotes economic development in the District

2.6 Councils AM Policy – Appropriate Level

2.6.1 Objective of the Water, Wastewater and Stormwater Asset Management Policy

The objective of the Council's Asset Management Policy is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and levels of service, manage related risks, and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets and

levels of management as required. The delivery of service is required to be sustainable in the long term and deliver on Council's economic, environmental, social, and cultural objectives.

The Asset Management Policy requires that the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets.

The Council's Asset Management Policy sets the appropriate level of asset management practice for Council's Utilities, Community Facilities and Transportation.

Asset Management Policy Principles

The following principles will be used by Council to guide asset management planning and decision making:

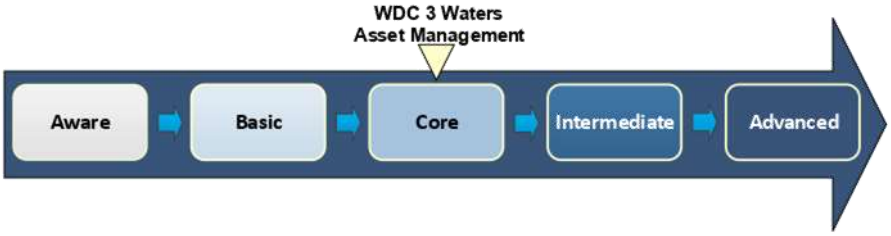
- Effective consultation to determine appropriate Levels of Service
- Ensuring service delivery needs form the basis of asset management
- Integration of asset management within and across Council utilising corporate, financial, business and budgetary planning using AMPs and Council's LTP to demonstrate this
- Integration of asset management within Council's strategic, tactical and operational planning frameworks
- Informed decision making taking a lifecycle management and inter-generational approach to asset planning
- Transparent and accountable asset management decision making
- Sustainable management providing for present needs whilst sustaining resources for future generations

Policy Linkages to Other Plans

This Asset Management Policy links to Council's LTP and the Stormwater Services Asset Management. An approach where planning is based around communities of interest is favoured, as this aims to promote an integrated management regime and encourage efficiencies across the District's Stormwater Services.

Structured Assessment of Asset Management Practice

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Stormwater assets in 2009. This structured assessment followed 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.



Future structured assessment should be carried out with reference to Section 2 of the International Infrastructure Management Manual (IIMM) 2015

Implementation and Review of Policy

This Asset Management Policy has been implemented in conjunction with the 2011,2014, and 2017 AMPs and corresponding LTP's. The next full review of this Asset Management Policy was programmed to be completed by April 2020. A light review has occurred with a full review scheduled as part of the improvement plan.

Asset Management Implementation Strategy

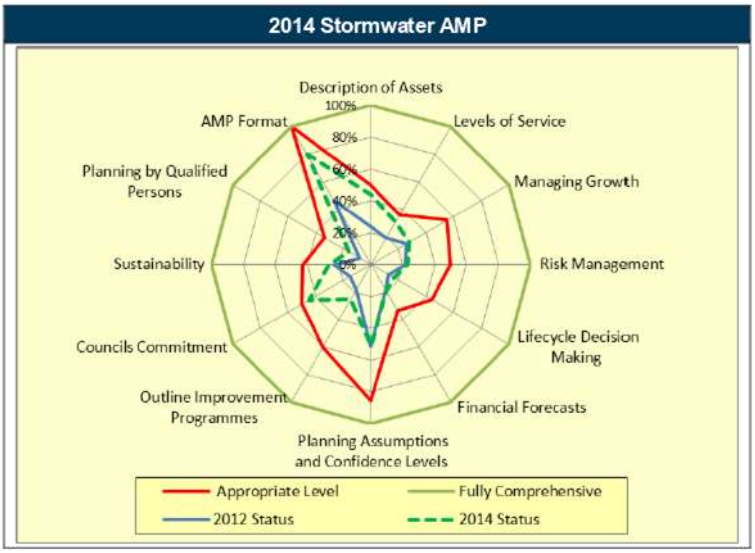
Council staff have completed a detailed analysis of appropriate asset management practice within the guidance offered by this Policy. This analysis has examined asset description, levels of service, managing growth, risk management, asset lifecycle decision making, financial forecasts, planning assumptions and confidence levels, improvement programmes, use of qualified persons and Council commitment to asset management planning.

2.6.2 Stormwater AMP Compliance Status

The 2008 AMP Compliance Status Report indicated that: Overall, the assessment indicates the AMPs are at a basic level and while covering many of the aspects required, the AMPs; are unlikely to provide Council an adequate basis on which to make decisions between competing priorities for infrastructure funding or to understand the impact on service levels, both in the immediate and longer term.

The assessment on the stormwater AMP in 2014 indicated a significant increase in the level of sophistication of the AMP and management of the assets since 2008. The long term programme to achieve the appropriate AM level is shown in Section 11: Plan Implementation.

Figure 2-2: Stormwater AMP Compliance Status



2.7 Key Stakeholders

Key stakeholders are those who have significant specific involvement with the assets and/or the service facilitated by the assets and describes their particular main interests and is limited to the main issues for key stakeholder groups. 'Public Service providers' include schools, dentists, doctors,

hospitals, and other government organisations. 'Asset Managers' are those District Council staff (engineers and others) whose responsibility it is to manage the services made possible by the assets covered in this AMP.

The key stakeholders and the outcomes that they require for the Stormwater Activity are detailed in Table 2-3. Different issues will require different levels of consultation; from a broad approach to specific and limited to those directly affected. This is indicated under Consultation Range (Broad ***, Moderate **, Limited *).

Table 2-3: Waimate District Stakeholders

Key Stakeholder		Consultation Range	Desired Stakeholder Outcome(s)
External	Waimate District Council customers and resident population	***	Reliable service that meets strategic and sustainable drivers
	Canterbury Regional Council	**	Resource use is sustainable as directed in the RMA 1991
	Local Government New Zealand or Central Government	*	Ensure that Local Government Act is complied with (via Auditor-General)
	Department of Conservation	*	Enhance conservation value of natural waterways (i.e. rivers/streams)
	Local Iwi/Ngai Tahu	*	Enhance waterways for Mahinga kai, cultural/spiritual values
	Local Businesses/Industries	**	Stormwater Services to suit commercial needs and expansion, at affordable cost
	Wider Community	*	Enhance landscape and aesthetic values of farmland and plains.
Internal	Waimate District Council	***	Maximise the four aspects of well-being through provision of the Stormwater Services Activity
	Elected Officials	***	Owner of assets, responsible for sustainable service levels under the LGA 2002
	Council committees	*	As per delegated authority from Council
	Executive	***	Compliance with regulations, service reliability, quality and economy
	Asset Managers	*	As above plus policy, planning and implementation of infrastructure and service management activities (e.g. operations, demand management, maintenance, construction). Safety. Effective corporate support for decision-making, service management, procurement, finance, communications, I.T., staff and other resources
	Planners	*	AMP support for Long Term Plans. Infrastructure support for current/future district activities
	Finance	**	Proper accounting for assets and for services consumed by asset management activities
	Customer Services	*	Systems which minimise and resolve complaints/enquiries about service

Key Stakeholder	Consultation Range	Desired Stakeholder Outcome(s)
Information Services	*	Clarity of technical and budget requirements for systems and support

2.7.1 Relationships with Other Bodies and Organisations

Tangata Whenua - Kaitaikitanga, tikanga

For Maori, linking the past, present and the future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori culture.

Council will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today, and seek to establish the right Tikanga that will enable us to deliver Stormwater Services in an integrated and sustainable way.

Canterbury Regional Council - Environment Canterbury (ECan)

Environment Canterbury is delegated responsibility for management of the water resources within the District and achieves this through Regional Plans. These plans provide a framework for the sustainable environmental management of Canterbury's physical and natural resources. The change of use of land, taking of water, diverting of water, disposal of water, and discharge to air, require resource consents. Therefore, Council must liaise with Environment Canterbury in obtaining and complying with consents in relation to the Stormwater Services Activity.

Water New Zealand (Water NZ)

Water NZ provides a forum for the exchange of ideas between those involved in the 'water industry'. Water NZ also manages projects such as the development of national codes of practice. In recent times, Water NZ has taken on the role of lobbyist to Government on water issues.

IPENZ, IPWEA, LGNZ, SOLGM

Each of these organisations provides peer support and exchange of information to foster appropriate practice and share/manage issues that arise.

2.7.2 Other Organisations

Council has a consultative relationship with other organisations including:

Fish and Game, North Canterbury
Irrigation New Zealand
Meridian Energy Limited
Federated Farmers

2.8 Progress Since Last AMP

2.8.1 Background

Asset management in New Zealand has developed over the last 15 years in response to the requirement to justify and improve the level of investment in and management of community driven infrastructure. Council asset management has mirrored this development to the point that Council's Utilities asset management will be at the appropriate level within three to six years.

This is a seventh generation AMP with the first AMP being produced in 2002.

2.8.2 Key advances in the 2020 AMP

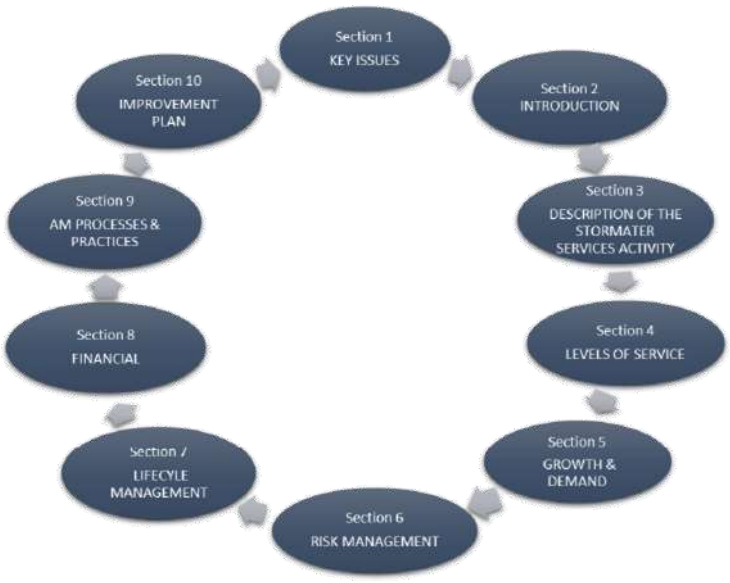
The following matters represent the most significant changes to this AMP over the period 2011 to 2020:

- Data – Systems and Quality
- Asset Data Capture
- Asset Data Quality
- Complaints resolution
- Criticality Assessments
- Government and Industry direction
- Potential for widespread reform

2.9 The Asset Management Plan Format

A top down approach has been taken to develop the AMP, using existing data followed by data improvement. The structure of this plan mirrors the logical process followed for asset management planning as shown Figure 2-3:

Figure 2-3: Asset Management Process



2.9.1 Key Elements of the AMP

The key elements of the AMP are shown in Table 2-4 below.

Table 2-4: Key Elements of Plan

Section	Content
Section 1: Key Issues	Describe the challenges and aspirations faced by the Stormwater Services and inform of the strategic direction for the short term and long term
Section 2: Introduction	Sets out the purpose of this Asset Management (AM) Plan, indicates the key stakeholders, describes the asset management progress over the last 15 years and shows the plan framework
Section 3: Description of the Stormwater Service	Covers the rationale for ownership of the Stormwater Services assets and the description of assets covered under this plan
Section 4: Levels of Service	The Levels of Service for the Stormwater Services are defined and the performance measures by which the service levels will be assessed
Section 5: Growth and Demand	Provides details of growth forecasts, which affect the management, and utilisation of the Stormwater Services assets
Section 6: Risk Management	Details the Risk Management Processes utilised by Council for assessing and managing risk within the Stormwater Services
Section 7: Lifecycle Management	Outlines what is planned to manage and operate the assets at the agreed levels of service while optimising lifecycle costs
Section 8: Financials	Identifies the financial requirements resulting from all of the information presented in the previous sections
Section 9: AM Practices and Processes	Outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP
Section 10: Improvement Plan	This section details the improvements to AM within Council that will lead to an increase in confidence in the management of the assets

3.0 DESCRIPTION OF THE STORMWATER SERVICE

This section of the plan covers the rationale for ownership of the stormwater supply assets and the description of assets covered under this plan.

3.1 Waimate District Overview

The Waimate District is located at the southern end of the Canterbury Region. The Canterbury Region has an estimated population of approximately 599,694.

The Waimate District is bounded by the Waitaki and Pareora Rivers to the south and north respectively, the Hakataramea Valley and mountains of Mackenzie District to the West and the Pacific Ocean to the East.

The main centre of population is the town of Waimate itself, a town housing a population of some 3,576 people (2018 census). This represents about 44% of the total population of the district of around 8070. Other centres of population include the coastal townships of Glenavy, Willowbridge, Makikihi, Morven and St Andrews. The Waimate District community profile is presented in Table 3-1.

Table 3-1: Waimate Community Profile

Area	3,582 km^2		
Population (2018 census)	8,070	Households (occupied dwellings)	3,327
Employees	53.08 FTE's	Rating system: Mix of General Rates and Targeted Rates	
Infrastructure (as at 30 June 2017):		Total rateable properties	4,092
Length of roads/streets	1,335 km	Average total rates per property	$2,934 inc. GST
Length of wastewater network	39.2 km	Council debt (external, primarily WEC)	$2.60m
Length of stormwater pipes and drains	15.7 km	**Climate:**	
Length of water pipes	898 km	Mean Annual Rainfall	600 mm

3.2 Stormwater Services Provided by Council

The existing Stormwater Management is mainly to prevent flooding of properties, roads and erosion control. The management and design by Council is to ensure that the system operates to the design level of service and the Code of Practices.

An integrated combination of measures is used to manage the effects of stormwater runoff. These will include:

- A Primary Stormwater System - the Primary Stormwater System is designed to minimise nuisance flooding by collecting and discharging stormwater, resulting from moderate rainfall into streams and other watercourses. The Primary Stormwater System comprises of pipes, culverts, open drains and channels (Typically 20% – 10% Annual Exceedance Probability)
- A Secondary Stormwater System - the Secondary Stormwater System generally comprises overland flowpaths through private property and along roadways designed to convey excess floodwater with a minimum of damage when the Primary Stormwater System is overloaded. The provision of secondary flowpaths recognises that it is

impractical to provide a Primary system which can cope with extreme rainfall events. The Secondary System is normally designed to carry a 1 in 100-year storm. The provision of designed Secondary Stormwater Systems is a comparatively recent practice in New Zealand and there are areas within the regions served by a stormwater system where secondary flowpaths were not provided when the areas were developed.

- Planning and building controls such as restrictions on building in high flood risk areas and minimum floor heights for residential buildings. Planning and building controls play an essential part of stormwater management by ensuring an adequate level of stormwater protection is able to be practically, reliably and affordably be provided to new developments
- Public education programmes intended to minimise the entry of pollutants to the Stormwater System and a variety of traps and treatment systems in the Stormwater System designed to reduce the quantities of contaminants that are discharged to waterbodies.

3.3 Description of Activity

The Council owns and operates one significant stormwater system, the system servicing Waimate. Council owns and operates other systems in St Andrews, Makikihi and Morven townships, but these are considered very minor, consisting of some kerb and channel and minor pipework. These are mainly considered roading assets.

Council's stormwater assets are owned and maintained by two asset groupings: These are:

- Roading drainage assets – includes kerb and channel, stormwater inlets/catchpits, leads from catchpits to mains and large under road culverts
- Stormwater disposal assets – stormwater disposal assets collect runoff from roadway assets and adjacent land, and catchments upstream of a stormwater disposal asset, and convey it downstream to a natural water course

Individual properties connected to the stormwater disposal service are responsible for their service lateral from the house to the Council main/kerb & channel when the main/kerb and channel is not on road reserve or Council property.

Council is responsible for the service connection from the stormwater main/kerb & channel to the property boundary when the main/kerb & channel is within a road reserve.

3.3.1 Summary of Assets

A summary of the stormwater assets is tabled below.

Table 3-2: Summary of Stormwater Assets

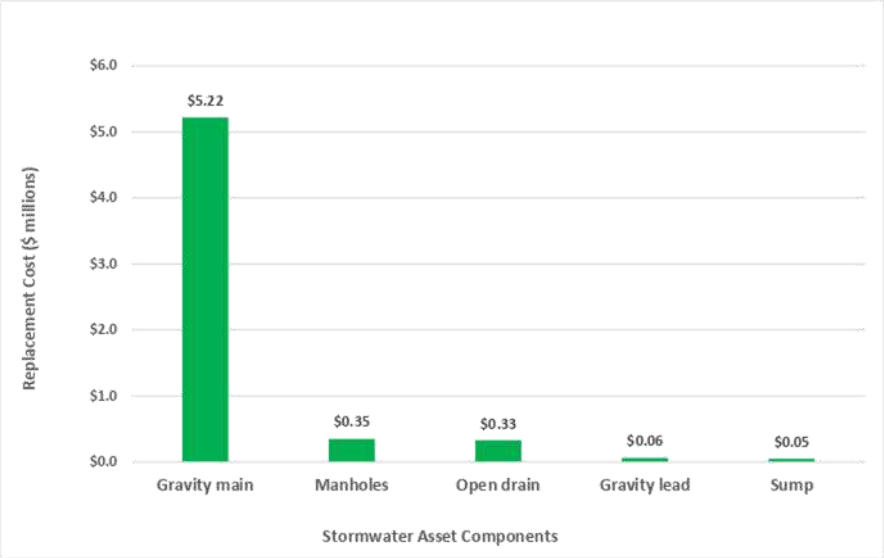
Asset Description	Units	Quantity	Replacement Costs
Sump	No	27	$75,593
Pit	No	19	$48,830
Manhole	No	65	$351,184
Headwalls	No	7	$10,665
Open drains	m	5,133	$325,133
Pipes (inc. Culverts and Syphons)	m	10,446	$5,312,881

The Stormwater Supply system is made up of the following components as indicated in Figure 3-1:

- Stormwater Lines (Pipes, Mains, drains)

- Stormwater Service Lines (Property connections)
- Stormwater Points (Manholes, Sumps, Pits, Headwalls)

Figure 3-1: Stormwater Components



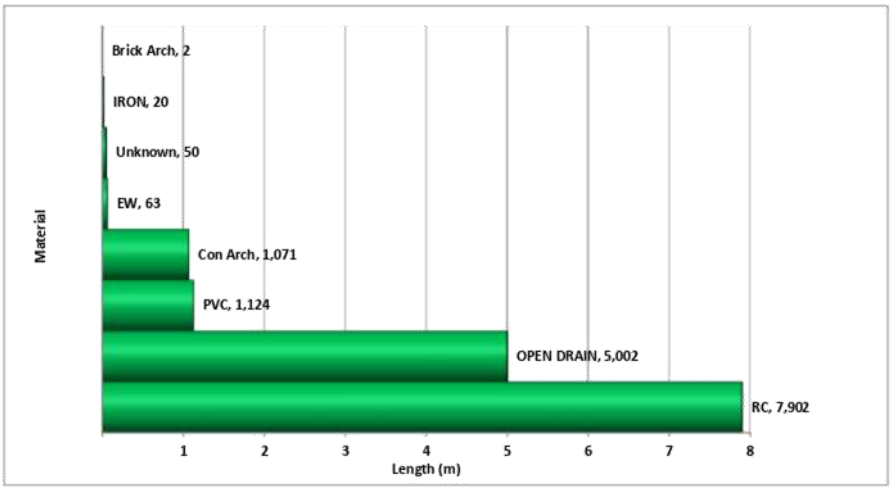
3.4 Stormwater lines

3.4.1 Asset Description

The stormwater lines consist mainly of:

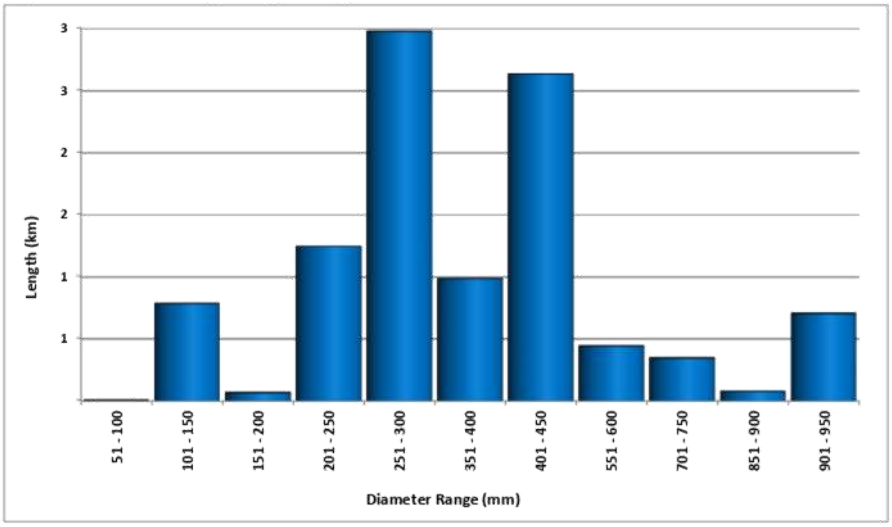
- Pipelines & culverts - convey stormwater away from developed areas. Pipelines are typically circular in profile and manufactured off-site. Culverts are larger in size and typically of rectangular construction and constructed in-situ.
- Open drains & watercourses (land drainage) - convey stormwater away from developed areas when the construction of a pipeline is uneconomic or where an existing stream can be retained as a recreational asset.

Figure 3-2: Stormwater lines materials



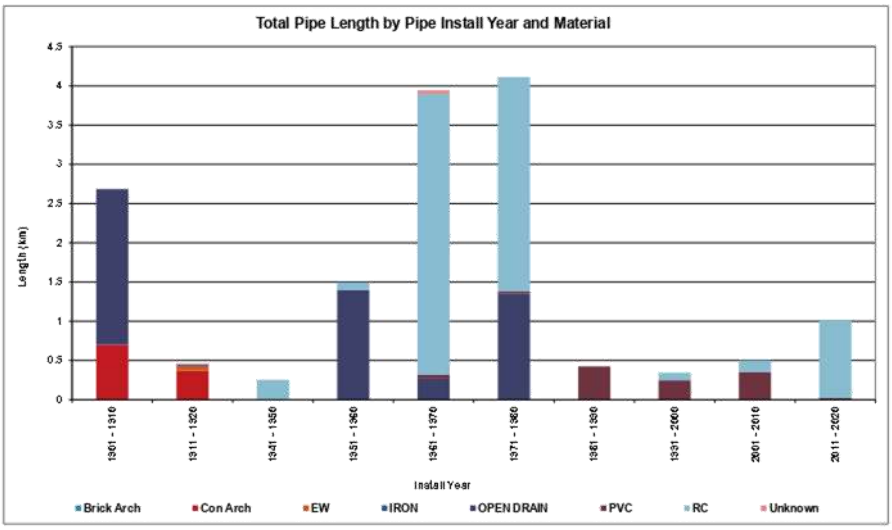
The predominant pipe material is reinforced concrete (RC) making up 7.9km (52%) of the reticulation. Open drains make up 5km (33%) of the reticulation. Other pipe materials include 1.1km (7%) of PVC, 1km (5%) of concrete arch, very minor portions of earthenware, iron and brick arch.

Figure 3-3: Summary of Pipe Length Vs Diameter



As shown in Figure 3-3 above the majority of stormwater lines, 4.3km (41%) are greater than 400mm in diameter. It should be noted that open drains are recorded as 1,500mm and equals 5.133km. As a result the pipes greater than 400mm consists of Ø450mm pipe (2.6km), Ø600mm (0.4km), Ø750mm (0.35km) and Ø900mm (0.08km) There are approximately 2.9km of Ø300mm pipe, 0.99km of Ø375mm pipe.

Figure 3-4: Pipe length by installation year and material



It is evident from the above figure that the available and preferred pipe material was concrete box, reinforced concrete and some open drains during the development and construction of the scheme. However, during the 1960's and 1970's a significant amount of open drains and reinforced concrete pipes were installed. Since the 1960's PVC was used intermittently probably based on the location, application and availability. It is anticipated that uPVc and MDPE may well be preferential pipe in the future as technology allows their use.

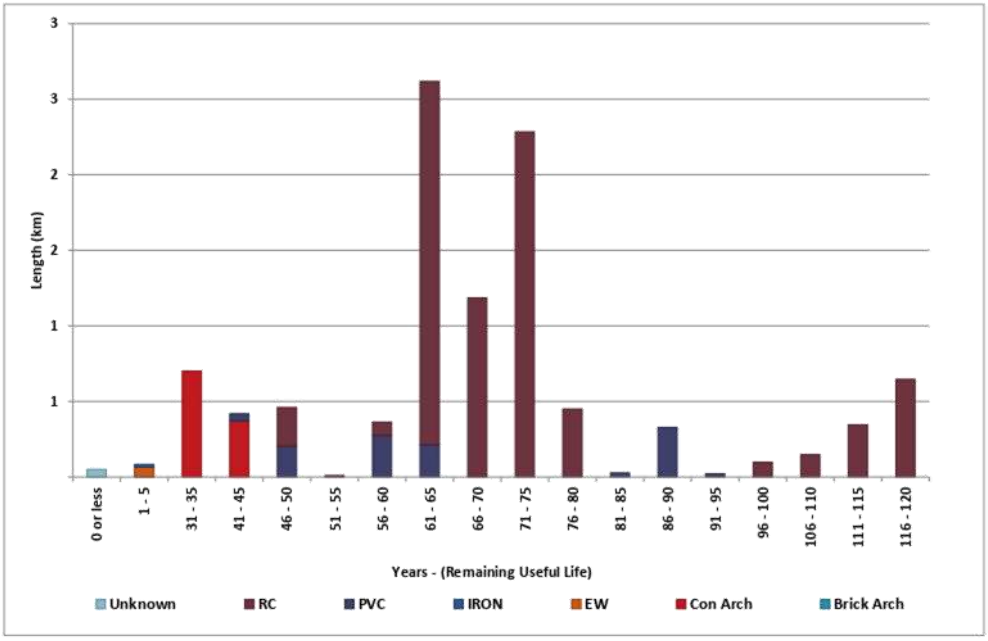
The base lives of pipe materials as stated in the 2020 Valuation are shown below.

Table 3-3: Economic Lives of Stormwater Assets

STORMWATER Material	BASE LIVES (Years)	STORMWATER Material	BASE LIVES (Years)
Brick arch	80	Open drain	NA
CI pipe	100	Pit/Sump	120
Concrete arch	150	PVC	100
Concrete box	150	PVC lined brick arch	80
EW	100	PVC lined concrete arch	80
Headwall	120	RC lined concrete arch	N/A
Manhole	120	RC pipe	120

Figure 3-5 below shows the remaining useful life by material type. It can be seen that there is a minimum amount of pipe (approximately 50m of unknown pipe) which have reached the end of its expected economic life. There are 63m of earthenware pipe and 20m of iron pipe that will reach the end of its expected life within the first five years of this Plan. There are no other pipes that will reach the end of their useful lives within the next 30 years.

Figure 3-5: Remaining useful life by material type



3.4.2 Condition of Reticulation

There are no pipe condition ratings for the stormwater pipe assets but the Council engineers consider the condition of the stormwater reticulation in general to be in good order.

3.4.3 Performance of Reticulation

The performance of the network is rated by Council engineers as Grade '1' (excellent) except where problems are occurring due to the configuration of roading assets (channels, sumps and intakes). The issues relating to asset performance are detailed below.

3.4.4 Data Reliability

The reliability of three waters data held by Council has not, to date, been systematically assessed and remains ungraded as per the IIMM manual. However, the data is based on good records, procedures and is subject to ongoing quality assurance as a result of maintenance works and has been informally assessed as B/C (see 2020 Valuation Report). In order to address this short-fall we would propose to add an improvement item to the Improvement Plan (**IP 34**).

Condition assessments have been completed for a number of the 3W's assets and include, but are not limited to:

i. NDT of AC Water Mains

ii. CCTV of Sewer Mains (Inc. those programmed for renewal)

iii. Visual inspections during maintenance activities

The results of these condition assessments have been applied to similar, uninspected assets to provide more reliable condition assessment of the whole asset base. For example, smaller diameter Asbestos Cement water mains are known to be in poorer condition than their larger counterparts, and smaller diameter AC mains in the northern extents of the urban area are failing due to ground conditions and pipe material combination.

Condition ratings do exist within the AMIS on an equivalent scale of 1 to 5.

Renewal works are prioritised based on criticality (assessed), empirical knowledge of failure rates / historic maintenance activity, other unrelated (and concurrently programmed) capital works. It should be noted that predictive models being used are age based in the first instance.

An improvement item (IP 34) will be noted in the improvement plans to produce a second predictive model which includes weighting on Condition and Performance gradings held within AssetFinda.

Network capacity

Stormwater is a service that is designed to accommodate the rainfall derived from a catchment. Additional demand for a stormwater service is usually the result of infill building and subdivisions that reduce the permeable area of land for infiltration and increases the peak water flow in the existing stormwater system. There has been no recorded major stormwater flooding inWaimate in recent years but localized flooding does occur. The current capacity of the primary and secondary stormwater systems is;

- **Primary System**: Pipelines generally have been sized with the discharge derived from the rational method of analysis with a design of 20% AEP (Annual Exceedance Probability), a 1 in 5 year return period. The limited extent of the pipe network leads to localised areas of road side flooding where the stormwater flow exceeds the kerb and channel capacity (see Figure 3-6 below).
- **Secondary System**: The town has an overall gradient towards the east and overland flow tends to follow the street system in this direction. Street intersections form a succession of weirs ponding floodwaters behind, these result in some minor flooding. The main stormwater pipe starting at the Queen Street, Glasgow Street intersection has the capacity to discharge at least 5% AEP in a 1 in 20 year return period.

Figure 3-6: Localised street flooding prior to the 2013 upgrades



The stormwater collection system has been (partly) computer modelled. This model is operated by external consultants and is based in the Infoworks modelling software. During 2009 Council conducted a hydraulic analysis of the reticulation system. This analysis identified capacity issues within the kerb and channel system and the piped system. System upgrades were recommended and are shown in this AMP.

Queen Street

Part of Queen Street between High Street and Glasgow St floods on a regular basis, with ponding stormwater extending across footpaths and nearing shops and buildings at finished floor levels. This CBD area of Queen Street was originally serviced by a brick drain constructed close to the building foundations on the north side. A 250 mm diameter PVC pipe has since been installed within the brick drain to alleviate the problem without much success. CCTV inspection found a significant blockage in the pipe. Hydraulic modelling assessment found the pipe to be undersized and suggests upsizing the pipe (approximately 250m) DN375 will provide sufficient capacity to convey the peak 10% AEP flow. Further mitigation includes rebuilding the road, lowering the crown, to provide effective overland flow paths. Staff will liaise with the New Zealand Transport Agency around co-funding and timing of these works.

Network Reliability

As entrances to the piped system are generally well guarded by sump grates, inlet structure debris grills, etc, material likely to cause blockages is precluded entry. A program of regular clearing of the entrance structures is in place. Pipe blockages due to collapsed pipes or tree root intrusion are rare.

Water Quality

Water quality in streams and rivers can be adversely affected by discharges from the public stormwater system. Stormwater runoff typically contains pollutants, which can range from natural mineral sources (plant and animals) to vehicles and illegal discharges from commercial, industrial, farming and construction activity (including solvents, paints, cleaners, oil, floatables, pesticides, fertilisers and faecal matter). There may be immediate effects from the first flush of a storm (typically having the highest levels of contaminants) and cumulative effects from contaminants that build up over time in watercourse sediments. The extent to which the watercourse is affected by stormwater depends on the location and number of discharge points, the relative flow in the watercourse, the baseline water quality and the overall ecological health and sensitivity of the receiving environment.

Some investigations have already been completed in order to establish the magnitude of any contamination in preparation for both the Stormwater Management Plan and associated Resource Consent (by 30 June 2018).

3.5 Stormwater Service Lines

3.5.1 Asset Description

Approximately 50% of urban properties have Stormwater service lines convey stormwater run-off from private property to the kerb face or a connection with a public stormwater main. The remainder dispose water to ground via soak pits.

Where the Council main is located on the private property the service connection is the responsibility of the property owner.

Specific condition information of the service lines is limited, although the condition of the mains suggests that the service lines would be in similar condition as the mains, which Council engineers consider are in good condition. Poor connection details at kerb faces are progressively addressed in tandem with footpath resurfacing or kerb and channel replacement projects.

3.6 Stormwater points

3.6.1 Asset Description

Stormwater points consist of manholes, sumps, pits and headwalls.

Manholes – to provide access to pipelines at intervals of not greater than 100m. Manholes are located at confluences, changes in pipeline gradient or alignment

Sumps - inlet structures to the stormwater system which collect surface water (typically from street channels). The most common design incorporates a pit to trap sediment

Pits - large structures that serve as bends on stormwater drains and a point of access for inspections and cleaning

Headwalls - structures located at the inlet and outlets on pipelines and culverts when necessary to retain the surrounding earth. These are manly associated with discharge points

The Waimate stormwater reticulation has 14 discharge points to natural watercourses, 10 direct from channels and 4 from pipes via open drains. The discharge points are tabled below.

Table 3-4: Stormwater discharge points

Discharge from	Service Area	Receiving water
Channel	Hayes St	Waimate Creek
Channel	Mortimer St	Waimate Creek
Channel	Smith St	Waimate Creek
250mm pipe	Point Bush Rd	Waimate Creek
Channel	Naylor St	Waimate Creek
Channel	Queen St	Waimate Creek
450mm pipe	Waihao Back Rd	Waimate Creek
Channel	Massey St	Waimate Creek
Channel	William St	Waimate Creek
Open drain	McNamaras Rd	Waimate Creek
Open drain	Rugby St	Watercourse to Molloys Rd
Open drain	Timaru Rd	Watercourse to Bathgates Rd
Open drain	Regent St	Waituna Stream
Open drain	Gorge Rd	Racecourse Area

The age and condition profile of manholes and structure assets is the same as for pipes and culverts, and few renewals are anticipated in the 20 year planning period.

Council engineers consider the performance of the stormwater points in general to be good.

3.7 Buildings

There are no buildings under the stormwater service.

3.8 Environmental Effects

3.8.1 Resource Consents

The resource consents and confirmed permitted activities associated with the stormwater activity are detailed in Figure 3-5 below.

Table 3-5: Resource Consents – Stormwater

Consent Number	Status	Activity	Commencement date	Expiry date	Comment
CRC000171	Current	Discharge of stormwater	08/11/2001	10/10/2036	To discharge stormwater originating from the grassed reserve areas between Waimate Creek and the effluent border-dyke irrigation areas to Waimate Creek (Waimate Wastewater Treatment Plant)
CRC000234	Current	Discharge of stormwater	22/11/1999	19/11/2034	To discharge water and chlorine from the Waimate water supply and stormwater onto land and then surface water (Mill Road – Hayes Creek)
CRC021092	Current	Construct remove stopbank, deposit material	21/01/2002	18/01/2037	To disturb the bed of, to construct a stopbank on, and maintain stopbank, and to deposit material in the bed of the Waimate Creek (Queen St/Gorge Rd)
CRC070319	Current	Discharge of contaminated water	4/12/2006	1/12/2041	To discharge flood contaminants into water (Ryans Road, Morven - Morven Beach Rd Drain)
CRC074139	Current	Discharge of Stormwater Residential	31/10/2007	n/a	Certificate of compliance confirming permitted activity status of stormwater discharge from a residential subdivision into the Waimate Creek (207 Queen Street) (Eric Batchelor Pl). Will need to reassess compliance status when LWRP becomes operative.
CRC 210042	In process	Discharge of existing and future developed site stormwater from within Waimate Town	tbc	tbc	This application is in process

The five Resource Consents held for the Stormwater Activity range from constructing a stopbank, to divert surface water, and to discharge of stormwater to a creek. The confirmed permitted activity status (CRC074139), for the residential subdivision on Queen Street will need to be reassessed for compliance.

The application (CRC210042) to discharge of existing and future developed site stormwater from within the Stormwater Management Plan Area for Waimate Town, that enters the Waimate District Council reticulated stormwater system and is subsequently discharged onto or into land (to groundwater) or ephemeral surface water was submitted during June 2020 and is being processed at the time of writing this Plan.

3.8.2 Environmental Monitoring and Reporting

Consent reporting within Council for the stormwater activity is the responsibility of the Water and Wastes Manager and information for consent compliance is provided to Environment Canterbury as required.

3.8.3 Stormwater Management Plans

Rule 5.93 of the LWRP is of specific note as this requires an approved Stormwater Management Plan for reticulated stormwater systems. The primary purpose of the SMP is to:

- Document stormwater management objectives and procedures used by Council
- Ensure that stormwater is managed in accordance with Council and other statutory requirements (including obtaining consent for stormwater discharges from the Waimate reticulated stormwater network as required by the LWRP)
- Present design philosophies for new stormwater infrastructure which are to be implemented through the use of a Council Code of Practice. Council does not currently have a Code of Practice but this may be included in the work stream required for the SMP and associated consents.

The SMP have the secondary purpose of:

- Assisting Council officers in their assessment of compliance with the Resource Management Act, the Building Act and giving approvals for future developments
- Providing background information for public records, project memoranda and planning, design and construction
- Providing recommendations where stormwater issues may affect Council Policy.

Erosion and Sediment Control

Council is responsible for ensuring that erosion is minimised or eliminated in the area surrounding their stormwater outlets and the discharge of sediment into waterways is minimised.

Council will develop appropriate processes to ensure that future developments and earthworks apply suitable erosion and sediment control measures to minimise erosion and discharge of sediment to Council's public stormwater system and adverse effects on the environment are minimised (**IP 34**).

Monitoring programme

An environmental monitoring programme is likely to be a requirement of the SMP. If required, the Council monitoring programme will incorporate good management practices and will be instigated

on completion of the SMP. There are likely to be efficiencies in a collaborative approach to monitoring that considers the requirements of the SMP along with other programmes such as the Zone Implementation Programme and Environment Canterbury water quality monitoring programmes.

3.9 Assessment of Water Services

The Local Government Act 2002 places a specific requirement on local authorities to make assessments of water and sanitary services available to communities within the district. The Act requires that the assessment shall provide the following information in respect of water services:- The Water and Sanitary Services Assessment is an assessment of all services (public and private) relating to Water, Wastewater, Rubbish and Recycling, Public Toilets and Cemeteries.

The aim is to assess the adequacy of these services both now and in the future. It considers the risks that these services, or lack of these services, may pose to health and wellbeing of the community.

3.9.1 Risks and Issues from the Assessments

Table 3-6: Risks and Issues – for all Serviced Communities

	Risks and Issues	Risk level	Proposals to Address Issues and Risks	Progress to Date
1	Flooding	Low	Maintenance and upgrades as required	On-going
2	Stormwater contamination	Moderate	Awareness of potential risk	On-going
3	Earthquake	Low	Insurance and contingencies	On-going

3.9.2 Update of the Water & Sanitary Assessment (2005)

In accordance with Section 6, Schedule 10 of the LGA 2002, an Assessment of Water and Sanitary Services were conducted by Council during June 2011. As part of the Delivery Plan agreed with DIA, a Sanitary Survey will be carried out with the funding received under tranche 1 (COVID 19 stimulus) and is programmed for February/March 2021.

The underlying conclusion from the 2011 Water and Sanitary Assessments are that the existing stormwater infrastructure is adequate for now and the future, and that changes in demand will not affect public health and will only have a minor effect on the environment.

It is therefore suggested to continue with existing disposal methods with on-going assessment of any improvements or enhancements required, with a focus on stormwater inflow impacts on wastewater overflows.

3.10 Criticality Assessment

During 2017 Council performed a criticality assessment on 3 Waters assets by using the New Zealand Asset Metadata Standards (NZAMS) methodology and criticality ranking. This including consideration of GIS, population, key facilities and hydraulic model data. The NZAMS defines criticality as "the significance of any individual component or asset to the ability of any part of a network or portfolio to deliver the service it was designed to perform". The methodology considered:

- residential population rating – the number of people affected by the removal of the asset
- facility importance rating – the importance of the facility based on the role the facility play in enabling the community to function.

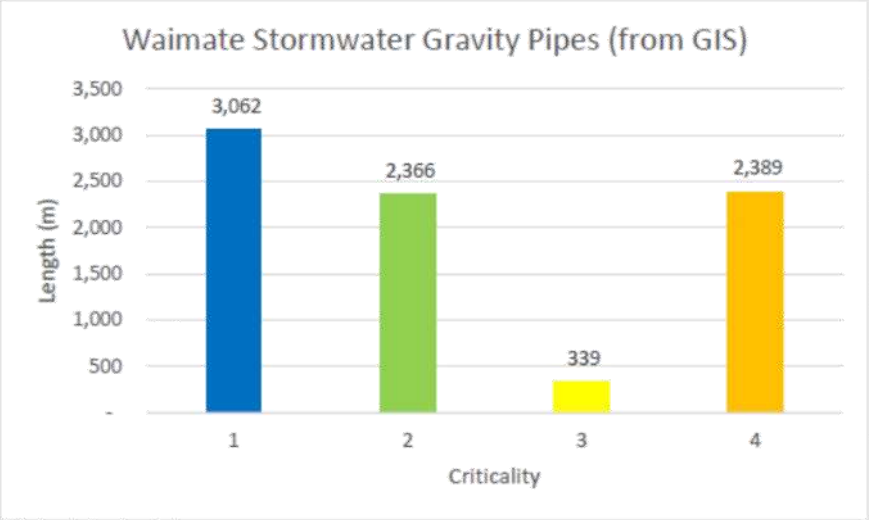
The global criticality ratings are:

1. very low
2. low
3. medium
4. high
5. very high

The criticality assessment provided the following results.

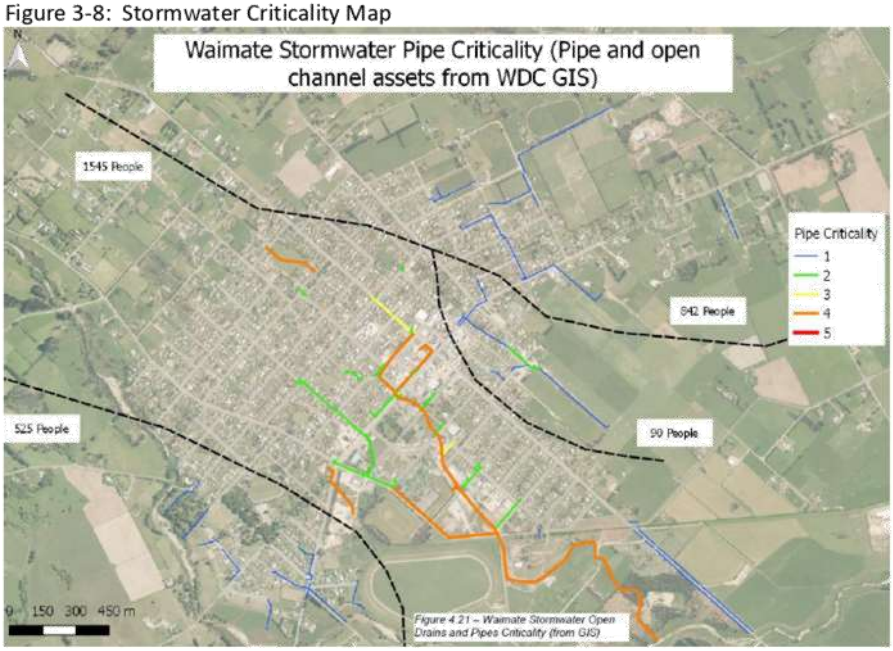
The figure below shows the pipe length distribution across the different criticality categories for the stormwater system.

Figure 3-7: Stormwater Criticality and Lengths Distribution



The figure below shows an overview plan of the criticality rating for the stormwater system.

Figure 3-8: Stormwater Criticality Map



The criticality assessment provides Council engineers the ability to clearly identify the assets of highest importance and the greatest value. This ensures the asset can be managed more proactively in order to mitigate the risk associated with their failure. This proactive management includes:

- Prioritising condition assessments
- Adjusting economic lives with respect to renewal profiles
- Prioritising/deferring renewals
- Prioritising expenditure operation and maintenance planning
- Priorities for collecting asset information to the required level of confidence

It is important to align the asset data in AssetFinda with the criticality assessment ratings (**IP 31**). The criticality assessment report made the following recommendations (**IP 32**):

- Plan a renewals program supported by a condition management program for critical infrastructure
- Plan around supplying critical customers and key facilities following a critical asset failure
- Identify sensitive customers (for example: dialysis patients) for a more detailed criticality assessment
- Update and maintain the water supply models, especially where new assets have been added (new bore and pump station in the Otaio rural water supply)
- Expand the stormwater model for a better understanding of stormwater flows and populations served by WDC's assets
- Maintain the GIS data, especially for the stormwater assets

In view of the pending outcome of the Havelock North Water Inquiry and change in political landscape Council may reconsider the Criticality assessment to ensure the four wellbeing's (social, economic, environmental and cultural) are adequately captured within the assessment (**IP33**).

4.0 LEVELS OF SERVICE

The Levels of Service for the Stormwater Services are defined in this section and the performance measures by which the service levels will be assessed for the Stormwater services. The service levels are aimed at supporting the community outcomes and meeting the strategic goals. It also contains information on the customer research undertaken and the legislative requirements adhered to in arriving at the service levels.

Levels of service define the type and extent of services delivered to the customer. They are written from a customer viewpoint such that Council can set targets against the levels of service to demonstrate outputs and performance against the community outcomes. Levels of service assist the Council in optimising all activities for each service, as well as providing a benchmark against which to meet customer expectations.

4.1 Community Outcomes

4.1.1 Revision of Community Outcomes for the 2009/19 LTP

2012/22 Long Term Plan

In 2011 the Council amended the community outcomes and these were subsequently reassessed for the 2015-25 Long Term Plan. Council agreed that there will be no significant change to the community outcomes for the 2018/2028 LTP. Changes relate to alignment with the Council Vision. These outcomes and linkage of the Stormwater levels of service are provided in Table 4-1 below.

2015/25 Long Term Plan

In 2017 the Council amended the community outcomes. These outcomes and linkage of the Water Services Levels of Service via the Rationale are shown in **Error! Reference source not found.**Table 4-1. There are no changes to the Community Outcomes for the 2021-31 LTP.

Table 4-1: Waimate District Council Community Outcomes 2018-28 and Stormwater Services Rationale

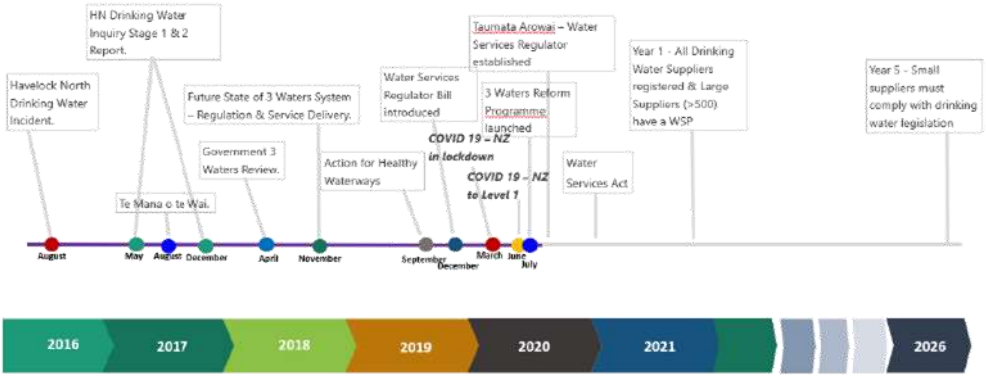
	COMMUNITY OUTCOMES			
	Thriving Community	**Safe & Healthy People**	**Sustainable District and Environment**	**Active, Diverse and Supportive Community**
	Economic Wellbeing	**Social Wellbeing**	**Environmental Wellbeing**	**Social Wellbeing**
	A District that encourages development	A place where people are safe in their homes, work and public spaces	The Waimate District is enhanced through sustainable and diverse development	All people are encouraged to participate in our democratic process
Rationale		***Stormwater** – flooding is adequately managed within urban areas*		
	A District that provides infrastructure for economic activity	Our services, infrastructure and environment enhance quality of life	Our heritage is valued and protected	District assets t provide recreation and leisure choice
Rationale	***Stormwater** – The timely provision of utility services is essential to supporting growth*	***Stormwater** - We have reliable, efficient and well planned water, wastewater, stormwater and solid waste infrastructure that meet the needs of residents*		
	A District that actively promotes itself and its businesses		We value the natural environment, biodiversity and landscapes	We celebrate and support the good things about our community
Rationale			***Stormwater** – We preserve the environment by ensuring the quality and quantity of discharges to the environment*	

4.2 National Strategies and Plans

4.2.1 Government and Industry Direction

In providing the 3 Waters Services the Waimate District Council keep a weather eye on the Central Government and Industry direction for the national infrastructure assets and public service provision. This is done through attending conferences and seminars, studying reports released by Central Government agencies and membership of industry organisations e.g. IPWEA, Water NZ, etc.

3 Waters - Government & Industry Direction



The August 2016 Havelock North Water incident and subsequent Inquiry has renewed the focus on the very high standard of care and diligence required to supply drinking water.

During 2017, the Minister for Local Government initiated the Government 3Waters Review to assess whether current local government practices and the system oversight are 'fit for purpose'. This review ran in parallel to the latter stages of the Havelock North Inquiry and raised a range of questions around the effectiveness, capability and sustainability of the current water service model. During 2017 the Government announced changes to the National Policy Statement for Freshwater Management – Te Mana o te Wai. Te Mana o te Wai is a concept for fresh water, which when given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community. This requires councils to involve iwi/hapū in the management of freshwater, work with them to identify their values and interests, and reflect those values and interests in decision-making.

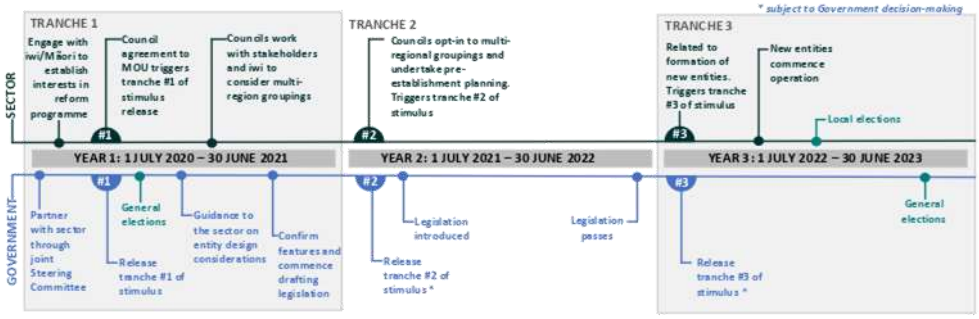
The MfE discussion document 'Action for Healthy Waterways' released September 2019 signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems.
Towards the end of 2019, the Government agreed to establish a new drinking water regulator as an independent Crown entity. Associated legislation is expected to be passed in 2020/21 and the establishment and roll out of the new Regulator will follow and is expected to take a number of years.

Following the global outbreak of the Corona Virus the Government announced New Zealand's four-level COVID-19 Alert System specifying public health and social measures to be taken against COVID-19. New Zealand went into Level 4 on Thursday 26 March 2020. Level 4 requirements included the general public to stay at home, educational facilities closed, only essential services & lifeline utilities remain open & operational, severe travel limitations, major reprioritisation of healthcare services, etc. NZ progressively reduced the alert levels from 27 April and returned to Level 1 on 10 June 2020.

The response to COVID 19 will potentially have a significant impact on the economy and the ability to implement and progress the abovementioned Government initiatives. Several Councils already signalled no rates rises for the 2020/21 year. Waimate District Council chose to reduce the rate increase from 7.7% to 4% and is currently looking to fund this shortfall through smoothing rates between 2021/22 and 2030/31.

July 2020 saw the Government announce the 3 Waters Reform Programme consisting of a $761m funding package over the next three years to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure. Initial funding will only be made available to councils that sign up to the Memorandum of Understanding. Waimate District Council signed up to the Memorandum of Understanding.

Below is an indicative timetable for the full reform programme. While this is subject to change as the reform progresses, this provides an overview of the longer-term reform pathway.



The following themes are also signalled:

Source	Direction
Insights into local government: 2019 OAG June 2020	Among a range of observations the OAG states "*I remain concerned that Council's might not be adequately reinvesting in their critical assets*". To do this well, councils need to improve their asset management information. In particular, they need: • good data about their critical assets in order to value, depreciate, and plan renewals; • good processes and sufficient resources to maintain and update their critical asset data; • effective working relationships between asset management, finance, and strategic planning staff, all of whom have an important role to play in supporting a council's asset management function; and • timely engagement with, and involvement by, elected members.

Source	Direction
Managing stormwater systems to reduce the risk of flooding OAG Dec 2018	**Recommendations** 1. To better manage their stormwater systems to protect people and their property from the risks of flooding, we recommend that councils: 2. understand the current and likely future flood risks in their district or city sufficiently to take a proactive approach to reduce the risk and effects of flooding; 3. provide elected members with the necessary information and options, including about local flood risks and their stormwater systems, to make well-informed and deliberate decisions about investment in their stormwater systems; • improve the information they make available to their communities so that people can understand: • the potential risk of flooding; • what the council is doing to manage that risk, including how it is managing the stormwater system and at what cost; and 4. what the remaining risk is to the community; improve their understanding of their stormwater systems, which will entail ensuring the adequacy of their stormwater asset data, including condition data and information on the performance and capacity of the stormwater systems; and identify and use opportunities to work together with relevant organisations to more effectively manage their stormwater systems.
Reflecting on our work about water management OAG Feb 2020	**A more strategic and integrated approach to water management is needed** • The Government is responding to the need for a more strategic and integrated approach to water management • A strategic and integrated approach would support targeting of investment decisions • A stronger focus on implementation is needed when setting strategy • Long-term thinking is needed when setting a strategic and integrated approach **Understanding of water resources needs to improve** • A national picture of the state of freshwater quality would support a more strategic and integrated approach • Information gaps can limit the ability to make well-informed decisions • Information needs to be understandable both to decision-makers and to those holding them to account • Good information depends on collecting quality data • There will always be some uncertainty **Water management challenges require adaptive ways of working** • Balancing different views and values requires flexible frameworks • Collaboration needs to translate into action • More can be done to involve Māori in water management Water management challenges require both central and local government response

Source	Direction
Matters arising from our audits of the 2018-28 long-term plans OAG Feb 2019	**Recommendations** • that councils prioritise collecting condition and performance information of critical assets and, in the meantime, take a precautionary approach for significant services where the condition information of critical assets is unknown; • that the Department of Internal Affairs and the local government sector review the required content for long-term plans to ensure that they remain fit for purpose, particularly: – the current suite of mandatory performance measures; – the disclosure requirements for financial and infrastructure strategies; – disclosures required under the Local Government (Financial Reporting and Prudence) Regulations 2014; and – how assumptions are disclosed in long-term plans; • that the Productivity Commission, in its review into the adequacy and efficiency of the existing funding and financing options for councils, consider the trends arising in the 2018-28 long-term plans, particularly the trends and concerns we have raised about increasing debt; and that central government and local government continue to consider how increased leadership can be provided for climate change matters, particularly: – what data is needed and who collects this; – the quality of this data; and – how councils should consider this in future accountability documents, including the long-term plan.
Local Government NZ	LGNZ are working on four significant projects with the sector at present: Water 2050; Climate Change; Housing 2030 and the Localism Project. **Water 2050** - The Water 2050 project promotes discussion and contribute to policy development by central and local government, particularly in regards to the Government's Three Waters Review, across five key areas: • Allocation • Water Quality • Infrastructure • Cost and funding • Governance **Climate change** - leading and championing policy to deal with the impacts of climate change is a key policy priority for LGNZ. Climate change poses an unprecedented level of risk and adapting to and mitigating the impacts of climate change is a new priority focus for councils. **Housing** is a significant issue for our communities' social and economic futures. Unaffordable housing is having a negative impact on local economies, discretionary household expenditure and social well-being. This means addressing matters of supply, how social and community housing needs are met and the importance of healthy homes. Underpinning the issue is the need for appropriate funding and financing. LGNZ efforts are focussed in three general areas: • Supply; • Social and community housing; and • Healthy homes.

Source	Direction
	Localism - Local government is calling for a shift in the way public decisions are made by advocating for greater self-government at the local and an active programme of devolution and decentralisation. This document provides councils with guidance to • Assist with understanding and managing climate risk to the essential infrastructure that they own – particularly in relation to sea level rise, coastal hazards (such as storm inundation and erosion), and inland (pluvial) flooding; • Assist councils with addressing the issues that completion of the previous survey, which fed into the Vulnerable report, identified; and Help our community leaders prime and test council staff, constituents and stakeholders to engage in the most effective long-term planning for infrastructure investment, and make sensible investment decisions now, which don't preclude future options for infrastructure provision.
Vulnerable: the quantum of local government infrastructure exposed to sea level rise Local Government NZ January 2019	This project has two intended outputs. • The first is to research the current quantity and value of infrastructure (roads, 3Waters and buildings) exposed to sea level rise at four increments; 0.5, 1.0, 1.5 and 3.0 metres, and to quantify replacement value. The second and more important output of this research is to provide responses to rising sea levels. This study intentionally avoids specific and local costs, and targets discussion at a regional and national level in order to highlight trends and general areas of high and low priority. It raises questions about how to improve procurement, appropriately share management of risk, and communicate with stakeholders about priorities.
Water NZ Competency Framework Water NZ	This document explores the workforce skills and capabilities for an effective, efficient, accountable and resilient three waters sector in New Zealand. It describes what people should be able to do and what they need to know to competently undertake their work. It is a work in progress and includes the following roles. • Drinking Water Treatment Operators • Wastewater Treatment Operators • Drinking Water Distribution Operators (to be developed) • Wastewater Network Operator (to be developed)

4.2.2 Infrastructure Commission, Te Waihanga

The New Zealand Infrastructure Commission – Te Waihanga – was established in 2019 as an Autonomous Crown Entity to carry out two broad functions – strategy and planning and procurement and delivery support on infrastructure investment.

InfraCom - Te Waihanga will work with central and local government, the private sector, iwi and other stakeholders, to develop a 30-year infrastructure strategy to replace the National Infrastructure Plan.

The first plan will be reported to government by the end of 2021 and thereafter at least every 5 years . The strategy will cover the ability of existing infrastructure to meet community expectations;

current and future infrastructure needs and priorities; as well as any barriers which could impede the delivery of infrastructure or services arising from it.

4.2.3 National Policy Statement

The National Policy Statement for Freshwater Management (NPSFM) 2020 came into force on 3 September 2020 and documents the objective to ensure that natural and physical resources are managed in a way that prioritises:

a) first, the health and well-being of water bodies and freshwater ecosystems
b) second, the health needs of people (such as drinking water)
c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The NPSFM includes a requirement to manage freshwater in a way that 'gives effect' to Te Mana o te Wai, including by actively involving tangata whenua in freshwater management, working with tangata whenua and communities to set out a 'long-term vision' in the regional policy statement, and through a new 'hierarchy of obligations' which prioritises the health and wellbeing of water bodies, then the essential needs of people (e.g. drinking water), followed by other uses.

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

'Action for Healthy Waterways' (Ministry for the Environment) signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems, likely regulatory requirements under a new 3 Waters regulatory framework.

These initiatives will flow through respective Regional Councils Policy Statements & Regional Plans.

4.2.4 National Policy Statement on Urban Development Capacity

The National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) sets out the objectives and policies for providing development capacity under the Resource Management Act 1991.

The NPS-UDC came into effect on 1 December 2016 and has been described by the government as "the core issue of increasing land supply".

The NPS-UDC directs local authorities to provide sufficient development capacity in their resource management plans for housing and business growth to meet demand.

Development capacity refers to the amount of development allowed by zoning and regulations in plans that is supported by infrastructure. This development can be "outwards" (on greenfield sites) and/or "upwards" (by intensifying existing urban environments).

4.3 Key Legislation and Regulation– Implications for Asset Management

Legislation is established by Central Government and must be complied with at Local Government Level. Significant legislation and regulations affecting the Stormwater activities are provided in Table 4-2.

Council must comply with any relevant legislation enacted by Parliament. Commentary related to some of the key legislation is provided below. Different legislation has differing levels of impact on the Stormwater services activities; this is indicated under Impact Range (Broad ***, Moderate **, Limited *).

Table 4-2: Legislation and Regulation Affecting the Stormwater Services

Legislation & Regulation	Stormwater Services Range
Building Act 2004 (and amendments)	*
Civil Defence Emergency Management Act 2002	***
Climate Change (Emissions Trading and Renewable Preference) Act 2008	*
Climate Change Response Act 2002 (and amendments)	**
Energy Efficiency and Conservation Act 2000	*
Environmental Protection Authority Act 2011	*
Epidemic Preparedness Amendment Act 2010	*
Fire and Emergency New Zealand Act 2017	**
Health Act 1956	***
Health and Safety at Work Act 2015	***
Heritage New Zealand Pouhere Taonga Act 2014	*
Infrastructure (Amendments Relating to Utilities Access) Act 2010	**
Local Government Act 2002 (and amendments)	***
Local Government Act 1974 (and amendments)	**
Local Government Rating Act 2002 (and amendments)	**
Local Government Rating Act 1979	*
Ngai Tahu Claims Settlement Act 1998	*
Public Works Act 1981 (and amendments)	*
Reserves Act 1977 (and amendments)	*
Resource Management Act 1991 (and amendments)	***
Utilities Access Act 2010	***

4.3.1 Major Legislation Details

The legislation that has or will have the most effect on the Stormwater Services is expanded in the following section.

Civil Defence Emergency Management Act 2002

The expectations under the CDEM Act 2002 is 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.

Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that:

- contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels
- allow New Zealand to prepare for, and adapt to, the effects of climate change.

The amendments establish four key items.

1. set a new domestic greenhouse gas emissions reduction target for New Zealand to:
    a. **reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050**
    b. reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
2. establish a system of emissions budgets to act as stepping stones towards the long-term target
3. require the Government to develop and implement policies for climate change adaptation and mitigation
4. establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

The original proposal was for a separate piece of legislation called the Zero Carbon Bill to be passed into law. In May 2019, the Government decided to introduce it as an amendment to the Climate Change Response Act 2002. The objective was to ensure that all key climate legislation is within one Act.

Health and Safety at Work Act 2015

The Health and Safety at Work Act 2015 (HSWA)was enacted on 4 April 2016 and is part of "Working Safer: a blueprint for health and safety at work" and reforms New Zealand's health and safety system following the recommendations of the Independent Taskforce on Workplace Health and Safety. Working Safer is aimed at reducing New Zealand's workplace injury and death toll by 25 per cent by 2020.

The HSWA:

- reinforces proportionality – what a business needs to do depends on its level of risk and what it can control
- shifts from hazard spotting to managing critical risks – actions that reduce workplace harm rather than trivial hazards
- introduces the "reasonably practicable" concept – focusing attention on what's reasonable for a business to do
- changes the focus from the physical workplace to the conduct of work – what the business actually does and so what it can control
- supports more effective worker engagement and participation – promoting flexibility to suit business size and need.

A guiding principle of the HSWA is that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from work risks as is reasonably

practicable. The HSWA shifts the focus from monitoring and recording health and safety incidents to proactively identifying and managing risks so everyone is safe and healthy.
The HSWA identifies four duty holders:

persons conducting a business or undertaking (PCBUs) – these may be individuals or organisations	have the primary responsibility for the health and safety of their workers and any other workers they influence or direct. They are also responsible for the health and safety of people at risk from the work of their business
officers	(company directors, partners, board members, chief executives) must do due diligence to make sure the business understands and is meeting its health and safety responsibilities
workers	must take reasonable care for their own health and safety and that their actions don't adversely affect the health and safety of others. They must also follow any reasonable health and safety instruction given to them by the business and cooperate with any reasonable business policy or procedure relating to health and safety in the workplace
other persons at workplaces	who come into the workplace, such as visitors or customers, also have some health and safety duties to ensure that their actions don't adversely affect the health and safety of others

Heritage New Zealand Pouhere Taonga Act 2014

Describes an archaeological site as "Any place in New Zealand that:

- Was associated with human activity that occurred before 1900
- Is the site of the wreck of any vessel where that wreck occurred before 1900
- Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand"

It is unlawful to modify, damage or destroy any archaeological site – recorded or not – without an authority from the New Zealand Historic Place Trust.

Local Government Act 2002

Defines the purpose of local authorities as enabling local decision-making by and on behalf of the community, and allows local authorities the power of general competence. This Act specifically requires Councils to continue to provide water and wastewater services if they do so already.
AMPs are the main method of demonstrating Schedule 10 requirements.

In addition to the general requirements of the Local Government Act there are some specific clauses that apply to water services.

Table 4-3: Water Services LGA 2002 Clauses

Section	Details	Applies to
S10	Restores the four aspects of community well-being by requiring local authorities to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future	Water and Waste Services
S17A	Requires that Councils review the cost effectiveness of the way they deliver their services to ensure they meet the needs of communities	All services
S101B	Requires a 30 Year Infrastructure Strategy	Core Services

Section	Details	Applies to
S125	Places a requirement to assess water and other sanitary services from time to time	Water and Sanitary Services Assessment
S130	Imposes an obligation to maintain water services and places limitations on the transfer or selling of assets	Divestment of services
S 136	Empowers Councils to enter into Contracts relating to provision of water services for periods not exceeding 35 years whilst maintaining control over the pricing of the service, retain legal responsibility for the service and being responsible for the development of policy related to the water services	Utilities Contract
S 137	Empowers Councils to enter joint local government arrangements and joint arrangements with other entities for the provision of water services, with the same constraints as S136	Utilities and Professional Services provision and procurement
Pt 1 -2 Pt 3 - 23	Council provides groups of activities for financial, performance and negative effects reporting purposes. The Water and Waste unit will provide Group summaries for water (urban & rural), sewerage and stormwater	Water and Waste Services

Local Government Act 2002 – Section 17A

To date a formal, documented Section 17A review has not been completed for 3W's service delivery. Council informally reviewed 3W's service delivery in 2016/17.

Waimate, whilst not unique, is one of few councils that continues to provide maintenance operations "in-house" and resultantly did not have contractual arrangements in place to trigger a review between 2014 and 2017 (the statutory deadline for completing the first round of reviews).

At this point in time, investigations in to the Havelock North incident and subsequent indications that sector reforms were underway meant that the desire to change service delivery arrangements was low. Furthermore, Council was effectively comfortable that the potential benefits of performing a review did not justify the time and expense of completing the exercise. Subsequent acceleration of the reforms has bolstered this position in so far as service delivery is being addressed during the current calendar year (2021) and the impacts for 2021/22 are as yet unknown. Based on Councils decision regarding "opting in or out", this may trigger a Section 17A review (or not).

Resource Management Act 1991

Governs all water takes and discharges. Water takes and discharges to waterways and land occur through the extraction of water from waterways and land. Resource consents obtained for water takes and discharge activities require parameters such as volume and quality to be monitored as well as taking steps to mitigate any adverse effects that may occur through the activity.

There have been numerous amendments to the Resource Management Act over the years with reform a key priority. During 2019 the Government appointed the Resource Management Review Panel to undertake a comprehensive review of the RMA. The Review Panel recommended:

- The RMA to be repealed and replaced with two new pieces of legislation
    - The Natural and Built Environments Act to strengthen the current system by not only seeking to protect the environment, but improve it.

- The Strategic Planning Act to give statutory weight to strategic spatial plans and, critically, force reconciliation and alignment across central and local government to ensure implementation.

Taumata Arowai–the Water Services Regulator Bill

Taumata Arowai – the Water Services Regulator Bill received Royal Assent on 6 August 2020. The Bill will establish Taumata Arowai–the Water Services Regulator and provide for its objectives, functions, and governance arrangements.

Taumata Arowai – the Water Services Regulator Bill will create a new regulatory body to oversee, administer and enforce a new and strengthened drinking water regulatory system. It will also have a national oversight role to improve the environmental performance of storm water and wastewater networks.

This Bill will be enacted during 2021.
A separate Bill, the Water Services Bill, to be introduced in early 2020, will give effect to decisions to implement system-wide reforms to the regulation of drinking water and source water, and targeted reforms to improve the regulation and performance of wastewater and stormwater networks. The Regulator's detailed functions and powers are located in that Bill.

Utilities Access Act 2010.

The Utilities Access Act 2010 provides for a coordinated approach to management of the road corridor. The Act requires the Corridor Managers to undertake a planning and access management role, and Utility operators to comply with an approved code of practice.

The National Code of Practice for Utility Operators Access to Transport Corridors is a mandatory requirement for all road and rail controlling authorities and utility network operators under the Utilities Access Act 2010, and came into effect on the 1st January 2012. The Code was reviewed during 2016.

The initial KPI data identified several issues including a lack of consistency, along with the fact that not all reporting entities had sent in their returns, meaning that any comparisons were incomplete. The situation was exacerbated by the fact that only 1 year's results are available, with any real value to come from analysis of changing trends over time. Refining of the data collection requirements will be a major focus moving forward, resulting in a more comprehensive reporting and analysis to be provided following the receipt of 2016-17 KPI data.

4.3.2 Relevant Regulations Affecting this Activity

Local Government (Financial Reporting) Regulations 2011

4.4 Standards, Codes of Practice and Guidelines

National environmental standards, design standards (AS/NZS ISO), Codes of Practice and Guidelines provide technical direction. National Standards must be complied under the direction of relevant legislation.

4.4.1 National Environmental Standards

National environmental standards are regulations issued under the Resource Management Act 1991 (RMA). They prescribe technical standards, methods and other requirements for environmental matters.

Local and regional councils [or local government] must enforce these standards (or they can enforce stricter standards when the standard provides for this). In this way, national environmental standards ensure consistent minimum standards are maintained throughout all New Zealand's regions and districts.

4.4.2 AS/NZS Standards

The Code for Subdivision and Development AS/NZS 4404 is the principle document defining design requirements. Wherever possible, relevant AS/NZS standards are used as the basis for determining standards of design and construction. Standards and guidelines relevant to the Stormwater Activity are provided in Table 4-4.

Table 4-4: National Environmental Standards and Guidelines

Year Released	Technical Discipline: Asset Management
2020	NAMS International Infrastructure Management Manual
2015	NAMS International Infrastructure Management Manual
2011	NAMS International Infrastructure Management Manual
2008	PAS55-1:2008 Asset Management - Replaced
2007 v2.0	NAMS Developing Levels of Service and Performance Measures Guidelines
2004 v1.0	NAMS Optimised Decision Making Guidelines
2006 v2.0	NAMS Infrastructure Asset Valuation and Depreciation Guidelines
2006	NZWWA New Zealand Pipe Inspection Manual
1999	NZWWA The New Zealand Infrastructural Asset Grading Guidelines

4.4.3 ISO 55000 Asset Management 2014

This international standard was released in January 2014 and makes the previous BSI PAS55 Asset Management (2008) standards redundant. The new standard outlines the requirements for a 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 Stormwater Services AMP the Council has yet to review whether current Council 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 if this is the direction Council decide to take in the future.

4.5 Regional Plans

4.5.1 Natural Resources Regional Plan (NRRP)

The NRRP was revoked during February 2017 and replaced with the LWRP.

4.5.2 Land and Water Regional Plan (LWRP)

The Land & Water Regional Plan is a new planning framework for Canterbury and aims to provide clear direction on how land and water are to be managed and help deliver community aspirations for water quality in both urban and rural areas.

The Canterbury Land and Water Regional Plan (LWRP) identifies the resource management objectives for managing land and water resources in Canterbury to achieve the purpose of the Resource Management Act 1991. It identifies the policies and rules needed to achieve the objectives, and provides direction in terms of the processing of resource consent applications.

This LWRP is made up of 16 sections and a map volume:

- the first describes Canterbury's land and water resources, interrelated issues that need to be managed, the key partnerships, relationships and processes already underway, including the Canterbury Water Management Strategy (CWMS).
- The second section describes how the Plan works and contains the definitions used in the Plan.
- The subsequent three sections cover the region-wide objectives, policies, and rules.
- Sections 6 to 15 inclusive contain sub-region catchment specific policies and rules, and
- Section 16 contains the schedules.
- The maps referred to in the rules are in a separate map volume.

Rules 5.93 to 5.97 address Stormwater. Rule 5.93 is of specific note as this requires an approved Stormwater Management Plan for reticulated stormwater systems and Policy 4.16 records the requirements of a Stormwater Management Plan.

4.5.3 Regional and Iwi Plans

Regional and Iwi Plans affecting the Stormwater activities are listed in Table 4-5. Each of these is a significant document, any impact on the current or proposed Waters Policy must be accounted for.

Table 4-5: Regional and Iwi Plan Documents

Canterbury Regional Council Plans	Key Impacts on Stormwater Services
Canterbury Land and Water Regional Plan (LWRP)	Application submitted by 30 June 2018
Regional Coastal Environment Plan 2011. Covers coastal marine area and the coastal environment and its integrated management.	
Regional Policy Statement Sets the framework for resource management in Canterbury for the next 10 to 15 year	Became operative on 15 January 2013 and has undergone minor amendments since.
Canterbury Water Management Strategy	Stormwater – water quality

4.5.4 Cantebrury Mayoral Forum

The Waimate District Council is part of the Canterbury Mayoral Forum (11 member Councils) consisting of:

- Kaikōura District,
- Hurunui District,
- Waimakariri District,

- Christchurch City,
- Selwyn District,
- Ashburton District,
- Timaru District,
- Mackenzie District,
- Waimate District,
- Waitaki District (part of which lies within the Canterbury Regional Council area), and
- Environment Canterbury

Region wide issues identified by the Joint Working Group include:

- a need for more effort in compliance, monitoring and enforcement
- a greater focus on biodiversity outcomes monitoring and reporting
- opportunities for councils to share approaches and share resources
- addressing scale and complexities of issues, recognising the size of rating bases and capacities of councils.

Key work by Council supporting ecosystem health and biodiversity, drinking water and water use efficiency targets include:

- ecosystem health and biodiversity
  - restore Wainono lagoon
  - District Plan
- 3Waters
  - Major drinking water upgrades including Hook-Waituna, Lower Waihao, Waihaorunga and Waikakahi
  - Water safety plans in place and implemented
  - Global stormwater discharge consent in place
  - 3waters infrastructure renewals
- water use efficiency
  - water savings through upgrade of ageing infrastructure
  - water conservation measures in place
  - urban toby replacement with manifold meters

Key actions to meet 2025 Goals are tabled below:

Ecosystem Health
Biodiversity **Lowland Stream health** Fulfil requirements to obtain and comply with stormwater consents for townships by 2025. Progress improvement to stormwater infrastructure to reduce ecological damage to lowland streams from sediment and contaminants. Continue regular community education/behaviour change campaigns on stormwater issues and management.
Lowland Stream health Review the state and operation of the district's wastewater treatment plant infrastructure to address and reduce potential impacts on the district's highly valued rivers.
Biodiversity **Drylands** Identify and map SNAs on private land. Review status of SNAs listed in District Plan in line with NPSIB criteria and requirements by 2026. Implement system to actively protect SNAs and maintain indigenous vegetation. Work with Environment Canterbury to develop a biodiversity monitoring strategy. Secure funding for shared biodiversity role to undertake compliance monitoring.

Ecosystem Health
Advocate for indigenous biodiversity through regular education/behaviour change campaigns to improve understanding of the importance of protecting and conserving indigenous vegetation.
Biodiversity: **Drylands / Hill and High country streams** Review vegetation clearance rules as part of District Plan review to protect indigenous vegetation. Advocate for indigenous biodiversity through regular education/behaviour change campaigns to improve understanding of the importance of protecting and conserving indigenous vegetation.
Source Water Quality
Priority planning for water supply wells and new treatment plants, including rural water schemes (Waihaorunga, Cannington-Motukaika, and Waikakai). Review the state and operation of the district's wastewater treatment plant infrastructure to address and reduce potential impacts on the district's highly valued rivers and source groundwater Raise awareness of health impacts from high nitrate in drinking water. Run campaigns to recommend regular testing of private bores and consider options for secure water supply
Water Use Efficiency
Improve compliance with national regulations on the measurement and reporting of water takes. Manage water demand through meeting requirements under LWRP. Run local public relations education/behaviour change campaigns on water use efficiency to raise awareness and reduce usage.

Environment Canterbury provides quarterly updates to the Chief Executives Forum and Mayoral Forum on the regionwide progress towards implementing the CWMS. These quarterly reports provide a summary of the last three months' progress of zone committee projects and provide information on the latest freshwater related policy and RMA planning.

As work progresses on implementing the Fit for Future work programme, future quarterly reports to the Mayoral Forum will focus on reporting on the delivery of the CWMS Targets and review of the Canterbury Biodiversity Strategy in line with national direction.

4.6 Waimate District Council Strategies, Plans and Bylaws

4.6.1 Council Strategies

The following Council Strategies have impacts and are considered as part of the Stormwater services Activity

- District Wide Strategy
- Economic Development Strategy
- Procurement Strategy
- Infrastructure Strategy

4.6.2 Council Planning Documents

The following Council Planning Documents have impacts and are considered as part of the Stormwater Services Activity

- Waimate District Long Term Plan 2018-28 (current)
- Waimate District Long Term Plan 2021-31 (proposed)
- Waimate District Plan
- Waimate District Council Engineering Design Standards for Subdivisions and Development
- Structure Plans

- Waimate District Council AMPs

4.6.3 Council Bylaws

Section 146 of the Local Government Act 2002 provides for a Territorial Authority to make Bylaws in its district for the purposes of managing, regulating against, or protecting from damage, misuse, or loss, or for preventing the use of; the land, structures, or infrastructure associated with the Stormwater services.

Waimate District Council Consolidated Bylaw 2018, Chapter on Water Services consist of six parts:

- Part 1 General Conditions, applicable to all Network Infrastructure Services.
- Part 2 Urban Water Supply
- Part 3 Rural Water Supply
- Part 4 Stormwater Drainage
- Part 5 Sewerage
- Part 6 Trade Waste

The bylaw defines standards and obligations for the discharge, conditions of connection and infringements.

4.6.4 Council Policies

Significance and Engagement Policy

Waimate District Council developed the Significance and Engagement Policy to determine the significance of issues within the District, and how to align Council engagement with the public based on the degree of significance of the issue.

This policy exists to:

- Inform the public can expect from the Waimate District Council regarding community engagement and the ways you can influence and participate in the decision-making of the Council.
- To provide Council with a tool that guides the assessment of significance during decision making. A decision on significance and engagement provides direction on the level of community engagement that might be desirable to enable Council to develop a clearer understanding of community views and preferences on an issue or proposal.

This Policy identifies the following Strategic assets:

- Regent Theatre
- Waimate Public Library - building and collections
- Resource Recovery Park
- Parks and Reserves
- Public Toilets
- Cemeteries
- Roading Networks and connected infrastructure
- Sewerage Networks and Treatment Plants
- Norman Kirk Memorial Pool
- **Stormwater Networks**
- Water Treatment, Storage and Supply Networks
- Community Housing
- Local Government Centre
- Waimate Sports Stadium

Earthquake Prone Buildings

Earthquake Prone Buildings are no longer included in a Council Policy, but are now included in the Building Act 2004 under, Subpart 6A Building (Earthquake-prone Buildings) Amendment Act 2016. These new provisions came into effect on 1 July 2017.

Council is required to identify potential earthquake prone buildings or parts of Earthquake Prone Buildings and advise building owners that they are required to provide an Engineering Assessment that has been undertaken in accordance with the Earthquake Prone Buildings Methodology.

As the Waimate District is designated as being in a Low Seismic Risk Area the Council has until 1 July 2032 to identify potential earthquake prone buildings in the district. Council also has the ability to identify potentially Earthquake Prone Buildings at any time if they have reason to suspect it may be Earthquake Prone Building.

This Engineering Assessment is required to be provided by the building owner to the Council within 12 months of the building owner being notified by the Council of their building being considered to be an Earthquake Prone Building.

In the case where a building owner has had an Earthquake Prone Building Assessment undertaken prior to 1 July 2017, then this assessment is to be provided to the Council for review against the Earthquake Prone Building Methodology. The Council will assess these reports against the Earthquake Prone Buildings Methodology and decide whether the report is acceptable or may request either additional information or a new report to be provided.

The Council will also assign the Earthquake Prone Building rating and if it is less than 33% then the rating will be entered into the MBIE National Earthquake Prone Buildings database. The building owner will be required to erect and maintain the prescribed placards in the building in the prescribed locations indicating what the Earthquake Prone Building Rating of their building is until such time as the building is strengthened or demolished. These placards are required to be displayed where members of the public will be clearly visible so members of the public are aware of the Earthquake Prone Rating of the building.

The period for building owners to undertake strengthening of buildings in the Waimate District is 35 years from the date when the Council advises the building owner of its decision that the building is an Earthquake Prone Building.

Dangerous and Insanitary Buildings

Council has revoked the Earthquake Prone Buildings, Dangerous and Insanitary Building Policy and separated the Dangerous Buildings and Insanitary Buildings into two individual policies to make easier for staff when dealing with these buildings. These new policies were adopted by Council in December 2017.

When either a Dangerous or an Insanitary Building are brought to Councils attention an assessment will be undertaken by staff to establish whether they are either Dangerous or Insanitary.

Council staff will work with the building owner to make the building safe and to remove or reduce the danger in the case of both dangerous building and insanitary buildings.

4.7 Level of Service Consultation

4.7.1 Consultation Processes

Community Outcomes for the Long Term Plan

The Council has carried out significant consultation to establish the Community Outcomes for the LTP; these were reviewed in 2011 following the changes to the Local Government Act in 2010. For the 2021 LTP the Community Outcomes retain the essence of those included in previous Waimate Community and Long Term Plans and were tested against the Waimate District Council vision statement.

Community Consultation

The Waimate District Council has undertaken a range of consultation processes over the past few years specifically targeted at gathering information on preferred Levels of Service or the extent of infrastructure that Council will be required to install, future vision or how we manage the service. The extent of the historical and proposed consultation is detailed in Table 4-6.

Table 4-6: Stormwater Service Consultation Processes (Historical and Proposed)

Consultation Processes	Key Stakeholders Involved	Date	Reasons for Consultation	Extent of Consultation
Historical				
2012-2022 LTCCP process	All	2012	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
2015-2025 LTP process	All	2015	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
2018-2028 LTP process	All	2015	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
Water Safety Plan (Waimate Urban and Rural)	Urban and Rural customers	2013 & ongoing		
Proposed				
2021-2031 LTP process	All	2021	Legislative requirement criteria of LGA 2002 and RMA	In accordance with the LGA 2002 consultation requirements
District Plan Review	All	2024		
Bylaws	All	2018	Review of Bylaws	Public and Industry submissions requested

4.8 2021 – 2031 Stormwater Services Levels of Service

In 2011 the levels of service were reviewed and modified to take into account feedback from various parties including Audit New Zealand, industry best practice and ease in measuring and reporting. These were further reviewed in 2014, 2017 and 2020. Only the Customer Levels of service (including non-financial) are reported in the LTP.

4.8.1 Rules for Performance Measures

In 2010, the Local Government Act 2002 was amended to require the Secretary for Local Government to make rules specifying non-financial performance measures for local authorities to

use when reporting to their communities. The aim was to help the public to contribute to discussions on future levels of service for their communities and to participate more easily in their local authority's decision-making processes.

Performance measure rules come into force on 30 July 2014. Local authorities are required to incorporate the performance measures in the development of the 2015-2025 LTP. The performance measures were reported for the first time in the 2015/2016 annual reports. The performance measures are:

Performance measure 1 - System adequacy

Performance measure 2 - Discharge compliance

Performance measure 4 - Fault response times

Performance measure 5 - Customer satisfaction

4.8.2 2021-2031 Stormwater Services: Levels of Service

In 2020 the 2018 (and 2014) Customer Levels of Service were reviewed. Table 4-7 details the results of this review.

Council reviewed the customer service requests system to ensure they align with the Mandatory Performance Measures and ensured the internal and Contractor reporting aligns with the Mandatory Performance Measures 'tasks'. Council's AMIS (AssetFinda) and associated Service Request module have been programmed to allow reporting aligned with the NFPM and to ensure consistency and accuracy of reporting.

Table 4-7: LTP 2021 – 2031 Stormwater Services Levels of Service

What we do	**Council provides stormwater drainage systems for the removal of surface water following rainfall events. In Waimate urban catchments this surface water is removed by a piped stormwater drainage system and existing kerb and channel networks.**			
1. Maintain reliable stormwater network services				
How we do it	• Maintain stormwater systems and respond to service failures • Develop and implement system for recording flooding events • Monitor demand and manage growth of network • Collection and disposal of stormwater via stormwater systems • Monitor condition and performance of stormwater reticulation and assets			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Number of flooding events that occur in our systems (M) (per 1000 properties connected) Number of habitable floors affected in a flooding events in the district (M) (per 1000 properties connected)	Achieved (2018/19)	0	0
	Number of blockages in the Councils urban storm water transmission (i.e. piped, open drain).	New	≤3	≤3

* Flooding event means an event where stormwater enters a habitable floor. Measured from the time of notification to the time that service personnel reach the site.

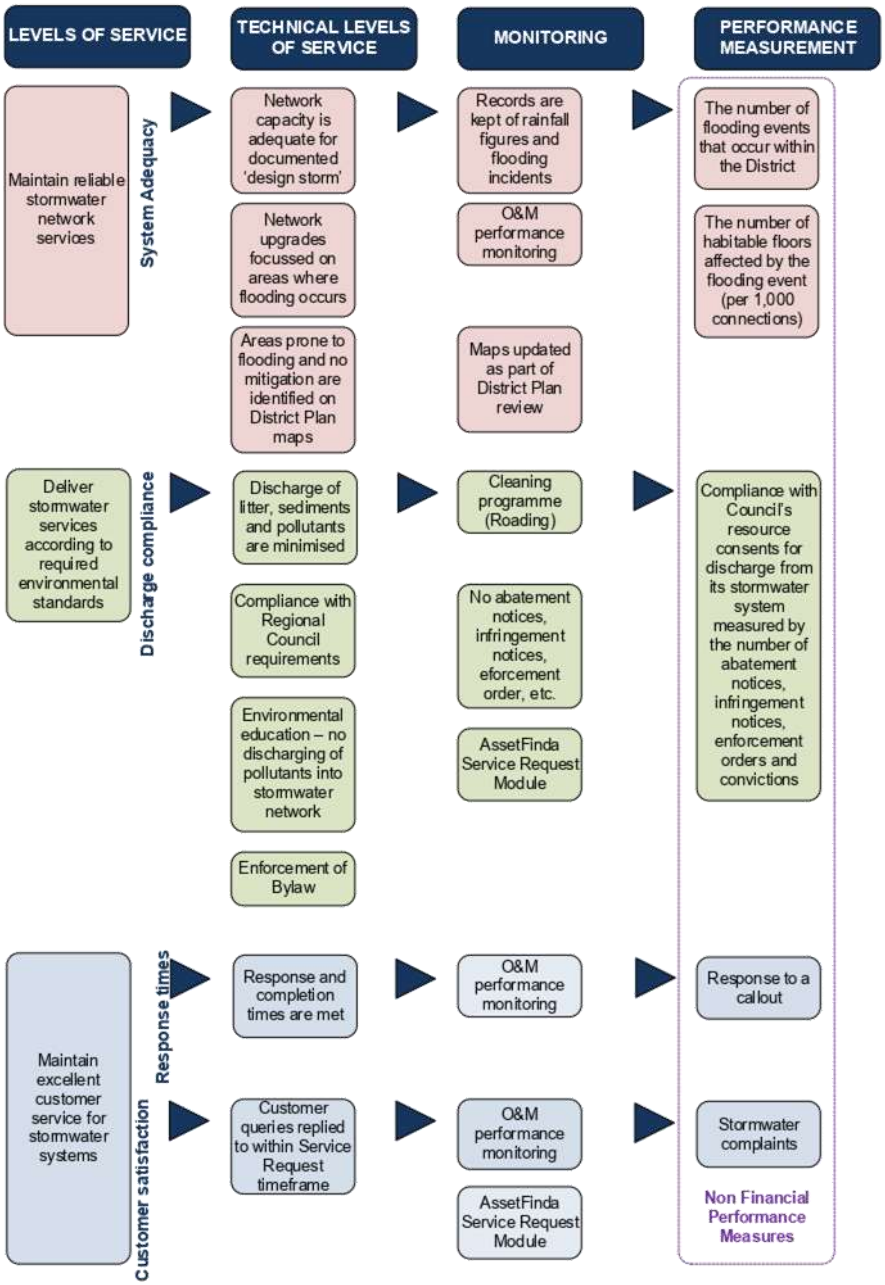
2. Deliver stormwater services according to required environmental standards				
How we do it	• Manage and monitor stormwater systems under conditions of resource consents • Monitor ongoing regulatory changes to stormwater activities • Develop a Demand Management Plan for the Stormwater activity • Update and review Risk Management Strategy • Investigate options for stormwater treatment • Develop stormwater quality monitoring systems • Apply for and receive stormwater resource consents within necessary time period			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Compliance with Resource Consents for discharge from stormwater system (M)	Achieved (2018/19)	No abatement notices, infringement notices, enforcement orders and convictions	No abatement notices, infringement notices, enforcement orders and convictions

3. Maintain excellent customer service for stormwater systems				
How we do it	• Provide a customer service request system 24 hours a day, 7 days a week • Maintain stormwater system and respond to service failures or faults in a timely manner			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Median response time to attend a flooding event.* (M)	Achieved (2018/19)	≤120 minutes	≤120 minutes
	Number of complaints received about the performance of the stormwater system (M)	Achieved(2018/19)	≤1.5 per 1,000 properties	≤1.5 per 1,000 properties

The interpretation of the Non-Financial Performance Measures Rules are shown in http://www.dia.govt.nz/diawebsite.nsf/wpg_URL/Resource-material-Our-Policy-Advice-Areas-Local-Government-Policy?OpenDocument#ElectoralAct

4.8.3 Customer and Technical Levels of Service

The Technical Service Standards for each Customer Levels of Service, along with linkages to the monitoring and Performance Measurements is described below.



It should be noted that in the context of the requirements under the NFPM:
"Flooding event" means an overflow of stormwater from a territorial authority's stormwater system that entered a habitable floor.

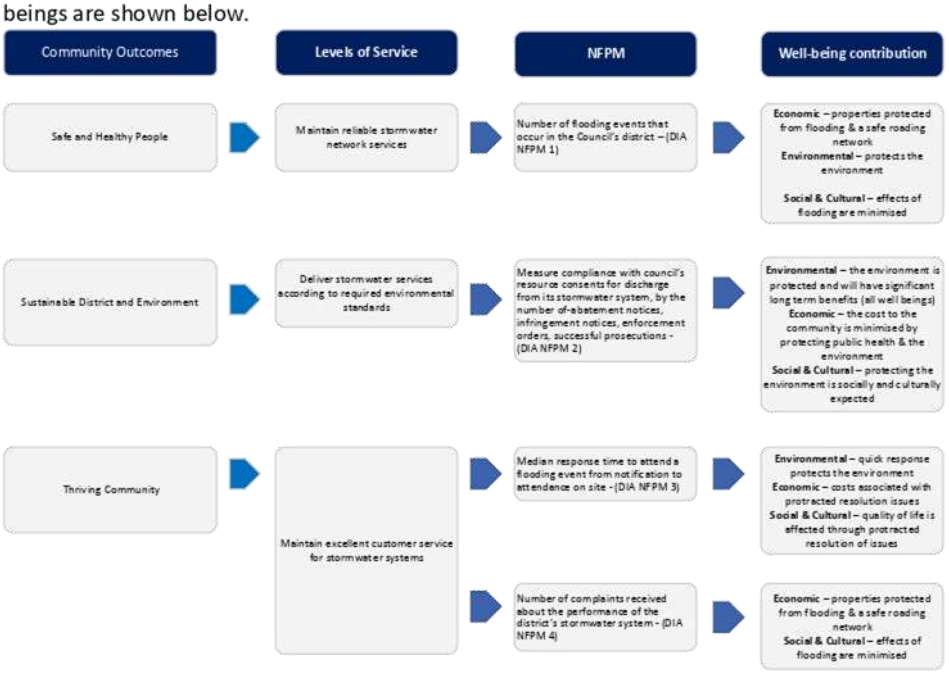
"Habitable floor" means a floor of a building (including a basement) but does not include ancillary structures such as stand-alone garden sheds or garages.
"Stormwater system" means the pipes and infrastructure (excluding roads) that collect and manage rainfall runoff from the point of connection to the point of discharge.

However

- The definition of stormwater system which excludes streets, means that most (if not all) flooding in this district is not required to be reported as it is caused by runoff from the roads themselves and not the stormwater pipes.
- This Council, along with many others, does not know how many properties are connected to the stormwater system as they are not separately rated.
- The inclusion of basements (and attached garages) as a habitable floor is at variance with the NZ Building Code which does not regard these as habitable areas so Council is unable to prevent their being constructed below a floodable level.
- Most properties discharge to road rather than the stormwater system. Generally, connection to the stormwater system is not permitted and only considered under extreme circumstances and with specific conditions (flap valves, etc.)

4.8.4 Activity Contribution to the Four Well-beings

Section 10 of the Local Government Act restores the four aspects of community well-being by requiring local authorities to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future. The reinstatement of the four well-beings acknowledges that the Council has a broader role in looking after our communities, than simply providing core services. The stormwater activity levels of service contribution to the four well-beings are shown below.



4.9 Performance Gaps

The results for the March 2019 Communitrak customer satisfaction survey as shown below. The results from the survey report that:

- Overall, 50% of Waimate District residents are satisfied with stormwater services, while 11% are not very satisfied with this service. These readings are similar to the 2017 results.
- A large percentage (39%) are unable to comment and this is probably due to only 44% of residents saying they are provided with a piped stormwater collection, where they live. Of these, 79% are satisfied.
- The percent not very satisfied is on par with like Districts and residents nationwide.

There are no notable differences between Wards and between socio-economic groups, in terms of those residents more likely to be not very satisfied with stormwater services.

The main reasons residents are not very satisfied with stormwater services are:

- *flooding,*
- *blockages/drains/gutters, culverts need clearing regularly,*
- *inadequate drainage/need improving*

Figure 4-1: Communitrak Survey Trends

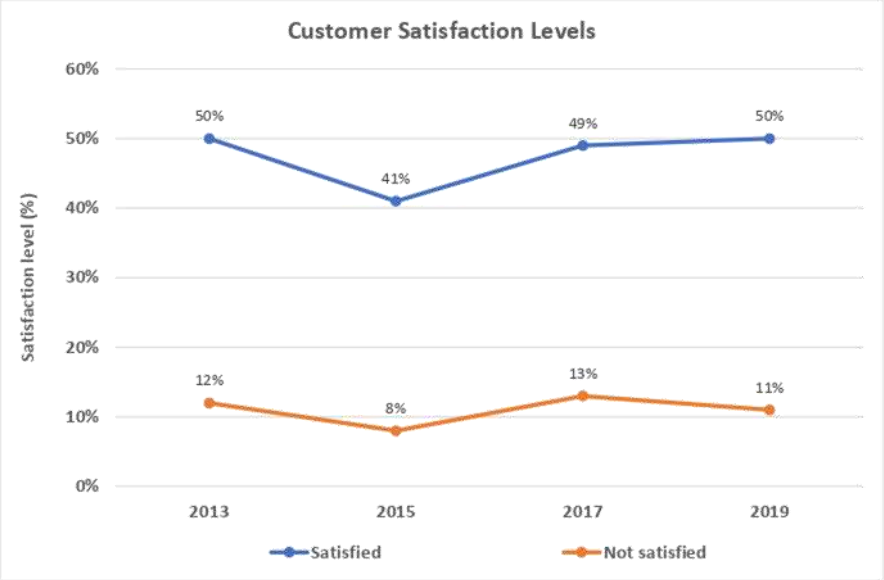


Figure 4-1 shows that despite a significant reduction is satisfaction levels during 2015 the satisfaction levels with the stormwater service has recovered well over the last four years.

5.0 GROWTH AND DEMAND MANAGEMENT

This section provides details of growth forecasts, which affect the management, and utilisation of all Stormwaters assets and details demand management strategies.

5.1 Projects That Will Have An Impact On District Population

There are a number of projects that were / are anticipated to have an impact on the districts population, namely:

- Hunter Downs Irrigation Scheme – Did not proceed (2020)
- Waihao Downs Irrigation scheme (Commissioned)
- Oceania Dairy Factory (Ongoing development)
- Alps to Ocean Cycle Track (Commissioned)

Details of these projects are presented below.

Hunter Downs Irrigation Scheme

The Hunter Downs Irrigation Scheme was to be a community irrigation proposal developed originally by the South Canterbury Irrigation Trust (SCIT) and Meridian. The scheme would have potentially irrigated up to 40,000 ha of land from the Waitaki River stretching as far north as Otipua. The scheme was reduced to just 12,000 ha of irrigated land with construction supposed to start mid 2018. At the time of writing this AMP, the consent is close to lapsing.

Waihao Downs Irrigation Scheme

The Waihao Downs Irrigation Scheme irrigates 6,800 ha of farmland within a larger command area of 14,000 ha in the Waihao basin. The scheme involves taking water from the Waitaki River which is then distributed through a piped network to farms. There are a few potential farm conversions left.

Kurow Duntroon Irrigation Scheme

The Kurow Duntroon Irrigation Scheme, within the neighbouring Waitaki district, was developed by the Ministry of Works during 1965.

The original system consisted of a siphon drawing water from the Waitaki Dam into a 35 kilometres long open water race delivering water via a gravity fed system of manually operated gates.
This system was replaced during 2018/19 by installing 76 kilometres of pipelines from Waitaki Dam to Duntroon on the west bank of the Maerewhenua River. The system will ultimately enable irrigation of 5,500 hectares.

The Kurow Duntroon Irrigation Company (KDIC) is a community owned irrigation scheme, and holds a resource consent (CRC163429) from Ecan that expires in 2048, for an annual water take of 26.3 million litres. The scheme will increase activity in the rural service industries (on farm contractors and farm supplies) and processing companies (milk companies and vegetable processing).

Oceania Dairy Factory

Oceania Dairy Limited is a wholly-owned subsidiary of Inner Mongolia Yili Industrial Group (Yili), and is China's largest dairy producer. The state-of-the-art Glenavy processing plant has been designed for the production of milk powder for export to China where it will be used by Yili to produce infant formula. Stage Two is now complete and further improvements and expansion are likely in the future.

Alps to Ocean Cycle Track

This is a cycle track from Aoraki/Mt Cook to Oamaru and is almost fully complete. Construction of the off-road sections of trail are ongoing, and will likely take another few years to finish.

Given central Otago Rail Trail didn't have real impact until a number of years later, Council has assumed that any impact will be similar for Waimate District.



With these development projects there is a high chance that Waimate will experience slight increases in population with changes in socio-economic structure and changes in land use.

5.2 Demand Forecasts

The Waimate District Growth Projections- 2020 (Rationale) report provides a projection of the population growth for the Waimate District over the next 30 years. The report provides growth projection outputs for usually resident population, employment, dwellings, rating units and visitors.

Typically, WDC used the growth projections prepared by Statistics New Zealand (StatsNZ). Council is now looking for a more in-depth understanding of what their district might look like over the next 30 years. This coupled with the delayed release of the Stats NZ projections, following 2018 Census, has led WDC to commission these growth projections to understand the future growth in their district and provide a single source of the truth for council.

Four growth scenarios have been modelled for each parameter representing different levels of ambition in terms of the district's growth over the next thirty years.

The report considered four growth scenarios i.e.

- Scenario 1 – Business as Usual (Pre COVID 19)
  - No impact from COVID 19 and no limit on dwellings that can be constructed
- Scenario 2 – High
  - minimal COVID 19 impact and currently zones land reaching capacity
- Scenario 3 - Medium
  - Expected COVID 19 impact, business as usual by 2025
- Scenario 4 - Low
  - Higher than expected COVID 19 impact

Scenario 3 is considered to be the most appropriate for WDC's long term planning as there will be short term effects due to COVID-19.

However, it is not yet known what, if any, long term effects there will be. Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the

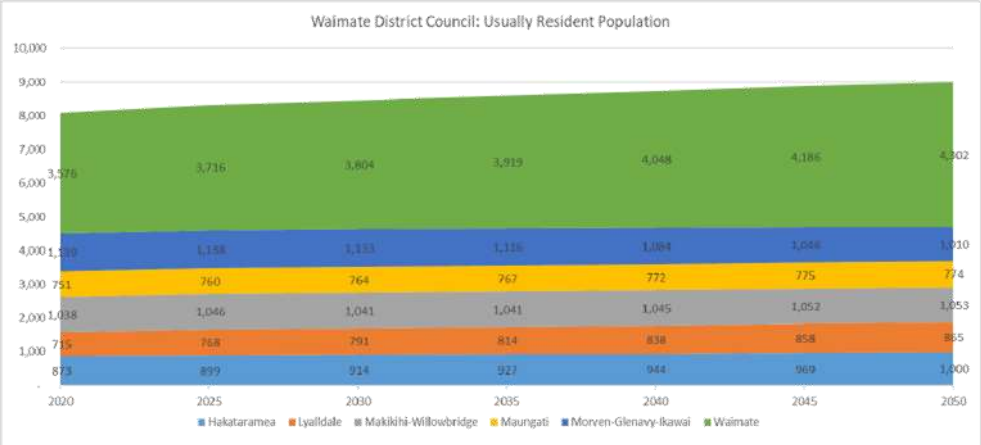
impact of COVID-19 and the progress of recovery. At this time growth can be reprojected, if necessary.
Since this growth projections model was developed it has become apparent that a bubble between New Zealand and Australia will not be forming in 2020. To offer best value for money to WDC, and due to the minimal impact on the final projections, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening. {Rationale}.

5.3 Growth Trends

Population Projections
The key characteristics of Waimate District's population are:

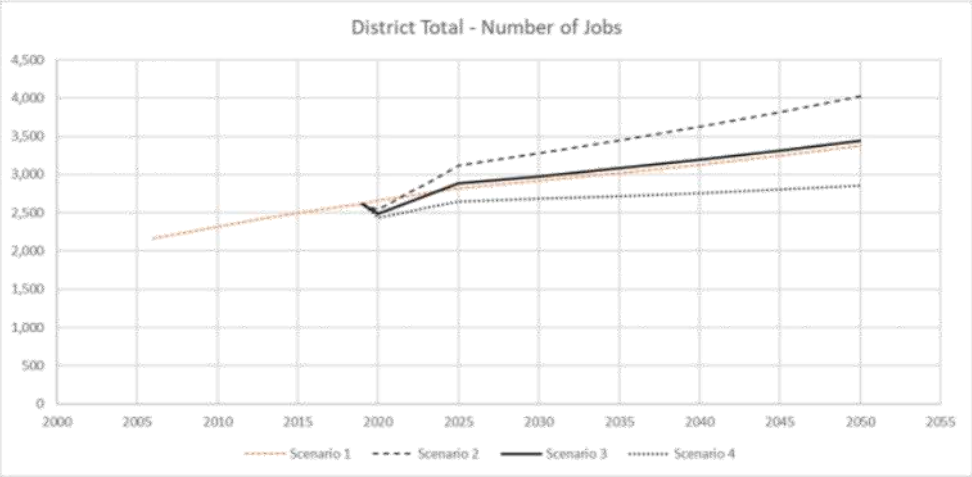
- Younger people leave the area for education and employment opportunities.
- People later in their working lives or early retirement are moving to the area for the lifestyle, affordability and/or retirement.
- Older people (over 70) are moving from the rural areas of the district to Waimate or leaving the area, likely in search of better healthcare or to be closer to family.

Over the next thirty years, the usually resident population of Waimate District is predicted to increase slightly. As a result there will not be any significant increase or decrease in demand for Council services based on change in population.



Employment Projections
It is projected that WDC will experience a short-term reduction in the number of jobs, but it is expected that come 2025 the economy and number of jobs will have normalised and be on the increase once again.

COVID-19 has some impact on employment in the district, but it is expected that those who lose their jobs will not move away. Typically, the most mobile and reactive portion of the population are those in their early working years, who do not have the necessary finances to "stick out" unemployment, or strong ties (family, property ownership etc) to the area. Waimate District has a relatively small proportion of the population in this age group, between 20 and 35. Therefore, modelling has assumed that if residents become unemployed, they will find work elsewhere and commute or remain unemployed in the area.



The average age of Waimate District's population is older than the national average of 37.3 years (StatsNZ). Looking across the district Waimate township has a significantly older average age of 48.6 years in 2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement.

5.4 Response to Projected Growth

The effects of COVID-19 will have a significant impact nationally and to a lesser extent locally as the Waimate districts' primary industries, agriculture and forestry, are less affected than for example tourism.

The usually resident population is predicted to increase slightly and there will not be any significant increase or decrease in demand for Council services based on the growth projections.

5.5 Stormwater Demand Drivers

Population increase may require network extensions or new development which may put pressure on the existing reticulation network and disposal. The following table indicates how these factors are expected to be reflected in changes in domestic and non-domestic stormwater.

Table 5-1: Stormwater Demand Drivers

Stormwater Demand Drivers	Domestic	Commercial	Industrial
Growth	Population change in reticulated areas Change in per dwelling population	Expansion of commercial areas	Expansion of industrial areas
Legislative changes	Legislative change can significantly affect the Council's ability to meet minimum Levels of Service, and may require improvements to infrastructure assets. Changes in environmental standards may affect stormwater disposal options		
Change in customer expectations	Customer expectations are increasingly tending towards higher Levels of Service, both the extent and frequency of stormwater flooding and ponding on property and roads during and after storms, as well as enhanced stormwater quality		
Climatic changes	In recent years, there has been an increase in the incidence of extreme weather events around the world. Although future projections have not been made specifically within the Waimate District, it is likely that there will be even more frequent and intense rainfall over the next 50 years		

5.5.1 Legislative Changes

The legislative framework and government and industry direction is discussed in Sections 4.2 to 4.6.

5.6 Climatic Change

In recent years, there has been an increase in the incidence of extreme weather events around the world. Although future projections have not yet been made specifically within the Waimate District, it is likely that there will be even more frequent and intense rainfall over the next 50 years. This would be expected to increase the frequency with which the stormwater system is overloaded. Climate change is further discussed in Section 6.3.10.

5.7 Demand Management

Demand Management strategies are used as alternatives to the creation of new assets. They are aimed at modifying customer demands to achieve:

- Social, environmental and legislative objectives for Waimate District
- The delivery of cost-effective services
- Defer the need for new assets and optimise the performance/utilisation of the existing assets

The Council is working on a range of strategies to manage stormwater effects and therefore the requirement for additional infrastructure. Table 5-2 lists the strategies carried out by Council:

Table 5-2: Demand Management Strategies

Strategy	Objective/ Description
Stormwater Separation	Removal of stormwater ingress into the wastewater system through upgrading of the stormwater system
Response Time	Prompt response to reports of blockages, flooding or ponding
Replacement/ Rehabilitation Programme	The Renewal Programme to ensure assets are not utilised beyond their useful life when the risk of unidentified failure is greatly increased
Codes of Practice	Enforcement of appropriate Engineering Codes of Practice to ensure all maintenance is carried out to the relevant standard
Technical Standards	Ensuring new assets are constructed to the correct standards and tested appropriately before being commissioned
Standard Materials	The use of standard (high quality) materials
Quality Audits	To ensure all standards are being met
Waimate District Consolidated Bylaw 2018	Chapter 14 Part 4 provides the regulatory framework of permitted and prohibited connections and discharges to the Stormwater network.
Development contributions	To fund new development/growth related capital expenditure
Integrated solutions	Maximising the use and benefits of natural catchment areas, including soakage and storage/attenuation potential
	Exploring opportunities to reduce stormwater runoff through re-vegetation, the use of porous pavements, and soakage
	Exploring opportunities to reduce stormwater runoff through the capture of runoff from roofs for re-use as a non-drinking water source

Non-asset solutions for current and future use by Waimate District Council are outlined in Table 5-3.

Table 5-3: Non Asset Strategies

Strategy	Description
Water Conservation/ Public Education	Encouraging water conservation (within the household) and understanding the issues concerning the wastewater & stormwater systems through public education and advertising campaigns
	Encouraging environmental awareness and the effects of activities such as car washing, where contaminants may enter the stormwater system
	Encouraging the use of pervious paving and other sustainable stormwater practices
Property Inspections	Encouraging property owners to comply with Council's Bylaws and stormwater discharge requirements

6.0 RISK MANAGEMENT

This section looks at the Risk Management Processes utilised by Council for assessing and managing risk within the stormwater services.

6.1 Risk Management Strategy

6.1.1 Overview

Council's utilities Risk Management Strategy is in its formative stage. Council will be progressing down the path of completing, implementing and maintaining Risk Plans (Utility Risk Management Plans) for the principal utility asset systems to minimise the likelihood of non-achievement of critical business objectives.

Risk analysis involves consideration of the sources of risk, their consequences and the likelihood that those consequences may occur. The objective of risk analysis is to separate the low impact risks from the major risks, and to provide data to assist in the evaluation and treatment of the risks.

6.2 Risk Assessments

There are essentially three levels of risk assessment that should be considered for each activity within Council:

- Level 1 - Organisational Risk Assessment
- Level 2 - Activity Management Risk Assessment
- Level 3 - Critical Asset Risk Assessment.

Level 1 - Organisational Risk Assessment

Organisational Risk Assessment focuses on identification and management of significant operational risks that will have an impact beyond the activity itself and will affect the organisation as a whole. This approach allows the Integrated Risk Management framework to address risks at the organisational level, as well as at both the management and operational levels within the particular Council activities. The decision to implement the treatment measures identified will be at an organisational level, not activity level. To date the Council does not have a district wide risk policy. A Council risk policy will be developed that encompasses the above.

Level 2 - Activity Management Risk Assessment

Activity Management Risk Assessment uses the same principal and consequence tables, but the focus has been at more detailed level. During this process, specific risk events were identified which would affect the operational ability or management of the activity as a whole. If an individual system within the activity was identified as being at a greater risk or would need to be managed in a different way to the rest of the systems, then it was highlighted for separate consideration.

A Risk Summary Table was established in 2011 (see Table 6-1 below), which identifies risk management strategies to minimise risks associated with the provision of the Water, wastewater, stormwater and solid wastes services. It is considered that the risks, mitigations and improvements have not markedly changed since the risk summary table was established in 2011. Notwithstanding this, specific risks associated with water quality are documented within the Water Safety Plans for each water scheme.

The risk profile will be extended to encompass assets down to a component level in a Risk Management Plan. In the absence of component level assessments the risk summary table will be used to provide guidance for mitigation steps.

The risk management plan will be designed to ensure that:

- All significant operational and organisational risks are understood and identified
- The highest risks that should be addressed within a 10 year planning horizon are identified
- Risk reduction treatments which best meet business needs are applied

The risks assessed are given a ranking as follows:

Low Risk: Managed by routine procedures

Moderate: Managed responsibility specified and risk controls reviewed annually

Significant: Management attention required to reduce risk

High: Immediate action required to reduce risk

Table 6-1: Risk Summary Table (Showing Significant or High Risks only)

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
1	**Higher Level Policies, Procedures and Controls**					
1.5	The Council does not have an acceptable position on the impact of climate change on service delivery	Financial loss due to liability for property damage, loss of asset. Not able to provide service.	Significant	Council needs policy and relevant action plans including relevant design parameters) on Climate Change.	Low	Strategies to implement Councils future policy on the effects of climate change
2	**Financial**					
2.1	Lack of long-term financial planning	Higher than necessary financial costs	Significant	Existing network models are up to date and available	Low	
2.2	Service levels vs funding and works not clear	Service levels not being met due to lack of funding as decision makers not aware of implications for Service Levels.	Significant	Set performance targets for next 10 years and monitor and report on performance. Impacts of delayed capital works reported to Council.	Low	
2.3	Assumptions for financial forecasting not always understood	Additional costs incurred because assumption/uncertainties not accounted for i.e.: asset valuations, depreciation	Significant	Finance/managers need to be aware of assumptions and uncertainties behind financial forecasting information.	Moderate	Improvement of quality of information
2.4	Unforeseen Additional Costs	Reputation of Council detrimentally affected	Significant	Ensuring AMPs and asset information up to date	Low	
2.8	Insurance cover needs review	Insurance not adequate and unnecessary costs incurred	High	Insurance cover reviewed to ensure adequate cover on annual basis.	Low	
3	**Organisational Management**					
3.3	Lifelines Plan not up to date or implemented	Large scale asset failure due to a naturally occurring event resulting in prolonged and substantial loss of service to District	Significant	Ensure Lifelines Plan up-to-date and recommendations implemented that includes having a high level of risk reduction, readiness, response and recovery during	Significant	Update lifelines plan

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
				and following Civil Defence Emergency.		
4	**Human Resources**					
4.3	Information in people's heads or inappropriate recording of information	Organisational knowledge lost with staff leaving	Significant	Ensure staff document and appropriately file everything that is relevant. Ensure good management succession when existing staff leave.	Moderate	Formalise and update maintenance schedules and procedures, contingency and operation and maintenance manuals.
4.4	Insufficient staff or not appropriately skilled	Programmed work not completed due to insufficient staffing or skill levels, having negative impact on service levels and creating public health risk.	High	Skill levels are appropriate	Low	Formal training programme required that includes the use of activity management plans.
4.5	Inadequate attention to staff succession	Organisational knowledge lost with staff leaving	High	Implement good staff/management succession plan and document procedures	Moderate	Ensure staff are appropriately trained and have a good understanding of the requirement for written procedures and manuals (inc. AMP's)
6	**Asset Management**					
6.1	Network modelling, condition assessments not undertaken.	Capital Works programme not optimised. Renewal works not completed due to lack of knowledge causing failure of assets. Future forecasting not accurate.	Significant	Undertake formal condition assessments of network and develop robust renewals programme based on sound knowledge.	Moderate	Network model informed once condition and performance data becomes available.
6.2	As-built information can be slow or incorrect coming from maintenance staff, Contractors, Consultants	Council faces legal action because of incorrect information provided (particularly with regard to LIMS)	Significant	Ensure As-builts up to-date and on record promptly. Ensure GIS capability	Low	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.3	Criticality assessment not undertaken	Failure of critical assets resulting environmental damage or not meeting service levels	Significant	Undertake criticality assessment of assets and implement strategy for managing critical assets	Low	Incorporate criticality assessment of assets and implement strategy for managing critical assets.
6.5	Asset management systems not up-to-date or completed	Failure to of utility systems because maintenance work not completed or management system not operational.	Significant	Asset Management System in place and updated as required	Low	Continuous improvement required to retain appropriate level of sophistication.
6.8	Capital works delayed due to unforeseen circumstances	Programmed Capital Works not completed. Target Service Levels not met	Significant	Staff held accountable for delays & Staff trained in project management.	Moderate	Develop projects process that provides for project plans to be prepared for every approved renewal and capital development item.
6.9	Deferred renewal and maintenance not recorded or not done	Deferred maintenance not recorded causing unexpected, additional costs from asset failure	High	Record all deferred maintenance and renewals	Significant	Ensure all deferred renewals work recorded and management aware of impact on service levels if not funded.
6.10	Not all easements recorded or obtained	Council faces legal action or cannot carry out its activities because it does not have legal right to cross a property	Significant	Keep up-to-date record of easements. Establish clear policy for processes to be followed when easements are required.	Significant	Easement information needs to be improved with all identified easements provided with details of interested part. Legal situation to be clarified.
6.11	Insufficient documentation of escalating process decision making	Response to emergency situations reduced, higher expenditure	Significant	Employment of staff with the appropriate qualifications and skills	Low	
10	**Asset Risks - Stormwater**					
10.5	Insufficient overland flow paths	Flooding of houses and properties	Significant	Modelling of system will ascertain flow path requirements	Moderate	
10.6	Overland Flow Paths located on private property - no maintenance (overgrown/built upon)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
10.7	Overland Flow Paths Located on Councils property or roads - no maintenance (overgrown etc.)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
11	**Asset Risks - Wastewater**					
11.1	SCADA Failure	No alarm available	Significant	Back-up systems and procedures	Moderate	

Level 3 - Critical Asset Risk Assessment

Critical assets are those assets where failure would result in a major disruption to levels of service. Usually the identification of critical assets is based on pipe diameter or population served.

The criticality of an asset reflects the consequence of the asset failing (not the probability). High Criticality assets are best defined as assets which have a high consequence of failure (not necessarily a high probability of failure).

A criticality assessment has been carried out in 2017. See Section 3.10.

6.3 Risk Management with Council

6.3.1 Business Continuity

Business Continuity is a progression of disaster recovery, aimed at allowing an organisation to continue functioning after (and ideally, during) a disaster, rather than simply being able to recover after a disaster.

It is proposed to develop Business Continuity and Emergency Management Plan (for rapid and structured response to emergency failures and significant hazards) and ensure review control process is carried out.

6.3.2 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation and forms part of the business continuity process. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture. To this end, the Stormwater AMP is quite detailed to ensure all relevant documents and information required for appropriate decision making are recorded and knowledge transfer can occur even in the absence of key staff.

6.3.3 Health and Safety

Council is responsible for providing a safe work environment for its staff and public. A Health and Safety committee meets regularly, and provides information to all council staff on their obligations in this matter. The Councils Utilities staff, by the nature of their work are exposed to risks outside the office environment that are associated with the utilities services (reticulation and facilities). Council provides training in general and specific safety areas as required, examples for the utilities services are:

- Confined space requirements for supervisors and engineering staff that are associated with reticulation
- Traffic control at work sites via the code of practice
- Facilities Health and safety register and associated sign in/out procedures

6.3.4 Pandemic Response – COVID 19

The 2019–20 coronavirus pandemic is ongoing at the time of writing of this Plan. The timeline of events are as follows:

Table 6-2: COVID 19 Chain of events

Date	Event	NZ Government Response	Waimate DC Response
11/02/2020	World Health Organisation declares an official pandemic		
28/02/2020	NZ first reported case		
21/03/2020		Alert Levels (1-4) announced	
23/03/2020			Temporary closure of Council facilities
24/03/2020		Move to Alert Level 3	
25/03/2020		State of Emergency declared	Refuse services continue. Recycling services cease
26/03/2020		Move to Alert Level 4	
27/03/2020			Notice f Essential Services
24/04/2020			Notice of Building Control Services under Alert Level 3
27/04/2020		Move to Alert Level 3	
30/04/2020			Emergency budget response
13/05/2020		State of Emergency lifted	
14/05/2020		Move to Alert Level 2	
10/06/2020		Move to Alert Level 1	

The impacts will be wide ranging and likely include a significant and protracted recession. This presents an opportunity for Council to collaborate with Central Government to invest and progress infrastructure projects giving the economy the injection it will desperately need.

As an initial response Central Government decided to fast track eligible development and infrastructure through amendments to the Resource Management Act. This will aid in getting much-needed infrastructure programmes underway as soon as possible.

Further response includes the establishment of the Infrastructure Industry Reference Group (IIRG) to seek out infrastructure projects that are ready to start as soon as the construction industry returns to normal to reduce the economic impact of the COVID-19 pandemic. These 'shovel ready' projects include water, transport, clean energy and buildings. They would also have a public or regional benefit, create jobs and be able to get underway in short order.

There is a preference for larger projects with a value of over $10 million, which would have an immediate stimulatory effect on the construction industry, its workforce and the economy.
Smaller projects will be considered if they demonstrate a direct and immediate benefit to the regional economies and communities in which they are based.

Council has applied for Government funding for 2 shovel-ready projects, with a combined value of more than $11.4 million.

The Covid 19 pandemic created a very dynamic environment where circumstances can change on a daily basis. At the time of writing this Plan the assumption is that the Waimate district will be able to weather the storm as the districts' primary industries, agriculture and forestry, are less affected than for example tourism. The Department of Internal Affairs 'Local Government Sector COVID-19 Financial Implications Report 2 – Alert Level Scenarios, Assumptions and Updated Analysis' report projects "The agriculture sector is expected to perform relatively well in the short- and long-term".

Council will first attempt to reduce spending in ways that do not require reductions to service levels. Higher levels of reduction in spending would be more likely to require deferral of larger capital projects which may impact on Council's ability to comply with legislation and environmental standards in the 3Waters area.

Council could defer the replacement of assets for a period and potentially reduce the priority of capital expenditure so they can sustain service levels. The deferral of asset replacement may increase infrastructure resilience risks and increase long term costs.

The response to COVID 19 provided a snapshot of how quickly our environment can change and how quickly we can adapt. People working from home. The uptake of technology. Change in transportation patterns. Online sales and deliveries. Outdoor activities. Socio economic impacts and response.

6.3.5 Operation & Maintenance

In the daily operation and maintenance of the water supply system Council employ a range of risk management procedures including but not limited to:

- Prevention of contamination of treated water
    - Minimum requirements for disinfection of existing water mains and fittings during planned and reactive maintenance
    - Separate work crews for water and wastewater/stormwater by using a dedicated sewer service vehicle and tools
    - Best appropriate practices for staff including contractors and materials
    - Illegal connections
    - Appropriate use of backflow preventers
- Critical consumers
- Shutdowns
- Health and Safety
- Asbestos handling
- Traffic control and management
- Overflows and Clean up

Council also have the following agreements in place with local contractors in relation to Civil Defence Emergency expectations:

- Provide plant and personnel on site to enable the emergency work to be undertaken
- Advise the Engineer immediately if unable to either commission sufficient resources or undertake the emergency work
- Co-operate with the appropriate authorities i.e. Police, Civil Defence
- Carry out emergency work immediately if such work is essential to ensure the health and safety of the community or to protect the environment
- Prioritise emergency work to reduce the risk to the community and environment to acceptable levels
- Advise the Engineer immediately of any situation where the emergency is likely to continue and affect the health and safety of the community and the environment

Government Review of 3Waters Services

During 2017 the Minister for Local Government initiated a review of 3Waters services to assess whether current local government practices and the system oversight are 'fit for purpose'. This acknowledge that effective 3 Waters services are essential for communities as:

- Health and safety - depends on safe drinking water, safe disposal of waste water and effective stormwater drainage
- Prosperity - depends on adequate supply of cost effective three waters services for housing, businesses and community services
- Environment - depends on well managed extraction of drinking water, and careful disposal of waste water and stormwater

A series of events indicated there are system-wide performance challenges and supported the perception that service failure is the only indicator that service delivery is not in accordance with the expected outcomes.

On 8 July 2020 the Government announced a funding package of $761m to provide immediate post COVID 19 stimulus to local authorities to maintain and improve 3Waters infrastructure, support reform of local government water services delivery arrangements, and support the operation of Taumata Arowai.

On 27 July 2020, the Water Services Bill was introduced to Parliament. The Bill contains all of the details of the new drinking water regulatory system, and provisions relating to source water protection and Taumata Arowai's wastewater and stormwater functions.

A second, complementary Bill, the Taumata Arowai – Water Services Regulator Bill, sets out Taumata Arowai's objectives, general functions, and operating principles, and establishes Taumata Arowai as a Crown agent.

▪ Te Mana o te Wai

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. Te Mana o te Wai is relevant to all freshwater management and not just to the specific aspects of freshwater management referred to in this National Policy Statement.

It provides for the three healths of Te Mana o te Wai –

- Te Hauora o te Wai (the health and well-being of the water),
- Te Hauora o te Tangata (the health and well-being of people), and
- Te Hauora o te Taiao (the health and well-being of the environment)

Te Mana o Te Wai is given effect through the National Policy Statement for Freshwater Management. Refer to Section **Error! Reference source not found.**.

During September 2019 the Ministry for the Environment (MfE) released the discussion document 'Action for Healthy Waterways' which highlighted the Government's objectives to:

- Stop further degradation of New Zealand freshwater resources
- Reverse past damage
- Address water allocation issues

This strengthens and upholds Te Mana o te Wai – the health and well-being of the water and signalled the direction for urban development, rural land and water management.

Add to this the regulatory changes requiring a multi-barrier approach to drinking water safety, including mandatory disinfection of water supplies, stronger obligations on water suppliers and

local authorities to manage risks to sources of drinking water; and strengthened compliance, monitoring and enforcement of drinking water regulation

6.3.6 Insurance

Background

Council has insurance cover for the Wastewater, Water, Stormwater and Solid Waste Services are detailed in below. The insurance cover is updated on a regular basis following valuations to ensure the insurance cover is appropriate for its purpose. Insurance is provided through a mix of material damage policies and through the Local Authoirity Protection Programme (LAPP).

The Christchurch earthquakes of September 2010 through to June 2011 have had a significant detrimental effect on all council's ability to obtain insurance for all their assets.

Public Liability and Professional Indemnity

Third party cover for public liability and professional indemnity protection is provided by Risk Pool. Risk Pool is a mutual fund created by New Zealand Local Authorities to provide long term, affordable legal and professional liability protection. Membership of Risk Pool is open to all local authorities. Contributions are levied according to each member's actual risk profile, claims experience and management of risk. The Fund is protected by reinsurance to protect its retained liability on a per claim and / or annual aggregate basis.

Other Insurance

Council's other insurance providers are:

- 'Above ground' insurance policies (Material Damage, Business Interruption, Motor Vehicle, Fidelity Guarantee, Personal Accident, Statutory Liability, Employers Liability, Employment Disputes and Airport Owners / Operators Liability, Standing Timber): Insured across a range of providers, primarily Vero and QBE, with specific insurances provided by Lumley, Ace and Primacy.
- Vero are owned by Suncorp Group, one of the largest financial and insurance operations in Australasia. Vero has a long history in New Zealand providing specialist insurance and risk management.
- QBE Insurance has been operating in New Zealand since 1890, the QBE insurance group is one of the world's top 20 general insurance and reinsurance companies..
- Lumley is a business division of IAG, Australia and New Zealand's largest general insurer. Lumley provide Council's motor vehicle insurance.
- Primacy, owned by Allianz, are a specialist crop and forestry insurer and Australia's largest provider in this field and provide Council's Standing Timber insurance.
- The insurance also provides some <u>non-specified</u> cover; e.g.
    - up to $2,000,000 for property in the course of construction
    - up to $250,000 for capital additions (property acquired)
    - up to $250,000 buildings non-specified
    - up to $250,000 contents (any one site) unless specified
- *'Below ground' infrastructure:* Local Authority Protection Programme (LAPP). A mutual pool created by local authorities to cater for the replacement of infrastructure following catastrophic damage by natural disaster (Civic Financial Services is the administration manager of the Fund); LAPP provides cover for 40% of relevant assets (with central government liable for the remaining 60%).

- *Personal accident cover (staff insurance)*: Ace Insurance for which cover is 24/7 worldwide with different levels of cover for 'management' and 'all other staff'.
- *Land:* is not insured.

6.3.7 Emergency Management

Background

Waimate district is subject to a wide range of natural hazards. Several significant natural events have been recorded which have caused damage to property and the environment with no one hazard being the "standard" event. The district has suffered five main events over the last 45 years:

Snow storms: in 1967, 1992 and 2006 blanketed a large part of the district cutting road access causing power outages and stock deaths.

High Winds: in 1975 and 2014 damaged trees blocking roads and bringing down power wires.

Floods: in 1981 and more recently have badly eroded land adjacent rivers damaging bridges and roads.

Rural fire: In 2011 rural fire caused disruption to power in Waimate and the surrounding rural margins.

Council has subsequently modified pumps stations to enable operation using standby generators. Critical pipeline crossings over bridges have been strengthened or alternative pipe routes have been provided.

The impact of the Christchurch earthquake has served to further highlight the importance of adequate emergency planning.

Civil Defence and Emergency Response Plans

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups. Management systems for civil defence emergencies are detailed in the Council CDEM plan. The Waimate District Council Civil Defence Plan will be completed when the Canterbury Civil Defence Group Plan is finalised.

A Lifelines Response Plan has been prepared for key Council utility services. The Plan considers natural hazard events including earthquake, flooding, meteorological (snow/wind) and mass movement (land slip), and also takes account of fire and civil disruption events. The principle objectives of the Plan are to:

- Possess a management tool that identifies natural hazards for the individual utilities
- Identify the consequences of the natural hazards
- Identify immediate remedial actions
- Define restoration levels, priorities and issues
- Identify long term risk management issues
- Ensure that Emergency Management knowledge is retained within Council.

The Lifelines Response Plan details the hazards, possible cascading effects and the interventions that may be applicable. It does not consider the effect on any individual community as these will change with the extent of the hazard i.e. the depth and extent of snow and the extent and makeup of that utility i.e. if the water supply has a standby generator.

Disaster Resilience Summary Report

In 2006 the the Disaster Resilience Summary (DRS) report was commissioned. The DRS is designed to: -

- Create an understanding of the Utilities Lifeline services and operation
- Provide a clear summary of facts to assist CDEM undertake their role
- Provide each Utility with a simple method for providing only information that is required by the CDEM Groups
- Increase CDEM Group knowledge of each Utility's organisation and operations in order to significantly increase the efficiency of future CDEM/Utility contact

The hazards identified that might affect the networks were:
Snow, earthquake, floods (after most floods there is a re-think of how the planning and network is managed), river change/management, rain, wind (trees falling across roads), electricity failure, networks weakness, tsunami, telecommunications and Pandemic planning.

Items requiring further works in progress include:

- hazardous substance spill,
- fire,
- dam failure,
- drought/climate change,
- fuel supply failure,
- Tsunami.

6.3.8 Infrastructure Resilience

Recent high profile natural disasters have raised public awareness, but there is still a significant need to increase actual preparedness – both in general (e.g. household plans and emergency supplies) and for specific circumstances (e.g. tsunami preparedness in coastal communities).
However, resilience is not only applicable to natural hazards, but also needs consideration at an operational level where an asset failure is not necessarily a service failure.
Redundancy (duplication) does not provide Resilience. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system. Resilience is about the ability to plan and prepare for adverse events, the ability to absorb the impact and recover quickly, and the ability as a community to adapt to a new environment.
Council acknowledge that resilience is not only about physical assets. It is about the people. It includes but are not limited to:

- connecting people and communities (neighbour to neighbour; educate; access to household resilience items, etc.);
- supporting community organisations
- the built environment and asset systems which are robust

Adverse events/natural disasters/climate change and the related impacts cannot be avoided and as a result Council have to factor this into long term planning, civil defence planning and determining the infrastructure requirements moving forward to ensure the community's expectations are met with regard to safe and reliable services and general wellbeing.
In order to improve resilience Council approach will be to:

- Actively participate in CDEM planning and activities, at both regional and local levels
- Investigate options for alternative service provision and system redundancy
- Promote design and construction standards (where cost effective) that ensure infrastructure is able to withstand natural hazards and long term changes in circumstances such as those resulting from climate change

- Identify critical assets and ensure mitigation methods are developed
- Obtain insurance where this is deemed to be the most cost effective approach
- Invest in business continuity succession planning and training

Council will take guidance from 100Resilient Cities website http://www.100resilientcities.org/. This includes the strategies of Greater Christchurch and Wellington.

6.3.9 Project AF8

Project AF8 is a cutting edge risk scenario-based earthquake response planning project, informed by thorough earthquake source, expression, and consequences science. The focus of the project is New Zealand's South Island Alpine Fault. Project AF8 commenced in July 2016, with funding from the Ministry of Civil Defence & Emergency Management's Resilience Fund, and is managed by Emergency Management Southland on behalf of all South Island CDEM Groups.

Project AF8 has been initiated to introduce outline planning for response actions, resources, and overall coordination within and between CDEM Groups across the South Island.



The South Island Alpine Fault Earthquake Response (SAFER) Framework provides a concept of coordination of response and priority setting across all six South Island Civil Defence Emergency Management (CDEM) Groups and their partner organisations in the first seven days of response. It is not intended to replace existing plans within agencies but to provide a coordinated picture of response across the South Island.

The SAFER framework includes:

- Scenarios
- Response assumptions
- Secondary and compounding risks such as:
  - Aftershocks
  - Ongoing structural failure
  - Cascading landscape effects
  - Tsunami
  - Severe weather
  - Communicable human diseases
  - Impacts on response operations
- Consolidated response framework

Council will keep a keen eye on the response actions and resources from the AF8 project and work with CDEM Groups.

6.3.10 Climate Change

It is now generally accepted worldwide that human activities have accelerated climate change, and that further future climate change is unavoidable. The effects of climate change include both effects on our climate (such as temperature increases or flooding), and a wide range of secondary effects (such as damage to strategic infrastructure). The following details climate change projections for the Canterbury region.

The National Climate Change Risk Assessment (MfE August 2020) identifies 43 priority risks across five value domains (natural environment, human, economy, built environment and governance)

and highlights 10 risks considered to be the most significant. This MfE report highlights, among others, the following two domains (particularly applicable to Council infrastructure) as extreme risks:

Domain	Risk	Consequence
Economy	Risks to governments from economic costs associated with lost productivity, disaster relief expenditure and unfunded contingent liabilities due to extreme events and ongoing, gradual changes.	Extreme
Built environment	Risk to potable water supplies (availability and quality) due to changes in rainfall, temperature, drought, extreme weather events and ongoing sea-level rise.	Extreme
	Risks to buildings due to extreme weather events, drought, increased fire weather and ongoing sea-level rise.	

Waimate District is expected to experience two of the main impacts of climate change – sea level rise and more extreme weather patterns.

Sea level rise is considered the lesser of the influences as much of our coastline is elevated above MSL. Modelling of associated inundation, as a result of tsunami, is known to affect very few council controlled assets.

What is understood is that climate change associated risks will increase in time.

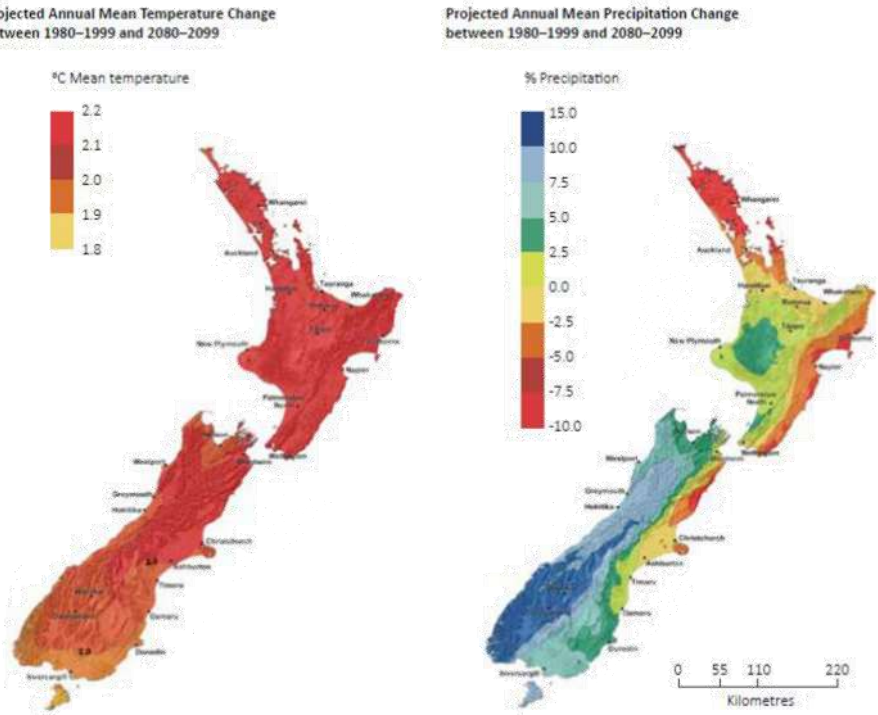
Waimate mayor Craig Rowley said climate change was a priority.

"As far as doing the work on something, we always take it into account looking at the of risk of climate change."

Rowley said it was a hectic time of the year with budgeting and planning, but climate change was something we certainly do recognise" (Timaru Herald 13/9/2017)

Council recognised the roles of Local Government, NZ, the Ministry of Primary Industries, and the Ministry for the Environment and the Royal; Society of NZ in researching and guiding a pragmatic response.

Figure 7: Average changes in annual mean temperature (left, degrees Celsius) and precipitation (right, percent) during 2080–2099 compared to 1980–1999, for a climate change scenario midway between low- and high-carbon futures.



Source: Climate change: implications for New Zealand (Royal Society of New Zealand, April 2016)

The local government position statement on climate change (2017) states

Climate change actions have three components:

1. actions to reduce emissions (mitigation);

2. planning and actions at the national and local level to support public safety and effective adaptation; and

3. limiting or removing pressure on systems affected by climate change.

All local authorities (city, regional, district and unitary) are at the frontline of climate change adaptation and have a role to play in mitigation.

The role of Council is key in delivering the outcomes sought by the community. Key drivers to support and manage the challenges are the National Climate Risk Assessment for New Zealand (Ministry for the Environment, 2020) and the Climate Change Projections for the Canterbury Region (NIWA, 2020).

Projections for Canterbury

Climate Change Projections for the Canterbury Region have considered the following scenarios, which take into account either cutting greenhouse gas emissions over time from 2019 levels – or not curbing emissions during the life of this Infrastructure Strategy.

Average Temperatures

- Increase with time and greenhouse gas concentrations.
- By 2040, annual mean temperature up 0.5 to 1.5°C.
- By 2090, up 0.5 to 2°C (if we cut emissions) or up 1.5 to 3.5°C (if we don't).

Maximum Daytime Temperatures

- By 2040, annual mean maximum temperature up 0.5 to 2°C.
- By 2090, up 1 to 3°C (if we cut emissions) and up 2 to 5°C (if we don't).
- By 2090, western Canterbury's alpine and sub-alpine areas could be 5 to 6°C warmer in spring and summer (if we don't).

Maximum Night-time Temperatures

- By 2040, annual mean minimum temperature up zero to 1°C.
- By 2090, up 0.5 to 1.5°C (if we cut emissions) and up 1 to 2.5°C (if we don't).
- The difference between a day's high and low increases with time and greenhouse gas concentrations.

Hot Days (25°C or more)

- By 2090, expect 20 to 60 more hot days in most of Canterbury (if we don't cut emissions).
- Inland areas feel it the most, particularly the southern Mackenzie Basin, which could have 60 to 85 more hot days.
- Most of these hot days would happen in summer.
- Our warmer season could get longer in relatively low-elevation areas, with 5 to 10 more hot days in autumn and spring.
- Increased fire risks.

Cold Days (Frosts)

- Expect fewer frost days throughout the region.
- Inland areas and higher elevations warm the most, with 10 to 30 fewer annual frost days by 2040, and 20 to 50 fewer by 2090.
- The frost season (the time between a year's first and last frost) will likely get shorter.

Rainfall

There is likely to be increased rainfall depth and intensity associated with climate change. In addition, the heat that comes from the condensation of this increased moisture will make storms more intense. These extreme events may exacerbate flooding risks for Waimate District.

- Most of the region can expect small changes in annual rainfall, up or down 5%.
- By 2040, autumn might be dryer in the Mackenzie Basin, with up to 10% less rain.
- By 2090, winters could be wetter in many eastern, western and southern parts of the region, with 15 to 40% more rain.
- By 2090, Banks Peninsula and many inland areas might get 5 to 15% less rain (if we don't cut emissions).

Snow

- Expect fewer snow days everywhere, especially in the mountains.

Drought

The modelling indicates that by the 2080s, there will be a significant increase in the average water deficit across Canterbury, with increases of between 2 weeks and over 6 weeks of pasture deficit as an average climate condition. By the 2030s, current drought events that are so severe that they only occur in 1 out of 20 years are projected to occur more frequently. Increased fire risks.

Windspeed

- Annual mean wind speeds up slightly, by nil to 5%.
- By 2090, winter and spring could be windier (up 5 to15%, if we don't cut emissions).
- That seasonal change might be more keenly felt in inland areas north and west of Rangiora (up 15 to 25%).
- Increased fire risks.

Sea Level Rise

Climate Change Projections for the Canterbury Region have identified worsening impacts over time at a regional and national level:

- Sea level rise projections for Canterbury are the same as for New Zealand.
- Up by 0.4m in the next 50 years and up 0.6 to 0.7m in 100 years (if we cut emissions).
- Up 0.5m in 50 years and up 1.2 metres in 100 years (if we don't).
- High tides get higher. At 0.65 metres of sea level rise, every high tide is above the spring tide mark (compared to 10% now).



Source: www.wetlandtrust.org.nz



Source: Stuff 24 July 2017

Climate Change Effects

The major effects that may impact on the Council's Infrastructure activities are set out below, along with potential mitigation options and an analysis of when the effects may occur. It should be noted that further work is required to understand how these effects will impact the Waimate District, but the collection and monitoring of data will be used to inform a more robust climate change response.

Dust from Unsealed Roads: Hotter temperatures and associated drought conditions could have detrimental effects in terms of increased dust from unsealed roads. This may mean that in future areas of unsealed roads need to be sealed, particularly close to residential properties. Council currently allows for $50k to part fund "dust seals" via policy. Road classifications and traffic volumes on our low use roads dictate the overall level of service. Individuals are able, with part funding by Council, to increase the level of service adjacent to their property to mitigate adverse effects associated with dust.

Council will continually monitor demand for this service and provide increased funding as required.

Hotter temperatures potentially have an impact on the timing of both grading and metalling activities which will need to be monitored over time.

In the shorter term this approach is considered appropriate but as the effects of drought conditions become more prevalent, Council may need to consider a revision of the level of service relating to unsealed rural roads which, in turn, will adversely affect funding requirements (increased).

- Likelihood - Possible (25 – 50%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Changes in Demand: An overall decrease in the mean rainfall for the district could impact on land use and in turn change demand on certain areas of the Council's infrastructure networks. More intense rainfall events have the ability to damage crops and this may manifest in changing farming practices. These changes in farming practices could result in changing traffic volumes for particular areas, changes in demand from our water networks, and requirements for higher levels of service to mitigate the risks associated with nuisance flooding, to name the major impacts.

Council will need to monitor and understand these requirements to inform future work programmes. This is achieved through regular traffic counts, up-to-date hydraulic modelling of our water schemes and optimised renewal of drainage assets.

Council is mindful that changes in demand with manifest as changes to LoS, geographic demand and overall demand. In order to cater for this, underlying data is important to plan appropriate renewals in the future.

Council is also installing water metering within the urban water network as a means to manage demand, manage water losses and to increase the availability of potable water.

- Likelihood - Likely (50 – 70%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Drainage Capacity: Extreme rainfall events in a generally dry region may cause surface flooding affects due to poor capacity of drainage assets. The cost of upgrading drainage assets for these extreme events is likely to be prohibitive for Council. Whilst, as a district, council is unable to build infrastructure to deal with these extreme flows and volumes, it is able to define the levels of service (20% and 2% annual exceedance probability) and therefore the level of protection that ratepayers and users can expect.

Mitigation of events outside of these parameters are dealt with through the protection and definition of overland flow paths, defined areas for detention and improved stormwater management practices. These practices (in an urban sense) are defined in Waimate District Councils draft Stormwater Management Plan which is an underpinning document for the global consent that is currently being sought through Environment Canterbury Regional Council. For example, Council defines on-site management of stormwater as the preferred solution up to a 1 in 50 year event. The defined 1 in 50 year design event takes in to account climate change factors defined by NIWA.

Extreme rainfall events have a detrimental impact on councils wastewater network where inflow of stormwater presents several challenges in terms of conveyance capacity and surcharging of manholes. In 2021, council is undertaking an inflow investigation to identify which areas are affected and formulating appropriate responses to mitigate the effects. Left unchecked, climate change impacts would adversely affect this activity. When addressed, this will lead to increased levels of service, allow for future growth by increasing available capacity and reduced compliance risks.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Design, planning, and policy

Increased Flood Damage Repair Work: Extreme rainfall events in a generally dry region may cause surface flooding affects and in turn increase requirements for flood damage repair works. Consideration will need to be given to design and location aspects for Council's assets to reduce the risk of damage or loss of service due to extreme weather events. There is no provision (currently) to fund these repairs and they are typically funded via existing budgets and often with co-funding from Waka Kotahi.

Council is continually monitoring the financial effects associated with flood events (and the diversion of existing budgets) and has considered (in the past) developing a "flood event" fund. This monitoring will continue with intervention likely if existing programmed work begins to be adversely affected. Potentially this issue will need to be consulted on as increased costs will result in increased rate requirement. Resultantly the community will receive a higher level of service than currently experienced.

Furthermore, storm events can impact on raw water quality from streams and bores used for water supply. This presents challenges associated with the provision of potable water in terms of reliability, treatability and therefore compliance with the Drinking Water Standards for New Zealand

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Monitor and adapt funding if required

Water availability for Construction: Increasing demand for water is currently an important issue for Canterbury. This increased demand is likely to become increasingly critical in a future characterised by drier average conditions, and an associated increase in both drought frequency and intensity. This may mean, as an example, that it will be more difficult to obtain the required water to complete construction works.

Updating of hydraulic models for the council water supplies allows for optimised future renewals that address the location of demand within the schemes (up or down). They also allow Council to plan for growth and increased demand as a result of changes to legislation e.g. the Water Services Bill and its potential impact on water suppliers outside of the current reform programme.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2025 onwards
- Mitigation - Monitor and adapt future programmes as required (LoS, additional demand, changing demand)

6.4 Significant Negative Effects

Table 6 – 4 below identifies the negative effects for the Waimate Community that the Stormwater Activity may have on the social, economic, environmental or cultural well-being of the community. It indicates how the existing approach or proposed action to address these in the future. There are no significant negative effects shown to occur for the Council's stormwater Service.

Table 6-3: Negative Effects – Stormwater Activity

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Drains							
Sedimentation and vegetation build up	⇔	⇔	Minor	Minor	Minor	Nil	Removal by mechanical/spraying means.
Use of chemical sprays	⇔	⇔	Mod	Nil	Minor	Minor	Compliance with Ecan & MfE requirements
General							

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Customer demand and expectations	⇧	⇧	Mod	Minor	Minor	Minor	Emphasis social responsibility (sustainable resource). Consent compliance.
Environmental							
If flooding were to occur on a regular basis this may affect the ability of industries to obtain or retain on-going insurance	⇔	⇔	Minor	Minor	Minor	Nil	Modelling of catchments to identify reticulation (drains and pipes) that are at capacity and may constrain future development.
Discharge of contaminated stormwater into waterways and lakes without treatment	⇔	⇩	Minor	Nil	Minor	Minor	Comply with Ecan consent conditions Environmental monitoring programme. Long term reduction in through the use of onsite storage and disposal.
Industrial businesses are prone to discharging pollutants to the environment	⇔	⇩	Minor	Minor	Minor	Minor	District Plan has controls for stormwater treatment and discharge when industrial development is being considered by ensuring of pre-treatment where necessary. The development and use of Councils Stormwater Management Plans will assist in insuring the discharge of pollutants will reduce in the future.
If increased development and population growth occurs, stormwater may contain more pollutants	⇔	⇩	Minor	Minor	Minor	Minor	District Plan has sufficient controls for stormwater treatment and discharge when growth within the community is being considered. The development and implementation of Councils Stormwater Management Plans will assist in ensuring the discharge of pollutants will reduce in the future.

⇧ Increasing ⇔ Remaining the same ⇩ Decreasing

6.5 Capital Programme Delivery

Council has an ambitious capital programme driven by a number of factors:

- Continuation of the active renewal programmes;
- Capital works required to meet the current Drinking Water Standards for New Zealand (DWSNZ)under the existing legislative framework;
- Future capital works associated with compliance through the proposed Water Services Act; and
- Capital works associated with the Department of Internal Affairs stimulus funding.

Particular pressure is exerted in year one of the 2021-31 Long Term Plan (Figures 8.1 – 8.4). In order to mitigate risks associated with programme delivery, Council has implemented a number of tactical responses:

i. A Project Manager and support staff (1.5 FTE) have been engaged to ensure that proposed stimulus funded projects (total $3.68M) are completed by 31 March 2022.
ii. The Project Manager is also assisting with timely delivery of proposed LTP projects through procurement assistance.
iii. All capital works have been programmed for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Where possible the programme has been modified to ensure successful and cost effective procurement can be realised.
iv. Council is aware that, given the effects of Covid 19, that material supply was likely to be impacted. Resultantly, Council addressed this issue by sourcing materials early and maintaining stock levels that can be drawn down on when projects commence. Sourcing materials early has also mitigated, to some extent, elevated pricing as raw materials become more scarce.
v. Procurement is now completed through the Government Electronic Tenders System (GETS). This affords the ability to notify the wider contracting / consulting market of upcoming projects and will undoubtedly maximise submissions received once projects are tendered.
vi. Nearly $2.5M of projects budgeted for 2021/22 are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. This maximises available construction time to achieve completion of the proposed capital programme.

The Waimate district is fortunate to have significant contracting resource located within the boundaries and at varying scale. In fact, one of the largest contractors in the South Island has its head office located within the Waimate town. Further afield, council is able to draw on further resource located to the North in Timaru and to the South in Oamaru.
As with any capital programme risks will always remain, even if mitigation has been employed. Known risks include:

- Dependent projects – Some proposed capital works are dependent on either technical investigations or other capital works. Delays in the latter could impact deliverability.
- Material Sourcing – Whilst proactive in sourcing materials, the risk associated with slow supply chains remain. There is also a risk associated with elevated pricing that could modify the scope of some projects.
- Compliance risks – A number of water supply compliance projects have been budgeted (2020/21 and 2021/22) to meet compliance requirements as defined in the current DWSNZ. Council is aware that enactment of the Water Services Act is highly likely to offer alternative means of treatment for some of these water schemes and anticipates, under this scenario, that the redefined capital works projects are likely to be more cost effective in the longer term. Timing associated with the "new standards" is restrictive in terms of construction. However, council is confident that these changes will occur and has selected to begin construction of the common requirements (pre and post Water Services Act) as Stage 1 to mitigate the potential loss of time.
- Delay in increased levels of service associated with the upgrade of individual water schemes for compliance with the DWSNZ. Whilst it is unlikely that the level of service will reduce, the current LoS will be extended until upgrades are commissioned.

7.0 LIFECYCLE MANAGEMENT PLAN

This section applies the risk polices described in Section 6 to develop the broad strategies and specific work programmes required to achieve the goals and standards outlined in Sections 3 and Section 4. It presents the lifecycle management plan for the stormwater assets, and includes:

- A description of the trends and issues
- Detailed management, operations, maintenance, renewal and development strategies
- Work programmes and associated financial forecasts
- Improvement activities

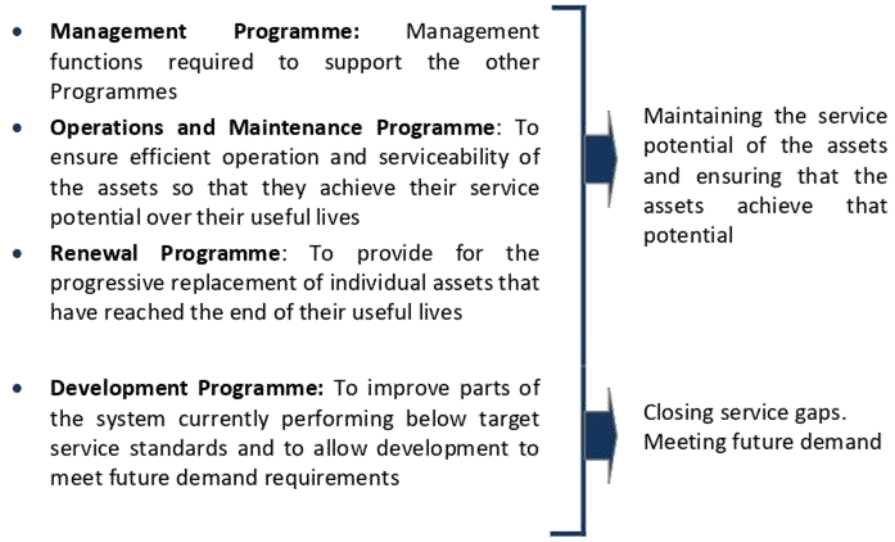
7.1 Asset Lifecycle

Assets have a life cycle as they move through from the initial concept to the final disposal. Depending on the type of asset, its lifecycle may vary from 10 years to over 100 years. Key stages in the asset life cycle are:

- Asset planning - when the new asset is designed. Decisions made at this time influence the cost of operating and maintaining the asset, and the lifespan of the asset. Alternative, non-asset solutions, should also be considered at this time.
- Asset creation or acquisition - when the asset is purchased, constructed or vested in Council. Capital cost, design and construction standards, commissioning the asset, and guarantees by suppliers influence the cost of operating the asset and the lifespan of the asset.
- Asset operations and maintenance - when the asset is operated and maintained. Operation relates to a number of elements including efficiency, power costs and throughput. This is usually more applicable to mechanical plant rather than static assets such as pipes. Maintenance relates to preventative maintenance where minor work is carried out to prevent more expensive work in the future, and reactive maintenance where a failure is fixed.
- Asset condition and performance monitoring - when the asset is examined and checked to establish the remaining life of the asset, what corrective action is required including maintenance, rehabilitation or renewal and within what timescale.
- Asset rehabilitation and renewal - when the asset is restored or replaced to ensure that the required level of service can be delivered.
- Asset disposal and rearrangement - When a failed or redundant asset is sold off, put to another use, or abandoned.

7.2 Lifecycle Management - An Overview

The Lifecycle Management Programmes cover the four key categories of work necessary to achieve the required outcomes from the stormwater activity. These programmes are provided below:



The Operations & Maintenance and Renewal Programmes are focused on maintaining the current service potential of assets, and are primarily driven by the condition of assets although asset performance is often an indicator of asset condition.

The Development Programme is focused on closing service gaps by increasing the service potential of the stormwater system and is primarily driven by the performance of assets and the need to accommodate growth in the District.

7.3 Management Programme

7.3.1 Introduction

Management and monitoring strategies set out the activities required to support the maintenance, operations cyclic renewal and asset development programmes. These activities include:

- Strategic Planning
- Data Management and Evaluation
- Business Processes
- Monitoring
- Financial Management

Strategic planning and a focus on meeting the needs of stormwater customers drives the design of management processes which in turn are reflected in the level of performance that is achieved. Collection of data necessary to manage the stormwater system effectively and processes for the analysis and interpretation of this data support all management activities.

7.3.2 Management Strategies

Table 7-1 sets out each strategy in this category.

Table 7-1: Management Strategies

Strategy	Objective/ Description
Strategic Planning	
Human Resources	Developing the professional skills of the staff through adequate training and experience Personal Development Plans will be agreed with staff each year and a register maintained to record training history. Staff are encouraged to belong to appropriate professional bodies and to attend appropriate conferences, seminars and training courses
Strategic Alignment	This AMP will support the achievement of relevant Community Outcomes for Waimate District Community Outcomes for Waimate District are set out in the Long Term Plan. The intended contribution of the Waimate District Council stormwater system to the achievement of Community Outcomes will be clearly set out in this AMP
Service Levels	Develop a clear statement of Stormwater Services to be provided and standards to be achieved as a basis for future consultation with the Community In the first instance customer service standards will be developed as part of a wider performance management framework for the wastewater activity. This performance management framework will incorporate: – Customer Service Standards – Standards for the Stormwater Service from the end users perspective – Activity Service Standards – Key high level standards which reflect the Waimate District Community Outcomes and which enable the overall performance of the stormwater activity to be monitored – Management Standards – More detailed standards that can be used by Waimate District Council to monitor the performance of aspects the stormwater activity on an "as required" basis – The performance management framework will reflect Performance Indicators in the Waimate District Council LTP
Sustainable Management	Ensure all planning for the management, operation, maintenance, renewal and development of the stormwater system is compatible with sustainable management principles Waimate District Council will pursue ways of limiting the use of natural resources including energy, valued landscapes (and other natural heritage) and adverse effects on waterways. This will involve auditing the systems and materials used, and developing ways to incorporate sustainable operation and development principles into its activities. For example, auditing power usage in pump stations, and using non-asset based solutions where possible
Data Management and Evaluation	
Asset Management Systems	Optimise the application of Asset Management Systems over the short to medium term and develop functionality in line with business needs. Staff changes in the past resulted in the neglect of this area. Refinement of asset data requirements will occur as staff identify management applications for data and refine reporting capacity. The Council will review the adequacy of the systems for future asset management purposes and proactively introduce enhanced system functionality as justified by business needs to support a high standard of decision-making. Waimate District Council will review the adequacy of the systems for future asset management purposes and proactively introduce enhanced system functionality as justified by business needs to support a high standard of decision-making
Network Modelling	A hydraulic network model exists. This model is operated by external consultants and is based in the Infoworks modelling software. Computer models of the stormwater network and utilities enables Waimate District Council to: – Determine accurately the existing capacity of the system – Identify inadequate sections of the system – Operate the system in the most efficient manner – Determine the impact of further development on the system

Strategy	Objective/ Description
	– Identify system upgrading requirements – Compare options for upgrading the stormwater system.
Data Collection	Data collection programmes (condition, performance, asset registers) closely aligned with business needs will be implemented in accordance with documented quality processes Data collection, maintenance and analysis is expensive and it is important that programmes and techniques are cost effective and consistent with business needs. Systematic processes will be further developed for the collection and upgrading of essential/critical data including: – Asset attribute information – Asset performance data – Asset condition data Staff changes have impacted on the Asset Finda/GIS data acquisition, capturing, trending and analysis. This will increase as new assets are acquired through upgrades/renewals and will require improvement and refinement Going forward Council will align its data collection and recording with the Metadata Standards
GIS Data Quality Assurance	GIS data will be the subject of defined quality assurance processes Waimate District Council will introduce quality processes intended to: ensure that all future data entered to the GIS system meets defined quality standards and support the progressive and systematic review of existing data on the GIS system
Business Processes	
AMP Updates	This AMP remains a strategic 'living' document and will be updated annually and reviewed at three yearly intervals or more frequently as necessary to incorporate significant improvements to asset management practices (as proposed in the improvement plan) The scope of the review will be influenced by changes in Community Outcomes for Waimate District, service standards, improved knowledge of assets, introduction of Asset Management improvements and corporate strategy/ policy and process
Risk Management	Risk Management is an essential part of Asset Management. Stormwater activity risks will be managed by developing a Risk Management Plan for the stormwater activity and the implementation of risk mitigation measures to maintain risk exposure at acceptable levels Risk mitigation measures will include maintaining appropriate insurance cover, emergency response planning, condition monitoring of critical assets, preventative maintenance, use of telemetry, implementation of operations manuals, review of standards and physical works programmes
Infrastructure asset valuation	Continue to perform valuations in a manner that is consistent with national guidelines and Waimate District Council corporate policy Asset valuations are the basis for several key asset management processes including asset renewal modelling and financial risk assessments. Valuations of the stormwater system will be carried out based on data from the GIS, MagiQ and AMS systems to ensure auditability and alignment with other processes
Statutory Compliance	Implement quality plans that identify legal obligations and processes adopted to achieve statutory compliance Section 4.3 of this plan sets out the legislative environment for the Stormwater Activity
Quality Assurance	Document, review and implement quality processes for all key business activities in accordance with standard practices Quality processes will cover activities such as reporting, data collection and management, contract monitoring, risk management, economic analysis, performance monitoring, strategic planning, customer contact, asset valuation, asset operation, work specification, etc.
Monitoring	
Asset Performance	Waimate District Council will continue to monitor the performance of the stormwater assets as an input to asset renewal and asset development programmes. This monitoring includes: – Customer service requests – Asset failure records – Asset Maintenance records

Strategy	Objective/ Description
	– Compliance with Resource Consents – Stormwater quality – Critical asset audits
Financial Management	
Budgeting	Prepare all expenditure programmes for the stormwater supply activity in accordance with Council funding and budget preparation policies and procedures The different categories of expenditure within the financial programmes will be identified to enable the funding to be allocated in accordance with the Council's policies
Financial management	Manage the stormwater activity budget in accordance with statutes and corporate policy. This will involve: – Economic appraisal of all capital expenditure – Annual review of AMP financial programmes – Recording of significant deferred maintenance and asset renewals – Continuous monitoring of expenditure against budget
Sustainable Funding	Ensure the stormwater system is managed in a financially sustainable manner over the long term. The financial requirements for the provision of the stormwater service sustainably and to acceptable standards over the long term will be identified and provided for in draft budgets. These requirements include: – Management of the stormwater service – Operation and maintenance if the stormwater systems – Asset replacement – Asset development to ensure that the ability of the stormwater systems to deliver an acceptable level of service is not significantly degraded by growth in Waimate District

7.3.3 Management Standards

The Council's Stormwater supply Systems are managed in accordance with the following standards:

- Generally accepted accounting practice (GAAP) and more specifically with FRS-3 "Accounting for Property, Plant and Equipment" (now superseded by NZ IAS 16)
- The International Infrastructure Management Manual
- Resource Consent Conditions for the Waimate District Stormwater Activity
- Council's Health and Safety Plan
- Council's Quality Assurance Documents
- Stormwater Management Plan (to be developed in accordance with the LWRP)

Implementation of the Stormwater Management Plan, once the global consent is issued, will be a challenge for Waimate. The global consent application is currently being processed by Environment Canterbury Regional Council with affected parties currently being consulted. Some risks exist if approvals are not provided, or National Policy is amended during the process.

7.4 Operations and Maintenance Plan

7.4.1 Introduction

Operations and Maintenance strategies set out how the Stormwater systems will be operated and maintained on a day-to-day basis to consistently achieve the optimum use of assets. Operations and Maintenance activities fall into the following categories, each having distinct objectives and triggering mechanisms:

Operations - Activities designed to ensure efficient utilisation of the assets, and therefore that the assets achieve their service potential. Operational strategies cover activities such as energy usage, control of mechanical and electrical plant, inspections and service management.

Maintenance - Maintenance strategies are designed to enable existing assets to operate to their service potential over their useful life. This is necessary to meet service standards, achieve target standards and prevent premature asset failure or deterioration. There are three types of maintenance:

Programmed maintenance - A base level of maintenance carried out to a predetermined schedule. Its objective is to maintain the service potential of the asset system

Condition maintenance - Maintenance actioned as a result of condition or performance evaluations of components of the stormwater system. Its objective is to avoid primary system failure.

Reactive maintenance - Maintenance carried out in response to reported problems or system defects. Its objective is to maintain day-to-day levels of service.

7.4.2 Method of Delivery

The operation and maintenance of the Council's Stormwater is carried out using a combination of Waimate District Council staff and external contractors. The Council appointed Roading contractor undertakes the routine maintenance and operation of the stormwater system. Council staff generally supervises and monitor operational activities and maintenance of a routine nature. From time to time Council may use the services of local drain layers, earthworks contractors or plant hire. This is done through a mix of quotations and tendering with Council staff overseeing works.

7.4.3 Operations and Maintenance Strategies

The following table sets out operations and maintenance strategies:

Table 7-2: O&M Strategies

Strategy	Objective/ Description
Routine Maintenance	Operation and maintenance is carried out by the roading maintenance contractor. This work is supervised and monitored by Council's in house operational unit
Repairs and Corrective Maintenance	Reactive maintenance is undertaken as quickly as practically possible to restore an asset to a satisfactory condition after a failure or an unsatisfactory condition has been detected that is likely to fail in the short term. Council provides customer support for any associated requests for work related to the assets.
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. Redesign and modifications will be undertaken in a methodical manner to ensure alternative options are considered and optimum decisions made
Operations	Operational activities are undertaken by Council in house operational unit 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. Work is performed to Council's standards and specifications
Physical Works Monitoring	The operational unit consist of skilled staff that are well versed on Council standards and specifications. Work is managed and overseen by the Utilities Supervisor. Weekly meetings are held to ensure work are completed on time and to Council standards
Incident management	Council approach is an escalation process from minor to major, all incidence is managed by the Council staff. Involvement is also judged by the potential consequences or asset criticality

7.4.4 Priority Response times

Priority response times have previously not been formally shown but there has been general agreement on the urgency of specific issues. The agreement of response time for different priority issues will enable assessment of the achievement via AssetFinda. The Priority Response times targets for the stormwater service are as follows:

Priority	Response	Completion
P1	1 Hour	24 Hours
P2	4 Hours	48 Hours
P3	1 Day	5 Days
P4	5 Days	10 Days
P5	Projects	Specific Dates

The following details the priority for the individual utilities alarms and callouts.

Utility	Description	Priority
Stormwater	Health Issues	P1
	Maintenance - Urgent	P1
	Drains overflow	P2
	Broken pipe	P2
	Maintenance	P3
	General Enquiry	P4

7.4.5 Operations and Maintenance Standards

The following standards are applicable to the operation and maintenance of the Stormwater system:

NZS4404:2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice (which provides standards for materials and construction of piped stormwater systems) In recent times Council has opted to utilise Timaru District Council specifications which closely mirror the requirments of NZS4404:2010

Relevant Resource Consents and the Resource Management Act 1991

Transit New Zealand Guidelines 'Working on the Road'

Health and Safety Plans

Council's quality assurance processes, including contract management procedures

7.4.6 Council Utilities Staff Qualifications

Table 7-3 details the utilities staff qualifications as at June 2020.

Table 7-3: Council Utilities Staff Qualifications

Position	Water Treatment	Wastewater Treatment	Reticulation Maintenance (Water & Waste)	Drain Laying & Plumbing	Backflow Prevention	Traffic Management		Confined Spaces	Heights	Asbestos	Chlorine	Chemical Handlers
						STMS	TC					
Water & Waste Manager	Level 3&4 Plus Diploma Level 5	-	-	-	-	-	-	-	-	-	-	-
Utilities Supervisor	Level 3&4 Diploma Level 5 (incomplete)	-	Level 3	-	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Utilities Technician	Level 3&4	Level 4 (incomplete)	Level 3	-	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Utilities Technician	Level 4	-	Plumber and Drainlayer	-	-	-	Yes	Yes	Yes	-	Yes	Yes
Three Waters Technical Administrator	-	-	-	-	-	-	-	-	-	-	Yes	-
Utilities Technician	Level 4 (Incomplete)	Level 4	Level 3	-	-	-	Yes	Yes	Yes	-	Yes	Yes

NZ Water Competency Framework

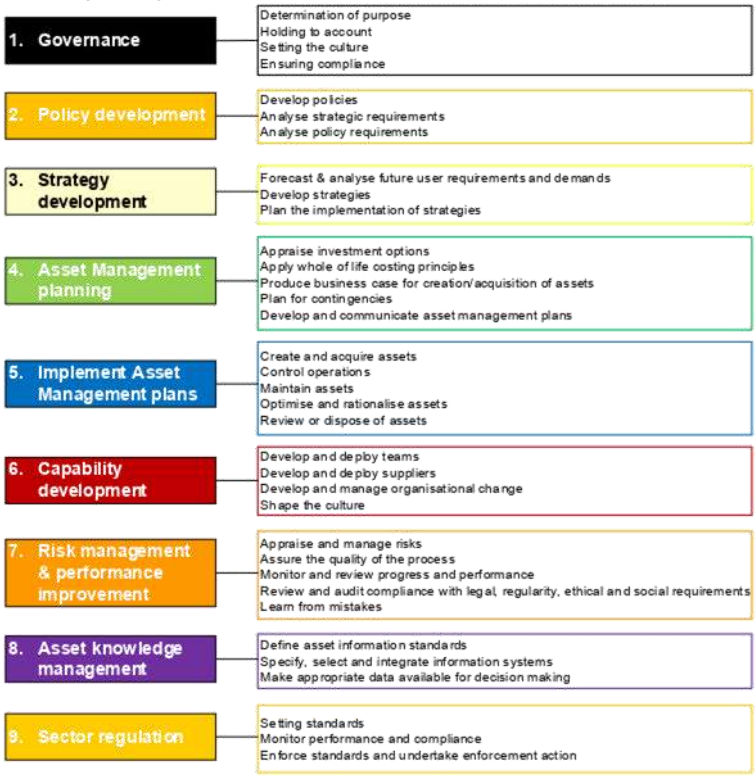
Assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate.

Increases in the complexity of water and wastewater treatment plants will occur as drinking water and environmental standards increase. The complexity of these plants and their associated resource consent compliance will require skilled and trained engineers for their operation, maintenance and supervision. Council needs to stay abreast of any resource requirements and qualifications to ensure the most appropriate method for delivery of the required levels of service.

During 2020 Water New Zealand released its draft Competency Framework which describes what people should be able to do and what they need to know to competently undertake their work. The Competency Framework use treatment operator roles, the people who operate, monitor and maintain water and wastewater services, as a starting point. Network/Distribution operators are still to be developed which will include stormwater.

The Water Industry Professionals Association (WIPA) was jointly established by the Water Industry Operations Group and Water New Zealand to provide a system of recording the professional development of people working in the water and wastewater industry to ensure a high level of competency within the industry was maintained. At the time of writing this Plan registration is voluntary but may become compulsory under the new regulatory framework.

The Competency Framework identifies nine areas as shown below.



(*Source: Water NZ – Competency Framework*)

It documents core skills and knowledge needed by operators to competently undertake work within the water industry. It is envisaged that the industry will be able to use the final document as a guide to:

- assess levels of staff training,
- develop training programmes,
- determine the knowledge and skills required by a workforce, or
- other matters related to staff competence.

Council will keep abreast of developments in this area to ensure staff training meets industry best practice and standards.

7.4.7 Summary of Future Costs

The stormwater activity annual maintenance and operations costs (excluding depreciation) are not expected to increase from the present level of $111,387 to $142,609. There is no deferred maintenance scheduled over the period. The forecast for expenditure is based on the assessments that:

The overall condition of the network will not change significantly over the next 10 years (see renewal strategy)

There will be significant extension of the network to resolve flooding issues

Opex Costs	Y1	Y2	Y3	Y4	Y5
	2021/22	2022/23	2023/24	2024/25	2025/26
Operational	124,370	130,585	135,443	136,053	136,956
	Y6	Y7	Y8	Y9	Y10
	2026/27	2027/28	2028/29	2029/30	2030/31
Operational	142,802	143,682	144,643	150,978	152,509

7.5 Renewal and Replacement Plan

7.5.1 Introduction

Cyclic renewal strategies are intended to provide for the progressive replacement of individual assets that have reached the end of their useful life. The rate of asset renewal is intended to maintain the overall condition of the asset system at a standard, which reflects its age profile, and ensures that the Community's investment in the District's stormwater infrastructure is maintained.

The level of expenditure on cyclic asset replacement varies from year to year, reflecting:

- The age profile of the infrastructure
- The condition profile of the infrastructure
- The on-going maintenance demand
- Customer service issues
- The differing economic lives of individual assets comprising the overall asset system

Failure to maintain an adequate renewal programme will be reflected in a greater decline in the overall standard of the system of assets than would be expected from the age profile of the asset system.
Cyclic renewal works fall into two categories:

Rehabilitation: Involves the major repair or refurbishment of an existing asset. An example is the relining of an existing pipeline. Rehabilitation produces an extension in the life of an asset. It does not provide for a planned increase in the operating capacity or design loading

Renewal: Does not provide for a planned increase to the operating capacity or design loading. Some minor increase in capacity may result from the process of renewal, but a substantial improvement is needed before system development is considered to have occurred

For the purpose of developing asset renewal programmes the stormwater system assets have used the following components consistent with the asset valuation process:

- Stormwater Lines (Pipes, Mains, drains)
- Stormwater Service Lines (Property connections)
- Stormwater Points (Manholes, Sumps, Pits, Headwalls)

7.5.2 Renewal and Replacement Strategies

The following table sets out cyclic renewal strategies:

Table 7-4: Renewal Strategies

Strategy	Objective/ Description
Identification of renewal needs	Renewal/replacement needs are identified by analysing; – Condition reports, maintenance records (asset failure and expenditure history), stormwater blockages/overflows/ponding, complaints records, and observations of the councils engineering and maintenance staff and contractors that they employ – Records of breakages are recorded in Asset Finda that allows an overview of the short term issues – Customer feedback is essential for monitoring asset performance and achieving levels of service. The feedback is quite often the early warning system that a problem maybe developing and can lead to more formal investigations – Modelling results – network modelling indicates an under capacity issue within the economic life of the asset either due to growth or meeting the existing LOS – Asset age, material and location – consideration of the remaining lives and material type The short-term asset renewal programmes have been prepared from specific renewal needs identified from information received by Council maintenance staff that includes pipe cleaning and flooding. Future renewal programmes will use the data obtained in the pipe condition assessments and the updated Asset Finda data
Prioritisation of renewal projects	Decisions on renewal works consider the short and long-term effects on the operating and structural integrity of the system. Renewal works are designed and undertaken in accordance with industry standards (or known future standards) and system design loadings Short-term renewal priorities are reassessed annually taking account of additional information that becomes available via breakage reports etc
Deferred Renewals	The quantity and impact of deferred renewals will be tracked. The Council recognises that although the deferral of some items on cyclic renewal programmes will not impede the operation of many assets in the short term, repeated deferral will create a future Council liability.

Strategy	Objective/ Description
Inspections prior to major road works	The condition of stormwater pipelines is inspected prior to major road works to identify the risk of the road being damaged by pipeline failure or the need for pipeline replacement in the short/medium term. Pipelines in poor condition may be programmed for replacement prior to or in conjunction with the road works or reseal programme subject to funding

7.5.3 Stormwater Asset Condition

Development of a Condition Assessment Strategy to identify which, where and when condition assessments will be performed is included as an Improvement item. This will be done in consideration of criticality, LoS, asset records, Council engineers visual assessment of failures and specialists assessments as required. Implementation of the Condition Assessment Strategy and resulting information collected will then inform the renewal plan.

Most (82%) of the stormwater network is less than 50 years of age and not well advanced in its lifecycle. The majority of pre-1950 assets are concrete culverts. Approximately 74% of the pipes (excluding open drains) consist of concrete and as such is considered to be a pipe material with significant expected economic lives.

Figure 7-1 shows that there is 50m of unknown pipe that have reached its expected useful life. There is 83 m of pipe that will reach the end of its expected useful life (approximately 63m of earthenware pipe and 20m of Iron pipe) within the first five years of this Plan. There is a single manhole which will reach the end of its expected economic life within the years 1-5 of this plan. A single direct access sump will reach the end of its expected useful life during the 16-20 year window. There are no other pipes that will reach the end of their useful lives within the next 30 years.

Figure 7-1: Stormwater Remaining Life

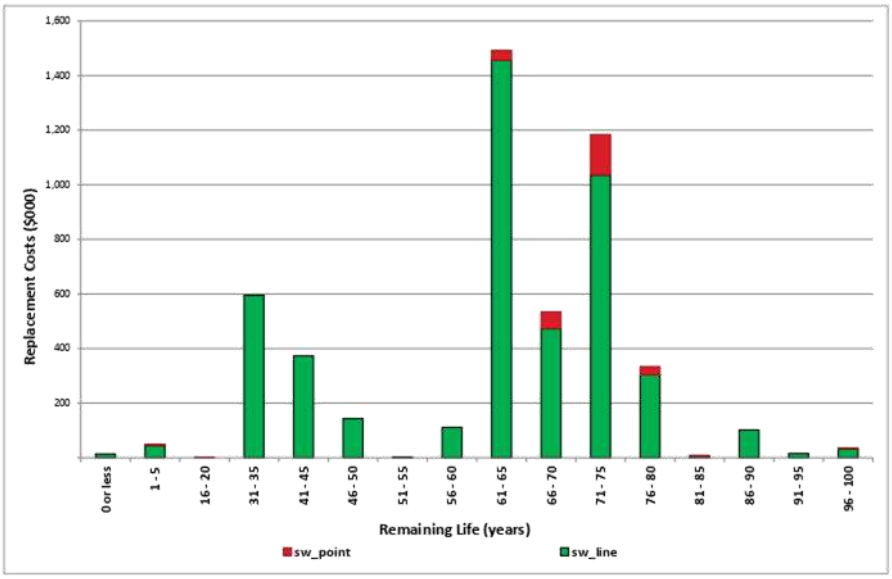
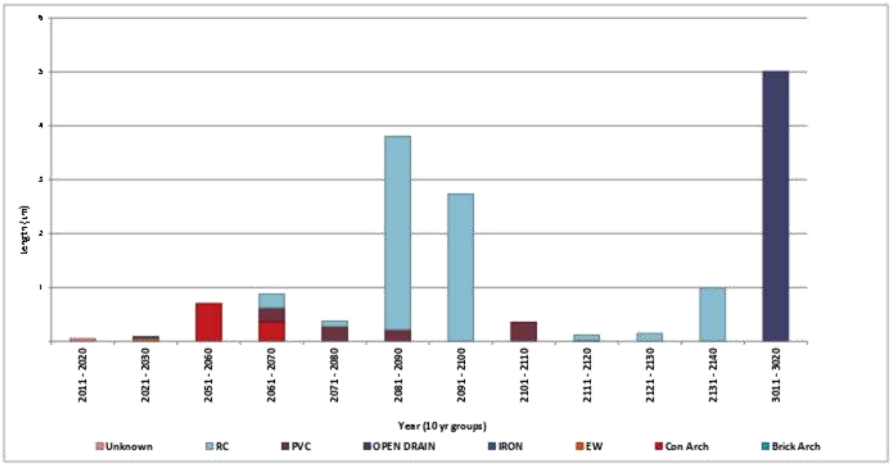


Figure 7-2 below shows that there is a minimum of assets that will reach the end its expected economic useful life within the term of this plan.

Figure 7-2: Reticulated Mains Forecast Renewal Date



7.5.4 Base Life of Stormwater Assets

The 2020 valuation used the base life for stormwater assets as detailed below.

Table 7-5: Stormwater System Assets Life

Stormwater Material	Base Lives (Years)	Stormwater Material	Base Lives (Years)
Brick arch	80	Open drain	NA
CI pipe	100	Pit/Sump	120
Concrete arch	150	PVC	100
Concrete box	150	PVC lined brick arch	80
EW	100	PVC lined concrete arch	80
Headwall	120	RC lined concrete arch	100
Manhole	120	RC pipe	120

7.5.5 Cyclic Renewal Standards

The following standards are applicable to the renewal of stormwater assets:

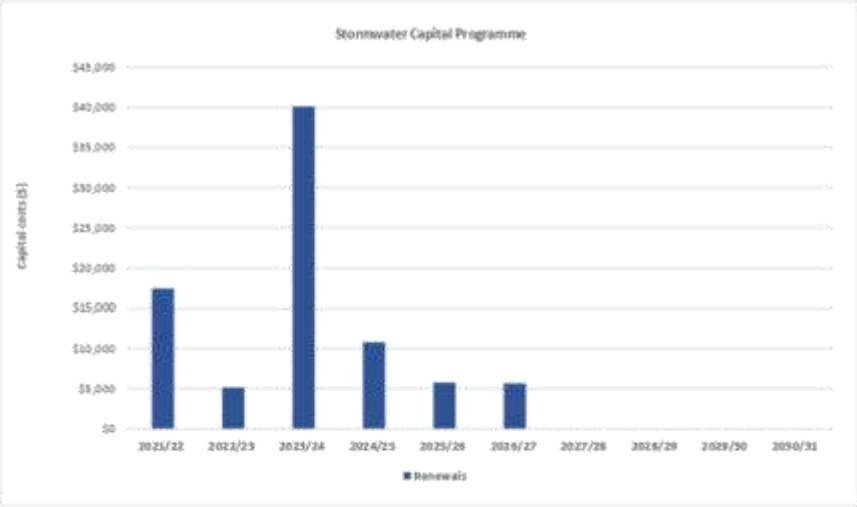
- NZS4404: 2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice (which provides standards for materials and construction of stormwater systems)
- Relevant Resource Consents and the Resource Management Act 1991
- Transit New Zealand Guidelines 'Working on the Road'
- Health and Safety Plans
- Electrical Regulations 1993
- Waimate District Council quality assurance processes, including contract management procedures

7.6 Programmed Renewals

The planned renewals (inflated) for the stormwater activity are as follows:

Renewals	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
553075009 - Stormwater - SW Manhole SW171 Replacement	-	-	-	5,400	5,762	-	-	-	-	-
553075010 - Stormwater - CCTV Assessment of Mains	5,265	5,170	-	5,400	-	5,668	-	-	-	-
553075011 - Stormwater - Belt Street main renewal	12,200	-	-	-	-	-	-	-	-	-
553075012 - Stormwater - Manse Street crossing renewal	-	-	40,117	-	-	-	-	-	-	-
Renewals Total	**17,465**	**5,170**	**40,117**	**10,800**	**5,762**	**5,668**	**-**	**-**	**-**	**-**

Figure 7-3: Stormwater Programmed Renewals



7.6.1 Evidence Base

The asset data held for water supply and sewerage had been a focus for improvement over the last six years. This was reflected in the positive peer reviews undertaken of both the 2017 and 2020 valuations.

Road and footpaths data continues to be sound, based on twenty years of RAMM use. An increase in data analysis as part of the ONRC framework and capture of pavement performance data has improved knowledge of the asset further.

The 2020 asset valuation identified the accuracy of most roading asset data as "B" or "Reliable" (Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old). Bridge data is of higher accuracy, "A" or "Highly reliable" (Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete).

The 2020 valuation has indicated (for three waters):

Confidence Level	Description	Accuracy	Condition	Quantity	Unit Cost	Base Life
A	Highly Reliable and Accurate	100%				
B	Reliable w ith Minor Inaccuracies	+/- 5%		B	B	B
C	50% estimated	+/- 20%	C			
D	Significant data estimated	+/- 30%				
E	All data estimated	+/- 40%				

From a valuation perspective the data reliability is considered (for all assets covered by the IS) to be "B" or +/- 5%. Council acknowledges that the reduced reliability associated with less accurate condition ratings (+/- 20%) could impact future financial forecasting. However, this is currently mitigated by empirical assessment of assets proposed for renewal. For example, roads identified for resealing are reassessed, alongside mains identified for renewal are investigated in regards to historical leaks, bursts and criticality.

Council acknowledges there are limitations with its data that affect decision-making. A commitment to improving data collection and analysis is indicated below. Additional part-time and full time roles have been added to the Council team to address data limitations and accuracy.

7.7 Asset Development Plan

7.7.1 Introduction

Asset development provides for a planned increase in the service capability of the stormwater system to:

- Close gaps between the current capability of the stormwater system and target service standards
- Accommodate growth

Asset development and asset renewal can occur simultaneously. The purpose of asset renewal is to prevent a decline in the service potential of the assets, whereas asset development is concerned with the service improvements, measured by asset performance.

7.7.2 Asset Development Strategies

Table 7-6 sets out the strategies used for developing capital development programmes for the Stormwater System. These strategies are intended to progressively close gaps between target service standards (taking account of demographic and economic growth projections) and the current service capability of the asset system.

Table 7-6: Development Strategies

Strategy	Objective/ Description
Identification of development needs	Asset development needs are identified from analysis of; Demand forecasts, System performance monitoring (flows, blockages, etc.), Network modelling, Risk assessments (Risk Management Plan), and Customer service requests. A provisional forward capital works development programme is maintained and updated in in conjunction with updates of the Asset Management Plans.
Development Project Categorisation	Development Projects will be separated into projects to close service gaps and projects required to accommodate growth. Development projects to close service gaps are generally funded entirely by Council. Development projects to accommodate growth may be partly or wholly funded through Development Contributions or Capital Contributions
Prioritisation of development projects	Development projects are justified and prioritised using a risk based process Decisions on development works consider the short and long-term effects on the operating and structural integrity of the water supply system. In determining the requirement for capital or asset development works the short and long-term effects on the operating and structural integrity of the system are considered, together with any forecast increase in loading upon the system All feasible options, including non-asset demand management options and the use of second-hand plant, are considered. Development works are designed and undertaken in accordance with industry standards (or known future standards) and system design loadings.
Project Approval	A long-term development programme is prepared from projects meeting the assessment criteria, and all projects are approved through the Annual Plan process. The actual timing of asset development works will reflect the community's ability to meet the cost, as determined through the Annual Plan process. Scheduled projects meeting assessment criteria not funded are listed on the forward works programme for the following year.
Project design	All asset development works will be designed and constructed in accordance with current adopted industry standards (or known future standards) and system design loading. In determining capital or asset development work requirements the short and long term effects on the operating and structural integrity of the system are considered, together with the demands of any forecast increase in loading upon the system. The system will be designed to minimise supply disruptions as far as practically possible by building in an appropriate level of redundancy. The standardisation of designs and specifications will be considered in the interest of facilitating replacement and operational simplicity.
Vested Assets	The risk, cost and benefits of accepting any new privately funded assets constructed in association with property development will be considered on a case by case basis in approval decisions. Such assets will be accepted into public ownership when satisfactorily completed in accordance with approvals given. Council will not contribute to the cost of such work unless there are exceptional service standard or equity issues.

7.7.3 Development Standards

The following standards are applicable to the development of stormwater assets:

- NZS4404: 2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice (which provides standards for materials and construction of piped stormwater systems)
- Relevant Resource Consents and the Resource Management Act 1991
- Transit New Zealand Guidelines 'Working on the Road'
- Health and Safety Plans

- Electrical Regulations 1993
- Council's quality assurance processes, including contract management procedures

The Standards will be reviewed regularly and updated to incorporate relevant experiences, legislative requirements and changes in best practice.

7.7.4 Summary of Future Costs

The 2009 Stormwater Investigation Study developed a hydraulic model and identified system capacity issues. It mainly found that kerb and channel lacked capacity in a number of locations and identified system upgrades in order of priority as follows:

The following table represents the upgrade requirements as detailed in the 2015-25 Long Term Plan. To date the priority 3 upgrade of High Street is complete and the priority 1 and 2 upgrades along Manse Street are also now commissioned. It is anticipated that these projects have closed the gap from current Level of service which in some areas did not meet the stated level of service.

Preliminary, general, Road pavement & resealing are not included as these works would occur when roading upgrades occur. The cost of installation of sumps will be a roading issue. Some capital works have been delayed due to alignment with roading projects and, more specifically, available roading budget.

Table 7-7: Development Forecast (in $,000)

Priority	Details	Location	2015/16	2016/17	2017/18	2018/19
Priority 1	New Max Pit sumps	Intersection Harris & High	$143	$170		
	450mm pipeline	Harris St (from High to Manse St)				
	New sumps	Intersection Harris & Manse				
	450mm pipeline	Manse St (Harris to Sherman St)				
	525mm main	Sherman St (across Manse St)				
Priority 2	300mm pipeline	Manse (Town Belt to Harris St)			$138	$36
	New sumps	Intersection Manse St & Rhodes St)				
	300mm pipeline	Sherman St (to intersection of Sherman & Glasgow St)				$37
	New sumps					
	300mm pipeline	Under Belt St				
	New sump	John St and 225mm connection to Victoria St				
Priority 3	300mm pipeline	High St (from Innes to Sherman St)				
	New sump	Intersection of Innes & High St				
	300mm pipeline	Along Belt St to Town Belt St			$14	$96
	New sump	Intersection of Edinburgh & Belt St				
		Total	**$143**	**$170**	**$152**	**$169**

7.8 Disposal Plan

7.8.1 Introduction

The development of Asset Management Systems and use of Asset Condition/Performance data allows better planning for the disposal of assets through rationalisation of asset stock or when assets become uneconomic to own and operate.

All pipeline renewals identified in this Lifecycle Management Plan have a corresponding disposal either through the pipes being removed and disposed of at the landfill, or being left in the ground if the asset is replaced in a new location. Disposals are recorded within AssetFinda and the GIS. Buried assets remain in the ground unless economic to remove or they pose a potential hazard.

In all cases asset disposal processes must comply with Council's legal obligations under the Local Government Act 2002, which covers:

- Public notification procedures required prior to sale
- Restrictions on the minimum value recovered
- Use of revenue received from asset disposal

Under the Stormwater Activity no assets for disposal are considered to be eligible to be for sale. When considering disposal options all relevant costs of disposal will be considered, including:

- Evaluation of options
- Consultation/advertising
- Obtaining resource consents
- Professional service, including engineering, planning and legal survey
- Demolition/making safe
- Site clearing, decontamination, and beautification

7.8.2 Asset Disposal Strategies

The following table details the disposal strategies

Table 7-8: Disposal Strategies

Strategy	Objective/ Description
Asset Disposal	Assess each proposal to dispose of surplus or redundant assets on an individual basis, subject to the requirements of the relevant legislation Asset disposal will comply with the requirements of the Local Government Act 2002 and in particular the requirement for councils to retain a capability to provide stormwater services Redundant pipes are removed where their alignment clashes with replacement pipelines or where their existence is considered dangerous. Abandoned stormwater pipelines have possible future value for other purposes (such as ducting for cabling). As the extent of this value (if any) is uncertain it is not recognised in the asset valuation. When a stormwater asset is abandoned or replaced the Geographic Information System and fixed asset register are updated. A system of job number creation and asset identification is used to document this process
Residual Value	The residual value (if any) of assets, which are planned to be disposed off, will be identified and provided for in financial projections

7.9 Sustainability within Council

In addition to managing the assets in an economically sustainable way, Council will also manage its internal operations to optimise their cost, efficiency and effectiveness, so that in the long term the costs of administering the infrastructure are sustainable. While the overall view of this is not a subject for this AMP, the management of the asset services delivery unit is relevant.

7.9.1 Staffing Levels

Currently the Water and Wastes Group has 9.5 full time equivalent employees. This includes the role of Asset Manager which encompasses a wider footprint of activities.
The greater emphasis being placed on the responsible management, distribution, operation and maintenance of existing and future resources will add to the tasks of the Water and Wastes Group. Compliance with the requirements of the Health Act, DWSNZ 2005 and increased Regional Rules (LWRP)will ask a great deal of effort and prudent decision making from the Water and Wastes staff.

The Health Act will impose an increased demand on human resources to meet the compliance with the requirements of the Heath Act. It will place an on-going demand on human resources to monitor and report on Health Act compliance. The current staffing levels are supplemented by outsourcing. However, outsourcing still requires scoping, input and supervision from Council staff and does not exonerate staff from outsourced work.

Staff changes have impacted on the AssetFinda/GIS data acquisition, capturing, trending and analysis. It is proposed as part of future improvements in the management of AssetFinda/GIS - to ensure sufficient resources are available (both internal and external) to enable the full use of AssetFinda/GIS for the operation, management and administration of the utility services.

Because of the above, assessment of staffing requirements will be required on an annual basis to ascertain the appropriate requirements for the increased workload. Assessment needs to consider the level of staffing coverage required to implement all of the Water and Wastes Group functions including internal management, information systems management, project management, design, supervision, construction, operations and maintenance.

7.9.2 Skills

In addition to staffing numbers, assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate.

Increases in the complexity of facilities such as water treatment plants and pump stations are occurring. This will require skilled and trained staffs for operation, maintenance and supervision. A review of Council policy on resourcing the operations and maintenance is required to ascertain the most appropriate method for delivery of the required levels of service should be considered. Refer to Section 7.4.6

7.9.3 Training

Training of staff is presently on an ad-hoc basis with no structured long term development plans for the individual staff members in the asset management field. The link between asset life, and the ability to deliver of levels of service with the skills of the people who plan, design, install, operate and maintain the assets is inevitable. It is crucial that the skill gaps of staff, contractors and service providers are identified; that there are structured training programmes to close these gaps; and that the effectiveness of the training provided is evaluated. Training programmes should be designed and reviewed for each individual – not for a business unit, contractor or service provider as an entity. Refer to Section 7.4.6.

7.9.4 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

Local Authorities have traditionally not been particularly successful at implementing succession planning techniques and practices. In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning were not experienced. With a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities. Whilst there is always potential for staff in key positions to move on to further their careers, succession planning can help to mitigate the effects of this. Succession planning techniques can include:

- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can include identifying weaknesses in training and experience and attempting to address those weaknesses by use of mentoring, relevant projects and continuing professional development programmes etc.
- Identifying likely staff retirements, promotions, resignations or position changes on an annual basis. Identifying potential internal staff to fill those positions, providing those staff with projects that extend them, and giving them relevant experience for filling the positions

No formal succession planning is implemented at present by Council. It is important that the current knowledge of existing staff on the Stormwater Services is continuously captured within AssetFinda and supporting asset management tools. This will reduce the risk to service continuation as a result of unplanned staff absences and any future retirements or resignations.

8.0 FINANCIAL SUMMARY

This Section sets out financial statements, funding strategy, depreciation forecast and charges for the Stormwater Services in Waimate District.

8.1 Financial Strategy

This AMP will provide the substantiation for budget forecasts put forward in the LTP (2021-2031) for Stormwater Services assets. Council will:

- Implement an improvement approach to asset management planning in the short term. A ten year improvement plan is included in each asset management plan. Improvement projects will be monitored monthly by a corporate AM Steering Team
- Prepare, maintain and periodically review an AMP outlining sustainable long-term asset management strategies. The AMP will typically be reviewed three-yearly in advance of the LTP. Annual amendments or updates may be undertaken if significant asset management changes occur
- Report variations in the adopted annual plan budgets against the AMP forecasts and explain the level of service implications of budget variations.

8.2 Development Contributions

Service Provisions (From LTP)

Where a development requires:-

- Water supply connections - larger than 25mm
- Stormwater discharges - exceeding co-efficient of existing discharge for site
- Connection to reticulated sewerage system - for connections other than for staff ablution and kitchen facilities

The Council, by way of controlled activity application, may determine the level of financial contribution payable to provide for provision on a case by case basis.

Overview of Financial Provisions

Activity Development	Subdivision	Any Industrial, Service, Commercial, Recreational, And Community Activities And Visitor Accommodation
Stormwater Disposal	Financial contribution can be required for stormwater disposal including connection fees (Rule 4.6 page 10/14) Process: Conditional on subdivision consent	Contributions required if exceed existing coefficient Process: Determined through separate Controlled Activity resource consent. Assess amount on the basis of Rule 11.8 page 10/26-27
Water Supply	Financial contribution for water supply including connection fee but excluding capital contributions (Rule 4.5 page 10/14) Process: Conditional on subdivision consent	Contributions required if connecting to reticulated supply with pipes > 25mm. Process: Amount determined by Controlled Activity resource consent Amount assessed on basis of Rule 11.7 page 10/26
Sewage Disposal	Financial contribution for sanitary sewage provision including connection fees, but excluding capital contributions (Rule 4.7 page 10/14-15) Process: Conditional on subdivision consent	Contribution required if need connection to reticulated system (other than from staff ablutions) Process: Determined through Controlled Activity resource consent Amount assessed on basis of Rule 11.9 Page 10/27-28

8.3 Depreciation

8.3.1 Background

The introduction of accrual accounting during the early 1990's changed the way in which local authorities accounted for their assets, particularly long life assets i.e. pipes and roads. This meant that instead of cash based accounting where the replacement/renewal cost of an asset is recognised only when it wears out, local authorities were required to spread the cost, and any reduction in the value of these assets over its useful life.

Section 100 subsection 1 of the LGA 2002 states: "A local authority must ensure that each year's projected operating revenues are set at a level sufficient to meet that year's projected operating expenses."
This requirement to set operating revenues at a level sufficient to meet operating expenses includes depreciation as Section 111 obliges councils to follow generally accepted accounting practice (GAAP) which includes a definition of "operating expenses." As depreciation is defined as an operational expense it must be included with other operational costs, including interest, when a council sets its operating revenue.

GAAP defines depreciation as follows:
Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.[1]
Therefore, deprecation measures the annual consumption of an asset so that the reduction in its value is accounted for as it is consumed. The purpose of depreciation is not to provide for the replacement of the asset, although this is a consequence of depreciation. Depreciation ensures that each year's ratepayers pay their way.

The basic value of an asset reduces in accordance with the wearing out or consumption of benefits over the assets life arising from use, the passage of time, or obsolescence. This reduced value is called the depreciated value. It is accounted for by the allocation of the cost (or revalue amount) of the asset less its residual value over its useful life.

The decline in service potential is thus provided on a straight line basis on all fixed assets. Therefore Council complies with the requirements of FRS3 and NZIAS 16 and funds asset depreciation.

The Council revalues its assets every three years to keep them up to date and this means that depreciation charge reflects the cost of replacing the asset. It is the valuers role to appropriately identify the level of depreciation, though this will be better achieved through more robust data e.g. condition assessment.

Annual depreciation is calculated by Council on a straight line basis – i.e. the replacement cost of the asset less its residual value over its useful life.

The Council has previously consulted with the Community and decided to fund depreciation via rates. However, Council does not fully fund depreciation where it is considered prudent to do so e.g. in roading.

[1] Source: Depreciation in the local government context, July 2011. Local Government New Zealand

8.4 Valuations

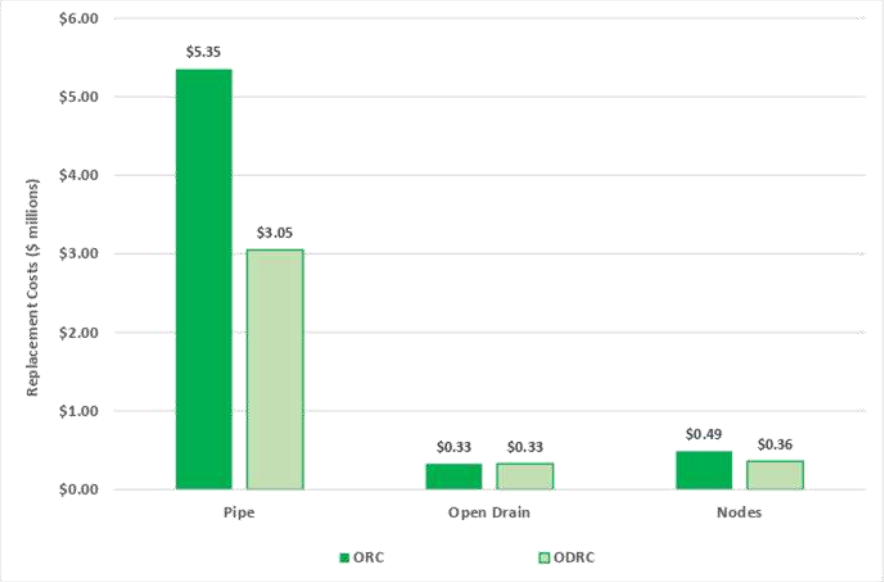
8.4.1 2020 Valuation Summary

Valuations of the three waters infrastructure were carried out in late 2020 and a summary of stormwater is provided below.

Table 8-1: Valuation Summary – Stormwater System 2020

Asset Type	ORC	ODRC	Annual Depreciation
Pipe	$5,350,942	$3,052,010	$44,610
Open Drain	$333,698	$333,698	$0
Nodes	$486,282	$360,713	$4,095
Total - Stormwater	**$6,170,912**	**$3,746,421**	**$48,705**

Figure 8-1: 2020 Stormwater Valuation Summary



Change in ORC from 2017 to 2020

The ORC increase from the 2017 valuation to 2020 was $1,794,427 or 41%. The key reasons for the increase since the previous valuation are:

- Increases in unit rates.
- Values of new assets added

8.4.2 Valuation Improvements Identified

The improvements identified in 2017, manhole depth factors, the development of predictive modelling in AssetFinda and a number of attribute improvement priorities to improve subsequent revaluations, are being developed.

Also discussed was the review of useful lives for assets that have reached the end of the useful lives and, as in service but "expired" assets, no longer contribute to the annual depreciation figure. The assets in question are reticulation pipes and nodes. Unless there is evidence that warrants then adjusting these lives arbitrarily is not warranted. Instead, develop predictive modelling to assess the remaining useful lives for this purpose.

8.4.3 Confidence Levels

The quantity and quality of the data (for the 2020 valuation) is tabled below:

Table 8-2: Assessment of Confidence Levels

Asset	Quantity	Replacement Cost	Life Expectancy	Condition
Stormwater assets	B	B	B	C

Where:

Confidence grade	Description
A – Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate ±2%
B – Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings for example some data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ±10%
C - Uncertain	Data based on sound records, procedures, investigations and analysis, which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ±25%
D – Very Uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy ±40%
E - Unknown	None or very little data held

(*Source – IIMM 2015*)

It is accepted that most condition data across the data is anecdotal hence the C rating, however, it has not been taken into the overall data confidence grade as condition was not used to adjust remaining useful life. Taking condition out of the assessment, we consider a data confidence of B is appropriate for this valuation.

8.5 How We Fund Our Activity

The following summarises the ways in which the storm water activity is funded:

- Operations and Maintenance
  - General Rate (Urban)
- Renewals
  - Depreciation
  - Loans (either internal or external
- Capital
  - Development/Financial contributions
  - Private or Community contributions

8.6 Financial Statements and Projections

The financial summaries in this AMP cover a minimum 10-year planning horizon and are based on financial projections covering the lifecycles of the assets. Additional projections out to 20 years have also been provided to confirm if any major expenditure is likely to occur in the next planning horizon that may have an impact and should be considered as part of financial decision making process.

The following tables summarise the 10-year financial forecast for the Stormwater Activity under the following headings:

- Operations & Maintenance
- Capital works – Growth
- Capital Works – Increased Level of Service
- Capital Works – Renewals
- Capita Works – Vested Assets

8.6.1 Renewal and Operational Expenditure

The renewals profile is based on an asset useful life. At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined over time by determining evidence-based useful lives using a combination of condition and performance data.

Table 8-3: 10 Year Renewal Expenditure Forecasts – All Assets

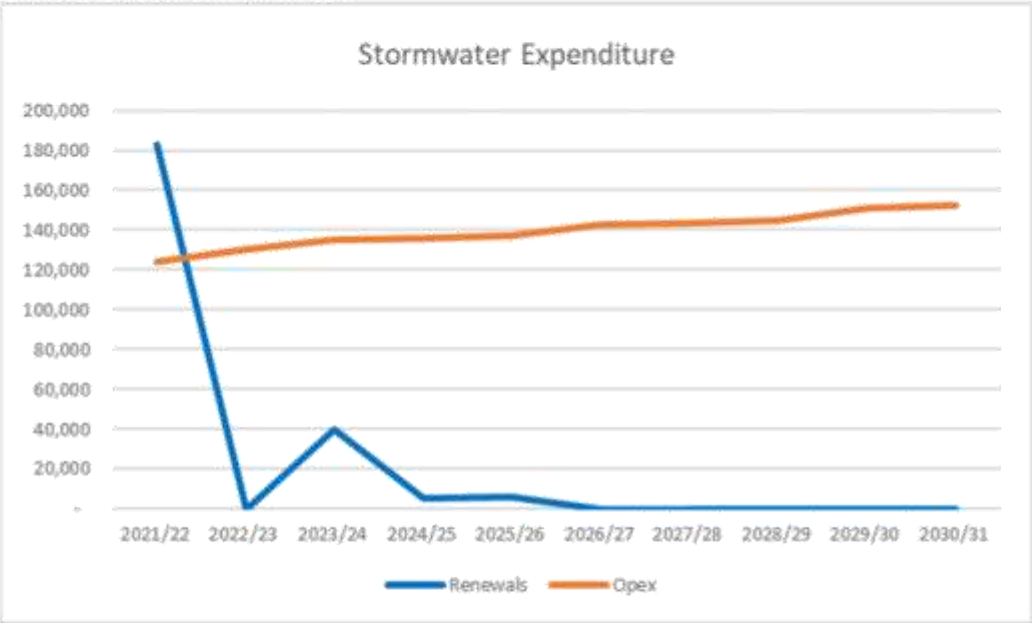
Remaining Useful Life Group	Stormwater_line	Stormwater_point	Grand Total
0 or less	$13,930		$13,930
1 - 5	$44,560	$5,139	$49,699
16 - 20		$2,570	$2,570
Total	$58,491	$7,709	$66,199

Table 8-4: Detailed Maintenance & Operational Expenditure (figures are inflated)

Stormwater - 5530	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	23,365	32,148	600	-	-	-	-	-	-	-
Total Operating Revenue	104,579	136,527	126,566	124,370	130,585	135,443	136,053	136,956	142,802	143,682
5530011 - General Rates	95,201	127,635	118,232	120,566	126,651	131,137	131,654	132,158	137,563	137,920
553007305 - Internal Interest	6,379	7,548	4,530	-	-	290	290	583	927	1,320
5530081 - Capital Contributions	3,000	1,343	3,804	3,804	3,933	4,016	4,108	4,215	4,312	4,442
Total Operating Expenditure	81,215	104,379	127,166	124,370	130,585	135,443	136,053	136,956	142,802	143,682
5530333 - General Expenses	67	-	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5530336 - LAPP Disaster Fund	1,772	1,833	2,017	2,341	2,421	2,471	2,528	2,594	2,654	2,733
5530349 - Repairs and Maintenance	-	-	308	308	318	325	333	341	349	360
5530356 - Telephone Expenses	193	193	206	206	213	217	222	228	234	241
5530357 - Utilities charges	8,034	4,825	7,093	5,346	5,528	5,644	5,774	5,924	6,060	6,242
553040311 - Depreciation	33,387	33,387	40,812	55,677	55,677	60,131	60,131	60,131	64,941	64,941
553040405 - Internal Interest	678	5,920	12,160	3,683	46	-	-	-	-	-
553040406 - Internal Loan - internal interest	-	17,500	13,600	9,300	14,700	14,100	13,500	12,900	12,300	11,700
5530405 - Insurance	778	881	740	863	892	911	932	956	978	1,008
553042405 - Internal Rent	3,228	3,336	3,562	6,435	6,609	6,804	7,078	7,227	7,383	7,585
5530425 - Rates	4,003	4,276	4,560	4,803	4,966	5,071	5,187	5,322	5,445	5,608

5530501 - Asset Mgt Plan	1,014	2,160	4,404	3,804	3,933	4,016	4,108	4,215	4,312	4,442
5530504 - Consultants	-	-	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5530506 - Contractors	730	-	2,262	2,262	2,339	2,388	2,443	2,507	2,564	2,641
5530510 - Operational Maintenance	-	820	3,000	3,000	3,102	3,167	3,240	3,324	3,401	3,503
5530601 - HR Costs - 8125	490	436	533	267	326	332	339	345	351	357
553060101 - 8126 - Health & Safety O/H Recoveries	1,150	1,159	944	605	623	632	643	656	670	685
5530602 - Corporate Services Costs - 8120	4,135	4,832	5,155	2,023	2,093	2,108	2,162	2,213	2,239	2,283
5530604 - Utilities Costs - 8140	2,385	3,242	3,179	697	679	623	619	679	716	714
5530606 - Asset Management Unit Costs - 8160	8,738	9,344	9,914	11,714	12,231	12,370	12,495	12,656	12,881	13,082
5530608 - Network Costs	2,293	2,187	2,579	2,089	2,083	2,142	2,137	2,123	2,262	2,255
5530609 - CEO & Finance Costs - 8110	3,554	3,386	3,573	1,253	1,320	1,368	1,390	1,414	1,441	1,472
5530611 - Support - Asset Manager	4,586	4,662	4,509	5,637	8,361	8,451	8,571	8,922	9,290	9,432
Capital Projects										
553075007 - Stormwater - Queen Street Upgrade	341,167	-	-	-	-	-	-	-	-	-
553075009 - Stormwater - SW Manhole SW171 Replacement	-	-	-	5,400	5,762	-	-	-	-	-
553075010 - Stormwater - CCTV Assessment of Mains	5,265	5,170	-	5,400	-	5,668	-	-	-	-
553075011 - Stormwater - Belt Street main renewal	12,200	-	-	-	-	-	-	-	-	-
553075012 - Stormwater - Manse Street crossing renewal	-	-	40,117	-	-	-	-	-	-	-
Capex Total	358,632	5,170	40,117	10,800	5,762	5,668	-	-	-	-

Figure 8-2: Stormwater Expenditure



8.6.2 Utilities (Water, Wastewater & Stormwater) Renewals and Capital Summary

The following details the summary of new capital and renewals for all three services for the 10 year period.

Table 8-5: Utilities (Water, Wastewater & Stormwater) Renewals and Capital Summary

3Waters	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Renewals	2,240,127	876,212	876,231	1,222,776	1,066,103	869,811	855,851	1,916,372	1,716,352	1,737,177
Levels of Service	3,660,143	156,557	57,008	5,400	-	5,668	-	-	-	-
Growth	490,080	716,133	326,064	-	-	-	326,928	337,708	-	-
Total	**6,390,350**	**1,748,901**	**1,259,302**	**1,228,176**	**1,066,103**	**875,479**	**1,182,779**	**2,254,080**	**1,716,352**	**1,737,177**

Figure 8-3: 3Waters Renewals and Capital Projects

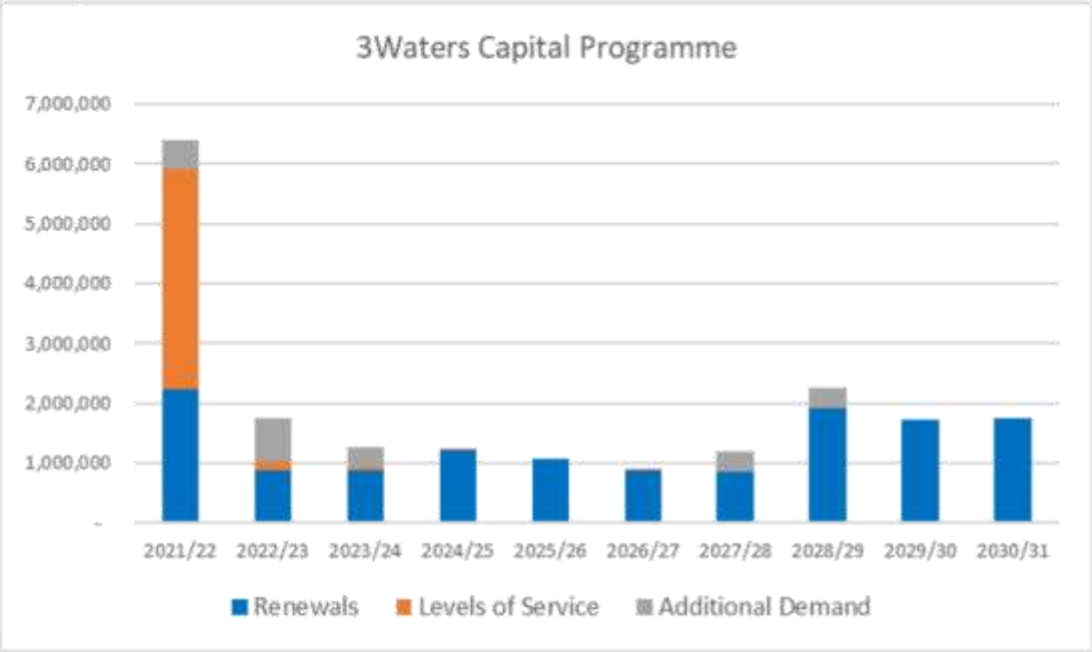


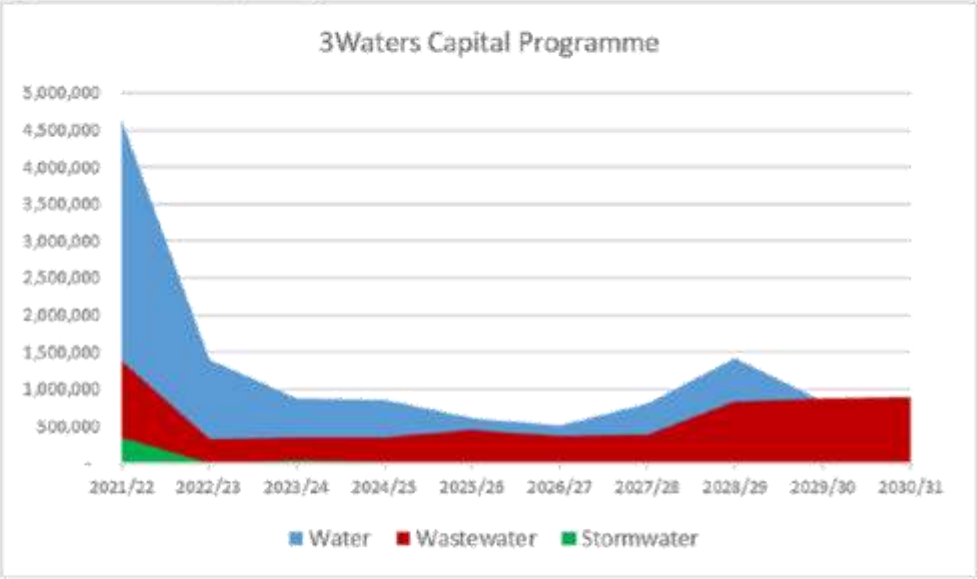
Table 8-6: 3Waters Capital Programme

Utility	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Water	4,643,522	1,403,545	875,555	866,376	607,682	506,492	803,309	1,418,856	848,458	845,877
Wastewater	1,388,196	340,186	343,630	351,000	452,659	363,319	379,470	835,224	867,894	891,300
Stormwater	358,632	5,170	40,117	10,800	5,762	5,668	-	-	-	-

Section 8: Financial Summary

Total	**6,390,350**	**1,748,901**	**1,259,302**	**1,228,176**	**1,066,103**	**875,479**	**1,182,779**	**2,254,080**	**1,716,352**	**1,737,177**

Figure 8-4: 3Waters Capital Programme



8.7 Key Financial Forecasts Assumptions and Uncertainties

Overview

Forecasting assumptions and uncertainties are essential in the operation of Council's assets to indicate the levels of risks associated with those assumptions. Where necessary additional strategies can be implemented to reduce the risk.

The LGA 2002 - Schedule 10, Part 1 (11) requires the Council to clearly define all the significant forecasting assumptions and risks that underlie the financial estimates, assumptions concerning the useful life of significant assets and an estimate of the potential effects of the uncertainty on the financial estimates provided.

Appendix C details the significant forecasting assumptions for the utilities.

8.7.1 Financial Forecast

The following table provide an assessment of the confidence in, and the accuracy of the 20-year financial forecast and supporting asset data. Table 8-8 and Table 8-9 detail the general meaning of the grades:

Table 8-7: Financial Forecast Confidence Level

Activity	Confidence Grade	Accuracy
Operations/Maintenance	B	2
Depreciation	B	2
Overheads		2
Funding Costs	C	3
Capital Expenditure	B	3
Debt Repayment	C	3
Overall	B	3

The overall confidence level is 'B' or reliable. Data is based on sound records, procedures, investigations and analysis which is documented but has some shortcomings and gaps that may impact on the confidence of long term financial forecasts.

The overall accuracy is 3 indicating that the accuracy of the financial forecasts is +/- 20%.

Table 8-8: Confidence Grades

Confidence Grade	General Meaning
A	Highly Reliable Data based on sound records, procedures, investigations and analysis, which is properly documented and recognised as the best method of assessment
B	Reliable Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings for example the data is old, some documentation is missing and reliance is placed on unconfirmed reports or some extrapolation
C	Uncertain Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolation from a limited sample for which grade A or B is available
D	Very Uncertain

Confidence Grade	General Meaning
	Data is based on unconfirmed verbal reports and/or cursory inspection and analysis

Accuracy ratings are made using the criteria outlined in:

Table 8-9: Accuracy Ratings

Grade	Description	Accuracy
1	Accurate	100%
2	Minor inaccuracies	+ / - 5%
3	50% estimated	+ / - 20%
4	Significant data estimated	+ / - 30%
5	All data estimated	+ / - 40%

9.0 PROCESSES AND ASSET MANAGEMENT PRACTICES

This section outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP

9.1 Organisation Structure

Figure 9-1: Waimate District Council Management Structure

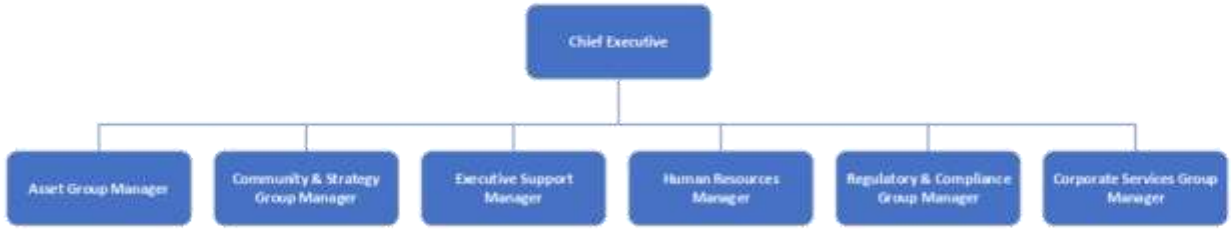
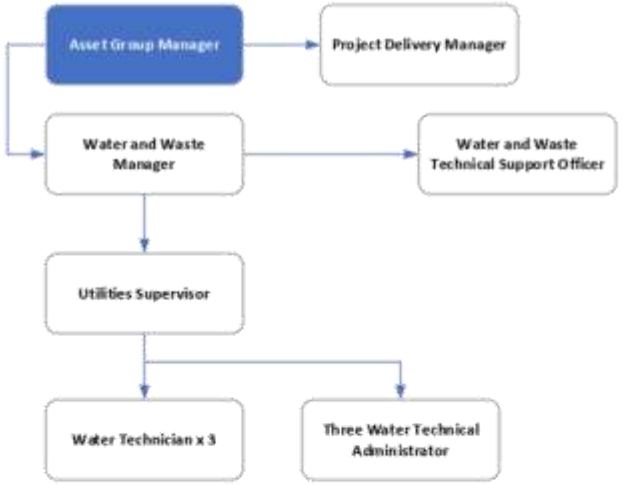


Figure 9-2: Water and Waste Unit Structure



9.2 Plan Review and Monitoring

9.2.1 Monitoring Approach

Council has developed this AMP based on its current knowledge of customer requirements, the configuration of the existing and future network to meet customer requirements, current asset information and the strategies to achieve customer requirements.

To further develop a meaningful AMP, including supporting processes, systems and data, Council recognise the need for a more structured approach. This approach includes:

- Council's firm commitment to implement and develop the AMP
- Incorporate this AMP as a tactical plan within Council's planning framework
- Review of the plans by internal staff and suitably qualified external consultants
- Aiming to produce an AMP that meets the requirements of the community
- Benchmarking key performance indicators against similar external TLAs
- A corporate commitment to implementing and maintaining suitable AM information systems
- Adopting a team approach to the preparation of future AMPs in order to maximise the buy-in of internal staff and sharing of specialised knowledge

9.2.2 Timetable for Audit and Review

The programme for future AM reviews of this AMP is in Table 9-1:

Table 9-1: Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 June each year
Internal AMP peer review by staff not directly involved in preparation of AMP	30 June each year
Adoption of AMP by Council	30 June every 3 years
External benchmarking by internal staff	Annually
Audit NZ external audit	As required by Audit NZ

9.2.3 Utilisation of AMP's

Historically Asset Management Plans have been carried out for regulatory requirements and not used on an on-going basis. Table 9-2 below details the methodologies for the on-going implementation and updating of AMP's within Council to ensure the Three Waters Asset Management Plans are used to their full potential.

Table 9-2: Methodologies for the On-going Implementation and Updating of AMP's

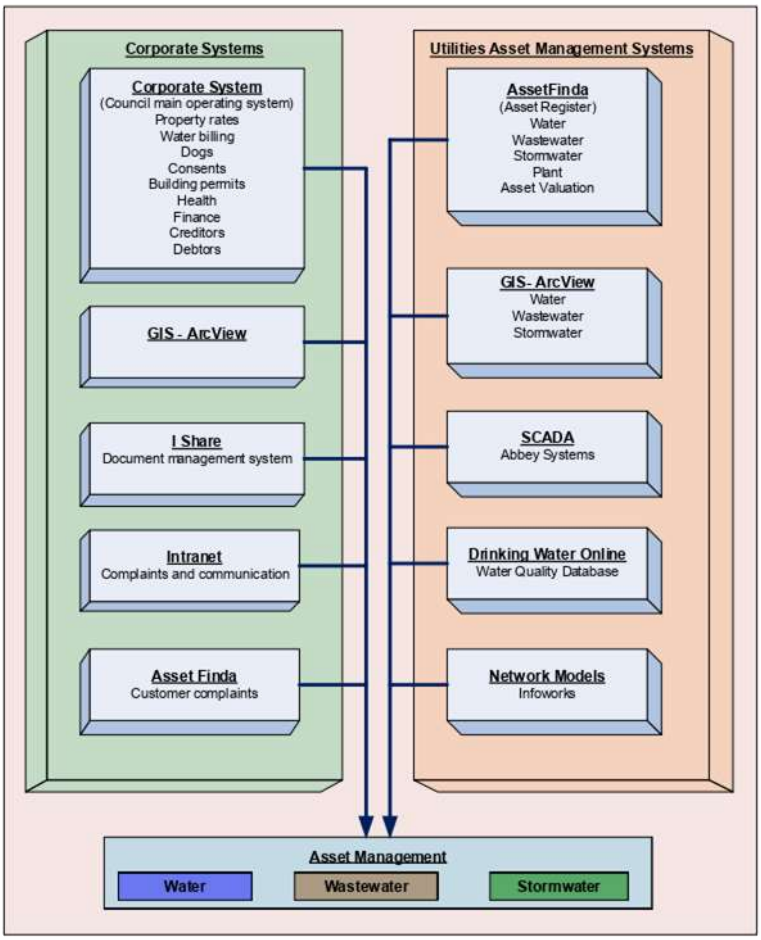
Methodologies	Output
Continuation of the organisational culture of asset management	The asset management culture needs be supported by the Chief Executive and senior managers in conjunction with the elected Council Effective stewardship and management of Councils major investment (assets) will not occur in the long term without a culture of asset management

Methodologies	Output
Resourcing of Asset Management Programmes	Asset management programmes must be adequately resourced
Roles and Responsibilities of Council Staff	The roles and responsibilities of Council staff as they relate to the AMP's implementation need to be defined in respect to the ongoing use of the plans as this will assist the AMP to remain relevant and current. To enable this to occur the following is required - The Activity Management Plans adopted/accepted by staff down to a defined level - Council Staff to know what's in the plans and how it could affect their day to day work - Council Staff to understand the reasons for the AMP and the implications for the long term use of them - Understand all the reporting requirements for Levels of Service and Internal Benchmarking - Training required in the use of the AMP (what's in it, how work is done, on-going requirements for monitoring, review and updating) - Instigation of processes to encourage Council Staff to use the AMP

9.3 Business Processes

Figure 9-3 details the data systems that are presently used within Council and their relationship with other systems.

Figure 9-3: Council Data Systems



9.3.1 AssetFinda

Council uses the AssetFinda Asset Management system for its Asset Information System. AssetFinda have been used since 2005 and is a web/GIS based asset management system. This has greatly improved the information on the scheme assets and enhance the future AMP and Asset Valuations. Some of the outputs from AssetFinda includes:

- Complete asset register for the scheme
- Completion of asset valuations
- Maintenance can be entered into the database. Cumulative costs of maintenance on each asset can be assessed
- Predictive analysis to indicate when assets should be replaced
- Condition monitoring of assets
- Complete "what if" scenarios to determine the optimal time to replace assets

AssetFinda was selected for the following reasons:

- Ease of use
- Simple functionality

- Low initial fee structure
- Low on-going fee structure

Table 9-3: AssetFinda Functionality and Utilisation by Council

Register Functions	Utilisation
Water	Water lines, points and plant details
Wastewater	Wastewater lines, points and plant details
Stormwater	Stormwater lines, points and plant details
Maintenance History	Cumulative maintenance costs of an asset. Maintenance history is also linked to the asset in GIS
Valuation	Used on an annual basis
Criticality	To be populated
Condition & Performance	Scores held in register

Data will be collected continually throughout the year and entered into AssetFinda. Further improvements are programmed and relate to field collection of data through the new developer – Univerus.

Metadata Standards

A Central Government funded project is the 'Metadata Standards' which sets national metadata standards for the 3-waters (potable, waste and storm) network, and for residential and light commercial buildings. This is to ensure the correct asset data is collected and in the correct manner.
Going forward Council will align its data collection and recording with the Metadata Standards. However, the existing data will be held and only aligned with the standards over time as more current information is captured.

9.3.2 GIS

Plans for reticulation and facilities for the three utilities are entered into AssetFinda as they are received. Where information is received from contractors on the utilities services then ArcView is updated. Council does not have a robust system of ensuring that all subdivision plans are of the required standard prior to importing into ArcView.

Council utilities staff are currently using Windows tablets to facilitate field collection of data. Improvements are currently programmed.

Asset Data

The majority of asset quantity, location and pipe size data are held in the GIS system. There are a number of quality assurance processes are used to ensure the reliability of the data recorded. These processes include:

Table 9-4: GIS Data

Item	Details
Sampling of assets contained in the GIS / AMS	Using field tests to check the reliability of pipe capture, pipe quantities and pipe size within the GIS/AMS

Item	Details
Coverage testing	Checks by Asset Managers that assets captured in particular areas reconcile with the services known to be provided
Continuity checks	These are carried out in GIS to identify breaks in the piping networks and gaps in the data
Historical and new data	GIS capture of historical data has been derived from professional engineering and survey plans, from Council record sheets or Council staff knowledge. The on-going capture of asset data is derived from engineering as-built plans. All As-Built plans received by Council are required to comply with strict specifications and all data entered into the GIS/AMS is the subject of quality assurance processes

9.3.3 Network Modelling

Computer models (Infoworks) of the stormwater exist. This enables Council to:

- Determine accurately the existing capacity of the system
- Identify inadequate sections of the system
- Operate the system in the most efficient manner
- Determine the impact of further development on the system
- Identify system upgrading requirements
- Compare options for upgrading the Stormwater System

The network models are operated and maintained by external consultants, Opus International Consultants Ltd.

Further modelling has been completed by Ecan and will be used to identify overland flow path requirements in the future.

9.3.4 Complaints database

The Council operates a complaints database through a 'Request for Service System' via AssetFinda. This records all complaints associated with the Three Waters and Roading activities and provides useful information for trending and analysis of system performance and highlights issues.

The database has now been updated such that service requests can now be analysed by relevant performance measures (Levels of Service) and priority response times included within AssetFinda.

SCADA System

There are no stormwater assets or sites where SCADA is installed or monitoring takes place.

10.0 IMPROVEMENT PLAN

This section details the improvements to AM systems that will increase the level of confidence in the AMP.

10.1 Asset Management Improvement Process

Background

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.

This Improvement Plan is integral to that approach, quantifying current business practice and measuring progress toward an identified future position.

Purpose of the Improvement Plan

The purpose of the Improvement Plan is to:

Identify, develop and implement AM planning processes

Identify and prioritise ways to cost-effectively improve the quality of the AMP

Identify indicative time-scales, priorities, and human and financial resources required to achieve AM planning objectives

The Improvement Plan is subject to constant reappraisal and change. While reappraisal is an on-going process, the Improvement Plan will form the basis of the stormwater service annual business planning. The following table details the Improvement Programme shown in the 2014 AMP and the progress of the individual projects.

10.2 Improvement Programme

Council is committed to on-going improvement in the quality of its asset management practices until appropriate practice levels are achieved. This is reflected in the current improvement programme for the period 2018-21 and the achievements made in the period 2015 to 2018.

Table 10 1 presents the current status of the 3 Waters Improvement Programme as at January 2018.

Improvement Priority

The improvement priority was carried out using the key areas of:

- Legislative requirements
- LoS achievement
- Where the assessed risk was considered high

Table 10-1: Achievement of 2012-2015 Programme and Proposed 2021-2024 Programme

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Level of Service (LOS)	1	Improvements to Council's Request for Service System via AssetFinda, to enable interrogation of service request system to analyse customer complaints and identification of problem area	2012-2013	Y	Service requests can now be analysed by relevant performance measure and priority response times included within the AssetFinda set-up.	Further development of the system is required to allow retrospective entry of after hour's information and also escalation. Council working with the developer to facilitate this. 2015-16. Completed – AssetFinda is now configurable to allow retrospective entry of Service Requests	-	-	2012-2013
W, WW & SW		2	Once National LOS are available, evaluating LOS Options by investigating the effects of varied LOS (financial, environmental etc.) and consult LOS options with the community (for inclusion of amended LOS into the 2015 LTP)	2014	N	Levels of service to be reviewed and included in 2015-25 LTP.	2014/15 - Implemented Non-Financial Performance Measures but no indication as yet to National Level of Service for three waters.	Monitoring	Monitoring	2014

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
SW		3	Stormwater Management Plan - develop, submit and obtain approval	2013-2015	N	Alignment required with proposed Global Consent timing	Carry Over – Draft Stormwater Management Plan completed. Consent application is currently being drafted and affected landowners have been consulted. Application will be lodged in early 2018.	Consent application lodged 2017/18. Implementation 2018/19 to 2023/24	Consent application lodged 2017/18. Awaiting feedback from affected parties. Implementation 2018/19 to 2023/24	2017/18
All	Demand	4	Review if increased demand (population/demographics effects etc.) can be provided by existing infrastructure or addition assets/upgrades required (a watching brief)	2012/13	N	As new population figures / demographics / development information becomes available, Council is actively reviewing existing infrastructure / services to ensure LOS are met.	On-going	On-going	On-going	2020/21
Water	Growth	5	Continue to implement demand management programme in-conjunction with the leak detection program	On-going	N	Demand management will be achieved by a combination of pressure management and	No formal policy on demand management but achieved through processes such as water conservation	Develop policy in relation to demand management and provide pressure management	On-going	2019/20

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						developing policy in relation	messages as required.			
All		6	Continue to develop the existing population projections process that is Council approved and used across all areas of council	2012/13	Y	Process in place (yet to be formally adopted by Council).	Process developed for 2018/28 Long Term Plan.	Process developed for 2018/28 Long Term Plan.	Process developed for 2021/31 Long Term Plan.	-
Water		7	Leak detection in Waimate urban reticulation every three years	2012 2015 2018	N	Not completed in 2012. Programmed for 2015. Council has a watching brief on Midnight flow.	On-going – Last completed June / July 2015	On-going – Programmed for 2018 /19. However, Pipe replacement reduced water loss significantly, so no leak detection took place in the period. Council continues to watch Midnight flow and monitor water loss (Performance Measure).	On-going – leak detection is planned for 2021/22. Water loss monitoring will Continue. Other forms of leak detection/water loss will be implemented in 2021/22 such as consumer service meters (RF).	2018/19 2021/22 2024/25
~~Water~~		8	~~Develop Water Demand Management Plan/Strategy to formalise, improve and guide existing demand management initiatives~~	~~2013/14~~	N	~~Re-programme for 2015- 2025 LTP~~	~~Carry Over~~	See IP 5	See IP 5	-

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Sustainability	9	Assess staffing levels to ensure sufficient resources to meet demand	2011/12	N	Council is currently in the process of creating the new role of "Group Asset Manager". It is envisaged that this role will become operational in early 2015 and is created to assume a more strategic role to free up existing managers.	Extend to include staff succession planning for unplanned staff absences, resignations or retirements 2015-2018 – Additional staff member allocated to support the Asset Management Business Unit. Additional Water Treatment Plant Operator allocated to meet additional workload once plants are upgraded to meet Extend to include staff succession planning for unplanned staff absences, resignations or retirements 2015-2018	Next major assessment programmed for 2021/31 LTP	Currently there are major changes in water legislation, regulation and potentially standards and solutions. These changes will impact the way 3 water services are managed and operated their supplies and networks. Increase compliance and greater expectations around levels of service will mean reviewing staffing levels on a regular basis until July 2024, to be assured of meeting legislation, regulation requirements.	2020/21 Onwards

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Risk	10	A Council wide risk policy to be developed	2012/13	N	Risks have been identified in a methodical manner through the Audit Committee.	Carry Over	Carry Over	Carry Over	2018/19
All		11	A critical assets study to be undertaken to identify critical assets and identify and adopt risk mitigation strategies for the operation, maintenance and renewal of all critical assets. The critical assets to be shown in AssetFinda	2012/13	Y	-	Carry Over	Completed 2017/18.	-	-
Water		12	*New 2014:* Implementation of Water Safety Plans	2014 Onwards	N	Currently approved water safety plans for Waimate Urban, Cannington-Motukaika, Waihaorunga, Waikakahi Submitted Hook-Waituna, Lower Waihao Under development, Otaio Makikihi	Carry Over	All water safety plans were approved and being implemented. Some capital works proposed in the 2018-28 LTP were subject to approval. Implementation and review on five year cycle.	Water safety plans are either being implemented (4) or undergoing review (1) and assessment (2) currently. Some capital works proposed in the 2021-31 LTP are still subject to approval. Implementation and review on five year cycle.	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		13	Develop Business Continuity and Emergency Management Plan (for rapid and structured response to emergency failures and significant hazards) and ensure review control process is carried out	2013/14	N	Major developments in communication of significant issues have been made.	Carry Over	On-going	On-going	2018/19 Onwards
W & WW	Lifecycle	14	To better understand the different AC pipe life a programme of assessing the condition of the pipes in all the schemes that contain AC pipe will occur	2012-2015	N	A number of samples taken	Carry Over	On-going. A number of pipe samples have been recovered and assessed from both the rural and urban schemes. Results of these assessment will continue to inform the renewal programme.	On-going	2018/19 Onwards
Water		15	To better understand the different "old PE pipe" life, a programme of assessing the condition of the pipes in all the schemes that contain Old PE pipe will occur.	2012-2015	N	-	2015-2018	Develop programme to retain and assess samples to better inform rural renewal programmes	On-going	2018/19 Onwards

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
Water		16	The location and extent of Garnite PVC pipes are required to be found and the information shown in both AssetFinda and GIS. This will allow greater understanding of the future renewals programme for this type of pipe.	On-going	-	As these are encountered the asset database is updated	On-going	On-going	On going	On-going
		17	*New 2014*: Continue condition assessment of plant assets to better understand future renewals programme for above ground assets	-	N	Condition assessments to be carried out	2015-2018	Condition and Criticality assessments to be completed.	On-going	2018/21
WW		18	CCTV of the condition 4 & 5 grade pipes are required to be carried out again to ascertain the decrease in condition and assist in the renewal programme	2012-2015	N	CCTV is utilised as a maintenance activity currently. Information yielded from these surveys, and future surveys will inform the renewal programme.	On-going	On-going CCTV inspections were utilised to ensure programmed renewals are both required and cost effective.	On-going	2018/21

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		19	Develop a Condition Assessment Strategy			To identify which, where and when condition assessments will be performed in consideration of criticality, LoS, asset records, Council engineers visual assessment of failures and specialists assessments as required.		Develop and implement prior to 2020/21 review of # Waters AMP's	On-going – Staff training has occurred in condition assessment.	2018/21
All		20	Develop a comprehensive renewal programmes based on analysis of condition and capacity once condition assessments have been carried out	2012-2015	N	Condition assessments to be carried out as part of the improvement of data quality	On-going	Condition assessments to be implemented concurrently once strategy in IP 19 is developed	On-going – Staff training has occurred in condition assessment..	2012-2015
All		21	Review and document operations and maintenance strategies based on criticality and risk	2013/14	N	-	2015-2018	Review Lifecycle sections of Amp's once criticality and risk assessments are progressed	On-going	2020/21
All		22	Formalise and update the existing maintenance schedules and procedures quality procedures, contingency and operation and maintenance manuals	2012-2015	N	Utilisation of AssetFinda to Schedule maintenance alongside formalising by	2015-2018	Implement scheduled maintenance of key assets within AssetFinda Version 4	Carry over – issues with implementation of AssetFinda Version 4. Schedule still to be	2018/19

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						means of manuals is required				
All	Financial	23	Review asset materials codes and size ranges to see if there is scope for rationalising the information, both to assist with valuation and for general asset management purposes	2012/13	Y	Completed this year	-	-	-	-
All		24	Continue to keep good records of construction costs, especially for rural pipelines, to provide better information for future valuation updates.	On-going	Y	-	On-going	On-going	On-going	On-going
All		25	Updating asset inventory to reflect changes resulting from capital works and continue to do so.	On-going	Y	-	On-going	On-going	On-going	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	AM Practices	26	It is proposed as part of future improvements in the management of AssetFinda/GIS - to ensure sufficient resources are available (both internal and external) to enable the full use of AssetFinda/GIS for the operation, management and administration of the utility services	2011/12	Y	Occurred during the 2014 / 15 Financial Year	-	-	-	-
All		27	Council continue to maintain the AssetFinda asset database and improve accuracy of data through review and modification of collection, storage, and auditing with prioritising on criticality including the development of Data management standard	On-going	-	-	On-going	On-going	On-going	On-going
All		28	Complete data capture and update records for underground assets - to the asset management systems and ensure adequate resources are available for data entry and on-going data maintenance	On-going	-	-	On-going	On-going	On-going	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		29	Continue to and complete data capture and update records for all facilities assets - to asset management systems	On-going	-	-	On-going	On-going	On-going	On-going
All	Improvement Programme	30	Develop long term improvement programme to achieve the Council's appropriate practice policy	2014/15	-	Not currently documented	Yes	Asset Management sophistication and Maturity Index assessments need to be completed.	Asset Management sophistication and Maturity Index assessments need to be completed prior to next generation 2024	2018/19
All	Lifecycle	31	Align the asset data in AssetFinda with the criticality assessment ratings					Import criticality ratings post implementation of AssetFinda Version 4. Provide a high level list of critical assets for ease of identification	Carry over – Complete with urgency to enable comparison of age predicted model with condition and performance weightings.	2018/19
		32	Consider and implement recommendations from criticality assessment					On-going	On-going	2018/19 Onwards
		33	Revisit criticality assessment			The Havelock North Water Enquiry and 3Waters review may require a review of the		Maintain a watching brief on recommendations and legislation to ensure criticality	Maintain a watching brief on recommendations and legislation to ensure criticality	TBC

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						criticality assessment to ensure the focus remains correct.		assessments remain pertinent.	assessments remain pertinent.	
All	Lifecycle	34	N/A	2021-24		Systematically assess 3W's data reliability and present in a table			Complete systematic reliability analysis for 3W's assets. Once established utilise predictive modelling with condition and performance weightings to better understand longer term renewal requirements.	2021-24

10.3 Monitoring & Review Procedures

10.3.1 Monitoring Approach

Waimate District Council has developed this AMP based on an integrated asset management planning approach that includes:

- The configuration of networks to meet customer requirements, now and in the future
- Current asset information
- Well-developed strategies to achieve customer requirements

The further development of Council's asset management approach including supporting processes, systems and data will be needed to meet the appropriate level of asset management practice as set out in Council's Asset Management Policy. This Policy will be reviewed periodically to take into account legislative and other national practice changes.

10.3.2 Timetable for Audit and Review

The programme for future AM reviews of this AMP is in Table 10-2 below:

Table 10-2: Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 June each year
Adoption of AMP by Council	30 June every 3 years
Audit NZ external audit	As required by Audit NZ

Appendix A Individual System Description & Overview

A.1 Waimate Urban Scheme

The Waimate stormwater network services the town of Waimate with an estimated population of 3,000 people. The system consists mainly of a kerb and channel collection discharging into natural water courses and five stormwater pipe laterals. The reticulation consists of a variety of pipes and open drains all installed at different times, the majority of pipe material are concrete. The main receiving water for stormwater discharge is the Waimate Creek.

System Information

System Information			
Properties Connected			
Stormwater reticulation			
1. Length of Mains (m)	10,446	2. Number of Pump Stations	None
3. Number of manholes	65		
4. Number of pits	19		
5. Number of sumps	27		
6. Length of drains (m)	5,002		
Replacement Cost		7. Treatment assets	None
8. Total Scheme	$6,170,912		

Figure 10-1: Scheme Components

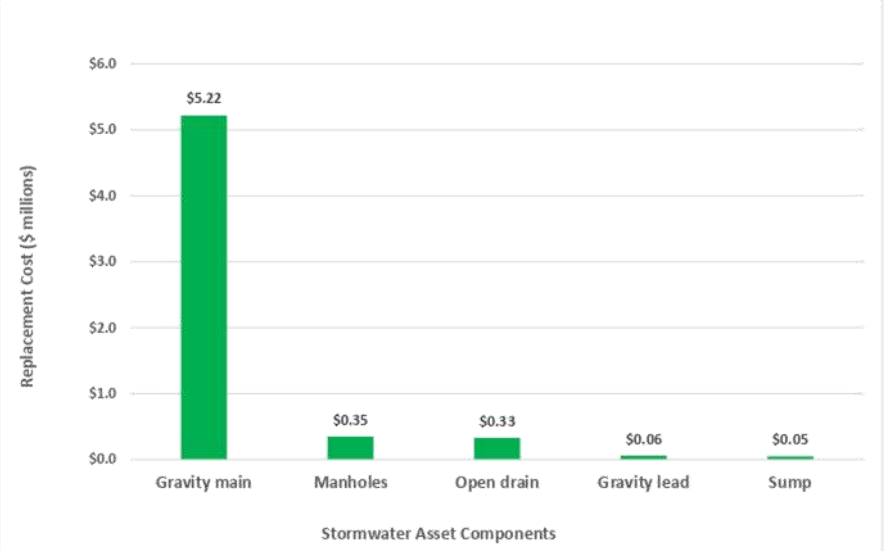


Figure 10-2: Stormwater Mains Diameter Range

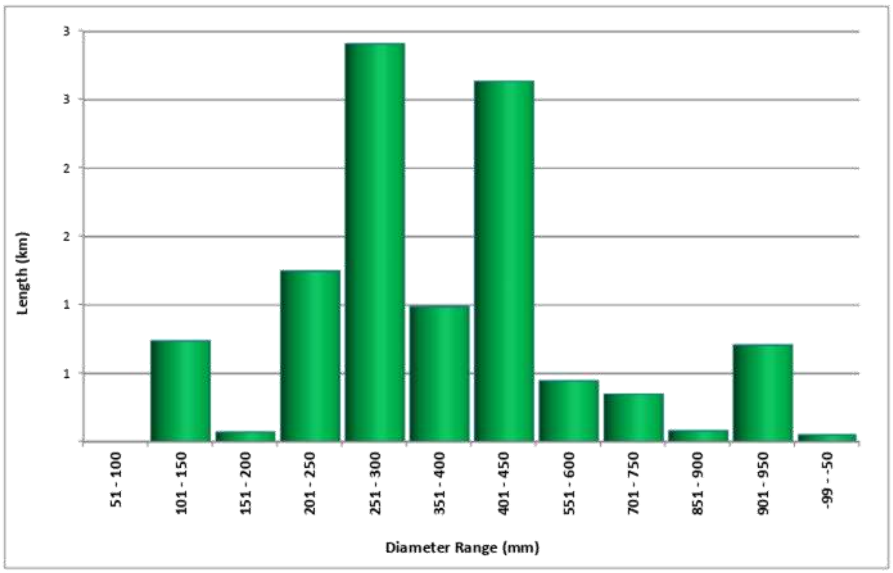
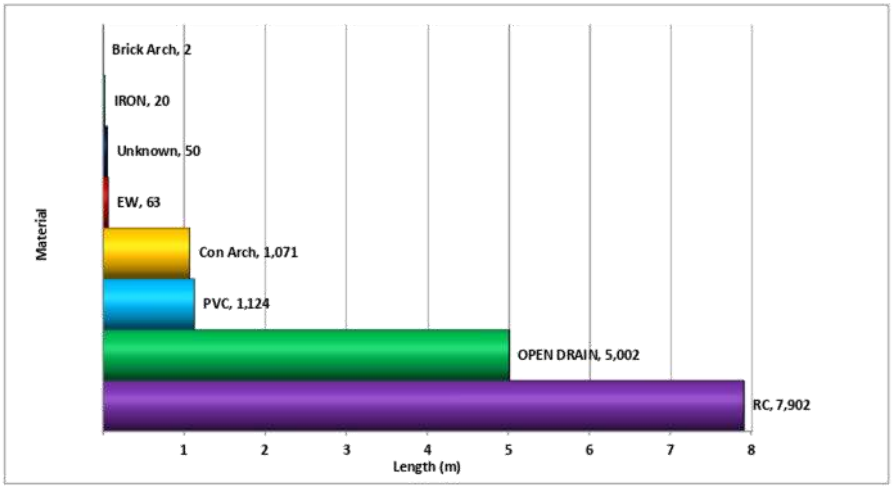


Figure 10-3: Stormwater Mains Material Length



The reticulation consists mainly of RC (52%), open drains (33%) and PVC (7%).

Figure 10-4: Pipe Length by size and material

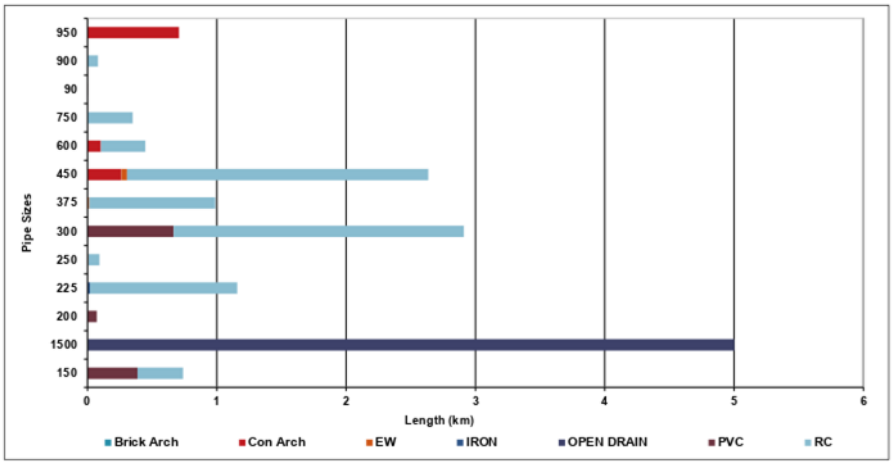
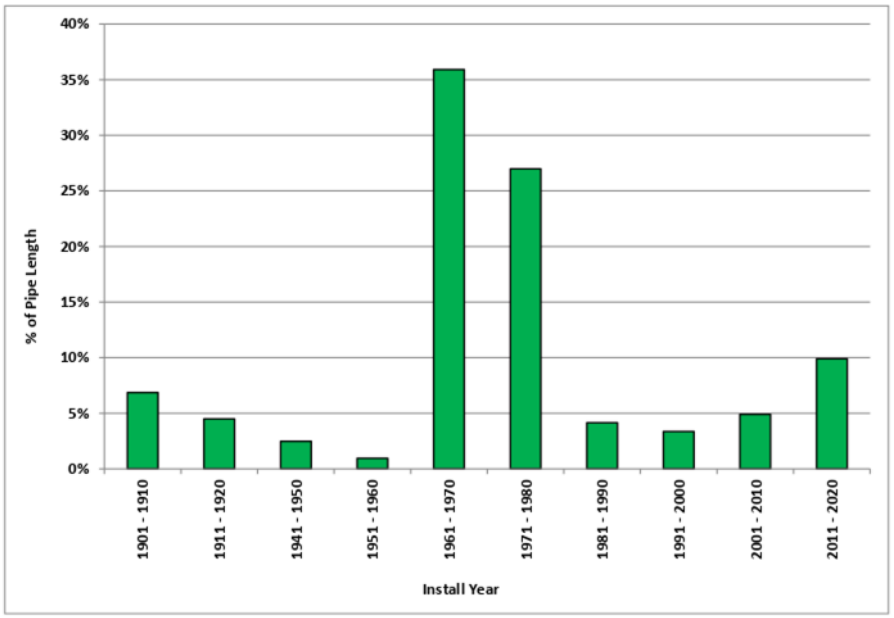


Figure 10-5: Stormwater Mains Install Year



Approximately 15% of the reticulation was installed during the period 1905 to 1960, and a further 63% installed during 1961 to 1980.

Figure 10-6: Reticulated Mains Forecast Renewal Date

Appendix A:

Individual System Description & Overview

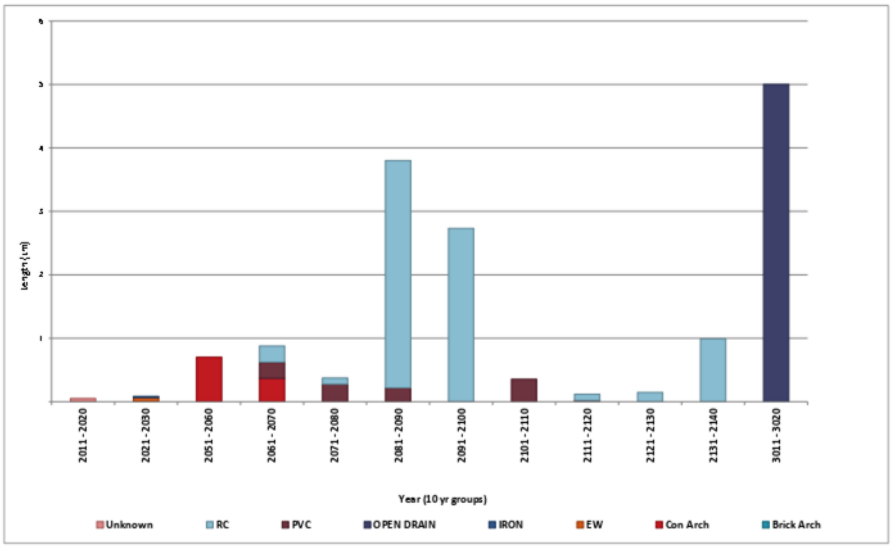


Figure 10-7: Total Asset Renewal Forecast – 5 Year Groups

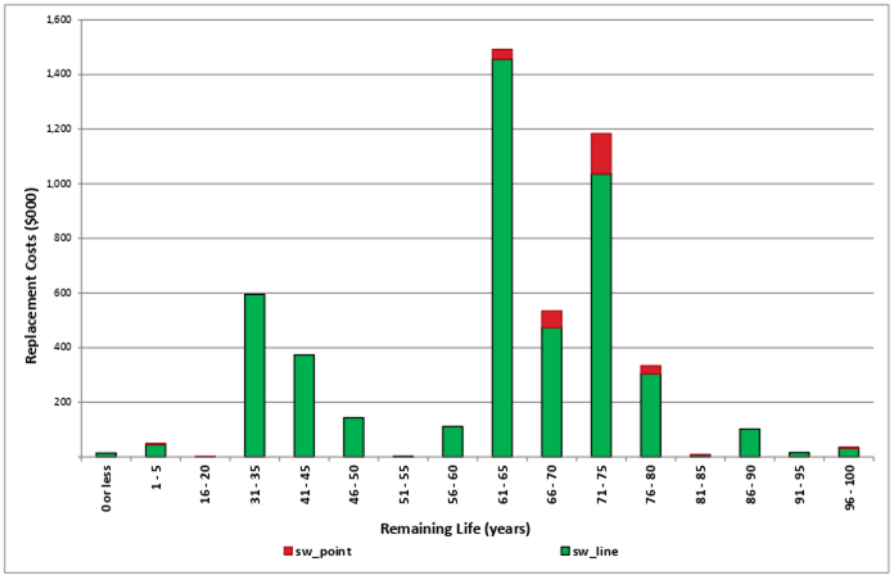


Figure 10-8: Waimate Stormwater Map



Appendix B Risk Assessments

The following table details the Risk Summary Table that was first established in 2011, which identifies risk management strategies to minimise risks associated with the provision of the Water, Wastewater, Stormwater and Solid Wastes services.

Appendix B:
Risk Management Process

Risk Summary Table – All Services

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
1		Higher Level Policies, Procedures and Controls				
1.1	Subdivision Code, District Plan not up to date	Inappropriate development and/or poor design of assets.	Moderate	Subdivision and Development Code up to date and activity to have input to District Plan.	Low	
1.2	Operations Manuals not up-to-date	Failure to supply water or cause adverse health effects due to poor operation of assets.	Moderate	Operating Manuals substantially complete and ensure staff comply with requirements.	Low	The existing operation and maintenance manuals are to be updated where required. Particularly when treatment processes are updated
1.3	Not having clear direction on public consultation	Council in breech of LGA2002 with respect to Public Consultation.	Low	Need ability to get advice from specialist council staff on consultation plan for each project.	Low	
1.4	Districts Bylaws not up to date	Inability to properly control inappropriate behaviour by others.	Low	Bylaws up to date	Low	Bylaws are being updated prior to 30 June 2018
1.5	The Council does not have an acceptable position on the impact of climate change on service delivery	Financial loss due to liability for property damage, loss of asset. Not able to provide service.	Significant	Council needs policy and relevant action plans including relevant design parameters) on Climate Change.	Low	Strategies to implement Councils future policy on the effects of climate change
1.6	Inaccurate growth information or growth not considered	Inappropriate decisions made about development.	Moderate	Growth developed by Council	Low	
2		Financial				
2.1	Lack of long-term financial planning	Higher than necessary financial costs	Significant	Existing network models are up to date and available	Low	
2.2	Service levels vs funding and works not clear	Service levels not being met due to lack of funding as decision makers not aware of implications for Service Levels.	Significant	Set performance targets for next 10 years and monitor and report on performance. Impacts of delayed capital works reported to Council.	Low	
2.3	Assumptions for financial forecasting not always understood	Additional costs incurred because assumption/uncertainties not accounted for i.e.: asset valuations, depreciation	Significant	Finance/managers need to be aware of assumptions and uncertainties behind financial forecasting information.	Moderate	
2.4	Unforeseen Additional Costs	Reputation of Council detrimentally affected	Significant	Ensuring AMPs and asset information up to date	Low	

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Risk Management Process

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
2.5	Valuations not accurate for asset facilities	Fixed Asset Register not reconciling with existing assets causing incorrect valuations and affecting true financial requirements	Low	Asset register reviewed and updated	Low	
2.6	Development Contributions policy not implemented and/or do not have robust system for calculating contributions from developers	Adequate contributions for development not obtained costing the Council more than it should. Council faces legal action if contributions not in line with Section 199 of the LGA 2002.	Moderate	Development Contributions Policy implemented.	Low	Changes to the RMA are likely to impact financial contributions.
2.7	All potential sources of Government and other external funding (Third Party funding) not appreciated or obtained	Higher cost to Council than should have been	Moderate	Identify potential availability of third party funding and apply / take advantage of it.	Low	
2.8	Insurance cover needs review	Insurance not adequate and unnecessary costs incurred	High	Insurance cover reviewed to ensure adequate cover on annual basis.	Low	
3		Organisational Management				
3.1	Lack of Strategic Thinking/ Long-Term planning	Inefficient use of time and money.	Moderate	Implementation of AMP and undertake condition assessments.	Low	
3.2	Failure to act on identified risk - e.g. Water Safety Plans Plans	Possible legal action against Council if event occurs which Council knew about. Public Health adverse affected.	Moderate	WSP's have been carried out and recommendations being implemented	Low	Need to monitor outcomes of Havelock North Enquiry and proposed 3Waters review
3.3	Lifelines Plan not up to date or implemented	Large scale asset failure due to a naturally occurring event resulting in prolonged and substantial loss of service to District	Significant	Ensure Lifelines Plan up-to-date and recommendations implemented that includes having a high level of risk reduction, readiness, response and recovery during and following Civil Defence Emergency.	Significant	Update lifelines plan, engage with regional lifelines group
3.4	Legislative requirements not understood	Council faces legal action because legal requirements are not met	Moderate	Annual reviews	Low	
4		Human Resources				
4.2	Accountabilities not clear	Staff not accountable for actions allowing apparent problems to continue	Moderate	Up-to-date job descriptions. Staff performance monitored and dealt with if not performing.	Low	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
4.3	Information in peoples heads or inappropriate recording of information	Organisational knowledge lost with staff leaving	Significant	Ensure staff document and appropriately file everything that is relevant. Ensure good management succession when existing staff leave.	Moderate	Formalise and update maintenance schedules and procedures, contingency and operation and maintenance manuals.
4.4	Insufficient staff or not appropriately skilled	Programmed work not completed due to insufficient staffing or skill levels, having negative impact on service levels and creating public health risk.	High	Skill levels are appropriate	Low	Formal training programme required that includes the use of activity management plans
4.5	Inadequate attention to staff succession	Organisational knowledge lost with staff leaving	High	Implement good staff/management succession plan and document procedures	Moderate	Implement good staff/management succession plan and document procedures
5		Health and Safety				
5.1	Do not have a good health and safety culture	High accident rate	Moderate	Council health and safety procedures implemented, appropriate training undertaken and manuals up-to-date.	Low	
5.2	Health and Safety Risks not identified or managed appropriately	Council faces legal claims for not meeting health and safety obligations	Moderate	Health and Safety manuals up to date and be effectively managed.	Low	
6		Asset Management				
6.1	Network modelling, condition assessments not undertaken.	Capital Works programme not optimised. Renewal works not completed due to lack of knowledge causing failure of assets. Future forecasting not accurate.	Significant	Undertake condition assessments of network and develop robust renewals programme based on sound knowledge.	Moderate	Development and maintenance of network model.
6.2	As-built information can be slow or incorrect coming from maintenance staff, Contractors, Consultants	Council faces legal action because of incorrect information provided (particularly with regard to LIMS)	Significant	Ensure As-builts up to-date and on record promptly. Ensure GIS capability	Low	
6.3	Criticality assessment not undertaken	Failure of critical assets resulting environmental damage or not meeting service levels	Significant	Undertake criticality assessment of assets and implement strategy for managing critical assets	Low	Incorporate criticality assessment of reticulated assets, undertake criticality assessment of plant assets and

Appendix B

Risk Management Process

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
						implement strategy for managing critical assets
6.4	Asset Risk Register and Asset Risk Plan not implemented	Council faces legal action because of asset failure or unnecessary costs incurred due to asset failure	Moderate	Maintain Asset Risk Register and Asset Risk Plan	Moderate	Improve risk plan to reduce residual risk
6.5	Asset management systems not up-to-date or completed	Failure to of utility systems because maintenance work not completed or management system not operational.	Significant	Asset Management System in place and updated as required	Moderate	Review AM system practices and processes
6.6	Performance monitoring of service levels not completed	Target Service levels not met resulting in customer dissatisfaction.	Moderate	Monitoring programme established and reviewed regularly.	Low	
6.7	Poor standards of constructed assets due to design and/or construction of infrastructure	Substandard physical works resulting in poor asset performance	Moderate	NZS4404 is updated regularly and Contractors & Consultants are familiar with this. Contractors/Consultants take responsibility for work done.	Low	Perhaps develop Sub-Division Code of Practice
6.8	Capital works delayed due to unforeseen circumstances	Programmed Capital Works not completed. Target Service Levels not met	Significant	Staff held accountable for delays & Staff trained in project management.	Moderate	Develop projects process that provides for project plans to be prepared for every approved renewal and capital development item.
6.9	Deferred renewal and maintenance not recorded or not done	Deferred maintenance not recorded causing unexpected, additional costs from asset failure	High	Record all deferred maintenance and renewals	Significant	Ensure all deferred renewals work recorded and management aware of impact on service levels if not funded.
6.10	Not all easements recorded or obtained	Council faces legal action or cannot carry out its activities because it does not have legal right to cross a property	Significant	Keep up-to-date record of easements. Establish clear policy for processes to be followed when easements are required.	Significant	Easement information needs to be improved with all identified easements provided with details of interested part. Legal situation to be clarified.
6.11	Insufficient documentation of escalating process decision making	Response to emergency situations reduced, higher expenditure	Significant	Employment of staff with the appropriate qualifications and skills	Low	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
7		Resource Consents and Designations				
7.1	Review of Designations required	Council faces legal action because water assets have not been designated in the District plan	Moderate	Designations reviewed every three years to ensure these are appropriate.	Low	
7.2	Resource Consents	Council faces legal action because resource consents not applied for or conditions not met. Public dissatisfaction with environmental damage being caused.	Moderate	All consents that are required are obtained and consents monitored and reported on as required.	Low	
8		Asset Risks - Water				
8.1	Some treatment plants not capable of meeting drinking water standards	Dissatisfaction of customers from not meeting target water supply gradings due to non compliance with drinking water standards.	Significant	Upgrade of water supplies to meet standards underway with monitoring programme in place.	Low	
8.2	Reticulation - Inaccurate and/or unknown location of main	Asset broken - inability to supply service	Low	Maintain good as-builts that are current via GIS	Low	Update locations as and when data becomes available
8.3	Insufficient reticulation capacity	Low pressure	Low	Maintain reticulation model with updates as required	Low	
8.4	Poor reticulation condition - reduced flows	LoS not achieved	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network	Low	
8.5	Insufficient reservoir storage	Fire fighting Code of practice not achieved	Moderate	Maintain reticulation model with updates as required	Low	
8.6	Insufficient Operational Pump Station Capacity	Low pressure/insufficient flow	Low	Good understanding of schemes capacities and on-going monitoring of usage	Low	
8.7	SCADA Failure	No alarm available, no water	Significant	Back up systems and procedures	Low	Backup system already implemented
8.8	Treatment Plant - Equipment/component Failure	Failure to meet consent conditions, reduced water pressure	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
8.9	Vandalism at facility	Reduced LoS	Significant	Warning via SCADA of any issue at facilities	Moderate	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
8.10	Rising Mains - Insufficient Capacity	Insufficient water during peak usage periods	Significant	Good understanding of schemes capacities and on-going monitoring of usage	Moderate	
8.11	Operator Error	Failure to achieve consent conditions or facility failure	Significant	Employment of staff with the appropriate qualifications, skills and training	Moderate	Upskill staff when new training becomes available.
8.12	Power failure for extended periods	No water - reservoirs run dry	Significant	Standby generators made available in an event of extended power failure	Moderate	
8.13	Fire at facility	Control equipment failure with resulting lack of ability to supply demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
8.14	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
8.15	Snow and wind	Power failure - see power failure	Significant	Standby generators made available in an event of extended power failure	Moderate	
8.16	Flooding	Intakes flooded - poor water quality or inability to pump water	Significant	Management and operational staff have the skills to manage natural events	Moderate	
9		Asset Risks Wastewater				
9.1	Blocked mains occurring on frequent basis	Flooding of roads, health risk	Moderate	Cleaning (via water blasting) those areas most effected on an annual basis	Low	
9.2	Manholes - Insufficient maintenance	Failure leading to blockages - Flooding of roads, health risk	Low	Inspections of key points within network during high rainfall periods	Low	Document and schedule manhole inspections in AssetFinda
9.3	Reticulation - Inaccurate and/or unknown location of main	Asset broken - inability to supply service	Low	Maintain good as-builts that are current via GIS	Low	
9.4	Insufficient reticulation capacity	Surcharging in wet weather - health issues	Low	Maintain reticulation model with updates as required	Moderate	Address known surcharging.
9.5	Poor reticulation condition (blockages)	Failure leading to blockages - Flooding of roads, health risk	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network	Low	Log all blockages in AssetFinda

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
9.6	Insufficient grades or flow to achieve self cleansing velocities	Build up of fats - blockages - Flooding of roads, health risk, increased costs for cleaning	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network. Known areas within network that have issues are inspected on regular basis	Low	
9.7	Chemical damage of pipes	Decreased asset life - premature replacement	Moderate	Inspections of network CCTV, cleaning etc	Moderate	
9.8	Pump Stations - Equipment or component Failure	Wastewater discharges to the environment having an impact on environmental, cultural and health issues. Customer complaints	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
9.9	Pump Stations - Insufficient Wet Weather Storage Capacity	Insufficient storage or capacity resulting in wastewater discharges to the environment having an impact on environmental and cultural issues	Moderate	Good understanding of schemes capacities and on-going monitoring of flows	Moderate	
9.10	Pump Stations - Corrosion and sulphur attack of electrical/control equipment	Surcharging in wet weather - health issues	Low	Monitoring of facilities on a regular basis	Low	
9.11	Insufficient Operational Pump Station Capacity	Surcharging in wet weather - health issues	Low	Good understanding of schemes capacities and on-going monitoring of flows	Low	
9.12	SCADA Failure	No alarm available	Significant	Back up systems and procedures	Low	
9.13	Treatment Plant - Equipment/component Failure	Failure to meet consent conditions.	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
9.14	Ponds - Overloading of Components Treatment Capacity	Failure to comply with resource consents and Customer complaints.	Moderate	Good understanding of treatment capacities and on-going testing and monitoring of flows	Moderate	
9.15	Odours at treatment plant, or reticulation		Moderate	Good understanding of treatment capacities	Moderate	
9.16	Vandalism at facility		Moderate	Warning via SCADA of any issue at facilities	Moderate	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
9.17	Overloading of Components Treatment Capacity	Discharge of Biosolids to environment. Failure to comply with resource consents. Customer complaints	Moderate	Good understanding of treatment capacities and on-going testing and monitoring of flows	Moderate	
9.18	Rising Mains - Insufficient Capacity	Wastewater discharged to the environment at pump stations having an impact on environmental and cultural issues.	Moderate	Good understanding of scheme capacities and on-going monitoring of flows	Moderate	
9.19	Operator Error	Failure to achieve consent conditions or facility failure	Moderate	Employment of staff with the appropriate qualifications and skills	Moderate	
9.20	Power failure	Treatment capacity diminished	Low	Standby generators will be made available in an event of power failure if required	Low	
9.21	Fire at facility	Control equipment failure with resulting lack of ability to continue service	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
9.22	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
9.23	Snow and wind	Power failure - see power failure	Low	Standby generators will be made available in an event of power failure if required	Moderate	
10		Asset Risks Stormwater				
10.1	Mains - Blocked mains prior to storm events	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.2	Manholes - Insufficient maintenance	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.3	Outlets, culverts, Blocked & erosion with insufficient cleaning	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.4	insufficient cleaning	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.5	Insufficient overland flow paths	Flooding of houses and properties	Significant	Modelling of system will ascertain flow path requirements	Moderate	Complete modelling area to reduce risk and identify overland flow paths to protect.

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
10.6	Overland Flow Paths located on private property - no maintenance (overgrown/built upon)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.7	Overland Flow Paths Located on Councils property or roads - no maintenance (overgrown etc.)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.8	Power failure	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
10.9	Fire	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
10.10	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Low	Management and operational staff have the skills to manage natural events	Low	
10.11	Snow and wind	Possible flooding	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
10.12	Hail	Possible flooding	Moderate	Management and operational staff have the skills to manage natural events	Moderate	Utilise good design parameters on pipe entry structures.
11		Asset Risks - Solid Wastes				
11.1	Landfills - Non compliance of consents	Attention by Ecan	Low	Defined post closure procedures	Low	
11.2	Landfills - Erosion of closed land fills by streams or rivers	exposure of old wastes to the environment	Moderate	Watching brief	Moderate	
11.3	RRP (resource Recovery Park): Power failure	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
11.4	Fire	Emergency closure	Low	Redirect to temporary site or TDC	Low	
11.5	RRP - Movement failure caused by, Earthquake, landslide or settlement.	Inability to carry out service	Low	Management and operational staff have the skills to manage natural events	Low	

Appendix B

Risk Management Process

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
11.6	Snow and wind	Disruption of collection cycle	Low	Management and operational staff have the skills to manage natural events	Low	
11.7	RRP - Major Flood	Short term closure	Low	Redirect to temporary site or TDC	Low	
11.8	RRP - Chemical spill	Short term closure	Moderate	Redirect to temporary site or TDC	Low	
11.9	RRP - Dust & noise nuisance	Reputation of Council detrimentally affected	Low	Good practices and processes carried out on site	Low	
11.10	RRP - Loss of market for recyclables	Build up of recyclables	Significant	Different Markets for each recyclable	Low	Contractor wears this risk
11.11	Bin/bag collection - spillage	Litter over wide area	Moderate	Contract processes	Low	
11.12	Bin/bag collection -Loss of contractor providing service	Collection disruption	Low	Management and operational staff have the skills to manage contractual issues and resolution	Low	

Appendix C Significant Forecasting Assumptions

The following table details the significant forecasting assumptions as at March 2021 that affect the utilities services.

Appendix B:

Significant Forecasting Assumptions

Appendix Table 1: Significant Forecasting Assumptions as at March 2021

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
POPULATION CHANGE						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
DEMOGRAPHIC CHANGES						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups
OIL PRICE						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum market has	WDC	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater frequency	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups

Appendix B:

Significant Forecasting Assumptions

historically demonstrated a tendency to stabilise rapidly, where possible.		and/or greater severity.		demand for alternative methods of transport.		

2021-2031 LTP SIGNIFICANT FORECASTING ASSUMPTIONS

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
CLIMATE CHANGE						
The effects of climate change are expected to manifest in three categories: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) general socio-economic consequences of such changes, and c) socio-economic consequences of policies/ measures designed to curb the adverse effects of climate change.	WDC	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY (NZTA) REVENUE						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidized works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths
GRANTS AND SUBSIDIES						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will	WDC	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property

Appendix B:

Significant Forecasting Assumptions

not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.				reduced level of service.		

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
NEW ZEALAND DRINKING WATER STANDARDS & SERVICE DELIVERY						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	WDC Central Government	Legislation changes under urgency in Parliament that must be implemented immediately.	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply
RESOURCE CONSETS						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	WDC	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply
WATER IRRIGATION SCHEMES						
Council does not expect major irrigation schemes to be introduced into the district over the period of the Long Term Plan.	WDC	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal impact on Council, but	Council will monitor the environment in regard to any potential development, and seeks to remain	Roading and Footpaths, Rural Water Supply, Sewerage

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Significant Forecasting Assumptions

				a more considerable impact on the district's agricultural sector.	involved in discussions/proposals.	

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
EMERGENCY EVENT						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	WDC	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups
DEVELOPMENT CONTRIBUTIONS						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable under	WDC	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups

Appendix B:

Significant Forecasting Assumptions

each system will be broadly similar.						

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
DISTRICT ECONOMY						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	WDC	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices- the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups
USEFUL LIVES OF SIGNIFICANT ASSETS AND DEPRECIATION						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support WDC asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply
REVALUATION OF NON-CURRENT ASSETS						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets:	WDC	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property

Appendix B:

Significant Forecasting Assumptions

Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%						

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FUNDS FOR FUTURE REPLACEMENT OF SIGNIFICANT ASSETS						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	WDC	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage
RETURN ON INVESTMENT- ALPINE ENERGY						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it	WDC (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance

Appendix B:

Significant Forecasting Assumptions

is assumed the dividend will remain at 6c.				unlikely to maintain dividends at the proposed level.		

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FORESTRY ASSETS VALUES						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	WDC	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance
CAPITAL DELIVERY						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	WDC	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in any given year, and carried over to subsequent years.	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021, or	Water Supply & all other activities

Appendix B:

Significant Forecasting Assumptions

					very early in the 2021/22 financial year. Due to the nature of the rates smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	
ASSUMPTION	**SOURCE**	**RISK**	**LEVEL OF UNCERTAINTY**	**IMPACT OF VARIATION**	**MANAGEMENT OF RISK**	**ACTIVITY**
RETURN ON INVESTMENTS- OTHER						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	WDC (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance
INFLATION						

Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL).	Business and Economic Research Ltd.	Inflation will be higher or lower than anticipated.	Moderate	A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.	Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan. In the event of significant changes to the underlying costs supporting work in the activity areas, mitigation planning will feature in the Annual Plan.	All activity groups

Year	Roading	Property and Parks	Water	Staff	Other	Wastewater	Capital Expenditure
	%	%	%	%	%	%	%
June 2022	3.3	1.7	7.2	4.8	1.7	7.2	3.0
June 2023	3.1	2.0	3.4	2.4	2.0	3.4	3.0
June 2024	3.0	2.0	2.1	1.5	2.0	2.1	2.6
June 2025	2.9	1.9	2.3	1.7	1.9	2.3	2.6
June 2026	2.9	1.8	2.6	2.0	1.8	2.6	2.7
June 2027	2.9	1.8	2.3	2.2	1.8	2.3	2.6
June 2028	2.9	1.7	3.0	2.3	1.7	3.0	2.8
June 2029	2.9	1.7	3.3	2.4	1.7	3.3	2.8
June 2030	2.9	1.7	3.3	2.6	1.7	3.3	2.9
June 2031	2.9	1.6	2.7	2.7	1.6	2.7	2.7

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
BORROWING COSTS						
Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.	WDC (in conjunction with its financial advisors)	Interest rates will differ significantly from those estimated.	Low	If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.	Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.	Investment and Finance
UNIDENTIFIED LIABILITIES						
It is assumed that Council does not have any unidentified liabilities.	WDC	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

Appendix D References

The following details reports and other significant reference areas associated with the four utilities

Table 10-3: References

#	Title	Issue Date	Sector	Author /Consultant
1	Water Safety Plans - Cannington-Motukaika - Hook Waituna - Lower Waihao - Otaio-Makikihi - Waihaorunga - Waikakahi - Waimate Urban	 Dec-17 * Oct-15 Nov-15 May-15 Dec-17 * Dec-17 * Feb-14	Water	Paul Roberts Water & Waste Manager *= *Submitted for approval*
2	Waimate Stormwater Investigation – Study Report	May-09	Stormwater	Opus
3	Queen Street Stormwater Issues and Options Report	Jul-17	Stormwater	Opus
3	Cast Iron Pipe Assessments	Mar-11	Water	Opus
4	AC Pipe Evaluation Reports	On-going	Water	Opus
5	Pressure Management Study	Jul-09	Waimate Water	Opus
6	Capital Assistance Programme Funding – Otaio-Makikihi	Complete	Water	Dan Mitchell Asset Group Manager
7	Capital Assistance Programme Funding – Lower Waihao	On-going	Water	P Roberts Water & Waste Manager
8	Capital Assistance Programme Funding – Hook Waituna	On-going	Water	P Roberts Water & Waste Manager
~~9~~	~~2011 Valuation~~	~~Sep-11~~	~~Solid Waste~~	~~Opus~~
~~10~~	~~2014 Valuation~~	~~Feb-15~~	~~Three Waters~~	~~In-house / BECA~~
~~11~~	~~2017 Valuation~~	~~Sep-17~~	~~Three Waters~~	~~In-house / BECA~~
12	2020 Valuation	Aug-20	Three Waters	In-house / BECA
13	Disaster Resilience Summary Report	2006	All	Council Asset Management Group
14	Stormwater AMP 2014	2015	Stormwater	Opus
15	Solid Waste AMP 2014	2015	Solid Waste	Opus

Appendix D:

References

#	Title	Issue Date	Sector	Author /Consultant
16	Water AMP 2014	2015	Water	Opus
17	Parks and Recreation AMP 2014	2015	Parks and Reserves	Opus
18	Wastewater AMP 2014	2015	Wastewater	Opus
~~18~~	~~AMP 2007 Potable Water: Urban & Rural Schemes~~	~~Jul-07~~	~~Water~~	~~Opus~~
~~19~~	~~Council's 2007 Wastewater AMP~~	~~Sep-07~~	~~Wastewater~~	~~Beca~~
~~20~~	~~Stormwater AMP 2008~~	~~Sep-08~~	~~Stormwater~~	~~Maunsell~~
~~21~~	~~Solid Waste AMP 2008~~	~~Sep-08~~	~~Solid Waste~~	~~Maunsell~~
19	Leak Detection programme	Jul-05	Water	Detection Services
20	Waimate Water Supply Leakage Detection and Analysis Study	Jul-09	Water	Opus
21	Council's Assessment of Water & Sanitary Services	Jun-11	All	M McTigue Water & Waste Manager
22	Leak Detection Programme	Oct-98	Water	Opus
23	Issues & Options for Universal Water Metering	Oct-98	Water	Opus
24	Waimate AMP Compliance Status	Feb-11	All	Waugh Infrastructure Management Ltd






Wastewater Asset Management Plan

2021 - 2031

Waimate District Council

Waimate
District Council

Quality Record Sheet

Waimate District Council

Wastewater AMP

2021-2031

Issue Information	
Issue Purpose	Draft for comment
Issue Date	May 2021
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Authorisation	
Waimate District Council	Dan Mitchell
Updated by	Kierie Zeelie (Waugh Infrastructure Management Limited) Dan Mitchell (Waimate District Council) Paul Roberts (Waimate District Council)
Update reviewed by	WDC & Waugh Infrastructure
Date	May 2021
Report Number	64-073-1024

Quality Information

Quality Information

Document	Wastewater Asset Management Plan
Ref	Version 3.2
Date	May 2021
Prepared by	Waimate District Council
AMP Development Process Project Sponsor: Dan Mitchell (Water & Waste Manager) AMP Authors: K Zeelie (Waugh Infrastructure Management Limited) Paul Roberts (Waimate District Council) Project Team: Lifecycle: Dan Mitchell Population Projections: Rationale Consultants Limited Financial: Dan Mitchell	
Date Adoption by Council: ...../...../.....	
Copies	

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
2.0	16/3/18	Full Update of AMP	Dan Mitchell	
2.1	20/3/18	Updated financials	Dan Mitchell	
3.0	30/11/20	Updated draft AMP		
3.2	24/04/21	Finalise draft AMP	Paul Roberts / Dan Mitchell	

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1.0 EXECUTIVE SUMMARY

WASTEWATER 	The wastewater activity is a core Council activity that contributes towards the provision of good quality infrastructure and helps ensure public health and safeguards the environment. The wastewater system comprises pipes, pump stations, treatment facilities and other assets that represent a significant council investment over many years.
FOCUS 	**New Capital and Growth** – to improve wastewater collection, treatment and disposal across the district and comply with the ever-increasing environmental compliance framework -to provide capacity to meet the required standards, future demand and support the expansion of development areas as identified by Council. **Renewals** – develop and implement a renewals strategy; including condition and criticality assessments. Ensure appropriate budgets are available to replace aging and/or deteriorating assets and align renewals with other infrastructure upgrades/renewals.
COMPLIANCE	**Resource Consents** - Council has a number of wastewater related resource consents and aims to achieve compliance with all resource consent conditions. Regular compliance monitoring and reporting is undertaken
SERVICE DELIVERY 	**Service Delivery** - the wastewater activity is delivered via a combination of in-house resources and contracted services with the operation and maintenance activities undertaken by inhouse resources. Operation and maintenance costs will increase due to: • separation of stormwater and wastewater • increased environmental compliance requirements, • expanding asset base, • increased community expectations
PERFORMANCE	**Performance** - a comprehensive performance monitoring and reporting framework ensures that legislative requirements and other KPIs are regularly assessed and reported on.
RISK & RESILIENCE	The ability to deliver capital projects on time may be affected by the skills shortage and increased consultation processes required as part of Te Mana o te Wai processes **Understand** our communities, the hazards and risks and acknowledge that failure will occur. **Ensure** early detection and recovery through connecting communities, supporting community organisations and robust infrastructure assets

1.1 What are we doing

We protect public health and the environment by providing two wastewater systems that collect, treat and dispose of liquid waste to acceptable environmental standards. These wastewater systems are located at:

- Waimate
- St Andrews

Council supports this service by:

- Providing, operating and maintaining wastewater infrastructure in compliance with New Zealand legislation, standards and resource consents
- Responding to call outs and service disruptions quickly and efficiently
- Planning for future development and needs.

1.2 Why are we doing it?

Council has a legal obligation under the Health Act 1956 to improve, promote, and protect public health within the District. This includes identifying the need for wastewater services and either providing these directly or overseeing the service if it is provided by others. The Council sees the provision of reliable wastewater collection and treatment services to the community as a major contribution to the District's economy and to resident's wellbeing. The Local Government Act 2002 requires ongoing wastewater services unless specific approval is sought to withdraw from this.

Council's wastewater activity contributes primarily to the following community outcomes

Community outcome	How it contributes
Thriving Community – A District that provides infrastructure for economic activity	The timely provision of utility services is essential to supporting growth
Safe and Healthy People A place where people are safe in their homes, work and public spaces	Protects public health by ensuring a safe and viable wastewater disposal system
Our services, infrastructure and environment enhance quality of life	We have reliable, efficient and well planned infrastructure that meet the needs of residents
Sustainable District and Environment We value the natural environment, biodiversity and landscapes	We preserve the environment by ensuring the quality and quantity of discharges to the environment

Council identified a number of significant negative effects that the wastewater activity may have on the well being of the community and the environment. Council developed appropriate mitigation measures to eliminate or minimise these effects.

1.3 Where are we headed?

Council's strategic goals for wastewater over the next ten years is:

- To ensure that adequate Wastewater Services are provided and maintained for the wellbeing of the public both now and in the reasonable foreseeable future.
- To ensure that the long-term operation and maintenance of the wastewater treatment plant is environmentally sustainable.
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Waimate District Council (Council) owned assets.

There are a number of key issues facing Council over the next ten years and beyond:

- Environmental compliance – Council operate the wastewater systems under resource consents granted by the Canterbury Regional Councils (ECan). These consents apply to wastewater collection and discharge. These consents require significant sampling, monitoring, operation and maintenance methodologies and regular reporting.
    - Increased community involvement through Te Mana o te Wai
- Separated wastewater and stormwater systems
    - Inflow – through illegal connections such as roof downpipes, yard drains, or indirect connections with stormwater pipes
    - Infiltration –through joints, cracks and misaligned pipelines
    - Exfiltration - escape of wastewater from the wastewater collection system into the surrounding soil via cracks or malfunctioning pipe joints
- Central Government's 3 Waters Reform Programme and funding package to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure.
- Central Government's 3Waters Review is considering
    - New national standards for the treatment of wastewater and management of wastewater overflows
    - New obligations on wastewater and stormwater network operators to implement a risk management plan
    - Nationally consistent monitoring and reporting requirements for wastewater and stormwater networks
    - Stronger Central Government oversight
    - Network operators to
        - adopt industry good practices and minimising risks to public health and the environment, while meeting local community/iwi values
        - implement a certified risk management plan that specifies how they will: –
            - Operate and maintain networks to meet current and future regulatory requirements; e.g. freshwater objectives and limits
            - Proactively manage risks to public health and environment
            - Address community and Māori cultural expectations for wastewater disposal
            - report on nationally prescribed environmental performance measures, and compliance with national standards
- Sludge management
- Increased focus on ageing and failing infrastructure
- Maintaining appropriate data and monitoring systems
- Ensure adequate in-house staff resource capacity and capability
- Investigating and implementing improved efficiencies
- Ongoing affordability of the wastewater system

The wastewater system represents a significant community investment. With age, asset condition and service potential reduce, and an important aspect of asset management is determining the right time and right level of renewals investment in order to maintain the agreed levels of service over the long term. Council will continue implementing the appropriate intervention strategies i.e. a combination of maintenance, repair and renewal activities to maintain the service.

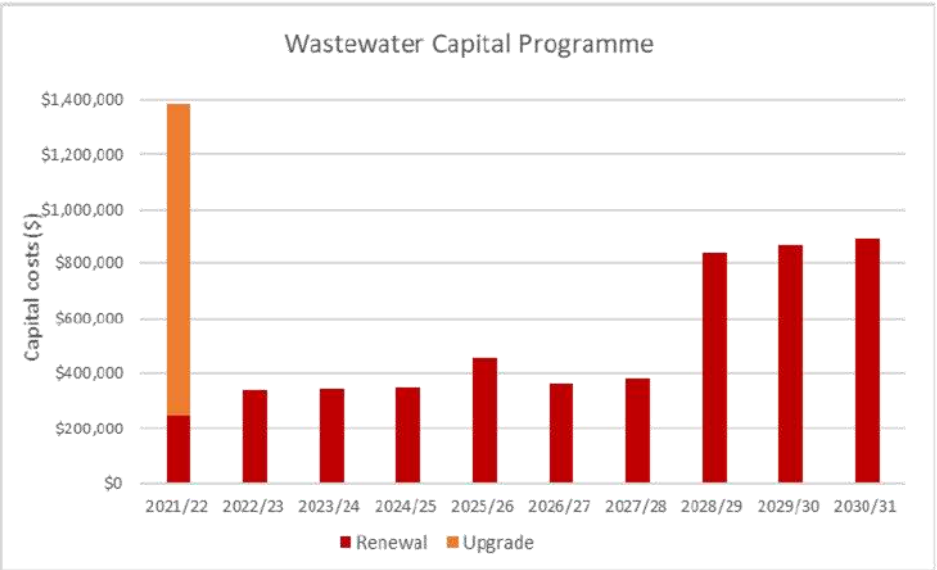
1.4 How will we get there?

Council plans to maintain current levels of service for the life of this plan, unless legislation, consent conditions, or community expectations change. Over the next ten years Council plans to:

- Continue to collect, treat, and dispose of wastewater
- Separate stormwater and wastewater systems
- Upgrade systems to meet the environmental standards
- Develop Risk Management Plans (MfE - Action for Healthy Waterways)
- Plan for future development and needs
- Protect the environment through resource consent compliance
- Consult with the community on issues such as health and legislative compliance issues

This vision is supported by a detailed wastewater asset management plan.
Significant projects and their funding sources are summarised in the following table and chart:

Project Description	Year	Inflated Amount
New Capital works -		
552074505 - Sewer - Edward Street Upgrade	2021/22	$616,193
552074520 - Sewer - WWTP Alarming/Monitoring of Out flow Meter		$4,112
552074528 - Sewer - Queen Street upgrade		$129,833
552074529 - Sewer - Septic Waste Receival Unit		$80,658
552074530 - Sewer - Te Kiteroa Line		$312,100
Total		**$1,142,896**
Renewals		
Mains & Plant Renewals	2021/22	$245,300
Mains & Plant Renewals	2022/23	$340,186
Mains & Plant Renewals	2023/24	$343,630
Mains & Plant Renewals	2024/25	$351,000
Mains & Plant Renewals	2025/26	$452,659
Mains & Plant Renewals	2026/27	$363,319
Mains & Plant Renewals	2027/28	$379,470
Mains & Plant Renewals	2028/29	$835,224
Mains & Plant Renewals	2029/30	$867,894
Mains & Plant Renewals	2030/31	$891,300
Total		**$5,069,982**



Key projects:

- Upgrades
  - Queen Street
  - Edward Street
- Septic waste receival unit
- Te Kiteroa line
- Renewals – refurbishment, replacement of wastewater assets estimated to be $5.07m over the next 10 years. All wastewater system renewal work will be funded by the annual depreciation provision where funds are available

To ensure on-going affordability of the wastewater service Council will continue to consider options in delivering the service.

1.5 How well are we doing and how well do we measure progress?

Council will continue to report on the non financial performance measures, in accordance with 261B of the Local Government Act 2002, as this covers the key expectations in terms of the delivery of the service.

Council have reviewed and updated its systems and processes to ensure alignment and compliance with these rules.

The linkage between community outcomes, levels of service and performance measurement is shown in the following table.

Community outcome	Level of Service	Performance Measure
Thriving Community – A District that provides infrastructure for economic activity	Council respond to problems quickly	Response & Resolution times (NFPM3)
Safe and Healthy People A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Council provide reliable and effective wastewater systems while complying with environmental standards	Number of complaints (NFPM4)
		Number of dry weather overflows from Council's sewerage system (NFPM1)
Sustainable District and Environment We value the natural environment, biodiversity and landscapes	Council provide wastewater systems that protect the natural environment	Compliance with Resource Consent conditions (NFPM 2)

1.6 What resources do we have and what resources do we need?

People –
The Water and Wastes Unit has seven full time equivalent staff, including operational staff. The Water and Wastes Unit provides management and engineering expertise to the Asset Group. The Unit utilises Council inhouse unit and contractors to maintain, renew, and construct assets through various contractual agreements. The Unit augments its skill base through the engagement of specialist consultants as required to undertake specific projects and works. The Waters and Wastes Unit is adequately resourced but the outcomes of the new regulatory framework and Government 3Waters Review will place even greater demands on already stretched resources.

It is likely that a shortage of technically skilled people to design, construct and manage water assets will continue to have an impact on this activity in future years. This is a global issue which is also affecting other local authorities.

Physical Assets -
Council manages two wastewater systems. These systems consist of pipes, pump stations, treatment facilities and other assets.

Length of wastewater mains = 39.2km
Number of manholes = 308
Number of pump stations = 2

The latest valuation, August 2020, estimates the replacement value of the wastewater system to be $25.1m.

1.7 Who pays for it?

This activity is funded by targeted rates from properties that have access to wastewater systems.

2.0 INTRODUCTION

This section sets out the scope and objectives of this Asset Management Plan (AMP), describes the interrelationships with other planning documents of the Council and shows the AMP framework and describes the asset management progress over the last 15 years.

2.1 Purpose of the Asset Management Plan

The purpose of this AMP is to outline and to summarise in a coordinated manner the Council's long-term management approach (more commonly called Asset Management) for the provision and maintenance of Wastewater Services throughout the District.

This AMP demonstrates how Council will:

- Detail the extent and quality of services demanded (or required) by the community and legislation now and in the future.
- Have clear linkage to community agreed outcomes and the agreed Levels of Service.
- Prudently manage the acquisition, maintenance, operation, renewal and disposal of wastewater assets in ways that optimise the value of services delivered to the community.
- Assess the risks of failing to deliver Levels of Service for its activities and provide appropriate means of mitigating those risks.
- Justify short, medium and long term funding requirements.
- Manage the risk of asset failure.
- Provide adequate funding to manage the assets according to assessed priorities.
- Proactively improve knowledge of its assets.

This AMP is intended to be read in conjunction with the 2021-20 LTP and fulfils requirements of the Local Government Act 2002 (and amendments), Schedule 10.

Asset Management
The overall objective of Asset Management is to:

Deliver the required level of service to existing and future customers in the most cost effective manner

2.2 Assets Included in This Plan

The Council is responsible for the Waimate urban wastewater system.

The Council also holds a resource consent for the St Andrews wastewater system. A replacement consent was granted on 24 August 2017 that closely replicates the original consent. This consent has a duration of 15 years. This is a private system consisting of individual private septic tanks on each property. Council engage a septage disposal contractor to maintain each septic tank to meet the requirements of the consent.

The inventory of public wastewater assets owned by the Council and managed by the Wastewater Services is shown in Table 2-1 below:

Table 2-1: Summary of Wastewater Services Assets Owned by WDC

Asset Type	Length/Number	Replacement Cost
Reticulation		
Pipe	39.2 km	$13.01m
Laterals	10.7km	$5.9m
Manholes	308	$2.7m
Plant		
WWTP		$3.3m
Milford Pump Station		$0.1m
Total		**$25.1m**

2.3 Relationship with Other Plans

The AMP relates to the LTP and other key Council plans, documents, policies and processes. These are mainly driven by legislation and obligations that central government, through legislation, assign to local authorities. The community outcomes guide the strategic and day-to-day decision making for the Council.

2.4 How This Plan will be Used

Development of an Asset Management Culture

The on-going development and successful implementation of asset management requires an organisational culture of asset management from both 'bottom-up' and 'top-down'. To be successful the asset management culture needs to be consistently modelled and supported by the Chief Executive and senior managers in conjunction with the elected Council.

It also needs to align with and reflect the Council's LTP and strategies. These requirements are supported in the new ISO 55000 standard for asset management. This process has been reinforced by the establishment of the Council's Asset Management Policy in 2009 and the AMP policy process included in Section 2.6.

Roles and Responsibilities of Council Staff

The roles and responsibilities of Council staff have been defined in respect to the on-going to enable the AMP to remain relevant and current. The following table details how this is and will be carried out within Council:

Table 2-2: Activity Management Plan Enactment

	Item	How is this Done
1	Organisational culture of asset management developed	Asset Management Policy 2009
2	Council Staff understand the reasons for the plans and the implications for the long term use of them	On department basis
3	The AMPs are adopted/accepted by staff	Adopted by Council
4	Council staff understand what is in the plans and how it could affect their day to day work including their responsibilities and reporting requirements as detailed in the different sections within the AMP	Training Programme / inputs required to develop and update the AMP's
5	Understand all the reporting requirements for Levels of Service and Internal Benchmarking	Training Programme and Implementation of LGA 2002 amendments

Resourcing of Asset Management Programmes

To be effective asset management programmes must be adequately resourced and therefore require on-going budget to deliver identified improvements and keep plans and processes current with evolving practice. For asset management to be successful in Waimate District there must be a commitment recognised across the organisation. This commitment must translate into budget, human resources, and management accountability.

2.4.1 Implementation

This AMP includes improvement and expenditure programmes that will be implemented with the objective of achieving community outcomes and delivering the stated Levels of Service for this Activity.

2.5 Wastewater Activity Outcomes

The Council provides Wastewater Services for the following reasons:

- Protects public health by ensuring a safe and viable wastewater disposal system. The provision of Wastewater Activity enables properly treated wastewater discharges to the environment thereby promotes the protection of the environment.
- We have reliable, efficient and well planned infrastructure that meet the needs of residents.
- The timely provision of utility services is essential to supporting growth.
- We preserve the environment by ensuring the quality and quantity of discharges to the environment.

2.6 Council's AM Policy – Appropriate Level

2.6.1 Objective of the Asset Management Policy

The objective of the Council's Asset Management Policy is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and Levels of Service, manage related risks, and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets and levels of management as required. The delivery of service is required to be sustainable in the long term and deliver on Council's economic, environmental, social, and cultural objectives.

The Asset Management Policy requires that the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets.

The Councils Asset Management Policy sets the appropriate level of asset management practice for Council's Utilities, Community Facilities and Transportation.

Asset Management Policy Principles

The following principles will be used by Council to guide asset management planning and decision making:

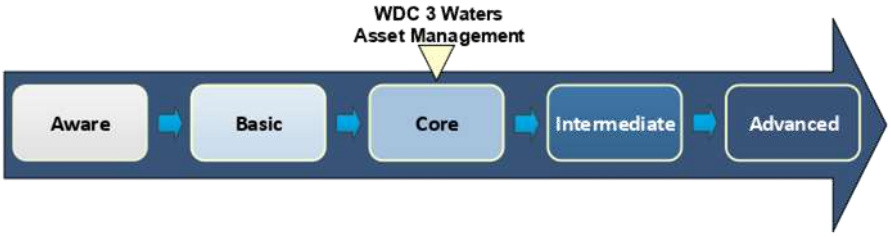
- Effective consultation to determine appropriate Levels of Service.
- Ensuring service delivery needs form the basis of asset management.
- Integration of asset management within and across Council utilising corporate, financial, business and budgetary planning using activity management plans and Council's LTP to demonstrate this.
- Integration of asset management within Council's strategic, tactical and operational planning frameworks.
- Informed decision making taking a lifecycle management and inter-generational approach to asset planning.
- Transparent and accountable asset management decision making.
- Sustainable management providing for present needs whilst sustaining resources for future generations.

Policy Linkages to Other Plans

This Asset Management Policy links to Council's LTP and the Wastewater Services asset management. An approach where planning is based around communities of interest is favoured, as this aims to promote an integrated management regime and encourage efficiencies across the District's Wastewater Services.

Structured Assessment of Asset Management Practice

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Wastewater assets in August 2009. This structured assessment followed the guidance provided in Section 2.2.4 of the International Infrastructure Management Manual (IIMM) 2006. The results of this assessment were that the Wastewater was considered Core.



Future structured assessment should be carried out with reference to Section 2.1.3 of the International Infrastructure Management Manual (IIMM) 2011

Implementation and Review of Policy

This Asset Management Policy has been implemented in conjunction with the 2011,2014, and 2017 AMPs and –corresponding LTP's. The next full review of this Asset Management Policy was programmed to be completed in June 2017. A light review has occurred with a full review scheduled as part of the improvement plan.

Asset Management Implementation Strategy

Council staff has completed a detailed analysis of appropriate asset management practice within the guidance offered by this Policy. This analysis has examined asset description, Levels of Service, managing growth, risk management, asset lifecycle decision making, financial forecasts, planning

assumptions and confidence levels, improvement programmes, use of qualified persons and Council commitment to asset management planning.

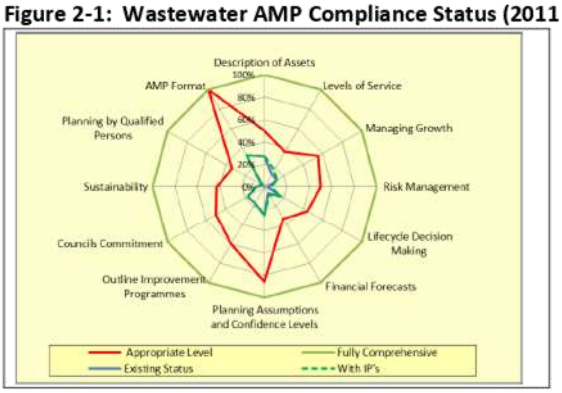
Appropriate Practice Policy

Develop long term improvement programme to achieve the Council's appropriate practice policy.

2.6.2 Wastewater AMP Compliance Status

The assessment on the Wastewater AMP in 2014 indicated a increase in the level of sophistication of the AMP and management of the assets since 2012. A long term programme to achieve the appropriate AM level is required. The improvements shown in Section 10.0 will assist in this process.

Figure 2-1: Wastewater AMP Compliance Status (2011 & 2014)



2.7 Key Stakeholders

Key stakeholders are those who have significant specific involvement with the assets and/or the service facilitated by the assets and describes their particular main interests and is limited to the main issues for key stakeholder groups. 'Public Service providers' include schools, dentists, doctors, hospitals, and other government organisations. 'Asset Managers' are those District Council staff (engineers and others) whose responsibility it is to manage the services made possible by the assets covered in this AMP.

The key stakeholders and the outcomes that they require for the Wastewater Activity are detailed in Table 2-3. Different issues will require different levels of consultation; from a broad approach to specific and limited to those directly affected. This is indicated under Consultation Range (Broad ***, Moderate **, Limited *).

Table 2-3: Waimate District Stakeholders

	Key Stakeholder	Consultation Range	Desired Stakeholder Outcome(s)
External	Council customers and resident population	***	Reliable service that meets strategic and sustainable drivers
	Canterbury Regional Council	**	Resource use is sustainable as directed in the RMA 1991
	Local Government New Zealand or Central Government	*	Ensure that Local Government Act is complied with (via Auditor-General)
	Department of Conservation	*	Enhance conservation value of natural waterways (i.e. rivers/streams)
	Local Iwi/Ngai Tahu	*	Enhance waterways for Mahinga kai, cultural/spiritual values

Key Stakeholder		Consultation Range	Desired Stakeholder Outcome(s)
	Local Businesses/Industries	**	Wastewater Services to suit commercial needs and expansion, at affordable cost
	Wider Community	*	Enhance landscape and aesthetic values of farmland and plains.
	Ministry of Health	*	Wastewater effluent quality is suitable, consistently assured, does not spread diseases
Internal	Waimate District Council	***	Maximise the four aspects of well-being through provision of the Wastewater Services Activity
	Elected Officials	***	Owner of assets, responsible for sustainable service levels under the LGA 2002 (2012 amendment)
	Council committees	*	As per delegated authority from Council
	Executive	***	Compliance with regulations, service reliability, quality and economy
	Asset Managers	*	As above plus policy, planning and implementation of infrastructure and service management activities (e.g. operations, demand management, maintenance, construction). Safety. Effective corporate support for decision-making, service management, procurement, finance, communications, I.T., staff and other resources
	Planners	*	AMP support for Long-term Community Plans. Infrastructure support for current/future district activities
	Finance	**	Proper accounting for assets and for services consumed by asset management activities
	Customer Services	*	Systems which minimise and resolve complaints/enquiries about service
	Information Services	*	Clarity of technical and budget requirements for systems and support

2.7.1 Relationships with Other Bodies and Organisations

Tangata Whenua - Kaitaikitanga, tikanga

For Maori, linking the past, present and the future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori culture.

Council will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today, and seek to establish the right Tikanga that will enable us to deliver water services in an integrated and sustainable way.

Canterbury Regional Council - Environment Canterbury (ECan)

Environment Canterbury is delegated responsibility for management of the water resources within the District and achieves this through Regional Plans. These plans provide a framework for the sustainable environmental management of Canterbury's physical and natural resources. The change of use of land, taking of water, diverting of water, disposal of water, and discharge to air, require resource consents. Therefore, Council must liaise with Environment Canterbury in obtaining and complying with consents in relation to the Water services Activity.

New Zealand Water

The NZW provides a forum for the exchange of ideas between those involved in the 'water industry'. The NZW also manages projects such as the development of national codes of practice. In recent times, the NZW has taken on the role of lobbyist to Government on water issues.

IPENZ, IPWEA, LGNZ, SOLGM

Each of these organisations provides peer support and exchange of information to foster appropriate practice and share/manage issues that arise.

2.7.2 Community and Public Health

Community and Public Health (CPH) have an interest in ensuring the public health of communities on behalf of the Ministry of Health. With respect to the Wastewater Services this role is predominantly concerned with the disposal of wastewater effluent where this could compromise community health.

2.7.3 Other Organisations

Council has a consultative relationship with other organisations including:

- Fish and Game, Central South Island
- Irrigation New Zealand
- Meridian
- Federated Farmers

2.8 Progress Since Last AMP

2.8.1 Background

Asset management in New Zealand has developed over the last 15 years in response to the requirement to justify and improve the level of investment in and management of community driven infrastructure. Council asset management has mirrored this development to the point that it will be at the appropriate level within six to nine years.

2.8.2 Key Advances in the 2021 AMP

The following matters represent the most significant changes to this Wastewater AMP, over the period 2011 to 2021:

- Data – Systems and Quality
- Asset Data Capture
- Asset Data Quality
- Complaints resolution
- Criticality Assessments
- Government and Industry direction

2.9 Information

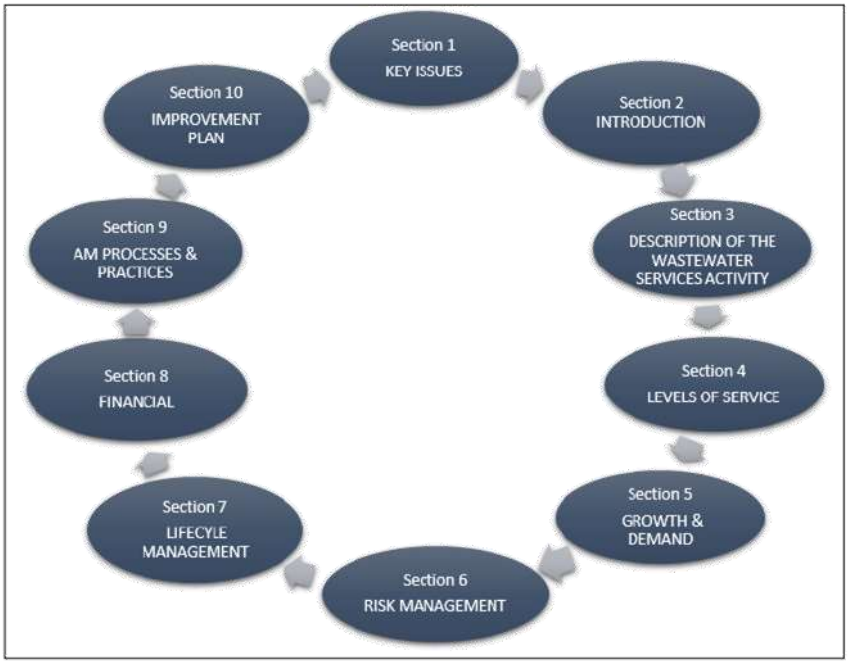
The information for this Wastewater AMP has been derived from the following sources:

- 2020 Valuation
- 2018 AMP
- Council reports and staff knowledge

2.10 The Asset Management Plan Format

A top down approach has been taken to develop the AMP, using existing data followed by data improvement. The structure of this plan mirrors the logical process followed for asset management planning as shown in Figure 2-2.

Figure 2-2: Asset Management Process



2.10.1 Key Elements of this Asset Management Plan

The key elements of this AMP are shown in Table 2-4 below.

Table 2-4: Key Elements of this AMP

Section	Content
Section 1: Key Issues	Describe the challenges and aspirations faced by the Wastewater Services and inform of the strategic direction for the short term and long term.
Section 2: Introduction	Sets out the purpose of this AMP, indicates the key stakeholders, describes the asset management progress over the last 15 years and shows the plan framework.
Section 3: Description of the Wastewater Services activity	Covers the rationale for ownership of the Wastewater Services assets and the description of assets covered under this plan.
Section 4: Levels of Service	The Levels of Service for the Wastewater Services are defined and the performance measures by which the service levels will be assessed.
Section 5: Growth and Demand	Provides details of growth forecasts, which affect the management, and utilisation of the Wastewater Services assets.
Section 6: Risk Management	Details the Risk Management Processes utilised by Council for assessing and managing risk within the Wastewater Services.
Section 7: Lifecycle Management	Outlines what is planned to manage and operate the assets at the agreed Levels of Service while optimising lifecycle costs.
Section 8:	Identifies the financial requirements resulting from all of the information presented in the previous sections.

Section	Content
Financials	
Section 9: AM Practices and Processes	Outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP.
Section 10: Improvement Plan	This section details the improvements to Asset Management within Council that will lead to an increase in confidence in the management of the assets.

3.0 DESCRIPTION OF THE WASTEWATER SERVICES

This section of the AMP covers the rationale for ownership of the Wastewater Services assets and the description of assets covered under this AMP. This section also highlights the critical Wastewater Services assets.

3.1 Waimate District Overview

The Waimate District is located at the southern end of the Canterbury Region. The Canterbury Region has an estimated population of approximately 521,832.

The Waimate District is bounded by the Waitaki and Pareora Rivers to the south and north respectively, the Hakataramea Valley and mountains of Mackenzie District to the West and the Pacific Ocean to the East.

The main centre of population is the town of Waimate itself, a town housing a population of some 2,778 people. This represents approximately 40% of the total population of the district of 7,536 (source 2013 census). Other centres of population include the coastal townships of Glenavy, Willowbridge, Makikihi, Morven and St Andrews. The Waimate District community profile is presented in Table 3-1.

Table 3-1: Waimate Community Profile

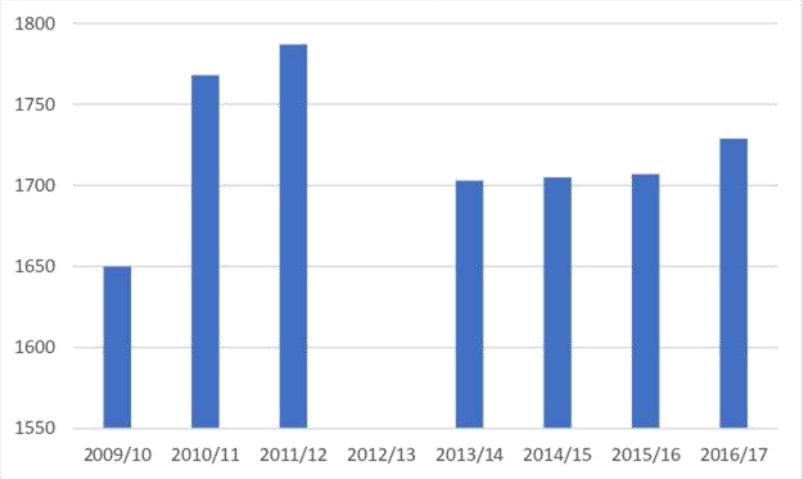
Area	3,582 km^2		
Population (2013 census)	7,536	Households (occupied dwellings)	3,234
Employees	53.08 FTE's	Rating system: Mix of General Rates and Targeted Rates	
Infrastructure (as at 30 June 2020):		Total rateable properties	4,092
Length of roads/streets	1,335 km	Average total rates per property	$2,934 inc. GST
Length of wastewater network	39.2 km	Council external	$2.60m
Length of stormwater pipes and drains	15.2 km	**Climate:**	
Length of water pipes	898 km	Mean Annual Rainfall	600 mm

3.2 Description of Activity

The Council collects wastewater from approximately 1,850 connected properties in the Waimate urban wastewater system. Customers include residential, community and industrial/commercial.

The Council also holds a resource consent for the St Andrews wastewater system. A replacement consent was granted on 24 August 2017 that closely replicates the original consent. This consent has a duration of 15 years. This is a private system consisting of individual private septic tanks on each property. Council engage a septage disposal contractor to maintain each septic tank to meet the requirements of the consent.

Figure 3-1: Waimate Urban Wastewater System Connections

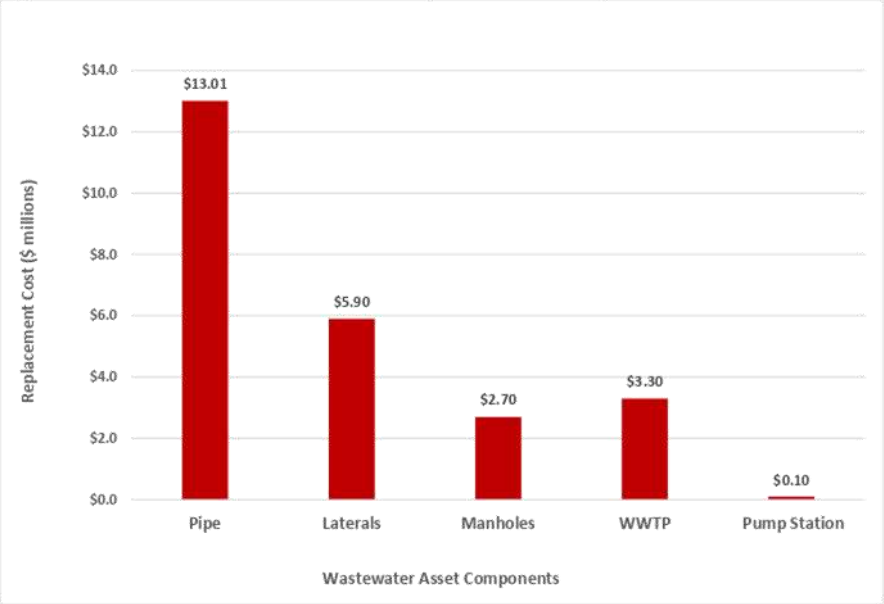


The figure above graphically represents the wastewater connections for the Waimate urban wastewater system. It should be noted that the increase in connections are due to improved data and knowledge rather than increase in population or new connections and decrease in 2013/14 due to change to actual connections and not rated (some properties may be rated for greater than one connection but still have one connection.)

Table 3-2: Summary of Wastewater Assets (Asset Valuation 2020)

Asset Description	Units	Quantity
Reticulation:		
Gravity pipes	m	34,391
Rising mains	m	4,789
Laterals (mapped)	No.	1,041
Inspection Pits / Poo Pits	No.	18
Cleaning Eyes	No.	46
Valves	No.	13
Capped Ends	No.	32
Manholes	No.	308
Plant:		
Wastewater Treatment Plant	No.	1
Pump Stations	No.	2

Figure 3-2: Waimate Urban Wastewater System Asset Components



The wastewater system is made up of the following components:

- Wastewater pipes (rising mains, gravity pipes)
- Wastewater laterals
- Wastewater point assets (inspection pits, poo pits, cleaning eyes, valves and capped ends)
- Wastewater manholes
- Pump stations
- Wastewater treatment plant (ponds, screening, irrigation) and associated buildings

3.3 Wastewater Pipes

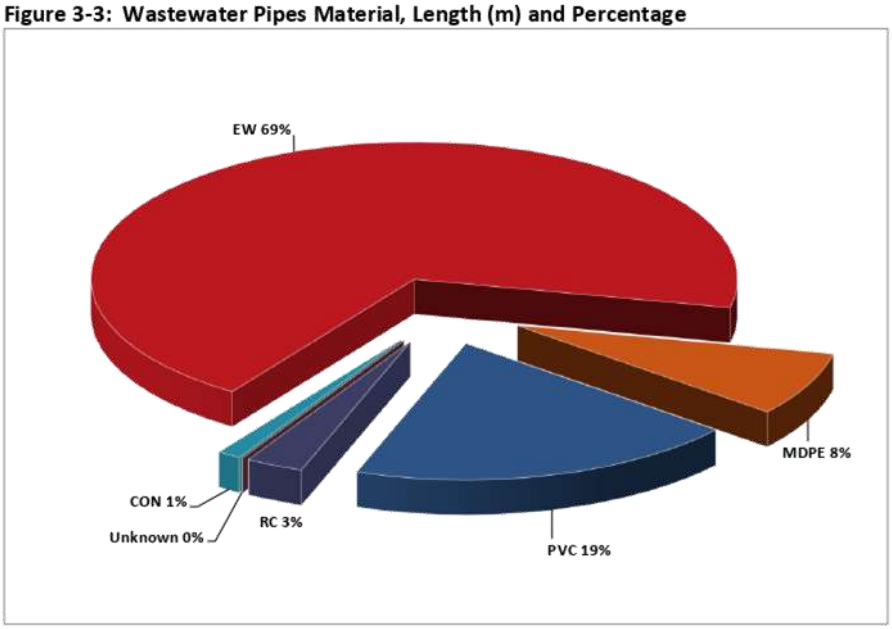
3.3.1 Asset Description

The total length of gravity pipes and rising mains is 39.2 km (not including laterals). The main purpose of the wastewater pipes is to take sewerage from the customer's point of discharge (normally property boundary) and transport to the wastewater treatment plant.

Pipe Material

The predominant pipe material is earthenware (EW) making up 26.9km (69%) of the wastewater reticulation.

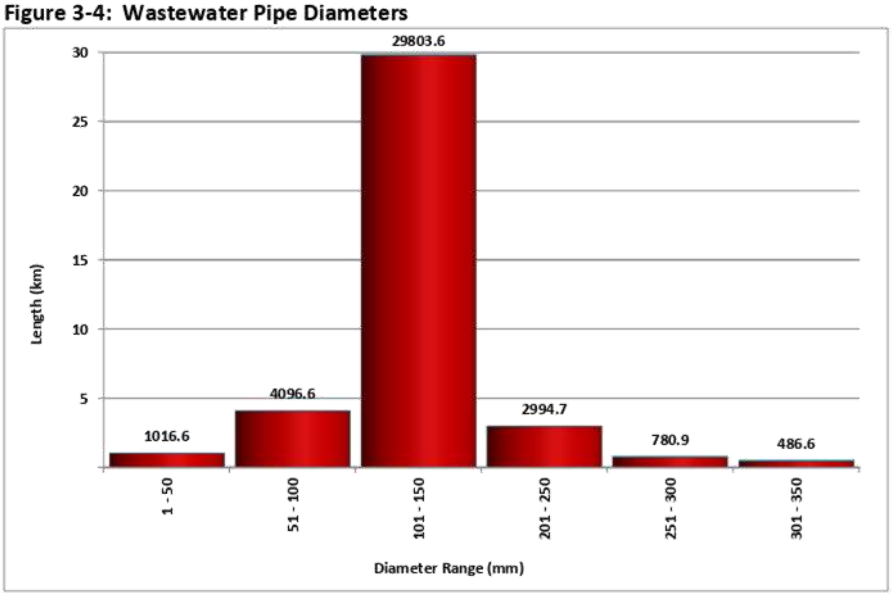
Figure 3-3: Wastewater Pipes Material, Length (m) and Percentage



Pipe Diameters

As shown in Figure 3-4 the majority of the wastewater pipes are of 150 mm diameter (29.8 km, 76%).

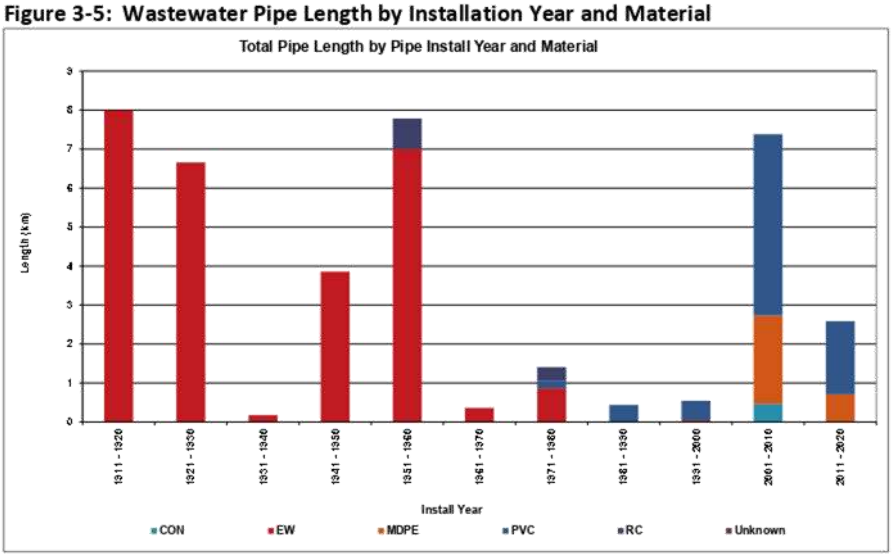
Figure 3-4: Wastewater Pipe Diameters



Pipe Age

The wastewater pipe assets range from new to 105 years of age. The distribution of wastewater pipe material length versus installation year can be seen in Figure 3-5.

Figure 3-5: Wastewater Pipe Length by Installation Year and Material



It is evident from the above that the available and preferred pipe material was earthenware (EW) during the development and construction of the scheme. However, during the 1950's to 1960's other materials such as reinforced concrete (CON) was trialled. From the 1970's onwards Polyvinyl Chloride (PVC) became the material of choice.

The base lives of pipe materials as stated in the 2020 valuation are shown below.

Table 3-3: Economic Lives of Wastewater Pipe Materials

Material	Base Lives (Years)
EW	80
PVC	100
MDPE	100
CON	60

Figure 3-6: Wastewater Pipes Remaining Useful Life by Material Type

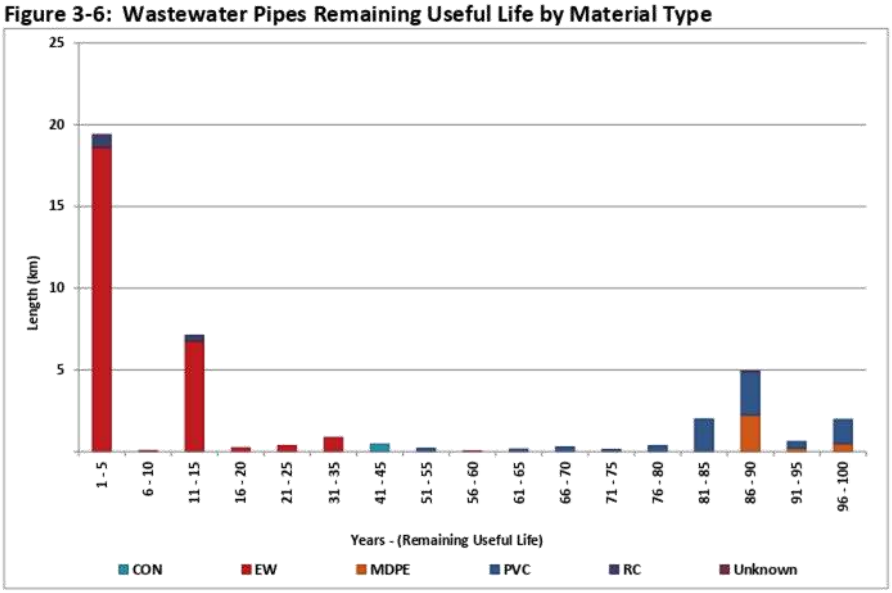


Figure 3-6 above shows the remaining useful life by material type. From this it can be seen that:

- Approximately 18.6 km of earthenware pipe and 0.8 km of concrete pipe will reach the end of its expected economic life within the first five years of the Plan
- Approximately 6.8 km of earthenware pipe and 0.35km of concrete pipe will reach the end of its expected economic useful life within the 11 to 15 year window.

3.3.2 Condition of Reticulation

Pipe condition ratings for all pipe assets are stored in AssetFinda. These condition ratings have historically been based on pipe age, material and some field inspection. There are areas of the network that are showing signs of end of life (increase in blockages etc). Over the next three years additional condition assessment will be instigated to provide greater confidence in the condition. Generally pipe renewals are programmed on the frequency of blockages or other maintenance activities.

3.4 Wastewater Laterals

Council is responsible for the laterals from the wastewater pipe to the property boundary when the main is within a road reserve. The property owner is responsible for the lateral from the house to the Council pipe when the pipe is not on road reserve or Council property.

There are approximately 1,041 laterals in the urban wastewater system. These laterals are mainly 100 mm diameter.

Currently the spatial data for laterals is incomplete. A project is programmed to ensure that drainage plans from each respective property file (when available) are transposed in to AssetFinda.

3.5 Wastewater Manholes, Point Assets and Pump Stations

Table 3-4 details the extent of the wastewater manholes, 'point' assets (cleaning eyes, inspection pits, poo pits, capped ends and valves) and pump stations:

Table 3-4: Wastewater Manholes, Point Assets and Pump Stations

Community	Capped End	Cleaning Eye	Inspection Pit	Manhole	Poo Pit	Pump Station	Valve
Waimate Urban	32	46	13	308	5	2	13

3.5.1 Condition

There is no CCTV data recorded for the condition of the laterals. Council Engineers have assumed that the condition of each lateral is consistent with the adjacent pipes. The spread of the condition grades for laterals across the Waimate urban wastewater system is therefore assumed to be the same as for the pipes. This is a significant assumption and future consideration should include obtaining information on lateral condition. However, when a pipe is replaced the laterals are replaced as well.

CCTV records indicate that the manholes are in good condition (condition grade 2).

The general condition of the point assets are considered by Council's engineers as good to excellent. There are no condition ratings within the asset valuation data. However, the total replacement value is small and doesn't represent a large financial risk to justify individual condition assessments.

3.5.2 Performance and Capacity

Council engineers consider that generally the laterals, manholes and other point assets perform well and there no known performance or capacity issues within the points assets.

3.5.3 Data Reliability

The reliability of three waters data held by Council has not, to date, been systematically assessed and remains ungraded as per the IIMM manual. However, the data is based on good records, procedures and is subject to ongoing quality assurance as a result of maintenance works and has been informally assessed as B/C (see 2020 Valuation Report). In order to address this short-fall we would propose to add an improvement item to the Improvement Plan (**IP 34**).

Condition assessments have been completed for a number of the 3W's assets and include, but are not limited to:

i. NDT of AC Water Mains

ii. CCTV of Sewer Mains (Inc. those programmed for renewal)

iii. Visual inspections during maintenance activities

The results of these condition assessments have been applied to similar, uninspected assets to provide more reliable condition assessment of the whole asset base. For example, smaller diameter Asbestos Cement water mains are known to be in poorer condition than their larger

counterparts, and smaller diameter AC mains in the northern extents of the urban area are failing due to ground conditions and pipe material combination.

Condition ratings do exist within the AMIS on an equivalent scale of 1 to 5.

Renewal works are prioritised based on criticality (assessed), empirical knowledge of failure rates / historic maintenance activity, other unrelated (and concurrently programmed) capital works. It should be noted that predictive models being used are age based in the first instance.

An improvement item (IP 34) will be noted in the improvement plans to produce a second predictive model which includes weighting on Condition and Performance gradings held within AssetFinda.

3.6 Wastewater Treatment Plant

3.6.1 Asset Description

The components of the Waimate Wastewater Treatment Plant (WWTP) and design data is presented in Table 3-5 below.

Table 3-5: Wastewater Treatment Plant

Treatment	Disposal	Septage Disposal	Recorded ADWF & PWWF (2017)	Design ADWF & PWWF	Consented Flows
5mm Screen 2 oxidation ponds (total 4.6 ha) Rock filter 2 aerators 3 maturation ponds	2 border dyke disposal areas (total 27.7 ha) 1,985 m irrigation pipe	Yes	ADWF = 761 m^3/day PWWF = 2,527 m^3/day	ADWF = 1,200 m^3/day PWWF = 6,000 m^3/day	4,300 m^3/day 13,300 m^3/day in emergencies

Wastewater from the Waimate urban wastewater system is received at the WWTP pump station. The sewerage is pumped through the screen into the primary oxidation ponds. Historically this was one pond, but upgrades undertaken during 2003 split the oxidation pond into two. The upgrades were associated with new consent conditions to provide for future population growth, improve effluent quality and replacement of the discharge to water with a disposal to land system.

The oxidation ponds have a total area of approximately 4.6 ha. Effluent flow between the ponds is over a 20 m long rock filter wall or through a 300 mm diameter transfer pipe. Two aerators are located within the first pond. From the oxidation ponds the effluent flows to the three tertiary/maturation ponds in series. From the maturation ponds the effluent flows through the pond outlet to the irrigation field, 360 m east of the ponds. The irrigation consists of 27.7 ha of border dykes and 1,985 m of irrigation pipes.

Estimates of flows received by the WWTP are in the order of 600 m^3/day, well within the ADWF design flows of 1,200m^3/day.

3.6.2 Condition of Wastewater Treatment Plant

As most of the WWTP is relatively new, Council engineers consider the condition of the WWTP assets to be excellent. It should be noted that some erosion of the rock filter walls is evident. Whilst this is not currently affecting the performance of the ponds a capital project has been included to address this issue.

3.6.3 Performance of Wastewater Treatment Plant

The performance of the WWTP is considered to be very good. The WWTP has been designed for high flows and 20 years of expansion, being able to deal with 6,000 m^3/day maximum. The design flow rates were measured during the early 1990's. Peak flows of 850 to 1,300 m^3/day were commonly experienced, generally for 1 to 2 hours in duration. A 2 hour peak flow of 5,000m^3/day, and heavy rain event flows with a peak flow of 3,200 m^3/day and low flow of 1,800 m^3/day were also experienced.

High flow events such as heavy rain are likely to be sporadic and can be handled effectively by the WWTP, or a separate consent to discharge directly in to the Waimate Creek. Impacts of these events can be further reduced over time by diversion of roof water.

Organic Loading

Primary ponds are designed on the basis of organic (BOD) and hydraulic loading. As treatment pond performance is temperature dependent, the worst case conditions for Waimate will be in winter when mean temperatures can be below 10°C. The primary pond has an area of 2.01 ha. Assuming a sustainable design BOD loading of 100 kg/ha/day (Mara, 1998), the ponds have an estimated winter treatment capacity of 201 kg/day of BOD. As each kW of mechanical aeration can remove an additional 24 kg/day of BOD, the existing aerator increases the winter capacity of the pond to 297 kg/ha/day.

The current population is estimated to be in the order of 3,000 people. Assuming that all 3,000 persons are connected and each has a BOD loading of 70g/day the existing loading on the primary pond is estimated to be 210kg/day. As a result it is estimated that there is sufficient capacity in the primary pond (with one aerator operating) to cope with estimated current loadings, plus an estimated 1,540 additional persons under winter conditions. The inclusion of the second aerator would increase the available loadings with an additional 1,370 persons during winter.
There is enough capacity in the ponds during summer, without aeration, to cater for the current and foreseeable future connected population as the allowable BOD loadings increase due to warmer conditions and longer sunshine hours.

Hydraulic Loading

The WWTP has an estimated storage volume based on ADWF of 1,200m^3/day of 52 days. Estimated wet weather storage is 15 days. The total available extreme rainfall storage based on peak wet weather flow is 3 days. Given the relatively dry climate of the area, these storage capacities are considered appropriate for the WWTP. A water balance model was prepared as part of the 2000 AEE and was used to predict a minimum storage requirement of 11 days (based on 25 years of daily rainfall records).

The 2001 Beca Steven report indicated that, based on the 1997-98 data, peak wet weather flows (PWWF) reached about 2,750 m^3/day, which is about three times the average daily flows. However, the report also noted that, as the recording location was downstream of some potential overflow points, the peak storm flows may have been under recorded. Raw sewage flows into the ponds are monitored to allow on-going assessment of pond capacity, as well as the impacts of future inflow/infiltration reduction work within the catchment.

Sludge Levels

An essential treatment mechanism in a pond is to settle solids, where they accumulate on the base of the pond and form a sludge layer in which Volatile Suspended Solids (VSS), the organic

component of the solids, is decomposed by anaerobic digestion. Over a long period of time, the depth of the sludge layer may accumulate to a level where there is insufficient volume in the overlying algae-rich layer for effective treatment. When the depth of sludge is significant, it can potentially impact treatment performance, and sludge depth profiling should be undertaken more frequently.

During 2020 Council engaged a contractor to undertake a sludge survey of pond 1 and 2. The survey found the average water depth to top of sludge to be 1.3m (pond 1) and 1.45m (pond 2), with areas in pond 1 where sludge levels were in the range of 0.75 - 1.0m. The total volume of sludge is estimated o be 5,182m^3 in both ponds. Sludge levels will be regularly monitored to ensure desludging is undertaken at the appropriate times and pond capacity is at optimum levels.

Septage Disposal

Council accepts septage at the WWTP from local tankered waste contractors. The septage is discharged to a manhole near the WWTP. Contractors are charged per cubic metre of septage discharged and based on an honesty system. Staff are currently investigating the use of WasteTrack as a waste management system.

3.7 Pump Stations

3.7.1 Asset Description

There are two pump stations within the Waimate wastewater network, the Milford pump station and the WWTP pump station. The WWTP pump station is located at the WWTP and lifts the wastewater received from the Waimate wastewater system into the ponds at the WWTP.

There are three private pump stations within the network, located at the Sawmill, Slink skin factory and the showgrounds.

3.8 Buildings

There is one building individually valued with a replacement cost of $29,057. It has an equivalent base life of 80 years and is 25% through its life. The Building assets are contained within AssetFinda and are included in the Plant Asset Register.

3.9 Environmental Effects

3.9.1 Resource Consents

There are six resource consents held for the Wastewater Activity. These range from permission to construct a pipeline, to construct a bore and discharge to air, land and water.

The resource consents associated with wastewater are detailed in Table 3-6: Resource Consents – Wastewater

Table 3-7: Resource Consents – Wastewater

Consent Number	Status	Activity	Correct issue date	Expiry Date	Comment	Volume
CRC00167	Current	Install a structure in Bed	15/10/2001	10/10/2036	Construct a pipeline under the bed of Waimate Creek	
CRC000168.1	Current	Discharge Contaminant into Air	31/08/2009	10/10/2036	To discharge contaminants to air	
CRC000169.1	Current	Discharge Contaminant into Land to Water	31/08/2009	10/10/2036	To discharge secondary treated effluent to land	Max 4,300m³/day; average 1,200m³/day
CRC000170	Current	Discharge Contaminant into Water	08/10/2001	10/10/2036	To discharge secondary treated effluent to Waimate Creek (in emergencies)	Volume shall not exceed 13,300m³/24 hours
CRC120234	Current	To use land to install, use and maintain a sewerage network	11/08/2011	n/a	Compliance certificate - subject to further conditions – annual report, triennial report, etc.	-
CRC180377	Current	To discharge on-site domestic wastewater into land.	24/08/2017	24/08/2032	To discharge on-site domestic wastewater into land. St Andrews Township.	-

Consent CRC 000169.1

Council is experiencing difficulty meeting the requirements of Condition 6a of the Waimate Wastewater Treatment Plant (WWTP) discharge consent (CRC000169.1) relating to wastewater faecal coliform concentration limits. WDC engaged specialist consultants to investigate:

1. the reasons for this noncompliance, including any modifications to current management practices at the WWTP (including monitoring) that would result in this condition being met.
2. the rationale behind Condition 18c(vii), requiring measuring denitrification enzyme activity (DEA) in soils within the irrigation area.

Condition 6a - Effluent faecal coliform concentrations exceeded the annual median consent limit in 2014/15 and 2015/16. Investigations indicate that these exceedances are not a result of sampling timing, e.g. following high inflows, or other factors such as low pond DO concentrations.

Variations in the upgradient C Slinks well results were greater than at other monitoring wells suggesting other sources of contamination.

As a result, the exceedance of the faecal coliform consent limit is considered a "technical non-compliance" and relaxing this limit would have no consequent effect on downgradient groundwater quality. It is also noted that the existing consent limit is considerably more stringent than the current NZ guidelines for safe application of effluent to land.

Condition 18c(vii) - The inclusion of denitrification enzyme activity (DEA) testing as a consent condition was likely based on giving added "reassurance" to the Regulatory Authority (ECan) and other stakeholders that the application of treated effluent to land would not adversely affect downgradient groundwater quality (in regard to nitrate concentrations).

However, literary review has not found any support for assessing DEA in the disposal area soils. Groundwater results, at up and downgradient wells were similar to the effluent quality and showed that the existing monitoring programme is sufficient to establish whether nitrate from effluent application is adversely affecting groundwater quality. The investigation did not find any other consent that requires soil DEA testing and most laboratories do not offer the DEA analysis as a standard test.

In view of the above Council plan to submit an application to vary the consent conditions [6a and 18c(vii)].

The Council also holds a resource consent for the St Andrews wastewater system. A replacement consent was granted on 24 August 2017 that closely replicates the original consent. This consent has a duration of 15 years. This is a private system consisting of individual private septic tanks on each property. Council engage a septage disposal contractor to maintain each septic tank to meet the requirements of the consent.

The consented limits are tabled below:

Table 3-8: Consented Peak Flows

Scheme	Maximum Allowable Flows	Design ADWF	Current (2020) ADWF
Waimate Urban	4,300m³/day	1,200 m³/day	699m³/day (Annual Median Flow)
	13,300m³/day in emergencies		
St Andrews	None	None	None

It can be seen that the current flows are well within consented and design flows.

3.9.2 Environmental Monitoring and Reporting

Consent reporting within Council for Wastewater is the responsibility of the Water and Waste Manager. Information for consent compliance is provided by the Council's Water and Waste Group and forwarded to Environment Canterbury.

3.10 Assessment of Wastewater Services

The LGA 2002 places a specific requirement on local authorities to make assessments of water and sanitary services available to communities within the district. The Act requires that the assessment shall provide the following information in respect of services:-

The Water and Sanitary Services Assessment is an assessment of all services (public and private) relating to:

- Water
- Wastewater
- Rubbish and Recycling
- Public Toilets
- Cemeteries

The aim is to assess the adequacy of these services both now and in the future. It considers the risks that these services, or lack of these services, may pose to health and wellbeing of the community.

Table 3-9: Public Wastewater Systems

Public Wastewater Systems Managed by Council	
Waimate Urban	St Andrews
Camping Grounds:	
Brairs Gull Camp Site	Fisherman's Bend Camp Ste
Te Akatarawa Camping Ground	Waitangi Reserve Camp Ground

3.10.1 Risks and Issues

The assessment of Water and Sanitary Services (June 2011) noted the following: The risk to the community emanating from properly maintained septic tanks and disposal fields located sensibly and on properties of adequate size to deal with the discharges are low. The risk to the community in more populous areas can rise to extreme.

3.10.2 Update of the Water & Sanitary Assessment

In accordance with Section 6, Schedule 10 of the LGA 2002, an Assessment of Water and Sanitary Services was conducted by Council during June 2011. As part of the Delivery Plan agreed with DIA, a Sanitary Survey will be carried out with the funding received under tranche 1 (COVID 19 stimulus) and is programmed for February/March 2022.

3.11 Criticality Assessment

During 2017 Council performed a criticality assessment on 3 Waters assets (reticulation) by using the New Zealand Asset Metadata Standards (NZAMS) methodology and criticality ranking. This including consideration of GIS, population, key facilities and hydraulic model data. The NZAMS defines criticality as "the significance of any individual component or asset to the ability of any part

of a network or portfolio to deliver the service it was designed to perform". The methodology considered:

- residential population rating – the number of people affected by the removal of the asset
- facility importance rating – the importance of the facility based on the role the facility play in enabling the community to function.

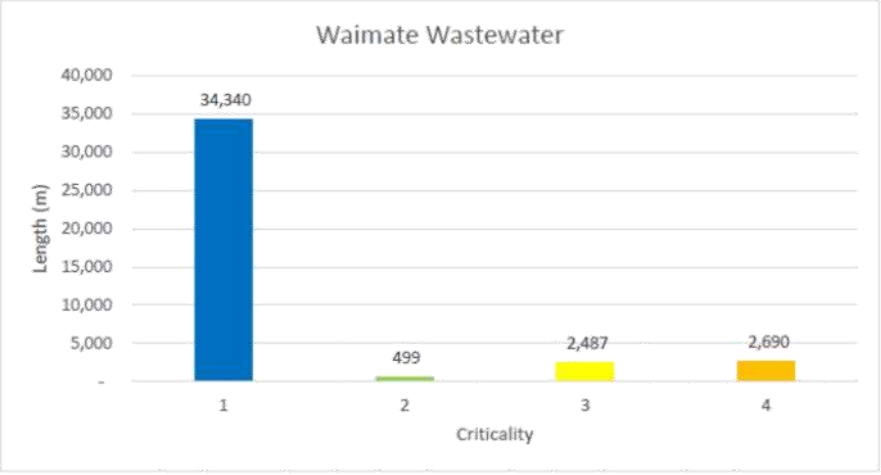
The global criticality ratings are:

1. very low
2. low
3. medium
4. high
5. very high

An additional diameter based component was included for water supply assets.
The criticality assessment provided the following results.

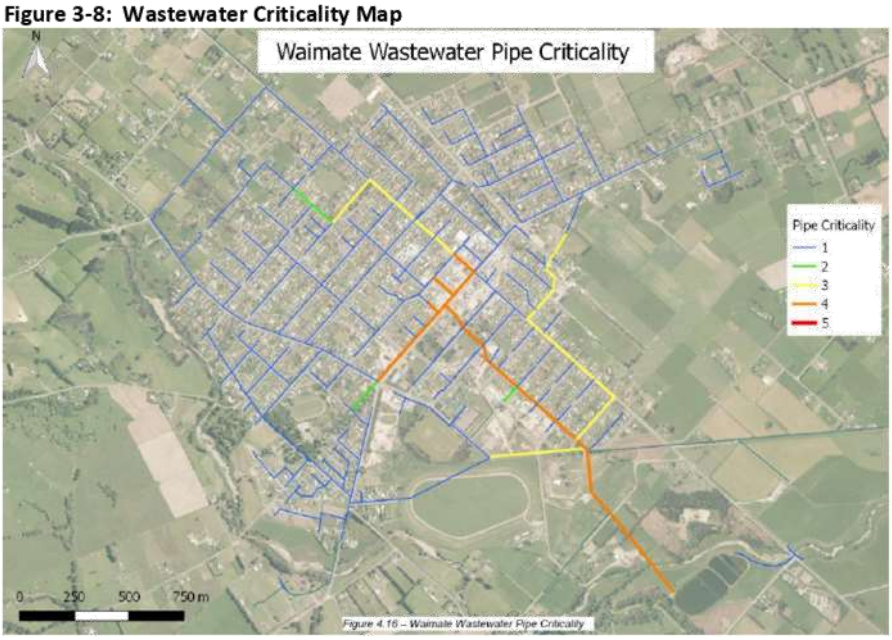
The figure below shows the pipe length distribution across the different criticality categories for the wastewater system.

Figure 3-7: Wastewater Criticality and Lengths Distribution



The figure below shows an overview plan of the criticality rating for the wastewater system.

Figure 3-8: Wastewater Criticality Map



The criticality assessment provides Council engineers the ability to clearly identify the assets of highest importance and the greatest value. This ensures the asset can be managed more proactively in order to mitigate the risk associated with their failure. This proactive management includes:

- Prioritising condition assessments
- Adjusting economic lives with respect to renewal profiles
- Prioritising/deferring renewals
- Prioritising expenditure, Operation and maintenance planning
- Priorities for collecting asset information to the required level of confidence

It is important to align the asset data in AssetFinda with the criticality assessment ratings (**IP 31**). The criticality assessment report made the following recommendations (**IP 32**):

- Plan a renewals program supported by a condition management program for critical infrastructure
- Plan around supplying critical customers and key facilities following a critical asset failure
- Identify sensitive customers (for example: dialysis patients) for a more detailed criticality assessment
- Update and maintain the water supply models, especially where new assets have been added (new bore and pump station in the Otaio rural water supply)
- Expand the stormwater model for a better understanding of stormwater flows and populations served by WDC's assets
- Maintain the GIS data, especially for the stormwater assets

In view of the pending outcome of the Havelock North Water Inquiry and change in political landscape Council may reconsider the Criticality assessment to ensure the four wellbeing's (social, economic, environmental and cultural) are adequately captured within the assessment (**IP 33**).

4.0 LEVELS OF SERVICE

The Levels of Service for the Wastewater Services are defined in this section and the performance measures by which the service levels will be assessed. The service levels are aimed at supporting and meeting the strategic goals. It also contains information on the customer research undertaken and the legislative requirements adhered to in arriving at the service levels.

4.1 Community Outcomes

4.1.1 Revision of Community Outcomes for Community Plan

2012/22 Long Term Plan

In 2011 the Council amended the community outcomes and these were subsequently reassessed for the 2015-25 Long Term Plan. The Council has indicated that there will be no significant change to the community outcomes for the 2018/2028 LTP. Changes relate to alignment with the Council Vision. These outcomes and linkage of the Wastewater levels of service are provided in Table 4-1 below.

2015/25 Long Term Plan

In 2017 the Council amended the community outcomes. These outcomes and linkage of the Water Services Levels of Service via the Rationale are shown in Table 4-1**Error! Reference source not found.**.

There are no changes to the Community Outcomes for the 2021-31 LTP.

Table 4-1: Waimate District Council Community Outcomes 2018-28 and Wastewater Services Rationale

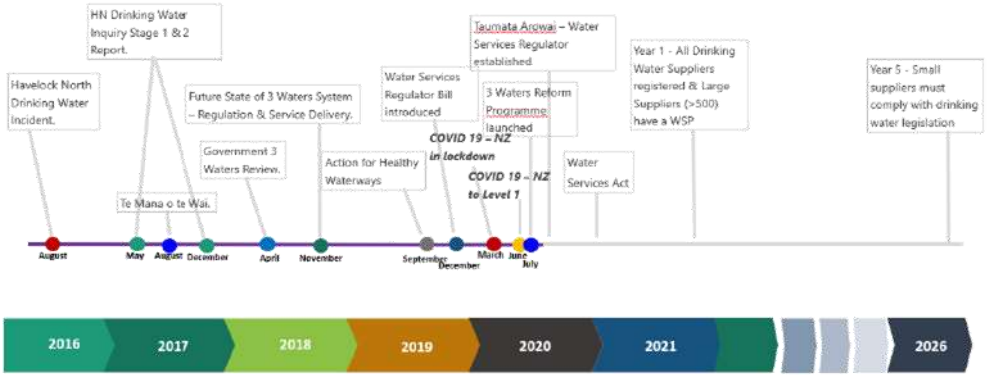
	COMMUNITY OUTCOMES			
	Thriving Community	**Safe & Healthy People**	**Sustainable District and Environment**	**Active, Diverse and Supportive Community**
	Economic Wellbeing	**Social Wellbeing**	**Environmental Wellbeing**	**Social Wellbeing**
	A District that encourages development	A place where people are safe in their homes, work and public spaces	The Waimate District is enhanced through sustainable and diverse development	All people are encouraged to participate in our democratic process
Rationale		***Wastewater*** *- Protects public health by ensuring a safe and viable wastewater disposal system*		
	A District that provides infrastructure for economic activity	Our services, infrastructure and environment enhance quality of life	Our heritage is valued and protected	District assets that provide recreation and leisure choice
Rationale	***Wastewater*** *– The timely provision of utility services is essential to supporting growth*	***Wastewater*** *- We have reliable, efficient and well planned infrastructure that meet the needs of residents*		
	A District that actively promotes itself and its businesses		We value the natural environment, biodiversity and landscapes	We celebrate and support the good things about our community
Rationale			***Wastewater*** *– We preserve the environment by ensuring the quality and quantity of discharges to the environment*	

4.2 National Strategies and Plans

4.2.1 Government and Industry Direction

In providing the 3 Waters Services the Waimate District Council keep a weather eye on the Central Government and Industry direction for the national infrastructure assets and public service provision. This is done through attending conferences and seminars, studying reports released by Central Government agencies and membership of industry organisations e.g. IPWEA, Water NZ, etc.

3 Waters - Government & Industry Direction



The August 2016 Havelock North Water incident and subsequent Inquiry has renewed the focus on the very high standard of care and diligence required to supply drinking water.

During 2017 the Minister for Local Government initiated the Government 3Waters Review to assess whether current local government practices and the system oversight are 'fit for purpose'. This review ran in parallel to the latter stages of the Havelock North Inquiry and raised a range of questions around the effectiveness, capability and sustainability of the current water service model. During 2017 the Government announced changes to the National Policy Statement for Freshwater Management – Te Mana o te Wai. Te Mana o te Wai is a concept for fresh water, which when given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community. This requires councils to involve iwi/hapū in the management of freshwater, work with them to identify their values and interests, and reflect those values and interests in decision-making.

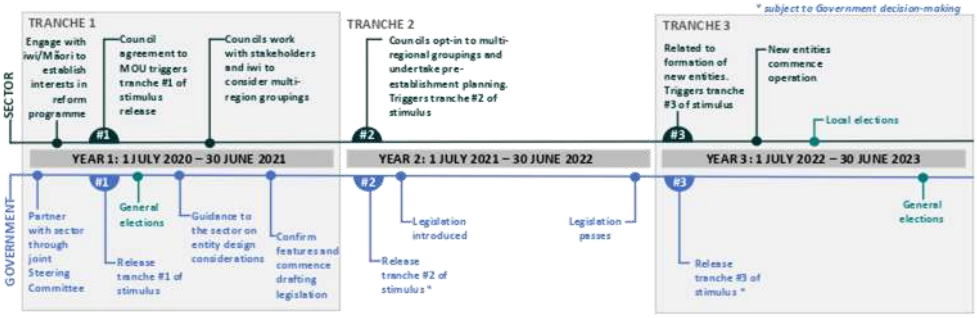
The MfE discussion document 'Action for Healthy Waterways' released September 2019 signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems.
Towards the end of 2019, the Government agreed to establish a new drinking water regulator as an independent Crown entity. Associated legislation is expected to be passed in 2020/21 and the establishment and roll out of the new Regulator will follow and is expected to take a number of years.

Following the global outbreak of the Corona Virus the Government announced New Zealand's four-level COVID-19 Alert System specifying public health and social measures to be taken against COVID-19. New Zealand went into Level 4 on Thursday 26 March 2020. Level 4 requirements included the general public to stay at home, educational facilities closed, only essential services & lifeline utilities remain open & operational, severe travel limitations, major reprioritisation of healthcare services, etc. NZ progressively reduced the alert levels from 27 April and returned to Level 1 on 10 June 2020.

The response to COVID 19 will have a significant impact on the economy and the ability to implement and progress the abovementioned Government initiatives. Several Councils already signalled no rates rises for the 2020/21 year.

July 2020 saw the Government announce the 3 Waters Reform Programme consisting of a $761m funding package over the next three years to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure. Initial funding will only be made available to councils that sign up to the Memorandum of Understanding. Waimate District Council signed up to the Memorandum of Understanding.

Below is an indicative timetable for the full reform programme. While this is subject to change as the reform progresses, this provides an overview of the longer-term reform pathway.



The following themes are also signalled:

Source	Direction
Insights into local government: 2019 OAG June 2020	Among a range of observations, the OAG states "*I remain concerned that Council's might not be adequately reinvesting in their critical assets*". To do this well, councils need to improve their asset management information. In particular, they need: • good data about their critical assets in order to value, depreciate, and plan renewals; • good processes and sufficient resources to maintain and update their critical asset data; • effective working relationships between asset management, finance, and strategic planning staff, all of whom have an important role to play in supporting a council's asset management function; and • timely engagement with, and involvement by, elected members.
Managing the supply of and demand for drinking water OAG Sept 2018	**Common challenges** • Working with iwi • Completeness and reliability of data • Staff capability and capacity • Under-delivery of planned capital spending

Source	Direction
Managing stormwater systems to reduce the risk of flooding OAG Dec 2018	**Recommendations** 1. To better manage their stormwater systems to protect people and their property from the risks of flooding, we recommend that councils: 2. understand the current and likely future flood risks in their district or city sufficiently to take a proactive approach to reduce the risk and effects of flooding; 3. provide elected members with the necessary information and options, including about local flood risks and their stormwater systems, to make well-informed and deliberate decisions about investment in their stormwater systems; • improve the information they make available to their communities so that people can understand: • the potential risk of flooding; • what the council is doing to manage that risk, including how it is managing the stormwater system and at what cost; and 4. what the remaining risk is to the community; improve their understanding of their stormwater systems, which will entail ensuring the adequacy of their stormwater asset data, including condition data and information on the performance and capacity of the stormwater systems; and identify and use opportunities to work together with relevant organisations to more effectively manage their stormwater systems.
Reflecting on our work about water management OAG Feb 2020	**A more strategic and integrated approach to water management is needed** • The Government is responding to the need for a more strategic and integrated approach to water management • A strategic and integrated approach would support targeting of investment decisions • A stronger focus on implementation is needed when setting strategy • Long-term thinking is needed when setting a strategic and integrated approach **Understanding of water resources needs to improve** • A national picture of the state of freshwater quality would support a more strategic and integrated approach • Information gaps can limit the ability to make well-informed decisions • Information needs to be understandable both to decision-makers and to those holding them to account • Good information depends on collecting quality data • There will always be some uncertainty **Water management challenges require adaptive ways of working** • Balancing different views and values requires flexible frameworks • Collaboration needs to translate into action • More can be done to involve Māori in water management Water management challenges require both central and local government response

Source	Direction
Matters arising from our audits of the 2018-28 long-term plans OAG Feb 2019	**Recommendations** • that councils prioritise collecting condition and performance information of critical assets and, in the meantime, take a precautionary approach for significant services where the condition information of critical assets is unknown; • that the Department of Internal Affairs and the local government sector review the required content for long-term plans to ensure that they remain fit for purpose, particularly: – the current suite of mandatory performance measures; – the disclosure requirements for financial and infrastructure strategies; – disclosures required under the Local Government (Financial Reporting and Prudence) Regulations 2014; and – how assumptions are disclosed in long-term plans; • that the Productivity Commission, in its review into the adequacy and efficiency of the existing funding and financing options for councils, consider the trends arising in the 2018-28 long-term plans, particularly the trends and concerns we have raised about increasing debt; and that central government and local government continue to consider how increased leadership can be provided for climate change matters, particularly: – what data is needed and who collects this; – the quality of this data; and – how councils should consider this in future accountability documents, including the long-term plan.
Local Government NZ	LGNZ are working on four significant projects with the sector at present: Water 2050; Climate Change; Housing 2030 and the Localism Project. **Water 2050** - The Water 2050 project promotes discussion and contribute to policy development by central and local government, particularly in regards to the Government's Three Waters Review, across five key areas: • Allocation • Water Quality • Infrastructure • Cost and funding • Governance **Climate change** - leading and championing policy to deal with the impacts of climate change is a key policy priority for LGNZ. Climate change poses an unprecedented level of risk and adapting to and mitigating the impacts of climate change is a new priority focus for councils. **Housing** is a significant issue for our communities' social and economic futures. Unaffordable housing is having a negative impact on local economies, discretionary household expenditure and social well-being. This means addressing matters of supply, how social and community housing needs are met and the importance of healthy homes. Underpinning the issue is the need for appropriate funding and financing. LGNZ efforts are focussed in three general areas: • Supply; • Social and community housing; and • Healthy homes.

Source	Direction
	Localism - Local government is calling for a shift in the way public decisions are made by advocating for greater self-government at the local and an active programme of devolution and decentralisation. This document provides councils with guidance to • Assist with understanding and managing climate risk to the essential infrastructure that they own – particularly in relation to sea level rise, coastal hazards (such as storm inundation and erosion), and inland (pluvial) flooding; • Assist councils with addressing the issues that completion of the previous survey, which fed into the Vulnerable report, identified; and Help our community leaders prime and test council staff, constituents and stakeholders to engage in the most effective long-term planning for infrastructure investment, and make sensible investment decisions now, which don't preclude future options for infrastructure provision.
Vulnerable: the quantum of local government infrastructure exposed to sea level rise Local Government NZ January 2019	This project has two intended outputs. • The first is to research the current quantity and value of infrastructure (roads, 3Waters and buildings) exposed to sea level rise at four increments; 0.5, 1.0, 1.5 and 3.0 metres, and to quantify replacement value. The second and more important output of this research is to provide responses to rising sea levels. This study intentionally avoids specific and local costs, and targets discussion at a regional and national level in order to highlight trends and general areas of high and low priority. It raises questions about how to improve procurement, appropriately share management of risk, and communicate with stakeholders about priorities.
Water NZ Competency Framework Water NZ	This document explores the workforce skills and capabilities for an effective, efficient, accountable and resilient three waters sector in New Zealand. It describes what people should be able to do and what they need to know to competently undertake their work. It is a work in progress and includes the following roles. • Drinking Water Treatment Operators • Wastewater Treatment Operators • Drinking Water Distribution Operators (to be developed) • Wastewater Network Operator (to be developed)

4.2.2 Infrastructure Commission, Te Waihanga

The New Zealand Infrastructure Commission – Te Waihanga – was established in 2019 as an Autonomous Crown Entity to carry out two broad functions – strategy and planning and procurement and delivery support on infrastructure investment.

InfraCom - Te Waihanga will work with central and local government, the private sector, iwi and other stakeholders, to develop a 30-year infrastructure strategy to replace the National Infrastructure Plan.

The first plan will be reported to government by the end of 2021 and thereafter at least every 5 years . The strategy will cover the ability of existing infrastructure to meet community expectations;

current and future infrastructure needs and priorities; as well as any barriers which could impede the delivery of infrastructure or services arising from it.

4.2.3 National Policy Statement

The National Policy Statement for Freshwater Management (NPSFM) 2020 came into force on 3 September 2020 and documents the objective to ensure that natural and physical resources are managed in a way that prioritises:

a) first, the health and well-being of water bodies and freshwater ecosystems
b) second, the health needs of people (such as drinking water)
c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The NPSFM includes a requirement to manage freshwater in a way that 'gives effect' to Te Mana o te Wai, including by actively involving tangata whenua in freshwater management, working with tangata whenua and communities to set out a 'long-term vision' in the regional policy statement, and through a new 'hierarchy of obligations' which prioritises the health and wellbeing of water bodies, then the essential needs of people (e.g. drinking water), followed by other uses.

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

'Action for Healthy Waterways' (Ministry for the Environment) signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems, likely regulatory requirements under a new 3 Waters regulatory framework.

These initiatives will flow through respective Regional Councils Policy Statements & Regional Plans.

4.2.4 National Policy Statement on Urban Development Capacity

The National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) sets out the objectives and policies for providing development capacity under the Resource Management Act 1991.

The NPS-UDC came into effect on 1 December 2016 and has been described by the government as "the core issue of increasing land supply".

The NPS-UDC directs local authorities to provide sufficient development capacity in their resource management plans for housing and business growth to meet demand.

Development capacity refers to the amount of development allowed by zoning and regulations in plans that is supported by infrastructure. This development can be "outwards" (on greenfield sites) and/or "upwards" (by intensifying existing urban environments).

4.3 Key Legislation and Regulation– Implications for Asset Management

Legislation is established by Central Government and must be complied with at Local Government Level. Significant legislation and regulations affecting the Wastewaters activities are provided in

Table 4-2. Council must comply with any relevant legislation enacted by Parliament. Commentary related to some of the key legislation is provided below.

Different legislation has differing levels of impact on the Wastewater Services activities; this is indicated under Impact Range (Broad ***, Moderate **, Limited *).

Table 4-2: Legislation and Regulation Affecting the Wastewater Services

Legislation & Regulation	Wastewater Services Range
Building Act 2004 (and amendments)	*
Civil Defence Emergency Management Act 2002	***
Climate Change (Emissions Trading and Renewable Preference) Act 2008	*
Climate Change Response Act 2002 (and amendments)	**
Energy Efficiency and Conservation Act 2000	*
Environmental Protection Authority Act 2011	*
Epidemic Preparedness Amendment Act 2010	*
Fire and Emergency New Zealand Act 2017	**
Health Act 1956 and Health (Drinking Water) Amendment Act 2007	***
Health and Safety at Work Act 2015	***
Heritage New Zealand Pouhere Taonga Act 2014	*
Infrastructure (Amendments Relating to Utilities Access) Act 2010	**
Local Government Act 2002 (and amendments)	***
Local Government Act 1974 (and amendments)	**
Local Government Rating Act 2002 (and amendments)	**
Local Government Rating Act 1979	*
Ngai Tahu Claims Settlement Act 1998	*
Public Works Act 1981 (and amendments)	*
Resource Management Act 1991 (and amendments)	***
Utilities Access Act 2010	***

4.3.1 Major Legislation Details

The legislation that has or will have the most effect on the Wastewater Services is expanded in the following section.

Civil Defence Emergency Management Act 2002

The expectations under the CDEM Act 2002 is 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.

Water supply and wastewater are regarded as critical services and are given special consideration within Council emergency management procedures. Every effort will be given to restore services immediately after an event to at least provide adequate water for sanitation and health albeit supply quantity may be limited.

Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that:

- contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels
- allow New Zealand to prepare for, and adapt to, the effects of climate change.

The amendments establish four key items.

1. set a new domestic greenhouse gas emissions reduction target for New Zealand to:
    a. reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050
    b. reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
2. establish a system of emissions budgets to act as stepping stones towards the long-term target
3. require the Government to develop and implement policies for climate change adaptation and mitigation
4. establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

The original proposal was for a separate piece of legislation called the Zero Carbon Bill to be passed into law. In May 2019, the Government decided to introduce it as an amendment to the Climate Change Response Act 2002. The objective was to ensure that all key climate legislation is within one Act.

Health Act 1956

The Health Act 1956 places an obligation on Council to improve, promote and protect public health within the District. The provision of Water and Wastewater Services conserves public health and helps to protect land and waterways from contamination.

The Health Act requires Council to furnish from time to time to the Medical Officer of Health such reports as may be required as to diseases, drinking water and sanitary conditions within it district.

Health and Safety at Work Act 2015

The Health and Safety at Work Act 2015 (HSWA)was enacted on 4 April 2016 and is part of "Working Safer: a blueprint for health and safety at work" and reforms New Zealand's health and safety system following the recommendations of the Independent Taskforce on Workplace Health and Safety. Working Safer is aimed at reducing New Zealand's workplace injury and death toll by 25 per cent by 2020.

The HSWA:

- reinforces proportionality – what a business needs to do depends on its level of risk and what it can control
- shifts from hazard spotting to managing critical risks – actions that reduce workplace harm rather than trivial hazards
- introduces the "reasonably practicable" concept – focusing attention on what's reasonable for a business to do
- changes the focus from the physical workplace to the conduct of work – what the business actually does and so what it can control

- supports more effective worker engagement and participation – promoting flexibility to suit business size and need.

A guiding principle of the HSWA is that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from work risks as is reasonably practicable. The HSWA shifts the focus from monitoring and recording health and safety incidents to proactively identifying and managing risks so everyone is safe and healthy.
The HSWA identifies four duty holders:

persons conducting a business or undertaking (PCBUs) – these may be individuals or organisations	have the primary responsibility for the health and safety of their workers and any other workers they influence or direct. They are also responsible for the health and safety of people at risk from the work of their business
officers	(company directors, partners, board members, chief executives) must do due diligence to make sure the business understands and is meeting its health and safety responsibilities
workers	must take reasonable care for their own health and safety and that their actions don't adversely affect the health and safety of others. They must also follow any reasonable health and safety instruction given to them by the business and cooperate with any reasonable business policy or procedure relating to health and safety in the workplace
other persons at workplaces	who come into the workplace, such as visitors or customers, also have some health and safety duties to ensure that their actions don't adversely affect the health and safety of others

Heritage New Zealand Pouhere Taonga Act 2014

Describes an archaeological site as "Any place in New Zealand that:

- Was associated with human activity that occurred before 1900
- Is the site of the wreck of any vessel where that wreck occurred before 1900
- Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand"

It is unlawful to modify, damage or destroy any archaeological site – recorded or not – without an authority from the New Zealand Historic Place Trust.

Local Government Act 2002

Defines the purpose of local authorities as enabling local decision-making by and on behalf of the community, and allows local authorities the power of general competence. This Act specifically requires Councils to continue to provide water and wastewater services if they do so already.
AMPs are the main method of demonstrating Schedule 10 requirements.

In addition to the general requirements of the Local Government Act there are some specific clauses that apply to water services.

Table 4-3: Water Services LGA 2002 Clauses

Section	Details	Applies to
S10	Restores the four aspects of community well-being by requiring local authorities to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future	Water and Waste Services

Section	Details	Applies to
S17A	Requires that Councils review the cost effectiveness of the way they deliver their services to ensure they meet the needs of communities	All services
S101B	Requires a 30 Year Infrastructure Strategy	Core Services
S125	Places a requirement to assess water and other sanitary services from time to time	Water and Sanitary Services Assessment
S130	Imposes an obligation to maintain water services and places limitations on the transfer or selling of assets	Divestment of services
S 136	Empowers Councils to enter into Contracts relating to provision of water services for periods not exceeding 35 years whilst maintaining control over the pricing of the service, retain legal responsibility for the service and being responsible for the development of policy related to the water services	Utilities Contract
S 137	Empowers Councils to enter joint local government arrangements and joint arrangements with other entities for the provision of water services, with the same constraints as S136	Utilities and Professional Services provision and procurement
Pt 1 -2 Pt 3 - 23	Council provides groups of activities for financial, performance and negative effects reporting purposes. The Water and Waste unit will provide Group summaries for water (urban & rural), sewerage and stormwater	Water and Waste Services

Local Government Act 2002 – Section 17A

To date a formal, documented Section 17A review has not been completed for 3W's service delivery. Council informally reviewed 3W's service delivery in 2016/17.

Waimate, whilst not unique, is one of few councils that continues to provide maintenance operations "in-house" and resultantly did not have contractual arrangements in place to trigger a review between 2014 and 2017 (the statutory deadline for completing the first round of reviews).

At this point in time, investigations in to the Havelock North incident and subsequent indications that sector reforms were underway meant that the desire to change service delivery arrangements was low. Furthermore, Council was effectively comfortable that the potential benefits of performing a review did not justify the time and expense of completing the exercise. Subsequent acceleration of the reforms has bolstered this position in so far as service delivery is being addressed during the current calendar year (2021) and the impacts for 2021/22 are as yet unknown. Based on Councils decision regarding "opting in or out", this may trigger a Section 17A review (or not).

Resource Management Act 1991

Governs all water takes and discharges. Water takes and discharges to waterways and land occur through the extraction of water from waterways and land. Resource consents obtained for water takes and discharge activities require parameters such as volume and quality to be monitored as well as taking steps to mitigate any adverse effects that may occur through the activity.

There have been numerous amendments to the Resource Management Act over the years with reform a key priority. During 2019 the Government appointed the Resource Management Review Panel to undertake a comprehensive review of the RMA. The Review Panel recommended:

- The RMA to be repealed and replaced with two new pieces of legislation
    - The Natural and Built Environments Act to strengthen the current system by not only seeking to protect the environment, but improve it.
    - The Strategic Planning Act to give statutory weight to strategic spatial plans and, critically, force reconciliation and alignment across central and local government to ensure implementation.

Taumata Arowai–the Water Services Regulator Bill

Taumata Arowai – the Water Services Regulator Bill received Royal Assent on 6 August 2020. The Bill will establish Taumata Arowai–the Water Services Regulator and provide for its objectives, functions, and governance arrangements.

Taumata Arowai – the Water Services Regulator Bill will create a new regulatory body to oversee, administer and enforce a new and strengthened drinking water regulatory system. It will also have a national oversight role to improve the environmental performance of storm water and wastewater networks.

It is anticipated this Bill will be enacted during 2021.

A separate Bill, the Water Services Bill, to be introduced in early 2020, will give effect to decisions to implement system-wide reforms to the regulation of drinking water and source water, and targeted reforms to improve the regulation and performance of wastewater and stormwater networks. The Regulator's detailed functions and powers are located in that Bill.

Utilities Access Act 2010.

The Utilities Access Act 2010 provides for a coordinated approach to management of the road corridor. The Act requires the Corridor Managers to undertake a planning and access management role, and Utility operators to comply with an approved code of practice.

The National Code of Practice for Utility Operators Access to Transport Corridors is a mandatory requirement for all road and rail controlling authorities and utility network operators under the Utilities Access Act 2010, and came into effect on the 1st January 2012. The Code was reviewed during 2016.

The initial KPI data identified several issues including a lack of consistency, along with the fact that not all reporting entities had sent in their returns, meaning that any comparisons were incomplete. The situation was exacerbated by the fact that only 1 year's results are available, with any real value to come from analysis of changing trends over time. Refining of the data collection requirements will be a major focus moving forward, resulting in a more comprehensive reporting and analysis to be provided following the receipt of 2016-17 KPI data.

4.3.2 Relevant Regulations Affecting this Activity

Local Government (Financial Reporting) Regulations 2011

4.4 Standards, Codes of Practice and Guidelines

National environmental standards, design standards (AS/NZS ISO), Codes of Practice and Guidelines provide technical direction. National Standards must be complied under the direction of relevant legislation.

4.4.1 National Environmental Standards

National environmental standards are regulations issued under the Resource Management Act 1991 (RMA). They prescribe technical standards, methods and other requirements for environmental matters.

Local and regional councils [or local government] must enforce these standards (or they can enforce stricter standards when the standard provides for this). In this way, national environmental standards ensure consistent minimum standards are maintained throughout all New Zealand's regions and districts.

4.4.2 AS/NZS Standards

The Code for Subdivision and Development AS/NZS 4404 is the principle document defining design requirements. Wherever possible, relevant AS/NZS standards are used as the basis for determining standards of design and construction.

Standards and guidelines relevant to the wastewaters Activity are provided in Table 4-4 below.

Table 4-4: National Environmental Standards and Guidelines

Year Released	Technical Discipline: Asset Management
2020	NAMS International Infrastructure Management Manual
2015	NAMS International Infrastructure Management Manual
2011	NAMS International Infrastructure Management Manual
2008	PAS55-1:2008 Asset Management
2007 v2.0	NAMS Developing Levels of Service and Performance Measures Guidelines
2004 v1.0	NAMS Optimised Decision Making Guidelines
2006 v2.0	NAMS Infrastructure Asset Valuation and Depreciation Guidelines
2006	NZWWA New Zealand Pipe Inspection Manual
1999	NZWWA The New Zealand Infrastructural Asset Grading Guidelines

4.4.3 NAMS International Infrastructure Management Manual 2011

This Plan has referred to the 2011 and 2015 guidelines, with significant improvements made in areas including sustainability and Asset Management Policy.

4.4.4 ISO 55000 Asset Management 2014

This international standard was released in January 2014 and makes the previous BSI PAS55 Asset Management (2008) standards redundant. The new standard outlines the requirements for a 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 Wastewater Services AMP the Council has yet to review whether current Council 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 if this is the direction Council decide to take in the future.

4.5 Regional Plans

4.5.1 Natural Resources Regional Plan (NRRP)

The NRRP was revoked during February 2017 and replaced with the LWRP.

4.5.2 Land and Water Regional Plan (LWRP)

The Land & Water Regional Plan is a new planning framework for Canterbury and aims to provide clear direction on how land and water are to be managed and help deliver community aspirations for water quality in both urban and rural areas.

The Canterbury Land and Water Regional Plan (LWRP) identifies the resource management objectives for managing land and water resources in Canterbury to achieve the purpose of the Resource Management Act 1991. It identifies the policies and rules needed to achieve the objectives, and provides direction in terms of the processing of resource consent applications.

This LWRP is made up of 16 sections and a map volume:

- the first describes Canterbury's land and water resources, interrelated issues that need to be managed, the key partnerships, relationships and processes already underway, including the Canterbury Water Management Strategy (CWMS).
- The second section describes how the Plan works and contains the definitions used in the Plan.
- The subsequent three sections cover the region-wide objectives, policies, and rules.
- Sections 6 to 15 inclusive contain sub-region catchment specific policies and rules, and
- Section 16 contains the schedules.
- The maps referred to in the rules are in a separate map volume.

Rule 5.7 to 5.9 address on-site wastewater. Rule 5.84 to 5.88 address sewerage systems (community wastewater). The existing discharge for Waimate is a discretionary activity and operated under current consents.

4.5.3 Regional and Iwi Plans

Regional and Iwi Plans affecting the Wastewater Activity are listed in Table 4-5. Each of these is a significant document.

Table 4-5: Regional and Iwi Plan Documents

Canterbury Regional Council Plans	Key Impacts on Wastewater Services
Canterbury Land and Water Regional Plan (LWRP)	Compliance through existing resource consents
Regional Coastal Environment Plan 2011: Covers coastal marine area and the coastal environment and its integrated management.	Nil
Regional Policy Statement : Sets the framework for resource management in Canterbury for the next 10 to 15 year	Became operative on 15 January 2013 and has undergone minor amendments since.

4.5.4 Canterbury Mayoral Forum

The Waimate District Council is part of the Canterbury Mayoral Forum (11 member Councils) consisting of:

- Kaikōura District,
- Hurunui District,
- Waimakariri District,
- Christchurch City,
- Selwyn District,
- Ashburton District,
- Timaru District,
- Mackenzie District,
- Waimate District,
- Waitaki District (part of which lies within the Canterbury Regional Council area), and
- Environment Canterbury

Region wide issues identified by the Joint Working Group include:

- a need for more effort in compliance, monitoring and enforcement
- a greater focus on biodiversity outcomes monitoring and reporting
- opportunities for councils to share approaches and share resources
- addressing scale and complexities of issues, recognising the size of rating bases and capacities of councils.

Key work by Council supporting ecosystem health and biodiversity, drinking water and water use efficiency targets include:

- ecosystem health and biodiversity
  - restore Wainono lagoon
  - District Plan
- 3Waters
  - Major drinking water upgrades including Hook-Waituna, Lower Waihao, Waihaorunga and Waikakahi
  - Water safety plans in place and implemented
  - Global stormwater discharge consent in place
  - 3waters infrastructure renewals
- water use efficiency
  - water savings through upgrade of ageing infrastructure
  - water conservation measures in place
  - urban toby replacement with manifold meters

Key actions to meet 2025 Goals are tabled below:

Ecosystem Health
Biodiversity **Lowland Stream health** Fulfil requirements to obtain and comply with stormwater consents for townships by 2025. Progress improvement to stormwater infrastructure to reduce ecological damage to lowland streams from sediment and contaminants. Continue regular community education/behaviour change campaigns on stormwater issues and management.
Lowland Stream health

Ecosystem Health
Review the state and operation of the district's wastewater treatment plant infrastructure to address and reduce potential impacts on the district's highly valued rivers.
Biodiversity **Drylands** Identify and map SNAs on private land. Review status of SNAs listed in District Plan in line with NPSIB criteria and requirements by 2026. Implement system to actively protect SNAs and maintain indigenous vegetation. Work with Environment Canterbury to develop a biodiversity monitoring strategy. Secure funding for shared biodiversity role to undertake compliance monitoring. Advocate for indigenous biodiversity through regular education/behaviour change campaigns to improve understanding of the importance of protecting and conserving indigenous vegetation.
Biodiversity: **Drylands / Hill and High country streams** Review vegetation clearance rules as part of District Plan review to protect indigenous vegetation. Advocate for indigenous biodiversity through regular education/behaviour change campaigns to improve understanding of the importance of protecting and conserving indigenous vegetation.
Source Water Quality
Priority planning for water supply wells and new treatment plants, including rural water schemes (Waihaorunga, Cannington-Motukaika, and Waikakai). Review the state and operation of the district's wastewater treatment plant infrastructure to address and reduce potential impacts on the district's highly valued rivers and source groundwater Raise awareness of health impacts from high nitrate in drinking water. Run campaigns to recommend regular testing of private bores and consider options for secure water supply
Water Use Efficiency
Improve compliance with national regulations on the measurement and reporting of water takes. Manage water demand through meeting requirements under LWRP. Run local public relations education/behaviour change campaigns on water use efficiency to raise awareness and reduce usage.

Environment Canterbury provides quarterly updates to the Chief Executives Forum and Mayoral Forum on the regionwide progress towards implementing the CWMS. These quarterly reports provide a summary of the last three months' progress of zone committee projects and provide information on the latest freshwater related policy and RMA planning.

As work progresses on implementing the Fit for Future work programme, future quarterly reports to the Mayoral Forum will focus on reporting on the delivery of the CWMS Targets and review of the Canterbury Biodiversity Strategy in line with national direction.

4.6 Council's Strategies, Plans and Bylaws

4.6.1 Council Strategies

The following Council Strategies have impacts and are considered as part of the Stormwater services Activity

- District Wide Strategy
- Economic Development Strategy
- Procurement Strategy
- Infrastructure Strategy

4.6.2 Council Planning Documents

The following Council Documents have impacts and are considered as part of the Wastewater Activity:

- Waimate District Long Term Plan 2018-28 (current)
- Waimate District Long Term Plan 2021-31 (proposed)
- Waimate District Plan
- Waimate District Council Engineering Design Standards for Subdivisions and Development
- Structure Plans
- Waimate District Council AMPs

4.6.3 Council Bylaws

Section 146 of the Local Government Act 2002 provides for a Territorial Authority to make Bylaws in its district for the purposes of managing, regulating against, or protecting from damage, misuse, or loss, or for preventing the use of; the land, structures, or infrastructure associated with the Wastewater Services.

Waimate District Council Consolidated Bylaw 2018, Chapter on Water Services consist of six parts:

- Part 1 General Conditions, applicable to all Network Infrastructure Services.
- Part 2 Urban Water Supply
- Part 3 Rural Water Supply
- Part 4 Stormwater Drainage
- Part 5 Sewerage
- Part 6 Trade Waste

The bylaw defines standards and obligations for the discharge, conditions of connection and infringements.

4.6.4 Council Policies

Significance and Engagement Policy

Waimate District Council developed the Significance and Engagement Policy to determine the significance of issues within the District, and how to align Council engagement with the public based on the degree of significance of the issue.

This policy exists to:

- Inform the public can expect from the Waimate District Council regarding community engagement and the ways you can influence and participate in the decision-making of the Council.
- To provide Council with a tool that guides the assessment of significance during decisionmaking. A decision on significance and engagement provides direction on the level of community engagement that might be desirable to enable Council to develop a clearer understanding of community views and preferences on an issue or proposal.

This Policy identifies the following Strategic assets:

- Regent Theatre
- Waimate Public Library - building and collections
- Resource Recovery Park
- Parks and Reserves
- Public Toilets
- Cemeteries
- Roading Networks and connected infrastructure

- **Sewerage Networks and Treatment Plants**
- Norman Kirk Memorial Pool
- Stormwater Networks
- Water Treatment, Storage and Supply Networks
- Community Housing
- Local Government Centre
- Waimate Sports Stadium

Earthquake Prone Buildings

Earthquake Prone Buildings are no longer included in a Council Policy, but are now included in the Building Act 2004 under, Subpart 6A Building (Earthquake-prone Buildings) Amendment Act 2016. These new provisions came into effect on 1 July 2017.

Council is required to identify potential earthquake prone buildings or parts of Earthquake Prone Buildings and advise building owners that they are required to provide an Engineering Assessment that has been undertaken in accordance with the Earthquake Prone Buildings Methodology.

As the Waimate District is designated as being in a Low Seismic Risk Area the Council has until 1 July 2032 to identify potential earthquake prone buildings in the district. Council also has the ability to identify potentially Earthquake Prone Buildings at any time if they have reason to suspect it may be Earthquake Prone Building.

This Engineering Assessment is required to be provided by the building owner to the Council within 12 months of the building owner being notified by the Council of their building being considered to be an Earthquake Prone Building.

In the case where a building owner has had an Earthquake Prone Building Assessment undertaken prior to 1 July 2017, then this assessment is to be provided to the Council for review against the Earthquake Prone Building Methodology. The Council will assess these reports against the Earthquake Prone Buildings Methodology and decide whether the report is acceptable or may request either additional information or a new report to be provided.

The Council will also assign the Earthquake Prone Building rating and if it is less than 33% then the rating will be entered into the MBIE National Earthquake Prone Buildings database. The building owner will be required to erect and maintain the prescribed placards in the building in the prescribed locations indicating what the Earthquake Prone Building Rating of their building is until such time as the building is strengthened or demolished. These placards are required to be displayed where members of the public will be clearly visible so members of the public are aware of the Earthquake Prone Rating of the building.

The period for building owners to undertake strengthening of buildings in the Waimate District is 35 years from the date when the Council advises the building owner of its decision that the building is an Earthquake Prone Building.

Dangerous and Insanitary Buildings

Council has revoked the Earthquake Prone Buildings, Dangerous and Insanitary Building Policy and separated the Dangerous Buildings and Insanitary Buildings into two individual policies to make easier for staff when dealings with these buildings. These new policies were adopted by Council in December 2017.

When either a Dangerous or an Insanitary Building are brought to Councils attention an assessment will be undertaken by staff to establish whether they are either Dangerous or Insanitary.

Council staff will work with the building owner to make the building safe and to remove or reduce the danger in the case of both dangerous building and insanitary buildings.

4.7 Level of Service Consultation

4.7.1 Consultation Processes

Community Outcomes for the Long Term Plan

The Council has carried out significant consultation to establish the Community Outcomes for the LTP; these were reviewed in 2011 following the changes to the Local Government Act in 2010. For the 2018 LTP the Community Outcomes retain the essence of those included in previous Waimate Community and Long Term Plans and were tested against the Waimate District Council vision statement.

Community Consultation

The Council has undertaken a range of consultation processes over the past few years specifically targeted at gathering information on preferred Levels of Service or the extent of infrastructure that Council will be required to install, future vision or how we manage the service. The extent of the historical and proposed consultation is detailed in Table 4-6 below.

Table 4-6: Wastewater Services Consultation Processes (Historical and Proposed)

Consultation Processes	Key Stakeholders Involved	Date	Reasons for Consultation	Extent of Consultation
Historical				
2012-2022 LTCCP process	All	2012	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
2015-2025 LTP process	All	2015	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
2018-2028 LTP process	All	2015	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
Water Safety Plan (Waimate Urban and Rural)	Urban and Rural customers	2013 & ongoing		
Proposed				
2021-2031 LTP process	All	2021	Legislative requirement criteria of LGA 2002 and RMA	In accordance with the LGA 2002 consultation requirements
District Plan Review	All	2024		
Bylaws	All	2018	Review of Bylaws	Public and Industry submissions requested

4.8 Levels of Service

4.8.1 2021 – 2031 Wastewater Services: Levels of Service

In 2011 the levels of service were reviewed and modified to take into account feedback from various parties including Audit New Zealand, industry best practice and ease in measuring and reporting. These were further reviewed in 2014, 2017 and 2021. Only the Customer Levels of service are reported in the LTP.

4.8.2 Rules for Performance Measures

In 2010, the Local Government Act 2002 was amended to require the Secretary for Local Government to make rules specifying non-financial performance measures for local authorities to use when reporting to their communities. The aim was to help the public to contribute to discussions on future Levels of Service for their communities and to participate more easily in their local authority's decision-making processes.

Performance measure rules come into force on 30 July 2014. Local authorities were required to incorporate the performance measures in the development of the 2015-2025 LTP. The performance measures were reported against for the first time in the 2015/2016 annual reports. The performance measures are:

- Performance measure 1 – System and Adequacy
- Performance measure 2 – Discharge Compliance
- Performance measure 3 - Fault Response Times
- Performance measure 4 - Customer Satisfaction

4.8.3 2021-2031 Wastewater Services: Levels of Service

In 2017 the 2015 Customer Levels of Service were reviewed Table 4-6 details the results of this review.
Council reviewed the customer service requests system to ensure they align with the Mandatory Performance Measures and ensured the internal and Contractor reporting aligns with the Mandatory Performance Measures 'tasks'. Council's AMIS (AssetFinda) and associated Service Request module have been programmed to allow reporting aligned with the NFPM and to ensure consistency and accuracy of reporting.

Table 4-7: LTP 2021 – 2031 Water Services Levels of Service

What we do	**Council provides a piped wastewater collection system, a sewerage treatment plant and disposal system that safety removes sewage from urban homes in Waimate. It is Council policy to implement programmes for the relocation of wastewater disposal areas from riverbeds, wetlands or the margins of rivers, lakes and the coast and to implement programmes to reduce, and eventually cease the discharge of waste from the Council's sewage reticulation and treatment systems into natural waterways.**			
1. Maintain reliable sewerage network services				
How we do it	• Maintain wastewater schemes and respond to service failures • Monitor demand and manage growth of network • Monitor condition and performance of wastewater reticulation and assets • Ongoing pipe investigation programme • Public education (ie wipes disposal)			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Number of dry weather overflows from the sewerage system (M)	Achieved (2018/19)	≤2 per 1000 connections	≤2 per 1000 connections
	Number of blockages in Councils urban sewer transmission reticulation ***	New	≤10	≤6

2. Deliver sewer services according to required environmental standards				
How we do it	• Manage and monitor sewerage treatment and disposal system under conditions of resource consent • Monitor quality of effluent • Monitor ongoing regulatory change for wastewater activities • Treatment and disposal of domestic and industrial wastewater via the wastewater schemes • Update and review Risk Management Strategy			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Compliance with Resource Consents for discharge from sewerage system (M)	Achieved (2018/19)	No abatement notices, infringement notices, enforcement orders and convictions	No abatement notices, infringement notices, enforcement orders and convictions

3. Maintain excellent customer service for sewerage system				
How we do it	• Provide a customer service request system 24 hours a day, 7 days a week • Investigate and rectify sewer services and wastewater odour complaints • Maintain wastewater schemes and respond to service failures or faults • Manage the collection, treatment and disposal of domestic and industrial • wastewater			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Median attendance and resolution times to sewerage overflows resulting from blockages or other faults* (M)	Achieved (2018/19)	Median attendance time ≤60 minutes Median resolution time ≤12 hours	Median attendance time ≤60 minutes Median resolution time ≤12 hours
	Total complaints received about: 1. Sewer odour 2. Sewerage system faults 3. Sewerage system blockages 4. The WDC response to sewerage system issues (M)	Achieved (2018/19)	≤3 complaints per 1,000 connections	≤3 complaints per 1,000 connections
	People receiving the service are satisfied with sewerage services	Achieved (2018/19)	≥97%	≥97%

* Attendance: from the time Council receives notification to the time that service personnel reach site

**Resolution: from the time Council receives notification to the time that service personnel confirm resolution of the fault or interruption.

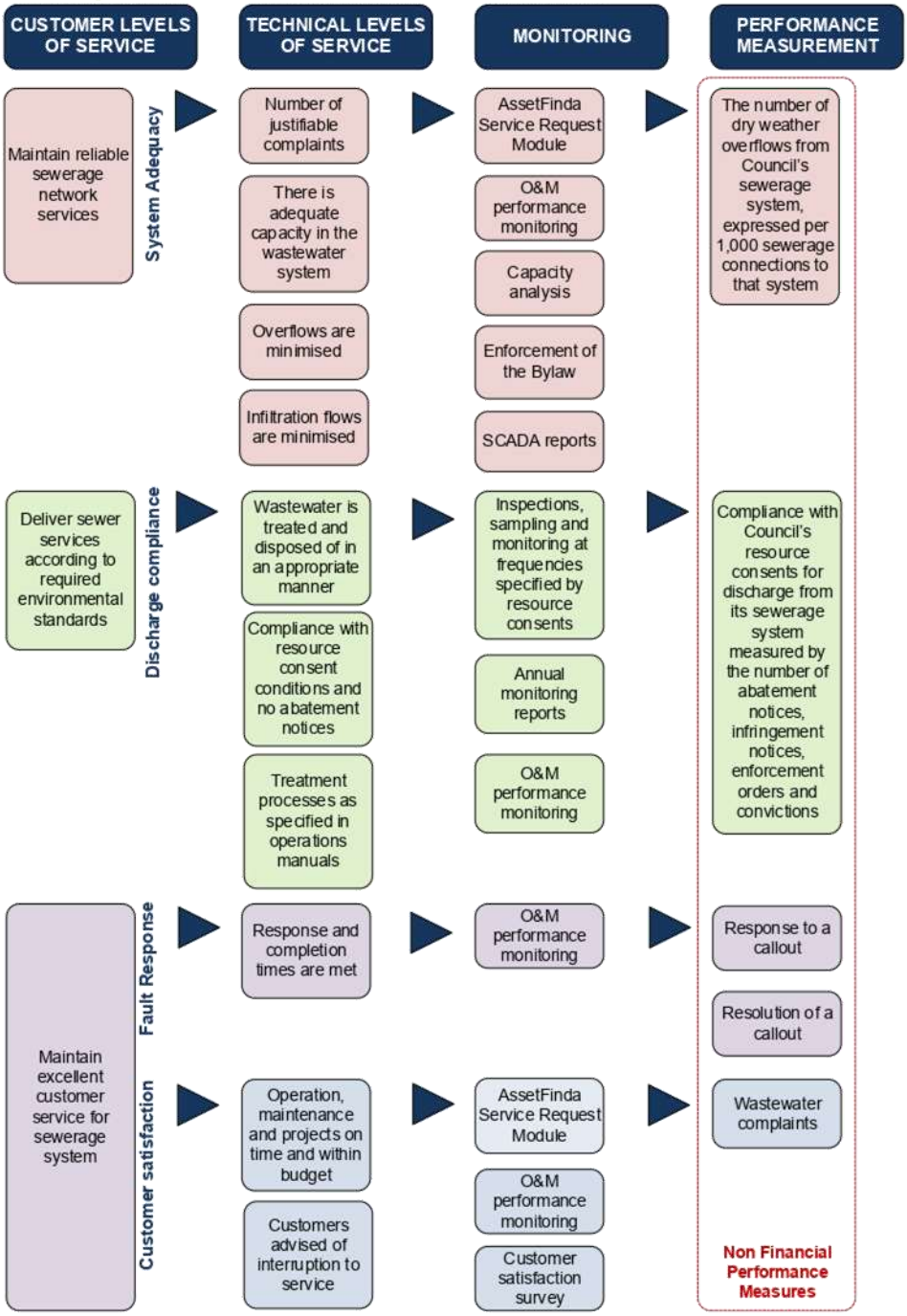
***New Measure: The purpose of the new performance measure is to provide some separation from the NFPM. There has traditionally been some difficulty in understanding whether a blockage was a private issue, or one within council's control. The downward trend in the target is reflective of a continued asset renewal programme and therefore there would be an expectation that blockages would reduce over time as aged earthenware pipes are replaced with uPVC.

The target has been set based on an expectation that blockage rates may increase in the short term as the asset ages further (and flushing flows decrease with a reduction in inflow) and reduce in the longer term as the effect of renewals becomes more pronounced.

The interpretation of the Non-Financial Performance Measures Rules are shown in http://www.dia.govt.nz/diawebsite.nsf/wpg_URL/Resource-material-Our-Policy-Advice-Areas-Local-Government-Policy?OpenDocument#ElectoralAct

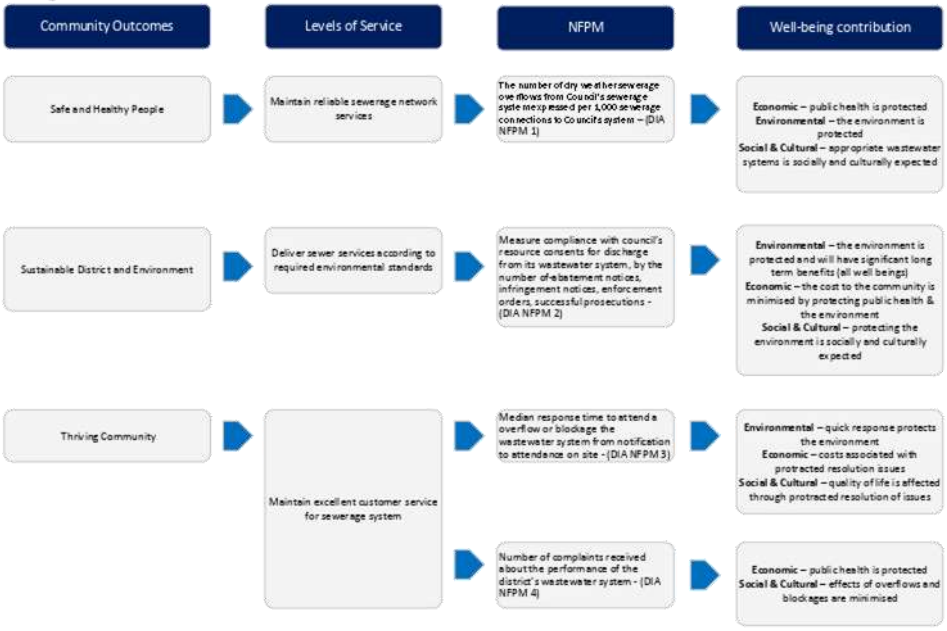
4.8.4 Customer and Technical Levels of Service

The Technical Service Standards for each Customer Levels of Service, along with linkages to the monitoring and Performance Measurements is described below.



4.8.5 Activity contribution to the Four well-beings

Section 10 of the Local Government Act restores the four aspects of community well-being by requiring local authorities to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future. The reinstatement of the four well-beings acknowledges that the Council has a broader role in looking after our communities, than simply providing core services. The wastewater activity levels of service contribution to the four well-beings are shown below.



4.9 Customer Survey

The results for the March 2019 Communitrak customer satisfaction survey as shown below. The results from the survey report that:

- 49% of residents are satisfied with the sewerage system and service in the District, including 27% who are very satisfied (32% in 2017).
- A large percentage (51%) are unable to comment. This is probably due to 56% of residents saying they are not provided with a sewerage system. For those who are provided with the service, only 3% are unable to comment and satisfaction rises to 97%.
- 0.4% of residents overall say they are not very satisfied with the sewerage system and service, with 1% of those provided with a sewerage system being not very satisfied.

The percent not very satisfied is on par with the Peer Group Average and slightly below the National Average readings for the sewerage system.

There are no notable differences between Wards and between socio-economic groups, in terms of those residents who are not very satisfied with the District's sewerage system and service.

The reasons (multiple responses allowed) residents are not very satisfied with the sewerage system and service are:

- *"Sewerage built up to back door and then had a collapse under garage, council came in and fixed, happened again and found pipe out to middle of road was breaking up.*
- *Analysed this and after a week blocked again. Cost in meantime paid for by me but on street. Mill Road , Waimate. Was peeved."*

Figure 4-1: Communitrak Survey Trends'



Figure 4-1 shows the satisfaction levels have increased considerably over the period 2013 to 2017 with a slight reduction in satisfaction levels over the last two years.

5.0 GROWTH AND DEMAND MANAGEMENT

Provides details of growth forecasts, which affect the management, and utilisation of all Waters assets and details demand management strategies.

5.1 Projects That Will Have An Impact On District Population

There are a number of projects that will or have had an impact on the districts population:

- Hunter Downs Irrigation Scheme – Did not proceed (2020)
- Waihao Downs Irrigation scheme (Commissioned)
- Oceania Dairy Factory
- Alps to Ocean Cycle Track (Commissioned)

Details of these projects are presented below.

Hunter Downs Irrigation Scheme

The Hunter Downs Irrigation Scheme was to be a community irrigation proposal developed originally by the South Canterbury Irrigation Trust (SCIT) and Meridian. The scheme would have potentially irrigated up to 40,000 ha of land from the Waitaki River stretching as far north as Otipua. The scheme was reduced to just 12,000 ha of irrigated land with construction supposed to start mid 2018. At the time of writing this AMP, the consent is close to lapsing.

Waihao Downs Irrigation Scheme

The Waihao Downs Irrigation Scheme irrigates 6,800 ha of farmland within a larger command area of 14,000 ha in the Waihao basin. The scheme involves taking water from the Waitaki River which is then distributed through a piped network to farms. There are a few potential farm conversions left.

Kurow Duntroon Irrigation Scheme

The Kurow Duntroon Irrigation Scheme, within the neighbouring Waitaki district, was developed by the Ministry of Works during 1965.

The original system consisted of a siphon drawing water from the Waitaki Dam into a 35 kilometres long open water race delivering water via a gravity fed system of manually operated gates.
This system was replaced during 2018/19 by installing 76 kilometres of pipelines from Waitaki Dam to Duntroon on the west bank of the Maerewhenua River. The system will ultimately enable irrigation of 5,500 hectares.

The Kurow Duntroon Irrigation Company (KDIC) is a community owned irrigation scheme, and holds a resource consent (CRC163429) from Ecan that expires in 2048, for an annual water take of 26.3 million litres. The scheme will increase activity in the rural service industries (on farm contractors and farm supplies) and processing companies (milk companies and vegetable processing).

Oceania Dairy Factory

Oceania Dairy Limited is a wholly-owned subsidiary of Inner Mongolia Yili Industrial Group (Yili), and is China's largest dairy producer. The state-of-the-art Glenavy processing plant has been designed for the production of milk powder for export to China where it will be used by Yili to produce infant formula. Stage Two is now complete.

Alps to Ocean Cycle Track

This is a cycle track from Aoraki/Mt Cook to Oamaru and is not yet fully complete. Construction of the off-road trail is ongoing, and will likely take another few years to finish.
Given central Otago Rail Trail didn't have real impact until a number of years later, Council has assumed that any impact will be similar for Waimate District.



With both the Hunter Downs and Waihao Downs Irrigation projects there is a high chance that Waimate will experience slight increases in population with changes in socio-economic structure and changes in land use.

5.1 Demand Forecasts

The Waimate District Growth Projections- 2020 (Rationale) report provides a projection of the population growth for the Waimate District over the next 30 years. The report provides growth projection outputs for usually resident population, employment, dwellings, rating units and visitors.

Typically, WDC used the growth projections prepared by Statistics New Zealand (StatsNZ). Council is now looking for a more in-depth understanding of what their district might look like over the next 30 years. This coupled with the delayed release of the Stats NZ projections, following 2018 Census, has led WDC to commission these growth projections to understand the future growth in their district and provide a single source of the truth for council.

Four growth scenarios have been modelled for each parameter representing different levels of ambition in terms of the district's growth over the next thirty years.

The report considered four growth scenarios i.e.

- Scenario 1 – Business as Usual (Pre COVID 19)
  - No impact from COVID 19 and no limit on dwellings that can be constructed
- Scenario 2 – High
  - minimal COVID 19 impact and currently zones land reaching capacity
- Scenario 3 - Medium
  - Expected COVID 19 impact, business as usual by 2025
- Scenario 4 - Low
  - Higher than expected COVID 19 impact

Scenario 3 is considered to be the most appropriate for WDC's long term planning as there will be short term effects due to COVID-19.

However, it is not yet known what, if any, long term effects there will be. Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be reprojected, if necessary.
Since this growth projections model was developed it has become apparent that a bubble between New Zealand and Australia will not be forming in 2020. To offer best value for money to WDC, and

due to the minimal impact on the final projections, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening. {Rationale}.

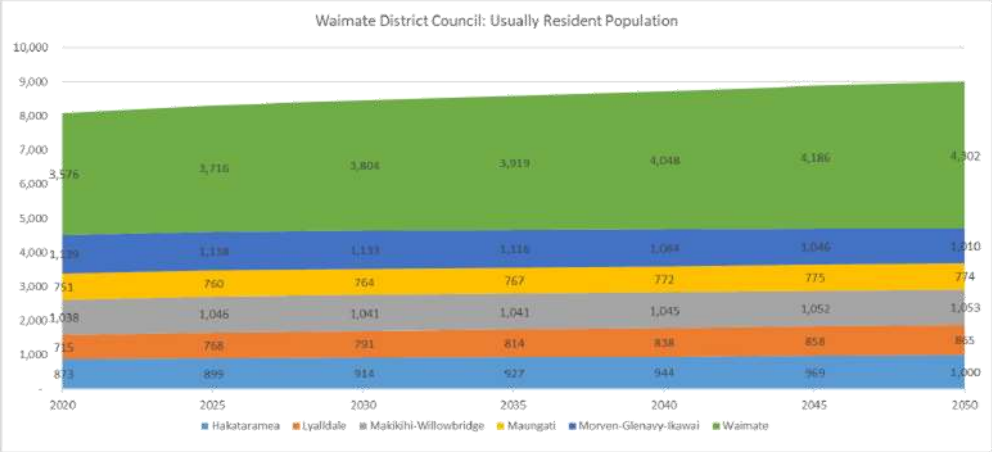
5.1.1 Growth Trends

Population Projections

The key characteristics of Waimate District's population are:

- Younger people leave the area for education and employment opportunities.
- People later in their working lives or early retirement are moving to the area for the lifestyle, affordability and/or retirement.
- Older people (over 70) are moving from the rural areas of the district to Waimate or leaving the area, likely in search of better healthcare or to be closer to family.

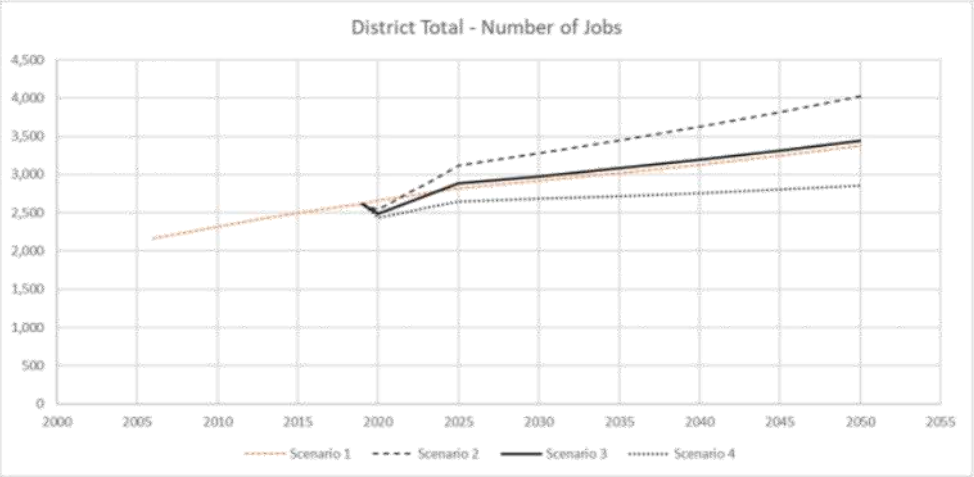
Over the next thirty years, the usually resident population of Waimate District is predicted to increase slightly. As a result there will not be any significant increase or decrease in demand for Council services based on change in population.



Employment Projections

It is projected that WDC will experience a short-term reduction in the number of jobs, but it is expected that come 2025 the economy and number of jobs will have normalised and be on the increase once again.

COVID-19 has some impact on employment in the district, but it is expected that those who lose their jobs will not move away. Typically, the most mobile and reactive portion of the population are those in their early working years, who do not have the necessary finances to "stick out" unemployment, or strong ties (family, property ownership etc) to the area. Waimate District has a relatively small proportion of the population in this age group, between 20 and 35. Therefore, modelling has assumed that if residents become unemployed, they will find work elsewhere and commute or remain unemployed in the area.



The average age of Waimate District's population is older than the national average of 37.3 years (StatsNZ). Looking across the district Waimate township has a significantly older average age of 48.6 years in2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement.

5.2 Response to Projected Growth

The effects of COVID-19 will have a significant impact on nationally and to a lesser extent locally as the Waimate districts' primary industries, agriculture and forestry, are less affected than for example tourism.

The usually resident population is predicted to increase slightly and there will not be any significant increase or decrease in demand for Council services based on the growth projections.

5.3 Wastewater Usage Trends in Waimate District

Table 5-1 below the current flows received by the WWTP is well within consented and design flow limits.

Table 5-1: Wastewater Loading Projections

	Waimate Urban
ADWF (m^3/day)	699
PWWF (m^3/day)	3458
Treatment Capacity (m^3/day)	1,200
Resource Consent Allow. (m^3/day)	Average 1,200
	Max 4,300
	Emergencies 13,300m^3/24 hours
Service Connections (as at July 2020)	1850

The Waimate urban wastewater system was designed and constructed during the period from 1915 through to 1964 and based on a population of 4,000. The existing WWTP has sufficient capacity to serve a connected population of about 5,640 persons. With the current population estimated at 3,576 persons (2020 growth projections) it is currently serving 63% of the total population based capacity. The capacity of the current wastewater system network has not been accurately modelled, but based on a flow loading rate of 312 L/person/day.

In the past lifestyle properties on the boundaries of the Waimate serviced by private septic tanks experienced failures of the septic tank systems. This posed significant health and environmental risks. During the past five years the wastewater system was expanded through connecting some of these properties to the wastewater system.

Wastewater intensive industries can have a large impact on the total daily wastewater consumption for small wastewater schemes. The impact of wastewater intensive industries would need to be assessed as they arise and their effect on the scheme assessed at that time.

5.3.1 Inflow/Infiltration

The rate of Inflow and Infiltration (I&I) of rainwater and ground water into the wastewater system is a key factor in future wastewater demands. Stormwater inflow is caused by rainwater entering the wastewater system through house downpipes that have been incorrectly (illegally) piped into the sewer. Infiltration results from groundwater seeping into the wastewater system through broken pipes or joints. The result is that this I&I puts an unnecessarily large effluent load into the pipes and the WWTP.

Because I&I is such a large factor affecting the performance of the Waimate urban wastewater system, there is a need for Council to investigate the current extent of stormwater I&I into the wastewater system, identify those areas in Waimate where the effects are greatest and focus on reducing I&I in these areas. Council will employ the following strategies to minimise I&I:

- Investigate I&I and develop programmes to reduce the entry of stormwater to the wastewater system in private properties.
- Repair or renew pipes where there is excessive entry of stormwater and or groundwater through defects in the pipes.
- On-going CCTV survey works.

5.3.2 Management of Future Demand for Wastewater Services

Whilst a process is now in place for assessing population projections across the District, this has yet to be formally adopted by Council. A continuous watching brief on population changes is required.

Council will actively review existing infrastructure and the Wastewater Services to ensure Levels of Service will continue to be met as new population figures, demographics and development information becomes available.

5.3.3 Legislative Changes

The legislative framework and government and industry direction is discussed in Section 4.2.

New Zealand Waste Strategy 2002

The New Zealand Waste Strategy 2002 presents a vision for minimising waste and managing it holistically in the long term. It sets out a practical programme of large and small actions for the medium term, as well as some far reaching, long term commitments. Targets that have been set by government that is applicable in the wastewater area and the response/compliance by Council are shown in the table below.

Table 5-2: NZ Waste Strategy Targets

Targets	Compliance	Comment
By December 2005, all territorial local authorities will have implemented the NZ standard model Trade Waste Bylaws or an equivalent	Waimate Consolidated Bylaw 2008	Adopted (Reviewed by 30 June 2018)

Targets	Compliance	Comment
By December 2005, all territorial local authorities will ensure that all holders of new trade waste permits will have in place a recognised waste minimisation and management programme		
By December 2020, all substandard wastewater treatment facilities will be upgraded, closed or replaced with systems that comply with all the relevant regional and coastal plans, standards and guidelines		
By December 2007, more than 95% of sewage sludge currently disposed of to landfill will be composted, beneficially used or appropriately treated to minimise the production of methane and leachate	National progress indicates that this is not able to be measured	

5.4 Demand Management

Demand Management strategies are used as alternatives to the creation of new assets. They are aimed at modifying customer demands to achieve:

Social, environmental and legislative objectives for Waimate District.

The delivery of cost-effective services.

Defer the need for new assets and optimise the performance/utilisation of the existing assets.

This involves implementing strategies to reduce flows into the WWTP and promote more efficient network operations. These strategies involve altering or repairing the asset to achieve the target. The effluent flow reduction strategies used by Council are outlined in the table below.

Table 5-3: Flow Reduction Strategies

Strategy	Description
Stormwater Separation	Removal of stormwater ingress into the wastewater system through upgrading of the stormwater system
Response Time	Prompt response and rectification of faults
Replacement/ Rehabilitation Programme	The Renewal Programme to ensure assets are not utilised beyond their useful life when the risk of unidentified failure is greatly increased
Codes of Practice	Enforcement of appropriate Engineering Codes of Practice to ensure all maintenance is carried out to the relevant standard
Infiltration Reduction	Developing an on-going infiltration reduction programme
Technical Standards	Ensuring new assets are constructed to the correct standards and tested appropriately before being commissioned
Standard Materials	The use of standard (high quality) materials
Quality Audits	To ensure all standards are being met

The Demand Management Plan also involves implementing non-asset strategies to manage the demand for a service. Non-asset solutions for current and future use by the Council and scheme committees are presented in Table 5-4.

Table 5-4: Effluent Flow Reduction Non Asset Strategies

Strategy	Description
Water Conservation/ Public Education	Encouraging water conservation (within the household) and understanding the issues concerning the wastewater system through public education and advertising campaigns

Strategy	Description
Property Inspections	Encouraging property owners to comply with Council's Bylaws and stormwater discharge requirements
New Domestic Technology	Encouraging the adoption of new technologies in the home such as low-flow showerheads and dual flush toilets

6.0 RISK MANAGEMENT

This section looks at the Risk Management Processes utilised by Council for assessing and managing risk within the Wastewater Services.

6.1 Risk Management Strategy

6.1.1 Overview

Council's Wastewater Risk Management Strategy is in its formative stage. Council are progressing down the path of completing, implementing and maintaining risk plans (Utility Risk Management Plans) for the principal utility asset systems to minimise the likelihood of non-achievement of critical business objectives.

Risk analysis involves consideration of the sources of risk, their consequences and the likelihood that those consequences may occur. The objective of risk analysis is to separate the low impact risks from the major risks, and to provide data to assist in the evaluation and treatment of the risks.

6.2 Risk Assessments

There are essentially three levels of risk assessment that should be considered for each activity within Council:

Level 1 - Organisational Risk Assessment

Level 2 - Activity Management Risk Assessment

Level 3 - Critical Asset Risk Assessment.

Level 1 - Organisational Risk Assessment

Organisational Risk Assessment focuses on identification and management of significant operational risks that will have an impact beyond the activity itself and will affect the organisation as a whole. This approach allows the Integrated Risk Management framework to address risks at the organisational level, as well as at both the management and operational levels within the particular Council activities. The decision to implement the treatment measures identified will be at an organisational level, not activity level. To date the Council does not have a district wide risk policy. A Council risk policy will be developed that encompasses the above.

Level 2 - Activity Management Risk Assessment

Activity Management Risk Assessment uses the same principal and consequence tables, but the focus has been at more detailed level. During this process, specific risk events were identified which would affect the operational ability or management of the activity as a whole. If an individual system within the activity was identified as being at a greater risk or would need to be managed in a different way to the rest of the systems, then it was highlighted for separate consideration.

A Risk Summary Table was established in 2011 (refer Appendix C), which identifies risk management strategies to minimise risks associated with the provision of the Water, wastewater, stormwater and solid wastes services. It is considered that the risks, mitigations and improvements have not changed markedly since the risk summary table was established in 2011. Notwithstanding this, specific risks associated with water quality are documented within the Water Safety Plans for each water scheme.

The risk profile will be extended to encompass assets down to a component level in a Risk Management Plan. In the absence of component level assessments the risk summary table will be used to provide guidance for mitigation steps.

The risk management plan will be designed to ensure that:

All significant operational and organisational risks are understood and identified

The highest risks that should be addressed within a 10 year planning horizon are identified

Risk reduction treatments which best meet business needs are applied

The risks assessed are given a ranking as follows:

- Low Risk: Managed by routine procedures
- Moderate: Managed responsibility specified and risk controls reviewed annually
- Significant: Management attention required to reduce risk
- High: Immediate action required to reduce risk

Table 6-1: Risk Summary Table (showing Significant or high Risks only)

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
1	**Higher Level Policies, Procedures and Controls**					
1.5	The Council does not have an acceptable position on the impact of climate change on service delivery	Financial loss due to liability for property damage, loss of asset. Not able to provide service.	Significant	Council needs policy and relevant action plans including relevant design parameters) on Climate Change.	Low	Strategies to implement Councils future policy on the effects of climate change
2	**Financial**					
2.1	Lack of long-term financial planning	Higher than necessary financial costs	Significant	Existing network models are up to date and available	Low	
2.2	Service levels vs funding and works not clear	Service levels not being met due to lack of funding as decision makers not aware of implications for Service Levels.	Significant	Set performance targets for next 10 years and monitor and report on performance. Impacts of delayed capital works reported to Council.	Low	
2.3	Assumptions for financial forecasting not always understood	Additional costs incurred because assumption/uncertainties not accounted for i.e.: asset valuations, depreciation	Significant	Finance/managers need to be aware of assumptions and uncertainties behind financial forecasting information.	Moderate	Improvement of quality of information
2.4	Unforeseen Additional Costs	Reputation of Council detrimentally affected	Significant	Ensuring AMPs and asset information up to date	Low	
2.8	Insurance cover needs review	Insurance not adequate and unnecessary costs incurred	High	Insurance cover reviewed to ensure adequate cover on annual basis.	Low	
3	**Organisational Management**					
3.3	Lifelines Plan not up to date or implemented	Large scale asset failure due to a naturally occurring event resulting in prolonged and substantial loss of service to District	Significant	Ensure Lifelines Plan up-to-date and recommendations implemented that includes having a high level of risk reduction, readiness, response and recovery during and following Civil Defence Emergency.	Significant	Update lifelines plan

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
4	**Human Resources**					
4.3	Information in people's heads or inappropriate recording of information	Organisational knowledge lost with staff leaving	Significant	Ensure staff document and appropriately file everything that is relevant. Ensure good management succession when existing staff leave.	Moderate	Formalise and update maintenance schedules and procedures, contingency and operation and maintenance manuals.
4.4	Insufficient staff or not appropriately skilled	Programmed work not completed due to insufficient staffing or skill levels, having negative impact on service levels and creating public health risk.	High	Skill levels are appropriate	Low	Formal training programme required that includes the use of activity management plans.
4.5	Inadequate attention to staff succession	Organisational knowledge lost with staff leaving	High	Implement good staff/management succession plan and document procedures	Moderate	Ensure staff are appropriately trained and have a good understanding of the requirement for written procedures and manuals (inc. AMP's)
6	**Asset Management**					
6.1	Network modelling, condition assessments not undertaken.	Capital Works programme not optimised. Renewal works not completed due to lack of knowledge causing failure of assets. Future forecasting not accurate.	Significant	Undertake formal condition assessments of network and develop robust renewals programme based on sound knowledge.	Moderate	Network model informed once condition and performance data becomes available.
6.2	As-built information can be slow or incorrect coming from maintenance staff, Contractors, Consultants	Council faces legal action because of incorrect information provided (particularly with regard to LIMS)	Significant	Ensure As-builts up to-date and on record promptly. Ensure GIS capability	Low	
6.3	Criticality assessment not undertaken	Failure of critical assets resulting environmental damage or not meeting service levels	Significant	Undertake criticality assessment of assets and implement strategy for managing critical assets	Low	Incorporate criticality assessment of assets and implement strategy for managing critical assets.
6.5	Asset management systems not up-to-date or completed	Failure to of utility systems because maintenance work not completed or management system not operational.	Significant	Asset Management System in place and updated as required	Low	Continuous improvement required to retain appropriate level of sophistication.

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.8	Capital works delayed due to unforeseen circumstances	Programmed Capital Works not completed. Target Service Levels not met	Significant	Staff held accountable for delays & Staff trained in project management.	Moderate	Develop projects process that provides for project plans to be prepared for every approved renewal and capital development item.
6.9	Deferred renewal and maintenance not recorded or not done	Deferred maintenance not recorded causing unexpected, additional costs from asset failure	High	Record all deferred maintenance and renewals	Significant	Ensure all deferred renewals work recorded and management aware of impact on service levels if not funded.
6.10	Not all easements recorded or obtained	Council faces legal action or cannot carry out its activities because it does not have legal right to cross a property	Significant	Keep up-to-date record of easements. Establish clear policy for processes to be followed when easements are required.	Significant	Easement information needs to be improved with all identified easements provided with details of interested part. Legal situation to be clarified.
6.11	Insufficient documentation of escalating process decision making	Response to emergency situations reduced, higher expenditure	Significant	Employment of staff with the appropriate qualifications and skills	Low	
10	**Asset Risks - Stormwater**					
10.5	Insufficient overland flow paths	Flooding of houses and properties	Significant	Modelling of system will ascertain flow path requirements	Moderate	
10.6	Overland Flow Paths located on private property - no maintenance (overgrown/built upon)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.7	Overland Flow Paths Located on Councils property or roads - no maintenance (overgrown etc.)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
11	**Asset Risks - Wastewater**					
11.1	SCADA Failure	No alarm available	Significant	Back-up systems and procedures	Moderate	

Level 3 - Critical Asset Risk Assessment

Critical assets are considered those assets in which failure would result in a major disruption to the drainage of wastewater or Levels of Service. Usually the identification of critical assets is based on pipe diameter or population served.

The criticality of an asset reflects the consequence of the asset failing (not the probability). High Criticality assets are best defined as assets which have a high consequence of failure (not necessarily a high probability of failure).

A criticality assessment has been carried out in 2017. See Section 3.11.

6.3 Risk Management with Council

6.3.1 Business Continuity

Business Continuity is a progression of disaster recovery, aimed at allowing an organisation to continue functioning after (and ideally, during) a disaster, rather than simply being able to recover after a disaster.

It is proposed to develop Business Continuity and Emergency Management Plan (for rapid and structured response to emergency failures and significant hazards) and ensure review control process is carried out.

6.3.2 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation and forms part of the business continuity process. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture. To this end the Wastewater AMP is quite detailed to ensure all relevant documents and information required for appropriate decision making are recorded and knowledge transfer can occur even in the absence of key staff.

6.3.3 Health and Safety

Council is responsible for providing a safe work environment for its staff and public. A Health and Safety committee meets regularly, and provides information to all council staff on their obligations in this matter. The Councils Utilities staff, by the nature of their work are exposed to risks outside the office environment that are associated with the utilities services (reticulation and facilities). Council provides training in general and specific safety areas as required, examples for the utilities services are:

- Confined space requirements for supervisors and engineering staff that are associated with reticulation.
- Traffic control at work sites via the code of practice.
- Facilities Health and safety register and associated sign in/out procedures.

6.3.4 Pandemic Response – COVID 19

The 2019–20 coronavirus pandemic is ongoing at the time of writing of this Plan. The timeline of events are as follows:

Table 6-2: COVID 19 Chain of events

Date	Event	NZ Government Response	Waimate DC Response
11/02/2020	World Health Organisation declares an official pandemic		
28/02/2020	NZ first reported case		
21/03/2020		Alert Levels (1-4) announced	
23/03/2020			Temporary closure of Council facilities
24/03/2020		Move to Alert Level 3	
25/03/2020		State of Emergency declared	Refuse services continue. Recycling services cease
26/03/2020		Move to Alert Level 4	
27/03/2020			Notice of Essential Services
24/04/2020			Notice of Building Control Services under Alert Level 3
27/04/2020		Move to Alert Level 3	
30/04/2020			Emergency budget response
13/05/2020		State of Emergency lifted	
14/05/2020		Move to Alert Level 2	
10/06/2020		Move to Alert Level 1	

The impacts will be wide ranging and likely include a significant and protracted recession. This presents an opportunity for Council to collaborate with Central Government to invest and progress infrastructure projects giving the economy the injection it will desperately need.

As an initial response Central Government decided to fast track eligible development and infrastructure through amendments to the Resource Management Act. This will aid in getting much-needed infrastructure programmes underway as soon as possible.

Further response includes the establishment of the Infrastructure Industry Reference Group (IIRG) to seek out infrastructure projects that are ready to start as soon as the construction industry returns to normal to reduce the economic impact of the COVID-19 pandemic. These 'shovel ready' projects include water, transport, clean energy and buildings. They would also have a public or regional benefit, create jobs and be able to get underway in short order.

There is a preference for larger projects with a value of over $10 million, which would have an immediate stimulatory effect on the construction industry, its workforce and the economy.
Smaller projects will be considered if they demonstrate a direct and immediate benefit to the regional economies and communities in which they are based.

Council has applied for Government funding for 2 shovel-ready projects, with a combined value of more than $11.4 million.

The COVID 19 pandemic created a very dynamic environment where circumstances can change on a daily basis. At the time of writing this Plan the assumption is that the Waimate district will be able to weather the storm as the districts' primary industries, agriculture and forestry, are less affected than for example tourism. The Department of Internal Affairs 'Local Government Sector COVID-19 Financial Implications Report 2 – Alert Level Scenarios, Assumptions and Updated Analysis' report projects "The agriculture sector is expected to perform relatively well in the short- and long-term".

Council will first attempt to reduce spending in ways that do not require reductions to service levels. Higher levels of reduction in spending would be more likely to require deferral of larger capital projects which may impact on Council's ability to comply with legislation and environmental standards in the 3Waters area.

Council could defer the replacement of assets for a period and potentially reduce the priority of capital expenditure so they can sustain service levels. The deferral of asset replacement may increase infrastructure resilience risks and increase long term costs.

The response to COVID 19 provided a snapshot of how quickly our environment can change and how quickly we can adapt. People working from home. The uptake of technology. Change in transportation patterns. Online sales and deliveries. Outdoor activities. Socio economic impacts and response.

6.3.5 Operation & Maintenance

In the daily operation and maintenance of the wastewater system Council employ a range of risk management procedures including but not limited to:

- Prevention of contamination of treated water
    - Minimum requirements for disinfection of existing water mains and fittings during planned and reactive maintenance
    - Separate vehicles and tools for water and wastewater/stormwater
    - Best appropriate practices for staff including contractors and materials
    - Illegal connections
    - Appropriate use of backflow preventers
- Critical consumers
- Shutdowns
- Health and Safety
- Asbestos handling
- Traffic control and management
- Overflows and Clean up

Council also have the following agreements in place with local contractors in relation to Civil Defence Emergency expectations:

- Provide plant and personnel on site to enable the emergency work to be undertaken
- Advise the Engineer immediately if unable to either commission sufficient resources or undertake the emergency work
- Co-operate with the appropriate authorities i.e. Police, Civil Defence
- Carry out emergency work immediately if such work is essential to ensure the health and safety of the community or to protect the environment
- Prioritise emergency work to reduce the risk to the community and environment to acceptable levels
- Advise the Engineer immediately of any situation where the emergency is likely to continue and affect the health and safety of the community and the environment

6.3.6 Government Review of 3Waters Services

During 2017 the Minister for Local Government initiated a review of 3Waters services to assess whether current local government practices and the system oversight are 'fit for purpose'. This acknowledge that effective 3 Waters services are essential for communities as:

- Health and safety - depends on safe drinking water, safe disposal of waste water and effective stormwater drainage
- Prosperity - depends on adequate supply of cost effective three waters services for housing, businesses and community services
- Environment - depends on well managed extraction of drinking water, and careful disposal of waste water and stormwater

A series of events indicated there are system-wide performance challenges and supported the perception that service failure is the only indicator that service delivery is not in accordance with the expected outcomes.

On 8 July 2020 the Government announced a funding package of $761m to provide immediate post COVID 19 stimulus to local authorities to maintain and improve 3Waters infrastructure, support reform of local government water services delivery arrangements, and support the operation of Taumata Arowai.

On 27 July 2020, the Water Services Bill was introduced to Parliament. The Bill contains all of the details of the new drinking water regulatory system, and provisions relating to source water protection and Taumata Arowai's wastewater and stormwater functions.

A second, complementary Bill, the Taumata Arowai – Water Services Regulator Bill, sets out Taumata Arowai's objectives, general functions, and operating principles, and establishes Taumata Arowai as a Crown agent.

6.3.7 Te Mana o te Wai

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. Te Mana o te Wai is relevant to all freshwater management and not just to the specific aspects of freshwater management referred to in this National Policy Statement.

It provides for the three healths of Te Mana o te Wai –

- Te Hauora o te Wai (the health and well-being of the water),
- Te Hauora o te Tangata (the health and well-being of people), and
- Te Hauora o te Taiao (the health and well-being of the environment)

Te Mana o Te Wai is given effect through the National Policy Statement for Freshwater Management. Refer to Section 4.2.

During September 2019 the Ministry for the Environment (MfE) released the discussion document 'Action for Healthy Waterways' which highlighted the Government's objectives to:

- Stop further degradation of New Zealand freshwater resources
- Reverse past damage
- Address water allocation issues

This strengthens and upholds Te Mana o te Wai – the health and well-being of the water and signalled the direction for urban development, rural land and water management.

Add to this the regulatory changes requiring a multi-barrier approach to drinking water safety, including mandatory disinfection of water supplies, stronger obligations on water suppliers and local authorities to manage risks to sources of drinking water; and strengthened compliance, monitoring and enforcement of drinking water regulation.

6.3.8 Insurance

Background

Council has insurance cover for the Wastewater, Water, Stormwater and Solid waste services as detailed below. The insurance cover is updated on a regular basis following valuations to ensure the insurance cover is appropriate for its purpose. Insurance is provided through a mix of material damage policies and through the Local Authority Protection Programme (LAPP).

The Christchurch earthquakes of September 2010 through to June 2011 have had a significant detrimental effect on all council's ability to obtain insurance for all their assets.

Public Liability and Professional Indemnity

Third party cover for public liability and professional indemnity protection is provided by Risk Pool. Risk Pool is a mutual fund created by New Zealand Local Authorities to provide long term, affordable legal and professional liability protection. Membership of Risk Pool is open to all local authorities. Contributions are levied according to each member's actual risk profile, claims experience and management of risk. The Fund is protected by reinsurance to protect its retained liability on a per claim and / or annual aggregate basis.

Other Insurance

Council's other insurance providers are:

- 'Above ground' insurance policies (Material Damage, Business Interruption, Motor Vehicle, Fidelity Guarantee, Personal Accident, Statutory Liability, Employers Liability, Employment Disputes and Airport Owners / Operators Liability, Standing Timber): Insured across a range of providers, primarily Vero and QBE, with specific insurances provided by Lumley, Ace and Primacy.
- Vero are owned by Suncorp Group, one of the largest financial and insurance operations in Australasia. Vero has a long history in New Zealand providing specialist insurance and risk management.
- QBE Insurance has been operating in New Zealand since 1890, the QBE insurance group is one of the world's top 20 general insurance and reinsurance companies..
- Lumley is a business division of IAG, Australia and New Zealand's largest general insurer. Lumley provide Council's motor vehicle insurance.
- Primacy, owned by Allianz, are a specialist crop and forestry insurer and Australia's largest provider in this field and provide Council's Standing Timber insurance.
- The insurance also provides some non-specified cover; e.g.
    - up to $2,000,000 for property in the course of construction
    - up to $250,000 for capital additions (property acquired)
    - up to $250,000 buildings non-specified
    - up to $250,000 contents (any one site) unless specified
- *'Below ground' infrastructure:* Local Authority Protection Programme (LAPP). A mutual pool created by local authorities to cater for the replacement of infrastructure following catastrophic damage by natural disaster (Civic Financial Services is the administration manager of the Fund); LAPP provides cover for 40% of relevant assets (with central government liable for the remaining 60%).
- *Personal accident cover (staff insurance)*: Ace Insurance for which cover is 24/7 worldwide with different levels of cover for 'management' and 'all other staff'.
- *Land:* is not insured.

6.3.9 Emergency Management

Background

Waimate district is subject to a wide range of natural hazards. Several significant natural events have been recorded which have caused damage to property and the environment with no one hazard being the "standard" event. The district has suffered four main events over the last 45 years:

- Snow storms: in 1967, 1992 and 2006 blanketed a large part of the Waimate district cutting road access causing power outages and stock deaths.
- High Winds: in 1975 damaged trees blocking roads and bringing down power wires.
- Floods: in 1981 and more recently have badly eroded land adjacent rivers damaging bridges and roads. Water supplies with surface water intakes were blocked with sediment. Power cuts also disrupted supply of water to consumers.
- Rural fire: As recently as last year caused disruption to power in Waimate and the surrounding rural margins.
- High Winds: in 2014 damaged trees blocking roads and bringing down power wires.

Council has subsequently modified pumps stations to enable operation using standby generators. Critical pipeline crossings over bridges have been strengthened or alternative pipe routes have been provided.

The impact of the Christchurch earthquake has served to further highlight the importance of adequate emergency planning.

Civil Defence and Emergency Response Plans

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups. Management systems for civil defence emergencies are detailed in the Council's CDEM plan.

The Lifelines Response Plan details the hazards, possible cascading effects and the interventions that may be applicable. It does not consider the effect on any individual community as these will change with the extent of the hazard i.e. the depth and extent of snow and the extent and makeup of that utility i.e. if the water supply has a standby generator.

Disaster Resilience Summary Report

In 2006 the Disaster Resilience Summary Report (DSR) was commissioned. The DRS is designed to:
-

Create an understanding of the Utilities Lifeline services and operation.

Provide a clear summary of facts to assist CDEM undertake their role.

Provide each Utility with a simple method for providing the only information that is required by the CDEM Groups.

Increase CDEM Group knowledge of each Utility's organisation and operations in order to significantly increase the efficiency of future CDEM/Utility contact.

The hazards have were identified that might affect the networks were:
Snow, earthquake, floods (after most floods there is a re-think of how the planning and network is managed), river change/management, rain, wind (trees falling across roads), electricity failure, networks weakness, tsunami, telecommunications and Pandemic planning.

Items requiring further works in progress include:

- Hazardous substance spill
- Fire
- Dam failure
- Drought/climate change
- Fuel supply failure
- Tsunami

6.3.10 Infrastructure Resilience

Recent high profile natural disasters have raised public awareness, but there is still a significant need to increase actual preparedness – both in general (e.g. household plans and emergency supplies) and for specific circumstances (e.g. tsunami preparedness in coastal communities).
However, resilience is not only applicable to natural hazards, but also needs consideration at an operational level where an asset failure is not necessarily a service failure.
Redundancy (duplication) does not provide Resilience. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system. Resilience is about the ability to plan and prepare for adverse events, the ability to absorb the impact and recover quickly, and the ability as a community to adapt to a new environment.
Council acknowledge that resilience is not only about physical assets. It is about the people. It includes but are not limited to:

- connecting people and communities (neighbour to neighbour; educate; access to household resilience items, etc.);
- supporting community organisations
- the built environment and asset systems which are robust

Adverse events/natural disasters/climate change and the related impacts cannot be avoided and as a result Council have to factor this into long term planning, civil defence planning and determining the infrastructure requirements moving forward to ensure the community's expectations are met with regard to safe and reliable services and general wellbeing.
In order to improve resilience Council approach will be to:

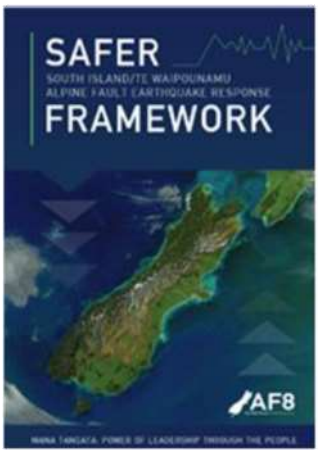
- Actively participate in CDEM planning and activities, at both regional and local levels
- Investigate options for alternative service provision and system redundancy
- Promote design and construction standards (where cost effective) that ensure infrastructure is able to withstand natural hazards and long term changes in circumstances such as those resulting from climate change
- Identify critical assets and ensure mitigation methods are developed
- Obtain insurance where this is deemed to be the most cost effective approach
- Invest in business continuity succession planning and training

Council will take guidance from 100Resilient Cities website http://www.100resilientcities.org/. This includes the strategies of Greater Christchurch and Wellington.

6.3.11 Project AF8

Project AF8 is a cutting edge risk scenario-based earthquake response planning project, informed by thorough earthquake source, expression, and consequences science. The focus of the project is New Zealand's South Island Alpine Fault. Project AF8 commenced in July 2016, with funding from the Ministry of Civil Defence & Emergency Management's Resilience Fund, and is managed by Emergency Management Southland on behalf of all South Island CDEM Groups.

Project AF8 has been initiated to introduce outline planning for response actions, resources, and overall coordination within and between CDEM Groups across the South Island.



The South Island Alpine Fault Earthquake Response (SAFER) Framework provides a concept of coordination of response and priority setting across all six South Island Civil Defence Emergency Management (CDEM) Groups and their partner organisations in the first seven days of response. It is not intended to replace existing plans within agencies but to provide a coordinated picture of response across the South Island.

The SAFER framework includes:

- Scenarios
- Response assumptions
- Secondary and compounding risks such as:
  - Aftershocks
  - Ongoing structural failure
  - Cascading landscape effects
  - Tsunami
  - Severe weather
  - Communicable human diseases
  - Impacts on response operations
- Consolidated response framework

Council will keep a keen eye on the response actions and resources from the AF8 project and work with CDEM Groups.

6.3.12 Climate Change

It is now generally accepted worldwide that human activities have accelerated climate change, and that further future climate change is unavoidable. The effects of climate change include both effects on our climate (such as temperature increases or flooding), and a wide range of secondary effects (such as damage to strategic infrastructure). The following details climate change projections for the Canterbury region.

The National Climate Change Risk Assessment (MfE August 2020) identifies 43 priority risks across five value domains (natural environment, human, economy, built environment and governance) and highlights 10 risks considered to be the most significant. This MfE report highlights, among others, the following two domains (particularly applicable to Council infrastructure) as extreme risks:

Domain	Risk	Consequence
Economy	Risks to governments from economic costs associated with lost productivity, disaster relief expenditure and unfunded contingent liabilities due to extreme events and ongoing, gradual changes.	Extreme
Built environment	Risk to potable water supplies (availability and quality) due to changes in rainfall, temperature, drought, extreme weather events and ongoing sea-level rise.	Extreme
	Risks to buildings due to extreme weather events, drought, increased fire weather and ongoing sea-level rise.	

Waimate District is expected to experience two of the main impacts of climate change – sea level rise and more extreme weather patterns.

Sea level rise is considered the lesser of the influences as much of our coastline is elevated above MSL. Modelling of associated inundation, as a result of tsunami, is known to affect very few council controlled assets.

What is understood is that climate change associated risks will increase in time.

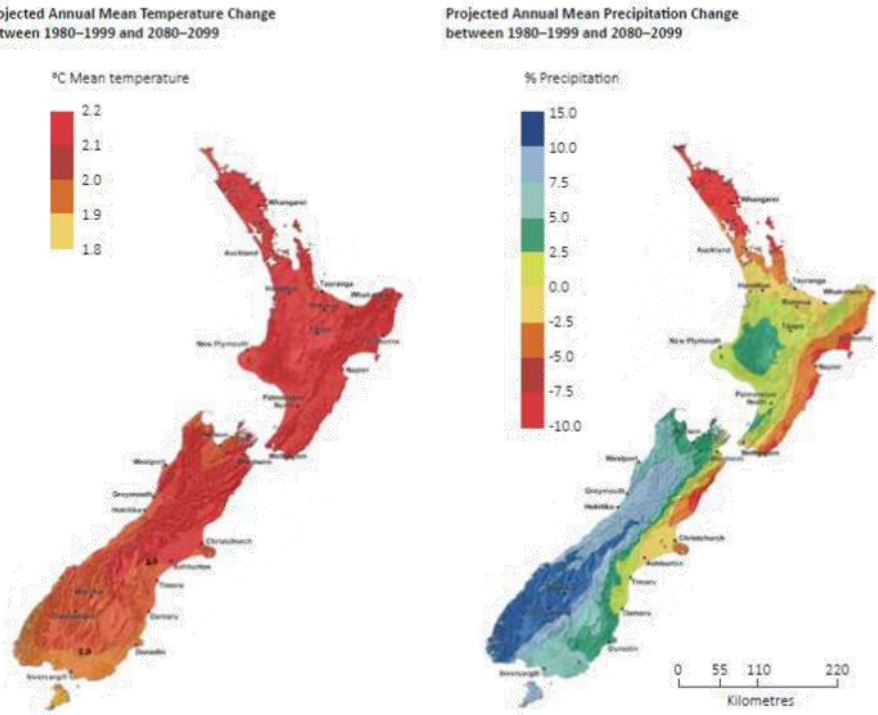
Waimate mayor Craig Rowley said climate change was a priority.

"As far as doing the work on something, we always take it into account looking at the of risk of climate change."

Rowley said it was a hectic time of the year with budgeting and planning, but climate change was something we certainly do recognise" (Timaru Herald 13/9/2017)

Council recognised the roles of Local Government, NZ, the Ministry of Primary Industries, and the Ministry for the Environment and the Royal; Society of NZ in researching and guiding a pragmatic response.

Figure 7: Average changes in annual mean temperature (left, degrees Celsius) and precipitation (right, percent) during 2080–2099 compared to 1980–1999, for a climate change scenario midway between low- and high-carbon futures.



Source: Climate change: implications for New Zealand (Royal Society of New Zealand, April 2016)

The local government position statement on climate change (2017) states

Climate change actions have three components:

1. actions to reduce emissions (mitigation);

2. planning and actions at the national and local level to support public safety and effective adaptation; and

3. limiting or removing pressure on systems affected by climate change.

All local authorities (city, regional, district and unitary) are at the frontline of climate change adaptation and have a role to play in mitigation.

The role of Council is key in delivering the outcomes sought by the community. Key drivers to support and manage the challenges are the National Climate Risk Assessment for New Zealand (Ministry for the Environment, 2020) and the Climate Change Projections for the Canterbury Region (NIWA, 2020).

Projections for Canterbury

Climate Change Projections for the Canterbury Region have considered the following scenarios, which take into account either cutting greenhouse gas emissions over time from 2019 levels – or not curbing emissions during the life of this Infrastructure Strategy.

Average Temperatures

- Increase with time and greenhouse gas concentrations.
- By 2040, annual mean temperature up 0.5 to 1.5°C.
- By 2090, up 0.5 to 2°C (if we cut emissions) or up 1.5 to 3.5°C (if we don't).

Maximum Daytime Temperatures

- By 2040, annual mean maximum temperature up 0.5 to 2°C.
- By 2090, up 1 to 3°C (if we cut emissions) and up 2 to 5°C (if we don't).
- By 2090, western Canterbury's alpine and sub-alpine areas could be 5 to 6°C warmer in spring and summer (if we don't).

Maximum Night-time Temperatures

- By 2040, annual mean minimum temperature up zero to 1°C.
- By 2090, up 0.5 to 1.5°C (if we cut emissions) and up 1 to 2.5°C (if we don't).
- The difference between a day's high and low increases with time and greenhouse gas concentrations.

Hot Days (25°C or more)

- By 2090, expect 20 to 60 more hot days in most of Canterbury (if we don't cut emissions).
- Inland areas feel it the most, particularly the southern Mackenzie Basin, which could have 60 to 85 more hot days.
- Most of these hot days would happen in summer.
- Our warmer season could get longer in relatively low-elevation areas, with 5 to 10 more hot days in autumn and spring.
- Increased fire risks.

Cold Days (Frosts)

- Expect fewer frost days throughout the region.
- Inland areas and higher elevations warm the most, with 10 to 30 fewer annual frost days by 2040, and 20 to 50 fewer by 2090.
- The frost season (the time between a year's first and last frost) will likely get shorter.

Rainfall

There is likely to be increased rainfall depth and intensity associated with climate change. In addition, the heat that comes from the condensation of this increased moisture will make storms more intense. These extreme events may exacerbate flooding risks for Waimate District.

- Most of the region can expect small changes in annual rainfall, up or down 5%.
- By 2040, autumn might be dryer in the Mackenzie Basin, with up to 10% less rain.
- By 2090, winters could be wetter in many eastern, western and southern parts of the region, with 15 to 40% more rain.
- By 2090, Banks Peninsula and many inland areas might get 5 to 15% less rain (if we don't cut emissions).

Snow

- Expect fewer snow days everywhere, especially in the mountains.

Drought

The modelling indicates that by the 2080s, there will be a significant increase in the average water deficit across Canterbury, with increases of between 2 weeks and over 6 weeks of pasture deficit as an average climate condition. By the 2030s, current drought events that are so severe that they only occur in 1 out of 20 years are projected to occur more frequently. Increased fire risks.

Windspeed

- Annual mean wind speeds up slightly, by nil to 5%.
- By 2090, winter and spring could be windier (up 5 to15%, if we don't cut emissions).
- That seasonal change might be more keenly felt in inland areas north and west of Rangiora (up 15 to 25%).
- Increased fire risks.

Sea Level Rise

Climate Change Projections for the Canterbury Region have identified worsening impacts over time at a regional and national level:

- Sea level rise projections for Canterbury are the same as for New Zealand.
- Up by 0.4m in the next 50 years and up 0.6 to 0.7m in 100 years (if we cut emissions).
- Up 0.5m in 50 years and up 1.2 metres in 100 years (if we don't).
- High tides get higher. At 0.65 metres of sea level rise, every high tide is above the spring tide mark (compared to 10% now).



Source: www.wetlandtrust.org.nz



Source: Stuff 24 July 2017

Climate Change Effects

The major effects that may impact on the Council's Infrastructure activities are set out below, along with potential mitigation options and an analysis of when the effects may occur. It should be noted that further work is required to understand how these effects will impact the Waimate District, but the collection and monitoring of data will be used to inform a more robust climate change response.

Dust from Unsealed Roads: Hotter temperatures and associated drought conditions could have detrimental effects in terms of increased dust from unsealed roads. This may mean that in future areas of unsealed roads need to be sealed, particularly close to residential properties. Council currently allows for $50k to part fund "dust seals" via policy. Road classifications and traffic volumes on our low use roads dictate the overall level of service. Individuals are able, with part funding by Council, to increase the level of service adjacent to their property to mitigate adverse effects associated with dust.

Council will continually monitor demand for this service and provide increased funding as required.

Hotter temperatures potentially have an impact on the timing of both grading and metalling activities which will need to be monitored over time.

In the shorter term this approach is considered appropriate but as the effects of drought conditions become more prevalent, Council may need to consider a revision of the level of service relating to unsealed rural roads which, in turn, will adversely affect funding requirements (increased).

- Likelihood - Possible (25 – 50%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Changes in Demand: An overall decrease in the mean rainfall for the district could impact on land use and in turn change demand on certain areas of the Council's infrastructure networks. More intense rainfall events have the ability to damage crops and this may manifest in changing farming practices. These changes in farming practices could result in changing traffic volumes for particular areas, changes in demand from our water networks, and requirements for higher levels of service to mitigate the risks associated with nuisance flooding, to name the major impacts.

Council will need to monitor and understand these requirements to inform future work programmes. This is achieved through regular traffic counts, up-to-date hydraulic modelling of our water schemes and optimised renewal of drainage assets.

Council is mindful that changes in demand with manifest as changes to LoS, geographic demand and overall demand. In order to cater for this, underlying data is important to plan appropriate renewals in the future.

Council is also installing water metering within the urban water network as a means to manage demand, manage water losses and to increase the availability of potable water.

- Likelihood - Likely (50 – 70%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Drainage Capacity: Extreme rainfall events in a generally dry region may cause surface flooding affects due to poor capacity of drainage assets. The cost of upgrading drainage assets for these extreme events is likely to be prohibitive for Council. Whilst, as a district, council is unable to build infrastructure to deal with these extreme flows and volumes, it is able to define the levels of service (20% and 2% annual exceedance probability) and therefore the level of protection that ratepayers and users can expect.

Mitigation of events outside of these parameters are dealt with through the protection and definition of overland flow paths, defined areas for detention and improved stormwater management practices. These practices (in an urban sense) are defined in Waimate District Councils draft Stormwater Management Plan which is an underpinning document for the global consent that is currently being sought through Environment Canterbury Regional Council. For example, Council defines on-site management of stormwater as the preferred solution up to a 1 in 50 year event. The defined 1 in 50 year design event takes in to account climate change factors defined by NIWA.

Extreme rainfall events have a detrimental impact on councils wastewater network where inflow of stormwater presents several challenges in terms of conveyance capacity and surcharging of manholes. In 2021, council is undertaking an inflow investigation to identify which areas are affected and formulating appropriate responses to mitigate the effects. Left unchecked, climate change impacts would adversely affect this activity. When addressed, this will lead to increased levels of service, allow for future growth by increasing available capacity and reduced compliance risks.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Design, planning, and policy

Increased Flood Damage Repair Work: Extreme rainfall events in a generally dry region may cause surface flooding affects and in turn increase requirements for flood damage repair works. Consideration will need to be given to design and location aspects for Council's assets to reduce the risk of damage or loss of service due to extreme weather events. There is no provision (currently) to fund these repairs and they are typically funded via existing budgets and often with co-funding from Waka Kotahi.

Council is continually monitoring the financial effects associated with flood events (and the diversion of existing budgets) and has considered (in the past) developing a "flood event" fund. This monitoring will continue with intervention likely if existing programmed work begins to be adversely affected. Potentially this issue will need to be consulted on as increased costs will result in increased rate requirement. Resultantly the community will receive a higher level of service than currently experienced.

Furthermore, storm events can impact on raw water quality from streams and bores used for water supply. This presents challenges associated with the provision of potable water in terms of reliability, treatability and therefore compliance with the Drinking Water Standards for New Zealand

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Monitor and adapt funding if required

Water availability for Construction: Increasing demand for water is currently an important issue for Canterbury. This increased demand is likely to become increasingly critical in a future characterised by drier average conditions, and an associated increase in both drought frequency and intensity. This may mean, as an example, that it will be more difficult to obtain the required water to complete construction works.

Updating of hydraulic models for the council water supplies allows for optimised future renewals that address the location of demand within the schemes (up or down). They also allow Council to plan for growth and increased demand as a result of changes to legislation e.g. the Water Services Bill and its potential impact on water suppliers outside of the current reform programme.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2025 onwards
- Mitigation - Monitor and adapt future programmes as required (LoS, additional demand, changing demand)

6.4 Significant Negative Effects

Table 6-3 below identifies the negative effects for the Waimate Community that the Wastewater Activity may have on the social, economic, environmental or cultural well-being of the community. It indicates how the existing approach or proposed action to address these in the future. There are no significant negative effects shown to occur for the Wastewater Services.

Table 6-3: Negative Effects – Wastewater Activity

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Wastewater Treatment Plant							
Discharge of treated backwash water to rivers	⇔	⇧	Minor	Mod	Mod	Minor	Maintain current consents for WWTP discharge. WWTP maintained to ensure continued compliance with resource consents
Biosolids discharge to land	⇔	⇧	Minor	Minor	Mod	Minor	Emphasise social responsibility (sustainable resources)

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Discharge of odour	⇔	⇩	Nil	Nil	Nil	Nil	Maintain odour control by ensuring staff are appropriately trained
Pump Stations							
Noise	⇔	⇔	Minor	Nil	Minor	Nil	Have a high degree of noise mitigation
Overflows	⇔	⇔	Mod	Minor	Minor	Minor	Pump station overflows are reported and resolved within a short space of time.
Visual	⇔	⇔	Minor	Minor	Nil	Minor	Aesthetics are considered during design and existing facilities are maintained to ensure minimum visual impact
Discharge of odour	⇔	⇩	Nil	Nil	Nil	Nil	Reported and resolved within short period

⇧ Increasing ⇔ Remaining the same ⇩ Decreasing

6.5 Capital Programme Delivery

Council has an ambitious capital programme driven by a number of factors:

- Continuation of the active renewal programmes;
- Capital works required to meet the current Drinking Water Standards for New Zealand (DWSNZ)under the existing legislative framework;
- Future capital works associated with compliance through the proposed Water Services Act; and
- Capital works associated with the Department of Internal Affairs stimulus funding.

Particular pressure is exerted in year one of the 2021-31 Long Term Plan (Figures 8.1 – 8.4). In order to mitigate risks associated with programme delivery, Council has implemented a number of tactical responses:

i. A Project Manager and support staff (1.5 FTE) have been engaged to ensure that proposed stimulus funded projects (total $3.68M) are completed by 31 March 2022.
ii. The Project Manager is also assisting with timely delivery of proposed LTP projects through procurement assistance.
iii. All capital works have been programmed for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Where possible the programme has been modified to ensure successful and cost effective procurement can be realised.
iv. Council is aware that, given the effects of Covid 19, that material supply was likely to be impacted. Resultantly, Council addressed this issue by sourcing materials early and maintaining stock levels that can be drawn down on when projects commence. Sourcing materials early has also mitigated, to some extent, elevated pricing as raw materials become more scarce.

v. Procurement is now completed through the Government Electronic Tenders System (GETS). This affords the ability to notify the wider contracting / consulting market of upcoming projects and will undoubtedly maximise submissions received once projects are tendered.
vi. Nearly $2.5M of projects budgeted for 2021/22 are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. This maximises available construction time to achieve completion of the proposed capital programme.

The Waimate district is fortunate to have significant contracting resource located within the boundaries and at varying scale. In fact, one of the largest contractors in the South Island has its head office located within the Waimate town. Further afield, council is able to draw on further resource located to the North in Timaru and to the South in Oamaru.
As with any capital programme risks will always remain, even if mitigation has been employed. Known risks include:

- Dependent projects – Some proposed capital works are dependent on either technical investigations or other capital works. Delays in the latter could impact deliverability.
- Material Sourcing – Whilst proactive in sourcing materials, the risk associated with slow supply chains remain. There is also a risk associated with elevated pricing that could modify the scope of some projects.
- Compliance risks – A number of water supply compliance projects have been budgeted (2020/21 and 2021/22) to meet compliance requirements as defined in the current DWSNZ. Council is aware that enactment of the Water Services Act is highly likely to offer alternative means of treatment for some of these water schemes and anticipates, under this scenario, that the redefined capital works projects are likely to be more cost effective in the longer term. Timing associated with the "new standards" is restrictive in terms of construction. However, council is confident that these changes will occur and has selected to begin construction of the common requirements (pre and post Water Services Act) as Stage 1 to mitigate the potential loss of time.
- Delay in increased levels of service associated with the upgrade of individual water schemes for compliance with the DWSNZ. Whilst it is unlikely that the level of service will reduce, the current LoS will be extended until upgrades are commissioned.

7.0 LIFECYCLE MANAGEMENT PLAN

This section applies the risk polices described in Section 6 to develop the broad strategies and specific work programmes required to achieve the goals and standards outlined in Sections 3 and Section 4. It presents the lifecycle management plan for the wastewater assets, and includes:

A description of the trends and issues.

Detailed management, operations and maintenance, renewal and development strategies.

Work programmes and associated financial forecasts.

Improvement activities.

7.1 Asset Lifecycle

Assets have a life cycle as they move through from the initial concept to the final disposal. Depending on the type of asset, its lifecycle may vary from 10 years to over 100 years. Key stages in the asset life cycle are:

- Asset planning - when the new asset is designed. Decisions made at this time influence the cost of operating and maintaining the asset, and the lifespan of the asset. Alternative, non-asset solutions, should also be considered at this time.
- Asset creation or acquisition - when the asset is purchased, constructed or vested in Council. Capital cost, design and construction standards, commissioning the asset, and guarantees by suppliers influence the cost of operating the asset and the lifespan of the asset.
- Asset operations and maintenance - when the asset is operated and maintained. Operation relates to a number of elements including efficiency, power costs and throughput. This is usually more applicable to mechanical plant rather than static assets such as pipes. Maintenance relates to preventative maintenance where minor work is carried out to prevent more expensive work in the future, and reactive maintenance where a failure is fixed.
- Asset condition and performance monitoring - when the asset is examined and checked to establish the remaining life of the asset, what corrective action is required including maintenance, rehabilitation or renewal and within what timescale
- Asset rehabilitation and renewal - when the asset is restored or replaced to ensure that the required level of service can be delivered.
- Asset disposal and rearrangement - When a failed or redundant asset is sold off, put to another use, or abandoned.

7.2 Lifecycle Management - An Overview

The Lifecycle Management Programmes cover the four key categories of work necessary to achieve the required outcomes from the wastewater supply activity. These programmes are:

Management Programme: Management functions required to support the other Programmes
Operations and Maintenance Programme: To ensure efficient operation and serviceability of the assets so that they achieve their service potential over their useful lives
Renewal Programme: To provide for the progressive replacement of individual assets that have reached the end of their useful lives

→ Maintaining the service potential of the assets and ensuring that the assets achieve that potential

Development Programme: To improve parts of the system currently performing below target service standards and to allow development to meet future demand requirements

→ Closing service gaps. Meeting future demand

The Operations & Maintenance and Renewal Programmes are focused on maintaining the current service potential of assets, and are primarily driven by the condition of assets although asset performance is often an indicator of asset condition.

The Development Programme is focused on closing service gaps by increasing the service potential of the wastewater supply system and is primarily driven by the performance of assets and the need to accommodate growth in the District.

7.3 Management Programme

7.3.1 Introduction

Management and monitoring strategies set out the activities required to support the maintenance, operations cyclic renewal and asset development programmes. These activities include:

- Strategic Planning
- Data Management and Evaluation
- Business Processes
- Monitoring
- Financial Management

Strategic planning and a focus on meeting the needs of wastewater customers drives the design of management processes which in turn are reflected in the level of performance that is achieved. Collection of data necessary to manage the wastewater system effectively and processes for the analysis and interpretation of this data support all management activities.

7.3.2 Management Strategies

The following table sets out each strategy in this category.

Table 7-1: Management Strategies

Strategy	Objective/ Description
Strategic Planning	
Human Resources	Developing the professional skills of the staff through adequate training and experience. Personal Development Plans will be agreed with staff each year and a register maintained to record training history. Staff are encouraged to belong to appropriate professional bodies and to attend appropriate conferences, seminars and training courses.
Strategic Alignment	This Asset Management Plan will support the achievement of relevant Community Outcomes for Waimate District. Community Outcomes for Waimate District are set out in the Long Term Plan. The intended contribution of the Council's wastewater system to the achievement of Community Outcomes will be clearly set out in this Asset Management Plan.
Service Levels	Clear statement of Wastewater Services provided and standards to be achieved as a basis for future consultation with the Community. In the first instance customer service standards have been developed as part of a wider performance management framework for the wastewater activity. This performance management framework incorporates: – Customer Service Standards – Standards for the Wastewater Service from the end users perspective – Activity Service Standards – Key high level standards which reflect the Waimate District Community Outcomes and which enable the overall performance of the wastewater activity to be monitored – Technical Standards – More detailed standards that can be used by the Council to monitor the performance of aspects the wastewater activity on an "as required" basis
Sustainable Management	Ensure all planning for the management, operation, maintenance, renewal and development of the wastewater systems is compatible with sustainable management principles. The Council will pursue ways of limiting the use of natural resources including energy, valued landscapes (and other natural heritage) and adverse effects on waterways. This will involve auditing the systems and materials used, and developing ways to incorporate sustainable operation and development principles into its activities. For example, auditing power usage in pump stations, and using non-asset based solutions where possible.
Data Management and Evaluation	
Asset Management Systems	Optimise the application of Asset Management Systems over the short to medium term and develop functionality in line with business needs. Staff changes in the past resulted in the neglect of this area. Refinement of asset data requirements will occur as staff identify management applications for data and refine reporting capacity. The Council will review the adequacy of the systems for future asset management purposes and proactively introduce enhanced system functionality as justified by business needs to support a high standard of decision-making.
Network Modelling	Hydraulic network models exist. These models is operated by external consultants and are based in the Infoworks modelling software. Computer models of the wastewater network and utilities enables the Council to: – Determine accurately the existing capacity of the system – Identify inadequate sections of the system – Operate the system in the most efficient manner – Determine the impact of further development on the system – Identify system upgrading requirements – Compare options for upgrading the wastewater system.

Strategy	Objective/ Description
Data Collection	Data collection programmes (condition, performance, asset registers) closely aligned with business needs will be implemented in accordance with documented quality processes Data collection, maintenance and analysis is expensive and it is important that programmes and techniques are cost effective and consistent with business needs. Systematic processes will be further developed for the collection and upgrading of essential/critical data including: – Asset attribute information – Asset performance data – Asset condition data Staff changes have had a positive impact on the AssetFinda/GIS data acquisition, capturing, trending and analysis. This will increase as new assets are acquired through upgrades/renewals and will require improvement and refinement. Going forward Council will align its data collection and recording with the Metadata Standards.
GIS Data Quality Assurance	GIS data will be the subject of defined quality assurance processes The Council will introduce quality processes intended to: ensure that all future data entered to the GIS system meets defined quality standards. Support the progressive and systematic review of existing data on the GIS system.
Business Processes	
Asset Management Plan Updates	This Asset Management Plan remains a strategic 'living' document and will be updated annually and reviewed at three yearly intervals or more frequently as necessary to incorporate significant improvements to asset management practices (as proposed in the improvement plan). The scope of the review will be influenced by changes in Community Outcomes for Waimate District, service standards, improved knowledge of assets, introduction of Asset Management improvements and corporate strategy/ policy and process.
Risk Management	Risk Management is an essential part of Asset Management. Wastewater activity risks will be managed by developing a Risk Management Plan for the wastewater activity and the implementation of risk mitigation measures to maintain risk exposure at acceptable levels. Risk mitigation measures will include maintaining appropriate insurance cover, emergency response planning, condition monitoring of critical assets, preventative maintenance, use of telemetry, implementation of operations manuals, review of standards and physical works programmes.
Infrastructure Asset valuation	Continue to perform valuations in a manner that is consistent with national guidelines and Council's corporate policy. Asset valuations are the basis for several key asset management processes including asset renewal modelling and financial risk assessments. Valuations of the wastewater system will be carried out based on data from the GIS and AMS systems to ensure auditability and alignment with other processes.
Statutory Compliance	Implement quality plans that identify legal obligations and processes adopted to achieve statutory compliance. Section 4.3 of this plan sets out the legislative environment for the Wastewater Activity.
Quality Assurance	Document, review and implement quality processes for all key business activities in accordance with standard practices. Quality processes will cover activities such as reporting, data collection and management, contract monitoring, risk management, economic analysis, performance monitoring, strategic planning, customer contact, asset valuation, asset operation, work specification, etc.

Strategy	Objective/ Description
Monitoring	
Asset Performance	The Council will continue to monitor the performance of the wastewater assets as an input to asset renewal and asset development programmes. This monitoring includes: – Customer service requests – Asset failure records – Asset Maintenance records – Compliance with Resource Consents – Wastewater Treatment Plant effluent quality – Critical asset audits
Financial Management	
Budgeting	Prepare all expenditure programmes for the wastewater activity in accordance with Council funding and budget preparation policies and procedures. The different categories of expenditure within the financial programmes will be identified to enable the funding to be allocated in accordance with the Council's policies.
Financial management	Manage the wastewater activity budget in accordance with statutes and corporate policy. This will involve: – Economic appraisal of all capital expenditure – Annual review of Asset Management Plan financial programmes – Recording of significant deferred maintenance and asset renewals – Continuous monitoring of expenditure against budget
Sustainable Funding	Ensure the wastewater system is managed in a financially sustainable manner over the long term. The financial requirements for the provision of the Wastewater Services sustainably and to acceptable standards over the long term will be identified and provided for in draft budgets. These requirements include: – Management of the Wastewater Services – Operation and maintenance of the wastewater systems – Asset replacement – Asset development to ensure that the ability of the wastewater systems to deliver an acceptable level of service is not significantly degraded by growth in Waimate District

7.3.3 Management Standards

The Council's Wastewater Services are managed in accordance with the following standards:

- Generally accepted accounting practice (GAAP) and more specifically with FRS-3 "Accounting for Property, Plant and Equipment" (to be superseded by NZ IAS 16)
- The International Asset Management Manual
- Resource Consent Conditions for the Waimate District Wastewater Activity
- Council's Health and Safety Plan
- Council's Quality Assurance Documents
- Operations Manuals

7.4 Operations and Maintenance Plan

7.4.1 Introduction

Operations and Maintenance strategies set out how the Wastewater Services will be operated and maintained on a day-to-day basis to consistently achieve the optimum use of assets. Operations and Maintenance activities fall into the following categories, each having distinct objectives and triggering mechanisms:

Operations - Activities designed to ensure efficient utilisation of the assets, and therefore that the assets achieve their service potential. Operational strategies cover activities such as energy usage, control of mechanical and electrical plant, inspections and service management.

Maintenance - Maintenance strategies are designed to enable existing assets to operate to their service potential over their useful life. This is necessary to meet service standards, achieve target standards and prevent premature asset failure or deterioration. There are three types of maintenance:
Programmed maintenance - A base level of maintenance carried out to a predetermined schedule. Its objective is to maintain the service potential of the asset system
Condition maintenance - Maintenance actioned as a result of condition or performance evaluations of components of the water supply system. Its objective is to avoid primary system failure
Reactive maintenance - Maintenance carried out in response to reported problems or system defects. Its objective is to maintain day-to-day Levels of Service

7.4.2 Method of Delivery

The operation and maintenance of the Wastewater Services is carried out using a combination of Council's staff and external contractors. Council staff generally carry out operational activities and maintenance of a routine nature with external contractors being used for specialist activities such as electrical work, laboratory testing and major overhauls of mechanical equipment. From time to time Council may use the services of local drain layers, earthworks contractors or plant hire. This is done through a mix of quotations and tendering with Council staff overseeing works.

7.4.3 Operations and Maintenance Strategies

The following table sets out operations and maintenance strategies:

Table 7-2: O&M Strategies

Strategy	Objective/ Description
Routine Maintenance	Routine Maintenance is carried out, supervised and monitored by Council's in house operational unit
Repairs and Corrective Maintenance	Reactive maintenance is undertaken as quickly as practically possible to restore an asset to a satisfactory condition after a failure or an unsatisfactory condition has been detected that is likely to fail in the short term. Council provides customer support for any associated requests for work related to the assets.
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. Redesign and modifications will be undertaken in a methodical manner to ensure alternative options are considered and optimum decisions made
Operations	Operational activities are undertaken by Council in house operational unit 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. Work is performed to Council's standards and specifications
Physical Works Monitoring	The operational unit consist of skilled staff that are well versed on Council standards and specifications. Work is managed and overseen by the Utilities Supervisor. Weekly meetings are held to ensure work are completed on time and to Council standards
Operation of Utilities	Utilities such as the treatment plant and pump stations are operated in terms of defined parameters and standards set out in quality system manuals. Wastewater systems will be operated in terms of these quality manuals
Incident Management	Council approach is an escalation process from minor to major, all incidence is managed by the Council staff. Involvement is also judged by the potential consequences or asset criticality

Strategy	Objective/ Description
System Control and Monitoring	Where available, the SCADA system provides surveillance of the Treatment Plant and Pumping station in the wastewater system and will provide alarms when equipment fails or when operating parameters are exceeded. The SCADA system also records operational data
Key Manhole Inspection	Council staff inspect approximately 20 manholes within the network on a weekly frequency. These key manholes provides a good indication that the network is performing well and provides for early warning if any problems exist

7.4.4 Priority Response times

The Priority Response times targets for the Wastewater Services are as follows.

Table 7-3: Priority Response Times

Priority	Response	Completion
P1	1 Hour	24 Hours
P2	4 Hours	48 Hours
P3	1 Day	5 Days
P4	5 Days	10 Days
P5	Projects	Specific Dates

The following details the priority for the individual utilities alarms and callouts.

Table 7-4: Alarm Priority

Utility	Description	Priority
Wastewater	Alarm	As recorded
	Blockage	P1
	Maintenance Urgent	P1
	Health Issues	P1
	Odour	P1
	Overflow	P1
	Locate Asset	P2
	Maintenance	P3
	General Enquiry	P3

7.4.5 Operations and Maintenance Standards

The following standards are applicable to the operation and maintenance of the Wastewater system:

- NZS4404: 2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice (which provides standards for materials and construction of piped water supply systems).
- Relevant Resource Consents and the Resource Management Act 1991.
- Transit New Zealand Guidelines 'Working on the Road'.
- Health and Safety Plans.
- Electrical Regulations 1993.
- Waimate District Council quality assurance processes, including contract management procedures.

7.4.6 Council Utilities Staff Qualifications

The following table details the utilities staff qualifications as at January 2018.

Table 7-5: Utilities Staff Qualifications

Position	Water Treatment	Wastewater Treatment	Reticulation Maintenance (Water & Waste)	Drain Laying & Plumbing	Backflow Prevention	Traffic Management		Confined Spaces	Heights	Asbestos	Chlorine	Chemical Handlers
						STMS	TC					
Water & Waste Manager	Level 3&4 Plus Diploma Level 5	-	-	-	-	-	-	-	-	-	-	-
Utilities Supervisor	Level 3&4 Diploma Level 5 (incomplete)	-	Level 3	-	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Utilities Technician	Level 3&4	Level 4 (incomplete)	Level 3	-	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Utilities Technician	Level 4	-	Plumber and Drainlayer	-	-	-	Yes	Yes	Yes	-	Yes	Yes
Three Waters Technical Administrator	-	-	-	-	-	-	-	-	-	-	Yes	-
Utilities Technician	Level 4 (Incomplete)	Level 4	Level 3	-	-	-	Yes	Yes	Yes	-	Yes	Yes

NZ Water Competency Framework

Assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate.

Increases in the complexity of water and wastewater treatment plants will occur as drinking water and environmental standards increase. The complexity of these plants and their associated resource consent compliance will require skilled and trained engineers for their operation, maintenance and supervision. Council needs to stay abreast of any resource requirements and qualifications to ensure the most appropriate method for delivery of the required levels of service.

During 2020 Water New Zealand released its draft Competency Framework which describes what people should be able to do and what they need to know to competently undertake their work. The Competency Framework use treatment operator roles, the people who operate, monitor and maintain water and wastewater services, as a starting point. Network/Distribution operators are still to be developed.

The Water Industry Professionals Association (WIPA) was jointly established by the Water Industry Operations Group and Water New Zealand to provide a system of recording the professional development of people working in the water and wastewater industry to ensure a high level of competency within the industry was maintained. At the time of writing this Plan registration is voluntary but may become compulsory under the new regulatory framework.

The Competency Framework identifies nine areas as shown below.

1. Governance	Determination of purpose Holding to account Setting the culture Ensuring compliance
2. Policy development	Develop policies Analyse strategic requirements Analyse policy requirements
3. Strategy development	Forecast & analyse future user requirements and demands Develop strategies Plan the implementation of strategies
4. Asset Management planning	Appraise investment options Apply whole of life costing principles Produce business case for creation/acquisition of assets Plan for contingencies Develop and communicate asset management plans
5. Implement Asset Management plans	Create and acquire assets Control operations Maintain assets Optimise and rationalise assets Review or dispose of assets
6. Capability development	Develop and deploy teams Develop and deploy suppliers Develop and manage organisational change Shape the culture
7. Risk management & performance improvement	Appraise and manage risks Assure the quality of the process Monitor and review progress and performance Review and audit compliance with legal, regularity, ethical and social requirements Learn from mistakes
8. Asset knowledge management	Define asset information standards Specify, select and integrate information systems Make appropriate data available for decision making
9. Sector regulation	Setting standards Monitor performance and compliance Enforce standards and undertake enforcement action

(*Source: Water NZ – Competency Framework*)

It documents core skills and knowledge needed by operators to competently undertake work within the water industry. It is envisaged that the industry will be able to use the final document as a guide to:

- assess levels of staff training,
- develop training programmes,
- determine the knowledge and skills required by a workforce, or
- other matters related to staff competence.

Council will keep abreast of developments in this area to ensure staff training meets industry best practice and standards.

7.4.7 Summary of Future Costs

Wastewater Activity annual maintenance and operations costs are projected to increase from $705,478 (2021/22) to $823,408 (2030/31) over the 10 year period. There is no deferred maintenance scheduled over the period.

Opex Costs	Y1	Y2	Y3	Y4	Y5
	2021/22	2022/23	2023/24	2024/25	2025/26
Operational	705,478	655,479	678,826	685,992	696,073
	Y6	Y7	Y8	Y9	Y10
	2026/27	2027/28	2028/29	2029/30	2030/31
Operational	730,715	739,171	746,987	794,821	823,409

7.5 Renewal and Replacement Plan

7.5.1 Introduction

Cyclic renewal strategies are intended to provide for the progressive replacement of individual assets that have reached the end of their useful life. The rate of asset renewal is intended to maintain the overall condition of the asset system at a standard, which reflects its age profile, and ensures that the Community's investment in the Waimate wastewater system is maintained.

The level of expenditure on cyclic asset replacement varies from year to year, reflecting:

- The age profile of the system.
- The condition profile of the system.
- The on-going maintenance demand.
- Customer service issues.
- The differing economic lives of individual assets comprising the overall asset system
- Failure to maintain an adequate renewal programme will be reflected in a greater decline in the overall standard of the system of assets than would be expected from the age profile of the asset system.

Cyclic renewal works fall into two categories:

Rehabilitation: Involves the major repair or refurbishment of an existing asset. An example is the relining of an existing pipeline. Rehabilitation produces an extension in the life of an asset. It does not provide for a planned increase in the operating capacity or design loading

Renewal: Does not provide for a planned increase to the operating capacity or design loading (i.e. renewal is 'like for like'). Some minor increase in capacity may result from the process of renewal, but a substantial improvement is needed before system development is considered to have occurred.

For the purpose of developing asset renewal programmes the wastewater system assets have used the following components consistent with the asset valuation process:

- Lines (gravity pipes, rising mains, laterals)
- Points (manholes, inspection pits, poo pits, capped ends, cleaning eyes, valves)
- Plant (WWTP, pumping stations, building)

7.5.2 Renewal and Replacement Strategies

Table 7-6 sets out cyclic renewal and replacement strategies:

Table 7-6: Renewal Strategies

Strategy	Objective/ Description
Identification of renewal needs	Renewal and replacement needs are identified by analysing; – Condition reports, maintenance records (asset failure and expenditure history), wastewater blockages, wastewater overflows, complaints records, and observations of the councils engineering and maintenance staff and contractors that they employ – Records of breakages are recorded in AssetFinda that allows an overview of the short term issues – Customer feedback is essential for monitoring asset performance and achieving Levels of Service. The feedback is quite often the early warning system that a problem maybe developing and can lead to more formal investigations The short-term asset renewal programmes have been prepared from specific renewal needs identified from information received by Council maintenance staff. The long-term asset renewal forecasts are based on an assessment of remaining asset lives (from the 2017 valuation process) and use industry base lives as a default position where condition or maintenance records are lacking. Future renewal programmes will use the data obtained in the pipe condition assessments proposed in Section 7.5.3 and the updated AssetFinda data. The future renewals strategy will incorporate a process that uses the numbers of blockages/collapses in a main as an indicator for inserting onto short term renewal programme.
Prioritisation of renewal projects	Decisions on renewal works consider the short and long-term effects on the operating and structural integrity of the system. Renewal works are designed and undertaken in accordance with industry standards (or known future standards) and system design loadings. Short-term renewal priorities are reassessed annually taking account of additional information that becomes available via breakage reports etc.
Deferred renewals	The quantity and impact of deferred renewals will be tracked. The Council recognises that although the deferral of some items on cyclic renewal programmes will not impede the operation of many assets in the short term, repeated deferral will create a future Council liability.
Inspections prior to major road works	The condition of wastewater pipelines is inspected prior to major road works to identify the risk of the road being damaged by pipeline failure or the need for pipeline replacement in the short/medium term. Pipelines in poor condition may be programmed for replacement prior to or in conjunction with the road works or reseal programme subject to funding.

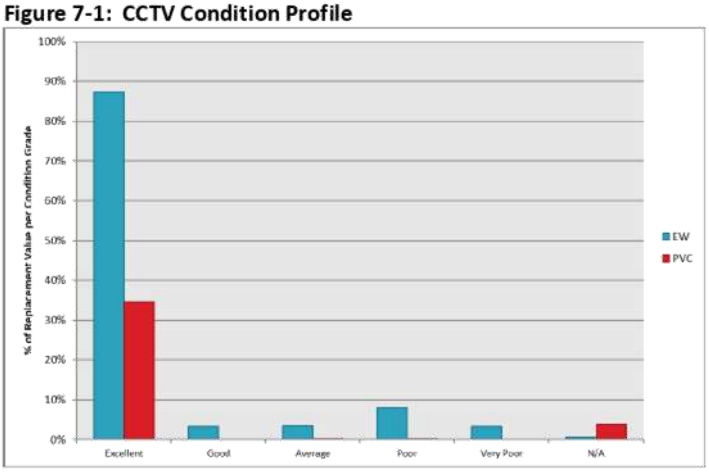
7.5.3 Wastewater Asset Condition

Wastewater Pipe CCTV Surveys

The condition of the wastewater pipes relates to the structural integrity of the pipes. Council undertook an extensive CCTV recording and grading programme in 1997 and has obtained survey data for 66% of the pipes contained within the reticulation network. The CCTV structural mean scores were converted into 1 to 5 ratings (as described in the NZIAM methodology) using the New Zealand Pipeline Inspection Manual (NZWWA, 1999) comparison tables. Pipes with no condition grade data were assigned condition grade of 3 (moderate condition).

Condition grading from the 1997 CCTV results is shown below.

Figure 7-1: CCTV Condition Profile



The PVC pipes are in very good structural condition.

A programme for implementing CCTV of the network will be carried out again (in conjunction with the pipe structural assessment to ascertain the decrease in condition and assist in the renewal programme.

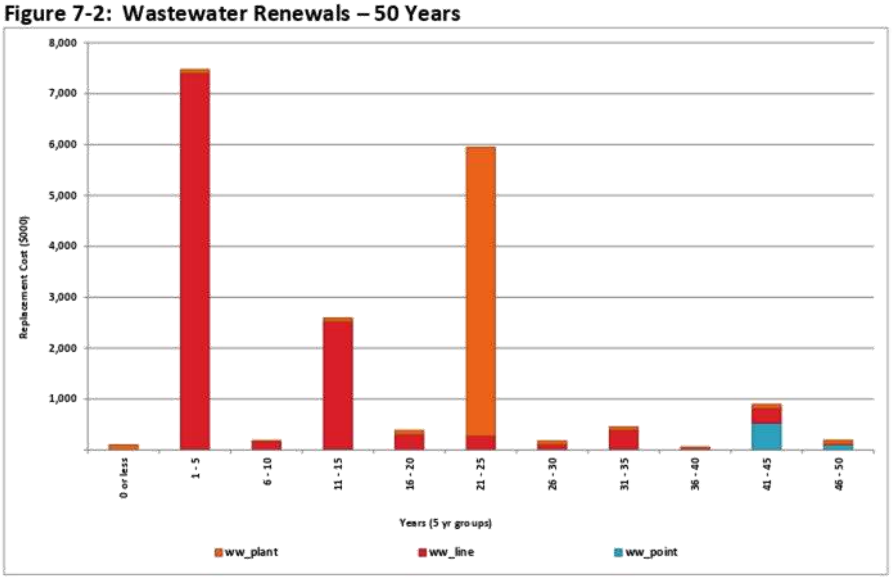
Development of a Condition Assessment Strategy to identify which, where and when condition assessments will be performed is include as an Improvement item. This will be done in consideration of criticality, LoS, asset records, Council engineers visual assessment of failures and specialists assessments as required. Implementation of the Condition Assessment Strategy and resulting information collected will then inform the renewal plan.

7.5.4 Renewal Requirements

The 30 year wastewater assets renewals forecasts obtained from the 2020 valuation data (replacement cost, base lives, install date etc.) is presented in Figure 7-2. Based on the theoretical renewal requirements this indicates an average expenditure of $775,654 a year is required for the period 2021–2031, of which $755,664 a year can be attributed to renewal of wastewater mains and laterals.

Sum of Replace Cost	Utility Type			
Remaining Useful Life Group	ww_line	ww_plant	ww_point	Grand Total
0 or less	-	$98,952	-	$98,952
1 - 5	$7,391,192	$73,005	$9,640	$7,473,837
6 - 10	$165,444	$18,313	-	$183,757
11 - 15	$2,508,218	$69,392	$13,397	$2,591,006
16 - 20	$305,045	$79,821	-	$384,866
21 - 25	$269,923	$5,670,856	$3,398	$5,944,177
26 - 30	$106,813	$70,694	$427	$177,934
31 – 35	$381,151	$65,352	$8,429	$454,933
36 – 40	$22,826	$29,590	$3,508	$55,925
41 – 45	$286,171	$78,369	$529,289	$893,829
46 -50	$2,946	$77,759	$109,454	$190,159
Grand Total	**$11,439,729**	**$6,332,104**	**$677,542**	**$18,449,376**

Figure 7-2: Wastewater Renewals – 50 Years



For the wastewater plant assets an average expenditure of $19,027 a year is estimated for the period 2021-2031.

The above is based on theoretical replacements. The actual programmed renewals in the short term (1 to 3 years) are:

- Main renewals ($871,916)
- Pump renewal ($20,680)
- Flow meter renewal ($9,000)
- Electrical & Control ($11,085)
- Equipment (16,436)

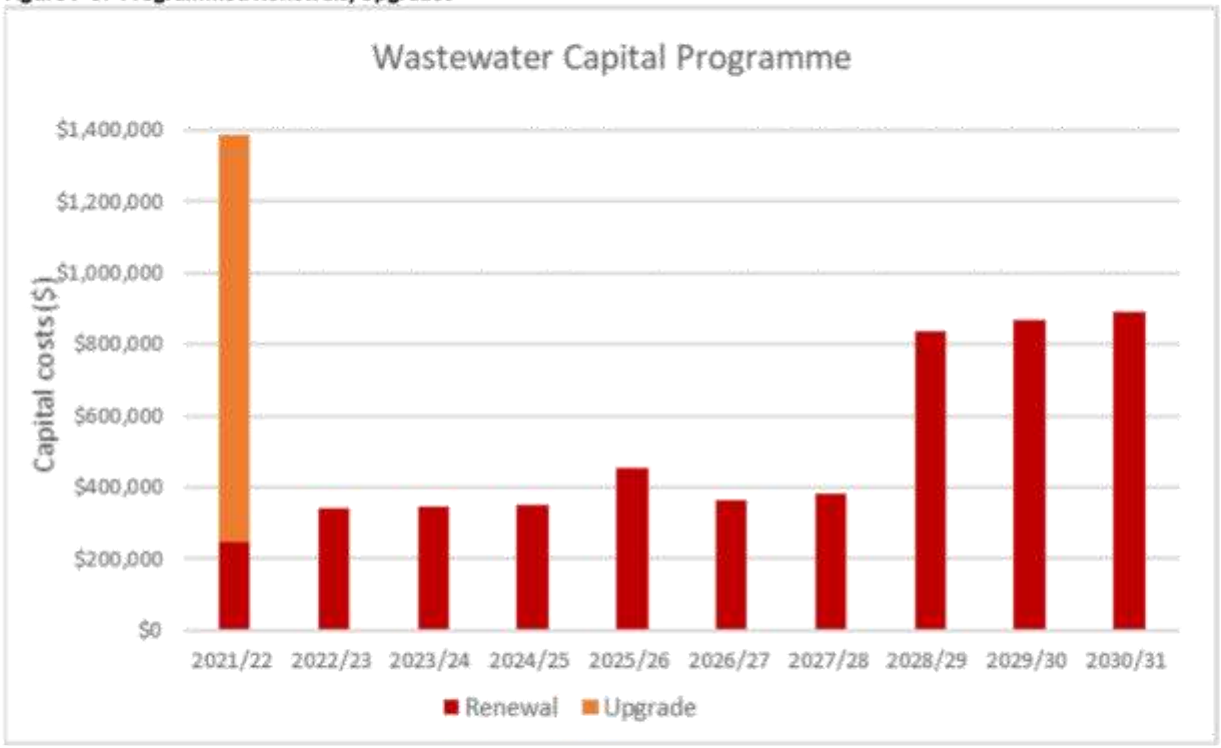
The long term (4- 10 years) programmed urban wastewater renewals are:

- Main renewals ($4m)
- Electrical & control ($83,108)
- Pump renewal ($10,354)

Table 7-7: Programmed Renewals

Renewals	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
552074501 - Sewer - Waimate Urban Renewals	224,000	315,370	332,546	339,120	360,133	357,084	379,470	835,224	862,786	886,054
552074505 - Sewer - Edward Street Upgrade	616,193	-	-	-	-	-	-	-	-	-
552074512 - Sewer - WWTP Electric Winch for Sewer Pumps	-	-	-	-	-	-	-	-	-	-
552074513 - Sewer - WWTP Submersible Pump 1 Renewal	-	-	-	-	-	-	-	-	-	-
552074514 - Sewer - WWTP Submersible Pump 2 Renewal	-	20,680	-	-	-	-	-	-	-	-
552074516 - Sewer - WWTP Electrics General 240, 24 Volts	-	-	-	11,880	-	-	-	-	-	-
552074517 - Sewer - WWTP In flow Meter Renewal	9,000	-	-	-	-	-	-	-	-	-
552074518 - Sewer - WWTP Out flow Meter Renewal	-	-	-	-	-	6,235	-	-	-	-
552074520 - Sewer - WWTP Alarming/Monitoring of Out flow Meter	4,112	-	-	-	-	-	-	-	-	-
552074521 - Sewer - Pond Bypass Valves Renewal	-	-	-	-	-	-	-	-	-	-
552074523 - Sewer - Telemetry - Milford	-	-	7,918	-	-	-	-	-	-	-
552074524 - Sewer - Milford - Flygt Controller (PLC)	-	-	3,167	-	-	-	-	-	-	-
552074525 - Sewer - Milford Pump Renewal	-	-	-	-	-	-	-	-	5,108	5,246
552074526 - Sewer - WWTP Electical/control Renewal	-	-	-	-	83,108	-	-	-	-	-
552074527 - Sewer - WWTP various equipment	12,300	4,136	-	-	9,419	-	-	-	-	-

Figure 7-3: Programmed Renewals/Upgrades



7.5.5 Evidence Base

The asset data held for water supply and sewerage had been a focus for improvement over the last six years. This was reflected in the positive peer reviews undertaken of both the 2017 and 2020 valuations.

Road and footpaths data continues to be sound, based on twenty years of RAMM use. An increase in data analysis as part of the ONRC framework and capture of pavement performance data has improved knowledge of the asset further.

The 2020 asset valuation identified the accuracy of most roading asset data as "B" or "Reliable" (Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old). Bridge data is of higher accuracy, "A" or "Highly reliable" (Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete).

The 2020 valuation has indicated (for three waters):

Confidence Level	Description	Accuracy	Condition	Quantity	Unit Cost	Base Life
A	Highly Reliable and Accurate	100%				
B	Reliable w ith Minor Inaccuracies	+/- 5%		B	B	B
C	50% estimated	+/- 20%	C			
D	Significant data estimated	+/- 30%				
E	All data estimated	+/- 40%				

From a valuation perspective the data reliability is considered (for all assets covered by the IS) to be "B" or +/- 5%. Council acknowledges that the reduced reliability associated with less accurate condition ratings (+/- 20%) could impact future financial forecasting. However, this is currently mitigated by empirical assessment of assets proposed for renewal. For example, roads identified for resealing are reassessed, alongside mains identified for renewal are investigated in regards to historical leaks, bursts and criticality.

Council acknowledges there are limitations with its data that affect decision-making. A commitment to improving data collection and analysis is indicated below. Additional part-time and full time roles have been added to the Council team to address data limitations and accuracy.

7.6 Asset Development Plan

7.6.1 Introduction

Asset development provides for a planned increase in the service capability of the wastewater collection and treatment system to:

Close gaps between the current capability of the wastewater system and target service standards.

Accommodate growth.

Asset development and asset renewal can occur simultaneously. The purpose of asset renewal is to prevent a decline in the service of the assets whereas, asset development is the service improvements, measured by asset performance.

7.6.2 Asset Development Strategies

Table 7-8 below sets out the strategies used for developing capital development programmes for the urban wastewater system. These strategies are intended to progressively close gaps between target service standards (taking account of demographic and economic growth projections) and the current service capability of the asset system.

Table 7-8: Development Strategies

Strategy	Objective/ Description
Identification of development needs	Asset development needs are identified from analysis of; Demand forecasts, System performance monitoring (flows, blockages, etc.), Network modelling, Risk assessments (Risk Management Plan), and Customer service requests. A provisional forward capital works development programme is maintained and updated in in conjunction with updates of the Asset Management Plans
Development Project Categorisation	Development Projects will be separated into projects to close service gaps and projects required to accommodate growth Development projects to close service gaps are generally funded entirely by Council. Development projects to accommodate growth may be partly or wholly funded through Development Contributions
Prioritisation of Development Projects	Development projects are justified and prioritised using a risk based process Decisions on development works consider the short and long-term effects on the operating and structural integrity of the wastewater system In determining the requirement for capital or asset development works the short and long-term effects on the operating and structural integrity of the system are considered, together with any forecast increase in loading upon the system All feasible options, including non-asset demand management options and the use of second-hand plant, are considered. Development works are designed and undertaken in accordance with industry standards (or known future standards) and system design loadings
Project Approval	A long-term development programme is prepared from projects meeting the assessment criteria, and all projects are approved through the Annual Plan process The actual timing of asset development works will reflect the community's ability to meet the cost, as determined through the Annual Plan process Scheduled projects meeting assessment criteria not funded are listed on the forward works programme for the following year
Project Design	All asset development works will be designed and constructed in accordance with current adopted industry standards (or known future standards) and system design loading In determining capital or asset development work requirements the short and long term effects on the operating and structural integrity of the system are considered, together with the demands of any forecast increase in loading upon the system The system will be designed to minimise supply disruptions as far as practically possible by building in an appropriate level of redundancy The standardisation of designs and specifications will be considered in the interest of facilitating replacement and operational simplicity
Vested Assets	The risk, cost and benefits of accepting any new privately funded assets constructed in association with property development will be considered on a case by case basis in approval decisions Such assets will be accepted into public ownership when satisfactorily completed in accordance with approvals given. Council will not contribute to the cost of such work unless there are exceptional service standard or equity issues

7.6.3 Development Standards

The following standards are applicable to the renewal of wastewater assets:

- NZS4404: 2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice
- Relevant Resource Consents and the Resource Management Act 1991
- Transit New Zealand Guidelines 'Working on the Road'
- Health and Safety Plans
- Electrical Regulations 1993

- Council's quality assurance processes, including contract management procedures

The Standards will be reviewed regularly and updated to incorporate relevant experiences, legislative requirements and changes in best practice.

7.7 Disposal Plan

7.7.1 Introduction

The development of Asset Management Systems and use of Asset Condition / Performance data allows better planning for the disposal of assets through rationalisation of asset stock or when assets become uneconomic to own and operate.

All pipeline renewals identified in this Lifecycle Management Plan have a corresponding disposal either through the pipes being removed and disposed of at the landfill, or being left in the ground if the wastewater assets are refurbished using 'no-dig' techniques or the asset is replaced in a new location. Disposals are recorded within AssetFinda and the GIS. Buried assets remain in the ground unless economic to remove or they pose a potential hazard.

In all cases asset disposal processes must comply with Council's legal obligations under the Local Government Act 2002, which covers:

- Public notification procedures required prior to sale
- Restrictions on the minimum value recovered
- Use of revenue received from asset disposal

When considering disposal options all relevant costs of disposal will be considered, including:

- Evaluation of options
- Consultation/advertising
- Obtaining resource consents
- Professional service, including engineering, planning and legal survey
- Demolition/making safe
- Site clearing, decontamination, and beautification

7.7.2 Asset Disposal Strategies

The following table details the disposal strategies

Table 7-9: Disposal Strategies

Strategy	Objective/ Description
Asset Disposal	Assess each proposal to dispose of surplus or redundant assets on an individual basis, subject to the requirements of the relevant legislation Asset disposal will comply with the requirements of the Local Government Act 2002 and in particular the requirement for councils to retain a capability to provide water supply services Redundant pipes are removed where their alignment clashes with replacement pipelines or where their existence is considered dangerous. Abandoned wastewater supply pipelines have possible future value for other purposes (such as ducting for cabling). As the extent of this value (if any) is uncertain it is not recognised in the asset valuation When a wastewater supply asset is abandoned or replaced the Geographic Information System and fixed asset register are updated. A system of job number creation and asset identification is used to document this process.
Residual Value	The residual value (if any) of assets, which are planned to be disposed of, will be identified and provided for in financial projections

7.8 Sustainability within Council

In addition to managing the assets in an economically sustainable way, Council will also manage its internal operations to optimise their cost, efficiency and effectiveness. This is to ensure that in the long term the costs of administering the infrastructure are sustainable.

While the overall view of this is not a subject for this AMP, the management of the asset services delivery unit is relevant.

7.8.1 Staffing Levels

Currently the Water and Wastes Group has eight full time equivalent employees. This includes the role of Asset Manager which encompasses a wider footprint of activities.

The greater emphasis being placed on the responsible management, distribution, operation and maintenance of existing and future resources will add to the tasks of the Water and Wastes Group. Compliance with the requirements of the Health Act 1956, Health (Drinking Water) Amendment Act 2007, DWSNZ 2005 and increased Regional Rules (LWRP) will ask a great deal of effort and prudent decision making from the Water and Wastes staff.

The Health Act's will impose an increased demand on human resources to meet the compliance with the requirements of the Heath Act. It will place an on-going demand on human resources to monitor and report on Health Act compliance. The current staffing levels are supplemented by outsourcing. However, outsourcing still requires scoping, input and supervision from Council staff and does not exonerate staff from outsourced work.

Staff changes have impacted on the AssetFinda/GIS data acquisition, capturing, trending and analysis. It is proposed as part of future improvements in the management of AssetFinda/GIS - to ensure sufficient resources are available (both internal and external) to enable the full use of AssetFinda/GIS for the operation, management and administration of the utility services

Because of the above, assessment of staffing requirements will be required on an annual basis to ascertain the appropriate requirements for the increased workload. Assessment needs to consider the level of staffing coverage required to implement all of the Water and Wastes Group functions including internal management, information systems management, project management, design, supervision, construction, operations and maintenance.

7.8.2 Skills

In addition to staffing numbers, assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate.

Increases in the complexity of facilities such as water treatment plants and pump stations are occurring. This will require skilled and trained staffs for operation, maintenance and supervision. A review of Council policy on resourcing the operations and maintenance is required to ascertain the most appropriate method for delivery of the required Levels of Service should be considered.

7.8.3 Training

Training of staff is presently on an ad-hoc basis with no structured long term development plans for the individual staff members in the asset management field. The link between asset life, and the ability to deliver of Levels of Service with the skills of the people who plan, design, install, operate and maintain the assets is inevitable. It is crucial that the skill gaps of staff, contractors and service providers are identified; that there are structured training programmes to close these gaps; and that the effectiveness of the training provided is evaluated. Training programmes should be designed and reviewed for each individual – not for a business unit, contractor or service provider as an entity. Refer to Section 7.4.6

7.8.4 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

Local Authorities have traditionally not been particularly successful at implementing succession planning techniques and practices. In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning were not experienced. With a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities. Whilst there is always potential for staff in key positions to move on to further their careers, succession planning can help to mitigate the effects of this. Succession planning techniques can include:

- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can include identifying weaknesses in training and experience and attempting to address those weaknesses by use of mentoring, relevant projects and continuing professional development programmes etc.
- Identifying likely staff retirements, promotions, resignations or position changes on an annual basis. Identifying potential internal staff to fill those positions, providing those staff with projects that extend them, and giving them relevant experience for filling the positions

No formal succession planning is implemented at present by Council. It is important that the current knowledge of existing staff on the Wastewater Services is continuously captured within AssetFinda and supporting asset management tools. This will reduce the risk to service continuation as a result of unplanned staff absences and any future retirements or resignations.

7.8.5 Efficient Use of Energy within Councils three Water Facilities

The Three Waters uses a significant proportion of the Council total energy consumption via their extensive range of facilities. Instigation of energy management through the use of the Energy Efficiency and Conservation Authority (EECA) methodologies and subsidies will assist in reducing total energy consumption. Where new plant is to be installed, Council staff take the opportunity to use modern energy efficient devices such as variable speed drives, soft starters.

Efficient Operation of Facilities

The Council operates a SCADA system that allows the operation of the facilities (WTP's, WWTP and majority of pump stations) remotely allowing efficiency monitoring and running the plant in off peak situations where it is practical to do so.

8.0 FINANCIAL SUMMARY

This Section sets out financial statements, funding strategy, depreciation forecast and charges for the Wastewater Services in Waimate District.

8.1 Financial Strategy

This plan will provide the substantiation for budget forecasts put forward in the LTP (2021-2031) for Wastewater Services assets. Council will:

- Implement an improvement approach to asset management planning in the short term. A 10 year improvement plan is included in each AMP. Improvement projects will be monitored monthly by the Asset Group Manager.
- Prepare, maintain and periodically review a Plan outlining sustainable long-term asset management strategies. The Plan will typically be reviewed three-yearly in advance of the LTP. Annual amendments or updates may be undertaken if significant asset management changes occur.
- Report variations in the adopted annual plan budgets against the original asset management plan forecasts and explain the level of service implications of budget variations.

8.2 Development Contributions

Please refer to Financial Policy 404 - Financial Contributions Policy.

8.3 Depreciation

8.3.1 Background

The introduction of accrual accounting during the early 1990's changed the way in which local authorities accounted for their assets, particularly long life assets i.e. pipes and roads. This meant that instead of cash based accounting where the replacement/renewal cost of an asset is recognised only when it wears out, local authorities were required to spread the cost, and any reduction in the value of these assets over its useful life.

Section 100 subsection 1 of the LGA 2002 states: "A local authority must ensure that each year's projected operating revenues are set at a level sufficient to meet that year's projected operating expenses."
This requirement to set operating revenues at a level sufficient to meet operating expenses includes depreciation as Section 111 obliges councils to follow generally accepted accounting practice (GAAP) which includes a definition of "operating expenses." As depreciation is defined as an operational expense it must be included with other operational costs, including interest, when a council sets its operating revenue.

GAAP defines depreciation as follows:
Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.[1]
Therefore, depreciation measures the annual consumption of an asset so that the reduction in its value is accounted for as it is consumed. The purpose of depreciation is not to provide for the replacement of the asset, although this is a consequence of depreciation. Deprecation ensures that each year's ratepayers pay their way.

[1] Source: Depreciation in the local government context, July 2011. Local Government New Zealand

The basic value of an asset reduces in accordance with the wearing out or consumption of benefits over the assets life arising from use, the passage of time, or obsolescence. This reduced value is called the depreciated value. It is accounted for by the allocation of the cost (or revalue amount) of the asset less its residual value over its useful life.

The decline in service potential is thus provided on a straight line basis on all fixed assets. Therefore Council complies with the requirements of FRS3 and NZIAS 16 and funds asset depreciation.

The Council revalues its assets every three years to keep them up to date and this means that depreciation charge reflects the cost of replacing the asset. It is the valuers role to appropriately identify the level of depreciation, though this will be better achieved through more robust data e.g. condition assessment.

Annual depreciation is calculated by Council on a straight line basis – i.e. the replacement cost of the asset less its residual value over its useful life.

The Council has previously consulted with the Community and decided to fund depreciation via rates. However, Council does not fully fund depreciation where it is considered prudent to do so e.g. in roading.

8.4 Valuations

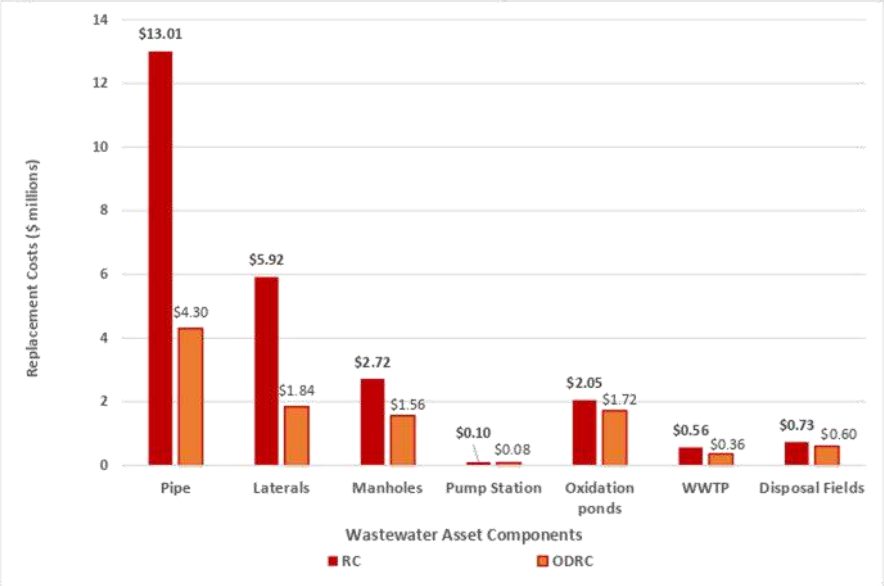
8.4.1 2020 Valuation Summary

Valuations of the three waters infrastructure were carried out during 2020 and a summary of the Wastewater Services is presented in Table 8-1 and Figure 8-1.

Table 8-1: Valuation Summary - Wastewater Services 2020

Asset Type	ORC	ODRC	Annual Deprecation
Reticulation			
Pipe	$13,010,957	$4,296,038	$92,143
Laterals	$5,920,000	$1,843,525	$78,448
Manholes	$2,721,124	$1,557,294	$19,456
Plant			
WWTP	$562,893	$355,436	$14,828
Oxidation Ponds	$2,052,682	$1,715,704	$15,168
Disposal Fields	$727,800	$595,605	$7,488
Pump Stations	$100,377	$77,553	$2,281
Total	**$25,095,833**	**$10,441,154**	**$229,813**

Figure 8-1: 2020 Wastewater Valuation Summary



Change in ORC from 2017 to 2020

The ORC increase from the 2017 valuation to 2020 was $8,387,301 or 13.4%. The key reasons for the increase since the previous valuation are:

- Increases in unit rates.
- Values of new assets added

Valuation Improvements Identified

The improvements identified in 2017, manhole depth factors, the development of predictive modelling in AssetFinda and a number of attribute improvement priorities to improve subsequent revaluations, are being developed.

Also discussed was the review of useful lives for assets that have reached the end of the useful lives and, as in service but "expired" assets, no longer contribute to the annual depreciation figure. The assets in question are reticulation pipes and nodes. Unless there is evidence that warrants then adjusting these lives arbitrarily is not warranted. Instead, develop predictive modelling to assess the remaining useful lives for this purpose.

8.4.2 Confidence Levels

The quantity and quality of the data (for the 2020 valuation) is tabled below :

Table 8-2: valuation Confidence Levels

Asset	Quantity	Replacement Cost	Life Expectancy	Condition
Wastewater assets	B	B	B	C

Where:

Confidence grade	Description
A – Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate ±2%
B – Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings for example some data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ±10%
C - Uncertain	Data based on sound records, procedures, investigations and analysis, which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ±25%
D – Very Uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy ±40%
E - Unknown	None or very little data held

(*Source – IIMM 2015*)

It is accepted that most condition data across the data is anecdotal hence the C rating, however, it has not been taken into the overall data confidence grade as condition was not used to adjust remaining useful life. Taking condition out of the assessment, we consider a data confidence of B is appropriate for this valuation.

8.5 How We Fund Our Activity

The following summarises the ways in which the wastewater activity is funded:

- Operations and Maintenance
- Individual scheme rates
- Renewals
- Depreciation
- Loans (either internal or external
- Capital
- Development/Financial contributions
- Private or Community contributions

8.6 Financial Statements and Projections

The financial summaries in this Asset Management Plan cover a minimum 10-year planning horizon and are based on financial projections covering the lifecycles of the assets. Additional projections out to 30 years have also been provided to confirm if any major expenditure is likely to occur in the next planning horizon that may have an impact and should be considered as part of financial decision making process.

The following tables summarise the 10-year financial forecast for the Wastewater Services Activity under the following headings:

- Operations and Maintenance
- Capital Works – Growth
- Capital Works – Increased Level of Service

- Capital Works – Renewals
- Capital Works – Vested Assets

8.6.1 Renewal and Operational Expenditure

The renewals profile is based on an asset useful life. At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined over time by determining evidence-based useful lives using a combination of condition and performance data.

Table 8-3: 10 Year Renewal Requirements – all Assets

Sum of Replace Cost	Utility Type			
Remaining Useful Life Group	ww_line	ww_plant	ww_point	Grand Total
0 or less	-	$98,952	-	$98,952
1 - 5	$7,391,192	$73,005	$9,640	$7,473,837
6 - 10	$165,444	$18,313	-	$183,757
Grand Total	**$7,556,636**	**$190,270**	**$6,640**	**$7,756,546**

Figure 8-2: Wastewater Asset Renewal Profile

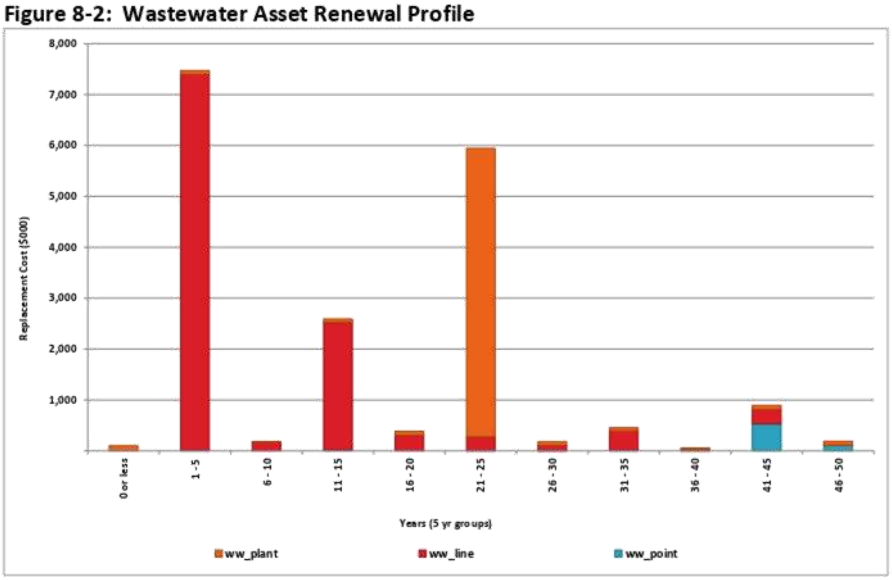


Figure 8-3: 50 Year Wastewater Asset Renewal Profile

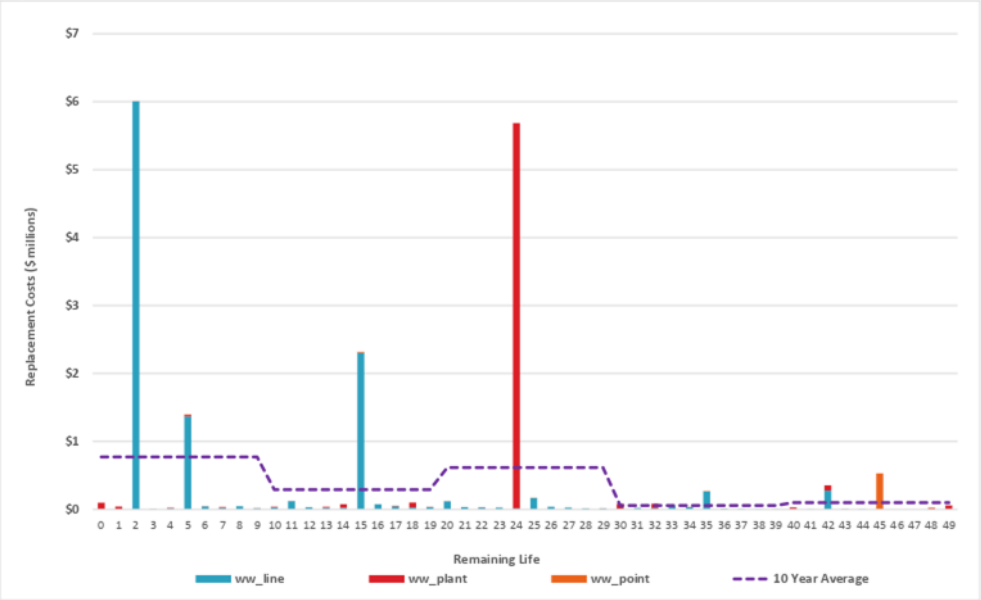


Table 8-4: Detailed Maintenance & Operational Expenditure (figures are inflated)

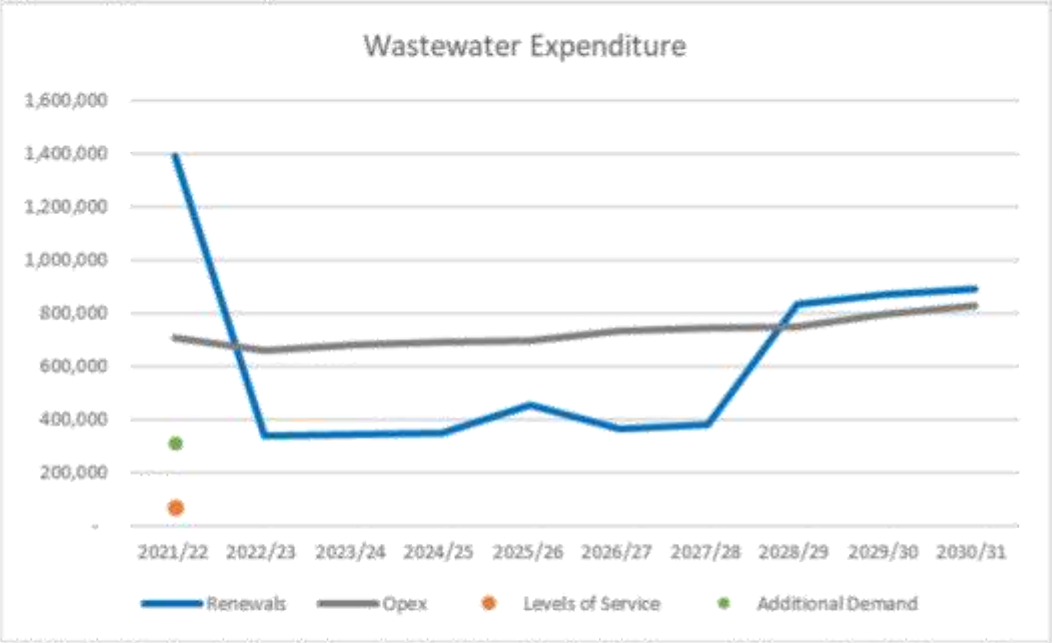
Waimate Sewer - 5520	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	38,301	4,805	12,315	17,654	70,246	71,895	73,682	75,669	77,520	79,820
Total Operating Revenue	**571,813**	**643,486**	**651,060**	**687,824**	**725,725**	**750,721**	**759,674**	**771,743**	**808,234**	**818,991**
552001504 - Targeted Rate - Sewer	524,433	546,896	568,703	604,736	640,223	664,406	670,685	680,439	714,829	722,784
552001505 - Targeted Rate - St Andrews Sewer	-	-	-	10,500	10,857	11,085	11,340	11,635	11,903	12,260
552002501 - Works - Application fee	113	-	617	617	638	651	666	684	699	720
552002502 - Works - Connection Fees	-	-	52,946	52,946	54,746	55,895	57,182	58,669	60,020	61,820
552005101 - Recoveries - General	4,037	16,221	7,500	7,500	7,755	7,918	8,100	8,311	8,502	8,757
552007101 - Dividend - SC Power	464	424	460	460	476	486	497	510	521	537
5520073 - Interest Received	142	-	-	-	-	-	-	-	-	-
552007305 - Internal Interest Income	30,264	29,812	10,460	691	304	671	-	-	-	-
5520081 - Capital Contributions - Sewer	18,365	55,818	16,444	16,444	17,003	17,360	17,760	18,222	18,641	19,200
552041203 - Rates Remissions	6,005	5,684	6,070	6,070	6,276	6,408	6,556	6,726	6,881	7,087
Total Operating Expenditure	**533,512**	**638,681**	**638,745**	**705,478**	**655,479**	**678,826**	**685,992**	**696,073**	**730,715**	**739,171**
5520302 - ACC	93	1,023	1,138	1,138	1,165	1,183	1,203	1,227	1,254	1,283
5520333 - General Expenses	4,138	1,300	1,500	1,500	1,551	1,584	1,620	1,662	1,700	1,751
5520336 - LAPP Disaster Fund	7,088	7,334	8,067	9,358	9,676	9,879	10,107	10,370	10,608	10,926
5520337 - Legal Fees	-	476	-	-	-	-	-	-	-	-

Waimate Sewer - 5520	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5520349 - Repairs and Maintenance	-	-	200	200	207	211	216	222	227	234
5520356 - Telephone Expenses	812	812	870	870	900	918	940	964	986	1,016
5520357 - Utilities charges	52,943	87,282	92,800	105,564	109,153	111,444	114,009	116,975	119,667	123,257
5520398 - Vehicle Recoveries	-	-	500	-	-	-	-	-	-	-
552040302 - Depreciation - Buildings	354	354	354	389	389	389	428	428	428	471
552040303 - Depreciation - Plant & Machinery	587	1,981	1,878	1,532	1,331	1,160	1,013	887	779	685
552040305 - Depn - Office Equipment	238	190	167	122	97	78	62	50	40	32
552040310 - Depreciation - Revaluation	216,219	222,598	248,139	253,330	253,330	273,596	273,596	273,596	295,484	295,484
552040313 - Depreciation - Rural Water	199	199	204	16	16	17	17	17	19	19
552040405 - Internal Interest	-	-	-	-	-	-	1,706	2,912	7,112	7,924
552040406 - Waimate Urban Sewer - Internal Loan interest	50,490	48,592	37,350	26,874	46,734	45,594	44,454	43,314	42,174	41,034
5520405 - Insurance	10,747	14,306	13,048	15,075	15,588	15,915	16,281	16,705	17,089	17,602
5520407 - Loss on Assets	-	78	-	-	-	-	-	-	-	-
5520422 - Electricity	13,902	13,559	12,000	14,000	14,476	14,780	15,120	15,513	15,870	16,346
5520423 - Grounds maintenance - Jobcosted Labour & Plant	-	-	1	1,100	1,122	1,144	1,166	1,187	1,209	1,229
552042405 - Internal Rent	6,480	6,672	7,124	12,893	13,242	13,633	14,181	14,478	14,790	15,196
5520425 - Rates	10,596	11,309	12,070	12,703	13,135	13,411	13,719	14,076	14,400	14,832
5520501 - Asset Mgt Plan	2,028	4,970	4,009	4,009	4,145	4,232	4,330	4,442	4,545	4,681
5520504 - Consultants	-	1,542	1,000	86,750	1,034	1,056	1,080	1,108	1,134	1,168
5520506 - Contractor	2,014	22,175	6,000	6,000	6,204	6,334	6,480	6,649	6,802	7,006

Waimate Sewer - 5520	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
552050601 - Contractor - St Andrews Sewer	-	-	-	10,500	10,857	11,085	11,340	11,635	11,903	12,260
5520510 - Operational Maintenance	3,733	18,408	13,700	15,000	15,510	15,836	16,200	16,622	17,004	17,514
5520511 - Pump Maintenance	390	3,065	1,024	1,024	1,059	1,081	1,106	1,135	1,161	1,196
5520512 - Water Testing	1,072	730	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5520601 - HR Costs - 8125	2,808	2,495	3,056	1,604	1,962	1,999	2,040	2,074	2,109	2,147
552060101 - 8126 - Health & Safety O/H Recoveries	6,581	6,639	5,409	3,641	3,746	3,804	3,869	3,945	4,029	4,119
5520602 - Corporate Services Costs - 8120	23,684	27,687	29,537	19,242	19,901	20,048	20,559	21,046	21,292	21,707
5520604 - Utilities Costs - 8140	43,823	59,556	58,410	25,342	24,667	22,634	22,500	24,697	26,039	25,962
5520606 - Asset Management Unit Costs - 8160	28,499	30,534	32,397	36,261	37,861	38,291	38,676	39,176	39,874	40,494
5520608 - Network Costs	13,132	12,532	14,774	13,352	13,310	13,688	13,654	13,568	14,456	14,407
5520609 - CEO & Finance Costs - 8110	20,352	19,403	20,470	11,918	12,553	13,009	13,223	13,451	13,706	13,999
5520611 - Support - Asset Manager	10,699	10,879	10,521	13,144	19,496	19,706	19,986	20,804	21,661	21,993
Capital Projects										
552074501 - Sewer - Waimate Urban Renewals	224,000	315,370	332,546	339,120	360,133	357,084	379,470	835,224	862,786	886,054
552074505 - Sewer - Edward Street Upgrade	616,193	-	-	-	-	-	-	-	-	-
552074512 - Sewer - WWTP Electric Winch for Sewer Pumps	-	-	-	-	-	-	-	-	-	-
552074513 - Sewer - WWTP Submersible Pump 1 Renewal	-	-	-	-	-	-	-	-	-	-
552074514 - Sewer - WWTP Submersible Pump 2 Renewal	-	20,680	-	-	-	-	-	-	-	-
552074516 - Sewer - WWTP Electrics General 240, 24 Volts	-	-	-	11,880	-	-	-	-	-	-

Waimate Sewer - 5520	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
552074517 - Sewer - WWTP In flow Meter Renewal	9,000	-	-	-	-	-	-	-	-	-
552074518 - Sewer - WWTP Out flow Meter Renewal	-	-	-	-	-	6,235	-	-	-	-
552074520 - Sewer - WWTP Alarming/Monitoring of Out flow Meter	4,112	-	-	-	-	-	-	-	-	-
552074521 - Sewer - Pond Bypass Valves Renewal	-	-	-	-	-	-	-	-	-	-
552074523 - Sewer - Telemetry - Milford	-	-	7,918	-	-	-	-	-	-	-
552074524 - Sewer - Milford - Flygt Controller (PLC)	-	-	3,167	-	-	-	-	-	-	-
552074525 - Sewer - Milford Pump Renewal	-	-	-	-	-	-	-	-	5,108	5,246
552074526 - Sewer - WWTP Electical/control Renewal	-	-	-	-	83,108	-	-	-	-	-
552074527 - Sewer - WWTP various equipment	12,300	4,136	-	-	9,419	-	-	-	-	-
552074528 - Sewer - Queen Street upgrade	129,833	-	-	-	-	-	-	-	-	-
552074529 - Sewer - Septic Waste Receival Unit	80,658	-	-	-	-	-	-	-	-	-
552074530 - Sewer - Te Kiteroa Line	312,100	-	-	-	-	-	-	-	-	-
Capex Total	**1,388,196**	**340,186**	**343,630**	**351,000**	**452,659**	**363,319**	**379,470**	**835,224**	**867,894**	**891,300**

Figure 8-4: Wastewater Expenditure



8.6.2 Utilities (Water, Wastewater & Stormwater) Renewals and Capital Summary

The following details the summary of new capital and renewals for all three services for the 10 year period.

Table 8-5: Utilities (Water, Wastewater & Stormwater) Renewals and Capital Summary

3Waters	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Renewals	2,240,127	876,212	876,231	1,222,776	1,066,103	869,811	855,851	1,916,372	1,716,352	1,737,177
Levels of Service	3,660,143	156,557	57,008	5,400	-	5,668	-	-	-	-
Growth	490,080	716,133	326,064	-	-	-	326,928	337,708	-	-
Total	**6,390,350**	**1,748,901**	**1,259,302**	**1,228,176**	**1,066,103**	**875,479**	**1,182,779**	**2,254,080**	**1,716,352**	**1,737,177**

Figure 8-5: 3Waters Renewals and Capital Projects

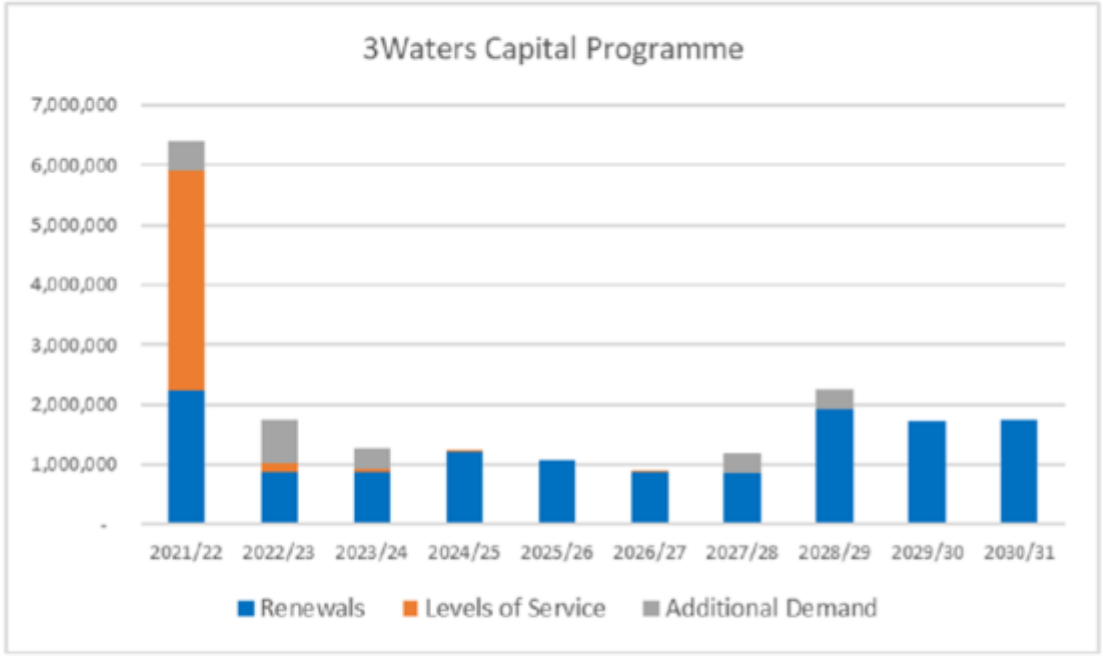
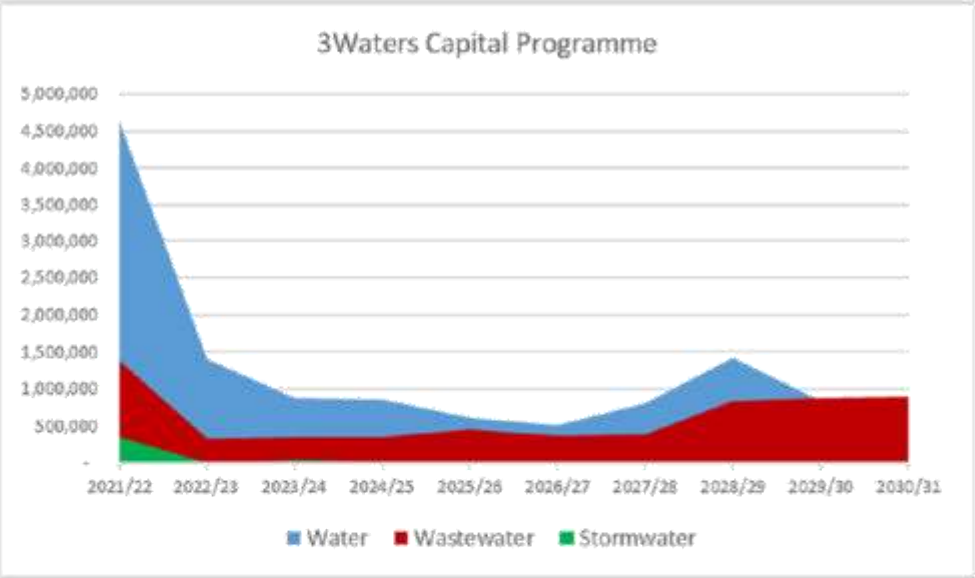


Table 8-6: 3Waters Capital Programme

Utility	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Water	4,643,522	1,403,545	875,555	866,376	607,682	506,492	803,309	1,418,856	848,458	845,877
Wastewater	1,388,196	340,186	343,630	351,000	452,659	363,319	379,470	835,224	867,894	891,300
Stormwater	358,632	5,170	40,117	10,800	5,762	5,668	-	-	-	-
Total	**6,390,350**	**1,748,901**	**1,259,302**	**1,228,176**	**1,066,103**	**875,479**	**1,182,779**	**2,254,080**	**1,716,352**	**1,737,177**

Figure 8-6: 3Waters Capital Programme



8.7 Key Financial Forecasts Assumptions

Overview

Forecasting assumptions and uncertainties are essential in the operation of Council's assets to indicate the levels of risks associated with those assumptions. Where necessary additional strategies can be implemented to reduce the risk.

The LGA 2002 - Schedule 10, Part 1 (11) requires the Council to clearly define all the significant forecasting assumptions and risks that underlie the financial estimates, assumptions concerning the useful life of significant assets and an estimate of the potential effects of the uncertainty on the financial estimates provided.

Appendix B details the significant forecasting assumptions for the utilities.

8.7.1 Financial Forecast

The following table provide an assessment of the confidence in, and the accuracy of the 20-year financial forecast and supporting asset data. Table 8-8 and Table 8-9 detail the general meaning of the grades:

Table 8-7: Financial Forecast Confidence Level

Activity	Confidence Grade	Accuracy
Operations/Maintenance	B	2
Depreciation	B	2
Overheads		2
Funding Costs	C	3
Capital Expenditure	B	3
Debt Repayment	C	3
Overall	B	3

The overall confidence level is 'B' or reliable. Data is based on sound records, procedures, investigations and analysis which is documented but has some shortcomings and gaps that may impact on the confidence of long term financial forecasts.

The overall accuracy is 3 indicating that the accuracy of the financial forecasts is +/- 20%.

Table 8-8: Confidence Grades

Confidence Grade	General Meaning
A	Highly Reliable Data based on sound records, procedures, investigations and analysis, which is properly documented and recognised as the best method of assessment
B	Reliable Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings for example the data is old, some documentation is missing and reliance is placed on unconfirmed reports or some extrapolation
C	Uncertain Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolation from a limited sample for which grade A or B is available
D	Very Uncertain Data is based on unconfirmed verbal reports and/or cursory inspection and analysis

Accuracy ratings are made using the criteria outlined in:

Table 8-9: Accuracy Ratings

Grade	Description	Accuracy
1	Accurate	100%
2	Minor inaccuracies	+ / - 5%
3	50% estimated	+ / - 20%
4	Significant data estimated	+ / - 30%
5	All data estimated	+ / - 40%

9.0 PROCESSES AND ASSET MANAGEMENT PRACTICES

This section outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP.

9.1 Organisation Structure

The organisation structure is presented in Figure 9-1.

Figure 9-1: Council Management Structure

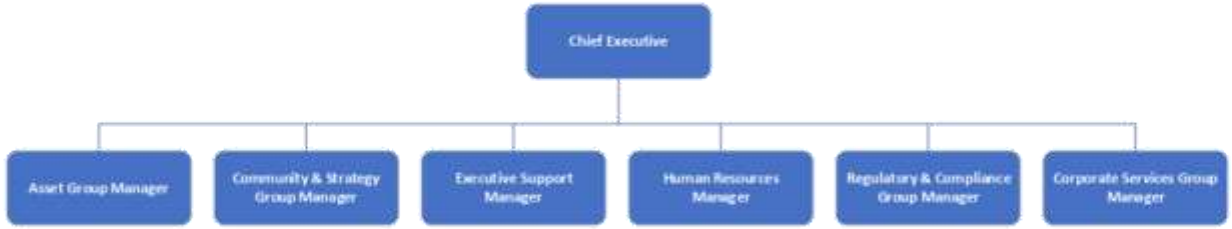
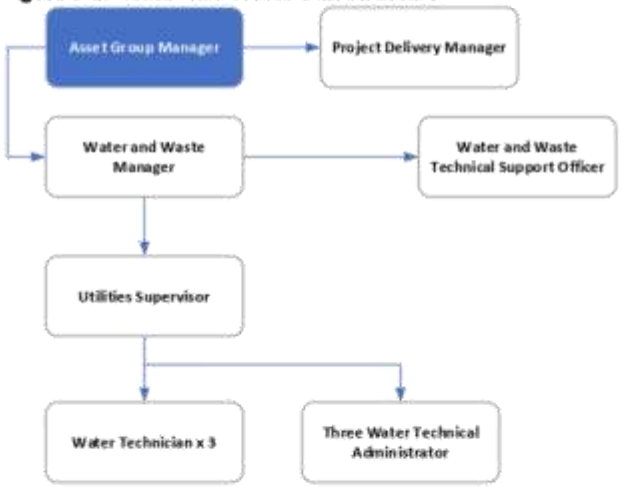


Figure 9-2: Water and Waste Unit Structure



9.2 Plan Review and Monitoring

9.2.1 Monitoring Approach

Council has developed this AMP based on its current knowledge of customer requirements, the configuration of the existing and future network to meet customer requirements, current asset information and the strategies to achieve customer requirements.

To further develop a meaningful AMP, including supporting processes, systems and data, Council recognise the need for a more structured approach. This approach includes:

- Council's firm commitment to implement and develop the AMP.
- Incorporate this AMP as a tactical plan within Council's planning framework.
- Review of the plans by internal staff and suitably qualified external consultants.
- Aiming to produce an AMP that meets the requirements of the community.
- Benchmarking key performance indicators against similar external TLAs.
- A corporate commitment to implementing and maintaining suitable AM information systems.
- Adopting a team approach to the preparation of future AMPs in order to maximise the buy-in of internal staff and sharing of specialised knowledge.

9.2.2 Timetable for Audit and Review

The programme for future AM reviews of this plan is in Table 9-1 below.

Table 9-1: Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 June each year
Internal AMP peer review by staff not directly involved in preparation of AMP	30 June each year
Adoption of AMP by Council	30 June every 3 years
External benchmarking by internal staff	Annually
Audit NZ external audit	As required by Audit NZ

9.2.3 Utilisation of AMPs

Historically Asset Management Plans have been carried out for regulatory requirements and not used on an on-going basis. Table 9-2 below details the methodologies for the on-going implementation and updating of AMPs within Council to ensure the Three Waters AMPs are used to their full potential.

Table 9-2: Methodologies for the On-going Implementation and Updating of AMPs

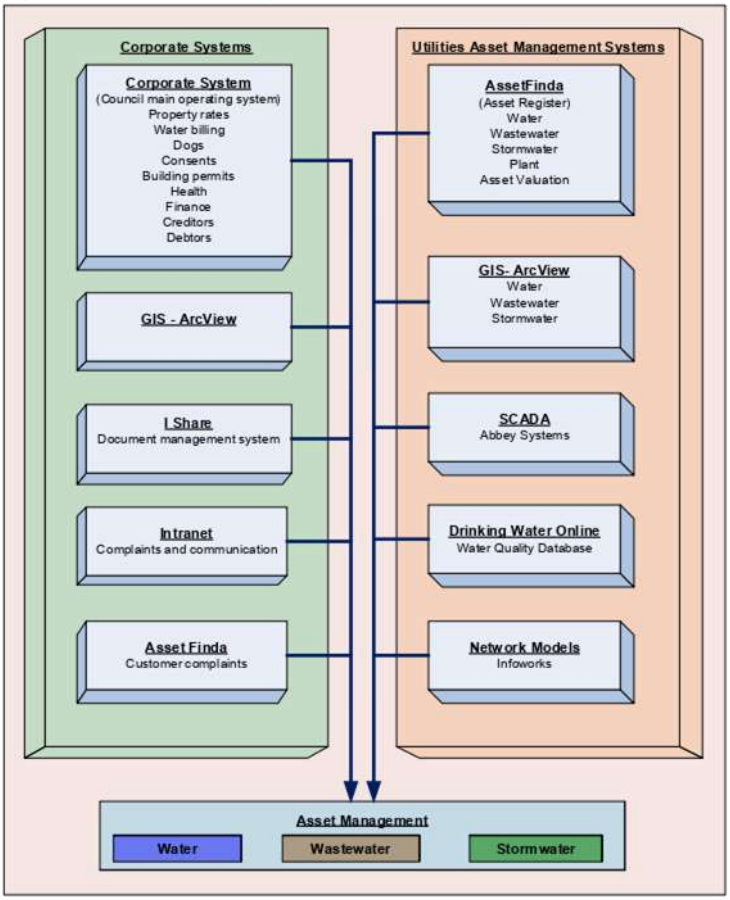
Methodologies	Output
Continuation of the organisational culture of asset management	The asset management culture needs be supported by the Chief Executive and senior managers in conjunction with the elected Council Effective stewardship and management of Council major investment (assets) will not occur in the long term without a culture of asset management
Resourcing of Asset Management Programmes	Asset management programmes must be adequately resourced

Methodologies	Output
Roles and Responsibilities of Council Staff	The roles and responsibilities of Council staff as they relate to the AMP's implementation need to be defined in respect to the on-going use of the plans as this will assist the Plan to remain relevant and current. To enable this to occur the following is required - The Activity Management Plans adopted/accepted by staff down to a defined level - Council Staff to know what's in the plans and how it could affect their day to day work - Council Staff to understand the reasons for the plan and the implications for the long term use of them - Understand all the reporting requirements for Levels of Service and Internal Benchmarking - Training required in the use of the Plan (what's in it, how work is done, on-going requirements for monitoring, review and updating) - Instigation of processes to encourage Council Staff to use the Plan

9.3 Business Processes

Figure 9-3 details the data systems that are presently used within Council and their relationship with other systems.

Figure 9-3: Council Data Systems



9.3.1 AssetFinda

Council uses AssetFinda for its Asset Information System. AssetFinda has been used since 2005 and is a web/GIS based asset management system. This has greatly improved the information on the scheme assets and enhance the future AMP and Asset Valuations. Some of the outputs from AssetFinda includes:

Complete asset register for the scheme.

Completion of asset valuations.

Maintenance can be entered into the database. Cumulative costs of maintenance on each asset can be assessed.

Predictive analysis to indicate when assets should be replaced.

Condition monitoring of assets.

Complete "what if" scenarios to determine the optimal time to replace assets.

Table 9-3: AssetFinda Functionality and Utilisation by Council

Register Functions	Utilisation
Property Services	
Utilities, Roading, Parks & Reserves	Complaints
Water	Water lines, points and plant details
Wastewater	Wastewater lines, points and plant details
Stormwater	Stormwater lines, points and plant details
Maintenance History	Cumulative maintenance costs of an asset. Maintenance history is also linked to the asset in GIS
Valuation	Used on an annual basis
Criticality	Not currently populated
Condition & Performance	Scores held in register

Data will be collected continually throughout the year and entered into AssetFinda.

Metadata Standards

A Central Government funded project is the 'Metadata Standards' which sets national metadata standards for the 3-waters (potable, waste and storm) network, and for residential and light commercial buildings. This is to ensure the correct asset data is collected and in the correct manner. The roll out of these data standards started mid 2017.
Going forward Council will align its data collection and recording with the Metadata Standards. However, the existing data will be held and only aligned with the standards over time as more current information is captured.

9.3.2 GIS

Plans for reticulation and facilities for the three utilities are entered into AssetFinda as they are received. Where information is received from contractors on the utilities services then ArcView is updated. Council does not have a robust system of ensuring that all subdivision plans are of the required standard prior to importing into ArcView.

Asset Data

The majority of asset quantity, location and pipe size data are held in the GIS system. There are a number of quality assurance processes are used to ensure the reliability of the data recorded. These processes include:

Table 9-4: GIS Data

Item	Details
Sampling of assets contained in the GIS / AMS	Using field tests to check the reliability of pipe capture, pipe quantities and pipe size within the GIS/AMS
Coverage testing	Checks by Asset Managers that assets captured in particular areas reconcile with the services known to be provided
Continuity checks	These are carried out in GIS to identify breaks in the piping networks and gaps in the data
Historical and new data	GIS capture of historical data has been derived from professional engineering and survey plans, from Council record sheets or Council staff knowledge. The on-going capture of asset data is derived from engineering as-built plans. All As-Built plans received by Council are required to comply with strict specifications and all data entered into the GIS/AMS is the subject of quality assurance processes

9.3.3 Network Modelling

Computer models (Infoworks) of the wastewater network exist. This enables Council to:

- Determine accurately the existing capacity of the system.
- Identify inadequate sections of the system.
- Operate the system in the most efficient manner.
- Determine the impact of further development on the system.
- Identify system upgrading requirements.
- Compare options for upgrading the System.

The network models are operated and maintained by external consultants, Opus International Consultants Ltd.

9.3.4 Complaints Database

The Council operates a complaints database through a 'Request for Service System' via AssetFinda. This records all complaints associated with the Three Waters, Parks and Reserves and Roading activities and provides useful information for trending and analysis of system performance and highlights issues.

The database has now been updated such that service requests can now be analysed by relevant performance measures (Levels of Service) and priority response times included within AssetFinda.

9.3.5 SCADA System

Background

Council operates an Abbey Systems Telemetry or SCADA (Supervisory Control and Data Acquisition) system. The system is used to monitor and control critical aspects of treatment plants and pump stations, 9 sites are presently monitored that include:

1 WWTPs

2 wastewater pump stations

5 water intakes and treatment plants (WTP)

2 water pump stations

The following table details the extent of SCADA within the Wastewater activity.

Table 9-5: SCADA within the Wastewater Activity

FACILITY	SCADA REPORT												ALARMING	
	Accumulator reset	Pump (I/O, hours)	Milliscreen (I/O, hours)	kW	Current	Power failure	Actuated Valves	Level (high/low)	Flow	Aerator (I/O, hours)	UV system	Intruder/ Operator	Outgoing alarms (high/low & fail)	Flashing Light
Treatment Plant	-	✓	✓	-	-	✓	-	✓	✓	✓	-	-	✓	-
Milford PS	-	✓	-	-	-	✓	-	✓	-	-	-	-	✓	✓

The system is used for:

- Monitoring the operation of sites.
- Reporting, trending and analysing historical data.
- Alarm monitoring (operators are informed of alarms via text messages to mobile phones).
- Some control functions.

Monitoring of Water and Wastewater Schemes by the Council's SCADA system has grown to the point that without the current SCADA system, maintaining the existing Levels of Service would be difficult. SCADA has given the ability for Council to ascertain faults and instigate repairs without affecting the service to the consumer has significantly increased efficiency and reliability of the utility schemes. The SCADA system is a critical system in Councils operation and service delivery.

Future Strategy for Council's SCADA

Council's strategy for the on-going use of SCADA is:

- Maintain SCADA system at a high level to ensure system reliability and on-going reporting ability.
- Increase availability of information to the Engineering staff in a format that will enable increased efficiencies in operation and management.
- The development of the reporting functions of the system and
- Develop further use of the system to control plants.

10.0 IMPROVEMENT PLAN

This section details the improvements to AM systems that will increase the level of confidence in the AMP.

10.1 Asset Management Improvement Process

Background

Council is committed to on-going improvement in the quality of its Wastewater Services management practices. This is reflected in the implementation of asset management systems and associated data collection and maintenance requirements.

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

- Information Management
- Scheme Knowledge
- Renewals, Risk and Criticality assessments

Purpose of the Improvement Plan

The purpose of the Improvement Plan is to:

- Identify, develop and implement AM planning processes.
- Identify and prioritise ways to cost-effectively improve the quality of the AMP.
- Identify indicative time-scales, priorities, and human and financial resources required to achieve AM planning objectives.

The Improvement Plan is subject to constant reappraisal and change. While reappraisal is an on-going process, the Improvement Plan will form the basis of the Wastewater Services annual business planning.

10.2 Improvement Programme

Council is committed to on-going improvement in the quality of its asset management practices until appropriate practice levels are achieved. This is reflected in the current improvement programme for the period 2018-2028 and the achievements made in the period 2012 to 2014.

Table 10-1 presents the current status of the 3 Waters Improvement Programme as at January 2018.

Improvement Priority

The improvement priority was carried out using the key areas of:

- Legislative requirements
- LOS achievement
- Where the assessed risk was considered high

Table 10-1: Achievement of 2014-2017 Programme and Proposed 2021-2024 Programme

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Level of Service (LOS)	1	Improvements to Council's Request for Service System via AssetFinda, to enable interrogation of service request system to analyse customer complaints and identification of problem area	2012-2013	Y	Service requests can now be analysed by relevant performance measure and priority response times included within the AssetFinda set-up.	Further development of the system is required to allow retrospective entry of after hour's information and also escalation. Council working with the developer to facilitate this. 2015-16. Completed – AssetFinda is now configurable to allow retrospective entry of Service Requests	-	-	2012-2013
W, WW & SW		2	Once National LOS are available, evaluating LOS Options by investigating the effects of varied LOS (financial, environmental etc.) and consult LOS options with the community (for inclusion of amended LOS into the 2015 LTP)	2014	N	Levels of service to be reviewed and included in 2015-25 LTP.	2014/15 - Implemented Non-Financial Performance Measures but no indication as yet to National Level of Service for three waters.	Monitoring	Monitoring	2014

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
SW		3	Stormwater Management Plan - develop, submit and obtain approval	2013-2015	N	Alignment required with proposed Global Consent timing	Carry Over – Draft Stormwater Management Plan completed. Consent application is currently being drafted and affected landowners have been consulted. Application will be lodged in early 2018.	Consent application lodged 2017/18. Implementation 2018/19 to 2023/24	Consent application lodged 2017/18. Awaiting feedback from affected parties. Implementation 2018/19 to 2023/24	2017/18
All	Demand	4	Review if increased demand (population/demographics effects etc.) can be provided by existing infrastructure or addition assets/upgrades required (a watching brief)	2012/13	N	As new population figures / demographics / development information becomes available, Council is actively reviewing existing infrastructure / services to ensure LOS are met.	On-going	On-going	On-going	2020/21
Water	Growth	5	Continue to implement demand management programme in-conjunction with the leak detection program	On-going	N	Demand management will be achieved by a combination of pressure management and	No formal policy on demand management but achieved through processes such as water conservation	Develop policy in relation to demand management and provide pressure management	On-going	2019/20

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						developing policy in relation	messages as required.			
All		6	Continue to develop the existing population projections process that is Council approved and used across all areas of council	2012/13	Y	Process in place (yet to be formally adopted by Council).	Process developed for 2018/28 Long Term Plan.	Process developed for 2018/28 Long Term Plan.	Process developed for 2021/31 Long Term Plan.	-
Water		7	Leak detection in Waimate urban reticulation every three years	2012 2015 2018	N	Not completed in 2012. Programmed for 2015. Council has a watching brief on Midnight flow.	On-going – Last completed June / July 2015	On-going – Programmed for 2018 /19. However, Pipe replacement reduced water loss significantly, so no leak detection took place in the period. Council continues to watch Midnight flow and monitor water loss (Performance Measure).	On-going – leak detection is planned for 2021/22. Water loss monitoring will Continue. Other forms of leak detection/water loss will be implemented in 2021/22 such as consumer service meters (RF).	2018/19 2021/22 2024/25
~~Water~~		8	~~Develop Water Demand Management Plan/Strategy to formalise, improve and guide existing demand management initiatives~~	~~2013/14~~	N	~~Re-programme for 2015- 2025 LTP~~	~~Carry Over~~	See IP 5	See IP 5	-

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Sustainability	9	Assess staffing levels to ensure sufficient resources to meet demand	2011/12	N	Council is currently in the process of creating the new role of "Group Asset Manager". It is envisaged that this role will become operational in early 2015 and is created to assume a more strategic role to free up existing managers.	Extend to include staff succession planning for unplanned staff absences, resignations or retirements 2015-2018 – Additional staff member allocated to support the Asset Management Business Unit. Additional Water Treatment Plant Operator allocated to meet additional workload once plants are upgraded to meet Extend to include staff succession planning for unplanned staff absences, resignations or retirements 2015-2018	Next major assessment programmed for 2021/31 LTP	Currently there are major changes in water legislation, regulation and potentially standards and solutions. These changes will impact the way 3 water services are managed and operated their supplies and networks. Increase compliance and greater expectations around levels of service will mean reviewing staffing levels on a regular basis until July 2024, to be assured of meeting legislation, regulation requirements.	2020/21 Onwards

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Risk	10	A Council wide risk policy to be developed	2012/13	N	Risks have been identified in a methodical manner through the Audit Committee.	Carry Over	Carry Over	Carry Over	2018/19
All		11	A critical assets study to be undertaken to identify critical assets and identify and adopt risk mitigation strategies for the operation, maintenance and renewal of all critical assets. The critical assets to be shown in AssetFinda	2012/13	Y	-	Carry Over	Completed 2017/18.	-	-
Water		12	*New 2014:* Implementation of Water Safety Plans	2014 Onwards	N	Currently approved water safety plans for Waimate Urban, Cannington-Motukaika, Waihaorunga, Waikakahi Submitted Hook-Waituna, Lower Waihao Under development, Otaio Makikihi	Carry Over	All water safety plans were approved and being implemented. Some capital works proposed in the 2018-28 LTP were subject to approval. Implementation and review on five year cycle.	Water safety plans are either being implemented (4) or undergoing review (1) and assessment (2) currently. Some capital works proposed in the 2021-31 LTP are still subject to approval. Implementation and review on five year cycle.	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		13	Develop Business Continuity and Emergency Management Plan (for rapid and structured response to emergency failures and significant hazards) and ensure review control process is carried out	2013/14	N	Major developments in communication of significant issues have been made.	Carry Over	On-going	On-going	2018/19 Onwards
W & WW	Lifecycle	14	To better understand the different AC pipe life a programme of assessing the condition of the pipes in all the schemes that contain AC pipe will occur	2012-2015	N	A number of samples taken	Carry Over	On-going. A number of pipe samples have been recovered and assessed from both the rural and urban schemes. Results of these assessment will continue to inform the renewal programme.	On-going	2018/19 Onwards
Water		15	To better understand the different "old PE pipe" life, a programme of assessing the condition of the pipes in all the schemes that contain Old PE pipe will occur.	2012-2015	N	-	2015-2018	Develop programme to retain and assess samples to better inform rural renewal programmes	On-going	2018/19 Onwards

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
Water		16	The location and extent of Garnite PVC pipes are required to be found and the information shown in both AssetFinda and GIS. This will allow greater understanding of the future renewals programme for this type of pipe.	On-going	-	As these are encountered the asset database is updated	On-going	On-going	On going	On-going
		17	*New 2014*: Continue condition assessment of plant assets to better understand future renewals programme for above ground assets	-	N	Condition assessments to be carried out	2015-2018	Condition and Criticality assessments to be completed.	On-going	2018/21
WW		18	CCTV of the condition 4 & 5 grade pipes are required to be carried out again to ascertain the decrease in condition and assist in the renewal programme	2012-2015	N	CCTV is utilised as a maintenance activity currently. Information yielded from these surveys, and future surveys will inform the renewal programme.	On-going	On-going CCTV inspections were utilised to ensure programmed renewals are both required and cost effective.	On-going	2018/21

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		19	Develop a Condition Assessment Strategy			To identify which, where and when condition assessments will be performed in consideration of criticality, LoS, asset records, Council engineers visual assessment of failures and specialists assessments as required.		Develop and implement prior to 2020/21 review of # Waters AMP's	On-going – Staff training has occurred in condition assessment.	2018/21
All		20	Develop a comprehensive renewal programmes based on analysis of condition and capacity once condition assessments have been carried out	2012-2015	N	Condition assessments to be carried out as part of the improvement of data quality	On-going	Condition assessments to be implemented concurrently once strategy in IP 19 is developed	On-going – Staff training has occurred in condition assessment..	2012-2015
All		21	Review and document operations and maintenance strategies based on criticality and risk	2013/14	N	-	2015-2018	Review Lifecycle sections of Amp's once criticality and risk assessments are progressed	On-going	2020/21
All		22	Formalise and update the existing maintenance schedules and procedures quality procedures, contingency and operation and maintenance manuals	2012-2015	N	Utilisation of AssetFinda to Schedule maintenance alongside formalising by	2015-2018	Implement scheduled maintenance of key assets within AssetFinda Version 4	Carry over – issues with implementation of AssetFinda Version 4. Schedule still to be	2018/19

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						means of manuals is required				
All	Financial	23	Review asset materials codes and size ranges to see if there is scope for rationalising the information, both to assist with valuation and for general asset management purposes	2012/13	Y	Completed this year	-	-	-	-
All		24	Continue to keep good records of construction costs, especially for rural pipelines, to provide better information for future valuation updates.	On-going	Y	-	On-going	On-going	On-going	On-going
All		25	Updating asset inventory to reflect changes resulting from capital works and continue to do so.	On-going	Y	-	On-going	On-going	On-going	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	AM Practices	26	It is proposed as part of future improvements in the management of AssetFinda/GIS - to ensure sufficient resources are available (both internal and external) to enable the full use of AssetFinda/GIS for the operation, management and administration of the utility services	2011/12	Y	Occurred during the 2014 / 15 Financial Year	-	-	-	-
All		27	Council continue to maintain the AssetFinda asset database and improve accuracy of data through review and modification of collection, storage, and auditing with prioritising on criticality including the development of Data management standard	On-going	-	-	On-going	On-going	On-going	On-going
All		28	Complete data capture and update records for underground assets - to the asset management systems and ensure adequate resources are available for data entry and on-going data maintenance	On-going	-	-	On-going	On-going	On-going	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		29	Continue to and complete data capture and update records for all facilities assets - to asset management systems	On-going	-	-	On-going	On-going	On-going	On-going
All	Improvement Programme	30	Develop long term improvement programme to achieve the Council's appropriate practice policy	2014/15	-	Not currently documented	Yes	Asset Management sophistication and Maturity Index assessments need to be completed.	Asset Management sophistication and Maturity Index assessments need to be completed prior to next generation 2024	2018/19
All	Lifecycle	31	Align the asset data in AssetFinda with the criticality assessment ratings					Import criticality ratings post implementation of AssetFinda Version 4. Provide a high level list of critical assets for ease of identification	Carry over – Complete with urgency to enable comparison of age predicted model with condition and performance weightings.	2018/19
		32	Consider and implement recommendations from criticality assessment					On-going	On-going	2018/19 Onwards
		33	Revisit criticality assessment			The Havelock North Water Enquiry and 3Waters review may require a review of the		Maintain a watching brief on recommendations and legislation to ensure criticality	Maintain a watching brief on recommendations and legislation to ensure criticality	TBC

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						criticality assessment to ensure the focus remains correct.		assessments remain pertinent.	assessments remain pertinent.	
All	Lifecycle	34	N/A	2021-24		Systematically assess 3W's data reliability and present in a table			Complete systematic reliability analysis for 3W's assets. Once established utilise predictive modelling with condition and performance weightings to better understand longer term renewal requirements.	2021-24

10.2.1 Monitoring Approach

Council has developed this AMP based on an integrated asset management planning approach that includes:

- The configuration of networks to meet customer requirements, now and in the future.
- Current asset information.
- Well-developed strategies to achieve customer requirements.

The further development of Council's asset management approach including supporting processes, systems and data will be needed to meet the appropriate level of asset management practice as set out in Council's Asset Management Policy. This Policy will be reviewed periodically to take into account legislative and other national practice changes.

10.2.2 Timetable for Audit and Review

The programme for future AM reviews of this plan is presented in the table below:

Table 10-2: Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 June each year
Adoption of AMP by Council	30 June every 3 years
Audit NZ external audit	As required by Audit NZ

Appendix A: Individual System Description & Overview

Waimate Urban Wastewater Scheme

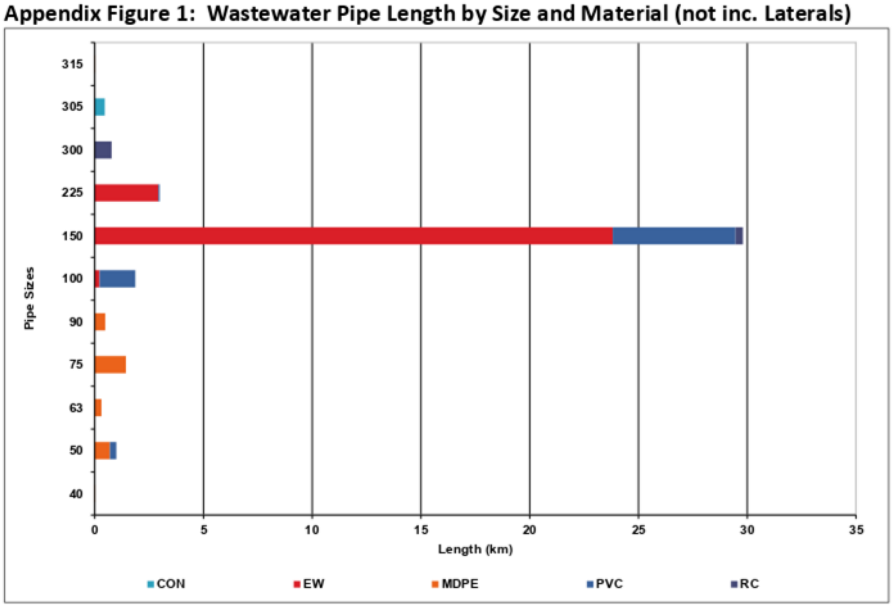
The Waimate wastewater system was designed and constructed during the period 1915 through to 1964 and originally based on a population of approximately 4,000 people. The existing wastewater treatment plant has sufficient capacity to serve a connected population of 5,640 people.

During 2003 significant upgrades were undertaken at the treatment plant in accordance with increased resource consent conditions. These upgrades provided for future population growth, improved effluent quality and replacement of the discharge to water system with a disposal to land system.

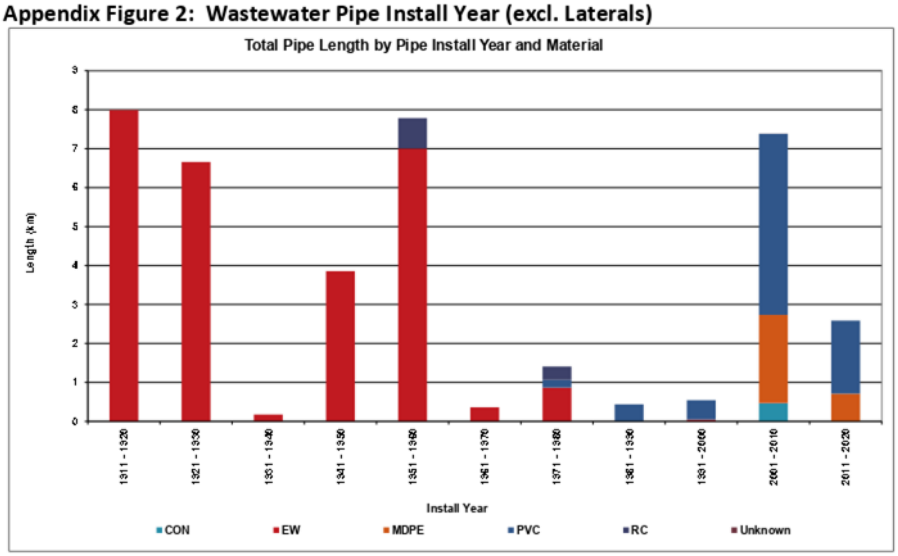
System Information

System Information			
Connections	1,850	**Treatment Plant**	
- Domestic	-	Oxidation ponds	2
- Trade waste	-	Rock filter	1
- Business	-	Aerators	2
- Industrial	-	Maturation ponds	3
		Design ADWF	1,200m^3/day
		Current flows (median)	761m^3/day
Pump Stations	2	Milford PS	
		WWTP PS	
Resource Consent	**Expiry Date**	**To**	
CRC000169.1	10/10/2036	Discharge effluent to land	4,300m^3/day
CRC000170	10/10/2036	Discharge effluent to Waimate Creek	13,300m^3/day in emergencies
Replacement Cost		**Reticulation (Mains) Length**	**Manholes**
Total Scheme	$25.1m	39.2 km	308

Appendix Figure 1: Wastewater Pipe Length by Size and Material (not inc. Laterals)

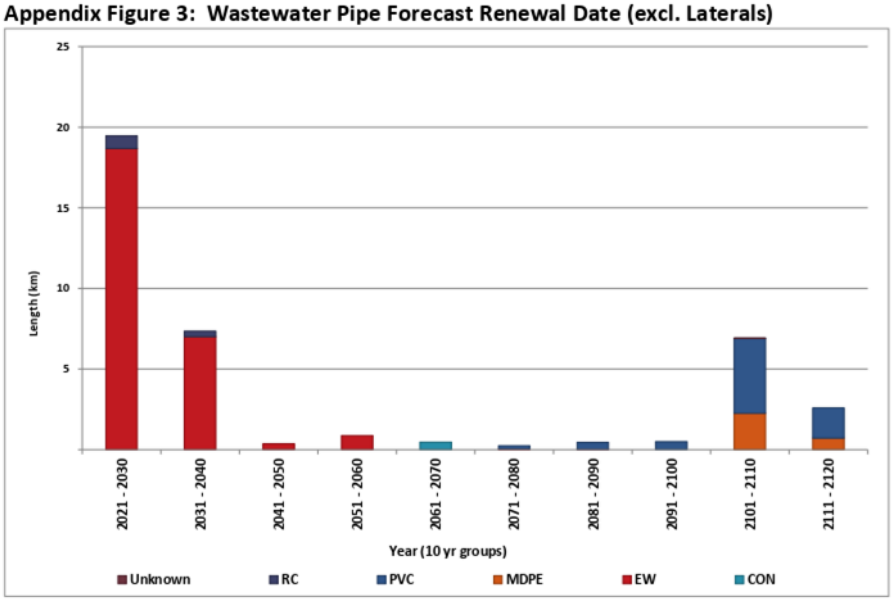


Appendix Figure 2: Wastewater Pipe Install Year (excl. Laterals)

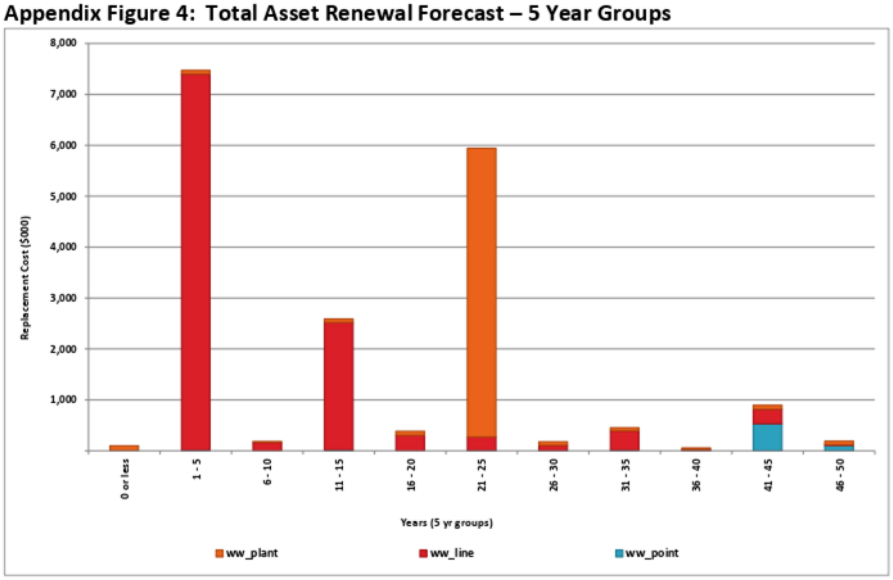


37% of the reticulation was installed during the period 1915 to 1930, and a further 30% installed during 1941 to 1960.

Appendix Figure 3: Wastewater Pipe Forecast Renewal Date (excl. Laterals)



Appendix Figure 4: Total Asset Renewal Forecast – 5 Year Groups



Appendix Figure 5: Waimate Urban Wastewater System



Appendix B: Significant Forecasting Assumptions

The following table details the significant forecasting assumptions as at March 2021 that affect the utilities services.

Appendix Table 1: Significant Forecasting Assumptions as at March 2021

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
POPULATION CHANGE						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
DEMOGRAPHIC CHANGES						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups
OIL PRICE						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum	WDC	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups

market has historically demonstrated a tendency to stabilise rapidly, where possible.		frequency and/or greater severity.		demand for alternative methods of transport.		

2021-2031 LTP SIGNIFICANT FORECASTING ASSUMPTIONS

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
CLIMATE CHANGE						
The effects of climate change are expected to manifest in three categories: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) general socio-economic consequences of such changes, and c) socio-economic consequences of policies/ measures designed to curb the adverse effects of climate change.	WDC	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY (NZTA) REVENUE						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidized works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths
GRANTS AND SUBSIDIES						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will	WDC	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property

not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.				reduced level of service.		

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
NEW ZEALAND DRINKING WATER STANDARDS & SERVICE DELIVERY						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	WDC Central Government	Legislation changes under urgency in Parliament that must be implemented immediately.	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply
RESOURCE CONSETS						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	WDC	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply
WATER IRRIGATION SCHEMES						
Council does not expect major irrigation schemes to be introduced into the	WDC	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal	Council will monitor the environment in regard to any potential development, and	Roading and Footpaths, Rural Water

district over the period of the Long Term Plan.				impact on Council, but a more considerable impact on the district's agricultural sector.	seeks to remain involved in discussions/proposals.	Supply, Sewerage

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
EMERGENCY EVENT						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	WDC	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups
DEVELOPMENT CONTRIBUTIONS						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable	WDC	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups

under each system will be broadly similar.						

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
DISTRICT ECONOMY						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	WDC	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices- the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups
USEFUL LIVES OF SIGNIFICANT ASSETS AND DEPRECIATION						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support WDC asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply
REVALUATION OF NON-CURRENT ASSETS						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets:	WDC	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property

Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%						

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FUNDS FOR FUTURE REPLACEMENT OF SIGNIFICANT ASSETS						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	WDC	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage
RETURN ON INVESTMENT- ALPINE ENERGY						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it	WDC (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance

is assumed the dividend will remain at 6c.				unlikely to maintain dividends at the proposed level.		

Appendix B:

Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FORESTRY ASSETS VALUES						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	WDC	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance
CAPITAL DELIVERY						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	WDC	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in any given year, and carried over to subsequent years.	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021,	Water Supply & all other activities

					or very early in the 2021/22 financial year. Due to the nature of the rates smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	
ASSUMPTION	**SOURCE**	**RISK**	**LEVEL OF UNCERTAINTY**	**IMPACT OF VARIATION**	**MANAGEMENT OF RISK**	**ACTIVITY**
RETURN ON INVESTMENTS- OTHER						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	WDC (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance
INFLATION						

Appendix B:

Significant Forecasting Assumptions

<table>
<tr>
<td>Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL).</td>
<td>Business and Economic Research Ltd.</td>
<td>Inflation will be higher or lower than anticipated.</td>
<td>Moderate</td>
<td>A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.</td>
<td>Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan.

In the event of significant changes to the underlying costs supporting work in the activity areas, mitigation planning will feature in the Annual Plan.</td>
<td>All activity groups</td>
</tr>
<tr>
<td colspan="2">
<table>
<tr><th>Year</th><th>Roading</th><th>Property and Parks</th><th>Water</th><th>Staff</th><th>Other</th><th>Wastewater</th><th>Capital Expenditure</th></tr>
<tr><th></th><th>%</th><th>%</th><th>%</th><th>%</th><th>%</th><th>%</th><th>%</th></tr>
<tr><td>June 2022</td><td>3.1</td><td>1.7</td><td>7.2</td><td>4.8</td><td>1.7</td><td>7.2</td><td>4.0</td></tr>
<tr><td>June 2023</td><td>3.1</td><td>2.0</td><td>3.4</td><td>2.4</td><td>2.0</td><td>3.4</td><td>3.0</td></tr>
<tr><td>June 2024</td><td>3.0</td><td>2.0</td><td>2.1</td><td>1.5</td><td>2.0</td><td>2.1</td><td>2.6</td></tr>
<tr><td>June 2025</td><td>2.9</td><td>1.9</td><td>2.3</td><td>1.7</td><td>1.9</td><td>2.3</td><td>2.6</td></tr>
<tr><td>June 2026</td><td>2.9</td><td>1.8</td><td>2.6</td><td>2.0</td><td>1.8</td><td>2.6</td><td>2.7</td></tr>
<tr><td>June 2027</td><td>2.9</td><td>1.8</td><td>2.3</td><td>2.2</td><td>1.8</td><td>2.3</td><td>2.6</td></tr>
<tr><td>June 2028</td><td>2.9</td><td>1.7</td><td>3.0</td><td>2.3</td><td>1.7</td><td>3.0</td><td>2.8</td></tr>
<tr><td>June 2029</td><td>2.9</td><td>1.7</td><td>3.3</td><td>2.4</td><td>1.7</td><td>3.3</td><td>2.8</td></tr>
<tr><td>June 2030</td><td>2.9</td><td>1.7</td><td>3.3</td><td>2.6</td><td>1.7</td><td>3.3</td><td>2.9</td></tr>
<tr><td>June 2031</td><td>2.9</td><td>1.6</td><td>2.7</td><td>2.7</td><td>1.6</td><td>2.7</td><td>2.7</td></tr>
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ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
BORROWING COSTS						
Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.	WDC (in conjunction with its financial advisors)	Interest rates will differ significantly from those estimated.	Low	If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.	Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.	Investment and Finance
UNIDENTIFIED LIABILITIES						
It is assumed that Council does not have any unidentified liabilities.	WDC	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

Appendix B:

Significant Forecasting Assumptions

Appendix C: Risk Summary Table

The following table details the Risk Summary Table that was first established in 2011, which identifies risk management strategies to minimise risks associated with the provision of the Water, Wastewater, Stormwater and Solid Wastes services.

Appendix C:

Risk Summary Table

Risk Summary Table – all Services

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
1		Higher Level Policies, Procedures and Controls				
1.1	Subdivision Code, District Plan not up to date	Inappropriate development and/or poor design of assets.	Moderate	Subdivision and Development Code up to date and activity to have input to District Plan.	Low	
1.2	Operations Manuals not up-to-date	Failure to supply water or cause adverse health effects due to poor operation of assets.	Moderate	Operating Manuals substantially complete and ensure staff comply with requirements.	Low	The existing operation and maintenance manuals are to be updated where required. Particularly when treatment processes are updated
1.3	Not having clear direction on public consultation	Council in breech of LGA2002 with respect to Public Consultation.	Low	Need ability to get advice from specialist council staff on consultation plan for each project.	Low	
1.4	Districts Bylaws not up to date	Inability to properly control inappropriate behaviour by others.	Low	Bylaws up to date	Low	Bylaws are being updated prior to 30 June 2018
1.5	The Council does not have an acceptable position on the impact of climate change on service delivery	Financial loss due to liability for property damage, loss of asset. Not able to provide service.	Significant	Council needs policy and relevant action plans including relevant design parameters) on Climate Change.	Low	Strategies to implement Councils future policy on the effects of climate change
1.6	Inaccurate growth information or growth not considered	Inappropriate decisions made about development.	Moderate	Growth developed by Council	Low	
2		Financial				
2.1	Lack of long-term financial planning	Higher than necessary financial costs	Significant	Existing network models are up to date and available	Low	
2.2	Service levels vs funding and works not clear	Service levels not being met due to lack of funding as decision makers not aware of implications for Service Levels.	Significant	Set performance targets for next 10 years and monitor and report on performance. Impacts of delayed capital works reported to Council.	Low	
2.3	Assumptions for financial forecasting not always understood	Additional costs incurred because assumption/uncertainties not accounted for i.e.: asset valuations, depreciation	Significant	Finance/managers need to be aware of assumptions and uncertainties behind financial forecasting information.	Moderate	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
2.4	Unforeseen Additional Costs	Reputation of Council detrimentally affected	Significant	Ensuring AMPs and asset information up to date	Low	
2.5	Valuations not accurate for asset facilities	Fixed Asset Register not reconciling with existing assets causing incorrect valuations and affecting true financial requirements	Low	Asset register reviewed and updated	Low	
2.6	Development Contributions policy not implemented and/or do not have robust system for calculating contributions from developers	Adequate contributions for development not obtained costing the Council more than it should. Council faces legal action if contributions not in line with Section 199 of the LGA 2002.	Moderate	Development Contributions Policy implemented.	Low	Changes to the RMA are likely to impact financial contributions.
2.7	All potential sources of Government and other external funding (Third Party funding) not appreciated or obtained	Higher cost to Council than should have been	Moderate	Identify potential availability of third party funding and apply / take advantage of it.	Low	
2.8	Insurance cover needs review	Insurance not adequate and unnecessary costs incurred	High	Insurance cover reviewed to ensure adequate cover on annual basis.	Low	
3		Organisational Management				
3.1	Lack of Strategic Thinking/ Long-Term planning	Inefficient use of time and money.	Moderate	Implementation of AMP and undertake condition assessments.	Low	
3.2	Failure to act on identified risk - e.g. Water Safety Plans Plans	Possible legal action against Council if event occurs which Council knew about. Public Health adverse affected.	Moderate	WSP's have been carried out and recommendations being implemented	Low	Need to monitor outcomes of Havelock North Enquiry and proposed 3Waters review
3.3	Lifelines Plan not up to date or implemented	Large scale asset failure due to a naturally occurring event resulting in prolonged and substantial loss of service to District	Significant	Ensure Lifelines Plan up-to-date and recommendations implemented that includes having a high level of risk reduction, readiness, response and recovery during and following Civil Defence Emergency.	Significant	Update lifelines plan, engage with regional lifelines group
3.4	Legislative requirements not understood	Council faces legal action because legal requirements are not met	Moderate	Annual reviews	Low	
4		Human Resources				

Appendix C:

Risk Summary Table

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
4.2	Accountabilities not clear	Staff not accountable for actions allowing apparent problems to continue	Moderate	Up-to-date job descriptions. Staff performance monitored and dealt with if not performing.	Low	
4.3	Information in peoples heads or inappropriate recording of information	Organisational knowledge lost with staff leaving	Significant	Ensure staff document and appropriately file everything that is relevant. Ensure good management succession when existing staff leave.	Moderate	Formalise and update maintenance schedules and procedures, contingency and operation and maintenance manuals.
4.4	Insufficient staff or not appropriately skilled	Programmed work not completed due to insufficient staffing or skill levels, having negative impact on service levels and creating public health risk.	High	Skill levels are appropriate	Low	Formal training programme required that includes the use of activity management plans
4.5	Inadequate attention to staff succession	Organisational knowledge lost with staff leaving	High	Implement good staff/management succession plan and document procedures	Moderate	Implement good staff/management succession plan and document procedures
5		Health and Safety				
5.1	Do not have a good health and safety culture	High accident rate	Moderate	Council health and safety procedures implemented, appropriate training undertaken and manuals up-to-date.	Low	
5.2	Health and Safety Risks not identified or managed appropriately	Council faces legal claims for not meeting health and safety obligations	Moderate	Health and Safety manuals up to date and be effectively managed.	Low	
6		Asset Management				
6.1	Network modelling, condition assessments not undertaken.	Capital Works programme not optimised. Renewal works not completed due to lack of knowledge causing failure of assets. Future forecasting not accurate.	Significant	Undertake condition assessments of network and develop robust renewals programme based on sound knowledge.	Moderate	Development and maintenance of network model.
6.2	As-built information can be slow or incorrect coming from maintenance staff, Contractors, Consultants	Council faces legal action because of incorrect information provided (particularly with regard to LIMS)	Significant	Ensure As-builts up to-date and on record promptly. Ensure GIS capability	Low	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.3	Criticality assessment not undertaken	Failure of critical assets resulting environmental damage or not meeting service levels	Significant	Undertake criticality assessment of assets and implement strategy for managing critical assets	Low	Incorporate criticality assessment of reticulated assets, undertake criticality assessment of plant assets and implement strategy for managing critical assets
6.4	Asset Risk Register and Asset Risk Plan not implemented	Council faces legal action because of asset failure or unnecessary costs incurred due to asset failure	Moderate	Maintain Asset Risk Register and Asset Risk Plan	Moderate	Improve risk plan to reduce residual risk
6.5	Asset management systems not up-to-date or completed	Failure to of utility systems because maintenance work not completed or management system not operational.	Significant	Asset Management System in place and updated as required	Moderate	Review AM system practices and processes
6.6	Performance monitoring of service levels not completed	Target Service levels not met resulting in customer dissatisfaction.	Moderate	Monitoring programme established and reviewed regularly.	Low	
6.7	Poor standards of constructed assets due to design and/or construction of infrastructure	Substandard physical works resulting in poor asset performance	Moderate	NZS4404 is updated regularly and Contractors & Consultants are familiar with this. Contractors/Consultants take responsibility for work done.	Low	Perhaps develop Sub-Division Code of Practice
6.8	Capital works delayed due to unforeseen circumstances	Programmed Capital Works not completed. Target Service Levels not met	Significant	Staff held accountable for delays & Staff trained in project management.	Moderate	Develop projects process that provides for project plans to be prepared for every approved renewal and capital development item.
6.9	Deferred renewal and maintenance not recorded or not done	Deferred maintenance not recorded causing unexpected, additional costs from asset failure	High	Record all deferred maintenance and renewals	Significant	Ensure all deferred renewals work recorded and management aware of impact on service levels if not funded.
6.10	Not all easements recorded or obtained	Council faces legal action or cannot carry out its activities because it does not have legal right to cross a property	Significant	Keep up-to-date record of easements. Establish clear policy for processes to be followed when easements are required.	Significant	Easement information needs to be improved with all identified easements provided with details of interested part. Legal situation to be clarified.

Appendix C:

Risk Summary Table

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.11	Insufficient documentation of escalating process decision making	Response to emergency situations reduced, higher expenditure	Significant	Employment of staff with the appropriate qualifications and skills	Low	
7		Resource Consents and Designations				
7.1	Review of Designations required	Council faces legal action because water assets have not been designated in the District plan	Moderate	Designations reviewed every three years to ensure these are appropriate.	Low	
7.2	Resource Consents	Council faces legal action because resource consents not applied for or conditions not met. Public dissatisfaction with environmental damage being caused.	Moderate	All consents that are required are obtained and consents monitored and reported on as required.	Low	
8		Asset Risks - Water				
8.1	Some treatment plants not capable of meeting drinking water standards	Dissatisfaction of customers from not meeting target water supply gradings due to non compliance with drinking water standards.	Significant	Upgrade of water supplies to meet standards underway with monitoring programme in place.	Low	
8.2	Reticulation - Inaccurate and/or unknown location of main	Asset broken - inability to supply service	Low	Maintain good as-builts that are current via GIS	Low	Update locations as and when data becomes available
8.3	Insufficient reticulation capacity	Low pressure	Low	Maintain reticulation model with updates as required	Low	
8.4	Poor reticulation condition - reduced flows	LoS not achieved	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network	Low	
8.5	Insufficient reservoir storage	Fire fighting Code of practice not achieved	Moderate	Maintain reticulation model with updates as required	Low	
8.6	Insufficient Operational Pump Station Capacity	Low pressure/insufficient flow	Low	Good understanding of schemes capacities and on-going monitoring of usage	Low	
8.7	SCADA Failure	No alarm available, no water	Significant	Back up systems and procedures	Low	Backup system already implemented

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
8.8	Treatment Plant - Equipment/component Failure	Failure to meet consent conditions, reduced water pressure	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
8.9	Vandalism at facility	Reduced LoS	Significant	Warning via SCADA of any issue at facilities	Moderate	
8.10	Rising Mains - Insufficient Capacity	Insufficient water during peak usage periods	Significant	Good understanding of schemes capacities and on-going monitoring of usage	Moderate	
8.11	Operator Error	Failure to achieve consent conditions or facility failure	Significant	Employment of staff with the appropriate qualifications, skills and training	Moderate	Upskill staff when new training becomes available.
8.12	Power failure for extended periods	No water - reservoirs run dry	Significant	Standby generators made available in an event of extended power failure	Moderate	
8.13	Fire at facility	Control equipment failure with resulting lack of ability to supply demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
8.14	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
8.15	Snow and wind	Power failure - see power failure	Significant	Standby generators made available in an event of extended power failure	Moderate	
8.16	Flooding	Intakes flooded - poor water quality or inability to pump water	Significant	Management and operational staff have the skills to manage natural events	Moderate	
9		Asset Risks Wastewater				
9.1	Blocked mains occurring on frequent basis	Flooding of roads, health risk	Moderate	Cleaning (via water blasting) those areas most effected on an annual basis	Low	
9.2	Manholes - Insufficient maintenance	Failure leading to blockages - Flooding of roads, health risk	Low	Inspections of key points within network during high rainfall periods	Low	Document and schedule manhole inspections in AssetFinda
9.3	Reticulation - Inaccurate and/or unknown location of main	Asset broken - inability to supply service	Low	Maintain good as-builts that are current via GIS	Low	
9.4	Insufficient reticulation capacity	Surcharging in wet weather - health issues	Low	Maintain reticulation model with updates as required	Moderate	Address known surcharging.

Appendix C:

Risk Summary Table

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
9.5	Poor reticulation condition (blockages)	Failure leading to blockages - Flooding of roads, health risk	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network	Low	Log all blockages in AssetFinda
9.6	Insufficient grades or flow to achieve self cleansing velocities	Build up of fats - blockages - Flooding of roads, health risk, increased costs for cleaning	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network. Known areas within network that have issues are inspected on regular basis	Low	
9.7	Chemical damage of pipes	Decreased asset life - premature replacement	Moderate	Inspections of network CCTV, cleaning etc	Moderate	
9.8	Pump Stations - Equipment or component Failure	Wastewater discharges to the environment having an impact on environmental, cultural and health issues. Customer complaints	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
9.9	Pump Stations - Insufficient Wet Weather Storage Capacity	Insufficient storage or capacity resulting in wastewater discharges to the environment having an impact on environmental and cultural issues	Moderate	Good understanding of schemes capacities and on-going monitoring of flows	Moderate	
9.10	Pump Stations - Corrosion and sulphur attack of electrical/control equipment	Surcharging in wet weather - health issues	Low	Monitoring of facilities on a regular basis	Low	
9.11	Insufficient Operational Pump Station Capacity	Surcharging in wet weather - health issues	Low	Good understanding of schemes capacities and on-going monitoring of flows	Low	
9.12	SCADA Failure	No alarm available	Significant	Back up systems and procedures	Low	
9.13	Treatment Plant - Equipment/component Failure	Failure to meet consent conditions.	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
9.14	Ponds - Overloading of Components Treatment Capacity	Failure to comply with resource consents and Customer complaints.	Moderate	Good understanding of treatment capacities and on-going testing and monitoring of flows	Moderate	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
9.15	Odours at treatment plant, or reticulation		Moderate	Good understanding of treatment capacities	Moderate	
9.16	Vandalism at facility		Moderate	Warning via SCADA of any issue at facilities	Moderate	
9.17	Overloading of Components Treatment Capacity	Discharge of Biosolids to environment. Failure to comply with resource consents. Customer complaints	Moderate	Good understanding of treatment capacities and on-going testing and monitoring of flows	Moderate	
9.18	Rising Mains - Insufficient Capacity	Wastewater discharged to the environment at pump stations having an impact on environmental and cultural issues.	Moderate	Good understanding of scheme capacities and on-going monitoring of flows	Moderate	
9.19	Operator Error	Failure to achieve consent conditions or facility failure	Moderate	Employment of staff with the appropriate qualifications and skills	Moderate	
9.20	Power failure	Treatment capacity diminished	Low	Standby generators will be made available in an event of power failure if required	Low	
9.21	Fire at facility	Control equipment failure with resulting lack of ability to continue service	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
9.22	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
9.23	Snow and wind	Power failure - see power failure	Low	Standby generators will be made available in an event of power failure if required	Moderate	
10		Asset Risks Stormwater				
10.1	Mains - Blocked mains prior to storm events	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.2	Manholes - Insufficient maintenance	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.3	Outlets, culverts, Blocked & erosion with insufficient cleaning	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.4	insufficient cleaning	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	

Appendix C:

Risk Summary Table

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
10.5	Insufficient overland flow paths	Flooding of houses and properties	Significant	Modelling of system will ascertain flow path requirements	Moderate	Complete modelling area to reduce risk and identify overland flow paths to protect.
10.6	Overland Flow Paths located on private property - no maintenance (overgrown/built upon)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.7	Overland Flow Paths Located on Councils property or roads - no maintenance (overgrown etc.)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.8	Power failure	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
10.9	Fire	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
10.10	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Low	Management and operational staff have the skills to manage natural events	Low	
10.11	Snow and wind	Possible flooding	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
10.12	Hail	Possible flooding	Moderate	Management and operational staff have the skills to manage natural events	Moderate	Utilise good design parameters on pipe entry structures.
11		Asset Risks - Solid Wastes				
11.1	Landfills - Non compliance of consents	Attention by Ecan	Low	Defined post closure procedures	Low	
11.2	Landfills - Erosion of closed land fills by streams or rivers	exposure of old wastes to the environment	Moderate	Watching brief	Moderate	
11.3	RRP (resource Recovery Park): Power failure	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
11.4	Fire	Emergency closure	Low	Redirect to temporary site or TDC	Low	

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
11.5	RRP - Movement failure caused by, Earthquake, landslide or settlement.	Inability to carry out service	Low	Management and operational staff have the skills to manage natural events	Low	
11.6	Snow and wind	Disruption of collection cycle	Low	Management and operational staff have the skills to manage natural events	Low	
11.7	RRP - Major Flood	Short term closure	Low	Redirect to temporary site or TDC	Low	
11.8	RRP - Chemical spill	Short term closure	Moderate	Redirect to temporary site or TDC	Low	
11.9	RRP - Dust & noise nuisance	Reputation of Council detrimentally affected	Low	Good practices and processes carried out on site	Low	
11.10	RRP - Loss of market for recyclables	Build up of recyclables	Significant	Different Markets for each recyclable	Low	Contractor wears this risk
11.11	Bin/bag collection - spillage	Litter over wide area	Moderate	Contract processes	Low	
11.12	Bin/bag collection -Loss of contractor providing service	Collection disruption	Low	Management and operational staff have the skills to manage contractual issues and resolution	Low	

Appendix D: References

The following details reports and other significant reference areas associated with the four utilities

Appendix Table 2: References

#	Title	Issue Date	Sector	Author /Consultant
1	Water Safety Plans		Water	Paul Roberts Water & Waste Manager *= *Submitted for approval*
	- Cannington-Motukaika	Dec-17 *		
	- Hook Waituna	Oct-15		
	- Lower Waihao	Nov-15		
	- Otaio-Makikihi	May-15		
	- Waihaorunga	Dec-17 *		
	- Waikakahi	Dec-17 *		
	- Waimate Urban	Feb-14		
2	Waimate Stormwater Investigation – Study Report	May-09	Stormwater	Opus
3	Queen Street Stormwater Issues and Options Report	Jul-17	Stormwater	Opus
4	Cast Iron Pipe Assessments	Mar-11	Water	Opus
5	AC Pipe Evaluation Reports	On-going	Water	Opus
6	Pressure Management Study	Jul-09	Waimate Water	Opus
7	Capital Assistance Programme Funding – Otaio-Makikihi	Complete	Water	Dan Mitchell Asset Group Manager
8	Capital Assistance Programme Funding – Lower Waihao	On-going	Water	P Roberts Water & Waste Manager
9	Capital Assistance Programme Funding – Hook Waituna	On-going	Water	P Roberts Water & Waste Manager
10	2020 Valuation	Sep-17	Three Waters	In-house / BECA
11	Disaster Resilience Summary Report	2006	All	COUNCIL Asset Management Group
12	Stormwater AMP 2014	2015	Stormwater	Opus
13	Solid Waste AMP 2014	2015	Solid Waste	Opus
14	Water AMP 2014	2015	Water	Opus
15	Parks and Recreation AMP 2014	2015	Parks and Reserves	Opus
16	Wastewater AMP 2014	2015	Wastewater	Opus
17	Leak Detection programme	Jul-05	Water	Detection Services
18	Waimate Water Supply Leakage Detection and Analysis Study	Jul-09	Water	Opus

#	Title	Issue Date	Sector	Author /Consultant
19	Council's Assessment of Water & Sanitary Services	Jun-11	All	M McTigue Water & Waste Manager
20	Leak Detection Programme	Oct-98	Water	Opus
21	Issues & Options for Universal Water Metering	Oct-98	Water	Opus
22	Waimate AMP Compliance Status	Feb-11	All	Waugh Infrastructure Management Ltd





Water Asset Management Plan

2021 - 2031

Waimate District Council

Waimate
District Council



Quality Record Sheet

Waimate District Council

Water AMP

2021-2031

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1.0 EXECUTIVE SUMMARY

WATER 	The water activity is a core Council activity that contributes towards the provision of good quality infrastructure and helps ensure public health and safeguards the environment. The water system comprises treatment facilities, pipes, pump stations and other assets that represent a significant council investment over many years.
FOCUS 	**New Capital and Growth** – to improve water treatment across the district and comply with the Health (Drinking Water) Amendment Act 2007 -to provide capacity to meet the required standards, future demand and support the expansion of development areas as identified by Council. **Renewals** – develop and implement a renewals strategy; including condition and criticality assessments. Ensure appropriate budgets are available to replace aging and/or deteriorating assets and align renewals with other infrastructure upgrades/renewals. **3 Waters Regulation** – will have a significant impact on the way the water service is delivered, managed, operated, maintained, monitored and reported on. There will be an increased holistic approach to 3waters management **COVID 19** - Central Government's programme and funding package to provide immediate post COVID 19 stimulus to maintain and improve three waters infrastructure
COMPLIANCE	**Resource Consents** - Council has a number of water related resource consents and aims to achieve compliance with all resource consent conditions. Regular compliance monitoring and reporting is undertaken
SERVICE DELIVERY 	**Service Delivery** - the water activity is delivered via a combination of in-house resources and contracted services with the operation and maintenance activities undertaken by inhouse resources. Operation and maintenance costs will increase: • To ensure compliance with DWSNZ • To ensure compliance with Resource Consents • As a result of expanding asset base, • increased community expectations
PERFORMANCE	**Performance** - a comprehensive performance monitoring and reporting framework ensures that legislative requirements and other KPIs are regularly assessed and reported on.
RISK & RESILIENCE	The ability to deliver capital projects on time may be affected by the skills shortage, increased monitoring and consultation processes required as part of Te Mana o te Wai processes **Understand** our communities, the hazards and risks and acknowledge that failure will occur. **Ensure** early detection and recovery through connecting communities, supporting community organisations and robust infrastructure assets

1.1 What are we doing

We protect public health and the environment by supplying water to the District's population through the operation of seven individual water supplies. These water supplies consist of:

- Waimate Urban,
- Cannington Motukaika,
- Hook Waituna,
- Lower Waihao,
- Otaio Makikihi,
- Waihaorunga and
- Waikakahi.

Council supports this service by:

- Providing, operating and maintaining of water infrastructure in compliance with New Zealand legislation and standards
- Responding to call outs and service disruptions quickly and efficiently
- Planning for future development and needs.

1.2 Why are we doing it?

Council has a legal obligation under the Health Act 1956 to improve, promote, and protect public health within the District. The Health (Drinking Water) Amendment Act 2007 places a further obligation on Council to comply with the Drinking Water Standards for New Zealand. In terms of the Local Government Act 2002 the continued operation of Water Supplies is required unless specific approval is sought to withdraw from the activity (in whole or part). The Council sees the provision of reliable and safe drinking water to the community as a major contribution to the District's economy and to resident's wellbeing.

Council's water supply activity contributes primarily to the following community outcomes

Community outcome	How it contributes
Thriving Community – A District that provides infrastructure for economic activity	The timely provision of utility services is essential to supporting growth
Safe and Healthy People A place where people are safe in their homes, work and public spaces	Protecting the communities from drinking water related health issues and providing firefighting capability
Our services, infrastructure and environment enhance quality of life	We have reliable, efficient and well planned water, wastewater, stormwater and solid waste infrastructure that meet the needs of residents
Sustainable District and Environment We value the natural environment, biodiversity and landscapes	Water is used efficiently and in a sustainable manner

Council identified a number of significant negative effects that the water activity may have on the well being of the community and the environment. Council developed appropriate mitigation measures to eliminate or minimise these effects.

1.3 Where are we headed?

Council's strategic goals for water over the next ten years is:

- To ensure that adequate water schemes are provided and maintained for the wellbeing of the public both now and in the reasonable foreseeable future
- To ensure that the long-term operation and maintenance of the water treatment facilities are environmentally sustainable
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Council owned water assets.

There are a number of key issues facing Council over the next ten years and beyond:

- Continue compliance with the Health Act and investment in meeting the Drinking Water Standards for New Zealand (*extent to be confirmed*)
- Compliance with new drinking water regulatory framework. The extent is still to be confirmed but will include:
    - registration of all drinking water supplies with only single household self-suppliers excluded
    - strengthened Water Safety Plans
        - multi-barrier approach to ensuring drinking water safety:
    - identifying and managing risks, source protection, treatment and reticulation
    - maintaining disinfection residuals in the reticulation
    - increased accountability
    - competency framework
- Central Government's 3 Waters Reform Programme and funding package to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure.
- Increased costs as a result of:
    - operation and maintenance costs
    - monitoring costs
    - training and qualification requirements
- Increased focus on ageing and failing infrastructure (cast iron and asbestos cement reticulation materials)
- Maintaining appropriate data and monitoring systems
- Ensure adequate in-house staff resource capacity and capability
- Progressively increase resilience of the water supply service
- Investigating and implementing improved efficiencies
- Ongoing affordability of the water supply
- Managing water demand

The water system represents a significant community investment. With age, asset condition and service potential reduce, and an important aspect of asset management is determining the right time and right level of renewals investment in order to maintain the agreed levels of service over the long term. Council will continue implementing the appropriate intervention strategies i.e. a combination of maintenance, repair and renewal activities to maintain the service.

1.4 How will we get there?

Council plans to maintain current levels of service for the life of this plan, unless legislation, consent conditions, or community expectations change. Over the next ten years Council plans to:

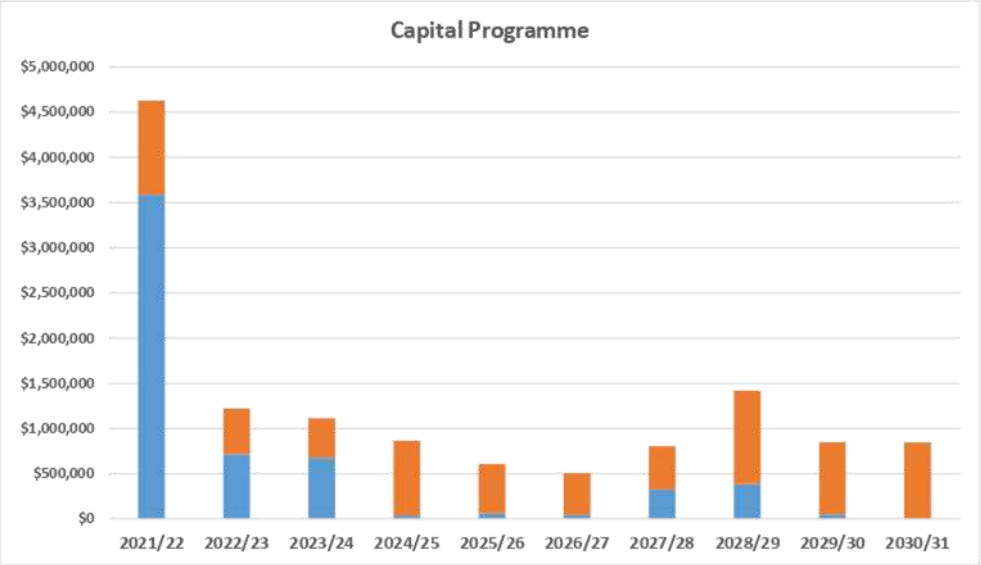
- Maintain consumer's access to water
- Continuing to invest in the implementation of Drink Water Standards and water safety upgrades to ensure a continuous supply of safe water
- Continue to monitor and respond to the Government's new Water Regulatory Framework

- Continue to develop and implement a robust water safety management framework
- Continue maintenance and renewal of the water network to meet the needs of current and future consumers.
- Plan for future development and needs
- Protect the environment through resource consent compliance
- Consult with the community on issues such as health and legislative compliance issues

This vision is supported by a detailed water asset management plan.

Significant projects and their funding sources are summarised in the following table and chart:

Project Description	Year	Inflated Amount
New Capital works -		
Drinking water upgrades (Hook Waituna, Lower Waihao, Waikakahi)	2021/22	$2,909,333
Bond Street Subdivision (Waimate)		$74,895
New bore (Otaio Makikihi) Booster pumps (Waimate)	2022/23	$127,182
Manchesters Road booster (Waimate)		$29,986
Chlorine monitoring (Lower Waihao),	2023/24	$57,008
Capacity upgrades (Hook Waituna, Otaiamo Makikihi)	2022 -30	$331,627
Water meters (Waimate)	2021/22	$472,045
Te Kiteroa Main (Booster, Reservoir)	2022-24	$799,699
Makers/Courts/Hunts Fitzmaurice Roads Extension & booster (Waimate)	2021-30	$980,232
Total		**$5,782,007**
Renewals		
Mains & plant renewals	2021/22	$1,042,164
Mains & plant renewals	2022/23	$505,006
Mains & plant renewals	2023/24	$438,643
Mains & plant renewals	2024/25	$827,496
Mains & plant renewals	2025/26	$548,953
Mains & plant renewals	2026/27	$463,416
Mains & plant renewals	2027/28	$476,381
Mains & plant renewals	2028/29	$1,032,904
Mains & plant renewals	2029/30	$798,622
Mains & plant renewals	2030/31	$845,877
Total		**$6,979,462**



Key projects:

- Drinking water compliance upgrades
  - Hook Waituna
  - Lower Waihao
  - Waikakahi
- Demand related
  - Booster – Bakers/Court/Hunts/Fitzmaurice Roads and Manchesters standby pump
  - Extensions – Bakers/Court/Hunts/Fitzmaurice Roads
  - Te Kiteroa main, booster and reservoir
  - Urban Water meters (Partial stimulus funded)
- Renewals – refurbishment, replacement of water assets estimated to be $6.98m over the next 10 years. All water supply system renewal work will be funded by the annual depreciation provision where funds are available

To ensure on-going affordability of the water supply service Council will continue to consider options in delivering the service.

1.5 How well are we doing and how well do we measure progress?

Council will continue to report on the non financial performance measures, in accordance with 261B of the Local Government Act 2002, as this covers the key expectations in terms of the delivery of the service.

Council have reviewed and updated its systems and processes to ensure alignment and compliance with these rules.

The linkage between community outcomes, levels of service and performance measurement is shown in the following table.

Community outcome	Level of Service	Performance Measure
Safe and Healthy People A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Safe drinking water	DWSNZ Compliance (NFPM1)
	Customer satisfaction	Number of complaints (NFPM4)
		Average consumption of drinking water (NFPM 5)
Thriving Community – A District that provides infrastructure for economic activity	Fault response	Response & Resolution times (NFPM3)
Sustainable District and Environment We value the natural environment, biodiversity and landscapes	Maintenance of the reticulation	Real water losses from reticulation (NFPM2)

1.6 What resources do we have and what resources do we need?

People –

The Water and Wastes Unit has seven full time equivalent staff, including operational staff. The Water and Wastes Unit provides management and engineering expertise to the Asset Group. The Unit utilises Council inhouse unit and contractors to maintain, renew, and construct assets through various contractual agreements. The Unit augments its skill base through the engagement of specialist consultants as required to undertake specific projects and works. The Waters and Wastes Unit is modestly resourced, but the outcomes of the new regulatory framework and Government 3Waters Review will place even greater demands on already stretched resources.

It is likely that a shortage of technically skilled people to design, construct and manage water assets will continue to have an impact on this activity in future years. This is a global issue which is also affecting other local authorities.

Physical Assets -

Council manages seven public water supply systems. These systems consist of treatment facilities, pipes, pump stations and other assets.

Length of water mains = 898 km
Number of valves/hydrants = 762/359
Number of pump stations = 18

The latest valuation, August 2020, estimates the replacement value of the water supply system to be $39.9m.

1.7 Who pays for it?

This activity is funded by targeted rates from properties that have access to water supply systems.

2.0 INTRODUCTION

This section sets out the scope and objectives of this Asset Management Plan (AMP), describes the interrelationships with other planning documents of the Waimate District Council (Council) and shows the AMP framework and describes the asset management progress.

2.1 Purpose of the AMP

The purpose of this AMP is to outline and to summarise in a coordinated manner the Council's long-term management approach (more commonly called Asset Management) for the provision and maintenance of Water Services throughout the District.

This AMP demonstrates how Council will:

- Detail the extent and quality of services demanded (or required) by the community and legislation now and in the future.
- Have clear linkage to community agreed outcomes and the agreed Levels of Service.
- Prudently manage the acquisition, maintenance, operation, renewal and disposal of water assets in ways that optimise the value of services delivered to the community.
- Assess the risks of failing to deliver levels of service for its activities and provide appropriate means of mitigating those risks.
- Justify short, medium and long term funding requirements.
- Manage the risk of asset failure.
- Provide adequate funding to manage the assets according to assessed priorities.
- Proactively and improve knowledge of its assets.

This AMP is intended to be read in conjunction with the 2021-2031 LTP and fulfils requirements of the Local Government Act 2002 (and amendments), Schedule 10

Asset Management

The overall objective of Asset Management is to:

Deliver the required Level of Service to existing and future customers in the most cost effective manner.

2.2 Assets Included in This AMP

The Council is responsible for one urban scheme and six rural water schemes. The rural schemes also supply the small communities of Studholme, Glenavy, Morven and Makikihi.

Table 2.1: Council Water Schemes

Scheme	Year Installed	Population served	Water mains (kms)	Replacement Costs
Waimate Urban	1906	3000	65.9	$21,114,428
Cannington Motukaika	1973	120	56.8	$1,051,797
Hook Waituna - Studholme ($25m^3$/day)	1973	1,350	252.1	$5,023,003
Lower Waihao - Glenavy ($200m^3$/day) - Morven ($50m^3$/day)	1978	600	125.1	$3,372,296

Scheme	Year Installed	Population served	Water mains (kms)	Replacement Costs
Otaio Makikihi - Makikihi (100m³/day)	1969	430	155.1	$4,567,344
Waihaorunga	1977	141	67.1	$1,066,006
Waikakahi	1973	360	176	$3,712,108
Total			898.1	**$39,906,982**

There are three other rural schemes within the Waimate District.

- The Downlands water scheme is operated and managed by the Timaru District Council and provides water to properties within the Waimate District including St Andrews. The Council has a 14% stake holding in the scheme but has no direct involvement in the scheme apart from the collection of water rates on those properties.
- The Hakataramea Valley and Cattle Creek rural water schemes are within the Waimate District. They have not been included in this AMP as they are administered and operated privately by an incorporated society.

Replacement Cost of the Water Services Assets

In 2013 a major review of insurances was undertaken with adjustments to values on a practical basis as determined by Council staff. All figures were agreed and ratified by Council by way of formal resolution when recommendations regarding insurance levels and values were discussed in detail.

The replacement cost of the Water Services assets, owned by Council are shown below:

Table 2.2: Summary of Water Scheme Assets Replacement Costs

Valuation Category	Asset Description	Units	Quantity	ORC
Plant	Treatment Plants	No	10	$5,100,395
	Booster Stations	No	11	
	Bores	No	5	
	Reservoirs	No	13	
Service	Connections	km	20.5	$1,514,361
Point Assets	Valves	No	791	$3,533,525
	Hydrants	No	359	
	Manifold & meter	No	680	
	Manifold only	No	185	
	Meters	No	56	
	Tobies	No	1094	
Lines	Reticulation	km	898.1	$29,758,701
TOTAL				**$39,906,982**

2.3 Relationship with Other Plans

The AMP relates to the LTP and other key Council plans, documents, policies and processes. These are mainly driven by legislation and obligations that central government, through legislation,

devolved to local authorities. The community outcomes guide the strategic and day to day decision making for the Council.

2.4 How This AMP will be Used

Development of an Asset Management Culture

The on-going development and successful implementation of asset management requires an organisational culture of asset management from both 'bottom-up' and 'top-down'. To be successful the asset management culture needs to be consistently modelled and supported by the Chief Executive and senior managers in conjunction with the elected Council.

It also needs to align with and reflect the LTP and strategies. These requirements are supported in the new ISO 55000 standard for asset management. This process has been reinforced by the establishment of the Council's Asset Management Policy in 2009 and the AMP Policy process included in Section 2.6.

Roles and Responsibilities of Council Staff

The roles and responsibilities of Council staff have been defined in respect to the on-going to enable the AMP to remain relevant and current. Table 2.3 details how this is and will be carried out within Council.

Table 2.3: Activity Management Plan Enactment

	Item	How is this done
1	Organisational culture of asset management developed	Asset Management Policy 2009
2	Council Staff understand the reasons for the AMPs and the implications for the long term use of them	On department basis
3	The AMPs are adopted/accepted by staff	Adopted by Council
4	Council staff understand what is in the AMPs and how it could affect their day to day work including their responsibilities and reporting requirements as detailed in the different sections within the AMP	Training Programme
5	Understand all the reporting requirements for Levels of Service and Internal Benchmarking	Training Programme and Implementation of LGA 2002 amendments

Resourcing of Asset Management Programmes

To be effective asset management programmes must be adequately resourced and therefore require on-going budget to deliver identified improvements and keep AMPs and processes current with evolving practice. For asset management to be successful in Waimate District there must be a commitment recognised across the organisation. This commitment must translate into budget, human resources, and management accountability.

2.4.1 Implementation

This AMP includes improvement and expenditure programmes that will be implemented with the objective of achieving community outcomes and delivering the stated Levels of Service for the Water Services activity.

2.5 Water Services Activity Objectives

Public Water Supply

The sustainable use of a safe water supply is fundamental to the health of all people and to the protection of the natural environment.

In fulfilling Council's responsibilities to ensure that occupied buildings are sanitary the Local Government Act and the Health Act require the Council to continue to provide the reticulated water services that it owns and maintain its capacity (section 130 of LGA).

The Council provides drinking water to all urban areas and significant section of the plains rural area. These services provide an effective way to protect public health and to protect the natural environment.

2.6 Council's AM Policy – Appropriate Level

2.6.1 Objective of the Asset Management Policy

The objective of the Council's Asset Management Policy is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and Levels of Service, manage related risks, and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets and levels of management as required. The delivery of service is required to be sustainable in the long term and deliver on Council's economic, environmental, social, and cultural objectives.

The Asset Management Policy requires that the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets.

The Council's Asset Management Policy sets the appropriate level of asset management practice for Council's Utilities, Community Facilities and Transportation.

Asset Management Policy Principles

The following principles will be used by Council to guide asset management planning and decision making:

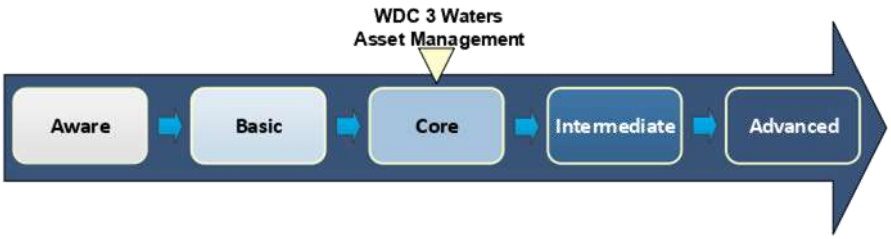
- Effective consultation to determine appropriate Levels of Service.
- Ensuring service delivery needs form the basis of asset management.
- Integration of asset management within and across Council utilising corporate, financial, business and budgetary planning using activity management plans and Council's LTP to demonstrate this.
- Integration of asset management within Council's strategic, tactical and operational planning frameworks.
- Informed decision making taking a lifecycle management and inter-generational approach to asset planning.
- Transparent and accountable asset management decision making.
- Sustainable management providing for present needs whilst sustaining resources for future generations.

Policy Linkages to Other Plans

This Asset Management Policy links to Council's LTP and the Water Services asset management. An approach where planning is based around communities of interest is favoured, as this aims to promote an integrated management regime and encourage efficiencies across the District's Water Services.

Structured Assessment of Asset Management Practice

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Water assets in August 2009. 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 Water was considered Core.



Implementation and Review of Policy

This Asset Management Policy has been implemented in conjunction with the 2011,2014, and 2017 AMPs and –corresponding LTP's. The next full review of this Asset Management Policy was programmed to be completed in June 2017. A light review has occurred with a full review scheduled as part of the improvement plan.

Asset Management Implementation Strategy

Council staff has completed a detailed analysis of appropriate asset management practice within the guidance offered by this Policy. This analysis has examined asset description, Levels of Service, managing growth, risk management, asset lifecycle decision making, financial forecasts, planning assumptions and confidence levels, improvement programmes, use of qualified persons and Council commitment to asset management planning.

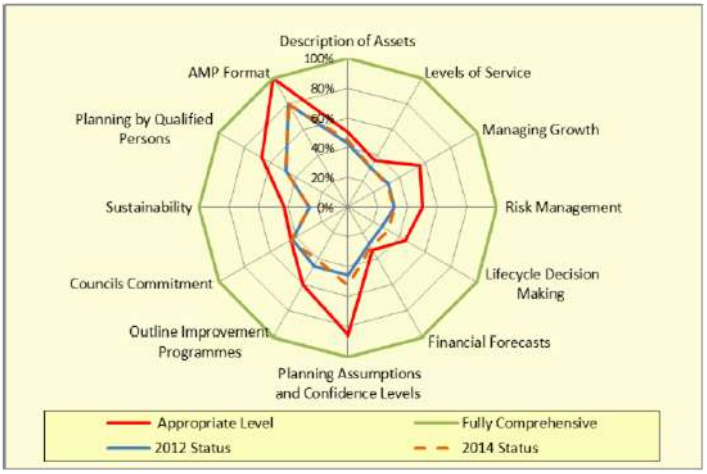
Appropriate Practice Policy

Develop long term improvement programme to achieve the Council's appropriate practice policy.

2.6.2 Water AMP Compliance Status

The assessment on the Water AMP in 2014 indicates a minor change in the management of the assets has occurred since the 2012 assessment was carried out. The long term programme to achieve the appropriate AM level is shown in Section 10 will assist in this process.

Figure 2-1: Water AMP Compliance Status (2011 & 2014)



2.7 Key Stakeholders

Key stakeholders are those who have significant specific involvement with the assets and/or the service facilitated by the assets and describes their particular main interests and is limited to the main issues for key stakeholder groups. 'Public Service providers' include schools, dentists, doctors,

hospitals, and other government organisations. 'Asset Managers' are those District Council staff (engineers and others) whose responsibility it is to manage the services made possible by the assets covered in this AMP.

The key stakeholders and the outcomes that they require for the Water Activity are detailed in Table 2.4. Different issues will require different levels of consultation; from a broad approach to specific and limited to those directly affected. This is indicated under Consultation Range (Broad ***, Moderate **, Limited *).

Table 2.4: Waimate District Stakeholders

	Key Stakeholder	Consultation Range	Desired Stakeholder Outcome(s)
External	Council customers and resident population	***	Reliable service that meets strategic and sustainable drivers
	Canterbury Regional Council	**	Resource use is sustainable as directed in the RMA 1991
	Local Government New Zealand or Central Government	*	Ensure that Local Government Act is complied with (via Auditor-General)
	Department of Conservation	*	Enhance conservation value of natural waterways (i.e. rivers/streams)
	Local Iwi/Ngai Tahu	*	Enhance waterways and Mahinga kai, cultural/spiritual values
	Local Businesses/Industries	**	Water services to suit commercial needs and expansion, at affordable cost
	Wider Community	*	Enhance landscape and aesthetic values of farmland and plains.
	Ministry of Health	*	Water quality is suitable, consistently assured, does not spread diseases
Internal	Waimate District Council	***	Maximise the four aspects of well-being through provision of the Water Services Activity
	Elected Officials	***	Owner of assets, responsible for sustainable service levels under the LGA 2002 (2012 amendment)
	Council committees	*	As per delegated authority from Council
	Executive	***	Compliance with regulations, service reliability, quality and economy
	Asset Managers	*	As above plus policy, planning and implementation of infrastructure and service management activities (e.g. operations, demand management, maintenance, construction). Safety. Effective corporate support for decision-making, service management, procurement, finance, communications, I.T, staff and other resources
	Planners	*	AMP support for LTPs. Infrastructure support for current/future district activities
	Finance	**	Proper accounting for assets and for services consumed by asset management activities
	Customer Services	*	Systems which minimise and resolve complaints/enquiries about service
	Information Services	*	Clarity of technical and budget requirements for systems and support

2.7.1 Rural Water Scheme Committees

Each rural water scheme has a local advisory committee elected every three years at a specially convened public meeting. The purpose of the committee is to consult with its community and relay local concerns and preferences to the Council. The committees have terms of, which provide direction on their governance role. The terms of reference have been reviewed but require ratification by Council.

While committees play a significant role in the management of the Water Services, ultimate responsibility, and hence risk, lies with Council as the owner of the asset.

2.7.2 Relationships with Other Bodies and Organisations

Tangata Whenua - kaitiakitanga, tikanga

For Maori, linking the past, present and the future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori culture.

Council will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today, and seek to establish the right Tikanga that will enable us to deliver Water Services in an integrated and sustainable way.

Canterbury Regional Council - Environment Canterbury (ECan)

Environment Canterbury is delegated responsibility for management of the water resources within the District and achieves this through Regional Plans. These plans provide a framework for the sustainable environmental management of Canterbury's physical and natural resources. The change of use of land, taking of water, diverting of water, disposal of water, and discharge to air, require resource consents. Therefore Council must liaise with Environment Canterbury in obtaining and complying with consents in relation to the Water Services Activity.

Water New Zealand

The Water NZ provides a forum for the exchange of ideas between those involved in the 'water industry'. Water NZ also manages projects such as the development of national codes of practice. In recent times, Water NZ has taken on the role of lobbyist to Government on water issues.

IPENZ, IPWEA, LGNZ, SOLGM

Each of these organisations provides peer support and exchange of information to foster appropriate practice and share/manage issues that arise.

2.7.3 Community and Public Health

Community and Public Health (CPH) have an interest in ensuring the public health of communities on behalf of the Ministry of Health. With respect to the Waters assets this role is predominantly concerned with the quality of drinking water the Council supplies to its consumers and the disposal of wastewater effluent where this could compromise community health.

CPH is the agency through which annual audits of the performance of Council's drinking water supplies against drinking water standards are implemented and through which applications for capital assistance from government for upgrades can be made. They are the regulator of Councils' water supplies under both the Health Act 1956 and the Health (Drinking Water) Amendment Act 2007.

2.7.4 Other Organisations

Council has a consultative relationship with other organisations including:

- Fish and Game, Central South Island
- Irrigation New Zealand
- Meridian
- Federated Farmers

2.8 Progress in Development of Asset Management

2.8.1 Background

Asset management in New Zealand has developed over the last 15 years in response to the requirement to justify and improve the level of investment in and management of community driven infrastructure. Council's asset management has mirrored this development to the point that it will be at the appropriate level within six to nine years.

This is a seventh generation AMP for the rural schemes and an eigth generation AMP for the urban scheme with the first AMP being produced in 2002.

2.8.2 Key Advances in the 2020 AMP

The following matters represent the most significant changes to this AMP, over the period 2011-2020

- Data – Systems and Quality
- Asset Data Capture
- Asset Data Quality
- Complaints resolution
- Criticality Assessment
- Condition Assessments
- Government and Industry Direction

2.9 Information

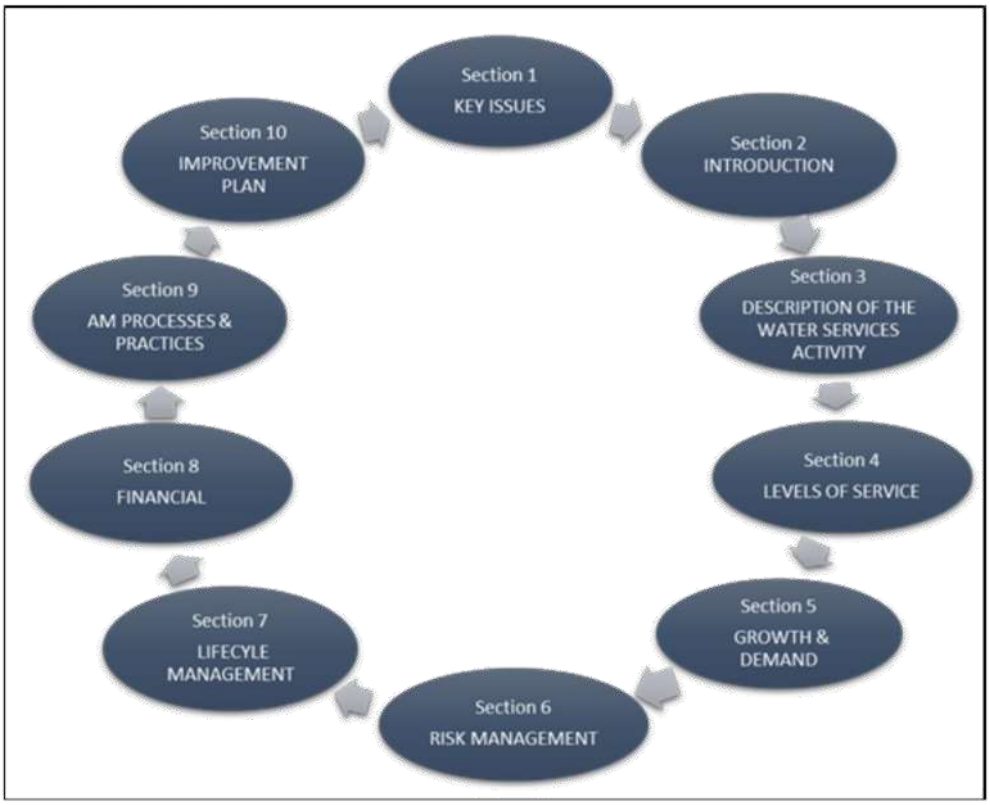
The information for this Water AMP has been derived from the following sources:

- 2020 Valuation (August 2020)
- 2018 AMP
- Council reports and staff knowledge

2.10 The AMP Format

A top down approach has been taken to develop the AMP, using existing data followed by data improvement. The structure of this plan mirrors the logical process followed for asset management planning as shown below:

Figure 2-2: Asset Management Process



2.10.1 Key Elements of this Asset Management Plan

The key elements of this AMP are shown in Table 2.5 below.

Table 2.5: Key Elements of AMP

Section	Content
Section 1: Key Issues	Describe the challenges and aspirations faced by the Water Services and inform of the strategic direction for the short term and long term.
Section 2: Introduction	Sets out the purpose of this AMP, indicates the key stakeholders, describes the asset management progress over the last 15 years and shows the plan framework.
Section 3: Description of the Water Services Activity	Covers the rationale for ownership of the Water Services assets and the description of assets covered under this AMP.
Section 4: Levels of Service	The Levels of Service for the Water Services are defined and the performance measures by which the service levels will be assessed.
Section 5: Growth and Demand	Provides details of growth forecasts, which affect the management, and utilisation of the Water Services assets.
Section 6: Risk Management	Details the Risk Management Processes utilised by Council for assessing and managing risk within the Water Services.
Section 7: Lifecycle Management	Outlines what is planned to manage and operate the assets at the agreed levels of service while optimising lifecycle costs.
Section 8: Financial	Identifies the financial requirements resulting from all of the information presented in the previous sections.

Section	Content
Section 9: AM Practices and Processes	Outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP.
Section 10: Improvement Plan	This section details the improvements to Asset Management within Council that will lead to an increase in confidence in the management of the assets.

3.0 DESCRIPTION OF THE WATER SERVICE

This section of the AMP covers the rationale for ownership of the Water Services assets and the description of assets covered under this AMP. This section also highlights the critical Water Services assets.

3.1 Waimate District Overview

The Waimate District is located at the southern end of the Canterbury Region. The Canterbury Region has an estimated population of approximately 539,436 as of 2013 Census.

The Waimate District is bounded by the Waitaki and Pareora Rivers to the south and north respectively, the Hakataramea Valley and mountains of Mackenzie District to the West and the Pacific Ocean to the East.

The main centre of population is the town of Waimate itself, a town housing a population of some 2,778 people. This represents approximately 40% of the total population of the district of 7,536 (source 2013 census). Other centres of population include the coastal townships of Glenavy, Willowbridge, Makikihi, Morven and St Andrews.

The Waimate District community profile is presented in Table 3.1.

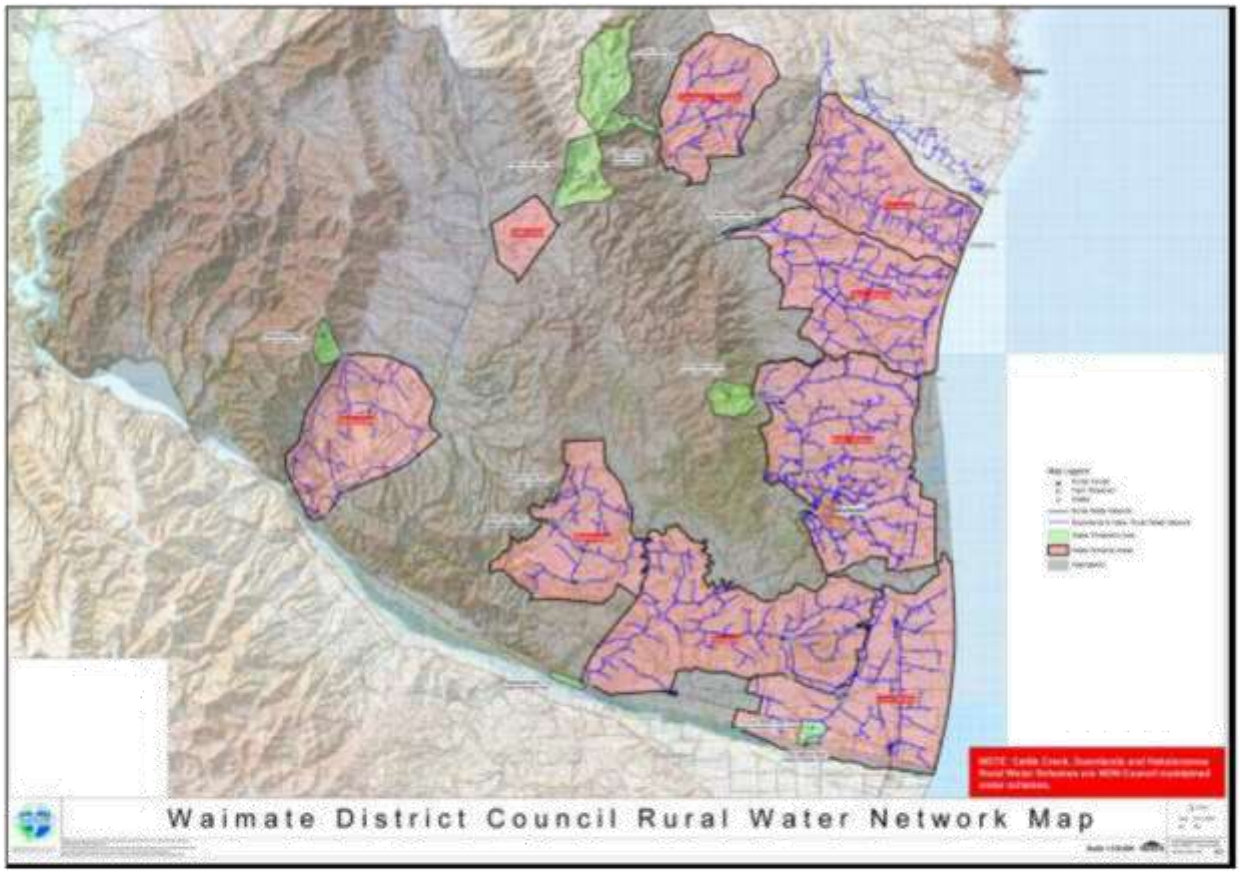
Table 3.1: Waimate Community Profile

Area	3,582 km^2		
Population (2013 census)	7,536	Households (occupied dwellings)	3,234
Employees	53.08 FTE's	Rating system: Mix of General Rates and Targeted Rates	
Infrastructure (as at 30 June 2020):		Total rateable properties	4,092
Length of roads/streets	1,335 km	Average total rates per property	$2,924 inc. GST
Length of wastewater pipes	39.2 km	Council debt	$2.60m
Length of stormwater pipes and drains	15.5 km	**Climate:**	
Length of water pipes	898 km	Mean Annual Rainfall (Te Aroha)	600 mm

3.2 Description of Activity

Council supplies water to approximately 3199 connections in the water schemes of Waimate Urban, Cannington Motukaika, Hook Waituna, Lower Waihao, Otaio Makikihi, Waihaorunga and Waikakahi.The Water schemes are presented in Figure 3-1.

Figure 3-1: Scheme Location and Area



3.2.1 Summary of Assets

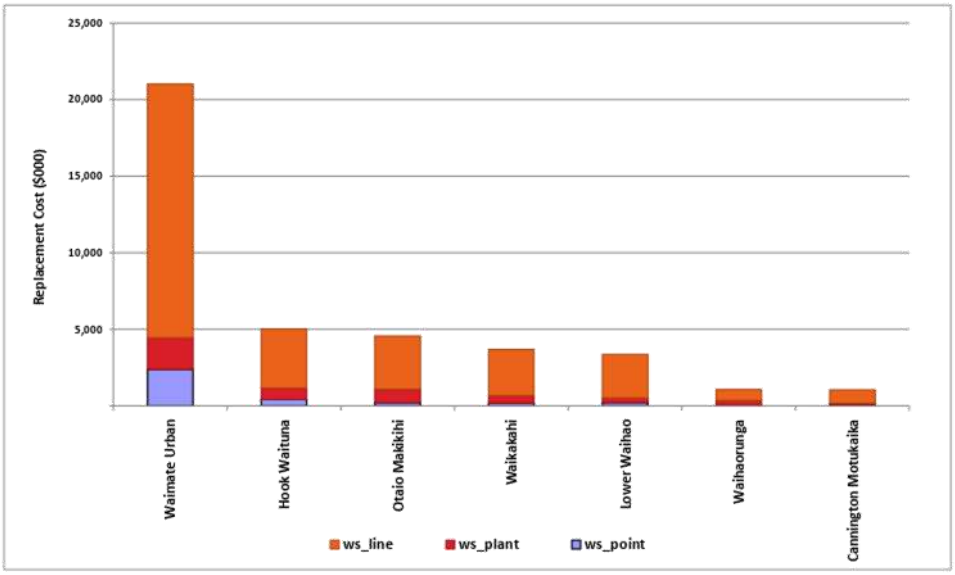
The majority of the rural water schemes source their water from river intakes as indicated in Table 3.2. In the rural schemes only the Lower Waihao sources its water from a shallow bore located next to the Waitaki River.

The Waimate Urban scheme sources its water from two bores, the Manchester Road bore (main supply) and Timaru Road Bore (supplementary source).

Table 3.2: Summary of Water Assets

Scheme	Year Installed	Treatment Plants	Supply Bores	River Intakes	Pumping Stations	Storage Reservoirs	Dams	Water mains (kms)	Service Lines (kms)	Replacement costs
Waimate Urban	1906	2	2		2	1		65.9	20.5	$21,114,428
Cannington Motukaika	1973	1		1	1	1		56.8		$1,051,797
Hook Waituna	1973	1		1	4	4		252.1		$5,023,003
Lower Waihao	1972	1	1		3	1		125.1	0.5	$3,372,096
Otaio Makikihi	1969	2	1	1	1	1		155.1		$4,567,344
Waihaorunga	1977	2		2	4	4		67.1		$1,066,006
Waikakahi	1972	1		1	3	2		176		$3,712,108
Total		**9**	**3**	**6**	**18**	**14**		**898.1**	**21**	**$39,906,982**

Figure 3-2: Water Components - Replacement Cost



The water schemes are made up of the following components:

- Water Lines: pipes, mains, connections
- Water Service Lines: property connections
- Water Points: valves, hydrants, manifolds, backflow prevention, meters and tobies
- Water Plant: bores and river Intakes, pumping and valve stations, water treatment plants and reservoirs
- Buildings

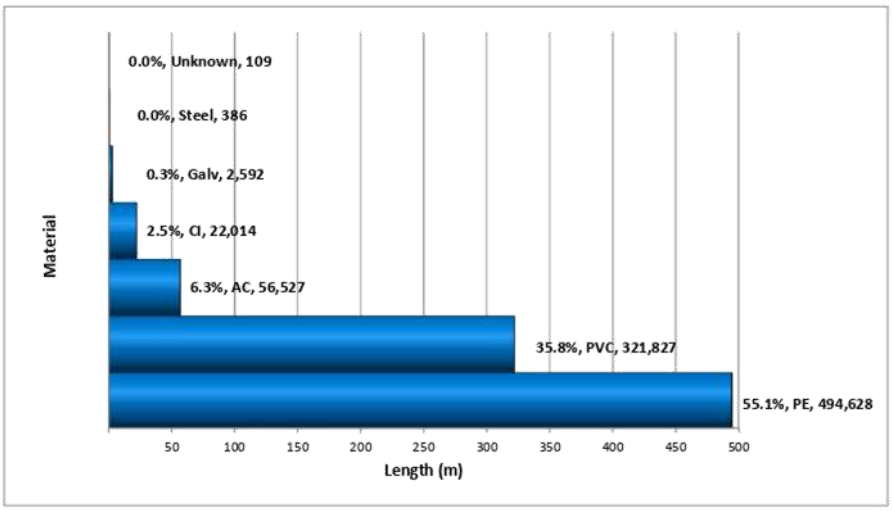
3.3 Water Reticulation

3.3.1 Asset Description

The total length of the combined reticulation is 898.1km. The main purpose of the reticulation system is to supply water from service reservoirs or treatment plants to the customer's point of supply while maintaining the quality of the water. The reticulation system also provides the capacity for fire-fighting supply within the Waimate Urban water scheme. The scheme networks have been hydraulically modelled. The reticulation which includes water mains, water points and service lines make up 78% of the total water asset value with the water mains (>20mm diameter) making up 74%.

The Council has water pipe assets ranging from new to 114 years of age. The distribution of pipe length verses remaining life can be seen in Figure 3-5. A summary of pipe materials is shown in Figure 3-3.

Figure 3-3: Summary of Pipe Materials



The majority (77%) of pipe is of a diameter 50 mm and less and pipes 51 mm to 150 mm making up a further 22%. This is as a result of the significant portion of rural schemes, which use small diameter mains for conveyance that do not provide firefighting capabilities. The summary of pipe length versus pipe diameter is presented in Table 3.3.

Table 3.3: Summary of Pipe Length vs. Diameter

Diameter (mm)	Length (m)	%
0 – 50	689,538	76.8%
51 – 100	131,144	14.6%
101 – 150	62,194	6.9%
151 – 200	9,507	1.1%
201 – 250	5,491	0.6%
251 – 300	134	0.02%
301-350	74	0.008%
Total	898,083	100%

Figure 3-4: Summary of Pipe Length vs Diameter

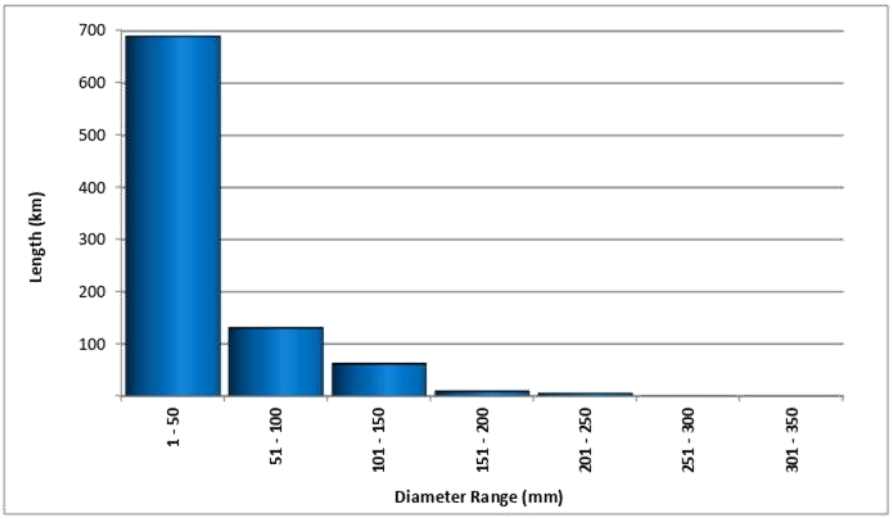
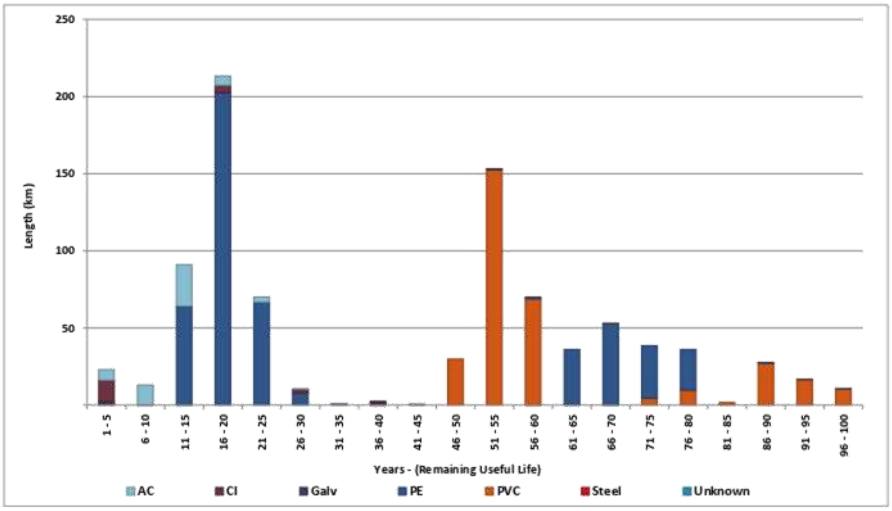


Figure 3-5: Pipe Length by Remaining Life



As shown in Figure 3-5 there is a significant amount of pipe, 341 km of PE, which will reach the end of its expected economic life within the next 30 years. There is also 7km of AC and 13.4km of CI pipe (all in Waimate Urban supply) that will reach the end of its expected economic life within the next five years.

Council engineers report that the AC pipe in the networks are becoming soft and pipe breaks are expected to increase on AC pipe mains.

3.3.2 Condition of Reticulation

Pipe condition ratings for all pipe assets are stored in the AssetFinda. These condition ratings have been based on pipe age, material and some field inspection.

The base life should be considered as a guideline only. While some non-pipe assets may be "past" their base life, Council engineers consider that they are still able to achieve the desired Level of Service and may do so for some time. Council operators assess asset condition during routine inspections in relation to potential effects on asset performance and reliability.

The condition of the pipe reticulation network can be determined by recording pipe failures and the taking and assessment of pipe samples.

AC Condition samples from Waimate Urban water scheme taken during 1999 indicated that pipe failures can be expected approximately 15 years from the date of the pipe evaluation, which is from 2014 onwards.

Cast Iron (CI) condition samples and assessments performed over the past 15 years indicate that the CI pipes in the Waimate Urban scheme are near the end of its useful life and pipe failures can be expected to show an increasing frequency over the coming years.

There is 13.4 km of CI pipe that will reach the end of its expected economic life within the first five years of this AMP. The condition assessments indicate that rehabilitation (relining) is not a viable option as the CI pipe is in poor condition with advanced graphitisation. It also indicates that the

surrounding soils are assisting the pipe to withstand internal pressures, but significant changes e.g. traffic loads, ground settlement or ground shaking will be likely to cause pipe failures.

To date limited pipe sampling has been undertaken for the rural schemes.

Staff are investigating an option of utilising its reactive maintenance records to assist with renewal programming. Since 2013 the utilities business unit has been recording, in real-time, breaks in the field. This dataset is now of considerable size and can be used to perform a statistical analysis to identify renewals. This is not to replace the conventional asset management approach, but will compliment it.

3.3.3 Performance of Reticulation

Over the last number of years Council has reduced its leakage through improved maintenance procedures and repairs resulting in a decrease for Waimate Urban water scheme in minimum night flows from 15 L/s to about 9 L/s. Minimum Night Flows are currently 11 – 13 L/s (January 2017).

3.4 Water Service Lines and Water Points

Water service lines (Waimate Urban water scheme only) are the pipe connection from the main to the property boundary. This includes the toby / manifold and any meter for monitoring or billing purposes.



Water 'points' are made up of valves, hydrants, manifolds, backflow prevention devices, water meters, sample points, tanks, tobies, capped ends.

There are 3,028 physical connections in the district. Council is continually updating its systems and capturing data to ensure that all connected properties are rated / billed.

3.4.1 Asset Description

Only the Waimate Urban water scheme has service lines. The rural schemes do not have service lines as the mains are usually small diameter pipes over long distances and as such are not counted as service lines. In general service lines in the Waimate Urban water scheme are 15 mm or 20 mm diameter.

Table 3.4: Length of Service Line by Pipe Material

Scheme	CI		Galv		PE		PVC		Unknown		Steel	
	No.	m	No.	m	No.	m	No.	m	No.	m	No	m
Waimate Urban	2	119	342	3,869	838	8,735	17	160	791	7,117	1	11
Total number of service lines					1,972							
Total length of service lines					20,016m							

Table 3.5: Point Water Assets

Community	Hydrant	Valves	Restrictor	Meters		Replacement Value ($)
				Retic	Service & Manifold	
Waimate Urban	359	383	-	2	702	$2,049,075
Cannington Motukaika	-	36	49	1	-	$55,091
Hook Waituna	-	128	514	8	4	$407,237
Lower Waihao	-	73	220	4	4	$195,199
Otaio Makikihi	-	88	213	6	3	$207,329
Waihaorunga	-	19	46	-	1	$39,114
Waikakahi	-	64	173	1	-	$154,681
Total	**359**	**791**	**1,215**	**22**	**714**	**$3,107,726**

3.4.2 Condition

The general condition of the point assets are considered by Council's engineers as good to excellent. The condition assessments were extracted from the asset valuation data with its base data the AssetFinda Asset Register. It is likely that these are default values and may not always reflect the true condition of a single asset. However, the total replacement value is small and don't represent a large financial risk to justify individual condition assessments.

Over the next three years additional condition assessment will be instigated to provide greater confidence in the condition.

3.4.3 Performance and Capacity

Residential connections within the town boundaries are unrestricted 15 mm and 20 mm diameter connections providing adequate supply for household use. Those consumers with higher demand such as businesses, industry and schools have larger metered connections by arrangement.

Consumers outside the Waimate Urban water scheme supply boundary generally have metered or restricted connections.

On average 30 urban water scheme service lines are replaced per year and Council strategy on service line replacement is to replace the service line and toby with a new service line, manifold (dual check), meter and manifold box. This adds improved backflow prevention to service connections and the ability in the future to record consumption for monitoring purposes, or to detect leakage on private properties.

3.4.4 Data Reliability

The reliability of three waters data held by Council has not, to date, been systematically assessed and remains ungraded as per the IIMM manual. However, the data is based on good records, procedures and is subject to ongoing quality assurance as a result of maintenance works and has been informally assessed as B/C (see 2020 Valuation Report). In order to address this short-fall we would propose to add an improvement item to the Improvement Plan (**IP 34**).

Condition assessments have been completed for a number of the 3W's assets and include, but are not limited to:

i. NDT of AC Water Mains

ii. CCTV of Sewer Mains (Inc. those programmed for renewal)

iii. Visual inspections during maintenance activities

The results of these condition assessments have been applied to similar, uninspected assets to provide more reliable condition assessment of the whole asset base. For example, smaller diameter Asbestos Cement water mains are known to be in poorer condition than their larger counterparts, and smaller diameter AC mains in the northern extents of the urban area are failing due to ground conditions and pipe material combination.

Condition ratings do exist within the AMIS on an equivalent scale of 1 to 5.

Renewal works are prioritised based on criticality (assessed), empirical knowledge of failure rates / historic maintenance activity, other unrelated (and concurrently programmed) capital works. It should be noted that predictive models being used are age based in the first instance.

An improvement item (IP 34) will be noted in the improvement plans to produce a second predictive model which includes weighting on Condition and Performance gradings held within AssetFinda.

3.5 Water Facilities

Water facilities are made up of water treatment plants, pumping stations and reservoirs.

3.5.1 Asset Description

The largest issue facing levels of service is with the quality of water supplied to the consumers and usually this also has the highest dissatisfaction level with customers. Council has started upgrading the treatment plants to improve water quality and comply with the Drinking Water Standards for New Zealand (DWSNZ) 2005 (revised 2018) as required by the Health (Drinking Water) Amendment Act 2007.

Council water treatment plants range from basic chlorination sites to the Waimate Urban scheme water treatment plant featuring filtration. A list of the treatment plants and their respective water sources is presented in Table 3.6.

Table 3.6: Waimate District Council Water Treatment Plants

Component	Unit	Waimate Urban	Cannington Motukaika	Hook Waituna	Lower Waihao	Otaio Makikihi	Waihaorunga	Waikakahi
Source	No 1	Groundwater	Surface water	Surface water	Groundwater	Surface water	Surface water	Surface water
	No 2	Groundwater			Groundwater	Groundwater	Surface water	
Intake	No 1	Bore	Stream	River	Well	River	Stream	Stream
	No 2	Bore			Well	Bore	Stream	
	Filter	Yes at bore 1	Roughing filter	River gallery	n/a	River gallery	River gallery	Yes
	Bore Depth (m)	B1 -110m B2 -83m	n/a	n/a	Outside 6m Inside 3.5m	n/a	n/a	n/a
	Dia. (mm)	B1 - 250mm		150PVC	Outside 200mm		50PVC	
		B2 – 300mm			Inside 100mm		150AC	
Treatment Capacity	(m^3/day)	B1 – 2,592m^3	475m^3	1,728m^3	1,633m^3	928m^3	455m^3	1,468m^3
		B2 – 1,728m^3				928m^3		
Treatment Process	Coagulation	No	No	No	No	No	No	No
	Flocculation	No	No	No	No	No	No	No
	Filtration	Yes at B1	Screen	Screen	No	No	No	No
	UV	B2 Yes		Yes		No.2 Yes		
	Disinfection	Chlorine	Chlorine	Chlorine	Chlorine	Chlorine	Chlorine	Chlorine
Treatment Plant Location		B1 Timaru Rd B2 Manchesters Rd	Backline Rd	Upper Hook Rd	Ferry Rd	Colliers Rd	Main pump Hursts Rd Tavendale pump Tavendales Rd	Hakataramea Ikawai Highway
Constructed	Year	B1 – 2000, B2 – 1972 *(Renew 2018/19)*	1973	1973	1978 *(Renew 2013)*	1969	1977	1973
Storage								
- Raw Water	m^3	None	None	None	None	None	None	None
- Treated Water	m^3	2,700m^3	25m^3	25m^3	350m^3	360m^3	150m^3	450m^3
Reticulation Length	km	66	56.7	252	125	155	67	176
Connections	No.	1,942	50	531	246	217	47	173
Fire Hydrants	No.	359	n/a	n/a	n/a	n/a	n/a	n/a

Component	Unit	Waimate Urban	Cannington Motukaika	Hook Waituna	Lower Waihao	Otaio Makikihi	Waihaorunga	Waikakahi
Approximate population (WINZ)		3,000	120	1,350	600	430	141	360
Grading		Ab	u	Ed	u	u	u	u

3.5.2 Condition of Treatment Plants

The Waimate Urban scheme water treatment plants were recently upgraded and the remainder of treatment plants in the District are soon to be upgraded to comply with the requirements of the Health Act. At this time the condition of the assets within these facilities were be recorded.

In general the condition and performance of asset components at the treatment plants are all considered by Council's engineers as good to excellent.

3.5.3 Capacity / Performance of Treatment Plants

The capacity of the water treatment plants are not known, but this will be considered under the water treatment plant upgrades and the available information captured into Table 3.7.

Table 3.7: Water Treatment Plant Capacity and Production

	Waimate Urban	Cannington Motukaika	Hook Waituna	Lower Waihao	Otaio Makikihi	Waihaorunga	Waikakahi
Average Demand (m^3/day)	1800	292	850	955	660	244	740
Peak Demand (m^3/day)	3600	389	1010	1360	790	374	979
Treated Water Storage (m^3)	2,700	22.5	nil	488	nil	180	450
Storage as a % of Peak Demand	75%	5.8%	-	36%	-	48%	46%
Treatment Capacity (m^3/day)	4,882	475	1728	1771	1296	455	1054
Resource Consent Allow. (m^3/day)	5,616	475	1,728	1,633	929	576	1,469
Design Population	6,300						
Maximum No of Possible Residential Connections	1,750						
Based on household occupancy	3.6						
Based on peak flow rate	45						
Average demand as % treatment capacity	37%	61%	49%	54%	51%	54%	70%
Peak demand as % treatment capacity	74%	81%	58%	77%	61%	81%	92%
Peak demand as % resource consent	64%	81%	58%	83%	85%	65%	67%
Total length of reticulation (km)	65.5	56.7	251.2	125.3	155.1	67	176.9
Length of undersized reticulation (km)							
Undersized as % total							
No. of Existing Connections	1,894	36	502	220	166	32	134
% Residential use	94.5	14.2[1]				18.2[1]	19[1]
% Commercial use	5.5						
% Agricultural use		85.8[2]				81[2]	81.8[2]

[1] Based on number of rural dwellings at 1500L/day

[2] Based on total volume sold, minus total rural dwellings at 1500L/day.

New Capital Expenditure planned to achieve compliance with the DWSNZ 2005 (Revised 2018) will incorporate any planned renewals.

3.6 Pumping Stations

3.6.1 Asset Description

The general details of the pump stations are presented below:

Table 3.8: Description of Pump Stations

Scheme	Pumping Station	Number of Pumps
Waimate Urban	Timaru Rd Bore	4
	Manchester Rd Bore	3
Cannington Motukaika	Booster	2
Hook Waituna	Hook Waituna Intake	4
	O'Donnells	2
	Simmons	2
	Tekit	2
	Brownleas	1
Lower Waihao	Lower Waihao Intake	2
	Lower Waihao Booster	3
Otaio Makikihi	Intake Otaio Gorge	2
	Campbell Forrests	4
	Tavistock Source	2
	Tavistock Booster	4
Waihaorunga	Main Intake	2
	Tavendale Plant	1
	Melford Booster	4
	Takitu Booster	2
Waikakahi	Stonewall Intake	2
	Lower Waihao Booster	1
	Dog Kennel	1
	Claytons Booster	2

3.6.2 Condition of Pump Stations

In general the condition and performance of asset components at the pump stations are all considered by Council's engineers as good to excellent.



3.6.3 Performance / Capacity of Pump Stations

The current performance of pump stations is adequate to achieve the desired Level of Service. However, electrical equipment within the pump stations is generally non-compliant with Electrical Regulations for wet areas. This increases the risk of failure of electrical equipment and loss of Level of Service. Council are undertaking steps to upgrade electrical equipment at pump stations.

The Council's engineers consider that there are no current issues with pump station capacity.

3.7 Reservoirs

3.7.1 Asset Description

Reservoirs provide multiple purposes, at treatment plants they normally allow the plant to even out the flows without the loss of water to the consumer in the event that problems occur at the treatment plant and when demand requires an increase in flow can buffer the additional requirements for water allowing the plant to increase production without compromising quality.

Treated water reservoirs are used to balance demand from the consumer and in the Waimate Urban scheme on demand supply to provide sufficient storage to meet NZ Fire Service requirements for fighting fires. Water is either pumped from the reservoir or water flows from the reservoir under gravity and depends on the available elevation around the network to ensure adequate pressure and flow.

3.7.2 Condition of Reservoirs

In general the condition and performance of asset components at the reservoirs are all considered by Council engineers as good to excellent.

3.7.3 Reservoirs Capacity / Performance

The current performance of the reservoirs is adequate to achieve the desired Level of Service.

Table 3.9: Reservoir Storage Capacity

	Waimate Urban	Cannington Motukaika	Hook Waituna	Lower Waihao	Otaio Makikihi	Waihaorunga	Waikakahi
Average Demand (m^3/day)	1800	292	850	955	660	244	740
Peak Demand (m^3/day)	3600	389	1010	1360	790	374	979
Treated Water Storage (m^3)	2,700m^3	22.5m^3	nil	488m^3	nil	180m^3	450m^3
Storage as a % of Peak Demand	75%	5.8%	-	36%	-	48%	46%
Storage as a % of Average Demand	150%	7.7%	-	51%	-	74%	61%

* Otaio reservoir not in use due to bore position

3.8 Environmental Effects

3.8.1 Resource Consents

There are a number of resource consents held for the Water Services activity. These range from permission to install a bore, to divert flow, to dam water and ultimately take water. There are no resource consents for "taking water" which are up for renewal within the timeframe of this AMP.

A number of resource consents expire within the timeframe of this AMP, but these are mainly related to a one off permit i.e. to install a bore. Consent CRC981066 is no longer required as it is the consent for the old intake for the Otaio Makikihi water scheme. The resource consents associated with water takes are detailed in Table 3.10.

Two of the consents held by the Waimate District Council to take water, are now for private water supplies. They are CRC940845 for Cattle Creek rural water supply intake and CRC981015 for Hakataramea rural water supply intake. The smaller Cattle Creek supply is not a registered drinking water supply, and is privately managed. The Hakataramea rural water supply is managed by the Hakataramea Water Scheme Committee Incorporated, and is a registered drinking water supply.

Table 3.10: Water Resource Consents

Consent Number	Status	Scheme	Activity	Issue date	Expiry date	Comment	Volume
CRC020225	Current	Waimate Urban	Discharge of Contaminated water Contaminant onto Land to Water	14/09/2001	11/09/2036	To discharge contaminants into land (from filter backwash - Timaru Rd, Waimate Water TP)	
CRC084606	Current	Waihaorunga	Take surface water	17/12/2008	16/12/2043	To take and use water from an unnamed tributary of the Waihaorunga Stream	not exceeding 1.4l/s or 847m³/7 days
CRC084608	Current	Waihaorunga	Take surface water	17/12/2008	17/12/2043	To take and use water from the Waihaorunga Creek	not exceeding 5.3l/s or 3,185m³/7 days
CRC092155	Current	Cannington-Motukaika	Take surface water	2/10/2009	1/10/2044	To take and use water (from Nimrod Stream - White Rock River, Cannington)	not exceeding 5.5l/s or 3,325m³/7 days
CRC110693	Current	Cannington-Motukaika	Construct remove structure			To construct a Pipe bridge - 41 Mt Nimrod Road (Opus). No conditions.	
CRC940845	Current	Cattle Creek (Private Scheme)	Take surface water	25/02/1994	23/02/2029	To take water from a tributary of the North branch of the Waihao River for the Cattle Creek Rural Water Supply	not exceeding 1.6l/s or 138m³/day
CRC940846	Current	Lower Waihao	Take groundwater	23/02/1994	23/02/2029	To take groundwater from bore for the Lower Waihao Rural Water Supply Scheme	not exceeding 18.9l/s or 1,633m³/day
CRC962154.1	Current	Waikakahi	Take surface water	23/03/1998	29/05/2031	To take water from a tributary of the Waitaki River for domestic use and stockwater (SH82, Ikawai)	not exceeding 17l/s
CRC970320	Current	Waikakahi	Construct/remove a structure, works to divert water	27/03/1998	29/05/2031	To reconstruct and maintain a weir, and to disturb the bed of an unnamed tributary of te Waitaki River for a rural water supply (SH82, Ikawai)	not exceeding 1.5m high and 30 m wide
CRC970321	Current	Waikakahi	Dam surface water	27/03/1998	29/05/2031	To dam water for a rural water supply (SH82, Ikawai)	not exceeding 3,000m³

Consent Number	Status	Scheme	Activity	Issue date	Expiry date	Comment	Volume
CRC980385	Current	Hook Waituna	Construct/remove a structure, works to divert water	27/05/1999	21/05/2034	To disturb the bed of, maintain and reconstruct a rock weir, in the Hook River (Upper Hook Road, Hook Bush)	not exceeding 1.6m high
CRC980386	Current	Hook Waituna	Take surface water	27/05/1999	21/05/2034	To dam, divert, take and use surface water from the Hook River for domestic & stockwater purposes and trickle irrigation of up to 25.2ha (Upper Hook Road, Hook Bush)	not exceeding 20l/s or 1,728m³/day
CRC981015	Current	Hakataramea (Private Scheme)	Divert surface water	23/1/1998	21/01/2033	To divert water in the Hakataramea River for erosion and flood control purposes (Wrights Crossing, Hakataramea River)	
CRC981066	Current	Otaio-Makikihi	Works for maintenance/protection	30/01/1998	28/01/2033	To disturb the bed of the Otaio River for the improvement of water flow to a pump chamber (Otaio River, Blue Cliffs Rd)	Surrendered
CRC981876.1	Current	Otaio-Makikihi	Take surface water	12/05/2004	22/04/2034	To take surface water for the Otaio-Makikihi RWS (Backline Rd, St Andrews)	not exceeding 15l/s or 6,500m³/ 7 days
CRC992050	Current	Otaio-Makikihi	Construct/remove a structure	~~25/05/1999~~	21/05/2034	To disturb the bed of the Otaio River by installing and maintaining an intake structure (Backline Rd, St Andrews)	
CRC202845	Current	Waimate Urban	Take groundwater	25/08/2020	14/06/2034	To take and use water (Timaru Rd & Railway Reserve)	not exceeding 65l/s or 4,320m³/day
CRC122551	Current	Otaio-Makikihi (Otaio Gorge intake & Tavistock Road bore combined)	Take Groundwater	06/07/2012	06/07/2047	to take groundwater for domestic and stock water purposes	not exceeding 15l/s or 6,500m³/ 7 days and no more than 351,500 m³ / year

Consent Number	Status	Scheme	Activity	Issue date	Expiry date	Comment	Volume
The resource consents for the Hakataramea Rural Water Supply is held in the name of the Hakataramea Water Scheme Society.							
CRC030733	Current	Hakataramea	To divert, take and use surface water	26/08/2003	25/08/2038	.	Not exceed 12.6 litres per second
CRC030734	Current		Discharge to land	17/09/2003	25/08/2038		Not exceed 12.6 litres per second

3.8.2 Environmental Monitoring and Reporting

Consent reporting within Council for Water and Wastewater is the responsibility of the Water and Waste Engineer. Information for consent compliance is provided by the Council's Water and Waste Group and forwarded to Environment Canterbury.

3.9 Assessment of Water Services

The Local Government Act 2002 places a specific requirement on local authorities to make assessments of water and sanitary services available to communities within the district. The Act requires that the assessment shall provide the following information in respect of Water Services:- The Water and Sanitary Services Assessment is an assessment of all services (public and private) relating to:

- Water
- Wastewater
- Rubbish and Recycling
- Public Toilets
- Cemeteries

The aim is to assess the adequacy of these services both now and in the future. It considers the risks that these services, or lack of these services, may pose to health and wellbeing of the community.

Table 3.11: Public and Private Water Supplies

Public Water Supplies Managed by Council	
Waimate Urban	Cannington Motukaika
Hook Waituna	Lower Waihao
Otaio Makikihi	Waihaorunga
Waikakahi	
Public Water Supplies Managed by other Councils	
Downlands Rural Water Supply (Timaru District Council)	
Camping Grounds: now owned, by Waimate District Council and administered and maintained by Council Parks and Reserves Group	
Briar's Gully Camp Site	Fisherman's Bend Camp Ste
Te Akatarawa Camping Ground	Waitangi Reserve Camp Ground
Private Water Supplies	
Hakataramea Valley Rural Water Supply	Cattle Creek (Upper Waihao) Rural Water Supply

Table 3.12 addresses specific risks and issues identified for the water schemes managed by Council.

Table 3.12: Quality and Adequacy

Scheme	Quality
Waimate Urban	Complies fully with DWSNZ 2005 (revised 2018). Plant regarded as Ab under the grading system. Is serviced by two sources. The majority of the year the Timaru bore is on standby. During hot dry months the Timaru bore assist in supply. Water supply restrictions have been put in place at times during recent years. Demand is increasing and it is envisaged that in terms of volume the Waimate Urban water scheme is not considered adequate for future anticipated demand
Rural Schemes	Recent enhancements have increased delivery volumes. Changes in farming practices i.e. changing from sheep to dairy farming may drive further demand. Single point failures remain a concern.

Scheme	Quality
	Not all DWSNZ 2005 (revised 2018) compliant. Steps have been taken towards DWSNZ compliance

3.9.1 Update of the Water & Sanitary Assessment (2005)

In accordance with Section 6, Schedule 10 of the LGA 2002, an Assessment of Water and Sanitary Services were conducted by Council during June 2011. As part of the Delivery Plan agreed with DIA, a Sanitary Survey will be carried out with the funding received under tranche 1 (COVID 19 stimulus) and was programmed for February/March 2021, however has not commenced, but will be completed by March 2022.

The update of the Water & Sanitary Assessment in 2011 noted the following:

i. There are many properties within the district which are not connected to a Council managed water supply scheme or to a private scheme. Many of these are isolated dwellings within more remote areas and are served by private sources.

ii. Other properties reliant on private sources are located within townships such as Willowbridge. In these areas a connection to a public water supply is available, but this option is not always taken up due to the inability of individuals to afford the connection costs or a personal preference not to do so. These areas are not served by sewerage reticulation and this enhances the likelihood of the contamination of the water supplies to these communities. Bores have been known to run dry in such areas.

3.10 Criticality

During 2017 Council performed a criticality assessment on 3 Waters assets by using the New Zealand Asset Metadata Standards methodology and criticality ranking. This including consideration of GIS, population, key facilities and hydraulic model data. The NZAMS defines criticality as "the significance of any individual component or asset to the ability of any part of a network or portfolio to deliver the service it was designed to perform". The methodology considered:

- residential population rating – the number of people affected by the removal of the asset
- facility importance rating – the importance of the facility based on the role the facility play in enabling the community to function.

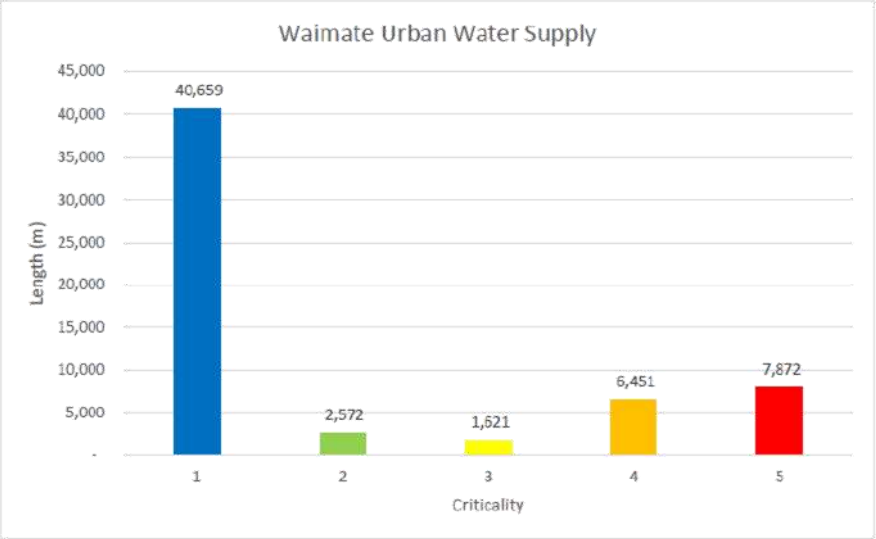
The global criticality ratings are:

1. very low
2. low
3. medium
4. high
5. very high

An additional diameter based component was included for water supply assets.
The criticality assessment provided the following results.

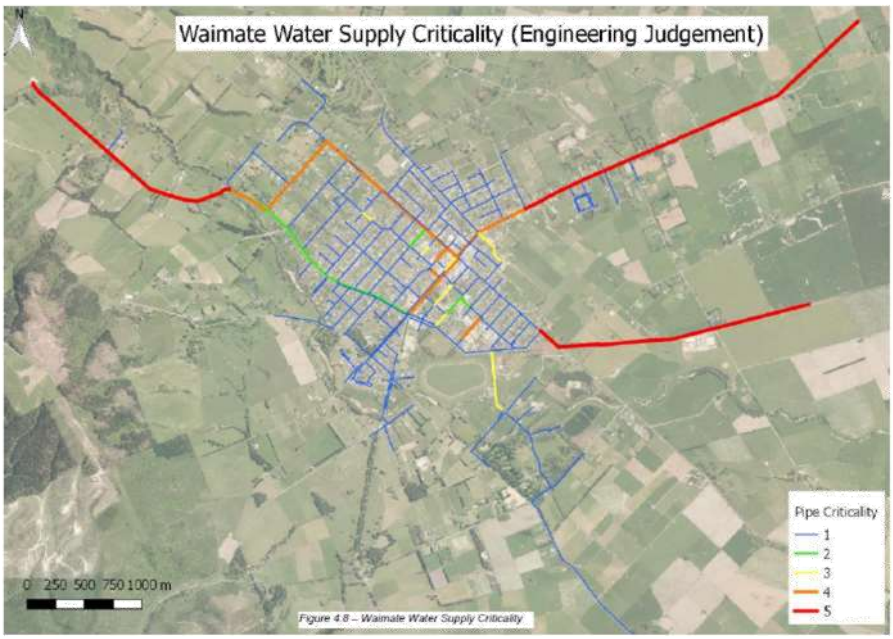
The figure below shows the pipe length distribution across the different criticality categories for the Waimate Urban Water Supply. Graphs are also available for the rural water supplies.

Figure 3-6: Waimate Urban Water Supply Criticality and Lengths Distribution



The figure below shows an overview plan of the criticality rating for the Waimate Urban Water Supply. Maps are also available for the rural water supplies.

Figure 3-7: Waimate Urban Water Supply Criticality Map



The criticality assessment provides Council engineers the ability to clearly identify the assets of highest importance and the greatest value. This ensures the asset can be managed more proactively in order to mitigate the risk associated with their failure. This proactive management includes:

- Prioritising condition assessments

- Adjusting economic lives with respect to renewal profiles
- Prioritising/deferring renewals
- Prioritising expenditure operation and maintenance planning
- Priorities for collecting asset information to the required level of confidence

It is important to align the asset data in AssetFinda with the criticality assessment ratings (**IP 31**). The criticality assessment report made the following recommendations (**IP 32**):

- Plan a renewals program supported by a condition management program for critical infrastructure
- Plan around supplying critical customers and key facilities following a critical asset failure
- Identify sensitive customers (for example: dialysis patients) for a more detailed criticality assessment
- Update and maintain the water supply models, especially where new assets have been added (new bore and pump station in the Otaio rural water supply)
- Expand the stormwater model for a better understanding of stormwater flows and populations served by WDC's assets
- Maintain the GIS data, especially for the stormwater assets

In view of the pending outcome of the Havelock North Water Inquiry and change in political landscape Council may reconsider the Criticality assessment to ensure the four wellbeing's (social, economic, environmental and cultural) are adequately captured within the assessment (**IP 33**).

4.0 LEVELS OF SERVICE

This section defines the Levels of Service and performance measures by which the service levels will be assessed for Water Services. The service levels are aimed at meeting the strategic goals of Council. This section also contains information on the customer research undertaken and the legislative requirements adhered to in arriving at the service levels.

Levels of service define the type and extent of services delivered to the customer. They are written from a customer viewpoint such that Council can set targets against the levels of service to demonstrate outputs and performance against the community outcomes. Levels of service assist the Council in optimising all activities for each service, as well as providing a benchmark against which to meet customer expectations.

4.1 Community Outcomes

4.1.1 Revision of Community Outcomes for Community Plan

2009/19 Community Plan

During the development of 2009/19 Community Plan, Council resolved to update and revise the community outcomes. Council produced a survey document asking the District's residents to focus and comment on the existing 25 community outcome statements. As a result of this survey Waimate District's community outcomes statement were modified to retain the 25 outcomes from 2006, but group the existing 25 outcomes under five high-level well-beings statements (Economic, Social, Environmental, Cultural and Social).

2012/22 Long Term Plan

In 2011 the Council amended the community outcomes and these were subsequently reassessed for the 2015-25 Long Term Plan. The Council has indicated that there will be no significant change to the community outcomes for the 2018/2028 LTP. Changes relate to alignment with the Council Vision. These outcomes and linkage of the Wastewater levels of service are provided in Table 4-1 below.

2015/25 Long Term Plan

In 2017 the Council amended the community outcomes. These outcomes and linkage of the Water Services Levels of Service via the Rationale are shown in Table 4.1 below. There are no changes to the Community Outcomes for the 2021-31 LTP.

Table 4.1: Waimate District Council Community Outcomes 2021-31 and Water Services Rationale

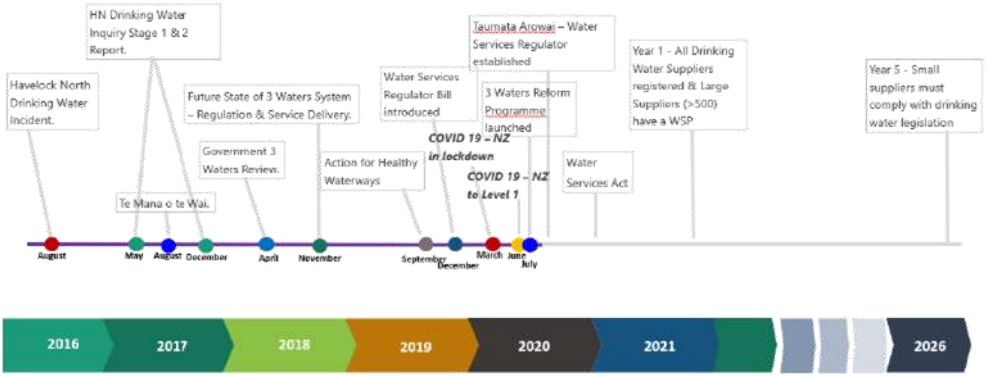
	COMMUNITY OUTCOMES			
	Thriving Community	**Safe & Healthy People**	**Sustainable District and Environment**	**Active, Diverse and Supportive Community**
	Economic Wellbeing	**Social Wellbeing**	**Environmental Wellbeing**	**Social Wellbeing**
	A District that encourages development	A place where people are safe in their homes, work and public spaces	The Waimate District is enhanced through sustainable and diverse development	All people are encouraged to participate in our democratic process
Rationale		***Water** – Protecting the communities from drinking water related health issues and providing firefighting capability*		
	A District that provides infrastructure for economic activity	Our services, infrastructure and environment enhance quality of life	Our heritage is valued and protected	District assets that provide recreation and leisure choice
Rationale	***Water** – The timely provision of utility services is essential to supporting growth*	***Water** - We have reliable, efficient and well planned water, wastewater, stormwater and solid waste infrastructure that meet the needs of residents*		
	A District that actively promotes itself and its businesses		We value the natural environment, biodiversity and landscapes	We celebrate and support the good things about our community
Rationale			***Water** – water is used efficiently and in an sustainable manner*	

4.2 National Strategies and Plans

4.2.1 Government and Industry Direction

In providing the 3 Waters Services the Waimate District Council keep a weather eye on the Central Government and Industry direction for the national infrastructure assets and public service provision. This is done through attending conferences and seminars, studying reports released by Central Government agencies and membership of industry organisations e.g. IPWEA, Water NZ, etc.

3 Waters - Government & Industry Direction



The August 2016 Havelock North Water incident and subsequent Inquiry has renewed the focus on the very high standard of care and diligence required to supply drinking water.

During 2017 the Minister for Local Government initiated the Government 3Waters Review to assess whether current local government practices and the system oversight are 'fit for purpose'. This review ran in parallel to the latter stages of the Havelock North Inquiry and raised a range of questions around the effectiveness, capability and sustainability of the current water service model.

During 2017 the Government announced changes to the National Policy Statement for Freshwater Management – Te Mana o te Wai. Te Mana o te Wai is a concept for fresh water, which when given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community. This requires councils to involve iwi/hapū in the management of freshwater, work with them to identify their values and interests, and reflect those values and interests in decision-making.

The MfE discussion document 'Action for Healthy Waterways' released September 2019 signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems.

Towards the end of 2019, the Government agreed to establish a new drinking water regulator as an independent Crown entity. Associated legislation is expected to be passed in 2020/21 and the establishment and roll out of the new Regulator will follow and is expected to take a number of years.

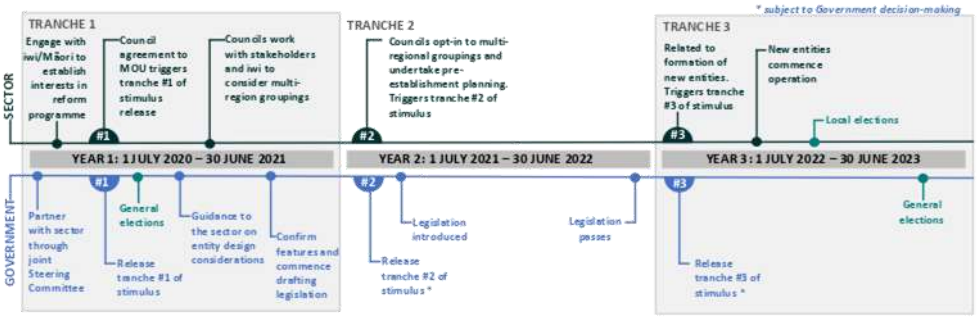
Following the global outbreak of the Corona Virus the Government announced New Zealand's four-level COVID-19 Alert System specifying public health and social measures to be taken against COVID-19. New Zealand went into Level 4 on Thursday 26 March 2020. Level 4 requirements included the general public to stay at home, educational facilities closed, only essential services & lifeline utilities remain open & operational, severe travel limitations, major reprioritisation of

healthcare services, etc. NZ progressively reduced the alert levels from 27 April and returned to Level 1 on 10 June 2020.

The response to COVID 19 will have a significant impact on the economy and the ability to implement and progress the abovementioned Government initiatives. Several Councils already signalled no rates rises for the 2020/21 year.

July 2020 saw the Government announce the 3 Waters Reform Programme consisting of a $761m funding package over the next three years to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure. Initial funding will only be made available to councils that sign up to the Memorandum of Understanding. Waimate District Council signed up to the Memorandum of Understanding, thus agreeing to participate in the exploration of future service delivery options for the three waters services and to collaborate with agencies involved in the reform.

Below is an indicative timetable for the full reform programme. While this is subject to change as the reform progresses, this provides an overview of the longer-term reform pathway.



The following themes are also signalled:

Source	Direction
Insights into local government: 2019 OAG June 2020	Among a range of observations the OAG states "*I remain concerned that Council's might not be adequately reinvesting in their critical assets*". To do this well, councils need to improve their asset management information. In particular, they need: • good data about their critical assets in order to value, depreciate, and plan renewals; • good processes and sufficient resources to maintain and update their critical asset data; • effective working relationships between asset management, finance, and strategic planning staff, all of whom have an important role to play in supporting a council's asset management function; and • timely engagement with, and involvement by, elected members.
Managing the supply of and demand for drinking water OAG Sept 2018	**Common challenges** • Working with iwi • Completeness and reliability of data • Staff capability and capacity • Under-delivery of planned capital spending

Source	Direction
Reflecting on our work about water management OAG Feb 2020	**A more strategic and integrated approach to water management is needed** • The Government is responding to the need for a more strategic and integrated approach to water management • A strategic and integrated approach would support targeting of investment decisions • A stronger focus on implementation is needed when setting strategy • Long-term thinking is needed when setting a strategic and integrated approach **Understanding of water resources needs to improve** • A national picture of the state of freshwater quality would support a more strategic and integrated approach • Information gaps can limit the ability to make well-informed decisions • Information needs to be understandable both to decision-makers and to those holding them to account • Good information depends on collecting quality data • There will always be some uncertainty **Water management challenges require adaptive ways of working** • Balancing different views and values requires flexible frameworks • Collaboration needs to translate into action • More can be done to involve Māori in water management Water management challenges require both central and local government response
Matters arising from our audits of the 2018-28 long-term plans OAG Feb 2019	**Recommendations** • that councils prioritise collecting condition and performance information of critical assets and, in the meantime, take a precautionary approach for significant services where the condition information of critical assets is unknown; • that the Department of Internal Affairs and the local government sector review the required content for long-term plans to ensure that they remain fit for purpose, particularly: – the current suite of mandatory performance measures; – the disclosure requirements for financial and infrastructure strategies; – disclosures required under the Local Government (Financial Reporting and Prudence) Regulations 2014; and – how assumptions are disclosed in long-term plans; • that the Productivity Commission, in its review into the adequacy and efficiency of the existing funding and financing options for councils, consider the trends arising in the 2018-28 long-term plans, particularly the trends and concerns we have raised about increasing debt; and that central government and local government continue to consider how increased leadership can be provided for climate change matters, particularly: – what data is needed and who collects this; – the quality of this data; and – how councils should consider this in future accountability documents, including the long-term plan.

Source	Direction
Local Government NZ	LGNZ are working on four significant projects with the sector at present: Water 2050; Climate Change; Housing 2030 and the Localism Project. **Water 2050** - The Water 2050 project promotes discussion and contribute to policy development by central and local government, particularly in regards to the Government's Three Waters Review, across five key areas: • Allocation • Water Quality • Infrastructure • Cost and funding • Governance **Climate change** - leading and championing policy to deal with the impacts of climate change is a key policy priority for LGNZ. Climate change poses an unprecedented level of risk and adapting to and mitigating the impacts of climate change is a new priority focus for councils. **Housing** is a significant issue for our communities' social and economic futures. Unaffordable housing is having a negative impact on local economies, discretionary household expenditure and social well-being. This means addressing matters of supply, how social and community housing needs are met and the importance of healthy homes. Underpinning the issue is the need for appropriate funding and financing. LGNZ efforts are focussed in three general areas: • Supply; • Social and community housing; and • Healthy homes. **Localism** - Local government is calling for a shift in the way public decisions are made by advocating for greater self-government at the local and an active programme of devolution and decentralisation. This document provides councils with guidance to • Assist with understanding and managing climate risk to the essential infrastructure that they own – particularly in relation to sea level rise, coastal hazards (such as storm inundation and erosion), and inland (pluvial) flooding; • Assist councils with addressing the issues that completion of the previous survey, which fed into the Vulnerable report, identified; and Help our community leaders prime and test council staff, constituents and stakeholders to engage in the most effective long-term planning for infrastructure investment, and make sensible investment decisions now, which don't preclude future options for infrastructure provision.
Vulnerable: the quantum of local government infrastructure exposed to sea level rise Local Government NZ January 2019	This project has two intended outputs. • The first is to research the current quantity and value of infrastructure (roads, 3Waters and buildings) exposed to sea level rise at four increments; 0.5, 1.0, 1.5 and 3.0 metres, and to quantify replacement value. The second and more important output of this research is to provide responses to rising sea levels. This study intentionally avoids specific and local costs, and targets discussion at a regional and national level in order to highlight trends and general areas

Source	Direction
	of high and low priority. It raises questions about how to improve procurement, appropriately share management of risk, and communicate with stakeholders about priorities.
Water NZ Competency Framework Water NZ	This document explores the workforce skills and capabilities for an effective, efficient, accountable and resilient three waters sector in New Zealand. It describes what people should be able to do and what they need to know to competently undertake their work. It is a work in progress and includes the following roles. • Drinking Water Treatment Operators • Wastewater Treatment Operators • Drinking Water Distribution Operators (to be developed) • Wastewater Network Operator (to be developed)

4.2.2 Infrastructure Commission, Te Waihanga

The New Zealand Infrastructure Commission – Te Waihanga – was established in 2019 as an Autonomous Crown Entity to carry out two broad functions – strategy and planning and procurement and delivery support on infrastructure investment.

InfraCom - Te Waihanga will work with central and local government, the private sector, iwi and other stakeholders, to develop a 30-year infrastructure strategy to replace the National Infrastructure Plan.

The first plan will be reported to government by the end of 2021 and thereafter at least every 5 years. The strategy will cover the ability of existing infrastructure to meet community expectations; current and future infrastructure needs and priorities; as well as any barriers which could impede the delivery of infrastructure or services arising from it.

4.2.3 National Policy Statement

The National Policy Statement for Freshwater Management (NPSFM) 2020 came into force on 3 September 2020 and documents the objective to ensure that natural and physical resources are managed in a way that prioritises:

a) first, the health and well-being of water bodies and freshwater ecosystems
b) second, the health needs of people (such as drinking water)
c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The NPSFM includes a requirement to manage freshwater in a way that 'gives effect' to Te Mana o te Wai, including by actively involving tangata whenua in freshwater management, working with tangata whenua and communities to set out a 'long-term vision' in the regional policy statement, and through a new 'hierarchy of obligations' which prioritises the health and wellbeing of water bodies, then the essential needs of people (e.g. drinking water), followed by other uses.

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

'Action for Healthy Waterways' (Ministry for the Environment) signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems, likely regulatory requirements under a new 3 Waters regulatory framework.

These initiatives will flow through respective Regional Councils Policy Statements & Regional Plans.

4.2.4 National Policy Statement on Urban Development Capacity

The National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) sets out the objectives and policies for providing development capacity under the Resource Management Act 1991.

The NPS-UDC came into effect on 1 December 2016 and has been described by the government as "the core issue of increasing land supply".

The NPS-UDC directs local authorities to provide sufficient development capacity in their resource management plans for housing and business growth to meet demand.

Development capacity refers to the amount of development allowed by zoning and regulations in plans that is supported by infrastructure. This development can be "outwards" (on greenfield sites) and/or "upwards" (by intensifying existing urban environments).

4.3 Key Legislation and Regulation– Implications for Asset Management

Legislation is established by Central Government and must be complied with at Local Government Level. Significant legislation and regulations affecting the Waters activities are provided in Table 4.2. Council must comply with any relevant legislation enacted by Parliament. Commentary related to some of the key legislation is provided below.

Different legislation has differing levels of impact on the Water Services activities; this is indicated under the Impact Range (Broad ***, Moderate **, Limited *).

Table 4.2: Legislation and Regulation Affecting the Water Services

Legislation & Regulation	Water Services Range
Building Act 2004 (and amendments)	*
Civil Defence Emergency Management Act 2002	***
Climate Change (Emissions Trading and Renewable Preference) Act 2008	*
Climate Change Response Act 2002 (and amendments)	**
Energy Efficiency and Conservation Act 2000	*
Environmental Protection Authority Act 2011	*
Epidemic Preparedness Amendment Act 2010	*
Fire and Emergency New Zealand Act 2017	**
Health (Drinking Water) Amendment Act 2007	***
Health Act 1956	***
Health and Safety at Work Act 2015	***
Heritage New Zealand Pouhere Taonga Act 2014	*

Legislation & Regulation	Water Services Range
Infrastructure (Amendments Relating to Utilities Access) Act 2010	**
Local Government Act 2002 (and amendments)	***
Local Government Act 1974 (and amendments)	**
Local Government Rating Act 2002 (and amendments)	**
Local Government Rating Act 1979	*
Ngai Tahu Claims Settlement Act 1998	*
Public Works Act 1981 (and amendments)	*
Reserves Act 1977 (and amendments)	*
Resource Management Act 1991 (and amendments)	***
Utilities Access Act 2010	***

4.3.1 Major Legislation Details

The legislation that has or will have the most effect on the Water services is expanded in the following section.

Civil Defence Emergency Management Act 2002

The expectations under the CDEM Act 2002 is 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.

Water and wastewater services are regarded as critical services and are given special consideration within Council emergency management procedures. Every effort will be given to restore services immediately after an event to at least provide adequate water for sanitation and health albeit supply quantity may be limited.

Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that:

- contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels
- allow New Zealand to prepare for, and adapt to, the effects of climate change.

The amendments establish four key items.

1. set a new domestic greenhouse gas emissions reduction target for New Zealand to:
    a. **reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050**
    b. reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
2. establish a system of emissions budgets to act as stepping stones towards the long-term target
3. require the Government to develop and implement policies for climate change adaptation and mitigation
4. establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

The original proposal was for a separate piece of legislation called the Zero Carbon Bill to be passed into law. In May 2019, the Government decided to introduce it as an amendment to the Climate Change Response Act 2002. The objective was to ensure that all key climate legislation is within one Act.

Health Act 1956

The Health Act 1956 places an obligation on Council to improve, promote and protect public health within the District. The provision of water and wastewater services conserves public health and helps to protect land and waterways from contamination.

The Health Act requires Council to furnish from time to time to the Medical Office of Health such reports as may be required as to diseases, drinking water and sanitary conditions within it district.

The Health (Drinking Water) Amendment Act 2007

The Health Act 1956 was amended by the Health (Drinking Water) Amendment Act in October 2007 and aims to protect public health by improving the quality of drinking water provided to communities. The main duties in the Act only apply to water supplies above a certain size. Drinking water suppliers must comply with Sections 69S to 69ZC of the Act by the dates listed in the table.

Table 4.3: Dates for Compliances for Drinking Water Suppliers

Type of Drinking Water Supply	Amended Compliance By:	Water Scheme
Medium (5001-10,000)	1 July 2013	Waimate (3000)
Minor (501 - 5000)	1 July 2014	Hook Waituna (1350) Lower Waihao (600)
Small (101-500)	1 July 2015	Cannington Motukaika (120) Otaio Makikihi (430) Waihaorunga (141) Waikakahi (360)
Neighbourhood	1 July 2016	-
	Total	-

As a consequence of this Act, Council are required to take all practicable steps to comply with the DWSNZ and to implement Water safety plans (carried out between 2009 to 2017).

Fire Service Act 1975

Repealed on 1 July 2017 and replaced with Fire and Emergency New Zealand Act 2017.

Fire and Emergency New Zealand Act 2017

The Fire and Emergency New Zealand Act repeals the 2 Acts governing fire services, the Fire Service Act 1975 and the Forest and Rural Fires Act 1977, to give effect to a single, unified fire services organisation for New Zealand.

The Act establishes Fire and Emergency New Zealand (FENZ) and combines urban and rural fire services.

The Act introduces a range of changes and new measures for the detailed design and operational policy of FENZ, including the following:

- an updated offences and penalties regime, including a new infringement offence scheme
- removal of powers to recover the cost of rural fires
- new powers for managing hazardous substances incidents
- new measures to encourage compliance among levy-payers and to protect the integrity of the levy
- new powers for firefighters to enter premises to investigate the causes of fires and to take a sample or samples of objects for analysis.

The Fire and Emergency New Zealand (Levy) Amendment Act 2019 was passed into legislation on 7 May 2019. The legislation changes the commencement date for new levy provisions in the Fire and Emergency Act 2017 (Sections 80 to 140) to 1 July 2024.

In addition, two new exemptions will be put into force from 1 July 2019. New Zealand Defence Force property and Art and items in collections of cultural heritage bodies. Fire and Emergency New Zealand have prepared a guideline for the new exemptions which can viewed at https://www.fireandemergency.nz/assets/Documents/About-FENZ/Levy-and-payment-forms/Guideline-on-additional-exemptions-from-1-July-2019.pdf.

Health and Safety at Work Act 2015

The Health and Safety at Work Act 2015 (HSWA)was enacted on 4 April 2016 and is part of "Working Safer: a blueprint for health and safety at work" and reforms New Zealand's health and safety system following the recommendations of the Independent Taskforce on Workplace Health and Safety. Working Safer is aimed at reducing New Zealand's workplace injury and death toll by 25 per cent by 2020.

The HSWA:

- reinforces proportionality – what a business needs to do depends on its level of risk and what it can control
- shifts from hazard spotting to managing critical risks – actions that reduce workplace harm rather than trivial hazards
- introduces the "reasonably practicable" concept – focusing attention on what's reasonable for a business to do
- changes the focus from the physical workplace to the conduct of work – what the business actually does and so what it can control
- supports more effective worker engagement and participation – promoting flexibility to suit business size and need.

A guiding principle of the HSWA is that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from work risks as is reasonably practicable. The HSWA shifts the focus from monitoring and recording health and safety incidents to proactively identifying and managing risks so everyone is safe and healthy.
The HSWA identifies four duty holders:

persons conducting a business or undertaking (PCBUs) – these may be individuals or organisations	have the primary responsibility for the health and safety of their workers and any other workers they influence or direct. They are also responsible for the health and safety of people at risk from the work of their business

officers	(company directors, partners, board members, chief executives) must do due diligence to make sure the business understands and is meeting its health and safety responsibilities
workers	must take reasonable care for their own health and safety and that their actions don't adversely affect the health and safety of others. They must also follow any reasonable health and safety instruction given to them by the business and cooperate with any reasonable business policy or procedure relating to health and safety in the workplace
other persons at workplaces	who come into the workplace, such as visitors or customers, also have some health and safety duties to ensure that their actions don't adversely affect the health and safety of others

Heritage New Zealand Pouhere Taonga Act 2014

Describes an archaeological site as "Any place in New Zealand that:

- Was associated with human activity that occurred before 1900
- Is the site of the wreck of any vessel where that wreck occurred before 1900
- Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand"

It is unlawful to modify, damage or destroy any archaeological site – recorded or not – without an authority from the New Zealand Historic Place Trust.

Local Government Act 2002

Defines the purpose of local authorities as enabling local decision-making by and on behalf of the community, and allows local authorities the power of general competence. This Act specifically requires Councils to continue to provide water and wastewater services if they do so already. AMPs are the main method of demonstrating Schedule 10 requirements.

In addition to the general requirements of the Local Government Act there are some specific clauses that apply to water services.

Table 4.4: Water Services LGA 2002 Clauses

Section	Details	Applies to
S10	Restores the four aspects of community well-being by requiring local authorities to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future	Water and Waste Services
S17A	Requires that Councils review the cost effectiveness of the way they deliver their services to ensure they meet the needs of communities	All services
S101B	Requires a 30 Year Infrastructure Strategy	Core Services
S125	Places a requirement to assess water and other sanitary services from time to time	Water and Sanitary Services Assessment
S130	Imposes an obligation to maintain water services and places limitations on the transfer or selling of assets	Divestment of services
S 136	Empowers Councils to enter into Contracts relating to provision of water services for periods not exceeding 35 years whilst maintaining control over	Utilities Contract

Section	Details	Applies to
	the pricing of the service, retain legal responsibility for the service and being responsible for the development of policy related to the water services	
S 137	Empowers Councils to enter joint local government arrangements and joint arrangements with other entities for the provision of water services, with the same constraints as S136	Utilities and Professional Services provision and procurement
Pt 1 -2 Pt 3 - 23	Council provides groups of activities for financial, performance and negative effects reporting purposes. The Water and Waste unit will provide Group summaries for water (urban & rural), sewerage and stormwater	Water and Waste Services

Local Government Act 2002 – Section 17A

To date a formal, documented Section 17A review has not been completed for 3W's service delivery. Council informally reviewed 3W's service delivery in 2016/17.

Waimate, whilst not unique, is one of few councils that continues to provide maintenance operations "in-house" and resultantly did not have contractual arrangements in place to trigger a review between 2014 and 2017 (the statutory deadline for completing the first round of reviews).

At this point in time, investigations in to the Havelock North incident and subsequent indications that sector reforms were underway meant that the desire to change service delivery arrangements was low. Furthermore, Council was effectively comfortable that the potential benefits of performing a review did not justify the time and expense of completing the exercise. Subsequent acceleration of the reforms has bolstered this position in so far as service delivery is being addressed during the current calendar year (2021) and the impacts for 2021/22 are as yet unknown. Based on Councils decision regarding "opting in or out", this may trigger a Section 17A review (or not).

Management Plan.Local Government (Rating) Act 2002

In deciding whether to proceed with universal metering, it is worth noting the flexibility that Councils have under this Act to determine an appropriate water charging mechanism. Targeted water rates may be fixed charges per unit of water sold or according to a scale of charges.

Resource Management Act 1991

Governs all water takes and discharges. Water takes and discharges to waterways and land occur through the extraction of water from waterways and land. Resource consents obtained for water takes and discharge activities require parameters such as volume and quality to be monitored as well as taking steps to mitigate any adverse effects that may occur through the activity.

There have been numerous amendments to the Resource Management Act over the years with reform a key priority. During 2019 the Government appointed the Resource Management Review Panel to undertake a comprehensive review of the RMA. The Review Panel recommended:

- The RMA to be repealed and replaced with two new pieces of legislation
    - The Natural and Built Environments Act to strengthen the current system by not only seeking to protect the environment, but improve it.

- The Strategic Planning Act to give statutory weight to strategic spatial plans and, critically, force reconciliation and alignment across central and local government to ensure implementation.

Taumata Arowai–the Water Services Regulator Bill

Taumata Arowai – the Water Services Regulator Bill received Royal Assent on 6 August 2020. The Bill will establish Taumata Arowai–the Water Services Regulator and provide for its objectives, functions, and governance arrangements.

Taumata Arowai – the Water Services Regulator Bill will create a new regulatory body to oversee, administer and enforce a new and strengthened drinking water regulatory system. It will also have a national oversight role to improve the environmental performance of storm water and wastewater networks.

This Bill will be enacted during 2021.

A separate Bill, the Water Services Bill, to be introduced in early 2020, will give effect to decisions to implement system-wide reforms to the regulation of drinking water and source water, and targeted reforms to improve the regulation and performance of wastewater and stormwater networks. The Regulator's detailed functions and powers are located in that Bill.

Utilities Access Act 2010.

The Utilities Access Act 2010 provides for a coordinated approach to management of the road corridor. The Act requires the Corridor Managers to undertake a planning and access management role, and Utility operators to comply with an approved code of practice. It is an expected that the requirements detailed in the act will be carried out as described in the Code of Practice developed by the New Zealand Utilities Access Group, should it be approved by the relevant Minister of the Crown.

The Code is a mandatory requirement for all road and rail controlling authorities and utility network operators under the Utilities Access Act 2010, and came into effect on the 1st January 2012. The Code was reviewed during 2016.

The initial KPI data identified several issues including a lack of consistency, along with the fact that not all reporting entities had sent in their returns, meaning that any comparisons were incomplete. The situation was exacerbated by the fact that only 1 year's results are available, with any real value to come from analysis of changing trends over time. Refining of the data collection requirements will be a major focus moving forward, resulting in a more comprehensive reporting and analysis to be provided following the receipt of 2016-17 KPI data.

4.3.2 Relevant Regulations Affecting this Activity

Local Government (Financial Reporting) Regulations 2011

4.4 Standards, Codes of Practice and Guidelines

National environmental standards, design standards (AS/NZS ISO), Codes of Practice and Guidelines provide technical direction. National Standards must be complied under the direction of relevant legislation.

4.4.1 National Environmental Standards

National environmental standards are regulations issued under the Resource Management Act 1991 (RMA). They prescribe technical standards, methods and other requirements for environmental matters.

Local and regional councils [or local government] must enforce these standards (or they can enforce stricter standards when the standard provides for this). In this way, national environmental standards ensure consistent minimum standards are maintained throughout all New Zealand's regions and Districts.

4.4.2 National Environmental Standard for Sources of Human Drinking Water (2008)

The 'National Environmental Standard for Sources of Human Drinking Water' is intended to reduce the risk of contaminating drinking water sources such as rivers and groundwater. It does this by requiring regional councils to consider the effects of activities on drinking water sources in their decision making - resource consents and regional plans. Specifically, councils will be required to:

- Decline discharge or water permits that are likely to result in community drinking water becoming unsafe for human consumption following existing treatment.
- Be satisfied that permitted activities in regional plans will not result in community drinking water supplies being unsafe for human consumption following existing treatment.
- Place conditions on relevant resource consents requiring notification of drinking water suppliers if significant unintended events occur (e.g. spills) that may adversely affect sources of human drinking water.

4.4.3 AS/NZS Standards

The Code for Subdivision and Development AS/NZS 4404 is the principle document defining design requirements. Wherever possible, relevant AS/NZS standards are used as the basis for determining standards of design and construction.

Standards and guidelines relevant to the Water Services are shown in Table 4.5 below.

Table 4.5: National Environmental Standards and Guidelines

Year Released	Technical Discipline: Asset Management
2020	NAMS International Infrastructure Management Manual
2015	NAMS International Infrastructure Management Manual
2011	NAMS International Infrastructure Management Manual
2014	ISO 55000, ISO 55001 and ISO 55002 - Asset Management
2007 v2.0	NAMS Developing Levels of Service and Performance Measures Guidelines
2004 v1.0	NAMS Optimised Decision Making Guidelines
2006 v2.0	NAMS Infrastructure Asset Valuation and Depreciation Guidelines
2006	NZWWA New Zealand Pipe Inspection Manual
1999	NZWWA The New Zealand Infrastructural Asset Grading Guidelines
	Technical Discipline: National Environmental Standards
2006	NES Sources of Human Drinking-Water
2008	Code of Practice for Fire Fighting Water Supplies NZS PAS 4509:2008 set the minimum flow rates and pressure that must be obtainable from fire hydrants and spacing's.

4.4.4 NAMS International Infrastructure Management Manual

This AMP has refers to the both the 2011 and 2015 guidelines, with significant improvements made in areas including sustainability and Asset Management Policy.

4.4.5 ISO 55000 Asset Management 2014

This international standard was released in January 2014 and makes the previous BSI PAS55 Asset Management (2008) standards redundant. The new standard outlines the requirements for a 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 Water Services AMP Council has yet to review whether current Council 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 if this is the direction Council decide to take in the future.

4.5 Regional Plans

4.5.1 Natural Resources Regional Plan (NRRP)

The NRRP was revoked during February 2017 and replaced with the LWRP.

4.5.2 Land and Water Regional Plan (LWRP)

The Land & Water Regional Plan is a new planning framework for Canterbury and aims to provide clear direction on how land and water are to be managed and help deliver community aspirations for water quality in both urban and rural areas.

The Canterbury Land and Water Regional Plan (LWRP) identifies the resource management objectives for managing land and water resources in Canterbury to achieve the purpose of the Resource Management Act 1991. It identifies the policies and rules needed to achieve the objectives, and provides direction in terms of the processing of resource consent applications.

This LWRP is made up of 16 sections and a map volume:

- the first describes Canterbury's land and water resources, interrelated issues that need to be managed, the key partnerships, relationships and processes already underway, including the Canterbury Water Management Strategy (CWMS).
- The second section describes how the Plan works and contains the definitions used in the Plan.
- The subsequent three sections cover the region-wide objectives, policies, and rules.
- Sections 6 to 15 inclusive contain sub-region catchment specific policies and rules, and
- Section 16 contains the schedules.
- The maps referred to in the rules are in a separate map volume.

Rule 5.111 to 5.115 address small and community water takes. Rule 5.123 to 5.127 address the take and use of surface water. Rule 5.128 to 5.132 address the take and use of groundwater. The existing community water takes for Waimate public water supplies are discretionary activities and operated under current consents.

4.5.3 Regional and Iwi Plans

Regional and Iwi Plans affecting the Water Services activities are listed in Table 4.6. Each of these is a significant document, any impact on the current or proposed Waters Policy must be accounted for.

Table 4.6: Regional and Iwi Plan Documents

Canterbury Regional Council Plans	Key Impacts on Water Services
Canterbury Land and Water Regional Plan (LWRP)	Compliance through existing resource consents
Regional Coastal Environment Plan 2011. Covers coastal marine area and the coastal environment and its integrated management.	
Regional Policy Statement Sets the framework for resource management in Canterbury for the next 10 to 15 year	Notified June 2011. Climate change factors included. Review and submission required
Canterbury Water Management Strategy	Drinking Water – ensuring primacy of quality

4.5.4 Canterbury Mayoral Forum

The Waimate District Council is part of the Canterbury Mayoral Forum (11 member Councils) consisting of:

- Kaikōura District,
- Hurunui District,
- Waimakariri District,
- Christchurch City,
- Selwyn District,
- Ashburton District,
- Timaru District,
- Mackenzie District,
- Waimate District,
- Waitaki District (part of which lies within the Canterbury Regional Council area), and
- Environment Canterbury

Region wide issues identified by the Joint Working Group include:

- a need for more effort in compliance, monitoring and enforcement
- a greater focus on biodiversity outcomes monitoring and reporting
- opportunities for councils to share approaches and share resources
- addressing scale and complexities of issues, recognising the size of rating bases and capacities of councils.

Key work by Council supporting ecosystem health and biodiversity, drinking water and water use efficiency targets include:

- ecosystem health and biodiversity
  - restore Wainono lagoon
  - District Plan
- 3Waters
  - Major drinking water upgrades including Hook-Waituna, Lower Waihao, Waihaorunga and Waikakahi
  - Water safety plans in place and implemented
  - Global stormwater discharge consent in place
  - 3waters infrastructure renewals

- water use efficiency
    - water savings through upgrade of ageing infrastructure
    - water conservation measures in place
    - urban toby replacement with manifold meters

Key actions to meet 2025 Goals are tabled below:

Ecosystem Health
Biodiversity **Lowland Stream health** Fulfil requirements to obtain and comply with stormwater consents for townships by 2025. Progress improvement to stormwater infrastructure to reduce ecological damage to lowland streams from sediment and contaminants. Continue regular community education/behaviour change campaigns on stormwater issues and management.
Lowland Stream health Review the state and operation of the district's wastewater treatment plant infrastructure to address and reduce potential impacts on the district's highly valued rivers.
Biodiversity **Drylands** Identify and map SNAs on private land. Review status of SNAs listed in District Plan in line with NPSIB criteria and requirements by 2026. Implement system to actively protect SNAs and maintain indigenous vegetation. Work with Environment Canterbury to develop a biodiversity monitoring strategy. Secure funding for shared biodiversity role to undertake compliance monitoring. Advocate for indigenous biodiversity through regular education/behaviour change campaigns to improve understanding of the importance of protecting and conserving indigenous vegetation.
Biodiversity: **Drylands / Hill and High country streams** Review vegetation clearance rules as part of District Plan review to protect indigenous vegetation. Advocate for indigenous biodiversity through regular education/behaviour change campaigns to improve understanding of the importance of protecting and conserving indigenous vegetation.
Source Water Quality
Priority planning for water supply wells and new treatment plants, including rural water schemes (Waihaorunga, Cannington-Motukaika, and Waikakai). Review the state and operation of the district's wastewater treatment plant infrastructure to address and reduce potential impacts on the district's highly valued rivers and source groundwater Raise awareness of health impacts from high nitrate in drinking water. Run campaigns to recommend regular testing of private bores and consider options for secure water supply
Water Use Efficiency
Improve compliance with national regulations on the measurement and reporting of water takes. Manage water demand through meeting requirements under LWRP. Run local public relations education/behaviour change campaigns on water use efficiency to raise awareness and reduce usage.

Environment Canterbury provides quarterly updates to the Chief Executives Forum and Mayoral Forum on the regionwide progress towards implementing the CWMS. These quarterly reports provide a summary of the last three months' progress of zone committee projects and provide information on the latest freshwater related policy and RMA planning.

As work progresses on implementing the Fit for Future work programme, future quarterly reports to the Mayoral Forum will focus on reporting on the delivery of the CWMS Targets and review of the Canterbury Biodiversity Strategy in line with national direction.

4.6 Waimate District Council Strategies, Plans and Bylaws

4.6.1 Council Strategies

The following Council Strategies have impacts and are considered as part of the Stormwater services Activity

- District Wide Strategy
- Economic Development Strategy
- Procurement Strategy
- Infrastructure Strategy

4.6.2 Council Planning Documents

The following Council Planning Documents have impacts and are considered as part of the Stormwater Services Activity

- Waimate District Long Term Plan 2018-28 (current)
- Waimate District Long Term Plan 2021-31 (proposed)
- Waimate District Plan
- Waimate District Council Engineering Design Standards for Subdivisions and Development
- Structure Plans
- Waimate District Council AMPs

4.6.3 Council Bylaws

Section 146 of the Local Government Act 2002 provides for a Territorial Authority to make Bylaws in its district for the purposes of managing, regulating against, or protecting from damage, misuse, or loss, or for preventing the use of; the land, structures, or infrastructure associated with the Water Services.

Waimate District Council Consolidated Bylaw 2018, Chapter on Water Services consist of six parts:

- Part 1 General Conditions, applicable to all Network Infrastructure Services.
- Part 2 Urban Water Supply
- Part 3 Rural Water Supply
- Part 4 Stormwater Drainage
- Part 5 Sewerage
- Part 6 Trade Waste

The bylaw defines standards and obligations for the use, consumption, protection, access, conditions of supply and infringements.

4.6.4 Council Policies

Significance and Engagement Policy

Waimate District Council developed the Significance and Engagement Policy to determine the significance of issues within the District, and how to align Council engagement with the public based on the degree of significance of the issue.

This policy exists to:

- Inform the public can expect from the Waimate District Council regarding community engagement and the ways you can influence and participate in the decision-making of the Council.
- To provide Council with a tool that guides the assessment of significance during decisionmaking. A decision on significance and engagement provides direction on the level of community engagement that might be desirable to enable Council to develop a clearer understanding of community views and preferences on an issue or proposal.

This Policy identifies the following Strategic assets:

- Regent Theatre
- Waimate Public Library - building and collections
- Resource Recovery Park
- Parks and Reserves
- Public Toilets
- Cemeteries
- Roading Networks and connected infrastructure
- Sewerage Networks and Treatment Plants
- Norman Kirk Memorial Pool
- Stormwater Networks
- **Water Treatment, Storage and Supply Networks**
- Community Housing
- Local Government Centre
- Waimate Sports Stadium

Earthquake Prone Buildings

Earthquake Prone Buildings are no longer included in a Council Policy, but are now included in the Building Act 2004 under, Subpart 6A Building (Earthquake-prone Buildings) Amendment Act 2016. These new provisions came into effect on 1 July 2017.

Council is required to identify potential earthquake prone buildings or parts of Earthquake Prone Buildings and advise building owners that they are required to provide an Engineering Assessment that has been undertaken in accordance with the Earthquake Prone Buildings Methodology.

As the Waimate District is designated as being in a Low Seismic Risk Area the Council has until 1 July 2032 to identify potential earthquake prone buildings in the district. Council also has the ability to identify potentially Earthquake Prone Buildings at any time if they have reason to suspect it may be Earthquake Prone Building.

This Engineering Assessment is required to be provided by the building owner to the Council within 12 months of the building owner being notified by the Council of their building being considered to be an Earthquake Prone Building.

In the case where a building owner has had an Earthquake Prone Building Assessment undertaken prior to 1 July 2017, then this assessment is to be provided to the Council for review against the Earthquake Prone Building Methodology. The Council will assess these reports against the Earthquake Prone Buildings Methodology and decide whether the report is acceptable or may request either additional information or a new report to be provided.

The Council will also assign the Earthquake Prone Building rating and if it is less than 33% then the rating will be entered into the MBIE National Earthquake Prone Buildings database. The building owner will be required to erect and maintain the prescribed placards in the building in the

prescribed locations indicating what the Earthquake Prone Building Rating of their building is until such time as the building is strengthened or demolished. These placards are required to be displayed where members of the public will be clearly visible so members of the public are aware of the Earthquake Prone Rating of the building.

The period for building owners to undertake strengthening of buildings in the Waimate District is 35 years from the date when the Council advises the building owner of its decision that the building is an Earthquake Prone Building.

Dangerous and Insanitary Buildings

Council has revoked the Earthquake Prone Buildings, Dangerous and Insanitary Building Policy and separated the Dangerous Buildings and Insanitary Buildings into two individual policies to make easier for staff when dealings with these buildings. These new policies were adopted by Council in December 2017.

When either a Dangerous or an Insanitary Building are brought to Councils attention an assessment will be undertaken by staff to establish whether they are either Dangerous or Insanitary.

Council staff will work with the building owner to make the building safe and to remove or reduce the danger in the case of both dangerous building and insanitary buildings.

4.7 Level of Service Consultation

4.7.1 Consultation Processes

Community Outcomes for the Long Term Plan

The Council has carried out significant consultation to establish the Community Outcomes for the LTP; these were reviewed in 2011 following the changes to the Local Government Act in 2010. For the 2021 LTP the Community Outcomes retain the essence of those included in previous Waimate Community and Long Term Plans and were tested against the Waimate District Council vision statement.

Community Consultation

The Council has undertaken a range of consultation processes over the past few years specifically targeted at gathering information on preferred Levels of Service or the extent of infrastructure that Council will be required to install, future vision or how we manage the service. The extent of the historical and proposed consultation is detailed in Table 4.7 below.

Table 4.7: Waters Services Consultation Processes (Historical and Proposed)

Consultation Processes	Key Stakeholders Involved	Date	Reasons for Consultation	Extent of Consultation
Historical				
2012-2022 LTCCP process	All	2012	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
2015-2025 LTP process	All	2015	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements

Consultation Processes	Key Stakeholders Involved	Date	Reasons for Consultation	Extent of Consultation
2018-2028 LTP process	All	2015	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
Water Safety Plan (Waimate Urban and Rural)	Urban and Rural customers	2013 & ongoing		
Proposed				
2021-2031 LTP process	All	2021	Legislative requirement criteria of LGA 2002 and RMA	In accordance with the LGA 2002 consultation requirements
District Plan Review	All	2024		
Bylaws	All	2018	Review of Bylaws	Public and Industry submissions requested

4.7.2 Rules for Performance Measures

In 2010, the Local Government Act 2002 was amended to require the Secretary for Local Government to make rules specifying non-financial performance measures for local authorities to use when reporting to their communities. The aim was to help the public to contribute to discussions on future levels of service for their communities and to participate more easily in their local authority's decision-making processes.

Performance measure rules come into force on 30 July 2014. Local authorities were required to incorporate the performance measures in the development of the 2015-2025 LTP. The performance measures were reported against for the first time in the 2015/2016 annual reports. The performance measures are:

- Performance measure 1 - Safety Of Drinking Water
- Performance measure 2 - Customer Satisfaction
- Performance measure 3 - Demand Management
- Performance measure 4 - Fault Response Times
- Performance measure 5 - Maintenance of the Reticulation Network

4.7.3 2021-2031 Water Services: Levels of Service

In 2017 the 2015 Customer Levels of Service were reviewed Table 4-9 details the results of this review.

Council reviewed the customer service requests system to ensure they align with the Mandatory Performance Measures and ensured the internal and Contractor reporting aligns with the Mandatory Performance Measures 'tasks'. Council's AMIS (AssetFinda) and associated Service Request module have been programmed to allow reporting aligned with the NFPM and to ensure consistency and accuracy of reporting.

Table 4.8: LTP 2021 – 2031 Water Services Levels of Service

What we do it	**Council provides a regular supply of water to the designated Waimate urban area and the six rural areas of Waimate to serve drinking, commercial and fire protection uses.**			
1. Provide safe drinking water				
How we do it	• Manage and monitor all water supplies under requirement of Drinking Water Standards • Monitor ongoing regulatory change for water supply activities • Implement Water Safety Plans for drinking water schemes			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Extent of compliance with Drinking Water Standards (Part 4) - Bacterial Compliance (M)	Partially achieved (2018/19)	Bacterial compliance – All schemes	Bacterial compliance – All schemes
	Extent of compliance with Drinking Water Standards (Part 5) - Protozoal Compliance (M)	Partially achieved (2018/19)	Protozoal compliance – All Schemes	Protozoal compliance – All Schemes

2. Provide a continuous, appropriate and safe water system throughout the District with excellent customer service				
How we do it	• Manage, monitor and test all water supplies • Respond to service failures and faults • Provide a customer service request system 24 hours a day 7 days a week			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	Median attendance and resolution times for urgent and on-urgent callouts for water supply faults or unplanned interruptions to the urban network* (M)	Achieved (2018/19	Attendance to urgent callout - ≤ 1 hour	Attendance to urgent callout - ≤ 1 hour
		Achieved (2018/19	Resolution for urgent callout - ≤ 24 hours	Resolution for urgent callout - ≤ 24 hours
		Achieved (2018/19	Attendance to non-urgent callout - ≤24 hours	Attendance to non-urgent callout - ≤24 hours
		Achieved (2018/19	Resolution for non-urgent callout - 72 hours	Resolution for non-urgent callout - 72 hours
	Total number of complaints received about: 1. drinking water clarity 2. drinking water taste 3. drinking water odour 4. drinking water pressure or flow 5. continuity of supply 6. Council's response to these issues (M)	Urban and Rural water achieved (2018/19	Urban water supply: <10 complaints per 1,000 connections Rural water supply: ≤ 40 complaints per 1,000 connections	Urban water supply: <10 complaints per 1,000 connections Rural water supply: ≤ 40 complaints per 1,000 connections

	Percentage of residents receiving the service satisfied with water supply services	Urban and Rural water achieved (2018/19	≥ 86%	≥ 86%

3. Provide reliable, efficient and well planned water infrastructure and services that meets the needs of the community				
How we do it	• Monitor demand on all water supplies • Manage growth of network • Monitor condition and performance of water supply reticulation and assets and analyse data to predict asset failure/identify priority improvements required • Complete capital expenditure programme associated with developing the network • Minimise the disruptions to water supplies • Provide a restricted supply of water to customers on rural water schemes • Implement leak detection and reduction programme			
How we measure performance		**Actual**	**Years 1 – 3 Target**	**Years 4 - 10 Target**
	The average consumption of drinking water per day per resident within the Waimate district (M)	Achieved (2018/19	Average consumption ≤ 500 litres per person per day	Average consumption ≤ 300 litres per person per day
	Percentage of real water loss from Council's network reticulation systems (M)	Not achieved (2018/19	Real water loss - ≤ 35%	Real water loss - ≤ 20%
	Reactive maintenance (system failure) or programed work in the Waimate urban area that exceed 8 hours of not suppling drinking water to the community or a consumer.	Achieved (2018/19	< 1 per year	< 1 per year
	Reactive maintenance (system failure) or programed work in the Rural Water Supplies that exceed 3 days of not suppling drinking water to the community or a consumer.	Achieved (2018/19	< 1 per year	< 1 per year

The interpretation of the Non-Financial Performance Measures Rules are shown in http://www.dia.govt.nz/diawebsite.nsf/wpg_URL/Resource-material-Our-Policy-Advice-Areas-Local-Government-Policy?OpenDocument#ElectoralAct

Compliance (bacterial and protozoal) with drinking-water standards: This measure is only partially achieved as a number of the plants are yet to be upgraded to meet the bacteria and protozoal compliance criteria required by the drinking water standards. The following plants are to be upgraded:

- Hook/Waituna: A trial ultra-filtration plant has been trailed at the plant with good results. The upgrade is still in process and has been rolled over now and now into 2020/21 and 2021/22. A Request for Proposal, for Early Contractor Envolvement is currently being prepared for Hook intake, which will include Lower Waihao Intake as well. The scheme has a submitted Water Safety Plan waiting for approval.
- Lower Waihao: Drinking Water Standards upgrades was planned to be completed in 2020/21 year, but will rollover into 2021/22, and will be included in the combined Request for Proposal with Hook. The scheme has a submitted Water Safety Plan waiting for approval.
- Waimate: Manchester Bore is currently being upgraded to meet Drinking Water Standards. A new compliant bore was constructed in 2018, and a new plant was built with a UV reactor and chlorination unit, which was completed early December 2019. Timaru Road Bore Treatment Plant is under going treatment upgrad with addition of a UV reactor. Bore security in the future will not be sort again for either bore. Instead Borehead security (Criterion 2 DWSNZ 2005 [Revised 2018]) will be applied for. This decision not to try for "Secure Bore" status was due to the Havelock North event in 2016, and the fact that "Secure Bore" status is not good science, and very hard to prove satisfactorily. The supply has a current approved Water Safety Plan, but will require updating after all the upgrades are completed.
- Otaio-Makikihi: Tavistock bore has been upgraded with the installation of UV reactor in 2020. Again bore security not be sort for bore, as for the reasons above.Instead Borehead security (Criterion 2 DWSNZ 2005 [Revised 2018]) will be applied for. A new water safety plan is currently being written and will be be submitted by the end of the year for approval.

Other Rural Water scheme Plants are planned to be upgraded to meet the Drinking Water Standards, however there are continuing reviews of the present New Zealand drinking water standards, legislation and 3 Waters industry, and therefore compliance upgrade options for water supplies are still being reviewed. Because of these reviews and potential changes and options, the planned upgrades for Rural Water schemes have been put on hold to a later date. This has been in agreement with Drinking Water Assessor, on the condition of increase remote monitoring via telemetry and control, which has been done. Council continues to work with the rural water scheme Committees to ensure a suitable outcome as part of the 2018-28 & 2021-31 Long Term Plan and compliance with drinking water standards. The remaining plants to upgraded to meet compliance are:

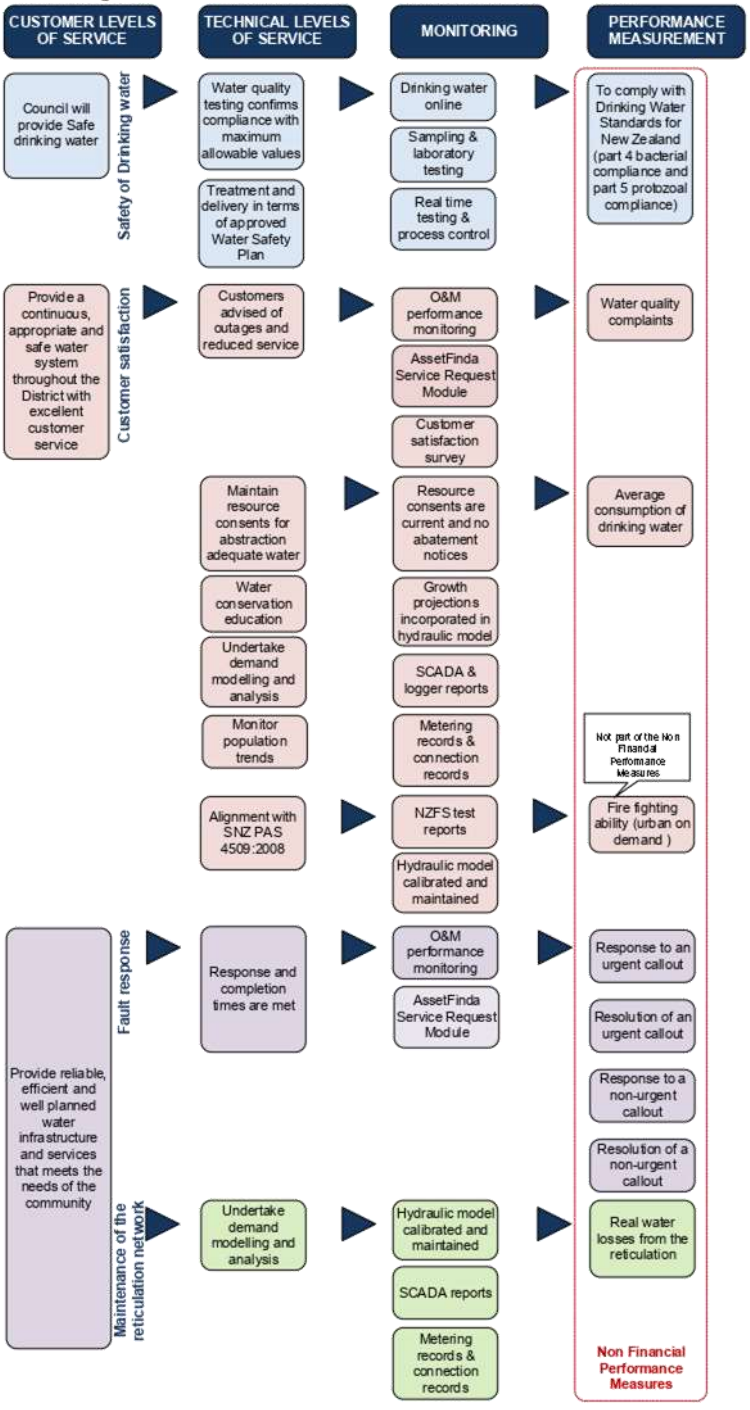
- Cannington-Motukaika: Cannington Intake
- Waihaorunga: Waihaorunga Main
- Waihaorunga: Tavendales
- Waikakahi: Waikakahi Intake

Complaints about rural water supply: Due to the nature and mechanics of a rural water scheme, and a number of factors beyond Council's control (i.e. members of public damaging pipe network) there is a greater potential for a loss of water pressure and continuity of supply. Council does have a renewals programme for pipe and points of supply (i.e. restrictor), a policy of 4 days point of supply storage, and public access to GIS maps of the water supplies on it website.

Real Water Loss: At present Council only has meters at the Timaru Road and Manchesters Road plants and no zone or points of supply meters. Therefore we are unable to measure true water usage in Waimate and have to rely on an assumed water loss calculation for this reporting.

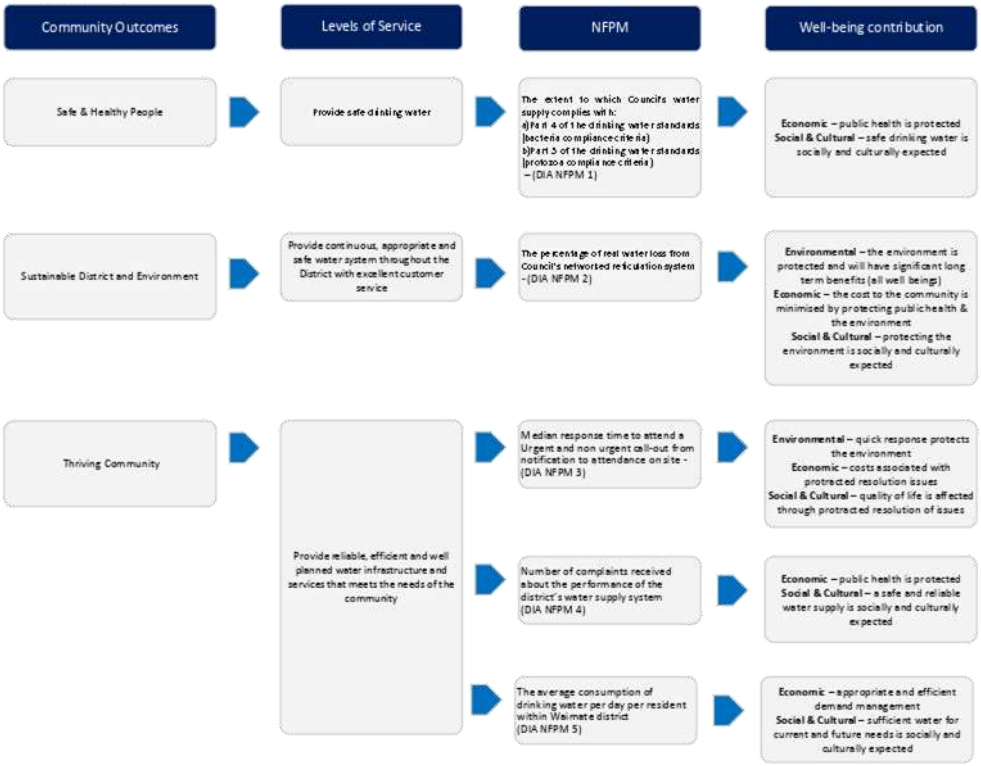
4.7.4 Customer and Technical Levels of Service

The Technical Service Standards for each Customer Levels of Service, along with linkages to the monitoring and Performance Measurements is described below.



4.7.5 Activity contribution to the Four well-beings

Section 10 of the Local Government Act restores the four aspects of community well-being by requiring local authorities to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future. The reinstatement of the four well-beings acknowledges that the Council has a broader role in looking after our communities, than simply providing core services. The water activity levels of service contribution to the four well-beings are shown below.



4.8 Performance Gaps

The results for the March 2017 Communitrak customer satisfaction survey as shown below. The results from the survey report that:

- 70% of residents are satisfied with the water supply and service (77% in 2017), with 36% being very satisfied (44% in 2017). 13% are not very satisfied and 18% are unable to comment.
- The percentage not very satisfied (13%) is similar to the Peer Group and National Average readings for water supply and 5% above the 2017 reading.
- 74% of residents say they are provided with a piped water supply and, of these, 86% are satisfied and 15% are not very satisfied.
- There are no notable differences between Wards and between socio-economic groups, in terms of those residents not very satisfied with the water supply and service.

The main reasons residents are not very satisfied with the water supply and service are:

- *needs to be boiled/filtered/undrinkable, mentioned by 3% of all residents*
- *poor quality/dirty/discoloured, 2%,*
- *chlorine content/chemical, 2%.*

Figure 4-1: Communitrak Survey Trends



Figure 4-1 shows the satisfaction levels have increased considerably over the period 2013 to 2017 with a slight reduction in satisfaction levels over the last two years.

A summary of the performance gaps are shown below along with a summary of how the gap(s) will be closed. These are further discussed in the Sections 5 to 10.

Table 4.9: Level of Service Performance Gaps

Level of Service	Ten Year Performance Measure	Performance Gap	Summary of How the Gap will be Closed
Council will provide potable water	Council provides water that complies with DWSNZ (revised 2018)	Yes	Increased water treatment and monitoring
Council manages the water schemes wisely	85% of satisfied or very satisfied residents with the overall performance of the Water service	Yes	Increased water treatment and monitoring

5.0 GROWTH AND DEMAND MANAGEMENT

Provides details of growth forecasts, which affect the management, and utilisation of all Waters assets and details demand management strategies.

5.1 Projects That Will Have An Impact On District Population

There are a number of projects that will or have had an impact on the districts population:

- Hunter Downs Irrigation Scheme – Did not proceed (2020)
- Waihao Downs Irrigation scheme (Commissioned)
- Oceania Dairy Factory
- Alps to Ocean Cycle Track (Commissioned)

Details of these projects are presented below.

Hunter Downs Irrigation Scheme

The Hunter Downs Irrigation Scheme was to be a community irrigation proposal developed originally by the South Canterbury Irrigation Trust (SCIT) and Meridian. The scheme would have potentially irrigated up to 40,000 ha of land from the Waitaki River stretching as far north as Otipua. The scheme was reduced to just 12,000 ha of irrigated land with construction supposed to start mid 2018. At the time of writing this AMP, the consent is close to lapsing.

Waihao Downs Irrigation Scheme

The Waihao Downs Irrigation Scheme irrigates 6,800 ha of farmland within a larger command area of 14,000 ha in the Waihao basin. The scheme involves taking water from the Waitaki River which is then distributed through a piped network to farms. There are a few potential farm conversions left.

Kurow Duntroon Irrigation Scheme

The Kurow Duntroon Irrigation Scheme, within the neighbouring Waitaki district, was developed by the Ministry of Works during 1965.

The original system consisted of a siphon drawing water from the Waitaki Dam into a 35 kilometres long open water race delivering water via a gravity fed system of manually operated gates.

This system was replaced during 2018/19 by installing 76 kilometres of pipelines from Waitaki Dam to Duntroon on the west bank of the Maerewhenua River. The system will ultimately enable irrigation of 5,500 hectares.

The Kurow Duntroon Irrigation Company (KDIC) is a community owned irrigation scheme, and holds a resource consent (CRC163429) from Ecan that expires in 2048, for an annual water take of 26.3 million litres. The scheme will increase activity in the rural service industries (on farm contractors and farm supplies) and processing companies (milk companies and vegetable processing).

Oceania Dairy Factory

Oceania Dairy Limited is a wholly-owned subsidiary of Inner Mongolia Yili Industrial Group (Yili), and is China's largest dairy producer. The state-of-the-art Glenavy processing plant has been designed for the production of milk powder for export to China where it will be used by Yili to produce infant formula. Stage Two is now complete.

Alps to Ocean Cycle Track

This is a cycle track from Aoraki/Mt Cook to Oamaru and is not yet fully complete. Construction of the off-road trail is ongoing, and will likely take another few years to finish. Given central Otago Rail Trail didn't have real impact until a number of years later, Council has assumed that any impact will be similar for Waimate District.



With both the Hunter Downs and Waihao Downs Irrigation projects there is a high chance that Waimate will experience slight increases in population with changes in socio-economic structure and changes in land use.

5.2 Demand Forecasts

The Waimate District Growth Projections- 2020 (Rationale) report provides a projection of the population growth for the Waimate District over the next 30 years. The report provides growth projection outputs for usually resident population, employment, dwellings, rating units and visitors.

Typically, WDC used the growth projections prepared by Statistics New Zealand (StatsNZ). Council is now looking for a more in-depth understanding of what their district might look like over the next 30 years. This coupled with the delayed release of the Stats NZ projections, following 2018 Census, has led WDC to commission these growth projections to understand the future growth in their district and provide a single source of the truth for council.

Four growth scenarios have been modelled for each parameter representing different levels of ambition in terms of the district's growth over the next thirty years.

The report considered four growth scenarios i.e.

- Scenario 1 – Business as Usual (Pre COVID 19)
  - No impact from COVID 19 and no limit on dwellings that can be constructed
- Scenario 2 – High
  - minimal COVID 19 impact and currently zones land reaching capacity
- Scenario 3 - Medium
  - Expected COVID 19 impact, business as usual by 2025
- Scenario 4 - Low
  - Higher than expected COVID 19 impact

Scenario 3 is considered to be the most appropriate for WDC's long term planning as there will be short term effects due to COVID-19.

However, it is not yet known what, if any, long term effects there will be. Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be reprojected, if necessary.

Since this growth projections model was developed it has become apparent that a bubble between New Zealand and Australia will not be forming in 2020. To offer best value for money to WDC, and

due to the minimal impact on the final projections, Rationale recommend revisiting these assumptions once there is a known scenario and date for border reopening. {Rationale}.

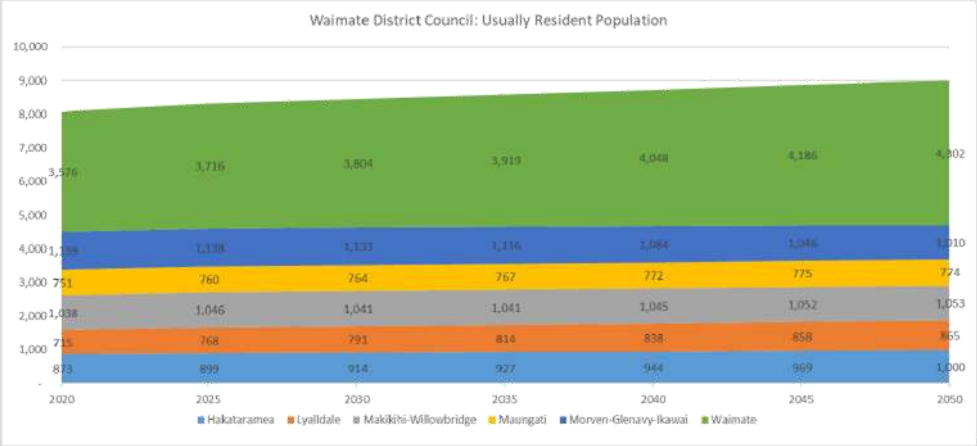
5.2.1 Growth Trends

Population Projections

The key characteristics of Waimate District's population are:

- Younger people leave the area for education and employment opportunities.
- People later in their working lives or early retirement are moving to the area for the lifestyle, affordability and/or retirement.
- Older people (over 70) are moving from the rural areas of the district to Waimate or leaving the area, likely in search of better healthcare or to be closer to family.

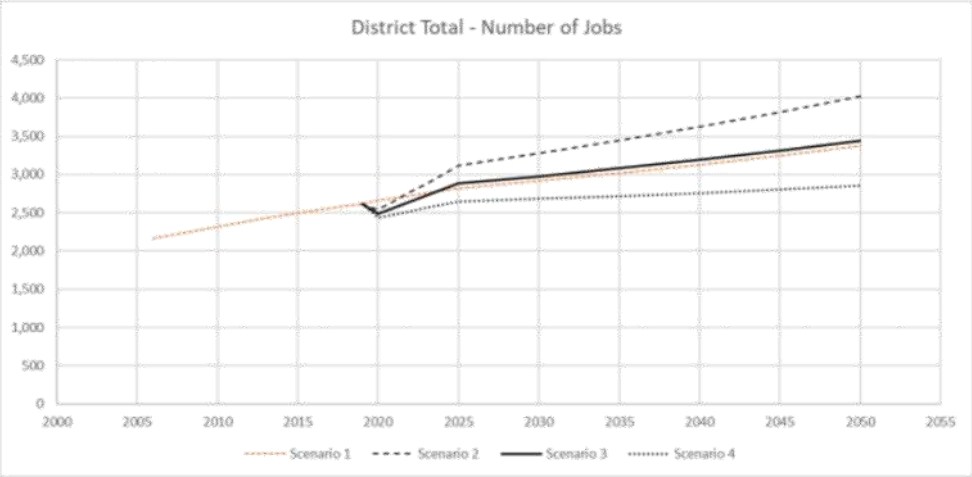
Over the next thirty years, the usually resident population of Waimate District is predicted to increase slightly. As a result there will not be any significant increase or decrease in demand for Council services based on change in population.



Employment Projections

It is projected that WDC will experience a short-term reduction in the number of jobs, but it is expected that come 2025 the economy and number of jobs will have normalised and be on the increase once again.

COVID-19 has some impact on employment in the district, but it is expected that those who lose their jobs will not move away. Typically, the most mobile and reactive portion of the population are those in their early working years, who do not have the necessary finances to "stick out" unemployment, or strong ties (family, property ownership etc) to the area. Waimate District has a relatively small proportion of the population in this age group, between 20 and 35. Therefore, modelling has assumed that if residents become unemployed, they will find work elsewhere and commute or remain unemployed in the area.



The average age of Waimate District's population is older than the national average of 37.3 years (StatsNZ). Looking across the district Waimate township has a significantly older average age of 48.6 years in2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement.

5.3 Response to Projected Growth

The effects of COVID-19 will have a significant impact on nationally and to a lesser extent locally as the Waimate districts' primary industries, agriculture and forestry, are less affected than for example tourism.

The usually resident population is predicted to increase slightly and there will not be any significant increase or decrease in demand for Council services based on the growth projections.

5.4 Water Services Demand Drivers

There are significant projects planned within the Waimate District which will have a significant impact on the water demand.

The Hunter Downs Irrigation Scheme will have a direct impact on demand as land use will change from dry land to irrigated land farming practices resulting in an increase in on farm population and an associated increase in demand for potable water. There will also be increased demand for stock water, but it is expected that the irrigation scheme will, in part, satisfy this demand. The increase in demand will also require significant extensions in reticulation, where possible, for new development.

The change in land use from dry land to dairying has been occurring for a number of years and is continuing. The population increase from the Hunter Downs Irrigation Scheme and the associated support services will potentially place pressure on already limited resources.

The following table indicates how these factors are expected to be reflected in changes in domestic and non-domestic water usage.

Table 5.1: Water Demand Drivers

Water Demand Drivers	Domestic	Commercial	Industrial	Agricultural/ Horticulture
Growth	Population change in reticulated areas	Increase in commercial areas	Expansion of industrial areas	Change in land use
Water Usage - Consumption	Domestic water usage	Commercial water usage	Water Conservation Increase in "wet" industries	Domestic consumption in rural areas
Water Usage - Irrigation	Domestic Irrigation	Not Significant	Industrial water irrigation	Irrigation Intensive farming
Water losses	Water Losses – All Reticulated Areas			
Resource Consent - Renewals	The renewal of resource consents will require water conservation measures to be implemented and will place additional drivers to match demand and customer expectations. A water conservation strategy will be developed and promoted prior to future water extraction consent renewals			
Legislative changes	Central Government is signalling that the focus will change from water quality to water quantity			

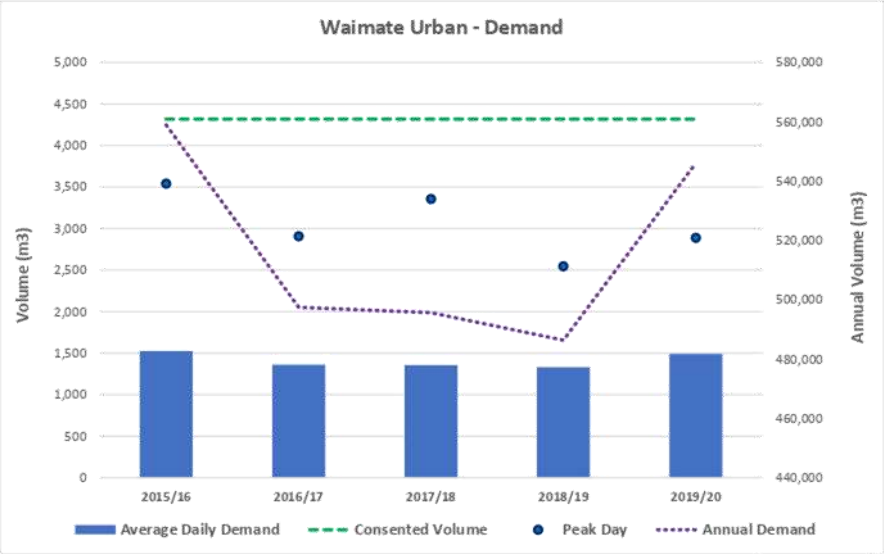
5.5 Water Usage Trends in Waimate District

Water intensive industries can have a large impact on the total daily water consumption for small water schemes. The impact of water intensive industries would need to be assessed as they arise and their effect on the scheme assessed at that time.

5.5.1 Waimate Urban Water Scheme

The Waimate Urban water scheme consented volume allows flows up to 65 L/s from two sources, Manchester Road bore (20 L/sec) and the Timaru Road bore (44 L/sec). The only limitation in the supply of water is the reticulations ability to distribute the full consented allocation and supply the reservoir. At peak times, Manchesters Bore can reach 21L/sec (10.3Bar), and Timaru Road Bore 35L/sec (10.25Bar) with minimal flow into the reservoir. More flow can be provided but at higher pressures. In 2008 Timaru Road Bore had been set to 12Bar pumping pressure to increase supply with negative effects on the reticulation pipework. Under the current normal conditions there is sufficient capacity for the Waimate Urban water scheme demand. However, during 2009 Council conducted a pressure management study "Waimate Water Supply – Pressure Management Study" (Opus International Consultants Ltd. 2009), which recommended pressure management of the system to defer renewals. Different options are currently under consideration, which includes a dedicated delivery rising main from the bores to the reservoir. In the last five years only water conservation measures have been implemented.

The following details the average daily water usage for the period 2015 to 2020. This indicates that usage has not markedly increased over this period. Note that these figures include water supplied to the Hook-Waituna Rural Water Supply.



The graph also shows that the average daily demand range between 1,332m^3 to 1,527m^3. The peak demand days range between 2,545m^3 to 3,541m^3. Annual demand range between 486,425m^3 in 2018/19 to 558,895m^3 in 2015/16.

Future Capacity

There is insufficient capacity within the Waimate Urban water scheme to service significant increases over the next 10 years. During peak summer periods the existing pumping system is operating 24 hours a day. The inclusion of a new 300mm diameter well (Winter 2018) at Manchesters Road and the commissioning of a dedicated delivery main by 2019/20 will ensure that increases in population are catered for. Additionally this will free up capacity within the existing reticulation.

5.5.2 Rural Restricted Schemes

The continued change in farming practices, mainly sheep to dairy farming, not only increases the demand for potable water but also affects the quality of water sources. Dairy farms in close proximity of water sources increase the potential for contamination.

There is increasing demand on the rural schemes to provide more water for stock consumption and in the case of dairy farms, high quality water for wash down of facilities. Council will carefully consider any application for extra water for all of the rural schemes.

In other districts where there has been a change from dry land farming to irrigated (with significant dairy farming), the demand for dairy stock water and wash-down water (within the milking sheds) is significantly higher than what a restricted scheme can supply. The restriction is usually the reticulation (main diameter). While the demand for stock watering with increased dairy farming may decrease, there is a corresponding increase in the number of houses and subsequent domestic water requirement. Note that the quantity of water supplied to rural properties is controlled via restrictors that can be adjusted to ensure that each property receives the correct amount of water.

Table 5.2: Water Demand

2018/19	Waimate Urban	Cannington Motukaika	Hook Waituna	Lower Waihao	Otaio Makikihi	Waihaorunga	Waikakahi
Average Demand(m^3/day)	1,332	319	957	740	652	267	891
Peak Demand(m^3/day)	2,545	531	1159	1,358	882	274	982
Treatment Capacity (m^3/day)	4,882	475	1,728	1,771	1,296	455	1,054
Resource Consent Allow. (m^3/day)	5,616	475	1,728	1,633	929	576	1,469
Service Connections (as at 2017)	1,953	50	525	241	213	47	173

Customer expectations are increasing, with demands for greater water pressure and availability. Increased water quality expectations are reflected in the DWSNZ (legislative) and in aesthetics qualities such as odour and taste. There is also a shift observed in lifestyles with more households having spa pools, landscaped gardens with water features and sprinklers to maintain the gardens and lawns. The result is an increasing demand on the water schemes (reticulation network and water treatment plants) to supply greater volumes of water of higher quality.

5.6 Legislative Changes

The legislative framework and government and industry direction is discussed in Section 4.2.

5.7 Demand Management

5.7.1 Background

Demand Management strategies are used as alternatives to the creation of new assets. They are aimed at modifying customer demands to achieve:

- Social, environmental and legislative objectives for Waimate District.
- The delivery of cost-effective services.
- Defer the need for new assets and optimise the performance/utilisation of the existing assets.

Council is working on a range of strategies to manage the demand for water and therefore the requirement for additional infrastructure. Table 5.3 lists strategies used by the Council.

Table 5.3: Demand Management Strategies

Strategy	Objective/ Description
Operations	Reduce unaccounted for water by leakage detection and control Investigate the level of water loss (leakage) to determine if a water loss problem exists
Operations	System Pressure Management: Pressure measurement is being considered to enable changes that will reduce operating pressures which impact on reticulation and reduces water losses. This needs to be balanced with levels of service with the consumer on adequate pressure
Waimate District Consolidated Bylaw 2008	The Water by-law does not have any direct water conservation requirements other than to prohibit water wastage and to ensure prudent use and require consumers to comply with any water restrictions publicly advertised during droughts, periods of unusually high demand or emergencies
Policy	Water Management Strategies: Council will consider developing a strategy to encapsulate the overall planned management of the water takes, use, and conservation education with an aim to reduce the per capita consumption. This is consistent with Councils resource consents requirements
Education	Water Conservation Strategy: Water conservation programmes aimed at increasing community awareness of the benefits of conserving water and reducing water demand. These

Strategy	Objective/ Description
	programmes include information on ways to conserve water and can be implemented through public signage in key locations and using the print media
Water Charges	Water meters are installed for all extraordinary supply users, therefore commercial, industrial, non-urban, and high usage consumers. This strategy is seen to help in terms of demand management although universal metering has a significant capital and operating costs that may not provide the long-term benefits of demand reduction. It has been observed that the consumption in metered areas is lower than the non-metered areas
Water Restrictions	Water restrictions are used to manage peak demand. Water restrictions typically include limits on the use of garden hoses

The NZS 4404: 2010 Land Development and Subdivision Infrastructure Standard specifies for design purposes the daily consumption as 250 L/person/day.

The Ministry of Health published "Household Water Supplies – The selection, operation and maintenance of individual household water supplies (2006)" which provides information about the supply of safe drinking-water to households not connected to town water supplies. These figures provide useful guidance as to what the Ministry for Health deems appropriate for personal consumption, cleaning and washing, which amounts to 300 L/person/day.

The 2007 AMP stated that the peak daily consumption (Total Demand – Leakage) was estimated to be 1,960 m^3/day, this equates to 710 L/per capita/day.

As part of the Non-Financial Performance Measures Rules 2013, consumption monitoring become a mandatory performance measure. From this monitoring the daily average consumption for the last two financial reporting years showed a reduction of 130 – 150L/day per person. This reduction in consumption can be attributed to the leak detection surveys, and the follow up maintenance and repairs.

The daily average consumption was 559L/person/day for 2015/16 and in the 2016/17 financial reporting year, 578L/person/day, which is still high considering the NZ standards and Ministry of health figures (250 and 300 litres/person/day). When adjusted for network water loss these figures reduce to approximately 310L/person/day (2016/17).

A Water Demand Management Strategy / Plan is required to:

- Identify the drivers for demand management in the Waimate context.
- Identify positives and negatives of demand management initiatives.
- Identify the following:
    - actual necessary use
    - wasteful use
    - losses (avoidable, economic and interference)
- Prioritise the areas where greatest need exist for demand management.
- Identify and implement appropriate demand management initiatives.

5.7.2 Reduction of Leakage

The reduction in water leakage rate within the Council's reticulation has a positive effect on maintenance costs (reduced pumping costs) and increases the time before additional capacity is required (optimisation of the existing assets).

The leakage rate in the urban area has historically been very high. Council staff has developed a strategy of assessing leakage in the urban area via measuring minimum night time flow rates.

During the period May to June 2009 Council actively targeted the repair of all leaks identified during the leak detection exercise. However, a review of telemetry flow data for the period pre/post leak repair showed that the minimum night flows increased from 10 L/s to 15 L/s. A further substantial leak was found and repaired. This highlighted the sensitivity of the network and its tendency to burst under high pressures. This also highlighted the need for pressure management to reduce burst rates, reduce leakage and extend asset lives.

In 2011 another survey was undertaken, leakage rates leakage rates reduced from 18 L/s to 9 L/s. To assist to achieve a target of 6 L/s, it is intended to zone the town into four to five sub-zones to better concentrate leakage reduction results. The leak detection service will be used on a three year cycle.

Again, in mid 2015 another survey was undertaken. 84 leaks were detected which equated to an estimated 171.2 L/m (2.8 L/sec) loss through leakage. 52 out of the 84 (62%) leaks were on private property, after the point-of-supply. This raised the question of individual consumer responsibility, water conservation, education and water meters (*Water and Wastewater Managers report for the District Infrastructure Committee meeting August 2015*).

Table 5.4: July 2015 Leak Detection Survey Leak Counts and Estimated Water Loss

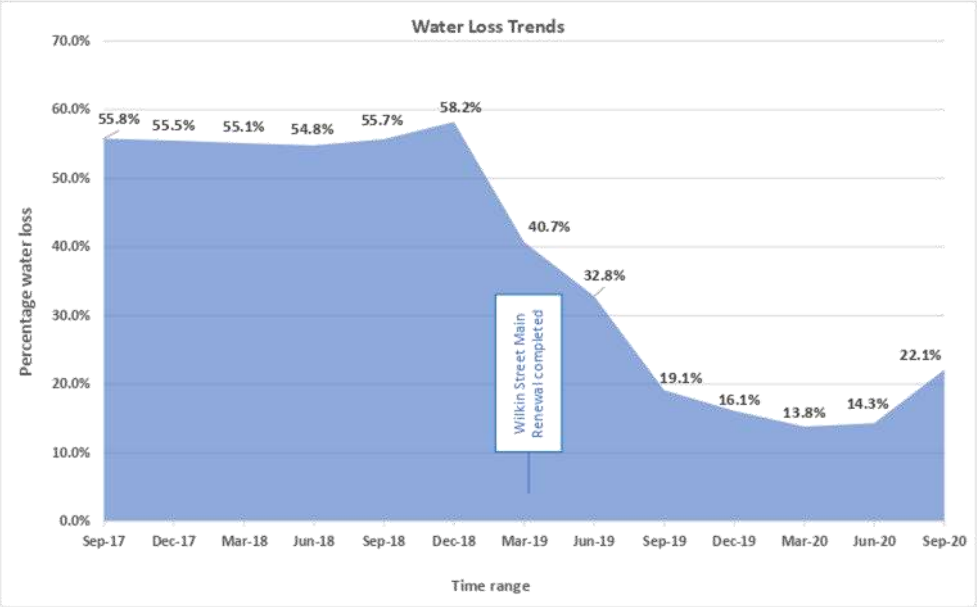
Leak Type	Count	Estimated Combined Leakage Flow Rates (L/min)
Private	52	134.4
Leak at Connection	19	4.75
Lateral	3	13
Sluice Valve	6	7.5
Fire Hydrant	3	1.5
Tapping/main	1	10

Water losses have also become a mandatory Non-Financial Performance Measure requirement. The last two financial reporting years have indicated, based on minimum night flows (MNF), there was 50% for 2015/16 and 46% in 2016/17 water loss, in the Waimate Urban supply.

No further leak detection was undertaken as the mains renewal programme resulted in a significant reduction in water loss. The MNF water loss calculations graphically showed below provides useful commentary on the reduction in water loss as a result of the mains renewal programme. It can be seen that MNF water loss hovered around 55% - 58% within the Waimate Urban Water Supply. Mains renewals, AC & CI, resulted in a significant reduction of 44% between December 2018 and March 2020. A major contributor was a significant water leak on the Wilkin Street mains, which was renewed from Edward Street to Michael Street. This Wilkin Street project was completed during March 2019.

However, the graph also show that water loss has increased from 13.8% in March 2020 to 22.1% in September 2020. As mains are replaced, reducing leakage in one area it increases pressures throughout the network which may lead to increased leakage or breaks in other areas and as a result water loss rates may fluctuate.

Figure 5-1: Water Loss Trends



As part of Council's delivery plan water meters are installed throughout the network. This will aid in leak detection on both private and commercial properties. Extra Ordinary users (high volume, commercial and businesses) with continue to be charged for water in excess of 200m^3 per six-month period. At the time of writing this asset management plan, Council is not considering a review of either charging mechanism or setting price points. The outcome of the three waters reform programme may well result in this decision being revisited in the future.

Consideration of future volumetric charging shall be based on the drivers created by the 3 Waters Regulatory reform and 'Water Sensitivity' i.e. improved management from source to customer. This includes programmes such as the Canterbury Water Management Strategy.

5.7.3 Network Modelling

Network modelling (InfoWorks WS) has been carried out for all schemes. The network modelling provides staff with:

- Determining the capacity of the existing network and identify areas not meeting the existing or future Levels of Service and upgrade requirements determined.
- An operational and management tool to assist in making the right decisions to improve and maintain service levels and reducing costs.
- New subdivisions can be modelled and effect on the network determined.
- Reliable calibrated hydraulic models provide a robust decision-making support framework in which numerous future scenarios of demand, population growth, climate change and land use variables can be readily evaluated to assist in the determination of optimal network improvements required to meet future or changing needs.

5.7.4 Universal Metering for Waimate Urban Water Scheme

The benefits of universal metering are as follows:

- It provides Council with a mechanism to implement a fair and equitable user-pays water billing system
- It promotes the efficient use of water through reduction in excessive consumption and minimising water losses through leakage
- It enables the Council to keep track of consumption and accurately identify the quantity of water lost to the system as leakage
- It may assist with obtaining resource consents for future bores

These benefits need to be balanced against the cost of installation, maintenance, and administration of the metering programme. A detailed economic assessment of the costs and benefits associated with universal metering for the Waimate Urban water scheme has been discussed in the report "Waimate Urban Water Supply: Issues and Options for Universal Water Metering" (Opus, 1998). This report concluded that the implementation of a universal water metering programme was not economically justifiable.

Although the direct costs of implementing universal metering could outweigh the direct benefits, it should be noted that there are benefits to the environmental, social and cultural well-beings of the District. Universal metering may require reconsideration of options in future.

With the recent events of Havelock North in 2016 the whole industry is under review. This will impact on cost of treatment and management of drinking water supplies, which may give justification for a universal water metering programme.

At present there is a progressive replacement programme of older service valve connections (Toby) when they fail, due to age or deterioration, to an upgraded manifold unit (dual checks) and water meter. Just under quarter of all connections now have a water meter. This progressive installation makes the cost of installation manageable. The installation of water meters allow monitoring of these connections to better understand consumer consumption, and understand water loss through leakage.

5.7.5 Public Education

Effective external education programs increase public knowledge about

- The need for water conservation,
- The potential benefits of demand management, and
- How to participate in local action

It is important for the public to permanently change their water use through an appreciation of the value of water and an understanding of simple and efficient ways to achieve at home. This can only be achieved through a well organised and consistent education and outreach programme.

6.0 RISK MANAGEMENT

This section looks at the Risk Management Processes utilised by Council for assessing and managing risk within the Water Services.

6.1 Risk Management Strategy

6.1.1 Overview

Council's Water Risk Management Strategy is in its formative stage. Council are progressing down the path of completing, implementing and maintaining risk plans (Utility Risk Management Plans) for the principal utility asset systems to minimise the likelihood of non-achievement of critical business objectives.

Risk analysis involves consideration of the sources of risk, their consequences and the likelihood that those consequences may occur. The objective of risk analysis is to separate the low impact risks from the major risks, and to provide data to assist in the evaluation and treatment of the risks.

6.2 Risk Assessments

There are essentially three levels of risk assessment that should be considered for each activity within Council:

- Level 1 - Organisational Risk Assessment
- Level 2 - Activity Management Risk Assessment
- Level 3 - Critical Asset Risk Assessment

Level 1 - Organisational Risk Assessment

Organisational Risk Assessment focuses on identification and management of significant operational risks that will have an impact beyond the activity itself and will affect the organisation as a whole. This approach allows the Integrated Risk Management framework to address risks at the organisational level, as well as at both the management and operational levels within the particular Council activities. The decision to implement the treatment measures identified will be at an organisational level, not activity level. To date the Council does not have a district wide risk policy. A Council risk policy will be developed that encompasses the above. **(IP6-1)**

Level 2 - Activity Management Risk Assessment

Activity Management Risk Assessment uses the same principal and consequence tables, but the focus has been at more detailed level. During this process, specific risk events were identified which would affect the operational ability or management of the activity as a whole. If an individual system within the activity was identified as being at a greater risk or would need to be managed in a different way to the rest of the systems, then it was highlighted for separate consideration.

A Risk Summary Table was established in 2011 (see Table 6.1 below), which identifies risk management strategies to minimise risks associated with the provision of the Water, wastewater, stormwater and solid wastes services. It is considered that the risks, mitigations and improvements have not markedly changed since the risk summary table was established in 2011. Notwithstanding this, specific risks associated with water quality are documented within the Water Safety Plans for each water scheme.

- Cannington-Motukaika Water Supply Water Safety Plan *Version 2.0 December 2017 (submitted for approval)*
- Hook-Waituna Water Supply Water Safety Plan *Version 3.3 November 2020*
- Lower Waihao Water Supply Water Safety Plan *Version 2.3 October 2020*
- Otaio-Makikihi Water Supply Water Safety Plan *Version 2.3 June 2020*

- Waihaorunga Water Supply Water Safety Plan *Version 2.2 December 2019 (submitted for approval)*
- Waikakahi Water Supply Water Safety Plan *Version 2.1 December 2019 (submitted for approval)*
- Waimate Water Supply Water Safety Plan *Version 3.0 January 2019*

The risk profile will be extended to encompass assets down to a component level in a Risk Management Plan. In the absence of component level assessments the risk summary table will be used to provide guidance for mitigation steps.

The risk management plan will be designed to ensure that:

- All significant operational and organisational risks are understood and identified.
- The highest risks that should be addressed within a 10 year planning horizon are identified.
- Risk reduction treatments which best meet business needs are applied:

Level 3 - Critical Asset Risk Assessment

Critical assets are considered those assets in which failure would result in a major disruption to the supply of water or levels of service. Usually the identification of critical assets is based on pipe diameter or population served.

The criticality of an asset reflects the consequence of the asset failing (not the probability). High Criticality assets are best defined as assets which have a high consequence of failure (not necessarily a high probability of failure).

A criticality assessment has been carried out in 2017. See Section 3.11

Table 6.1: Risk Summary Table (Showing Significant or High Risks only)

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
1	**Higher Level Policies, Procedures and Controls**					
1.5	The Council does not have an acceptable position on the impact of climate change on service delivery	Financial loss due to liability for property damage, loss of asset. Not able to provide service.	Significant	Council needs policy and relevant action plans including relevant design parameters) on Climate Change.	Low	Strategies to implement Councils future policy on the effects of climate change
2	**Financial**					
2.1	Lack of long-term financial planning	Higher than necessary financial costs	Significant	Existing network models are up to date and available	Low	
2.2	Service levels vs funding and works not clear	Service levels not being met due to lack of funding as decision makers not aware of implications for Service Levels.	Significant	Set performance targets for next 10 years and monitor and report on performance. Impacts of delayed capital works reported to Council.	Low	
2.3	Assumptions for financial forecasting not always understood	Additional costs incurred because assumption/uncertainties not accounted for i.e.: asset valuations, depreciation	Significant	Finance/managers need to be aware of assumptions and uncertainties behind financial forecasting information.	Moderate	Improvement of quality of information
2.4	Unforeseen Additional Costs	Reputation of Council detrimentally affected	Significant	Ensuring AMPs and asset information up to date	Low	
2.8	Insurance cover needs review	Insurance not adequate and unnecessary costs incurred	High	Insurance cover reviewed to ensure adequate cover on annual basis.	Low	
3	**Organisational Management**					
3.3	Lifelines Plan not up to date or implemented	Large scale asset failure due to a naturally occurring event resulting in prolonged and substantial loss of service to District	Significant	Ensure Lifelines Plan up-to-date and recommendations implemented that includes having a high level of risk reduction, readiness, response and recovery during and following Civil Defence Emergency.	Significant	Update lifelines plan

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
4	**Human Resources**					
4.3	Information in people's heads or inappropriate recording of information	Organisational knowledge lost with staff leaving	Significant	Ensure staff document and appropriately file everything that is relevant. Ensure good management succession when existing staff leave.	Moderate	Formalise and update maintenance schedules and procedures, contingency and operation and maintenance manuals.
4.4	Insufficient staff or not appropriately skilled	Programmed work not completed due to insufficient staffing or skill levels, having negative impact on service levels and creating public health risk.	High	Skill levels are appropriate	Low	Formal training programme required that includes the use of activity management plans.
4.5	Inadequate attention to staff succession	Organisational knowledge lost with staff leaving	High	Implement good staff/management succession plan and document procedures	Moderate	Ensure staff are appropriately trained and have a good understanding of the requirement for written procedures and manuals (inc. AMP's)
6	**Asset Management**					
6.1	Network modelling, condition assessments not undertaken.	Capital Works programme not optimised. Renewal works not completed due to lack of knowledge causing failure of assets. Future forecasting not accurate.	Significant	Undertake formal condition assessments of network and develop robust renewals programme based on sound knowledge.	Moderate	Network model informed once condition and performance data becomes available.
6.2	As-built information can be slow or incorrect coming from maintenance staff, Contractors, Consultants	Council faces legal action because of incorrect information provided (particularly with regard to LIMS)	Significant	Ensure As-builts up to-date and on record promptly. Ensure GIS capability	Low	
6.3	Criticality assessment not undertaken	Failure of critical assets resulting environmental damage or not meeting service levels	Significant	Undertake criticality assessment of assets and implement strategy for managing critical assets	Low	Incorporate criticality assessment of assets and implement strategy for managing critical assets.
6.5	Asset management systems not up-to-date or completed	Failure to of utility systems because maintenance work not completed or management system not operational.	Significant	Asset Management System in place and updated as required	Low	Continuous improvement required to retain appropriate level of sophistication.

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.8	Capital works delayed due to unforeseen circumstances	Programmed Capital Works not completed. Target Service Levels not met	Significant	Staff held accountable for delays & Staff trained in project management.	Moderate	Develop projects process that provides for project plans to be prepared for every approved renewal and capital development item.
6.9	Deferred renewal and maintenance not recorded or not done	Deferred maintenance not recorded causing unexpected, additional costs from asset failure	High	Record all deferred maintenance and renewals	Significant	Ensure all deferred renewals work recorded and management aware of impact on service levels if not funded.
6.10	Not all easements recorded or obtained	Council faces legal action or cannot carry out its activities because it does not have legal right to cross a property	Significant	Keep up-to-date record of easements. Establish clear policy for processes to be followed when easements are required.	Significant	Easement information needs to be improved with all identified easements provided with details of interested part. Legal situation to be clarified.
6.11	Insufficient documentation of escalating process decision making	Response to emergency situations reduced, higher expenditure	Significant	Employment of staff with the appropriate qualifications and skills	Low	
10	**Asset Risks - Stormwater**					
10.5	Insufficient overland flow paths	Flooding of houses and properties	Significant	Modelling of system will ascertain flow path requirements	Moderate	
10.6	Overland Flow Paths located on private property - no maintenance (overgrown/built upon)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.7	Overland Flow Paths Located on Councils property or roads - no maintenance (overgrown etc.)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
11	**Asset Risks - Wastewater**					
11.1	SCADA Failure	No alarm available	Significant	Back-up systems and procedures	Moderate	

6.3 Risk Management with Council

6.3.1 Business Continuity

Business Continuity is a progression of disaster recovery, aimed at allowing an organisation to continue functioning after (and ideally, during) a disaster, rather than simply being able to recover after a disaster.

It is proposed to develop Business Continuity and Emergency Management Plan (for rapid and structured response to emergency failures and significant hazards) and ensure review control process is carried out.

6.3.2 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation and forms part of the business continuity process. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture. To this end the Water AMP is quite detailed to ensure all relevant documents and information required for appropriate decision making are recorded and knowledge transfer can occur even in the absence of key staff.

6.3.3 Health and Safety

Council is responsible for providing a safe work environment for its staff and public. A Health and Safety committee meets regularly, and provides information to all council staff on their obligations in this matter. Council provides training in general and specific safety areas as required.

The Council's Utilities staff, by the nature of their work are exposed to risks outside the office environment that are associated with the utilities services (reticulation and facilities). Council provides training in general and specific safety areas as required, examples for the utilities services are:

- Confined space requirements for supervisors and engineering staff that are associated with reticulation
- Traffic control at work sites via the code of practice
- Facilities Health and safety register and associated sign in/out procedures

6.3.4 Pandemic Response – COVID 19

The 2019–20 coronavirus pandemic is ongoing at the time of writing of this Plan. The timeline of events are as follows:

Table 6.2: COVID 19 Chain of events

Date	Event	NZ Government Response	Waimate DC Response
11/02/2020	World Health Organisation declares an official pandemic		
28/02/2020	NZ first reported case		
21/03/2020		Alert Levels (1-4) announced	
23/03/2020			Temporary closure of Council facilities
24/03/2020		Move to Alert Level 3	
25/03/2020		State of Emergency declared	Refuse services continue. Recycling services cease
26/03/2020		Move to Alert Level 4	
27/03/2020			Notice f Essential Services

Date	Event	NZ Government Response	Waimate DC Response
24/04/2020			Notice of Building Control Services under Alert Level 3
27/04/2020		Move to Alert Level 3	
30/04/2020			Emergency budget response
13/05/2020		State of Emergency lifted	
14/05/2020		Move to Alert Level 2	
10/06/2020		Move to Alert Level 1	

The impacts will be wide ranging and likely include a significant and protracted recession. This presents an opportunity for Council to collaborate with Central Government to invest and progress infrastructure projects giving the economy the injection it will desperately need.

As an initial response Central Government decided to fast track eligible development and infrastructure through amendments to the Resource Management Act. This will aid in getting much-needed infrastructure programmes underway as soon as possible.

Further response includes the establishment of the Infrastructure Industry Reference Group (IIRG) to seek out infrastructure projects that are ready to start as soon as the construction industry returns to normal to reduce the economic impact of the COVID-19 pandemic. These 'shovel ready' projects include water, transport, clean energy and buildings. They would also have a public or regional benefit, create jobs and be able to get underway in short order.

There is a preference for larger projects with a value of over $10 million, which would have an immediate stimulatory effect on the construction industry, its workforce and the economy.
Smaller projects will be considered if they demonstrate a direct and immediate benefit to the regional economies and communities in which they are based.

Council has applied for Government funding for 2 shovel-ready projects, with a combined value of more than $11.4 million.

The COVID 19 pandemic created a very dynamic environment where circumstances can change on a daily basis. At the time of writing this Plan the assumption is that the Waimate district will be able to weather the storm as the districts' primary industries, agriculture and forestry, are less affected than for example tourism. The Department of Internal Affairs 'Local Government Sector COVID-19 Financial Implications Report 2 – Alert Level Scenarios, Assumptions and Updated Analysis' report projects "The agriculture sector is expected to perform relatively well in the short- and long-term".

Council will first attempt to reduce spending in ways that do not require reductions to service levels. Higher levels of reduction in spending would be more likely to require deferral of larger capital projects which may impact on Council's ability to comply with legislation and environmental standards in the 3Waters area.

Council could defer the replacement of assets for a period and potentially reduce the priority of capital expenditure so they can sustain service levels. The deferral of asset replacement may increase infrastructure resilience risks and increase long term costs.

The response to COVID 19 provided a snapshot of how quickly our environment can change and how quickly we can adapt. People working from home. The uptake of technology. Change in transportation patterns. Online sales and deliveries. Outdoor activities. Socio economic impacts and response.

6.3.5 Operation & Maintenance

In the daily operation and maintenance of the water supply system Council employ a range of risk management procedures including but not limited to:

- Prevention of contamination of treated water
  - Minimum requirements for disinfection of existing water mains and fittings during planned and reactive maintenance
  - Separate wastewater vehicle and tools
  - Best appropriate practices for staff including contractors and materials
  - Illegal connections
  - Appropriate use of backflow preventers
- Critical consumers
- Shutdowns
- Health and Safety
- Asbestos handling
- Traffic control and management
- Overflows and Clean up

Council also have the following agreements in place with local contractors in relation to Civil Defence Emergency expectations:

- Provide plant and personnel on site to enable the emergency work to be undertaken
- Advise the Engineer immediately if unable to either commission sufficient resources or undertake the emergency work
- Co-operate with the appropriate authorities i.e. Police, Civil Defence
- Carry out emergency work immediately if such work is essential to ensure the health and safety of the community or to protect the environment
- Prioritise emergency work to reduce the risk to the community and environment to acceptable levels
- Advise the Engineer immediately of any situation where the emergency is likely to continue and affect the health and safety of the community and the environment

6.3.6 Havelock North Water Inquiry

Following the widespread outbreak of gastroenteritis in Havelock North in August 2016, with more than 5,000 people falling ill, the Government launched an Inquiry into the Havelock North water supply contamination incident.

The Stage 1of the Inquiry addressed the regulatory regimes, the facts concerning the campylobacter outbreak and the question of failures by various agencies to meet required standards.

Stage 2 will look at lessons to be learned, how to prevent outbreaks in the future and changes that would improve the safety of drinking water.

A background paper prepared for the WaterNZ by Dr. Steve Hurdey and tabled with the Havelock North Inquiry identifies the following:

Recurring Themes Evident from an Analysis of International Outbreak Experience

- Complacency
- Lessons that should have been learned and widely known are too often forgotten

- Groundwater is a common source in outbreaks if mistakenly trusted as secure
- Politicians and "responsible" officials are often sceptical about possible contamination
- There is a common myth about water being pristine which reduces vigilance
- Safety does not require stricter water quality numbers – better practice is needed
- Misplaced fear of chemicals has interfered with adequate management of pathogens
- Public health monitoring is generally unable to detect small outbreaks
- Miscommunication occurs among individuals who are relied on to ensure safety
- Even high-quality systems can fail
- Chance / luck is often a factor in avoiding or driving an incident
- Investigations into the causes of an outbreak will often find multiple causes
- Blaming failures on human error generally misrepresents the underlying problems
- Preventing failure requires learning from experience
- Risk-based approaches like Water Safety Plans cannot work if identification and understanding of risk is inadequate

and lists the evidence for guiding principles applicable to New Zealand

Principle 1 - The greatest risks to consumers of drinking water are pathogenic microorganisms. Protection of water sources and treatment are of paramount importance and must never be compromised
Principle 2 - The drinking water system must have, and continuously maintain, robust multiple barriers appropriate to the level of potential contamination facing the raw water supply.
Principle 3 - Any sudden or extreme change in water quality, flow or environmental conditions (e.g. extreme rainfall or flooding) should arouse suspicion that drinking water might become contaminated.
Principle 4 - System operators must be able to respond quickly and effectively to adverse monitoring signals.
Principle 5 - System operators must maintain a personal sense of responsibility and dedication to providing consumers with safe water, and should never ignore a consumer complaint about water quality.
Principle 6 - Ensuring drinking water safety and quality requires the application of a considered risk management approach.

Council engineers note these recurring themes and guiding principles identified by the author (international environmental health science authority). It is expected that the impacts from the Inquiry will be significant and wide ranging including but not limited to the way the water service is delivered, managed, operated, maintained, monitored and reported on. Council will stay up to date with developments in this area to protect public health and safety.

6.3.7 Government Review of 3Waters Services

During 2017 the Minister for Local Government initiated a review of 3Waters services to assess whether current local government practices and the system oversight are 'fit for purpose'. This acknowledge that effective 3 Waters services are essential for communities as:

- Health and safety - depends on safe drinking water, safe disposal of waste water and effective stormwater drainage
- Prosperity - depends on adequate supply of cost effective three waters services for housing, businesses and community services
- Environment - depends on well managed extraction of drinking water, and careful disposal of waste water and stormwater

A series of events indicated there are system-wide performance challenges and supported the perception that service failure is the only indicator that service delivery is not in accordance with the expected outcomes.

On 8 July 2020 the Government announced a funding package of $761m to provide immediate post COVID 19 stimulus to local authorities to maintain and improve 3Waters infrastructure, support reform of local government water services delivery arrangements, and support the operation of Taumata Arowai.

On 27 July 2020, the Water Services Bill was introduced to Parliament. The Bill contains all of the details of the new drinking water regulatory system, and provisions relating to source water protection and Taumata Arowai's wastewater and stormwater functions.

A second, complementary Bill, the Taumata Arowai – Water Services Regulator Bill, sets out Taumata Arowai's objectives, general functions, and operating principles, and establishes Taumata Arowai as a Crown agent.

6.3.8 Te Mana o te Wai

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. Te Mana o te Wai is relevant to all freshwater management and not just to the specific aspects of freshwater management referred to in this National Policy Statement.

It provides for the three healths of Te Mana o te Wai –

- Te Hauora o te Wai (the health and well-being of the water),
- Te Hauora o te Tangata (the health and well-being of people), and
- Te Hauora o te Taiao (the health and well-being of the environment)

Te Mana o Te Wai is given effect through the National Policy Statement for Freshwater Management. Refer to Section 4.2.3.

During September 2019 the Ministry for the Environment (MfE) released the discussion document 'Action for Healthy Waterways' which highlighted the Government's objectives to:

- Stop further degradation of New Zealand freshwater resources
- Reverse past damage
- Address water allocation issues

This strengthens and upholds Te Mana o te Wai – the health and well-being of the water and signalled the direction for urban development, rural land and water management.

Add to this the regulatory changes requiring a multi-barrier approach to drinking water safety, including mandatory disinfection of water supplies, stronger obligations on water suppliers and local authorities to manage risks to sources of drinking water; and strengthened compliance, monitoring and enforcement of drinking water regulation.

6.3.9 Insurance

Background

Council has insurance cover for the Wastewater, Water, Stormwater and Solid Waste services, staff and property as detailed below. The insurance cover is updated on a regular basis following valuations to ensure the insurance cover is appropriate for its purpose.

Public Liability and Professional Indemnity

Third party cover for public liability and professional indemnity protection is provided by Risk Pool. Risk Pool is a mutual fund created by New Zealand Local Authorities to provide long term, affordable

legal and professional liability protection. Membership of Risk Pool is open to all local authorities. Contributions are levied according to each member's actual risk profile, claims experience and management of risk. The Fund is protected by reinsurance to protect its retained liability on a per claim and/or annual aggregate basis.

Other Insurance

Council's other insurance providers are:

- 'Above ground' insurance policies (Material Damage, Business Interruption, Motor Vehicle, Fidelity Guarantee, Personal Accident, Statutory Liability, Employers Liability, Employment Disputes and Airport Owners / Operators Liability, Standing Timber): Insured across a range of providers, primarily Vero and QBE, with specific insurances provided by Lumley, Ace and Primacy.
- Vero are owned by Suncorp Group, one of the largest financial and insurance operations in Australasia. Vero has a long history in New Zealand providing specialist insurance and risk management.
- QBE Insurance has been operating in New Zealand since 1890, the QBE insurance group is one of the world's top 20 general insurance and reinsurance companies..
- Lumley is a business division of IAG, Australia and New Zealand's largest general insurer. Lumley provide Council's motor vehicle insurance.
- Primacy, owned by Allianz, are a specialist crop and forestry insurer and Australia's largest provider in this field and provide Council's Standing Timber insurance.
- The insurance also provides some non-specified cover; e.g.
    - up to $2,000,000 for property in the course of construction
    - up to $250,000 for capital additions (property acquired)
    - up to $250,000 buildings non-specified
    - up to $250,000 contents (any one site) unless specified
- *'Below ground' infrastructure:* Local Authority Protection Programme (LAPP). A mutual pool created by local authorities to cater for the replacement of infrastructure following catastrophic damage by natural disaster (Civic Financial Services is the administration manager of the Fund); LAPP provides cover for 40% of relevant assets (with central government liable for the remaining 60%).
- *Personal accident cover (staff insurance)*: Ace Insurance for which cover is 24/7 worldwide with different levels of cover for 'management' and 'all other staff'.
- *Land:* is not insured.

6.3.10 Emergency Management

Background

Waimate district is subject to a wide range of natural hazards. Several significant natural events have been recorded which have caused damage to property and the environment with no one hazard being the "standard" event. The district has suffered five main events over the last 45 years:

- Snow storms: in 1967, 1992 and 2006 blanketed a large part of the Waimate district cutting road access causing power outages and stock deaths.
- High Winds: in 1975 damaged trees blocking roads and bringing down power wires.
- Floods: in 1981 and more recently have badly eroded land adjacent rivers damaging bridges and roads. Water supplies with surface water intakes were blocked with sediment. Power cuts also disrupted supply of water to consumers.

- Rural fire: As recently as last year caused disruption to power in Waimate and the surrounding rural margins.
- High Winds: in 2014 damaged trees blocking roads and bringing down power wires.

The Council has subsequently modified pumps stations to enable operation using standby generators.

Council has three generators at its disposal, and contact details for hiring generators. The generators that that belong to Council are the Civil Defence generator for the main Council building standby generation, and the other two are for and owned by the Otaio-Makikihi Rural Water Supply. These generators are mobile and can be moved around if not needed at those designated sites in and event.

Critical pipeline crossings over bridges have been strengthened or alternative pipe routes have been provided.

The impact of the Christchurch earthquake has served to further highlight the importance of adequate emergency planning.

Civil Defence and Emergency Response Plans

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups. Management systems for civil defence emergencies are detailed in the Council's CDEM plan.

A Lifelines Response Plan has been prepared for key Council utility services. The Lifelines Response Plan considers natural hazard events including earthquake, flooding, meteorological (snow/wind) and mass movement (land slip), and also takes account of fire and civil disruption events.

The principle objectives of the Lifelines Response Plan are to:

- Possess a management tool that identifies natural hazards for the individual utilities.
- Identify the consequences of the natural hazards.
- Identify immediate remedial actions.
- Define restoration levels, priorities and issues.
- Identify long term risk management issues.
- Ensure that Emergency Management knowledge is retained within Council.

The Lifelines Response Plan details the hazards, possible cascading effects and the interventions that may be applicable. It does not consider the effect on any individual community as these will change with the extent of the hazard i.e. the depth and extent of snow and the extent and makeup of that utility i.e. if the water scheme has a standby generator.

Disaster Resilience Summary Report

In 2006 the Council commissioned the Disaster Resilience Summary Report. The DRS is designed to: -

- Create an understanding of the Utilities Lifeline services and operation.
- Provide a clear summary of facts to assist CDEM undertake their role.
- Provide each Utility with a simple method for providing the only information that is required by the CDEM Groups.
- Increase CDEM Group knowledge of each Utility's organisation and operations in order to significantly increase the efficiency of future CDEM/Utility contact

The hazards have were identified that might affect the networks were:
Snow, earthquake, floods (after most floods there is a re-think of how the planning and network is managed), river change/management, rain, wind (trees falling across roads), electricity failure, networks weakness, tsunami, telecommunications and Pandemic planning.

Items requiring further works in progress include:

- Hazardous substance spill
- Fire
- Dam failure
- Drought/climate change
- Fuel supply failure
- Tsunami

6.3.11 Infrastructure Resilience

Recent high profile natural disasters have raised public awareness, but there is still a significant need to increase actual preparedness – both in general (e.g. household plans and emergency supplies) and for specific circumstances (e.g. tsunami preparedness in coastal communities).
However, resilience is not only applicable to natural hazards, but also needs consideration at an operational level where an asset failure is not necessarily a service failure.
Redundancy (duplication) does not provide Resilience. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system. Resilience is about the ability to plan and prepare for adverse events, the ability to absorb the impact and recover quickly, and the ability as a community to adapt to a new environment.
Council acknowledge that resilience is not only about physical assets. It is about the people. It includes but are not limited to:

- connecting people and communities (neighbour to neighbour; educate; access to household resilience items, etc.);
- supporting community organisations
- the built environment and asset systems which are robust

Adverse events/natural disasters/climate change and the related impacts cannot be avoided and as a result Council have to factor this into long term planning, civil defence planning and determining the infrastructure requirements moving forward to ensure the community's expectations are met with regard to safe and reliable services and general wellbeing.
In order to improve resilience Council approach will be to:

- Actively participate in CDEM planning and activities, at both regional and local levels
- Investigate options for alternative service provision and system redundancy
- Promote design and construction standards (where cost effective) that ensure infrastructure is able to withstand natural hazards and long term changes in circumstances such as those resulting from climate change
- Identify critical assets and ensure mitigation methods are developed
- Obtain insurance where this is deemed to be the most cost effective approach
- Invest in business continuity succession planning and training

Council will take guidance from 100Resilient Cities website http://www.100resilientcities.org/. This includes the strategies of Greater Christchurch and Wellington.

6.3.12 Project AF8

Project AF8 is a cutting edge risk scenario-based earthquake response planning project, informed by thorough earthquake source, expression, and consequences science. The focus of the project is New Zealand's South Island Alpine Fault. Project AF8 commenced in July 2016, with funding from

the Ministry of Civil Defence & Emergency Management's Resilience Fund, and is managed by Emergency Management Southland on behalf of all South Island CDEM Groups.



Project AF8 has been initiated to introduce outline planning for response actions, resources, and overall coordination within and between CDEM Groups across the South Island.

The South Island Alpine Fault Earthquake Response (SAFER) Framework provides a concept of coordination of response and priority setting across all six South Island Civil Defence Emergency Management (CDEM) Groups and their partner organisations in the first seven days of response. It is not intended to replace existing plans within agencies but to provide a coordinated picture of response across the South Island.

The SAFER framework includes:

- Scenarios
- Response assumptions
- Secondary and compounding risks such as:
  - Aftershocks
  - Ongoing structural failure
  - Cascading landscape effects
  - Tsunami
  - Severe weather
  - Communicable human diseases
  - Impacts on response operations
- Consolidated response framework

Council will keep a keen eye on the response actions and resources from the AF8 project and work with CDEM Groups.

6.3.13 Climate Change

It is now generally accepted worldwide that human activities have accelerated climate change, and that further future climate change is unavoidable. The effects of climate change include both effects on our climate (such as temperature increases or flooding), and a wide range of secondary effects (such as damage to strategic infrastructure). The following details climate change projections for the Canterbury region.

The National Climate Change Risk Assessment (MfE August 2020) identifies 43 priority risks across five value domains (natural environment, human, economy, built environment and governance) and highlights 10 risks considered to be the most significant. This MfE report highlights, among others, the following two domains (particularly applicable to Council infrastructure) as extreme risks:

Domain	Risk	Consequence
Economy	Risks to governments from economic costs associated with lost productivity, disaster relief expenditure and unfunded contingent liabilities due to extreme events and ongoing, gradual changes.	Extreme
Built environment	Risk to potable water supplies (availability and quality) due to changes in rainfall, temperature, drought, extreme weather events and ongoing sea-level rise.	Extreme
	Risks to buildings due to extreme weather events, drought, increased fire weather and ongoing sea-level rise.	

Waimate District is expected to experience two of the main impacts of climate change – sea level rise and more extreme weather patterns.

Sea level rise is considered the lesser of the influences as much of our coastline is elevated above MSL. Modelling of associated inundation, as a result of tsunami, is known to affect very few council controlled assets.

What is understood is that climate change associated risks will increase in time.

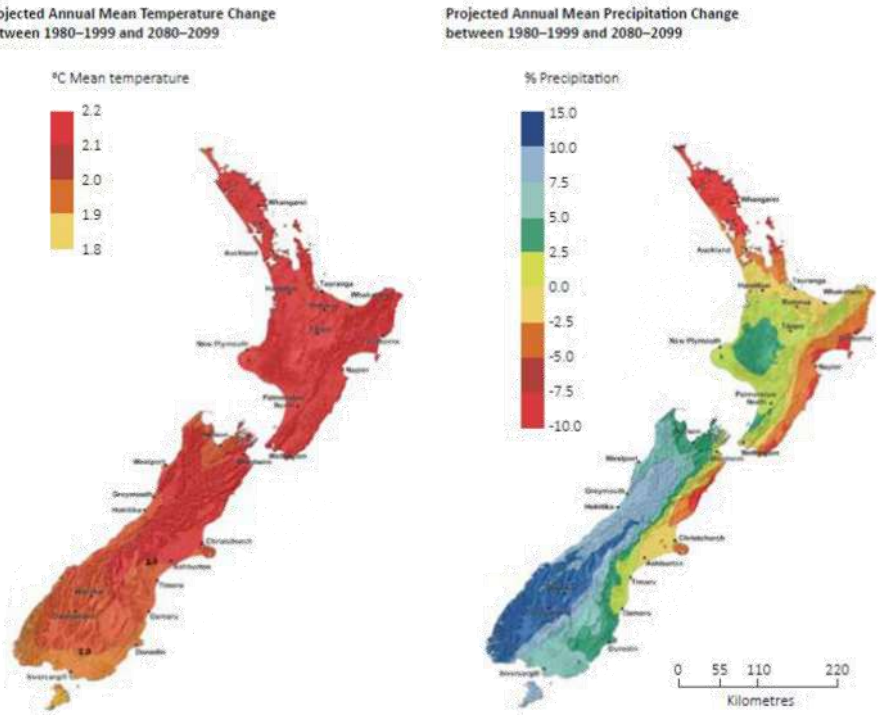
Waimate mayor Craig Rowley said climate change was a priority.

"As far as doing the work on something, we always take it into account looking at the of risk of climate change."

Rowley said it was a hectic time of the year with budgeting and planning, but climate change was something we certainly do recognise" (Timaru Herald 13/9/2017)

Council recognised the roles of Local Government, NZ, the Ministry of Primary Industries, and the Ministry for the Environment and the Royal; Society of NZ in researching and guiding a pragmatic response.

Figure 7: Average changes in annual mean temperature (left, degrees Celsius) and precipitation (right, percent) during 2080–2099 compared to 1980–1999, for a climate change scenario midway between low- and high-carbon futures.



Source: Climate change: implications for New Zealand (Royal Society of New Zealand, April 2016)

The local government position statement on climate change (2017) states

Climate change actions have three components:

1. actions to reduce emissions (mitigation);

2. planning and actions at the national and local level to support public safety and effective adaptation; and

3. limiting or removing pressure on systems affected by climate change.

All local authorities (city, regional, district and unitary) are at the frontline of climate change adaptation and have a role to play in mitigation.

The role of Council is key in delivering the outcomes sought by the community. Key drivers to support and manage the challenges are the National Climate Risk Assessment for New Zealand (Ministry for the Environment, 2020) and the Climate Change Projections for the Canterbury Region (NIWA, 2020).

Projections for Canterbury

Climate Change Projections for the Canterbury Region have considered the following scenarios, which take into account either cutting greenhouse gas emissions over time from 2019 levels – or not curbing emissions during the life of this Infrastructure Strategy.

Average Temperatures

- Increase with time and greenhouse gas concentrations.
- By 2040, annual mean temperature up 0.5 to 1.5°C.
- By 2090, up 0.5 to 2°C (if we cut emissions) or up 1.5 to 3.5°C (if we don't).

Maximum Daytime Temperatures

- By 2040, annual mean maximum temperature up 0.5 to 2°C.
- By 2090, up 1 to 3°C (if we cut emissions) and up 2 to 5°C (if we don't).
- By 2090, western Canterbury's alpine and sub-alpine areas could be 5 to 6°C warmer in spring and summer (if we don't).

Maximum Night-time Temperatures

- By 2040, annual mean minimum temperature up zero to 1°C.
- By 2090, up 0.5 to 1.5°C (if we cut emissions) and up 1 to 2.5°C (if we don't).
- The difference between a day's high and low increases with time and greenhouse gas concentrations.

Hot Days (25°C or more)

- By 2090, expect 20 to 60 more hot days in most of Canterbury (if we don't cut emissions).
- Inland areas feel it the most, particularly the southern Mackenzie Basin, which could have 60 to 85 more hot days.
- Most of these hot days would happen in summer.
- Our warmer season could get longer in relatively low-elevation areas, with 5 to 10 more hot days in autumn and spring.
- Increased fire risks.

Cold Days (Frosts)

- Expect fewer frost days throughout the region.
- Inland areas and higher elevations warm the most, with 10 to 30 fewer annual frost days by 2040, and 20 to 50 fewer by 2090.
- The frost season (the time between a year's first and last frost) will likely get shorter.

Rainfall

There is likely to be increased rainfall depth and intensity associated with climate change. In addition, the heat that comes from the condensation of this increased moisture will make storms more intense. These extreme events may exacerbate flooding risks for Waimate District.

- Most of the region can expect small changes in annual rainfall, up or down 5%.
- By 2040, autumn might be dryer in the Mackenzie Basin, with up to 10% less rain.
- By 2090, winters could be wetter in many eastern, western and southern parts of the region, with 15 to 40% more rain.
- By 2090, Banks Peninsula and many inland areas might get 5 to 15% less rain (if we don't cut emissions).

Snow

- Expect fewer snow days everywhere, especially in the mountains.

Drought

The modelling indicates that by the 2080s, there will be a significant increase in the average water deficit across Canterbury, with increases of between 2 weeks and over 6 weeks of pasture deficit as an average climate condition. By the 2030s, current drought events that are so severe that they only occur in 1 out of 20 years are projected to occur more frequently. Increased fire risks.

Windspeed

- Annual mean wind speeds up slightly, by nil to 5%.
- By 2090, winter and spring could be windier (up 5 to15%, if we don't cut emissions).
- That seasonal change might be more keenly felt in inland areas north and west of Rangiora (up 15 to 25%).
- Increased fire risks.

Sea Level Rise

Climate Change Projections for the Canterbury Region have identified worsening impacts over time at a regional and national level:

- Sea level rise projections for Canterbury are the same as for New Zealand.
- Up by 0.4m in the next 50 years and up 0.6 to 0.7m in 100 years (if we cut emissions).
- Up 0.5m in 50 years and up 1.2 metres in 100 years (if we don't).
- High tides get higher. At 0.65 metres of sea level rise, every high tide is above the spring tide mark (compared to 10% now).



Source: www.wetlandtrust.org.nz



Source: Stuff 24 July 2017

Climate Change Effects

The major effects that may impact on the Council's Infrastructure activities are set out below, along with potential mitigation options and an analysis of when the effects may occur. It should be noted that further work is required to understand how these effects will impact the Waimate District, but the collection and monitoring of data will be used to inform a more robust climate change response.

Dust from Unsealed Roads: Hotter temperatures and associated drought conditions could have detrimental effects in terms of increased dust from unsealed roads. This may mean that in future areas of unsealed roads need to be sealed, particularly close to residential properties. Council currently allows for $50k to part fund "dust seals" via policy. Road classifications and traffic volumes on our low use roads dictate the overall level of service. Individuals are able, with part funding by Council, to increase the level of service adjacent to their property to mitigate adverse effects associated with dust.

Council will continually monitor demand for this service and provide increased funding as required.

Hotter temperatures potentially have an impact on the timing of both grading and metalling activities which will need to be monitored over time.

In the shorter term this approach is considered appropriate but as the effects of drought conditions become more prevalent, Council may need to consider a revision of the level of service relating to unsealed rural roads which, in turn, will adversely affect funding requirements (increased).

- Likelihood - Possible (25 – 50%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Changes in Demand: An overall decrease in the mean rainfall for the district could impact on land use and in turn change demand on certain areas of the Council's infrastructure networks. More intense rainfall events have the ability to damage crops and this may manifest in changing farming practices. These changes in farming practices could result in changing traffic volumes for particular areas, changes in demand from our water networks, and requirements for higher levels of service to mitigate the risks associated with nuisance flooding, to name the major impacts.

Council will need to monitor and understand these requirements to inform future work programmes. This is achieved through regular traffic counts, up-to-date hydraulic modelling of our water schemes and optimised renewal of drainage assets.

Council is mindful that changes in demand with manifest as changes to LoS, geographic demand and overall demand. In order to cater for this, underlying data is important to plan appropriate renewals in the future.

Council is also installing water metering within the urban water network as a means to manage demand, manage water losses and to increase the availability of potable water.

- Likelihood - Likely (50 – 70%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Drainage Capacity: Extreme rainfall events in a generally dry region may cause surface flooding affects due to poor capacity of drainage assets. The cost of upgrading drainage assets for these extreme events is likely to be prohibitive for Council. Whilst, as a district, council is unable to build infrastructure to deal with these extreme flows and volumes, it is able to define the levels of service (20% and 2% annual exceedance probability) and therefore the level of protection that ratepayers and users can expect.

Mitigation of events outside of these parameters are dealt with through the protection and definition of overland flow paths, defined areas for detention and improved stormwater management practices. These practices (in an urban sense) are defined in Waimate District Councils draft Stormwater Management Plan which is an underpinning document for the global consent that is currently being sought through Environment Canterbury Regional Council. For example, Council defines on-site management of stormwater as the preferred solution up to a 1 in 50 year event. The defined 1 in 50 year design event takes in to account climate change factors defined by NIWA.

Extreme rainfall events have a detrimental impact on councils wastewater network where inflow of stormwater presents several challenges in terms of conveyance capacity and surcharging of manholes. In 2021, council is undertaking an inflow investigation to identify which areas are affected and formulating appropriate responses to mitigate the effects. Left unchecked, climate change impacts would adversely affect this activity. When addressed, this will lead to increased levels of service, allow for future growth by increasing available capacity and reduced compliance risks.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Design, planning, and policy

Increased Flood Damage Repair Work: Extreme rainfall events in a generally dry region may cause surface flooding affects and in turn increase requirements for flood damage repair works. Consideration will need to be given to design and location aspects for Council's assets to reduce the risk of damage or loss of service due to extreme weather events. There is no provision (currently) to fund these repairs and they are typically funded via existing budgets and often with co-funding from Waka Kotahi.

Council is continually monitoring the financial effects associated with flood events (and the diversion of existing budgets) and has considered (in the past) developing a "flood event" fund. This monitoring will continue with intervention likely if existing programmed work begins to be adversely affected. Potentially this issue will need to be consulted on as increased costs will result in increased rate requirement. Resultantly the community will receive a higher level of service than currently experienced.

Furthermore, storm events can impact on raw water quality from streams and bores used for water supply. This presents challenges associated with the provision of potable water in terms of reliability, treatability and therefore compliance with the Drinking Water Standards for New Zealand

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Monitor and adapt funding if required

Water availability for Construction: Increasing demand for water is currently an important issue for Canterbury. This increased demand is likely to become increasingly critical in a future characterised by drier average conditions, and an associated increase in both drought frequency and intensity. This may mean, as an example, that it will be more difficult to obtain the required water to complete construction works.

Updating of hydraulic models for the council water supplies allows for optimised future renewals that address the location of demand within the schemes (up or down). They also allow Council to plan for growth and increased demand as a result of changes to legislation e.g. the Water Services Bill and its potential impact on water suppliers outside of the current reform programme.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2025 onwards
- Mitigation - Monitor and adapt future programmes as required (LoS, additional demand, changing demand)

6.4 Water Safety Plans

6.4.1 Legislation

The current Health (Drinking Water) Amendment Act 2007 requires drinking water suppliers to prepare and implement a Water Safety Plan (WSP)[1] for any water supply serving more than 500 people. For supplies serving less than 500 people WSPs may be prepared and used as an alternative means of compliance with DWSNZ 2005 (amended 2018). These WSPs must be submitted for approval by a Drinking Water Assessor, and reviewed and resubmitted for approval every five years thereafter.

6.4.2 WSP Programme

The latest WSPs are all approved by the current Drinking Water Assessment Unit.

These have and will result in a number of issues that required being resolved as follows:

- Water quality – upgrading or new treatment requirements.
- A number of minor management and operational areas that required modification or additional process.

The PHRMP and WSP process has identified a number of risks and shortcomings to public health for the rural water schemes and these are indicated in the following tables.

[1] Previously known as Public Health Risk Management Plans (PHRMPs)

Table 6.3: Rural Water Schemes Primary Shortcoming

Scheme	Primary Shortcoming
Cannington-Motukaika	Lack of an effective protozoa barrier, which precludes compliance with DWSNZ 2005 (revised 2018) and compromises the safety of the supply
Hook Waituna	Lack of an effective protozoa barrier, which precludes compliance with DWSNZ:2005 (revised 2018) and compromises the safety of the supply
Lower Waihao	Poorly protected source water catchment and the lack of an effective protozoa barrier. These precludes compliance with DWSNZ:2005 (revised 2018) and compromises the safety of the supply
Otaio Makikihi	Reliance on "Secure Bore" status
Waihaorunga	Lack of an effective protozoa barrier, which precludes compliance with DWSNZ 2005 (revised 2018) and compromises the safety of the supply
Waikakahi	Lack of an effective protozoa barrier, which precludes compliance with DWSNZ 2005 (revised 2018) and compromises the safety of the supply

The resolution of these primary shortcomings is shown in Table 6.4 below.

Table 6.4: WSP - Major Projects and Capital Works

Risk Level	Water Supply Area	Details of Proposed Works	Expected Cost	Intended date of Completion
Cannington-Motukaika				
Extreme	Source, Treatment	Upgrade Cannington-Motukaika Plant to comply with DWSNZ 2005 (revised 2018) • Maintain the existing source site's weir and roughing filter. • Upgrade treatment plant site to Log 4 treatment. o Selective abstraction based on turbidity. o Pre-treatment with an invalidated membrane o 1µm Filter. o UV reactor o Disinfection – Sodium hypochlorite o Increase post treatment storage o Install telemetry for data acquisition and control (SCADA)	$700,000	2020/21
Hook-Waituna				
Extreme	Treatment	Stage 2 Upgrade - Add a pre-treatments separation process to the new Hook Waituna Treatment Plant to aid the removal of the submicron particulate from the source raw water to achieve log 4 treatment and DWSNZ 2005 (revised 2018) compliance. o Pre-settling balance tank. o Course self-cleaning screen (50 -100 micron) o Pre-treatment with an un-validated membrane	$673,333	2021/22
Lower Waihao				
Extreme	Source, Treatment	Upgrade Lower Waihao Plant to comply with DWSNZ 2005 (revised 2018) • Upgrade treatment plant site to Log 5 treatment. o Selective abstraction based on turbidity. o Pre-treatment with an invalidated membrane o 1µm Filter. o UV reactor o Disinfection – Gas Chlorine	$797,000	2021/22

Risk Level	Water Supply Area	Details of Proposed Works	Expected Cost	Intended date of Completion
Waihaorunga				
Extreme	Treatment	Upgrade Waihaorunga Main and Tavendales Plants to comply with DWSNZ 2005 (revised 2018) • Upgrade Waihaorunga Main Treatment Plant site to Log 4 treatment. o Selective abstraction based on turbidity. o Pre-treatment with an invalidated membrane o 1µm Filter. o UV reactor o Disinfection – Sodium hypochlorite o Install telemetry for data acquisition and control (SCADA) • Connect Tavendale Intake Gallery to new Waihaorunga Main Treatment Plant, then boost treated water back to Tavendale booster.	$526,500	2020/21
Waikakahi				
Extreme	Source, Treatment, Distribution	Upgrade Waikakahi Intake and Plant to comply with DWSNZ 2005 (revised 2018) • Find a new raw water source – *A more suitable source with less influence from surrounding environment and contaminates* : o Shallow bore or gallery/bank-filtration close to the Waitaki River or irrigation scheme intakes. o **Or**, Source raw water from irrigation scheme direct (Waitaki River water) • Upgrade treatment plant at new site to Log 4 treatment. o Add selective abstraction based on turbidity. o Pre-treatment with an invalidated membrane o 1µm Filter. o UV reactor o Disinfection – Chlorine gas o Continue using telemetry for data acquisition and control (SCADA) • New rising main to Waikakahi reservoir	$1,439,000	2021/22

WSP Review and Reporting

Reviewing and reporting on the WSPs require the following:

- Review of the performance of the WSPs and adjustments to the WSPs will be undertaken annually.
- Report on the performance of the WSPs, including information of the review of the WSPs will be included in Council's Annual Plan Report each year.

6.4.3 New Zealand Drinking Water Compliance Upgrades

The costs associated with the compliance with the DWSNZ 2005 (revised 2018) are detailed below.

Table 6.5: DWSNZ Compliance Upgrades

Supply	Cost	Year
Hook Waituna	$673,333	2021/22
Lower Waihao	$797,000	2021/22
Waikakahi	$1,439,000	2021/22

6.5 Significant Negative Effects

Table 6.6 below identifies the negative effects for the Waimate Community that the Water Activity may have on the social, economic, environmental or cultural well-being of the community. It indicates how the existing approach or proposed action to address these in the future. There are no significant negative effects shown to occur for the Water Service.

Table 6.6: Negative Effects – Water Activity

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Water Treatment Plants							
Discharge of treated backwash water to rivers	⇔	⇧	Minor	Mod	Mod	Minor	Maintain current consents for all WTP discharges Upgrade treatment plants to ensure ongoing compliance with resource consents
Disposal of Backwash solids to land	⇔	⇧	Minor	Minor	Mod	Minor	Solids dried then disposed of to landfill
Discharge of odour	⇔	⇩	Nil	Nil	Nil	Nil	High degree of odour control
Pump Stations							
Noise	⇔	⇔	Minor	Nil	Minor	Nil	All pumps reside in buildings with appropriate sound proofing
Reticulation							
Overflows	⇔	⇔	Mod	Minor	Minor	Minor	Result from mains breaks, these are infrequent and provided renewal programme is maintained effects will be minor other than disruption to consumers

Effect	Status of Effect		Impact on Well-Being (existing situation)				Existing Approach or Proposed Action to Address
	Existing	Potential	Social	Economic	Environmental	Cultural	
Reservoirs							
Overflows	⇔	⇔	minor	minor	Mod	minor	Overfilling can result in discharge of treated water to the stormwater system. Shut off valves, pressure sensors and alarm systems are in place to prevent this
Water Takes							
Competition	⇔	⇧	Mod	Mod	Mod	Mod	The allocation of water is becoming an issue with competing needs for a finite resource Council is controlled through its resource consents but are developing Water Management Plan
Increased Demand	⇔	⇧	Mod	Mod	Mod	Mod	With planned growth so will the requirement for additional water. The combination of water reduction strategies, securing future water sources and monitoring demand will mitigate effects. This has the potential to become a significant negative effect if significant growth occurs

⇧ Increasing ⇔ Remaining the same ⇩ Decreasing

6.6 Capital Programme Delivery

Council has an ambitious capital programme driven by a number of factors:

- Continuation of the active renewal programmes;
- Capital works required to meet the current Drinking Water Standards for New Zealand (DWSNZ)under the existing legislative framework;
- Future capital works associated with compliance through the proposed Water Services Act; and
- Capital works associated with the Department of Internal Affairs stimulus funding.

Particular pressure is exerted in year one of the 2021-31 Long Term Plan (Figures 8.1 – 8.4). In order to mitigate risks associated with programme delivery, Council has implemented a number of tactical responses:

i. A Project Manager and support staff (1.5 FTE) have been engaged to ensure that proposed stimulus funded projects (total $3.68M) are completed by 31 March 2022.
ii. The Project Manager is also assisting with timely delivery of proposed LTP projects through procurement assistance.
iii. All capital works have been programmed for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Where possible the programme has been modified to ensure successful and cost effective procurement can be realised.
iv. Council is aware that, given the effects of Covid 19, that material supply was likely to be impacted. Resultantly, Council addressed this issue by sourcing materials early and maintaining stock levels that can be drawn down on when projects commence. Sourcing

materials early has also mitigated, to some extent, elevated pricing as raw materials become more scarce.

v. Procurement is now completed through the Government Electronic Tenders System (GETS). This affords the ability to notify the wider contracting / consulting market of upcoming projects and will undoubtedly maximise submissions received once projects are tendered.

vi. Nearly $2.5M of projects budgeted for 2021/22 are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. This maximises available construction time to achieve completion of the proposed capital programme.

The Waimate district is fortunate to have significant contracting resource located within the boundaries and at varying scale. In fact, one of the largest contractors in the South Island has its head office located within the Waimate town. Further afield, council is able to draw on further resource located to the North in Timaru and to the South in Oamaru.
As with any capital programme risks will always remain, even if mitigation has been employed. Known risks include:

- Dependent projects – Some proposed capital works are dependent on either technical investigations or other capital works. Delays in the latter could impact deliverability.
- Material Sourcing – Whilst proactive in sourcing materials, the risk associated with slow supply chains remain. There is also a risk associated with elevated pricing that could modify the scope of some projects.
- Compliance risks – A number of water supply compliance projects have been budgeted (2020/21 and 2021/22) to meet compliance requirements as defined in the current DWSNZ. Council is aware that enactment of the Water Services Act is highly likely to offer alternative means of treatment for some of these water schemes and anticipates, under this scenario, that the redefined capital works projects are likely to be more cost effective in the longer term. Timing associated with the "new standards" is restrictive in terms of construction. However, council is confident that these changes will occur and has selected to begin construction of the common requirements (pre and post Water Services Act) as Stage 1 to mitigate the potential loss of time.
- Delay in increased levels of service associated with the upgrade of individual water schemes for compliance with the DWSNZ. Whilst it is unlikely that the level of service will reduce, the current LoS will be extended until upgrades are commissioned.

7.0 LIFECYCLE MANAGEMENT PLAN

This section applies the specific work programmes required to achieve the goals and standards outlined in Section 3 to Section 6. It presents the lifecycle management plan for the Water Services assets, and includes:

- *Detailed management, operations, maintenance, renewal and development strategies*
- *Work programmes and associated financial forecasts*

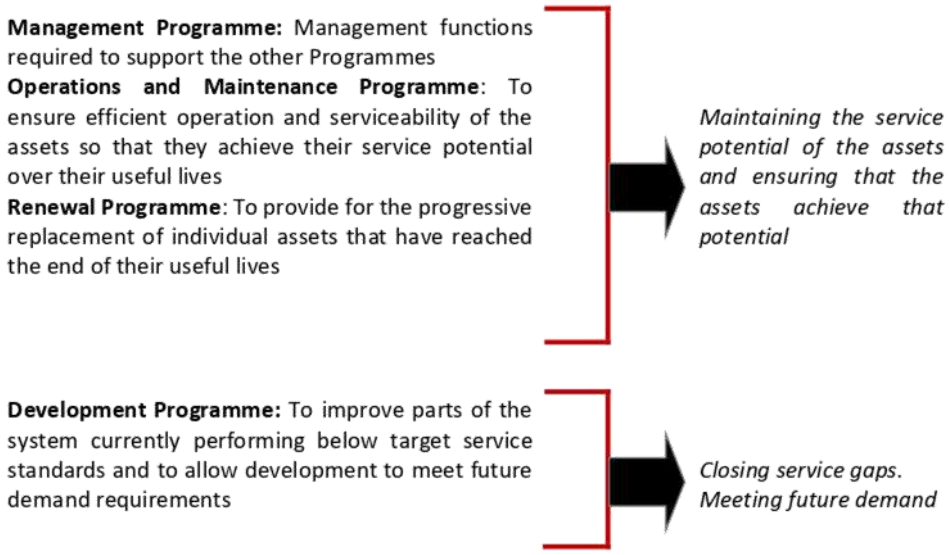
7.1 Asset Lifecycle

Assets have a life cycle as they move through from the initial concept to the final disposal. Depending on the type of asset, its lifecycle may vary from 10 years to over 100 years. Key stages in the asset life cycle are:

- Asset planning - when the new asset is designed. Decisions made at this time influence the cost of operating and maintaining the asset, and the lifespan of the asset. Alternative, non-asset solutions, should also be considered at this time.
- Asset creation or acquisition - when the asset is purchased, constructed or vested in Council. Capital cost, design and construction standards, commissioning the asset, and guarantees by suppliers influence the cost of operating the asset and the lifespan of the asset.
- Asset operations and maintenance - when the asset is operated and maintained. Operation relates to a number of elements including efficiency, power costs and throughput. This is usually more applicable to mechanical plant rather than static assets such as pipes. Maintenance relates to preventative maintenance where minor work is carried out to prevent more expensive work in the future, and reactive maintenance where a failure is fixed.
- Asset condition and performance monitoring - when the asset is examined and checked to establish the remaining life of the asset, what corrective action is required including maintenance, rehabilitation or renewal and within what timescale.
- Asset rehabilitation and renewal - when the asset is restored or replaced to ensure that the required Level of Service can be delivered.
- Asset disposal and rearrangement - When a failed or redundant asset is sold off, put to another use, or abandoned.

7.2 Lifecycle Management - An Overview

The Lifecycle Management Programmes cover the four key categories of work necessary to achieve the required outcomes from the Water Services activity. These programmes are:



The Operations & Maintenance and Renewal Programmes are focused on maintaining the current service potential of assets, and are primarily driven by the condition of assets although asset performance is often an indicator of asset condition.

7.3 Management Programme

7.3.1 Introduction

Management and monitoring strategies set out the activities required to support the maintenance, operations cyclic renewal and asset development programmes. These activities include:

- Strategic Planning
- Data Management and Evaluation
- Business Processes
- Monitoring
- Financial Management

Strategic planning and a focus on meeting the needs of water scheme consumers drives the design of management processes which in turn are reflected in the level of performance that is achieved. Collection of data necessary to manage the water schemes effectively and processes for the analysis and interpretation of this data support all management activities.

7.3.2 Management Strategies

Table 7.1 sets out the management strategies.

Table 7.1: Management Strategies

Strategy	Objective/ Description
Strategic Planning	
Human Resources	Developing the professional skills of the staff through adequate training and experience Personal Development Plans will be agreed with staff each year and a register maintained to record training history. Staff are encouraged to belong to appropriate professional bodies and to attend appropriate conferences, seminars and training courses.

Strategy	Objective/ Description
Strategic Alignment	This AMP will support the achievement of relevant Community Outcomes for Waimate District. Community Outcomes for Waimate District are set out in the LTP. The intended contribution of the Council water schemes to the achievement of Community Outcomes is clearly set out in this AMP.
Service Levels	Clear statement of Water Services provided and standards to be achieved as a basis for future consultation with the Community. In the first instance customer service standards have been developed as part of a wider performance management framework for the Water Services activity. This performance management framework incorporates: – Customer Service Standards – Standards for the Water Services from the end users perspective. – Activity Service Standards – Key high level standards which reflect the Waimate District Community Outcomes and which enable the overall performance of the Water Services activity to be monitored. – Technical Standards – More detailed standards that can be used by Waimate District Council to monitor the performance of aspects the Water Services activity on an "as required" basis.
Sustainable Management	Ensure all planning for the management, operation, maintenance, renewal and development of the water schemes is compatible with sustainable management principles. Council will pursue ways of limiting the use of natural resources including energy, valued landscapes (and other natural heritage) and adverse effects on waterways. This will involve auditing the systems and materials used, and developing ways to incorporate sustainable operation and development principles into its activities. For example, auditing power usage in pump stations, and using non-asset based solutions where possible.
Data Management and Evaluation	
Asset Management Systems	Optimise the application of Asset Management Systems over the short to medium term and develop functionality in line with business needs. Staff changes resulted in the neglect of this area. There is a significant portion of data held in the asset register in relation to private assets. Refinement of asset data requirements will occur as staff identify management applications for data and refine reporting capacity. WDC will review the adequacy of the systems for future asset management purposes and proactively introduce enhanced system functionality as justified by business needs to support a high standard of decision-making.
Network Modelling	Hydraulic network models exist. These models are operated by external consultants and are based in the InfoWorks modelling software. Computer models of the water scheme pipe network and utilities enables Council to: – Determine accurately the existing capacity of the system. – Identify inadequate sections of the system. – Operate the system in the most efficient manner. – Determine the impact of further development on the system. – Identify system upgrading requirements. – Compare options for upgrading the water schemes.

Strategy	Objective/ Description
Data Collection	Data collection programmes (condition, performance, asset registers) closely aligned with business needs will be implemented in accordance with documented quality processes Data collection, maintenance and analysis is expensive and it is important that programmes and techniques are cost effective and consistent with business needs. Systematic processes will be further developed for the collection and upgrading of essential/critical data including: – Asset attribute information – Asset performance data – Asset condition data Staff changes have impacted on the AssetFinda/GIS data acquisition, capturing, trending and analysis. This will increase as new assets are acquired through water treatment plant upgrades and will require improvement and refinement. Going forward Council will align its data collection and recording with the Metadata Standards
GIS Data Quality Assurance	GIS data will be the subject of defined quality assurance processes. Council will introduce quality processes intended to: ensure that all future data entered to the GIS system meets defined quality standards.
Business Processes	
AMP Updates	This AMP remains a strategic 'living' document and will be updated annually and reviewed at three yearly intervals or more frequently as necessary to incorporate significant improvements to asset management practices (as proposed in the improvement plan). The scope of the review will be influenced by changes in Community Outcomes for Waimate District, service standards, improved knowledge of assets, introduction of Asset Management improvements and corporate strategy/ policy and process.
Risk Management	Risk Management is an essential part of Asset Management. Water Services activity risks will be managed by developing a Risk Management Plan for the Water Services activity and the implementation of risk mitigation measures to maintain risk exposure at acceptable levels. Risk mitigation measures will include maintaining appropriate insurance cover, emergency response planning, condition monitoring of critical assets, preventative maintenance, use of telemetry, review and updating of WSPs and operations manuals, review of standards and physical works programmes.
Infrastructure asset valuation	Continue to perform valuations in a manner that is consistent with national guidelines and Council corporate policy. Asset valuations are the basis for several key asset management processes including asset renewal modelling and financial risk assessments. Valuations of the water schemes will be carried out based on data from the GIS and AMS systems to ensure auditability and alignment with other processes.
Statutory Compliance	Implement quality plans that identify legal obligations and processes adopted to achieve statutory compliance. Section 4.3 of this AMP sets out the legislative environment for the Water Services activity.
Quality Assurance	Document, review and implement quality processes for all key business activities in accordance with standard practices. Quality processes will cover activities such as reporting, data collection and management, contract monitoring, risk management, economic analysis, performance monitoring, strategic planning, customer contact, asset valuation, asset operation, work specification, etc.
Monitoring	
Asset Performance	Council will continue to monitor the performance of the water schemes assets as an input to asset renewal and asset development programmes. This monitoring includes: – Customer service requests – Asset failure records – Asset Maintenance records – Compliance with Resource Consents – Water Treatment Plant effluent quality – Critical asset audits

Strategy	Objective/ Description
Financial Management	
Budgeting	Prepare all expenditure programmes for the Water Services activity in accordance with Council funding and budget preparation policies and procedures. The different categories of expenditure within the financial programmes will be identified to enable the funding to be allocated in accordance with the Council's policies.
Financial management	Manage the Water Services activity budget in accordance with statutes and corporate policy. This will involve: – Economic appraisal of all capital expenditure – Annual review of AMP financial programmes – Recording of significant deferred maintenance and asset renewals – Continuous monitoring of expenditure against budget
Sustainable Funding	Ensure the water schemes are managed in a financially sustainable manner over the long term. The financial requirements for the provision of the Water Services sustainably and to acceptable standards over the long term will be identified and provided for in draft budgets. These requirements include: – Management of the Water Services – Operation and maintenance of the water schemes – Asset replacement – Asset development to ensure that the ability of the water schemes to deliver an acceptable Level of Service is not significantly degraded by growth in Waimate District

7.3.3 Management Standards

Council's Water Services are managed in accordance with the following standards:

- Generally accepted accounting practice (GAAP) and more specifically with FRS-3 "Accounting for Property, Plant and Equipment" (to be superseded by NZ IAS 16).
- The International Asset Management Manual.
- Resource Consent Conditions for the Waimate District Water Supply Activity.
- The Council's Health and Safety Plan.
- Council's Quality Assurance Documents.
- Operations Manuals.
- DWSNZ 2005 (revised 2018).

7.4 Operations and Maintenance Plan

7.4.1 Introduction

Operations and Maintenance strategies set out how the water schemes will be operated and maintained on a day-to-day basis to consistently achieve the optimum use of assets. Operations and Maintenance activities fall into the following categories, each having distinct objectives and triggering mechanisms:

Operations - Activities designed to ensure efficient utilisation of the assets, and therefore that the assets achieve their service potential. Operational strategies cover activities such as energy usage, control of mechanical and electrical plant, inspections and service management.

Maintenance - Maintenance strategies are designed to enable existing assets to operate to their service potential over their useful life. This is necessary to meet service standards, achieve target standards and prevent premature asset failure or deterioration. There are three types of maintenance:

- **Programmed maintenance** - A base level of maintenance carried out to a predetermined schedule. Its objective is to maintain the service potential of the asset system.

- **Condition maintenance (Proactive)** - Maintenance actioned as a result of condition or performance evaluations of components of the water scheme. Its objective is to avoid primary system failure.
- **Response maintenance (Reactive)** - Maintenance carried out in response to reported problems or system defects. Its objective is to maintain day-to-day Levels of Service.

7.4.2 Method of Delivery

The operation and maintenance of Council's Water schemes are carried out using a combination of Council staff and external contractors. Council staff generally carries out operational activities and maintenance of a routine nature with external contractors being used for specialist activities such as electrical work, laboratory testing and major overhauls of mechanical equipment. From time to time Council may use the services of local drain layers, earthworks contractors or plant hire. This is done through a mix of quotations and tendering with Council staff overseeing works.

7.4.3 Operations and Maintenance Strategies

Table 7.2 sets out operations and maintenance strategies.

Table 7.2: O&M Strategies

Strategy	Objective/ Description
Routine Maintenance	Routine Maintenance is carried out, supervised and monitored by Council's in house operational unit
Repairs and Corrective Maintenance	Reactive maintenance is undertaken as quickly as practically possible to restore an asset to a satisfactory condition after a failure or an unsatisfactory condition has been detected that is likely to fail in the short term. Council provides customer support for any associated requests for work related to the assets. In the rural restricted schemes minor work is not tended to immediately to ensure multiple tasks can be performed during a single site visit as indicated in the response time requirements.
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. Redesign and modifications will be undertaken in a methodical manner to ensure alternative options are considered and optimum decisions made.
Operations	Operational activities are undertaken by Council in house operational unit 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. Work is performed to Council's standards and specifications.
Physical Works Monitoring	The operational unit consist of skilled staff that are well versed on Council standards and specifications. Work is managed and overseen by the Utilities Supervisor. Weekly meetings are held to ensure work are completed on time and to Council standards.
Operation of Utilities	Utilities such as treatment plants, pump stations and reservoirs are operated in terms of defined parameters and standards set out in quality system manuals. Water Services utilities will be operated in terms of these quality manuals.
Incident management	Council approach is an escalation process from minor to major, all incidence is managed by the Council staff. Involvement is also judged by the potential consequences or asset criticality.
System Control and Monitoring	Where available, the SCADA system provides surveillance of the Treatment Plants, Bores, Intakes, Reservoirs and Pumping stations in the water schemes and will provide alarms when equipment fails or when operating parameters are exceeded. The SCADA system also records operational data.

7.4.4 Priority Response times

The Priority Response times targets for the Water Service are presented in Table 7.3.

Table 7.3: Priority Response Times

Priority	Response	Completion
P1	1 Hour	24 Hours
P2	4 Hours	48 Hours
P3	1 Day	5 Days
P4	5 Days	10 Days
P5	Projects	Specific Dates

The following details the priority for the individual utilities alarms and callouts.

Table 7.4: Alarm Priority

Utility	Description	Priority
Water:	SCADA Alarm	As recorded
	Health Issues	P1
	Maintenance - Urgent	P1
	No Water - Urban	P1
	Water Leak Urgent	P1
	Water Quality	P2
	Locate Asset	P2
	No Water - Rural	P2
	Tank Overflowing - Rural	P2
	Low Pressure / Low Flow	P2
	Water Leak	P2
	Maintenance	P3
	Change Restrictor	P5
	General Enquiry	P4
	Meter Read - Specific Date	P5

7.4.5 Operations and Maintenance Standards

The following standards are applicable to the operation and maintenance of the water schemes:

- NZS4404: 2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice (which provides standards for materials and construction of piped water schemes).
- Relevant Resource Consents and the Resource Management Act 1991.
- Transit New Zealand Guidelines 'Working on the Road'.
- Health and Safety Plans.
- Electrical Regulations 1993.
- Council quality assurance processes, including contract management procedures.

7.4.6 Council Utilities Staff Qualifications

Table 7.5 details the utilities staff qualifications as at January 2018.

Table 7.5: Council Utilities Staff Qualifications

Position	Water Treatment	Wastewater Treatment	Reticulation Maintenance (Water & Waste)	Drain Laying & Plumbing	Backflow Prevention	Traffic Management		Confined Spaces	Heights	Asbestos	Chlorine	Chemical Handlers
						STMS	TC					
Water & Waste Manager	Level 3&4 Plus Diploma Level 5	-	-	-	-	-	-	-	-	-	-	-
Utilities Supervisor	Level 3&4 Diploma Level 5 (incomplete)	-	Level 3	-	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Utilities Technician	Level 3&4	Level 4 (incomplete)	Level 3	-	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Utilities Technician	Level 4	-	Plumber and Drainlayer	-	-	-	Yes	Yes	Yes	-	Yes	Yes
Three Waters Technical Administrator	-	-	-	-	-	-	-	-	-	-	Yes	-
Utilities Technician	Level 4 (Incomplete)	Level 4	Level 3	-	-	-	Yes	Yes	Yes	-	Yes	Yes

NZ Water Competency Framework

Assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate.

Increases in the complexity of water and wastewater treatment plants will occur as drinking water and environmental standards increase. The complexity of these plants and their associated resource consent compliance will require skilled and trained engineers for their operation, maintenance and supervision. Council needs to stay abreast of any resource requirements and qualifications to ensure the most appropriate method for delivery of the required levels of service.

During 2020 Water New Zealand released its draft Competency Framework which describes what people should be able to do and what they need to know to competently undertake their work. The Competency Framework use treatment operator roles, the people who operate, monitor and maintain water and wastewater services, as a starting point. Network/Distribution operators are still to be developed.

The Water Industry Professionals Association (WIPA) was jointly established by the Water Industry Operations Group and Water New Zealand to provide a system of recording the professional development of people working in the water and wastewater industry to ensure a high level of competency within the industry was maintained. At the time of writing this Plan registration is voluntary but may become compulsory under the new regulatory framework.

The Competency Framework identifies nine areas as shown below.

1. Governance	Determination of purpose Holding to account Setting the culture Ensuring compliance
2. Policy development	Develop policies Analyse strategic requirements Analyse policy requirements
3. Strategy development	Forecast & analyse future user requirements and demands Develop strategies Plan the implementation of strategies
4. Asset Management planning	Appraise investment options Apply whole of life costing principles Produce business case for creation/acquisition of assets Plan for contingencies Develop and communicate asset management plans
5. Implement Asset Management plans	Create and acquire assets Control operations Maintain assets Optimise and rationalise assets Review or dispose of assets
6. Capability development	Develop and deploy teams Develop and deploy suppliers Develop and manage organisational change Shape the culture
7. Risk management & performance improvement	Appraise and manage risks Assure the quality of the process Monitor and review progress and performance Review and audit compliance with legal, regularity, ethical and social requirements Learn from mistakes
8. Asset knowledge management	Define asset information standards Specify, select and integrate information systems Make appropriate data available for decision making
9. Sector regulation	Setting standards Monitor performance and compliance Enforce standards and undertake enforcement action

(*Source: Water NZ – Competency Framework*)

It documents core skills and knowledge needed by operators to competently undertake work within the water industry. It is envisaged that the industry will be able to use the final document as a guide to:

- assess levels of staff training,
- develop training programmes,
- determine the knowledge and skills required by a workforce, or
- other matters related to staff competence.

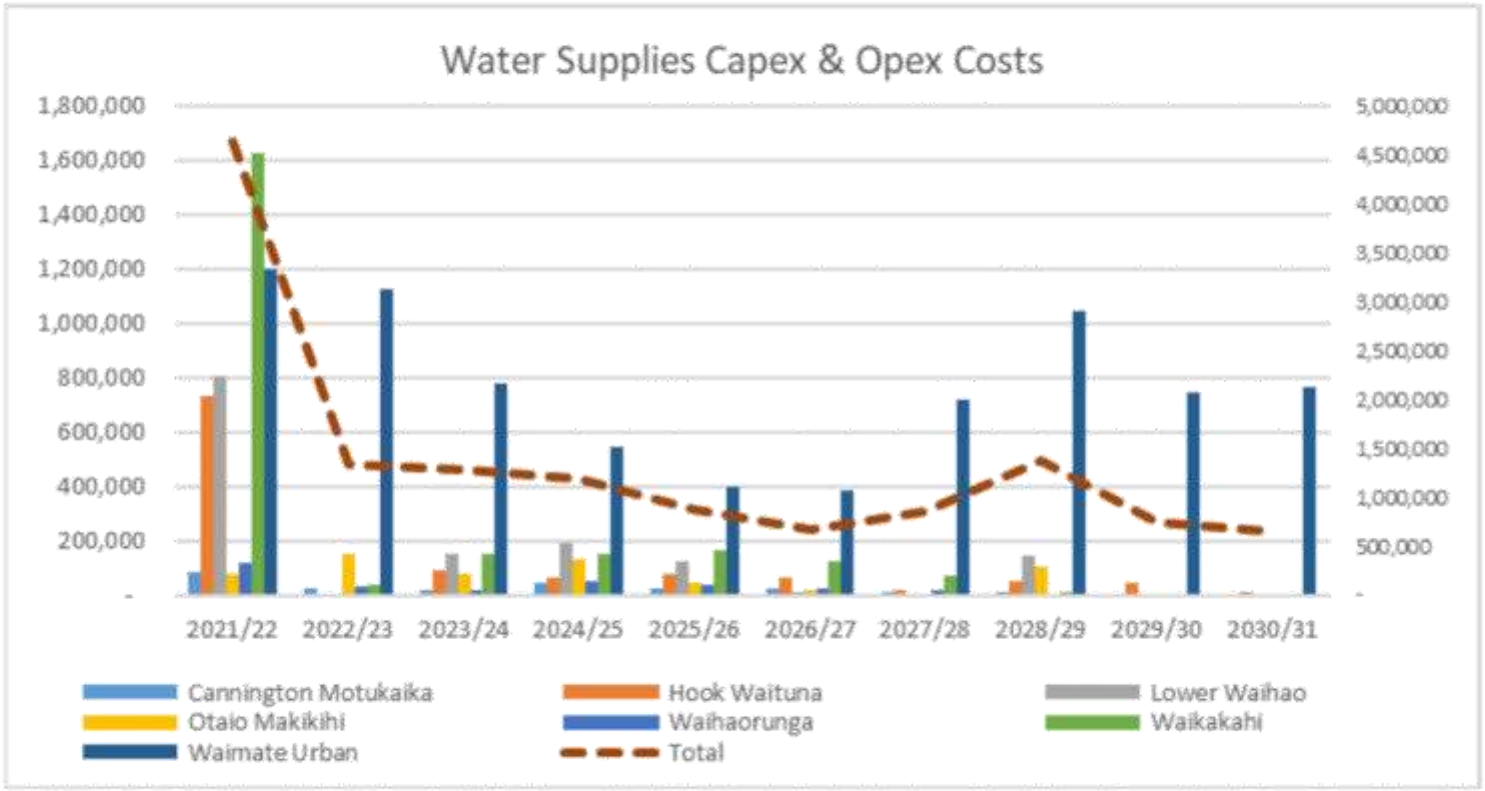
Council will keep abreast of developments in this area to ensure staff training meets industry best practice and standards.

7.4.7 Summary of Future Costs

Water Activity annual maintenance and operations costs are projected to increase from $2,650,143 (2019/20) to $3,746,752 (2030/31) over the 10 year period. There is no deferred maintenance scheduled over the period with cost increases being driven by inflation and increased interest payments associated with major compliance upgrades

O&M Costs	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Cannington Motukaika	103,628	107,865	110,871	112,636	115,086	119,772	121,638	123,803	128,604	132,034
Hook Waituna	364,683	388,958	397,947	401,666	409,282	423,105	428,453	431,334	446,593	457,803
Lower Waihao	383,172	414,835	425,106	430,401	441,213	455,707	460,259	464,050	481,850	490,055
Otaio Makikihi	315,103	325,857	338,744	341,567	347,651	359,941	366,045	371,657	387,671	396,926
Waihaorunga	182,494	187,120	192,984	195,158	198,346	205,200	208,473	211,870	220,491	226,198
Waikakahi	532,871	588,672	606,607	612,153	619,017	638,315	641,716	643,238	660,486	663,939
Waimate Urban	980,069	1,016,256	1,077,118	1,097,927	1,119,386	1,162,735	1,186,446	1,217,527	1,285,407	1,323,328
Total	**2,862,022**	**3,029,563**	**3,149,378**	**3,191,508**	**3,249,981**	**3,364,775**	**3,413,030**	**3,463,481**	**3,611,102**	**3,690,283**

Figure 7-1: Water Supplies Operation & Maintenance Costs



7.5 Renewal and Replacement Plan

7.5.1 Introduction

Cyclic renewal strategies are intended to provide for the progressive replacement of individual assets that have reached the end of their useful life. The rate of asset renewal is intended to maintain the overall condition of the asset system at a standard, which reflects its age profile, and ensures that the Community's investment in the District's Water Services infrastructure is maintained.

The level of expenditure on cyclic asset replacement varies from year to year, reflecting:

- The age profile
- The condition profile
- The on-going maintenance demand
- Customer service issues
- The differing economic lives of individual assets

Failure to maintain an adequate renewal programme will be reflected in a greater decline in the overall standard of the system of assets than would be expected from the age profile of the asset system.

Cyclic renewal works fall into two categories:

- **Rehabilitation:** Involves the major repair or refurbishment of an existing asset. An example is the relining of an existing pipeline. Rehabilitation produces an extension in the life of an asset. It does not provide for a planned increase in the operating capacity or design loading

- **Renewal:** Does not provide for a planned increase to the operating capacity or design loading. Some minor increase in capacity may result from the process of renewal, but a substantial improvement is needed before system development is considered to have occurred

For the purpose of developing asset renewal programmes the water schemes assets have used the following components consistent with the asset valuation process:

- Water Lines (Pipes, Mains)
- Water Points, Water Service Lines (Property connections)
- Water Plant (Reservoirs, Treatment Plants, Pumping & Valve Stations & Buildings)

7.5.2 Renewal and Replacement Strategies

The following table sets out cyclic renewal strategies:

Table 7.6: Renewal Strategies: Existing and Future

Strategy	Objective/ Description
Identification of renewal needs	Renewal/replacement needs are identified by analysing; – Condition reports (as shown in Section 7.5.3), maintenance records (asset failure and expenditure history), water leakage studies, water quality test results, request for service (RFS) records, and observations of the Council's engineering and maintenance staff and contractors that they employ. – Records of breakages are recorded in AssetFinda that allows an overview of the short term issues. – Customer feedback is essential for monitoring asset performance and achieving levels of service. The feedback is quite often the early warning system that a problem maybe developing and can lead to more formal investigations. The short-term asset renewal programmes have been prepared from specific renewal needs identified from information received by Council maintenance staff. The long-term asset renewal forecasts are based on an assessment of remaining asset lives (from the 2017 valuation process) and use industry base lives as a default position where condition or maintenance records are lacking. Future renewal programmes will use the data obtained in the proposed pipe condition assessments and the updated AssetFinda data. The future renewals strategy will incorporate a process that uses the numbers of breaks in a main as an indicator for inserting onto short term renewal programme. This for the Waimate urban scheme may be five breaks per year but may increase for the rural schemes.
Prioritisation of renewal projects	Decisions on renewal works consider the short and long-term effects on the operating and structural integrity of the system. Renewal works are designed and undertaken in accordance with industry standards (or known future standards) and system design loadings. Short-term renewal priorities are reassessed annually taking account of additional information that becomes available via breakage reports etc.
Deferred Renewals	The quantity and impact of deferred renewals will be tracked. The Council recognises that although the deferral of some items on cyclic renewal programmes will not impede the operation of many assets in the short term, repeated deferral will create a future Council liability.
Inspections prior to major road works	The condition of water scheme pipelines is inspected prior to major road works to identify the risk of the road being damaged by pipeline failure or the need for pipeline replacement in the short/medium term. Pipelines in poor condition may be programmed for replacement prior to or in conjunction with the road works or reseal programme subject to funding.
Rider mains	Where possible rider mains are installed in the grass berm to eliminate or limit the number of laterals across the road.
Service connections	Tobies are replaced with manifolds (dual check), meters and manifold boxes.
Restrictors	Restrictor checks are done on a random basis but with all restrictors checked as resources allow. Customers are expected to maintain filters with filters available from Council free of charge. Recently installed network meters allow monitoring of zones for leakage or tampering.
Dedicated delivery main	Renewals within the Waimate Urban water scheme will consider upgrading of the current system to provide a dedicated delivery main from the Waimate Urban Water Treatment Plants to the reservoir on Mill Road. This will allow a reduced pressure regime within the network and will assist to extend reticulation asset lives.

7.5.3 Condition Assessment of Cast Iron, AC, Old PE and Garnite PVC Pipes

Development of a Condition Assessment Strategy to identify which, where and when condition assessments will be performed is include as an Improvement item. This will be done in consideration of criticality, LoS, asset records, Council engineers visual assessment of failures and specialists assessments as required. Implementation of the Condition Assessment Strategy and resulting information collected will then inform the renewal plan.

Cast Iron Pipes – Waimate Urban Water Scheme

Opus has carried out a number of assessments on the condition of cast iron pipes since 1998. The Condition Assessment report of March 2011 stated the following regarding the effects of graphitisation on cast iron pipes:

Graphitisation, a de-alloying process, occurs in corroded cast iron pipe. This process results in the iron being leached away, leaving behind a matrix of flake graphite which occupies approximately the same volume as the original casting. This graphite has minimal strength but often maintains structural integrity against moderate water and/or ground pressures. However, the beam strength of graphitised pipe is reduced and its ability to withstand pressure surges is compromised.

The process of graphitisation is rarely uniform and, as in the case of these samples, some parts of the pipe show little signs of graphitisation while at other areas the graphitisation has completely penetrated the pipe wall. The variability of the depth of graphitisation can be partly due to the protection afforded by the hot-dip bitumen coating.

Based on assessments of the condition of 10 samples of cast iron pipes recovered from the Waimate Urban water supply network over the past 13 years, Opus concludes that:

- All of the 3" (DN 75) and 4" (DN 100) cast iron pipes would not have complied with the BS 78:1917 for cast iron pipes. They may have been made to special order to minimise shipping weight and purchase cost.
- We expect that all of these small bore cast iron pipes are probably in a similar condition and are nearing the end of their useful lifetime.
- Failures can be expected to show an increasing frequency over the coming years.
- Failures will generally be associated with beam type failures (circumferential cracking) as small diameter, graphitised cast iron pipes do not have much strength in bending, such as caused by traffic loads, ground settlement or wetting and drying of clay soils.
- Pressure surges cause longitudinal cracking or blow-outs of weakened pipes.
- Three of the 1998 samples had split longitudinally, indicating fairly severe graphitisation
- We would expect that there have been other failures in the intervening years.
- It is likely that the consolidated soils surrounding the pipe are assisting the pipe to resist the internal pressure, however, any significant changes e.g. in traffic loads, ground settlement or ground shaking/vibration will be likely to cause pipe failure.
- These pipes have lasted extremely well considering their generally thin and highly variable wall thickness.
- We do not believe that rehabilitation (e.g. relining with cement mortar or epoxy paint) is an option as the pipe is in a poor condition with advanced graphitisation.
- All of the cast iron pipes of this vintage inWaimate should be programmed for renewal within the next approximately 10 years.

- To avoid a large 'spike" in renewal spending, the "worst" pipelines should be considered for renewal within the next few years, and the remainder progressively replaced when failure rate and water supply interruption starts to cause customer resistance.

The replacement value of cast iron pipes in Waimate as indicated in the 2017 valuation, of $5.6m (22.6km of pipe). If renewal were to occur over a 10 year period this amounts to an annual renewal of $557,000 (about 2.3 km per year).

The following photo shows a cast iron pipe joint failure, these are lead packed and when failure occurs the joint is sawn off and replaced by a gibault joint.

Figure 7-2: Cast Iron Pipe Failure



AC Pipes

Initially AC Condition samples from Waimate Urban taken during 1999 indicated that pipe failures should have been expected approximately 15 years from the date of the pipe evaluation - that is from 2014 onwards.

More recent AC Condition samples have indicated slightly longer timeframes, but have also identified areas where condition is not as expected. These are targeted for replacement in years 1 through 3.

As the AC pipe remaining life is effected by different:

- Pressure regimes with the schemes.
- Water quality.
- Diameter: Small diameter AC pipe has a very short life (35 – 45 years) but larger diameter may have significantly greater life.
- Quality of installation.

Council's maintenance staff has noted the softness of the pipes in the different schemes that is a very good indication that the pipes will need replacement in the shorter term rather than long term. To better understand the different AC pipe life a programme of assessing the condition of the pipes in all the schemes that contain AC pipe will occur. This condition data will be incorporated into AssetFinda to allow future renewal programmes to be produced and increased confidence in future valuations.

Old PE Pipe

The 2011 Valuation Report noted the following for old PE:
Old PE pipelines have an average life of 36 years. As significant operational problems are not yet observed, the 45 year assigned life may be conservative. The life of Old PE pipes has a significant impact on depreciation as they make up more than half of the rural pipeline system.

In January 2012 Opus reviewed the life of the old PE pipe and noted "*while a conservative mean useful life of 45 years might have been appropriate in the past, it is likely to be over-conservative now. A revised estimate of 60 years is proposed for the remaining older rural PE pipe*". The effect of this was that the replacement of a high proportion of the Old PE pipe will now occur outside the 2018 – 2028 LTP period.

To better understand the different "old PE pipe" life, a programme of assessing the condition of the pipes in all the schemes that contain Old PE pipe will occur. This condition data will be incorporated into AssetFinda to allow future renewal programmes to be produced and increased confidence in future valuations.

Asset renewal over recent years has removed the majority of the poor batches of pipe leaving an asset with a longer asset life.

Garnite PVC Pipe

Garnite was one of the first types of PVC pipe installed in the Waimate water supplies. These pipes have shown to be very brittle and prone to failure. Asset renewal over recent years has removed the majority of the poor batches of pipe leaving an asset with a longer asset life (50 years plus).

7.5.4 Pressure Management: Waimate Urban Water Scheme

The report "Waimate Water Supply – Pressure Management" by Opus (July 2009) was carried out as a previous distribution model study in 2008 found that there was excessive leakage within the system that was subject to relatively high pressures (half the town exceeds 70m).

The report considered a reduction in maximum pressures by 33% and assumed a burst frequency reduction of approximately 50% would give an annual savings of $6,000. These savings do not take into consideration the savings associated with delaying the renewal of mains within the urban area. The rough order of costs in 2009 was $1.2m. Council is currently in the process of replacing part of the critical rising main between the reservoir and the Waimate town. Once the new rising main section is commissioned some initial pressure management may be achieved (through closing of local reticulation valves).

7.5.5 Evidence Base

The asset data held for water supply and sewerage had been a focus for improvement over the last six years. This was reflected in the positive peer reviews undertaken of both the 2017 and 2020 valuations.
Road and footpaths data continues to be sound, based on twenty years of RAMM use. An increase in data analysis as part of the ONRC framework and capture of pavement performance data has improved knowledge of the asset further.
The 2020 asset valuation identified the accuracy of most roading asset data as "B" or "Reliable" (Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old). Bridge data is of higher accuracy, "A" or "Highly reliable" (Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete).

The 2020 valuation has indicated (for three waters):

Confidence Level	Description	Accuracy	Condition	Quantity	Unit Cost	Base Life
A	Highly Reliable and Accurate	100%				
B	Reliable w ith Minor Inaccuracies	+/- 5%		B	B	B
C	50% estimated	+/- 20%	C			
D	Significant data estimated	+/- 30%				
E	All data estimated	+/- 40%				

From a valuation perspective the data reliability is considered (for all assets covered by the IS) to be "B" or +/- 5%. Council acknowledges that the reduced reliability associated with less accurate condition ratings (+/- 20%) could impact future financial forecasting. However, this is currently mitigated by empirical assessment of assets proposed for renewal. For example, roads identified for resealing are reassessed, alongside mains identified for renewal are investigated in regards to historical leaks, bursts and criticality.

Council acknowledges there are limitations with its data that affect decision-making. A commitment to improving data collection and analysis is indicated below. Additional part-time and full time roles have been added to the Council team to address data limitations and accuracy.

7.5.6 Base Life of Water Services Assets

The 2020 valuation used the base life for Water Services assets as shown in Table 7.7.

Table 7.7: Water Services Base Asset Life

Material	Life	Comment
AC	60	
CI	105	
Galv	60	Galvanized pipes have an average age of more than 48 years, but operational problems are not widely reported. The life has according been increased from 40 years to 60 years
PE	65 - 100	
PVC	100	
mPVC	100	
Steel	80	
Unknown	60	
Fire hydrant	75	
Meter	15	
Manifold	25	
Building	50	
Electrical	1 - 50	
Monitoring Equipment	3 - 40	
Pumps	10 - 20	

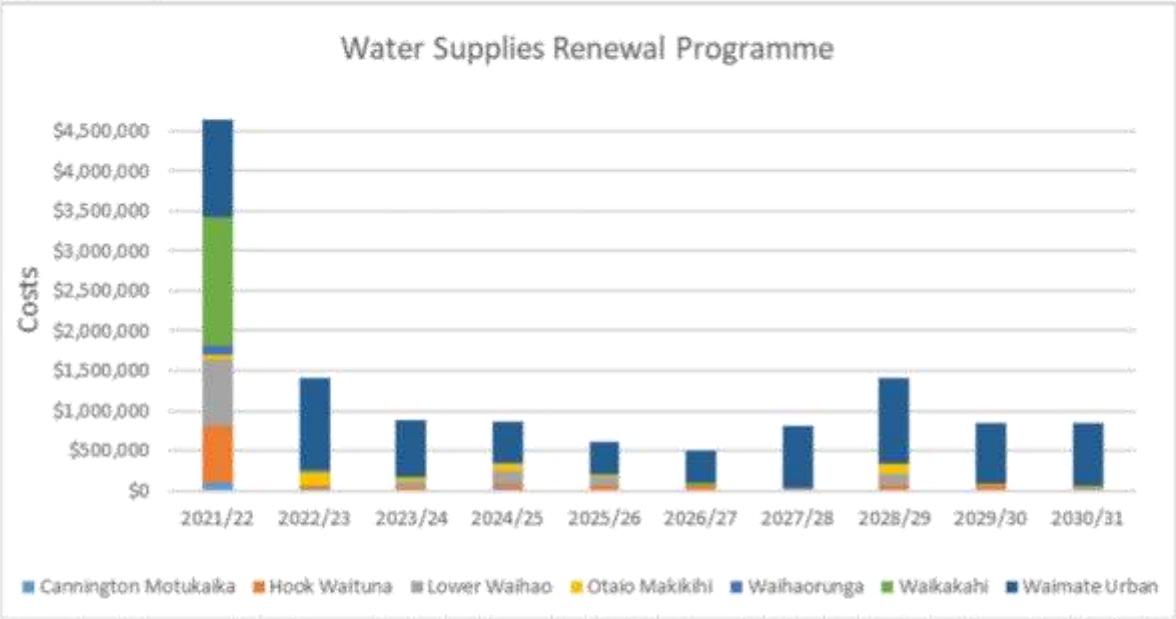
Ten Year Renewal Programme

The following table details the ten year renewal programme. Details are included within the Section 8.6.1.

Table 7.8: Ten Year Capex Programme (LoS, Growth, Renewals)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Renewals	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Cannington Motukaika	$102,000	$39,499	$19,530	$25,488	$7,313	$10,542	$5,838	$6,031	$6,230	$6,398
Hook Waituna	$713,333	$20,680	$32,727	$56,160	$59,948	$58,947	$23,352	$60,305	$62,295	$26,870
Lower Waihao	$827,000	$5,170	$68,621	$170,748	$101,613	$5,668	$5,838	$150,763	$6,230	$7,805
Otaio Makikihi	$58,000	$158,202	$33,782	$91,800	$20,389	$-	$2,335	$117,474	$2,492	$6,398
Waihaorunga	$108,500	$22,748	$-	$5,400	$-	$-	$5,838	$-	$-	$6,398
Waikakahi	$1,615,296	$20,887	$16,891	$5,400	$21,719	$25,506	$15,179	$6,031	$6,230	$6,398
Waimate Urban	$1,219,393	$1,136,360	$704,004	$511,380	$396,700	$405,829	$744,929	$1,078,253	$764,983	$785,613
TOTAL	**$4,643,522**	**$1,403,545**	**$875,555**	**$866,376**	**$607,682**	**$506,492**	**$803,309**	**$1,418,856**	**$848,458**	**$845,877**

Figure 7-3: Programmed Renewals



Long Term Reticulation Renewals

Figure 7-4 details the 30 year renewal requirements for the water mains based on the 2020 valuation.

Figure 7-4: Water Main Renewals - 50 Years

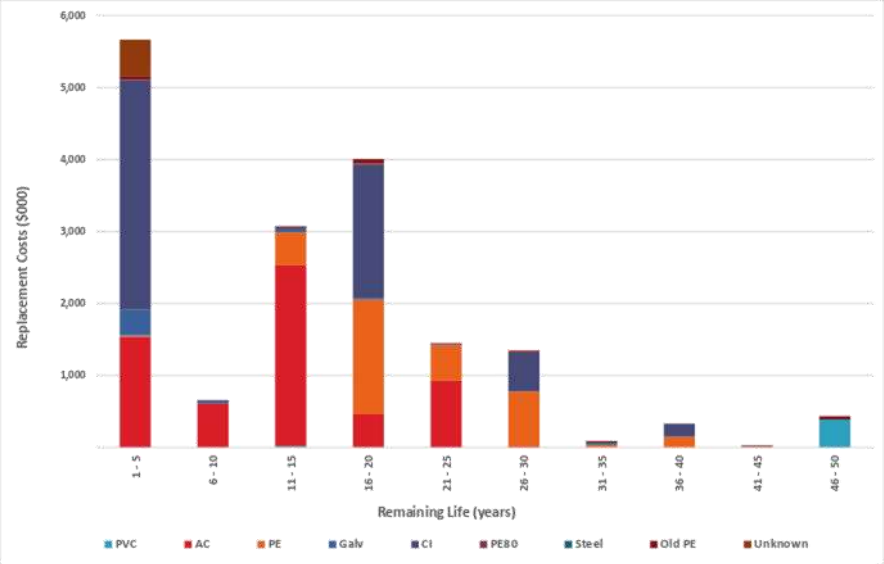
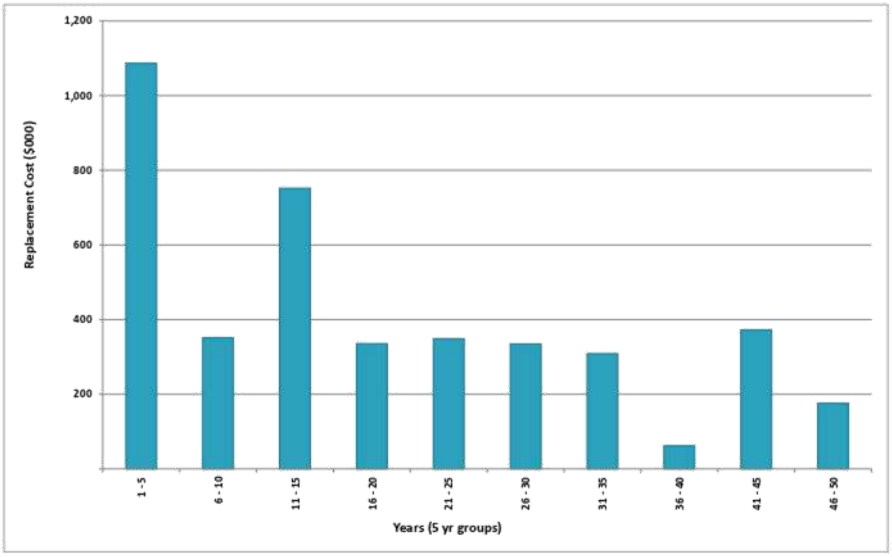


Figure 7-5: Water Plant Renewals - 50 Years



7.5.7 Cyclic Renewal Standards

The following standards are applicable to the renewal of water schemes assets:

- NZS4404: 2010 Land development and subdivision infrastructure adopted by Council as its Engineering Code of Practice (which provides standards for materials and construction of piped water schemes).
- Relevant Resource Consents and the Resource Management Act 1991.
- Transit New Zealand Guidelines 'Working on the Road'.
- Health and Safety Plans.
- Electrical Regulations 1993.
- Council quality assurance processes, including contract management procedures.

The Standards will be reviewed regularly and updated to incorporate relevant experiences, legislative requirements and changes in best practice.

7.6 Asset Development Plan

7.6.1 Introduction

Asset development provides for a planned increase in the service capability of the water scheme to:

- Close gaps between the current capability of the water scheme and target service standards.
- Accommodate growth.

Asset development and asset renewal can occur simultaneously. The purpose of asset renewal is to prevent a decline in the service potential of the assets whereas asset development is concerned with the service improvements, measured by asset performance.

7.6.2 Asset Development Strategies

The table below sets out the strategies used for developing capital development programmes for the Water Services. These strategies are intended to progressively close gaps between target service standards (taking account of demographic and economic growth projections) and the current service capability of the asset system.

Table 7.9: Development Strategies

Strategy	Objective/ Description
Identification of development needs	Asset development needs are identified from analysis of; Demand forecasts, System performance monitoring (pressure, flow, leakage rates, etc.), Network modelling, risk assessments (Risk Management Plan), and customer service requests. A provisional forward capital works development programme is maintained and updated in in conjunction with updates of the AMPs.
Development Project Categorisation	Development Projects will be separated into projects to close service gaps and projects required to accommodate growth. Development projects to close service gaps are generally funded entirely by Waimate District Council. Development projects to accommodate growth may be partly or wholly funded through Development Contributions.
Prioritisation of development projects	Development projects are justified and prioritised using a risk based process Decisions on development works consider the short and long-term effects on the operating and structural integrity of the water schemes system. In determining the requirement for capital or asset development works the short and long-term effects on the operating and structural integrity of the system are considered, together with any forecast increase in loading upon the system. All feasible options, including non-asset demand management options and the use of second-hand plant, are considered. Development works are designed and undertaken in

Strategy	Objective/ Description
	accordance with industry standards (or known future standards) and system design loadings.
Project Approval	A long-term development programme is prepared from projects meeting the assessment criteria, and all projects are approved through the Annual Plan process. The actual timing of asset development works will reflect the community's ability to meet the cost, as determined through the Annual Plan process. Scheduled projects meeting assessment criteria not funded are listed on the forward works programme for the following year.
Project design	All asset development works will be designed and constructed in accordance with current adopted industry standards (or known future standards) and system design loading. In determining capital or asset development work requirements the short and long-term effects on the operating and structural integrity of the system are considered, together with the demands of any forecast increase in loading upon the system. The system will be designed to minimise supply disruptions as far as practically possible by building in an appropriate level of redundancy. The standardisation of designs and specifications will be considered in the interest of facilitating replacement and operational simplicity.
Vested Assets	The risk, cost and benefits of accepting any new privately funded assets constructed in association with property development will be considered on a case by case basis in approval decisions. Such assets will be accepted into public ownership when satisfactorily completed in accordance with approvals given. Council will not contribute to the cost of such work unless there are exceptional service standard or equity issues.

7.6.3 Summary of Future Costs

The main focus for Council is to:

- Improve water treatment for all schemes to comply with the DWSNZ and therefore meet the requirements of the Health (Drinking Water) Amendment Act 2007.
- Monitor the outcomes of the Havelock North Water Enquiry to ensure future works / process meet both the recommendations and any legislative changes.
- Achieving compliance requires significant capital works to upgrade the treatment processes, estimated to cost $2.8million.

The water treatment plant upgrades fall into three broad categories:

- Building better treatment plants to treat the water that is currently used.
- Finding new more easily accessible and easily treated water and treating this.
- Augmenting supplies for economies of scale.

The preferred option will be selected by considering the cost to build, run and continue producing very high quality water in compliance with New Zealand standards and legislative requirements.

The Ministry of Health had previously established a subsidy scheme to provide funding assistance for lower socio economic communities to meet the DWSNZ. This was withdrawn in recent years but Council will continue to lobby central government for funding assistance to be re-established following the Havelock North Enquiry recommendations.

7.7 Disposal Plan

7.7.1 Introduction

The development of Asset Management Systems and use of Asset Condition / Performance data allows better planning for the disposal of assets through rationalisation of asset stock or when assets become uneconomic to own and operate.

All pipeline renewals identified in this Lifecycle Management Plan have a corresponding disposal either through the pipes being removed and disposed of at the landfill, or being left in the ground if the Water Services are refurbished using 'no-dig' techniques or the asset is replaced in a new location. Disposals are recorded within AssetFinda and the GIS. Buried assets remain in the ground unless economic to remove or they pose a potential hazard.

- In all cases asset disposal processes must comply with Council's legal obligations under the Local Government Act 2002, which covers:
- Public notification procedures required prior to sale
- Restrictions on the minimum value recovered
- Use of revenue received from asset disposal

When considering disposal options all relevant costs of disposal will be considered, including:

- Evaluation of options
- Consultation/advertising
- Obtaining resource consents
- Professional service, including engineering, planning and legal survey
- Demolition/making safe
- Site clearing, decontamination, and beautification

7.7.2 Asset Disposal Strategies

The following table details the disposal strategies.

Table 7.10: Disposal Strategies

Strategy	Objective/ Description
Asset Disposal	Assess each proposal to dispose of surplus or redundant assets on an individual basis, subject to the requirements of the relevant legislation Asset disposal will comply with the requirements of the Local Government Act 2002 and in particular the requirement for councils to retain a capability to provide Water Services Redundant pipes are removed where their alignment clashes with replacement pipelines or where their existence is considered dangerous. Abandoned water scheme pipelines have possible future value for other purposes (such as ducting for cabling). As the extent of this value (if any) is uncertain it is not recognised in the asset valuation When a water scheme asset is abandoned or replaced the Geographic Information System and fixed asset register are updated. A system of job number creation and asset identification is used to document this process
Residual Value	The residual value (if any) of assets, which are planned to be disposed of, will be identified and provided for in financial projections

7.8 Sustainability within Council

In addition to managing the assets in an economically sustainable way, Council will also manage its internal operations to optimise their cost, efficiency and effectiveness, so that in the long term the costs of administering the infrastructure are sustainable.

While the overall view of this is not a subject for this plan, the management of the asset services delivery unit is relevant.

7.8.1 Staffing Levels

Currently the Water and Wastes Group has eight full time equivalent employees. This includes the role of Asset Manager which encompasses a wider footprint of activities.

The greater emphasis being placed on the responsible management, distribution, operation and maintenance of existing and future resources will add to the tasks of the Water and Wastes Group. Compliance with the requirements of the Health Act, Health (Drinking Water) Amendment Act, DWSNZ 2005 (revised 2018) and increased Regional Rules (LWRP) will ask a great deal of effort and prudent decision making from the Water and Wastes staff.

The Health Act will impose an increased demand on human resources to meet the compliance with the requirements of the Heath Act. It will place an on-going demand on human resources to monitor and report on Health Act compliance. The current staffing levels are supplemented by outsourcing. However, outsourcing still requires scoping, input and supervision from Council staff and does not exonerate staff from outsourced work.

Staff changes have impacted on the AssetFinda/GIS data acquisition, capturing, trending and analysis. This will increase as new assets are acquired through water treatment plant upgrades.

Because of the above, assessment of staffing requirements will be required on an annual basis to ascertain the appropriate requirements for the increased workload. Assessment needs to consider the level of staffing coverage required to implement all of the Water and Wastes Group functions including internal management, information systems management, project management, design, supervision, construction, operations and maintenance.

7.8.2 Skills

In addition to staffing numbers, assessment of staffing levels needs to consider the skill requirements to meet the demands of the infrastructure that Council does and will own and operate.

Increases in the complexity of facilities such as water treatment plants and pump stations are occurring. This will require skilled and trained staffs for operation, maintenance and supervision. A review of Council policy on resourcing the operations and maintenance is required to ascertain the most appropriate method for delivery of the required levels of service should be considered.

Refer to Section 7.4.6

7.8.3 Training

Training of staff is presently on an ad-hoc basis with no structured long term development plans for the individual staff members in the asset management field. The link between asset life, and the ability to deliver of levels of service with the skills of the people who plan, design, install, operate and maintain the assets is inevitable. It is crucial that the skill gaps of staff, contractors and service

providers are identified; that there are structured training programmes to close these gaps; and that the effectiveness of the training provided is evaluated. Training programmes should be designed and reviewed for each individual – not for a business unit, contractor or service provider as an entity. Refer to Section 7.4.6.

7.8.4 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

Local Authorities have traditionally not been particularly successful at implementing succession planning techniques and practices. In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning were not experienced. With a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities. Whilst there is always potential for staff in key positions to move on to further their careers, succession planning can help to mitigate the effects of this. Succession planning techniques can include:

- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can include identifying weaknesses in training and experience and attempting to address those weaknesses by use of mentoring, relevant projects and continuing professional development programmes etc.
- Identifying likely staff retirements, promotions, resignations or position changes on an annual basis. Identifying potential internal staff to fill those positions, providing those staff with projects that extend them, and giving them relevant experience for filling the positions

No formal succession planning is implemented at present by Council. It is important that the current knowledge of existing staff on the Wastewater Services is continuously captured within AssetFinda and supporting asset management tools. This will reduce the risk to service continuation as a result of unplanned staff absences and any future retirements or resignations.

7.8.5 Efficient Use of Energy within Councils 3Water Facilities

The Three Waters uses a significant proportion of the Council total energy consumption via their extensive range of facilities. Instigation of energy management through the use of the Energy Efficiency and Conservation Authority (EECA) methodologies and subsidies will assist in reducing total energy consumption. Where new plant is to be installed, Council staff take the opportunity to use modern energy efficient devices such as variable speed drives, soft starters.

Efficient Operation of Facilities

The Council operates a SCADA system that allows the operation of the facilities (WTP and majority of water pump stations) remotely allowing efficiency monitoring and running the plant in off peak situations where it is practical to do so.

8.0 FINANCIAL SUMMARY

This Section sets out financial statements, funding strategy, depreciation forecast and charges for the Water Services in Waimate District.

8.1 Financial Strategy

This AMP will provide the substantiation for budget forecasts put forward in the LTP (2021-2031) for Water Services assets. Council will:

- Implement an improvement approach to asset management planning in the short term. A 10 year improvement plan is included in each AMP. Improvement projects will be monitored monthly by the Asset Group Manager.
- Prepare, maintain and periodically review an AMP outlining sustainable long-term asset management strategies. The AMP will typically be reviewed three-yearly in advance of the LTP. Annual amendments or updates may be undertaken if significant asset management changes occur.
- Report variations in the adopted annual plan budgets against the original AMP forecasts and explain the Level of Service implications of budget variations.

8.2 Development Contributions

Please refer to Financial Policy 404 - Financial Contributions Policy.

8.3 Depreciation

8.3.1 Background

The introduction of accrual accounting during the early 1990's changed the way in which local authorities accounted for their assets, particularly long life assets i.e. pipes and roads. This meant that instead of cash based accounting where the replacement/renewal cost of an asset is recognised only when it wears out, local authorities were required to spread the cost, and any reduction in the value of these assets over its useful life.

Section 100 subsection 1 of the LGA 2002 states: "A local authority must ensure that each year's projected operating revenues are set at a level sufficient to meet that year's projected operating expenses."
This requirement to set operating revenues at a level sufficient to meet operating expenses includes depreciation as Section 111 obliges councils to follow generally accepted accounting practice (GAAP) which includes a definition of "operating expenses." As depreciation is defined as an operational expense it must be included with other operational costs, including interest, when a council sets its operating revenue.

GAAP defines depreciation as follows:
Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.[2]

Therefore, deprecation measures the annual consumption of an asset so that the reduction in its value is accounted for as it is consumed. The purpose of depreciation is not to provide for the replacement of the asset, although this is a consequence of depreciation. Deprecation ensures that each year's ratepayers pay their way.

The basic value of an asset reduces in accordance with the wearing out or consumption of benefits over the assets life arising from use, the passage of time, or obsolescence. This reduced value is called the depreciated value. It is accounted for by the allocation of the cost (or revalue amount) of the asset less its residual value over its useful life.

[2] Source: Depreciation in the local government context, July 2011. Local Government New Zealand

The decline in service potential is thus provided on a straight line basis on all fixed assets. Therefore Council complies with the requirements of FRS3 and NZIAS 16 and funds asset depreciation.

The Council revalues its assets every three years to keep them up to date and this means that depreciation charge reflects the cost of replacing the asset. It is the valuers role to appropriately identify the level of depreciation, though this will be better achieved through more robust data e.g. condition assessment.

Level of Depreciation Funding

Previously Council has funded depreciation for water assets 100%. As a consequence of the 2011 assets revaluation the new depreciation requirement will have an adverse political consequence it is proposed that the depreciation be ramped up to 100% over the next 3 years i.e. 2015 for the rural water schemes only.

8.4 Valuations

8.4.1 2020 Valuation Summary

Valuations of the three waters infrastructure were carried out in August 2020 and a summary is presented in Table 8.1 and Table 8.2.

Table 8.1: 2020 Valuation Summary

Scheme	ORC	ODRC	Annual Depreciation
Non Pipe Assets	$4,991,455	$2,575,374	$142,895
Pipe Assets	$34,915,527	$16,343,146	$384,553
Total Water Non-Pipes	**$39,906,982**	**$18,918,520**	**$527,448**

Figure 8-1: 2020 Valuation Summary

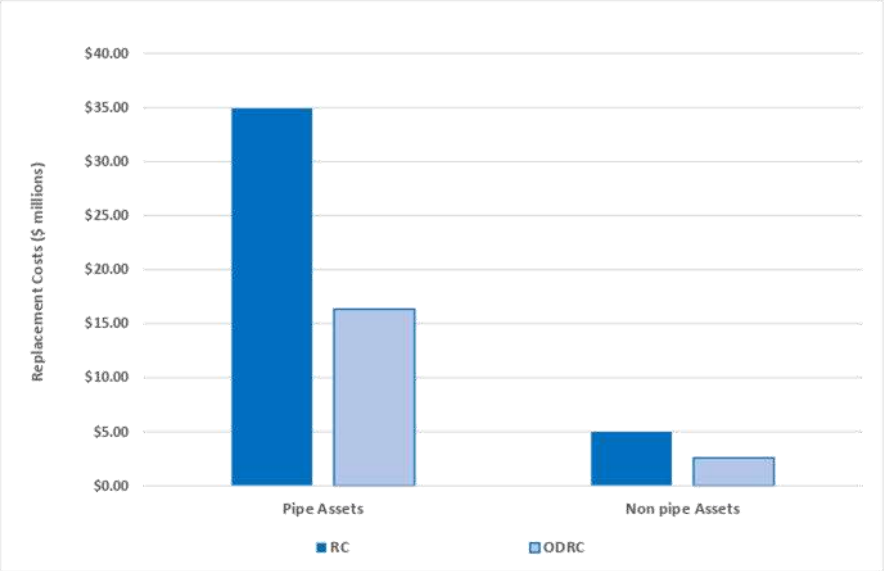


Figure 8-2: 3 Waters 2020 Valuation

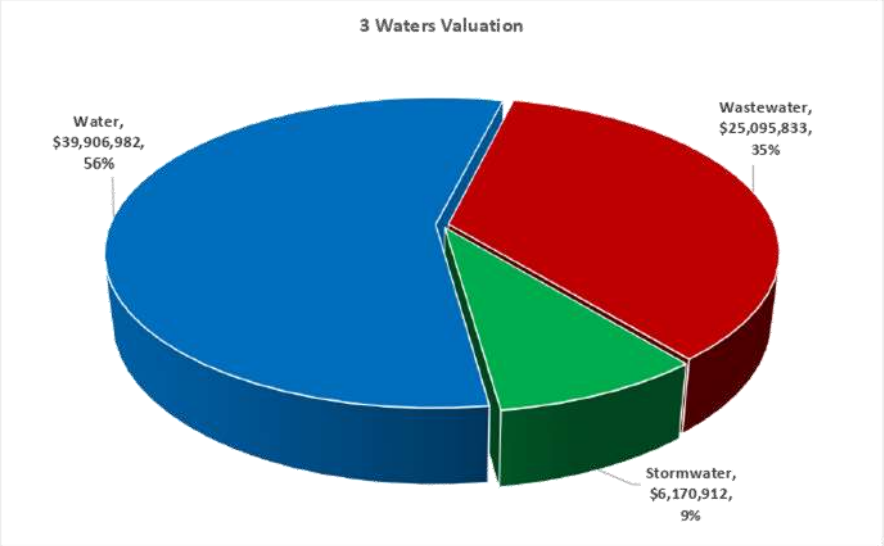
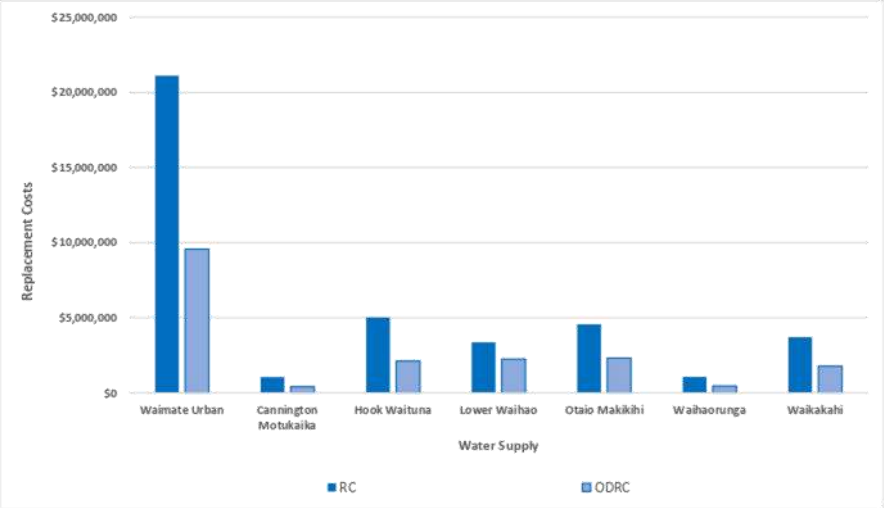


Table 8.2: 2020 Valuation Summary – Water Supplies

Scheme	ORC	ODRC	Annual Depreciation
Waimate Urban	$21,114,428	$9,577,047	$242,290
Cannington Motukaika	$1,051,797	$411,668	$15,275
Hook Waituna	$5,023,003	$2,128,179	$64,511
Lower Waihao	$3,372,296	$2,248,967	$46,723
Otaio Makikihi	$4,567,344	$2,317,285	$78,640
Waihaorunga	$1,066,006	$455,681	$19,437
Waikakahi	$3,712,108	$1,779,693	$60,572
Total Water Pipes	**$39,906,982**	**$18,918,520**	**$527,448**

Figure 8-3: 2020 Valuation Summary - Water Supplies



Change in ORC from 2017 to 2020

The ORC increase from the 2017 valuation to 2020 was $1,796,101 or 7.7%. The key reasons for the increase since the previous valuation are:

- Increases in unit rates.
- Values of new assets added

Valuation Improvements Identified

The improvements identified in 2017, manhole depth factors, the development of predictive modelling in AssetFinda and a number of attribute improvement priorities to improve subsequent revaluations, are being developed.

Also discussed was the review of useful lives for assets that have reached the end of the useful lives and, as in service but "expired" assets, no longer contribute to the annual depreciation figure. The assets in question are reticulation pipes and nodes. Unless there is evidence that warrants then adjusting these lives arbitrarily is not warranted. Instead, develop predictive modelling to assess the remaining useful lives for this purpose.

8.4.2 Confidence Levels

The quantity and quality of the data for the 2017 valuation is shown in Table 8.3.

Table 8.3: Assessment of Confidence Levels

Asset	Quantity	Replacement Cost	Life Expectancy	Condition
Water assets	B	B	B	C

It is accepted that most condition data across the data is anecdotal hence the C rating, however, it has not been taken into the overall data confidence grade as condition was not used to adjust remaining useful life. Taking condition out of the assessment, we consider a data confidence of B is appropriate for this valuation.

8.5 How We Fund Our Activity

The following summarises the ways in which the water activity is funded:

- Operations and Maintenance
- Individual scheme rates
- Water usage via water meters
- Renewals
- Depreciation
- Loans (either internal or external
- Capital
- Development/Financial contributions
- Private or Community contributions
- Government Subsidies (Drinking water Assistance Programme)

8.6 Financial Statements and Projections

8.6.1 Background

The financial summaries in this AMP cover a minimum 30 year planning horizon and are based on financial projections covering the lifecycles of the assets. Additional projections out to 20 years have also been provided to confirm if any major expenditure is likely to occur in the next planning horizon that may have an impact and should be considered as part of financial decision making process.

The following tables summarise the 30-year financial forecast for the Water Services activity under the following headings:

- Operations and Maintenance
- Capital works – Growth
- Capital Works – Increased Level of Service
- Capital Works – Renewals
- Capita Works – Vested Assets

8.6.2 Renewal and Operational Expenditure

As noted in Section 7.5.2 the renewals profile is based on an asset useful life. At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined over time by determining evidence-based useful lives using a combination of condition and performance data.

It needs to be noted that the water supply capital budgets in Tables 8-5 to 8-11 don't line up with the predicated capital expenditure from the 2017 valuations (book value). This is because a number of reasons:

- Assessment of pipe, adjustment for known risk factors, and actual number of breaks/leaks (Section 7.5.2)
- Positive impacts of the renewal work already done i.e. reductions in breaks/leaks
- The ability to all do the physical works required (staffing)
- The ability to finance all assets that have that fallen due for renewal, which includes those assets that have well past their useful lives and were not renewed at time of expiry.

Thirty Year Renewal Forecasts

The renewals forecasts are shown below and are of a significant amount ($19m over the 30 year period).

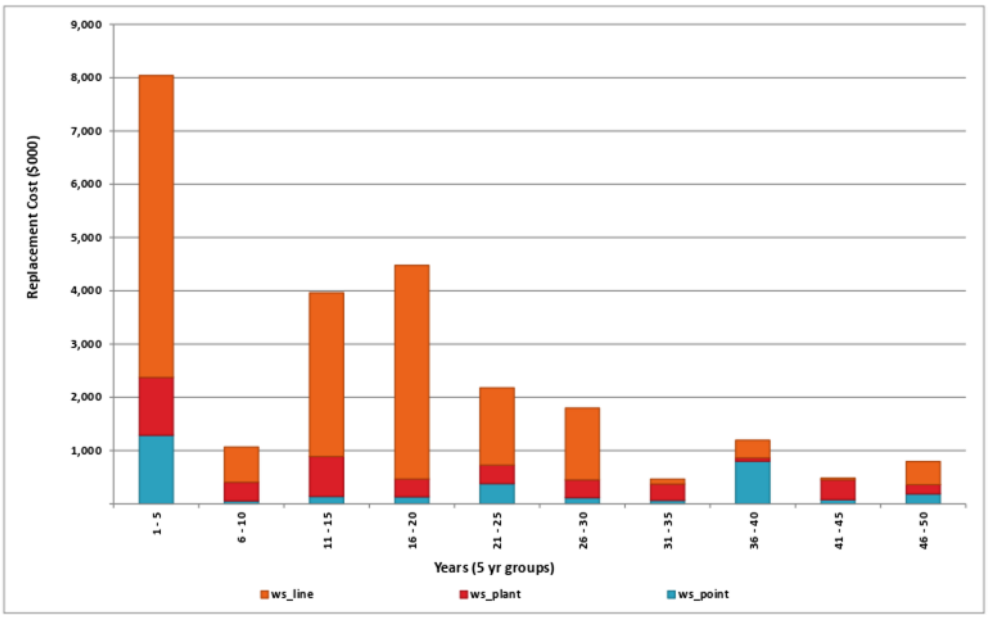
Table 8.4: 30 Year Renewal Expenditure Forecasts – All Assets

Scheme Name	Remaining Useful Life Group	Point ($)	Plant ($)	Line ($)	Grand Total ($)
Waimate Urban	1 to 5	506,485	237,768	5,665,212	6,409,466
	6 to 10	23,707	16,473	51,192	91,373
	11 to 15	126,068	282,024	944,443	1,352,536
	16 to 20	109,678	234,333	2,068,186	2,412,197
	21 to 25	266,589	281,993	962,787	1,511,369
	26 to 30	39,499	201,902	596,116	837,517
Waimate Urban Total		1,072,026	1,254,493	10,287,939	12,614,458
Cannington Motukaika	1 to 5	43,724	78,777		122,501
	6 to 10	2,359	8,120		10,479
	11 to 15	1,132	5,341	257,443	263,916
	16 to 20	626		164,953	165,580

Section 8: Financial Summary

Scheme Name	Remaining Useful Life Group	Point ($)	Plant ($)	Line ($)	Grand Total ($)
	21 to 25	1,720			1,720
	26 to 30	2,935	71		3,006
Cannington Motukaika Total		52,496	92,309	422,397	567,202
432,624Hook Waituna	1 to 5	319,138	94,277		413,415
	6 to 10	5,799	83,497		89,296
	11 to 15	1,725	108,645	787,251	897,621
	16 to 20	6,424	30,185	934,710	971,320
	21 to 25	42,327	11,556	6,315	60,199
	26 to 30	24,182	36,339	80	60,602
Hook Waituna Total		399,595	364,499	1,728,357	2,492,453
Lower Waihao	1 to 5	121,548	93,523		215,072
	6 to 10	4,911	48,078		52,989
	11 to 15	3,909	15,753		19,662
	16 to 20	4,104	7,250	247,788	259,143
	21 to 25	33,185	21,355	275,003	329,544
	26 to 30	24,012	1,852		25,864
Lower Waihao Total		191,669	187,811	522,792	902,273
13,531Otaio Makikihi	1 to 5	129,740	123,877		253,618
	6 to 10	12,609	59,087	609,184	680,881
	11 to 15	1,396	247,742	426,037	675,175
	16 to 20	4,351	8,767		13,118
	21 to 25	20,271	1,866	800	22,938
	26 to 30	14,893	77,135	751,289	843,317
Otaio Makikihi Total		183,260	518,474	1,787,311	2,489,046
Waihaorunga	1 to 5	33,586	166,949		200,535
	6 to 10		24,356		24,356
	11 to 15	1,465	51,958		53,423
	16 to 20	908	23,350	133,046	157,305
	21 to 25	550	12,476	197,853	210,879
	26 to 30	3,175	1,375		4,550
Waihaorunga Total		39,684	280,464	330,899	651,048
Waikakahi	1 to 5	134,552	244,423		378,975
	6 to 10	5,967	94,857		100,824
	11 to 15	2,324	40,608	658,793	701,726
	16 to 20	6,331	30,252	459,061	495,645
	21 to 25	15,674	19,837	6,644	42,155
	26 to 30	6,254	15,813		22,067
Waikakahi Total		171,102	445,790	1,124,500	1,741,393
Grand Total		**2,109,832**	**3,143,842**	**16,204,198**	**21,457,873**

Figure 8-4: Water Renewals - 50 Years



Maintenance Expenditure

The maintenance requirements (as at 30/11/2020) are detailed below (including inflation). As the renewal works are progressed the existing maintenance expenditure will decease markedly. This will of course be offset by the increased operational costs as a result of the DWSNZ upgrade works i.e. higher labour, electricity and treatment consumables costs.

Table 8.5: Detailed Maintenance & Operational Expenditure: Cannington / Motukaika (figures are inflated)

Cannington Motukaika -5110	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	**-14,991**	**-16,401**	**-3,026**	**20,046**	**17,344**	**12,664**	**7,700**	**2,955**	**-295**	**-4,545**
Total Operating Revenue	**- 80,070**	**- 83,654**	**- 82,156**	**- 83,582**	**- 90,521**	**- 98,207**	**- 104,936**	**- 112,131**	**- 120,067**	**- 126,183**
511001505 - Targeted Rate - Water	- 68,840	- 70,893	- 74,436	- 81,880	- 89,249	- 97,281	- 104,091	- 111,377	- 119,174	- 125,132
511005101 - Recoveries - General	-	- 117	-	-	-	-	-	-	-	-
511007101 - Dividend - SC Power	- 60	- 60	- 60	- 60	- 62	- 63	- 65	- 66	- 68	- 70
511007305 - Internal Interest	- 11,170	- 12,584	- 7,660	- 1,642	- 1,210	- 863	- 780	- 688	- 825	- 981
Total Operating Expenditure	**65,079**	**67,253**	**79,130**	**103,628**	**107,865**	**110,871**	**112,636**	**115,086**	**119,772**	**121,638**
5110304 - Conference, Seminars and Training	223	-	-	-	-	-	-	-	-	-
5110322 - Advertising and Notices	-	-	206	206	213	217	222	228	234	241
5110333 - General Expenses	105	34	514	514	531	543	555	570	583	600
5110336 - LAPP Disaster Fund	1,117	1,344	1,479	1,716	1,774	1,812	1,853	1,902	1,945	2,004
5110347 - Publications	70	-	-	-	-	-	-	-	-	-
5110349 - Repairs and Maintenance	-	-	206	206	213	217	222	228	234	241
5110356 - Telephone Expenses	113	113	130	130	134	137	140	144	147	152
5110357 - Utilities charges	19,176	20,036	13,878	24,544	25,379	25,911	26,508	27,197	27,823	28,658
511040313 - Depreciation	13,505	13,505	14,815	20,885	22,158	23,931	23,931	23,931	25,845	25,845
5110405 - Insurance	912	1,138	945	1,106	1,144	1,168	1,194	1,226	1,254	1,291
5110422 - Electricity - Cannington	4,217	6,091	4,000	6,100	6,307	6,440	6,588	6,759	6,915	7,122
511042405 - Internal Rent	2,160	2,232	2,386	4,331	4,447	4,580	4,765	4,863	4,967	5,104
5110425 - Rates	824	482	510	542	560	572	585	601	614	633

Cannington Motukaika -5110	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5110501 - Asset Mgt Plan	680	742	4,355	2,555	2,642	2,697	2,759	2,831	2,896	2,983
5110504 - Consultants	-	-	1,098	1,098	1,135	1,159	1,186	1,217	1,245	1,282
5110506 - Contractors	115	178	1,098	1,098	1,135	1,159	1,186	1,217	1,245	1,282
5110508 - Line Maintenance	-	-	2,196	2,196	2,271	2,318	2,372	2,433	2,489	2,564
5110510 - Operational Maintenance	-	-	2,000	2,000	2,068	2,111	2,160	2,216	2,267	2,335
5110511 - Pump Maintenance	2,517	196	3,281	3,281	3,393	3,464	3,543	3,636	3,719	3,831
5110512 - Water Testing	3,810	4,167	4,000	4,900	4,653	4,751	4,860	4,986	5,555	5,254
5110520 - Source / Headworks	-	-	4,392	4,392	4,541	4,637	4,743	4,867	4,979	5,128
5110601 - HR Costs - 8125	325	289	353	291	356	363	370	376	383	390
511060101 - 8126 - Health & Safety O/H Recoveries	762	768	626	661	680	690	702	716	731	747
5110602 - Corporate Services Costs - 8120	2,744	3,202	3,416	3,336	3,450	3,475	3,564	3,648	3,691	3,763
5110604 - Utilities Costs - 8140	2,563	3,483	3,416	5,132	4,995	4,584	4,556	5,001	5,273	5,257
5110606 - Asset Management Unit Costs - 8160	3,735	4,006	4,250	6,013	6,279	6,350	6,414	6,497	6,612	6,715
5110608 - Network Costs	1,521	1,449	1,709	2,450	2,442	2,512	2,506	2,490	2,653	2,644
5110609 - CEO & Finance Costs - 8110	2,358	2,244	2,367	2,066	2,176	2,255	2,292	2,332	2,376	2,427
5110611 - Support - Asset Manager	1,529	1,555	1,504	1,880	2,788	2,818	2,858	2,975	3,098	3,145
Capital Projects										
511076001 - Cannington - Renewals	63,000	5,170	5,279	5,400	7,313	5,668	5,838	6,031	6,230	6,398
511076003 - Cannington - Pratts Pumphouse - New Board and Telemetry	23,000	-	-	-	-	-	-	-	-	-
511076004 - Cannington - Pratts Pumphouse - Pump 1 Renewal	-	-	-	-	-	4,874	-	-	-	-
511076005 - Cannington - Pratts Chlorine Analyser	16,000	-	-	-	-	-	-	-	-	-

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Cannington Motukaika -5110	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
511076006 - Cannington - Renewal Maintenace of weir	-	-	14,252	-	-	-	-	-	-	-
511076007 - Cannington - Pratts pumphouse power supply	-	-	-	20,088	-	-	-	-	-	-
511076008 - Cannington - Line renewal PE 80mm Slip Line	-	34,329	-	-	-	-	-	-	-	-
Capex Total	**102,000**	**39,499**	**19,530**	**25,488**	**7,313**	**10,542**	**5,838**	**6,031**	**6,230**	**6,398**

Table 8.6: Detailed Maintenance & Operational Expenditure: Hook / Waituna (Figures are inflated)

Hook Waituna - 5130	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	**18,310**	**24,688**	**59,553**	**11,073**	**18,147**	**8,871**	**2,811**	**11,235**	**14,061**	**17,560**
Total Operating Revenue	**309,697**	**344,614**	**330,775**	**353,610**	**370,811**	**389,076**	**404,477**	**420,517**	**437,166**	**446,013**
513001505 - Rates Appropriation - Targeted	278,035	306,604	321,657	344,173	361,382	379,451	394,629	410,414	426,830	435,367
513002501 - Works - Application fee	7,452	6,710	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
513002503 - Works - Metered Supply Charges	-	3,033	-	-	-	-	-	-	-	-
513005101 - Recoveries - General	5,284	1,493	4,626	4,626	4,783	4,884	4,996	5,126	5,244	5,401
513005103 - Recoveries - Works	-	2,323	-	-	-	-	-	-	-	-
513007101 - Dividend - SC Power	382	362	380	380	393	401	410	421	431	444
513007305 - Internal Interest	14,195	16,264	-	319	-	-	-	-	-	-
5130081 - Capital Contributions - Water	4,348	7,826	3,084	3,084	3,189	3,256	3,331	3,417	3,496	3,601
Total Operating Expenditure	**328,006**	**319,926**	**390,328**	**364,683**	**388,958**	**397,947**	**401,666**	**409,282**	**423,105**	**428,453**
5130322 - Advertising and Notices	113	24	206	206	213	217	222	228	234	241
5130333 - General Expenses	322	148	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5130336 - LAPP Disaster Fund	3,796	4,701	5,172	6,001	6,205	6,335	6,481	6,650	6,803	7,007
5130349 - Repairs and Maintenance	-	-	925	925	956	977	999	1,025	1,049	1,080
5130356 - Telephone Expenses	362	362	400	400	414	422	432	443	453	467
5130357 - Utilities charges	95,178	74,368	97,660	91,119	94,217	96,194	98,409	100,969	103,293	106,391
513040305 - Depn - Office Equipment	133	107	93	-	-	-	-	-	-	-
513040313 - Depreciation	70,466	71,473	91,991	93,882	93,882	101,392	101,392	101,392	109,503	109,503

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Hook Waituna - 5130	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
513040405 - Internal Interest Expense	4,685	5,600	9,230	-	15,360	13,708	11,914	10,473	8,893	6,954
5130405 - Insurance	4,054	5,075	4,935	5,652	5,844	5,967	6,104	6,263	6,407	6,599
5130407 - Loss on Assets	-	426	-	-	-	-	-	-	-	-
5130422 - Electricity	14,320	16,986	14,572	17,000	17,578	17,947	18,360	18,838	19,271	19,849
513042405 - Internal Rent	6,480	6,672	7,124	12,893	13,242	13,633	14,181	14,478	14,790	15,196
5130425 - Rates	2,142	2,266	2,420	2,546	2,633	2,688	2,750	2,821	2,886	2,973
5130501 - Asset Mgt Plan	2,028	5,101	12,652	8,852	9,153	9,345	9,560	9,809	10,035	10,336
5130504 - Consultants	480	-	3,000	3,000	3,102	3,167	3,240	3,324	3,401	3,503
5130506 - Contractor - Other	1,593	883	1,542	1,542	1,594	1,628	1,665	1,709	1,748	1,800
5130508 - Line Maintenance	-	603	1,250	1,250	1,293	1,320	1,350	1,385	1,417	1,460
5130510 - Operational Maintenance	-	-	2,000	2,000	2,068	2,111	2,160	2,216	2,267	2,335
5130511 - Pump Maintenance	332	-	1,500	1,500	1,551	1,584	1,620	1,662	1,700	1,751
5130512 - Water Testing	4,082	6,316	5,500	6,400	6,618	6,756	6,912	7,646	7,255	7,473
5130514 - Water purchases	18,051	23,528	24,000	26,000	26,884	27,448	28,080	28,811	29,474	30,358
5130520 - Source / Headworks	16,476	-	5,140	5,140	5,315	5,426	5,551	5,696	5,827	6,001
5130601 - HR Costs - 8125	1,720	1,529	1,873	1,135	1,388	1,415	1,444	1,468	1,492	1,519
513060101 - 8126 - Health & Safety O/H Recoveries	4,032	4,069	3,315	2,576	2,651	2,692	2,738	2,792	2,852	2,915
5130602 - Corporate Services Costs - 8120	14,512	16,966	18,100	11,780	12,183	12,273	12,586	12,884	13,034	13,289
5130604 - Utilities Costs - 8140	28,202	38,326	37,590	26,462	25,757	23,635	23,495	25,789	27,190	27,109
5130606 - Asset Management Unit Costs - 8160	11,638	12,496	13,258	15,403	16,082	16,265	16,428	16,641	16,937	17,200
5130608 - Network Costs	8,046	7,679	9,054	9,879	9,848	10,128	10,103	10,039	10,696	10,660

Hook Waituna - 5130	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5130609 - CEO & Finance Costs - 8110	12,471	11,890	12,544	7,296	7,685	7,964	8,095	8,234	8,391	8,570
5130611 - Support - Asset Manager	2,292	2,331	2,254	2,817	4,179	4,224	4,284	4,459	4,643	4,714
Capital Projects										
513076001 - Hook / Waituna - Renewals	10,000	20,680	10,557	10,800	11,081	11,336	23,352	12,061	12,459	25,590
513076005 - Hook / Waituna - Drinking Water Intake/Plant Compliance Upgrade	673,333	-	-	-	-	-	-	-	-	-
513076007 - Hook / Waituna - O'Donnells Pumphouse Panel and Telemetry	-	-	-	-	-	-	-	-	-	-
513076012 - Hook / Waituna - Simmons Pumphouse Pump 1 Renewal	-	-	-	-	-	4,534	-	-	-	-
513076014 - Hook / Waituna - Flow Meter Replacement	4,000	-	-	6,480	6,759	-	-	-	-	1,280
513076015 - Hook / Waituna - Dual check augmentation	18,000	-	-	-	-	-	-	-	-	-
513076016 - Hook / Waituna - Line renewal Intake to O'Donnells	-	-	-	-	-	-	-	48,244	49,836	-
513076017 - Hook / Waituna - Line renewal investigation Garlands to Stud	8,000	-	-	-	-	-	-	-	-	-
513076018 - Hook / Waituna - Line renewal upper Nortons Reserve Rd	-	-	-	-	42,108	43,077	-	-	-	-
513076019 - Hook / Waituna - Line renewal Manchesters and Molloys Rd	-	-	22,170	38,880	-	-	-	-	-	-
Capex Total	**713,333**	**20,680**	**32,727**	**56,160**	**59,948**	**58,947**	**23,352**	**60,305**	**62,295**	**26,870**

Table 8.7: Detailed Maintenance & Operational Expenditure: Lower Waihao (figures are inflated)

Lower Waihao - 5140	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	**19,985**	**29,684**	**83,243**	**20,251**	**26,079**	**9,493**	**591**	**5,969**	**8,053**	**15,489**
Total Operating Revenue	**308,758**	**318,818**	**316,592**	**362,921**	**388,756**	**415,613**	**430,992**	**447,182**	**463,760**	**475,748**
514001505 - Targeted Rate - Water	225,287	248,779	260,792	293,391	316,862	342,211	355,900	370,136	384,941	394,565
514002501 - Works - Application fee	452	752	617	617	638	651	666	684	699	720
514002502 - Works - Connection Fees	113	157	617	617	638	651	666	684	699	720
514005101 - Recoveries - General	13,762	6,014	5,140	5,140	5,315	5,426	5,551	5,696	5,827	6,001
514007101 - Dividend - SC Power	530	483	530	530	548	560	572	587	601	619
514007305 - Internal Interest	6,341	7,340	4,270	-	-	-	-	-	-	-
5140081 - Capital Contributions - Water	4,348	1,739	4,626	4,626	4,783	4,884	4,996	5,126	5,244	5,401
5140102 - Internal Water Recoveries	57,925	53,553	40,000	58,000	59,972	61,231	62,640	64,270	65,749	67,721
Total Operating Expenditure	**288,773**	**289,135**	**399,835**	**383,172**	**414,835**	**425,106**	**430,401**	**441,213**	**455,707**	**460,259**
5140322 - Advertising and Notices	75	-	206	206	213	217	222	228	234	241
5140333 - General Expenses	141	148	3,297	3,297	3,409	3,481	3,561	3,653	3,737	3,850
5140336 - LAPP Disaster Fund	2,233	2,820	3,102	3,598	3,720	3,798	3,886	3,987	4,079	4,201
5140349 - Repairs & Maintenance	-	30	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5140356 - Telephone Expenses	3,389	3,389	3,580	3,580	3,702	3,779	3,866	3,967	4,058	4,180
5140357 - Utilities charges	63,294	53,158	66,820	65,783	68,020	69,447	71,046	72,894	74,572	76,808
514040305 - Depn - Office Equipment	55	44	38	-	-	-	-	-	-	-
514040313 - Depreciation	41,373	42,155	86,820	84,178	84,178	92,096	92,096	92,096	99,464	99,464

Lower Waihao - 5140	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
514040405 - Internal Interest	8,552	8,716	37,580	29,095	51,238	49,650	49,230	51,572	51,678	48,623
5140405 - Insurance	2,169	2,706	2,453	2,835	2,931	2,993	3,062	3,141	3,214	3,310
5140407 - Loss on Assets	-	175	-	-	-	-	-	-	-	-
5140422 - Electricity	78,488	76,040	71,000	77,500	80,135	81,817	83,700	85,878	87,854	90,489
514042405 - Internal Rent	4,320	4,452	4,761	8,624	8,856	9,118	9,485	9,682	9,891	10,162
5140425 - Rates	2,142	1,456	6,000	1,635	1,691	1,726	1,766	1,812	1,853	1,909
5140501 - Asset Mgt Plan	1,359	4,259	13,099	8,699	8,995	9,184	9,395	9,639	9,861	10,157
5140504 - Consultants	-	-	1,000	1,000	1,034	1,056	1,080	1,108	1,134	1,168
5140506 - Contractors	1,404	817	2,056	2,056	2,126	2,171	2,220	2,278	2,331	2,401
5140508 - Line Maintenance	-	-	1,250	1,250	1,293	1,320	1,350	1,385	1,417	1,460
5140510 - Operational Maintenance	8,657	5,450	8,500	8,500	8,789	8,973	9,180	9,419	9,636	9,925
5140511 - Pump Maintenance	-	1,982	1,542	1,542	1,594	1,628	1,665	1,709	1,748	1,800
5140512 - Water Testing	3,662	5,622	5,500	5,700	5,894	6,017	6,156	6,759	6,462	6,655
5140520 - Source / Headworks	-	-	1,799	1,799	1,860	1,899	1,943	1,993	2,039	2,101
5140601 - HR Costs - 8125	1,541	1,370	1,677	952	1,164	1,186	1,211	1,231	1,251	1,274
514060101 - 8126 - Health & Safety O/H Recoveries	3,611	3,644	2,969	2,160	2,223	2,257	2,296	2,341	2,391	2,444
5140602 - Corporate Services Costs - 8120	12,996	15,195	16,210	14,715	15,219	15,331	15,721	16,094	16,282	16,599
5140604 - Utilities Costs - 8140	17,171	23,335	22,886	17,716	17,244	15,823	15,729	17,265	18,203	18,149
5140606 - Asset Management Unit Costs - 8160	11,475	12,315	13,066	15,821	16,519	16,707	16,875	17,093	17,398	17,668
5140608 - Network Costs	7,206	6,877	8,108	7,972	7,948	8,173	8,153	8,102	8,632	8,603
5140609 - CEO & Finance Costs - 8110	11,168	10,649	11,234	9,114	9,600	9,948	10,112	10,286	10,481	10,705
5140611 - Support - Asset Manager	2,292	2,331	2,254	2,817	4,179	4,224	4,284	4,459	4,643	4,714

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Lower Waihao - 5140	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Capital Projects										
514076001 - Lower Waihao - Renewals	30,000	5,170	5,279	5,400	-	5,668	5,838	6,031	6,230	6,398
514076003 - Lower Waihao - Drinking Water Intake/Plant Compliance Upgrade	797,000	-	-	-	-	-	-	-	-	-
514076004 - Lower Waihao - Glenavy Township Mains Renewal	-	-	-	-	77,567	-	-	124,590	-	-
514076005 - Lower Waihao - Glenavy Township Restrictor Renewal	-	-	-	-	11,081	-	-	20,142	-	-
514076006 - Lower Waihao - Glenavy Chlorine Monitoring Station	-	-	57,008	-	-	-	-	-	-	-
514076008 - Lower Waihao - Lower Waihao Boost Pump 3 Renewal	-	-	-	-	6,095	-	-	-	-	-
514076009 - Lower Waihao - Telemetry - Lower Waihao Boost Renewal	-	-	-	8,640	-	-	-	-	-	-
514076010 - Lower Waihao - Flow Meter Renewal	-	-	6,334	-	6,870	-	-	-	-	1,407
514076011 - Lower Waihao - Old Ferry Rd 150mm AC Renewal	-	-	-	-	-	-	-	-	-	-
514076012 - Lower Waihao - Glenavy line renewal	-	-	-	156,708	-	-	-	-	-	-
Capex Total	**827,000**	**5,170**	**68,621**	**170,748**	**101,613**	**5,668**	**5,838**	**150,763**	**6,230**	**7,805**

Table 8.8: Detailed Maintenance & Operational Expenditure: Otaio / Makikihi (figures are inflated)

Otaio Makikihi - 5150	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	**18,734**	**9,337**	**44,241**	**38,242**	**27,129**	**16,490**	**217**	**13,958**	**23,511**	**26,467**
Total Operating Revenue	**245,834**	**271,123**	**259,175**	**276,861**	**298,728**	**322,254**	**341,350**	**361,609**	**383,452**	**392,512**
515001505 - Targeted Rate - Water	220,759	241,094	250,697	270,753	292,413	315,806	334,754	354,840	376,130	383,653
515002501 - Works - Application fee	1,789	2,277	518	518	536	547	559	574	587	605
515005101 - Recoveries - General	1,909	2,990	2,570	2,570	2,657	2,713	2,776	2,848	2,913	3,001
515007101 - Dividend - SC Power	448	421	450	450	465	475	486	499	510	525
515007305 - Internal Interest	7,017	6,080	2,370	-	-	-	-	-	398	1,728
5150081 - Capital Contributions - Water	13,913	18,261	2,570	2,570	2,657	2,713	2,776	2,848	2,913	3,001
Total Operating Expenditure	**264,568**	**261,786**	**303,416**	**315,103**	**325,857**	**338,744**	**341,567**	**347,651**	**359,941**	**366,045**
5150322 - Advertising and Notices	40	34	206	206	213	217	222	228	234	241
5150333 - General Expenses	141	148	777	777	803	820	839	861	881	907
5150336 - LAPP Disaster Fund	2,233	2,398	2,637	3,059	3,163	3,229	3,304	3,390	3,468	3,572
5150349 - Repairs and Maintenance	-	-	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5150356 - Telephone expenses	1,505	1,536	1,542	1,542	1,594	1,628	1,665	1,709	1,748	1,800
5150357 - Utilities charges	45,558	33,505	48,316	49,612	51,299	52,375	53,581	54,975	56,240	57,927
5150358 - Vehicle Costs	-	-	-	100	103	106	108	111	113	117
5150398 - Vehicle Recoveries	1,242	95	400	-	-	-	-	-	-	-
5150401 - Bad & Doubtful Debts	2,065	-	-	-	-	-	-	-	-	-
515040303 - Depreciation - Plant & Machinery	2,544	4,577	3,662	2,928	2,342	1,874	1,499	1,199	960	768

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Otaio Makikihi - 5150	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
515040305 - Depn - Office Equipment	41	33	29	-	-	-	-	-	-	-
515040313 - Depreciation	64,605	64,774	75,726	88,770	93,087	100,533	100,533	100,533	108,576	108,576
515040405 - Internal Interest	4,096	1,432	6,160	1,356	833	3,530	1,966	1,665	-	-
5150405 - Insurance	3,954	4,925	4,926	5,592	5,782	5,903	6,039	6,197	6,339	6,529
5150407 - Loss on Assets	-	148	-	-	-	-	-	-	-	-
5150422 - Electricity	69,824	66,723	60,000	67,000	69,278	70,732	72,360	74,243	75,951	78,229
515042405 - Internal Rent	4,320	4,452	4,761	8,624	8,856	9,118	9,485	9,682	9,891	10,162
5150425 - Rates	1,318	1,775	1,890	1,994	2,062	2,105	2,154	2,210	2,260	2,328
5150501 - Asset Mgt Plan	1,359	4,438	14,216	9,316	9,633	9,835	10,061	10,323	10,561	10,877
5150504 - Consultants	2,600	-	1,500	1,500	1,551	1,584	1,620	1,662	1,700	1,751
5150506 - Contractors	304	630	1,542	1,542	1,594	1,628	1,665	1,709	1,748	1,800
5150508 - Line Maintenance	-	-	1,000	1,000	1,034	1,056	1,080	1,108	1,134	1,168
5150510 - Operational Maintenance	-	6,028	3,500	3,500	3,619	3,695	3,780	3,878	3,968	4,087
5150511 - Pump Maintenance	376	-	2,056	2,056	2,126	2,171	2,220	2,278	2,331	2,401
5150512 - Water Testing	4,804	6,612	6,800	7,200	7,445	7,601	7,776	7,978	8,162	8,407
5150520 - Source / Headworks	-	-	1,024	1,024	1,059	1,081	1,106	1,135	1,161	1,196
5150601 - HR Costs - 8125	1,300	1,155	1,415	747	914	931	950	966	982	1,000
515060101 - 8126 - Health & Safety O/H Recoveries	3,047	3,073	2,504	1,696	1,746	1,772	1,802	1,838	1,877	1,919
5150602 - Corporate Services Costs - 8120	10,968	12,816	13,673	12,260	12,680	12,774	13,099	13,410	13,566	13,831
5150604 - Utilities Costs - 8140	11,985	16,287	15,974	15,354	14,945	13,714	13,632	14,964	15,776	15,730
5150606 - Asset Management Unit Costs - 8160	7,305	7,855	8,334	9,538	9,959	10,072	10,174	10,305	10,489	10,652

Otaio Makikihi - 5150	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5150608 - Network Costs	6,081	5,801	6,839	6,308	6,288	6,467	6,451	6,410	6,829	6,806
5150609 - CEO & Finance Costs - 8110	9,425	8,982	9,475	7,594	7,999	8,289	8,426	8,570	8,733	8,920
5150611 - Support - Asset Manager	1,529	1,555	1,504	1,880	2,788	2,818	2,858	2,975	3,098	3,145
Capital Projects										
515076002 - Otaio / Makikihi - Renewals	48,000	-	2,111	-	2,216	-	2,335	-	2,492	-
515076003 - Otaio / Makikihi - New Bore Redundancy	-	127,182	-	-	-	-	-	-	-	-
515076004 - Otaio / Makikihi - Wilton - 2500m 80mm PVC + 400m 32 OD	-	-	-	-	-	-	-	-	-	-
515076005 - Otaio / Makikihi - Makikihi Township Mains Renewal	-	-	-	75,600	-	-	-	104,931	-	-
515076006 - Otaio / Makikihi - Makikihi Township Restrictor Renewal	-	-	-	10,800	-	-	-	12,543	-	-
515076009 - Otaio / Makikihi - Flow Meter Replacement	-	-	-	5,400	1,551	-	-	-	-	6,398
515076010 - Otaio / Makikihi - Line renewal Makikihi 100mm PVC	-	31,020	31,671	-	-	-	-	-	-	-
515076011 - Otaio / Makikihi - Consent Volume Review	-	-	-	-	16,622	-	-	-	-	-
515076012 - Otaio / Makikihi - Renewal Marshalls Road	10,000	-	-	-	-	-	-	-	-	-
Capex Total	**58,000**	**158,202**	**33,782**	**91,800**	**20,389**	**-**	**2,335**	**117,474**	**2,492**	**6,398**

Table 8.9: Detailed Maintenance & Operational Expenditure: Waihaorunga (figures are inflated)

Waihaorunga - 5160	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand total	**8,934**	**8,510**	**17,991**	**43,580**	**35,717**	**27,973**	**15,312**	**2,330**	**- 8,485**	**- 22,898**
Total Operating Revenue	**- 103,755**	**- 118,559**	**- 122,816**	**- 138,914**	**- 151,403**	**- 165,011**	**- 179,846**	**- 196,016**	**- 213,685**	**- 231,371**
516001505 - Targeted Rate - Water	- 99,667	- 114,854	- 120,586	- 138,674	- 151,155	- 164,758	- 179,587	- 195,750	- 213,367	- 230,436
516005101 - Recoveries - General	- 113	- 1,065	-	-	-	-	-	-	-	-
516007101 - Dividend - SC Power	- 240	- 240	- 240	- 240	- 248	- 253	- 259	- 266	- 272	- 280
516007305 - Internal Interest Income	- 3,734	- 2,400	- 1,990	-	-	-	-	-	- 46	- 655
Total Operating Expenditure	**112,688**	**127,069**	**140,807**	**182,494**	**187,120**	**192,984**	**195,158**	**198,346**	**205,200**	**208,473**
5160322 - Advertising and Notices	22	34	206	206	213	217	222	228	234	241
5160333 - General Expenses	115	-	514	514	531	543	555	570	583	600
5160336 - LAPP Disaster Fund	1,117	1,439	1,583	1,837	1,899	1,939	1,984	2,036	2,082	2,145
5160347 - Publications	48	-	-	-	-	-	-	-	-	-
5160349 - Repairs and Maintenance	-	-	382	382	395	403	413	423	433	446
5160356 - Telephone Expenses	113	113	123	123	127	130	133	136	139	144
5160357 - Utilities charges	27,560	32,809	22,616	40,746	42,131	43,016	44,006	45,151	46,190	47,575
516040303 - Depreciation - Plant and Machinery	401	360	352	129	116	104	94	84	76	68
516040305 - Depn - Office Equipment	38	31	27	-	-	-	-	-	-	-
516040313 - Depreciation	15,304	16,677	32,564	44,884	44,884	48,475	48,475	48,475	52,353	52,353
516040405 - Internal Interest	3,182	3,628	3,130	2,191	2,298	2,702	2,084	1,248	-	-
5160405 - Insurance	1,328	1,705	1,470	1,711	1,769	1,806	1,848	1,896	1,940	1,998

Waihaorunga - 5160	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5160407 - Loss on Assets	-	1,937	-	-	-	-	-	-	-	-
5160422 - Electricity	24,815	26,714	22,000	27,000	27,918	28,504	29,160	29,919	30,607	31,525
516042405 - Internal Rent	2,160	2,232	2,386	4,331	4,447	4,580	4,765	4,863	4,967	5,104
5160425 - Rates	659	470	500	528	546	557	570	585	599	616
5160501 - Asset Mgt Plan	680	1,335	9,529	5,429	5,614	5,731	5,863	6,016	6,154	6,339
5160504 - Consultants	-	-	1,098	1,098	1,135	1,159	1,186	1,217	1,245	1,282
5160506 - Contractors	1,413	2,720	2,467	2,467	2,551	2,604	2,664	2,734	2,797	2,880
5160508 - Line Maintenance	-	-	518	518	536	547	559	574	587	605
5160510 - Operational Maintenance	-	-	1,600	1,600	1,654	1,689	1,728	1,773	1,814	1,868
5160511 - Pump Maintenance	825	-	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5160512 - Water Testing	6,694	6,234	6,300	6,800	6,618	6,756	6,912	7,092	7,708	7,473
5160520 - Source / Headworks	-	-	555	555	574	586	599	615	629	648
5160601 - HR Costs - 8125	563	500	613	519	635	647	660	671	683	695
516060101 - 8126 - Health & Safety O/H Recoveries	1,319	1,333	1,085	1,178	1,213	1,231	1,252	1,277	1,304	1,333
5160602 - Corporate Services Costs - 8120	4,750	5,556	5,927	7,002	7,241	7,295	7,481	7,658	7,747	7,899
5160604 - Utilities Costs - 8140	3,935	5,348	5,245	9,572	9,317	8,550	8,499	9,329	9,835	9,806
5160606 - Asset Management Unit Costs - 8160	7,407	7,930	8,413	9,563	9,985	10,099	10,200	10,332	10,516	10,679
5160608 - Network Costs	2,633	2,514	2,965	4,367	4,353	4,477	4,466	4,437	4,728	4,712
5160609 - CEO & Finance Costs - 8110	4,081	3,894	4,107	4,337	4,568	4,733	4,812	4,894	4,987	5,094
Capital Projects										
516076001 - Waihaorunga - Renewals	108,500	-	-	5,400	-	-	5,838	-	-	6,398
516076003 - Waihaorunga - Drink Water Intake/Plant Compliance Upgrade	-	-	-	-	-	-	-	-	-	-

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Waihaorunga - 5160	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
516076004 - Waihaorunga - Takitu Pumphouse - New Board and Telemetry	-	22,748	-	-	-	-	-	-	-	-
Capex Total	108,500	22,748	-	5,400	-	-	5,838	-	-	6,398

Table 8.10: Detailed Maintenance & Operational Expenditure: Waikakahi (figures are inflated)

Waikakahi - 5170	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand total	**10,268**	**16,492**	**134,006**	**147,615**	**146,539**	**99,203**	**54,648**	**6,390**	**34,904**	**78,272**
Total Operating Revenue	**321,967**	**354,266**	**336,031**	**385,256**	**442,133**	**507,404**	**557,505**	**612,627**	**673,219**	**719,988**
517001505 - Targeted Rate - Water	294,057	311,075	328,168	377,393	434,002	499,103	549,013	603,914	664,305	710,807
517002501 - Works - Application fee	1,013	2,927	308	308	318	325	333	341	349	360
517005101 - Recoveries - General	4,660	10,371	6,168	6,168	6,378	6,512	6,661	6,835	6,992	7,202
517007101 - Dividend - SC Power	774	713	770	770	796	813	832	853	873	899
517007305 - Internal Interest	18,854	17,400	-	-	-	-	-	-	-	-
5170081 - Capital Contributions - Water	2,609	11,779	617	617	638	651	666	684	699	720
Total Operating Expenditure	**332,236**	**370,758**	**470,037**	**532,871**	**588,672**	**606,607**	**612,153**	**619,017**	**638,315**	**641,716**
5170322 - Advertising and Notices	-	34	206	206	213	217	222	228	234	241
5170333 - General Expenses	221	17,792	1,285	1,285	1,329	1,357	1,388	1,424	1,457	1,500
5170336 - LAPP Disaster Fund	2,680	3,385	3,723	4,320	4,467	4,561	4,666	4,787	4,897	5,044
5170347 - Publications	70	-	-	-	-	-	-	-	-	-
5170349 - Repairs and Maintenance	-	-	360	360	372	380	389	399	408	420
5170356 - Telephone expenses	4,529	4,191	4,800	4,400	4,550	4,645	4,752	4,876	4,988	5,137
5170357 - Utilities charges	62,212	70,824	56,540	86,497	89,438	91,315	93,417	95,847	98,053	100,994
5170401 - Bad & Doubtful Debts	2,516	-	-	-	-	-	-	-	-	-
517040303 - Depreciation - Plant & Machinery	70	63	56	51	46	41	37	33	30	27
517040313 - Depreciation	52,346	54,314	144,968	159,983	159,983	172,782	172,782	172,782	186,604	186,604

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Waikakahi - 5170	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
517040405 - Internal Interest Expense	806	1,320	43,390	33,595	78,720	78,942	77,240	73,857	69,516	63,635
5170405 - Insurance	3,019	3,854	3,561	4,106	4,246	4,335	4,434	4,550	4,655	4,794
5170422 - Electricity	65,975	70,756	61,000	70,800	73,207	74,744	76,464	78,453	80,259	82,666
517042201 - Electricity - Hurst Tank 17 Supply	-	-	540	540	558	570	583	598	612	631
517042405 - Internal Rent	4,320	4,452	4,761	8,624	8,856	9,118	9,485	9,682	9,891	10,162
5170425 - Rates	2,471	1,660	1,770	1,864	1,927	1,968	2,013	2,066	2,113	2,176
5170501 - Asset Mgt Plan	1,359	4,080	12,082	8,082	8,357	8,532	8,729	8,956	9,162	9,437
5170504 - Consultants	-	-	1,028	1,028	1,063	1,085	1,110	1,139	1,165	1,200
5170506 - Contractor - Other	600	274	2,056	2,056	2,126	2,171	2,220	2,278	2,331	2,401
5170508 - Line Maintenance	-	335	1,500	1,500	1,551	1,584	1,620	1,662	1,700	1,751
5170510 - Operational Maintenance	-	-	1,500	1,500	1,551	1,584	1,620	1,662	1,700	1,751
5170511 - Pump Maintenance	-	160	500	500	517	528	540	554	567	584
5170512 - Water Testing	3,205	4,064	3,900	4,600	4,343	4,434	4,536	4,654	5,215	4,904
5170514 - Water purchases	57,925	53,553	40,000	58,000	59,972	61,231	62,640	64,270	65,749	67,721
5170520 - Source / Headworks	-	-	1,928	1,928	1,994	2,035	2,082	2,136	2,186	2,251
5170601 - HR Costs - 8125	1,773	1,576	1,930	1,061	1,298	1,323	1,350	1,372	1,395	1,420
517060101 - 8126 - Health & Safety O/H Recoveries	4,156	4,192	3,416	2,409	2,479	2,517	2,560	2,610	2,666	2,725
5170602 - Corporate Services Costs - 8120	14,955	17,482	18,650	17,078	17,663	17,794	18,247	18,679	18,898	19,266
5170604 - Utilities Costs - 8140	15,801	21,473	21,060	23,189	22,571	20,711	20,589	22,599	23,827	23,756
5170606 - Asset Management Unit Costs - 8160	8,554	9,207	9,769	11,828	12,350	12,490	12,616	12,779	13,006	13,208
5170608 - Network Costs	8,292	7,912	9,329	9,025	8,997	9,252	9,229	9,171	9,771	9,738

Waikakahi - 5170	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5170609 - CEO & Finance Costs - 8110	12,851	12,252	12,925	10,578	11,142	11,546	11,737	11,938	12,165	12,425
5170611 - Support - Asset Manager	1,529	1,555	1,504	1,880	2,788	2,818	2,858	2,975	3,098	3,145
Capital Projects										
517076001 - Waikakahi - Renewals	174,696	5,170	5,279	5,400	5,541	5,668	5,838	6,031	6,230	6,398
517076003 - Waikakahi - Drinking Water Intake/Plant Compliance Upgrade	1,439,000	-	-	-	-	-	-	-	-	-
517076006 - Waikakahi - Mehrtens/Cameron 700m 32 OD	-	4,343	-	-	-	-	-	-	-	-
517076007 - Waikakahi - Harrison B/T 1.5km 63 OD	-	11,374	-	-	-	-	-	-	-	-
517076008 - Waikakahi - McKay/ Francis 1.3km 40 OD	-	-	11,613	-	-	-	-	-	-	-
517076010 - Waikakahi - LW WK Booster PH - Pump 4	-	-	-	-	14,405	-	-	-	-	-
517076011 - Waikakahi - Dog Kennel Road PH - Pump 1	-	-	-	-	-	19,838	-	-	-	-
517076015 - Waikakahi - Telemetry - Waikakahi Reservoir	-	-	-	-	-	-	9,341	-	-	-
517076017 - Waikakahi - Flow meter renewals	1,600	-	-	-	1,773	-	-	-	-	-
Capex Total	**1,615,296**	**20,887**	**16,891**	**5,400**	**21,719**	**25,506**	**15,179**	**6,031**	**6,230**	**6,398**

Table 8.11: Detailed Maintenance & Operational Expenditure: Waimate Urban (figures are inflated)

Waimate Urban - 5310	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Grand Total	**- 18,241 +**	**- 12,133**	**74,273**	**35,757**	**- 793**	**17,706**	**24,222**	**30,718**	**16,001**	**19,277**
Total Operating Revenue	**- 778,742**	**- 851,259**	**- 865,812**	**- 944,312**	**- 1,017,049**	**- 1,094,824**	**- 1,122,149**	**- 1,150,104**	**- 1,178,736**	**- 1,205,723**
531001505 - Targeted Rate - Water	- 720,543	- 773,417	- 808,182	- 889,000	- 960,120	- 1,036,930	- 1,062,853	- 1,089,424	- 1,116,660	- 1,141,785
531002501 - Works - Application fee	- 1,013	- 822	- 1,028	- 1,028	- 1,063	- 1,085	- 1,110	- 1,139	- 1,165	- 1,200
531002503 - Works - Metered Supply Charges	- 14,075	- 18,647	- 15,420	- 15,420	- 15,944	- 16,279	- 16,654	- 17,087	- 17,480	- 18,004
531005101 - Recoveries - General	- 593	- 19,901	-	-	-	-	-	-	-	-
531007101 - Dividend - SC Power	- 1,418	- 1,305	- 1,420	- 1,420	- 1,468	- 1,499	- 1,534	- 1,574	- 1,610	- 1,658
531007305 - Internal Interest Income	- 958	- 8,248	- 4,870	- 553	- 307	- 83	- 155	-	-	-
5310081 - Capital Contributions - Water	- 22,822	- 5,783	- 11,312	- 11,312	- 11,697	- 11,942	- 12,217	- 12,535	- 12,823	- 13,208
5310102 - Internal Water Recoveries	- 18,051	- 23,528	- 24,000	- 26,000	- 26,884	- 27,448	- 28,080	- 28,811	- 29,474	- 30,358
531041202 - Rates Remissions	731	391	420	420	434	443	454	465	476	490
Total Operating Expenditure	**760,501**	**839,125**	**940,085**	**980,069**	**1,016,256**	**1,077,118**	**1,097,927**	**1,119,386**	**1,162,735**	**1,186,446**
5310304 - Conferences, Seminars and Training	612	922	-	-	-	-	-	-	-	-
5310322 - Advertising and Notices	591	169	514	514	531	543	555	570	583	600
531033103 - Computer Support	-	-	-	-	2,895	2,956	3,024	3,103	3,174	3,269
5310333 - General Expenses	3,325	1,618	4,108	4,108	4,248	4,337	4,437	4,552	4,657	4,797
5310336 - LAPP Disaster Fund	5,670	5,858	6,444	7,477	7,731	7,893	8,075	8,285	8,476	8,730
5310349 - Repairs and Maintenance	105	64	1,542	1,542	1,594	1,628	1,665	1,709	1,748	1,800
5310356 - Telephone expenses	1,712	1,806	1,789	2,100	2,171	2,217	2,268	2,327	2,381	2,452

Waimate Urban - 5310	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5310357 - Utilities Charges	151,212	130,281	128,500	186,789	193,140	197,193	201,732	206,981	211,744	218,095
5310398 - Vehicle Recoveries	-	-	700	-	-	-	-	-	-	-
5310401 - Bad / doubtful debts	-	810	-	-	-	-	-	-	-	-
531040302 - Depreciation - Buildings	59	59	59	165	165	165	181	181	181	200
531040303 - Depreciation - Plant & Machinery	1,906	1,715	1,607	1,650	1,458	1,291	1,147	1,017	905	808
531040305 - Depn - Office Equipment	582	535	535	2,272	1,817	1,454	1,163	930	744	596
531040313 - Depreciation	210,321	236,805	283,475	276,712	294,830	326,666	326,666	326,666	352,799	361,070
531040319 - Amorisation on intangible assets	-	-	- 1	-	4,841	3,901	3,149	2,547	2,066	1,681
531040405 - Internal Interest	2,726	456	11,580	-	-	-	-	5,382	7,621	9,815
531040406 - Waimate Urban Water - Internal Loan interest	63,122	102,620	120,500	98,173	117,073	141,373	152,173	150,973	149,773	148,573
5310405 - Insurance	5,522	7,401	6,355	7,378	7,629	7,789	7,968	8,176	8,364	8,615
5310407 - Loss on Assets	-	760	-	-	-	-	-	-	-	-
5310422 - Electricity	104,712	110,751	112,000	115,500	119,427	121,933	124,740	127,986	130,931	134,858
5310423 - Grounds maintenance - Jobcosted Labour & Plant	-	-	1	700	714	728	742	756	769	782
531042405 - Internal Rent	6,480	6,672	7,124	12,893	13,242	13,633	14,181	14,478	14,790	15,196
5310425 - Rates	7,112	9,553	10,190	10,730	11,095	11,328	11,588	11,890	12,164	12,528
5310501 - Asset Mgt Plan	-	3,635	14,849	9,249	9,563	9,764	9,989	10,249	10,485	10,799
5310504 - Consultants	450	2,695	2,500	32,500	2,585	2,639	2,700	2,770	2,834	2,919
5310506 - Contractors	2,217	2,108	4,000	4,000	4,136	4,223	4,320	4,432	4,534	4,670
5310510 - Operational Maintenance	3,450	3,411	6,000	6,000	6,204	6,334	6,480	6,649	6,802	7,006
5310511 - Pump Maintenance	45	30	500	500	517	528	540	554	567	584
5310512 - Water Testing	6,003	7,723	6,500	9,650	9,978	10,188	10,422	10,693	10,939	11,267

Section 8: Financial Summary

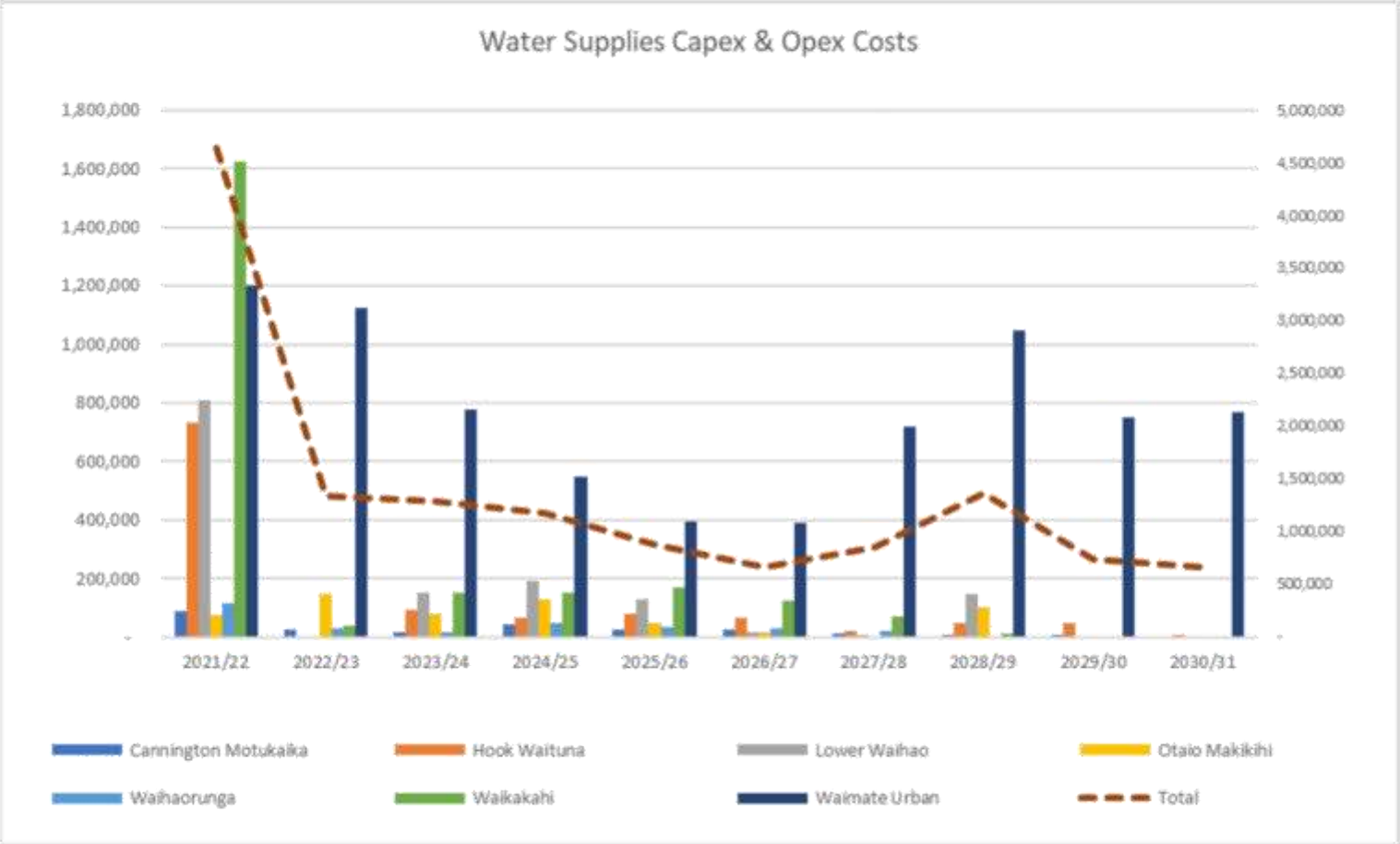
Waimate Urban - 5310	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
5310601 - HR Costs - 8125	4,409	3,918	4,800	2,664	3,258	3,321	3,388	3,445	3,503	3,566
531060101 - 8126 - Health & Safety O/H Recoveries	10,334	10,426	8,495	6,047	6,223	6,319	6,426	6,553	6,693	6,842
5310602 - Corporate Services Costs - 8120	37,193	43,480	46,387	29,189	30,188	30,411	31,186	31,925	32,298	32,928
5310604 - Utilities Costs - 8140	33,390	45,376	44,504	58,068	56,522	51,864	51,557	56,592	59,665	59,489
5310606 - Asset Management Unit Costs - 8160	33,961	36,435	38,658	39,321	41,056	41,523	41,940	42,482	43,238	43,911
5310608 - Network Costs	20,622	19,680	23,202	22,954	22,883	23,533	23,475	23,326	24,852	24,769
5310609 - CEO & Finance Costs - 8110	31,961	30,472	32,147	18,078	19,042	19,733	20,059	20,404	20,792	21,236
5310611 - Support - Asset Manager	10,699	10,879	10,521	13,146	19,498	19,709	19,989	20,807	21,665	21,996
Capital Projects										
531071501 - Urban Water - General plant and equipment	6,300	-	-	-	-	-	-	-	-	-
531076001 - Urban Water - Bond Street Subdivision	74,895	-	-	-	-	-	-	-	-	-
531076002 - Urban Water - Lateral Renewals	96,000	62,040	63,342	64,800	66,486	68,016	70,056	127,847	132,065	135,627
531076003 - Urban Water - AC Water Main Renewals	210,987	113,740	116,127	118,800	121,891	124,896	128,436	191,046	197,351	202,673
531076004 - Urban Water - CI Water Main Renewals	160,000	165,440	168,912	172,800	177,296	181,376	186,816	387,882	400,681	411,487
531076008 - Urban Water - Timaru Road pump renewals	68,081	25,850	-	-	-	-	-	-	-	-
531076016 - Urban Water - Waimate Reservoir Wash Down Pump	-	-	-	-	-	-	-	-	-	-
531076018 - Urban Water - Telemetry - Timaru Rd Plant	-	-	-	8,640	-	-	-	-	-	-
531076019 - Urban Water - Telemetry - Manchesters Bore	-	-	-	8,100	-	-	-	-	-	-
531076021 - Urban Water - Waimate Reservoir Cover Replacement	-	-	-	108,000	-	-	-	-	-	-
531076023 - Urban Water - Main line valve renewals	28,000	28,952	29,560	30,240	31,027	31,741	32,693	33,771	34,885	35,826
531076024 - Urban Water - Booster Bakers/Court/Hunts/Fitzmaurice Roads	20,000	-	295,596	-	-	-	-	-	-	-

Waimate Urban - 5310	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
531076025 - Urban Water - Extension Bakers/Court/Hunts/Fitzmaunce Roads	-	-	-	-	-	-	326,928	337,708	-	-
531076026 - Urban Water - Booster Manchesters Standby Pump 2	-	29,986	-	-	-	-	-	-	-	-
531076027 - Urban Water - Water Meters	472,045	-	-	-	-	-	-	-	-	-
531076028 - Urban Water - Te Kiteroa Main, Booster and Reservoir	83,085	686,147	30,468	-	-	-	-	-	-	-
531078001 - Urban Water - Meter reader software	-	24,205	-	-	-	-	-	-	-	-
Capex Total	**1,219,393**	**1,136,360**	**704,004**	**511,380**	**396,700**	**405,829**	**744,929**	**1,078,253**	**764,983**	**785,613**

Table 8.12: Summary of Expenses (Capex & Opex)

Summary of Expenses (Capex & Opex)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Cannington Motukaika	$205,628	$147,364	$130,401	$138,124	$122,399	$130,314	$127,476	$129,834	$134,834	$138,432
Hook Waituna	$1,078,016	$409,638	$430,674	$457,826	$469,230	$482,052	$451,805	$491,639	$508,888	$484,673
Lower Waihao	$1,210,172	$420,005	$493,727	$601,149	$542,826	$461,375	$466,097	$614,813	$488,080	$497,860
Otaio Makikihi	$373,103	$484,059	$372,526	$433,367	$368,040	$359,941	$368,380	$489,131	$390,163	$403,324
Waihaorunga	$290,994	$209,868	$192,984	$200,558	$198,346	$205,200	$214,311	$211,870	$220,491	$232,596
Waikakahi	$2,148,167	$609,559	$623,498	$617,553	$640,736	$663,821	$656,895	$649,269	$666,716	$670,337
Waimate Urban	$2,199,462	$2,152,616	$1,781,122	$1,609,307	$1,516,066	$1,568,564	$1,931,375	$2,295,780	$2,050,390	$2,108,941
Total	$7,505,542	$4,433,109	$4,024,932	$4,057,884	$3,857,663	$3,871,267	$4,216,339	$4,882,336	$4,459,562	$4,536,163

Figure 8-5: Summary of Annual Expenditure



8.6.3 Utilities (Water, Wastewater & Stormwater) Renewals and Capital Summary

The following details the summary of new capital and renewals for all three services for the 10 year period.

Table 8.13: Utilities (Water, Wastewater & Stormwater) Renewals and Capital Summary

3Waters	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Renewals	2,240,127	876,212	876,231	1,222,776	1,066,103	869,811	855,851	1,916,372	1,716,352	1,737,177
Levels of Service	3,660,143	156,557	57,008	5,400	-	5,668	-	-	-	-
Growth	490,080	716,133	326,064	-	-	-	326,928	337,708	-	-
Total	**6,390,350**	**1,748,901**	**1,259,302**	**1,228,176**	**1,066,103**	**875,479**	**1,182,779**	**2,254,080**	**1,716,352**	**1,737,177**

Figure 8-6: 3Waters Renewals and Capital Projects

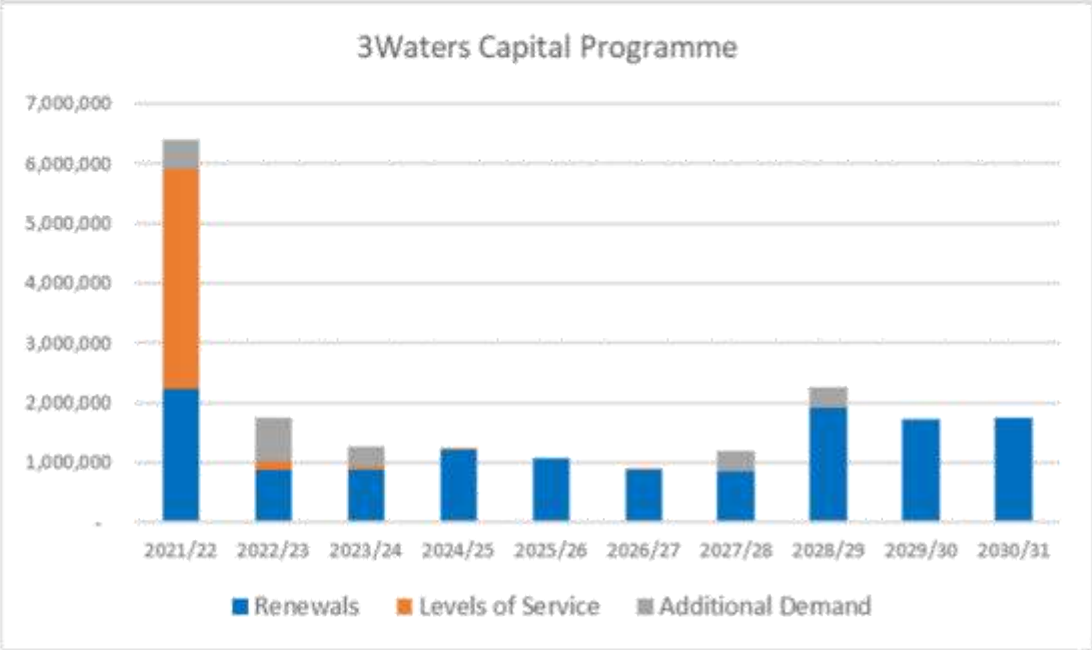
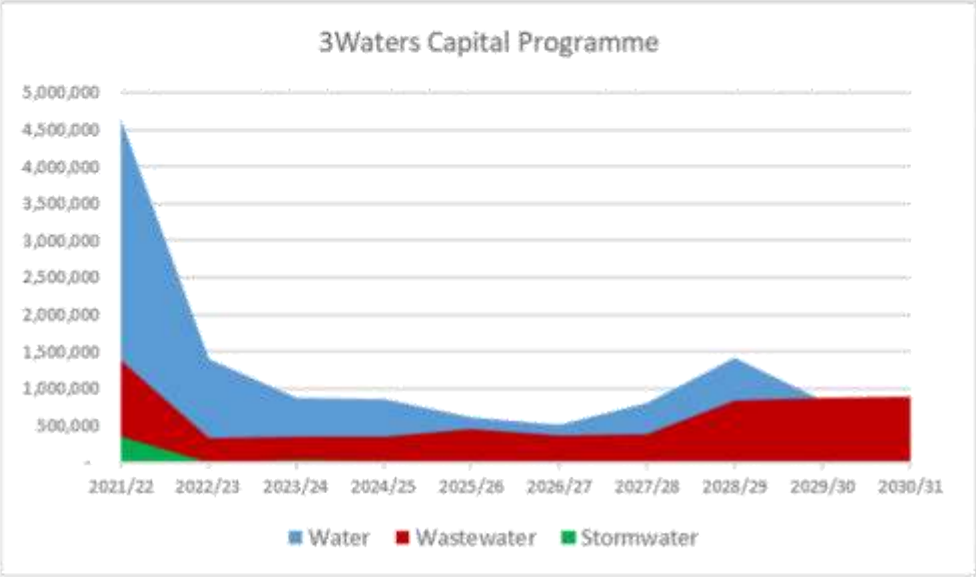


Table 8.14: 3Waters Capital Programme

Utility	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Water	4,643,522	1,403,545	875,555	866,376	607,682	506,492	803,309	1,418,856	848,458	845,877
Wastewater	1,388,196	340,186	343,630	351,000	452,659	363,319	379,470	835,224	867,894	891,300
Stormwater	358,632	5,170	40,117	10,800	5,762	5,668	-	-	-	-
Total	**6,390,350**	**1,748,901**	**1,259,302**	**1,228,176**	**1,066,103**	**875,479**	**1,182,779**	**2,254,080**	**1,716,352**	**1,737,177**

Figure 8-7: 3Waters Capital Programme



8.7 Key Financial Forecasts Assumptions and Uncertainties

8.7.1 Overview

Forecasting assumptions and uncertainties are essential in the operation of Council's assets to indicate the levels of risks associated with those assumptions. Where necessary additional strategies can be implemented to reduce the risk.

The LGA 2002 - Schedule 10, Part 1 (11) requires the Council to clearly define all the significant forecasting assumptions and risks that underlie the financial estimates, assumptions concerning the useful life of significant assets and an estimate of the potential effects of the uncertainty on the financial estimates provided.

Appendix C details the significant forecasting assumptions for the utilities.

8.7.2 Financial Forecast

The following table provide an assessment of the confidence in, and the accuracy of the 20-year financial forecast and supporting asset data. Table 8.16 and Table 8.17 detail the general meaning of the grades:

Table 8.15: Financial Forecast Confidence Level

Activity	Confidence Grade	Accuracy
Operations/Maintenance	B	2
Depreciation	B	2
Overheads		2
Funding Costs	C	3
Capital Expenditure	B	3
Debt Repayment	C	3
Overall	B	3

The overall confidence level is 'B' or reliable. Data is based on sound records, procedures, investigations and analysis which is documented but has some shortcomings and gaps that may impact on the confidence of long term financial forecasts.

The overall accuracy is 3 indicating that the accuracy of the financial forecasts is +/- 20%.

Table 8.16: Confidence Grades

Confidence Grade	General Meaning
A	**Highly Reliable** Data based on sound records, procedures, investigations and analysis, which is properly documented and recognised as the best method of assessment
B	**Reliable** Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings for example the data is old, some documentation is missing and reliance is placed on unconfirmed reports or some extrapolation
C	**Uncertain** Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolation from a limited sample for which grade A or B is available
D	**Very Uncertain** Data is based on unconfirmed verbal reports and/or cursory inspection and analysis

Accuracy ratings are made using the criteria outlined in:

Table 8.17: Accuracy Ratings

Grade	Description	Accuracy
1	Accurate	100%
2	Minor inaccuracies	+ / - 5%
3	50% estimated	+ / - 20%
4	Significant data estimated	+ / - 30%
5	All data estimated	+ / - 40%

9.0 PROCESSES AND ASSET MANAGEMENT PRACTICES

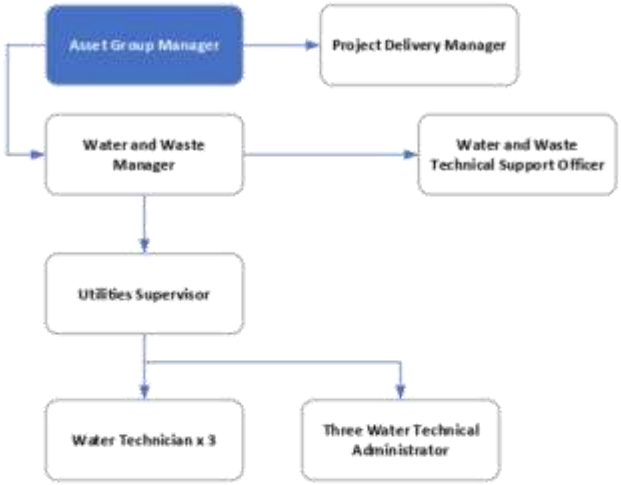
This section outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP.

9.1 Organisation Structure

Figure 9-1: Council Management Structure



Figure 9-2: Water and Waste Unit Structure



9.2 AMP Review and Monitoring

9.2.1 Monitoring Approach

Council has developed this AMP based on its current knowledge of customer requirements, the configuration of the existing and future network to meet customer requirements, current asset information and the strategies to achieve customer requirements.

To further develop a meaningful AMP, including supporting processes, systems and data, Council recognise the need for a more structured approach. This approach includes:

- Council's firm commitment to implement and develop the AMP.
- Incorporate this AMP as a tactical plan within Council's planning framework.
- Review of the AMPs by internal staff and suitably qualified external consultants.
- Aiming to produce an AMP that meets the requirements of the community.
- Benchmarking key performance indicators against similar external TLAs.
- A corporate commitment to implementing and maintaining suitable Asset Management information systems.
- Adopting a team approach to the preparation of future AMPs in order to maximise the buy-in of internal staff and sharing of specialised knowledge.

9.2.2 Timetable for Audit and Review

The programme for future Asset Management reviews of this AMP is in Table 9.1.

Table 9.1: Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 June each year
Internal AMP peer review by staff not directly involved in preparation of AMP	30 June each year
Adoption of AMP by Council	30 June every 3 years
External benchmarking by internal staff	Annually
Audit NZ external audit	As required by Audit NZ

9.2.3 Utilisation of AMPs

Historically AMPs have been carried out for regulatory requirements and not used on an on-going basis. Table 9.2 below details the methodologies for the on-going implementation and updating of AMPs within Council to ensure the Three Waters AMPs are used to their full potential.

Table 9.2: Methodologies for the On-going Implementation and Updating of AMPs

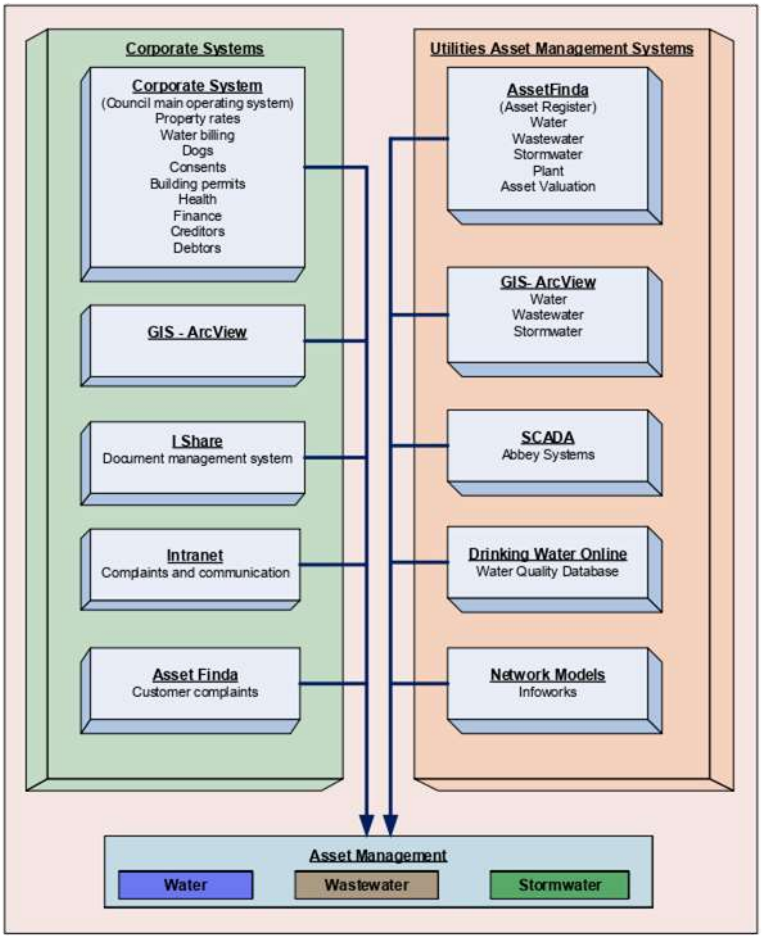
Methodologies	Output
Continuation of the organisational culture of asset management	The asset management culture needs be supported by the Chief Executive and senior managers in conjunction with the elected Council. Effective stewardship and management of Council major investment (assets) will not occur in the long term without a culture of asset management.
Resourcing of Asset Management Programmes	Asset management programmes must be adequately resourced.
Roles and Responsibilities of Council Staff	The roles and responsibilities of Council staff as they relate to the AMPs implementation need to be defined in respect to the ongoing use of the plans as

Methodologies	Output
	this will assist the AMP to remain relevant and current. To enable this to occur the following is required. - The AMPs adopted/accepted by staff down to a defined level. - Council Staff to know what's in the plans and how it could affect their day to day Work. - Council Staff to understand the reasons for the AMP and the implications for the long-term use of them. - Understand all the reporting requirements for Levels of Service and Internal Benchmarking. - Training required in the use of the AMP (what's in it, how work is done, on-going requirements for monitoring, review and updating). - Instigation of processes to encourage Council Staff to use the AMP.

9.3 Business Processes

Figure 9-3 below details the data systems that are presently used within Council and their relationship with other systems.

Figure 9-3: Council Data Systems



9.3.1 AssetFinda

Council uses the AssetFinda Asset Management system for its Asset Information System. AssetFinda have been used since 2005 and is a web/GIS based asset management system. This has greatly improved the information on the scheme assets and enhance the future AMP and Asset Valuations. Some of the outputs from AssetFinda includes:

- Complete asset register for the scheme.
- Completion of asset valuations.
- Maintenance can be entered into the database. Cumulative costs of maintenance on each asset can be assessed.
- Predictive analysis to indicate when assets should be replaced.
- Condition monitoring of assets.
- Complete "what if" scenarios to determine the optimal time to replace assets.

AssetFinda was selected for the following reasons:

- Ease of use
- Simple functionality
- Low initial fee structure
- Low on-going fee structure

Table 9.3: AssetFinda Functionality and Utilisation by Council

Register Functions	Utilisation
Water	Water lines, points and plant details
Wastewater	Wastewater lines, points and plant details
Stormwater	Stormwater lines, points and plant details
Maintenance History	Cumulative maintenance costs of an asset. Maintenance history is also linked to the asset in GIS
Valuation	Used on an annual basis
Criticality	To be populated
Condition & Performance	Scores held in register

Data will be collected continually throughout the year and entered into AssetFinda.

Metadata Standards

A Central Government funded project is the 'Metadata Standards' which sets national metadata standards for the 3-waters (potable, waste and storm) network, and for residential and light commercial buildings. This is to ensure the correct asset data is collected and in the correct manner. The roll out of these data standards is expected to start mid 2017.
Going forward Council will align its data collection and recording with the Metadata Standards. However, the existing data will be held and only aligned with the standards over time as more current information is captured.

9.3.2 GIS

Plans for reticulation and facilities for the three utilities are entered onto ArcMap as they are received. Where information is received from contractors on the utilities services then ArcView is updated. Council does not have a robust system of ensuring that all subdivision plans are of the required standard prior to importing into ArcView.

Asset Data

The majority of asset quantity, location and pipe size data are held in the GIS system. There are a number of quality assurance processes are used to ensure the reliability of the data recorded. These processes include:

Table 9.4: GIS Data

Item	Details
Sampling of assets contained in the GIS / AMS	Using field tests to check the reliability of pipe capture, pipe quantities and pipe size within the GIS/AMS
Coverage testing	Checks by Asset Managers that assets captured in particular areas reconcile with the services known to be provided
Continuity checks	These are carried out in GIS to identify breaks in the piping networks and gaps in the data
Historical and new data	GIS capture of historical data has been derived from professional engineering and survey plans, from Council record sheets or Council staff knowledge. The on-going capture of asset data is derived from engineering as-built plans. All As-built plans received by Council are required to comply with strict specifications and all data entered into the GIS/AMS is the subject of quality assurance processes

Recent staff changes have impacted greatly on the quality of data within the AssetFinda/GIS systems. It is proposed as part of future improvements in the management programme section of this AMP to develop and implement formal quality assurance systems for existing and new GIS data.

9.3.3 Network Modelling

Computer models (InfoWorks) of the water schemes exist. This enables Council to:

- Determine accurately the existing capacity of the schemes
- Identify inadequate sections of the schemes
- Operate the system in the most efficient manner
- Determine the impact of further development on the schemes
- Identify system upgrading requirements
- Compare options for upgrading the water schemes

The network models are operated and maintained by Opus International Consultants Ltd.

9.3.4 Complaints Database

The Council operates a complaints database through a 'Request for Service System' via AssetFinda. This records all complaints associated with the Three Waters, Roading activities and Parks and Reserves and provides useful information for trending and analysis of system performance and highlights issues.

The database has now been updated such that service requests can now be analysed by relevant performance measures (Levels of Service) and priority response times included within AssetFinda. Further development of the system is required to allow retrospective entry of after-hours information and also escalation. Council is working with the developer of the system to develop this.

9.3.5 SCADA System

Background

Council operates an Abbey Systems Telemetry or SCADA (Supervisory Control and Data Acquisition) system. The system is used to monitor & control critical aspects of treatment plants and pump stations, 17 sites are presently monitored that include:

- 1 WWTPs
- 2 Wastewater pump stations
- 7 Water intakes and treatment plants (WTP)
- 5 Reservoirs
- 3 Water pump stations

SCADA is available to the Waimate Urban water scheme and Lower Waihao, Otaio, Hook Waituna, and Waikakahi rural water schemes. Upgrades to all the rural water supplies in the near future will result in SCADA being available to all water schemes.

Two of the sites in Otaio-Makikhi are presently inactive, as the sites are not used in the present supply configuration. The sites are Otaio Gorge Plant and Otaio Reservoir.

Table 9.5: Scheme SCADA Details

SCHEME	FACILITY	METER	SCADA REPORT													ALARMING	
			Pump Start/Stop	Pump Hours	Level	Flow & Volume	Turbidity	FAC Residual	Cl2 Dose	pH	Conductivity	Temperature	UV Transmittance	UV Dose	Pressure	Intruder/ Operator	Outgoing alarms	Flashing Light
Waimate Urban	Manchester Rd Bore		✓	✓	✓	✓	✓	✓		✓	✓			✓	✓	✓	✓	
	Timaru Rd Bore		✓	✓	✓	✓	✓	✓		✓		✓	✓		✓		✓	
	Mill Rd Reservoir				✓	✓		✓									✓	
	Cannington Plant				✓	✓	✓	✓		✓		✓			✓		✓	
Cannington Motukaika	Pratts Pump Station																	✓
	Pratts (Lambs) Reservoir																	
	Hook Intake Treatment Plant		✓	✓		✓	✓	✓		✓			✓	✓	✓		✓	
	Simmons Pump Station																	✓
	Simmons Reservoir																	
Hook Waituna	Brownleas Pump Station																	
	O'Donnells Pump Station																	
	O'Donnells Reservoir																	
	Garlands Rd (Tekit) Pump Station																	✓

SCHEME	FACILITY	METER	SCADA REPORT													ALARMING	
			Pump Start/Stop	Pump Hours	Level	Flow & Volume	Turbidity	FAC Residual	Cl2 Dose	pH	Conductivity	Temperature	UV Transmittance	UV Dose	Pressure	Intruder/ Operator	Outgoing alarms	Flashing Light
	Garlands Rd (Tekit) Reservoir																	
Lower Waihao	Lower Waihao Intake & Plant		✓	✓		✓	✓	✓	✓	✓			✓				✓	
	Pykes Rd Pump Station		✓	✓		✓											✓	
	Lower Waihao Reservoir				✓												✓	
Otaio Makikihi	Otaio Gorge Rd Intake & Plant		A	A		A		A		A							A	
	Otaio Reservoir				A												A	
	Tavistock Bore & Plant		✓	✓	✓	✓	✓	✓		✓	✓			✓	✓		✓	
	Campbell Forrest Pump Station		✓	✓	✓	✓											✓	
Waihaorunga	Main Intake & Plant		✓	✓		✓	✓	✓		✓					✓		✓	
	Main Reservoir																	
	Melford Pump Station																	
	Melford Reservoir																	
	Takitu Pump Station																	

SCHEME	FACILITY	METER	SCADA REPORT													ALARMING	
			Pump Start/Stop	Pump Hours	Level	Flow & Volume	Turbidity	FAC Residual	Cl2 Dose	pH	Conductivity	Temperature	UV Transmittance	UV Dose	Pressure	Intruder/ Operator	Outgoing alarms	Flashing Light
Waikakahi	Takitu Reservoir																	
	Tavendales Plant					✓	✓	✓		✓		✓			✓		✓	✓
	Tavendales Reservoir																	
	Waikakahi (Stonewall) Intake & Plant		✓	✓		✓	✓	✓	✓	✓		✓					✓	
	Waikakahi Reservoir				✓												✓	
	Claytons Pump Station																	
	Dog Kennel Pump Station		✓	✓		✓											✓	
	Calytons Reservoir				✓												✓	

A = Available but not in use

The system is used for:

- Monitoring the operation of sites.
- Reporting, trending and analysing historical data.
- Alarm monitoring (operators are informed of alarms via text messages to mobile phones).
- Some control functions.

Monitoring of Water and Wastewater schemes by the Council's SCADA system has grown to the point that without the current SCADA system, maintaining the existing Levels of Service would be difficult. SCADA has given the ability for Council to ascertain faults and instigate repairs without affecting the service to the consumer has significantly increased efficiency and reliability of the utility schemes.

The SCADA system is a critical system in Council's operation and service delivery.

In late 2016 the SCADA system was reviewed and the automated pump "start/stop's" controls were removed from the Master and Backup PC's, and programmed into the individual remote SCADA PLC's (RTU's) on site. This has improved the resilience and reliability of the system, by having the associated pumps and reservoirs talking directly to each other, to initiate starts and stops, without the dependency on the Master or Backup PC's.

Future Strategy for Council's SCADA

Council's strategy for the on-going use of SCADA is:

- Maintain SCADA system at a high level to ensure system reliability and on-going reporting ability.
- Increase availability of information to the Engineering staff in a format that will enable increased efficiencies in operation and management.
- Develop the reporting functions of the system.
- Develop further use of the system to control treatment plants.

10.0 IMPROVEMENT PLAN

This section details the improvements to Asset Management systems that will increase the level of confidence in the AMP.

10.1 Asset Management Improvement Process

Background

Council is committed to on-going improvement in the quality of its Water Services management practices. This is reflected in the implementation of asset management systems and associated data collection and maintenance requirements.

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

- Information Management
- Scheme Knowledge
- Renewals and Risk assessments

Purpose of the Improvement Plan

The purpose of the Improvement Plan is to:

- Identify, develop and implement Asset Management planning processes.
- Identify and prioritise ways to cost-effectively improve the quality of the AMP.
- Identify indicative time-scales, priorities, and human and financial resources required to achieve Asset Management planning objectives.

The Improvement Plan is subject to constant reappraisal and change. While reappraisal is an on-going process, the Improvement Plan will form the basis of the Water Services annual business planning.

10.2 Improvement Programme

Council is committed to on-going improvement in the quality of its asset management practices until appropriate practice levels are achieved. This is reflected in the current improvement programme for the period 2018-2021 and the achievements made in the period 2015 to 2018.

Table 10.1 presents the current status of the 3 Waters Improvement Programme as at January 2018.

Improvement Priority

The improvement priority was carried out using the key areas of:

- Legislative requirements
- Level of Service achievement
- Where the assessed risk was considered high

Table 10.1: Achievement of 2015-2018 Programme and Proposed 2021-2024 Programme

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Level of Service (LOS)	1	Improvements to Council's Request for Service System via AssetFinda, to enable interrogation of service request system to analyse customer complaints and identification of problem area	2012-2013	Y	Service requests can now be analysed by relevant performance measure and priority response times included within the AssetFinda set-up.	Further development of the system is required to allow retrospective entry of after hour's information and also escalation. Council working with the developer to facilitate this. 2015-16. Completed – AssetFinda is now configurable to allow retrospective entry of Service Requests	-	-	2012-2013
W, WW & SW		2	Once National LOS are available, evaluating LOS Options by investigating the effects of varied LOS (financial, environmental etc.) and consult LOS options with the community (for inclusion of amended LOS into the 2015 LTP)	2014	N	Levels of service to be reviewed and included in 2015-25 LTP.	2014/15 - Implemented Non-Financial Performance Measures but no indication as yet to National Level of Service for three waters.	Monitoring	Monitoring	2014

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
SW		3	Stormwater Management Plan - develop, submit and obtain approval	2013-2015	N	Alignment required with proposed Global Consent timing	Carry Over – Draft Stormwater Management Plan completed. Consent application is currently being drafted and affected landowners have been consulted. Application will be lodged in early 2018.	Consent application lodged 2017/18. Implementation 2018/19 to 2023/24	Consent application lodged 2017/18. Awaiting feedback from affected parties. Implementation 2018/19 to 2023/24	2017/18
All	Demand	4	Review if increased demand (population/demographics effects etc.) can be provided by existing infrastructure or addition assets/upgrades required (a watching brief)	2012/13	N	As new population figures / demographics / development information becomes available, Council is actively reviewing existing infrastructure / services to ensure LOS are met.	On-going	On-going	On-going	2020/21
Water	Growth	5	Continue to implement demand management programme in-conjunction with the leak detection program	On-going	N	Demand management will be achieved by a combination of pressure management and	No formal policy on demand management but achieved through processes such as water conservation	Develop policy in relation to demand management and provide pressure management	On-going	2019/20

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						developing policy in relation	messages as required.			
All		6	Continue to develop the existing population projections process that is Council approved and used across all areas of council	2012/13	Y	Process in place (yet to be formally adopted by Council).	Process developed for 2018/28 Long Term Plan.	Process developed for 2018/28 Long Term Plan.	Process developed for 2021/31 Long Term Plan.	-
Water		7	Leak detection in Waimate urban reticulation every three years	2012 2015 2018	N	Not completed in 2012. Programmed for 2015. Council has a watching brief on Midnight flow.	On-going – Last completed June / July 2015	On-going – Programmed for 2018 /19. However, Pipe replacement reduced water loss significantly, so no leak detection took place in the period. Council continues to watch Midnight flow and monitor water loss (Performance Measure).	On-going – leak detection is planned for 2021/22. Water loss monitoring will Continue. Other forms of leak detection/water loss will be implemented in 2021/22 such as consumer service meters (RF).	2018/19 2021/22 2024/25
~~Water~~		8	~~Develop Water Demand Management Plan/Strategy to formalise, improve and guide existing demand management initiatives~~	~~2013/14~~	N	~~Re-programme for 2015- 2025 LTP~~	~~Carry Over~~	See IP 5	See IP 5	-

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Sustainability	9	Assess staffing levels to ensure sufficient resources to meet demand	2011/12	N	Council is currently in the process of creating the new role of "Group Asset Manager". It is envisaged that this role will become operational in early 2015 and is created to assume a more strategic role to free up existing managers.	Extend to include staff succession planning for unplanned staff absences, resignations or retirements 2015-2018 – Additional staff member allocated to support the Asset Management Business Unit. Additional Water Treatment Plant Operator allocated to meet additional workload once plants are upgraded to meet Extend to include staff succession planning for unplanned staff absences, resignations or retirements 2015-2018	Next major assessment programmed for 2021/31 LTP	Currently there are major changes in water legislation, regulation and potentially standards and solutions. These changes will impact the way 3 water services are managed and operated their supplies and networks. Increase compliance and greater expectations around levels of service will mean reviewing staffing levels on a regular basis until July 2024, to be assured of meeting legislation, regulation requirements.	2020/21 Onwards

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	Risk	10	A Council wide risk policy to be developed	2012/13	N	Risks have been identified in a methodical manner through the Audit Committee.	Carry Over	Carry Over	Carry Over	2018/19
All		11	A critical assets study to be undertaken to identify critical assets and identify and adopt risk mitigation strategies for the operation, maintenance and renewal of all critical assets. The critical assets to be shown in AssetFinda	2012/13	Y	-	Carry Over	Completed 2017/18.	-	-
Water		12	*New 2014:* Implementation of Water Safety Plans	2014 Onwards	N	Currently approved water safety plans for Waimate Urban, Cannington-Motukaika, Waihaorunga, Waikakahi Submitted Hook-Waituna, Lower Waihao Under development, Otaio Makikihi	Carry Over	All water safety plans were approved and being implemented. Some capital works proposed in the 2018-28 LTP were subject to approval. Implementation and review on five year cycle.	Water safety plans are either being implemented (4) or undergoing review (1) and assessment (2) currently. Some capital works proposed in the 2021-31 LTP are still subject to approval. Implementation and review on five year cycle.	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		13	Develop Business Continuity and Emergency Management Plan (for rapid and structured response to emergency failures and significant hazards) and ensure review control process is carried out	2013/14	N	Major developments in communication of significant issues have been made.	Carry Over	On-going	On-going	2018/19 Onwards
W & WW	Lifecycle	14	To better understand the different AC pipe life a programme of assessing the condition of the pipes in all the schemes that contain AC pipe will occur	2012-2015	N	A number of samples taken	Carry Over	On-going. A number of pipe samples have been recovered and assessed from both the rural and urban schemes. Results of these assessment will continue to inform the renewal programme.	On-going	2018/19 Onwards
Water		15	To better understand the different "old PE pipe" life, a programme of assessing the condition of the pipes in all the schemes that contain Old PE pipe will occur.	2012-2015	N	-	2015-2018	Develop programme to retain and assess samples to better inform rural renewal programmes	On-going	2018/19 Onwards

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
Water		16	The location and extent of Garnite PVC pipes are required to be found and the information shown in both AssetFinda and GIS. This will allow greater understanding of the future renewals programme for this type of pipe.	On-going	-	As these are encountered the asset database is updated	On-going	On-going	On going	On-going
		17	*New 2014*: Continue condition assessment of plant assets to better understand future renewals programme for above ground assets	-	N	Condition assessments to be carried out	2015-2018	Condition and Criticality assessments to be completed.	On-going	2018/21
WW		18	CCTV of the condition 4 & 5 grade pipes are required to be carried out again to ascertain the decrease in condition and assist in the renewal programme	2012-2015	N	CCTV is utilised as a maintenance activity currently. Information yielded from these surveys, and future surveys will inform the renewal programme.	On-going	On-going CCTV inspections were utilised to ensure programmed renewals are both required and cost effective.	On-going	2018/21

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		19	Develop a Condition Assessment Strategy			To identify which, where and when condition assessments will be performed in consideration of criticality, LoS, asset records, Council engineers visual assessment of failures and specialists assessments as required.		Develop and implement prior to 2020/21 review of # Waters AMP's	On-going – Staff training has occurred in condition assessment.	2018/21
All		20	Develop a comprehensive renewal programmes based on analysis of condition and capacity once condition assessments have been carried out	2012-2015	N	Condition assessments to be carried out as part of the improvement of data quality	On-going	Condition assessments to be implemented concurrently once strategy in IP 19 is developed	On-going – Staff training has occurred in condition assessment..	2012-2015
All		21	Review and document operations and maintenance strategies based on criticality and risk	2013/14	N	-	2015-2018	Review Lifecycle sections of Amp's once criticality and risk assessments are progressed	On-going	2020/21
All		22	Formalise and update the existing maintenance schedules and procedures quality procedures, contingency and operation and maintenance manuals	2012-2015	N	Utilisation of AssetFinda to Schedule maintenance alongside formalising by	2015-2018	Implement scheduled maintenance of key assets within AssetFinda Version 4	Carry over – issues with implementation of AssetFinda Version 4. Schedule still to be	2018/19

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						means of manuals is required				
All	Financial	23	Review asset materials codes and size ranges to see if there is scope for rationalising the information, both to assist with valuation and for general asset management purposes	2012/13	Y	Completed this year	-	-	-	-
All		24	Continue to keep good records of construction costs, especially for rural pipelines, to provide better information for future valuation updates.	On-going	Y	-	On-going	On-going	On-going	On-going
All		25	Updating asset inventory to reflect changes resulting from capital works and continue to do so.	On-going	Y	-	On-going	On-going	On-going	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All	AM Practices	26	It is proposed as part of future improvements in the management of AssetFinda/GIS - to ensure sufficient resources are available (both internal and external) to enable the full use of AssetFinda/GIS for the operation, management and administration of the utility services	2011/12	Y	Occurred during the 2014 / 15 Financial Year	-	-	-	-
All		27	Council continue to maintain the AssetFinda asset database and improve accuracy of data through review and modification of collection, storage, and auditing with prioritising on criticality including the development of Data management standard	On-going	-	-	On-going	On-going	On-going	On-going
All		28	Complete data capture and update records for underground assets - to the asset management systems and ensure adequate resources are available for data entry and on-going data maintenance	On-going	-	-	On-going	On-going	On-going	On-going

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
All		29	Continue to and complete data capture and update records for all facilities assets - to asset management systems	On-going	-	-	On-going	On-going	On-going	On-going
All	Improvement Programme	30	Develop long term improvement programme to achieve the Council's appropriate practice policy	2014/15	-	Not currently documented	Yes	Asset Management sophistication and Maturity Index assessments need to be completed.	Asset Management sophistication and Maturity Index assessments need to be completed prior to next generation 2024	2018/19
All	Lifecycle	31	Align the asset data in AssetFinda with the criticality assessment ratings					Import criticality ratings post implementation of AssetFinda Version 4. Provide a high level list of critical assets for ease of identification	Carry over – Complete with urgency to enable comparison of age predicted model with condition and performance weightings.	2018/19
		32	Consider and implement recommendations from criticality assessment					On-going	On-going	2018/19 Onwards
		33	Revisit criticality assessment			The Havelock North Water Enquiry and 3Waters review may require a review of the		Maintain a watching brief on recommendations and legislation to ensure criticality	Maintain a watching brief on recommendations and legislation to ensure criticality	TBC

Service	AM Area	No	2012-2014 Improvement Item	Year(s)	Completed	Comment	2015-2018 Improvement Plan and Comments	2018-2021 Improvement Plan and Comments	2021-2024 Improvement Plan	Year(s)
						criticality assessment to ensure the focus remains correct.		assessments remain pertinent.	assessments remain pertinent.	
All	Lifecycle	34	N/A	2021-24		Systematically assess 3W's data reliability and present in a table			Complete systematic reliability analysis for 3W's assets. Once established utilise predictive modelling with condition and performance weightings to better understand longer term renewal requirements.	2021-24

10.2.1 Monitoring Approach

Council has developed this AMP based on an integrated asset management planning approach that includes:

- The configuration of networks to meet customer requirements, now and in the future.
- Current asset information.
- Well-developed strategies to achieve customer requirements.

The further development of Council's asset management approach including supporting processes, systems and data will be needed to meet the appropriate level of asset management practice as set out in Council's Asset Management Policy. This Policy will be reviewed periodically to take into account legislative and other national practice changes.

10.2.2 Timetable for Audit and Review

The programme for future AM reviews of this plan is presented in Table 10.2.

Table 10.2: Timetable for Audit and Review

Activity	Target Date
Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues	30 June each year
Report on Improvement Plan	30 June each year
AMP updates involving members of staff involved in preparing specific aspects of the AMP	30 June each year
Adoption of AMP by Council	30 June every 3 years
Audit NZ external audit	As required by Audit NZ

Appendix A Individual System Description & Overview

Water Quality Compliance DWSNZ

Since 2004 the water supply of most Local Authorities have not been graded due to the change in Drinking water standards and its agreed status, the amendment to the Water section within the Health Act has now made DWSNZ 2005 (amended 2018) compulsory.

The Waimate Urban and Hook Waituna schemes are the only schemes which have a current Public Health grading, with the remainder of the schemes are ungraded.

Appendix Table 1: Waimate Water Supplies Public Health Grading

NZ Community Drinking Water Supplies Health Grading						
Waimate Urban	Cannington Motukaika	Hook Waituna	Lower Waihao	Otaio Makikihi	Waihaorunga	Waikakahi
Ab	u	Ed	u	u	u	u

The Public Health grading is based on the following criteria.

Appendix Table 2: Public Health Grading

Source & Plant Grading		Distribution Zone Grading	
Grade	Explanation	Grade	Explanation
A1	Completely satisfactory, negligible level of risk, demonstrably high quality	a1	Completely satisfactory, negligible level of risk, demonstrably high quality
A	Completely satisfactory, extremely low level of risk	a	Completely satisfactory, extremely low level of risk
B	Satisfactory, very low level of risk when the water leaves the treatment plant	b	Satisfactory, very low level of risk
C	Marginally satisfactory, low level of microbiological risk when the water leaves the treatment plant, but may not be satisfactory chemically	c	Marginally satisfactory, moderately low level of risk
D	Unsatisfactory level of risk	d	Unsatisfactory level of risk
E	Unacceptable level of risk	e	Unacceptable level of risk
u	Ungraded	u	Not yet graded (not required f less than 500 people)

The sampling results for the water supplies over the past two years are tabled below:

Appendix A:

Individual System Description & Overview

A.1 Waimate Urban Scheme

Overview

The reticulation network is supplied from two groundwater bores with one reservoir that supplies 24 hours emergency supply capacity. Manchester Road bore, drilled in 1972, is the predominantly used bore and treatment involves chlorine dosing. Timaru Road bore, commissioned in 2000, originally only used during times of peak water demand during the summer months and treatment includes; chlorine dosing, lime dosing (when required) and an automatic valveless gravity filter to remove iron. However, since the implementation of pressure management both bores operate permanently.

The approximate length for the reticulation network is 67.3 km. A total of 58% of the pipe reticulation network will reach the end of its expected economic lives within the next 30 years.

Approximately 8.8 km of AC and 14km of CI will reach the end of its expected economic lives within the first ten years of this plan.

History

After much consideration by the Council in the early years the nineteenth century, a High Pressure water Supply system was eventually installed in 1906. The scheme has grown progressively since that date with major additions between 1950 and 1970.

The source of this supply was the Waimate Stream, which rises in a large valley on the eastern side of the Hunter Hills some 762 metres high. The point selected for the Intake was in Kelcy's Bush, some eight kilometres from and 183 metres above the town and just opposite the present car park area, but an exceptionally heavy rainfall event damaged the head-works during the period of construction. Therefore, the intake was moved another 60 metres approx. further upstream to the current picnic area. It is important to also note that not only was the original head works damaged in the heavy rain event, but also the then new pipe line to town, at Garland's Bridge.

The old concrete head works remains are still visible at both of these sites. At the second site at the current picnic area, there is a junction pit and from there a 225 millimetre tile pipe and in places steel runs to the top of the hill in Atwill Park just near the bend in the road. From this point a 150 millimetre, cast iron main went down to the old Reservoir, which had a capacity of 2,273 cubic metres and was 68 metres above the town. It is recorded that the Reservoir held sufficient for three days' supply, which would give a demand of approximately 758 cubic metres per day.

From the old Reservoir a 150 millimetre, cast iron main went down to a point in Mill Road just opposite the Belt Street intersection where it is reduced to 100 millimetres and continued down Mill Road to Queen Street. 100 millimetre distribution mains branch off at the intersections of Belt, Rhodes, Harris, Shearman and Queen Streets and three inch pipes supply Opie Street and the Streets to the west of Mill Road. From these primary distribution mains, the water was carried to as far as Uretane (Mrs. Ruddenklau's property - 1937). In the South, Timaru Road (Mr. Cottee's – 1937). In the east, Parsonage Road (Mr. Barclay's – 1937). In the north, High Street (Mr. Hunt's in the north-west - 1937), as well as all the area lying in between these widely separated points.

A report states that the pipes were capable of delivering 2455 cubic metres per day to town, or approximately 1.6 cubic metres per minute (26.5 litres per second). The pressure when tested in town after completion was: Opie Street 565 kPa, Queen Street 737 kPa, and Lower High Street 910 kPa.
A lot of the original cast iron main from 1906 is still in operation today around the Waimate Township.

On 8 December 1914, owing to the shortage of water, the question of procuring additional supplies was considered by the Council. Two proposals were discussed, one to take a pipe from Sanders Falls Creek and the other to obtain supplies from Hayes Creek near the Reservoir. On January 26. 1915 it was decided to lay a pipeline to Sanders Falls.

On 18 January 1924, it was decided to measure the flow of water in the stream. The point selected was the Rook Pool. The reported result were a flow of 663.7 litres per minute (11.1 litres per second) or 956 cubic metres per day.

A recommendation from a report in 1928, written by Mr. Fletcher Roberts, a Civil Engineer from Dunedin, was that the intake be moved 1046 metres upstream to the Rock Pool, and that an additional 200 millimetre pipeline be laid from the Reservoir to town via Allen Street and High Street to Queen Street. Also that a flow meter be installed at the new Intake in order to obtain some accurate data on the flow of the stream.

On 26 August 1930, the Council decided to proceed with the first mentioned recommendation, which was the shifting of the Intake to the Rock Pool. Works started that year and by November 1931 completed.

At this time, the worldwide economic depression became felt in New Zealand, and unfortunately, the additional 200 millimetre pipe recommendation was held in abeyance. Later in 1935, a 225 millimetre cast iron main was installed from the old Reservoir to township to improve flow.
The Rock Pool Intake was still in use and maintained until 1999, and the old Waimate Reservoir until the year 2000.

In the early 1970's a number of bores were drilled by A M Bisley & Co Ltd. One of those bores was the Number 3 bore, also known as Manchesters Road Bore, which was drilled in February 1972. When commissioned it jointly supplied Waimate Urban Supply.

In 1998, the Waimate District Council bought Tony Halbraken's farm (Timaru Road) and subdivided off the new bore that had been drilled on the property, including an easement for access, and then sold the rest of the farm. The bore was drilled by Washington's Drilling in February 1997 and was only partially developed (31.5 hours), 21 March 1998. The Council got Washington's Drilling back on the 22 May 1998, to continue developing the bore for another 20 hours. The Timaru Road bore was commissioned in 1999.

When Timaru Rd Bore was commissioned, the process was similar to Manchesters Road Bore, where abstraction and distribution were the same process with chlorination added as it left the plant.
At this point, the Rock Pool and Saunders Fall were abandoned by the Council. Local farmers on Mill Road, with consent, took on the old Kelcy bush intakes for stock water (only).

In year 2,000 a 2,600 m3 capacity lined and covered, earth pond type reservoir was constructed to replace the original concrete and masonry reservoir that had served Waimate for approximately 90 years.

By 2002 widespread consumer complaints about the staining of laundry and white ware became a significant issue. This was due to the raw water quality coming out of the Timaru Road Bore. From an analyses carried out in 1999 the manganese content was 0.7mg/l, and the dissolved iron content at 0.25mg/L. The elevated levels of manganese and dissolved iron was the cause of the issue, and was exacerbated by gas chlorination creating precipitate.

This led to a decision by Council to upgrade the Timaru Road Bore site with a new treatment plant to remove the manganese and dissolved iron.

The plant was upgraded and commissioned in June 2002. It included chlorine as the oxidizer for the removal of manganese and dissolved iron, an Automatic Valve-less Gravity (AVG) Filter, pH correction lime dosing unit, 2 times 30,000 litre balance tanks, a wet well with two submersible reticulation pumps, upgraded block building and back wash pond.

By 14 January 2003, problems began. A 100mm of fine bore sand was found on top of filter bed media. This build up caused premature and multiple backwashing. The sand was scraped off and removed. The blinding of the filter bed occurred another five times and 6.7m3 approximately, of bore sand in total was removed.

Because of the bore sand in the Timaru Road Bore the filter bed from 2009 is annually checked and scraped. The depth of the bore sand currently found on the filter bed media ranges around 20 to 30 mm.

In 2005 due to the AVG filter bed being blinded with bore sand, two new soak holes are bored to drain away the excess backwash effluent/supernatant.

About this time in 2005, Waimate consumers began lodging taste and odour complaints when the plant was running.

In 2006 lime dosing for pH correction stopped. It is not understood why it was stopped. With current pH levels for raw water around 7.7 and treated 7.4, plus the naturally occurring alkalinity (117 g/m3) in the raw water, there is no need for lime dosing to correct pH.

In addition, staff in 2006 stopped using Timaru Road Bore and Treatment Plant as the duty/main source and supply for Waimate because of taste and odour complaints. When the plant was running the chlorine residual ranged between 0.2 to 0.4 mg/l leaving the plant.

From 2003 written records on site about process became vague and by 2006 non-existent.
In 2007 and 2008, there were major staff changes. A new Supervisor and two new water operators, and at the end of 2008, a returning Engineer. Work was started on getting the Timaru Road Bore and Treatment Plant functioning properly again.

At this time the Timaru Road Bore and Treatment Plant was suffering from:

- Multiple backwashes (3x a day).
- Incorrect flow rate through filter (169m3/hr).
- Bore sand, causing the clogging filter bed.
- Smell of Hydrogen Sulphide off the raw water from bore.
- Dark black/brown coloured backwashes.
- Taste and odour compliant when the bore and plant was operational.
- No maintenance program being actioned.
- Water main breakages in township.

Each of these issues were investigated and corrected by:

- Correcting the flow rate to a maximum of 150m3/hour reduced the number of backwashing actions from per day to per week.
- Annual cleaning the filter bed stopped the blinding of the bed and contributed to reducing the number of backwashing actions from per day to per week.

- By recognizing the hydrogen sulphide in the raw water, it lead to the discovery of the causes of the taste and odour complaints, and the thick dark black/brown coloured backwashes.
  Because of the low chlorine dose and lack of use, the filter bowl started to breed sulphide/sulphate eating bacteria, which lead to a thick dark black/brown coloured backwashes and taste and odour complaints. There is also may have been a possibility of poor oxidization of the manganese and dissolved iron in the raw water, which also creates taste and odour issues.
  This lead to upping the chlorine dose so that there was a chlorine residual of 0.7 to 0.8 mg/l at the underdrain of the filter bowl (post treatment), and setting up the plant to run daily. This meant that the manganese, dissolved iron and hydrogen sulphide were oxidized properly and prevented any growth in the filter bowl, plus the running the plant daily also prevented the growth of the bacteria. After these actions, the taste and odour issues were significantly reduced.
- Regular weekly visits and maintenance as required, plus the introduction of regular manual backwashes to keep the filter bed healthy. All Staff are now trained in the new plant procedure.
- Reducing the reticulation pump outgoing set-point pressure from12 Bar, which was too high for the aging infrastructure, to 10.3 Bar. This lead to a significant reduction in water main breakages in township.

During 2013 to 2018 About 4.3 km's of new 200mm PVC rising main has been installed from High Street and Queen Street intersection up High Street to Allan Street and along, then from Mill Road and Allan Street intersection, under the Waimate Creek Bridge to the Waimate Reservoir. This has been done to improve flow up to the Mill Road Reservoir, and part of the process to improve pressure management in the Waimate Urban supply.

Since 2016 Council have been renewing water mains pipe, laterals and Tobies (point of supply) in the Waimate urban area. To date, about 4 km of old cast iron and AC pipe have been renewed with 100 millimetre PVC pipe. All tobies and laterals have also been replaced with 20 millimetre MDPE OD pipe and Acuflo manifold units (dual check) with flow meters.

On the 21 December 2014 the Manchester Bore plant building caught on fire, damaging the electrics and interrupting delivery and chlorination. A temporary building to house new equipment was erected on 22 December 2014 and became operational on 23 December 2014. The cause was electrical and could have been either a fault or excessive heat generation of electrical control equipment.

After reapplying for full "Secure Bore" status after five years in 2017, Manchesters Bore was unable to fulfil criterion 2 of the DWSNZ 2005 revised 2018). This was because of the age of the bore, plus no construction details when A.M.Bisley & Co. Ltd. drilled the bore in 1973. The full "Secure Bore" status was revoked on the 23 November 2017.

With loosing "Secure Bore" status it was decicded not to retry for bore security again, but to put in a multiple barrier approach to treatment, to assure secure and safe drinking water supply for the Waimate town community. This deciosn not to try for "Secure Bore" status was due to the Havelock North event in 2016, and the fact that "Secure Bore" status is not good science, and very hard to prove satisfactorily.

First stage was to replace the old Manachester Bore (J40/0022) with a new 300mm bore (CA19/0055), 3 meteres east of the existing bore on the railway embankment, which was commissioned September 2018. The new bore tapped into the same aquifer with the screen set between 79.1 to 83.1 metres.

As part of that process a retaining wall was then built on the north side of the old railway embankment to increase space for a new treatment plant on the embankment. This was completed March 2019.

The contract for the new treatment plant soon followed with the new treatment plant being constructed at the end of 2019. The plant was completed and commissioned 5 December 2019.

The new Plant relies on a secure borehead, Ultraviolet (UV) irradiation of microbiological organisms (protozoa & bacteria) and disinfection of treated water to the distribution



Manchester Bore Treatment Plant December 2019

The plant has been operational since completion in December 2019 with some minor operational compliance functions that need to be completed by council staff to achieve full compliance (manual monitoring of UVT, Secure Borehead report).

As the Council had decided to move away from "Secure Bore" status as a barrier, work started in late 2020 on Timaru Road bore to upgrade the treatment process to Ultraviolet (UV) irradiation for microbiological treatment. And will also seek to meet criterion 2 (Borehead Security), DWSNZ 2005 (revised 2018) as a barrier.

8. System Description

Source and Catchment:

Manchesters Bore

The new Manchesters Bore (2018) is a 300mm diameter bore at 83.1 metre deep with the screen set at 79.1 – 83.1m, and is sited on the old railroad embankment, 850 metres off Manchesters Road, Waimate. This new bore (CA19/0055) was installed in 2018, and replaces the older bore (J40/0022) drilled in 1973, which was aging and its integrity and security were questionable.

The new bore was drilled to meet the compliance requirements of the DWSNZ 2005 (revised 2018), and the NZS4411:2001 Drilling Standards, plus grout sealed to 11 metres (Australian Standard [5-10m]) below the ground level to prevent ingress. "Secure Bore" status has not been sought after for this bore, as it is a questionable methodology to prove that the water drawn from it is safe. Instead Council will seek to meet criterion 2 (Borehead Security) DWSNZ 2005 (revised 2018) and provide treatment at the Plant for bacterial and protozoal compliance.

The wider catchment around Manchesters bore is made up of arable cropping, life style blocks (septic tanks), sheep and dairy farming (septic tanks and secondary sewage treatment), plus the urban community of Waimate with a population of 3000, which is 3 km to the West of the bore. The Regional Council's "Community Drinking Water Protection Zone", which is a protection zone of 100m radius

around bore, totaling 3.1 hectares of land, is an exclusion zone protecting the source. Inside the protection zone, the only activities that occur insde the "Community Drinking Water Protection Zone" are arable cropping and intermittent grazing of sheep (>50), which pose no risk. The bore and plant are fenced off from livestock access. Manchesters Bore, old and new, has maintained E.coli compliance since 2009, with no E.coli transgressions. However, there were four events of total coliforms (1 MPN/100ml and 2 MPN/100ml in 2013, then again 1 MPN/100ml and 200 MPN/100ml in 2018) from the old bore (J40/0022) with no reason why? Plus one event of total coliforms found in the commisoning sample at >5 MPN/100ml from the new bore (CA19/0055), which could be put down to the activity of drill and developing.

From geological and hydrological reports put out by Environment Canterbury (Regional Council) evidence it indicates that the Manchesters Bore draws water from the Upper Kowai Formation in the Cannington Gravels. The recharge zone is difficult to identify and quantify for the Kowai Formation. Due to its limited outcrop area, it is suspected that the majority of recharge for the Kowai Formation infiltrates from the shallow groundwater system. The ground water from the bore has a mean age of >171 years, and less than 0.005% water less than a year old. This would indicate that Manchesters Bore is not directly influenced by surface activities *(See "Waimate Urban Water Supply Bore Hydrology Report – November 2017")*.

The overall assessment of the Manchesters Bore catchment, plus the impact from human and agricultural activities has no known impacts.

Timaru Road Bore

Timaru Road Bore is a 250mm diameter bore at 110m metre deep with a screen at 105 – 110m, and is sited at 383 Timaru Road, Waimate. The wider catchment is made up of arable cropping, life style blocks (septic tanks), sheep and dairy farming (septic tanks and secondary sewage treatment), plus the urban community of Waimate with a population of 3000, which is 4 km to the Southwest of the bore. The Regional Council's "Community Drinking Water Protection Zone", which is a protection zone of 100m radius around bore, totaling 3.1 hectares of land, is an exclusion zone protecting the source. Inside the protection zone the only activities that occur are arable cropping and intermittent grazing of sheep (>50) and beef cattle (>50), which pose no risk. The bore and plant are fenced off from livestock access. Timaru Road Bore has maintained E.coli compliance since 2009, with no E.coli transgressions.

From geological and hydrological reports put out by Environment Canterbury (Regional Council) evidence it indicates that the Timaru Road Bore draws water from the Lower Kowai Formation in the Cannington Gravels. For the Lower Kowai Formation the recharge zone is unknown. At present, record lengths are not long enough to determine any long-term trends to identify area of infiltration and recharge. The ground water from the bore has a mean age of >180 years, and less than 0.005% water less than a year old. This would indicate that Timaru Road Bore is not directly influenced by surface activities *(See "Waimate Urban Water Supply Bore Hydrology Report – November 2017")*.

The overall assessment of the Timaru Road Bore catchment, plus the impact from human and agricultural activities indicates no known impacts, and the bore meets all three current criteria requirement for "Secure Bore" status in providing safe, compliant drinking water to the consumers on Waimate Urban Supply. However the Waimate District Council will not be reappling for "Secure Bore" status in the future

<u>Abstraction:</u>

Appendix A:

Individual System Description & Overview

Manchesters Bore

An 11 kW submersible pump abstracts the source water from Manchesters Bore and is controlled by a variable frequency drive (VFD). A maximum / minimum flow rate set points have been set for the protection of the pump and the medium pressure UV reactor. On the bore head, there is Reduced Pressure Zone (RPZ) backflow preventer.

The Manchesters Bore submersible pump is intiated by demand and level transducer in the balance tank.

Timaru Road

A 30 kW submersible pump abstracts source water from Timaru Road Bore. The flow from the bore is currently throttled by valve on the bore head to 44 L/sec, which is the maximum flow rate for the Automatic Valveless Gravity (AVG) Filter. On the bore head there is a Reduced Pressure Zone (RPZ) backflow preventer, plus an air gap at the top of the AVG filter for back flow prevention.

The Timaru Road Bore submersible pump is also intiated by demand and level transducer in one of the two balance tanks.

Treatment Plants:

Manchesters Bore

The new Manchesters Bore Treatment Plant is next to the bore head. Next to the plant is a concrete chlorine gas store and dose shed, and a balance tank. The Treatment Plant houses the the medium pressure UV reactor, electrical distribution and control panels, analysers and SCADA.

Once the source water has passed through the RPZ backflow preventer, it enters the building and flows into the medium pressure UV reactor and out to the balance tank. When the treated water is drawn by the 30kW duty reticulation pump, the chlorine gas dose water solution is injected in before the pumps to aid mixing. The dose pump rate is automatically controlled to maintain a Free Available Chlorine (FAC) set-point level as measured and monitored by the chlorine analyser (automated closed loop process controller). The chlorination system operates whenever the reticulation pump is running.

The reticulation pump is initiated by level setpoints on the Mill Road Reservoir. The onsite SCADA PLC's at Mill Road Reservoir and Manchesters Bore provide the control function between the two remote units (RTU) to switch the pump on and off as required to fill the reservoir. This pump control includes Timaru Road Bore Treatment Plant. Manchesters Bore will always turn on first, and off last. If the plant faults, Timaru Road Bore Treatment Plant will continue to supply Waimate Urban.

The present treatment plant has no protozoal treatment barriers or "Secure Bore" status for the bore. To be protozoal compliant under the Drinking Water Standard for New Zealand 2005 (revised 2018), the plant needs log three (3) or four (4) treatment processes to be in place.

Timaru Road

The Timaru Road Bore is protozoal compliant with the current "Secure Bore" status with chlorine disinfection. Timaru Road Bore treatment plant is on the same site as the bore and consists of the bore headworks, an Automatic Valveless Gravity (AVG) Filter for soluble iron removal, two 30,000 Litre storage tanks, concrete high lift pump chamber with two 92 kW submersible pumps for reticulation delivery. Onsite also is the treatment plant building that houses electrical distribution and control, SCADA plus valving and chlorine treatment equipment (chlorine gas – 1 tonne + 100kg cylinders) for the oxidation of soluble iron and residual chlorine (FAC) for disinfection.

Currently (2021) the plant is being upgraded with UV reactor for protozoal treatment, so the plant does not have to rely on "Secure Bore" status. The new UV reactor will be operational by the end of 2021.

Chlorination at Timaru Road has two functions. One, oxidise the soluble iron into iron precipitate to be filtered out in the AVG filter, and two, residual chlorine (FAC) for disinfection. The chlorine dose is manually set to allow for enough chlorine to oxidise of the soluble iron and residual chlorine (FAC) for disinfection.

After the RPZ backflow preventer on the bore head the source water is dosed with a gas chlorine solution after the check valve. There is enough contact time and mixing before the AVG filter bed to produce iron oxide precipitate to be remove by the filter. As the filtrate enters the under drain at the base of the AVG filter, the chlorine residual is routinely manually monitored for the ideal FAC residual of 0.7 - 0.8 mg/L. The treated water pass up through the unit into the clear water backwash tank in the AVG filter, and then out into the two 30,000 Litre storage tanks. Level sensors in one of the storage tank indicates state and also linked to control setpoints for the 30 kW bore pump to start and stop. Treated water is drawn from the storage tanks into the concrete high lift pump chamber by the duty 92 kW submersible reticulation pump. The reticulation pump is controlled by a variable frequency drive (VFD). A maximum pressure, plus maximum flow rate set points have been set for the protection the reticulation and alarming for faults.

The duty reticulation pump is initiated by level setpoints on the Mill Road Reservoir. The onsite SCADA PLC's at Mill Road Reservoir and Timaru Road Bore Treatment Plant provide the control function between the two remote units (RTU) to switch the pump on and off as required to fill the reservoir. This pump control includes Manchesters Bore Treatment. Timaru Road Bore Treatment Plant will always turn on second, and off first. If the plant faults, Manchesters Bore will continue to supply Waimate Urban.

Distribution:

As mentioned in "Treatment", distribution is initiated by level setpoints on the Mill Road Reservoir and controlled by onsite SCADA PLC's remote units (RTU) at the reservoir and two intake plants.
Distribution in Waimate Urban supply, directly pumps into the supply reticulation with the residual volume overflowing into the Mill Road Reservoir. This requires pressure and flow control at both intakes to protect the reticulation. Manchesters Bore reticulation pump is set at 10.3 Bar, and Timaru Road Bore reticulation pump is also set at 10.2 Bar.

A separate rising main runs from each treatment plant and feeds into the reticulation. Manchesters Rd rising main is a DN200 asbestos cement pipe installed in 1973. Timaru Rd rising main is a DN200 PVC-M pipe installed in 1999.

The Mill Road Reservoir is elevated above the town at 120 metres above sea level on Mill Rd. The reservoir is a lined and covered earth reservoir approximately 4 metres deep with an approximate capacity of 2,600 cubic metres. This storage volume has the potential to supply the township for 36hrs, at a restricted demand, in the event of an emergency. The reservoir lining and roof consist of sections of polyethylene sheets welded to form a water tight seal. The roof and lining are joined together to form a sealed reservoir. There is a separate inlet (high level) and outlet (low level) system to allow cycling of the water in the reservoir. Chlorine FAC residual is also now monitored at this point in the distribution.

The Waimate Urban water supply network and the Hook Waituna network cross at numerous locations. At two such points the supplies are connected at Manchesters Road and Mill Road. Since 2018 the Waimate Urban supply permanently augments the Hook Waituna Rural Water Supply from

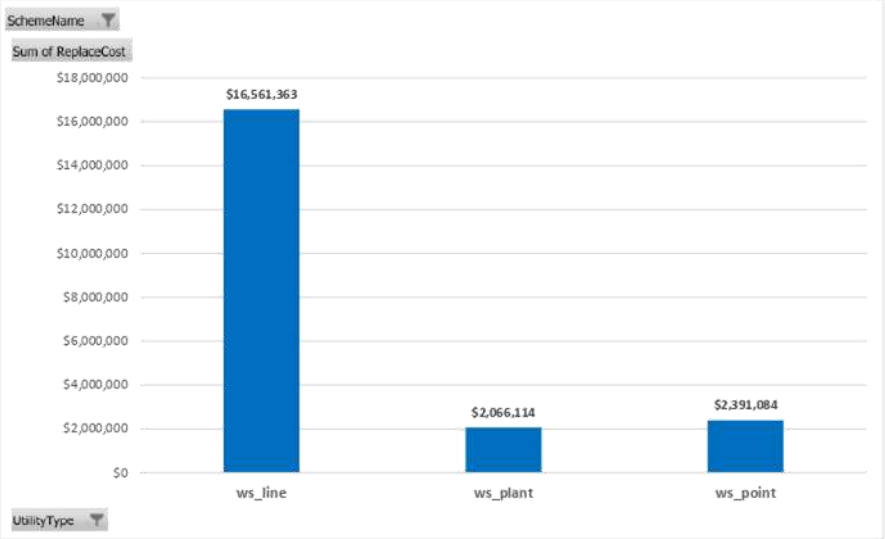
these two points. This has the effect of boosting the supply into the rural water scheme network. Non-return valves prevent backflow from the rural scheme back into the Waimate Urban supply. The areas augmented are known as Willowbridge and Garlands. Augmentation is required now because the Hook Water Supply under normal demand can not provide enough treated water to all parts of the Hook Waituna reticulation.

Management and Operation:
The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Business Unit (UBU) based at Michael Street nearby. Five qualified field staff operate and maintain the rural water scheme plant, fixing leaks etc as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing.

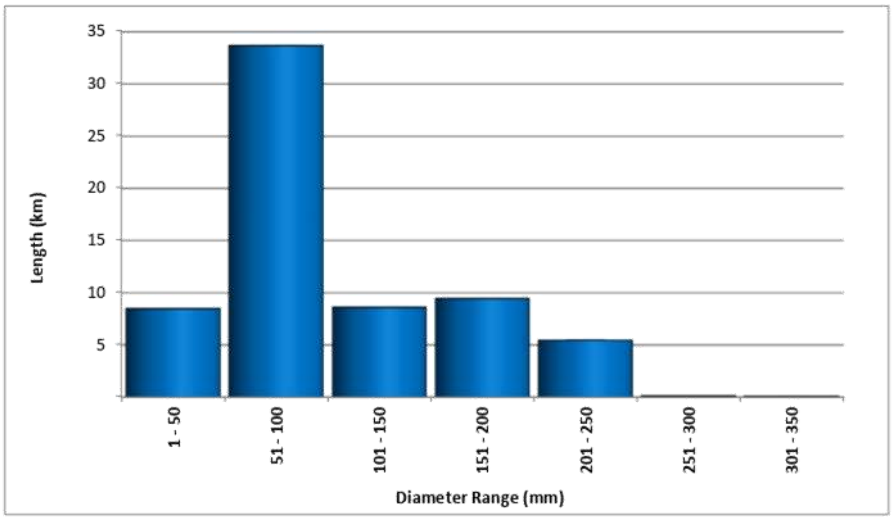
System Information

System Information – Waimate Urban			
Properties Connected	1,985	**Treated Storage (Reservoir)**	
- Metered unrestricted	-	Mill Rd	
- Metered restricted	-	Built (yr)	2000
- Unmetered Residential	-	Capacity	2,600 m³
		Material	
Water Sources	(Consent volumes)	**Treatment**	
Manchester Road bore	2,160 m³/day	Chlorine	
Timaru Rd bore	3,456 m³/day	Filtration & Chlorine	
Resource Consents	Expiry date	To	
CRC000234	19/11/2034	Discharge backwash	Mill Rd
CRC020225	11/09/2036	Discharge backwash	Timaru Rd
CRC992171.1	14/06/2034	Take water	Manchester Rd & Timaru Rd
Replacement Cost	$21.1 m	Reticulation length	66 km

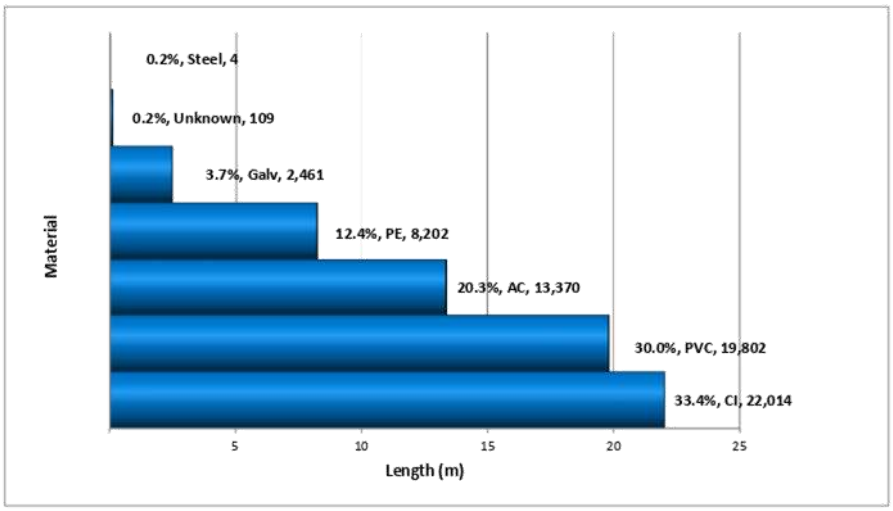
Appendix Figure 1: Scheme Components



Appendix Figure 2: Water Mains Diameter Range

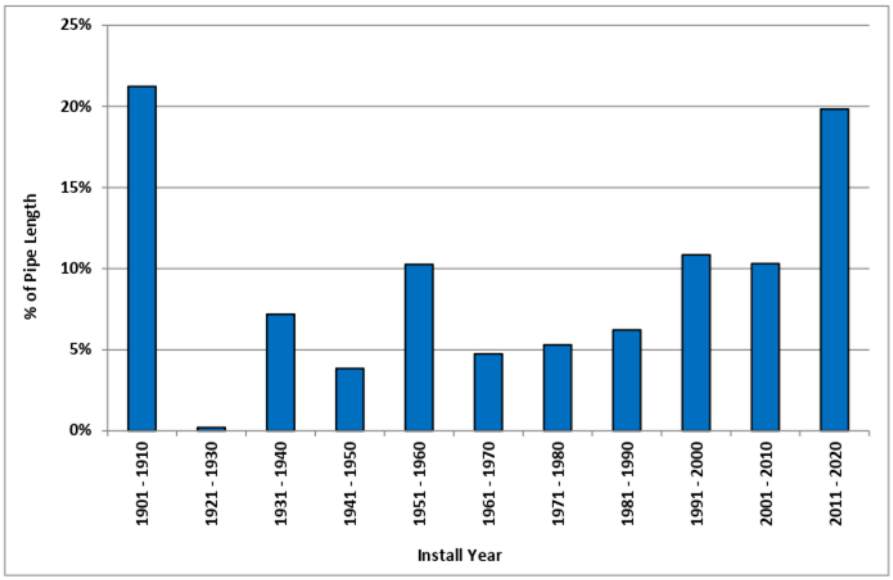


Appendix Figure 3: Water Mains Material Length

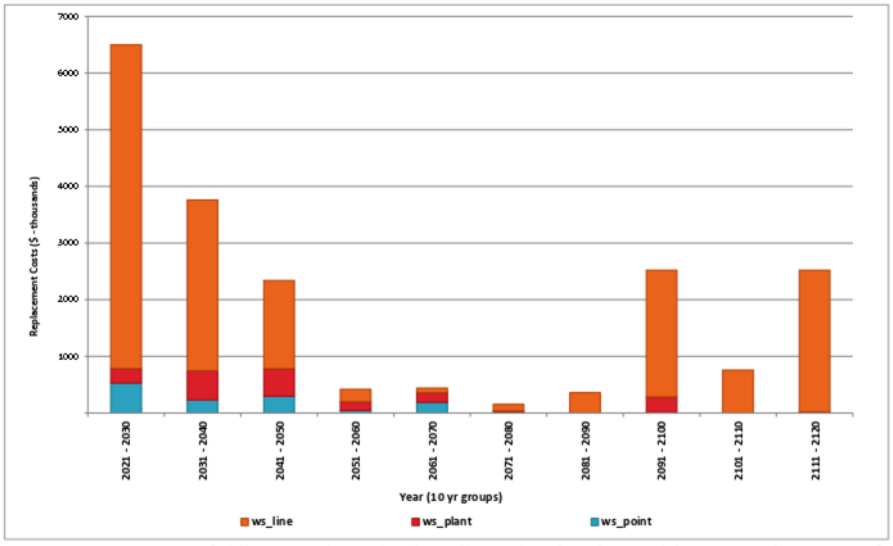


Approximately 21% of the Waimate Urban water supply reticulation was installed during 1906 and are 114 years old. The remaining 79% have been installed since 1921 and are aged between 1-99 years. The reticulation consists mainly of CI (33%), PVC (30%), AC (20%), PE (12%) and Galv (4%). There is 4m of steel which will be pipes from bore to surface pump stations.

Appendix Figure 4: Water Mains Install Year

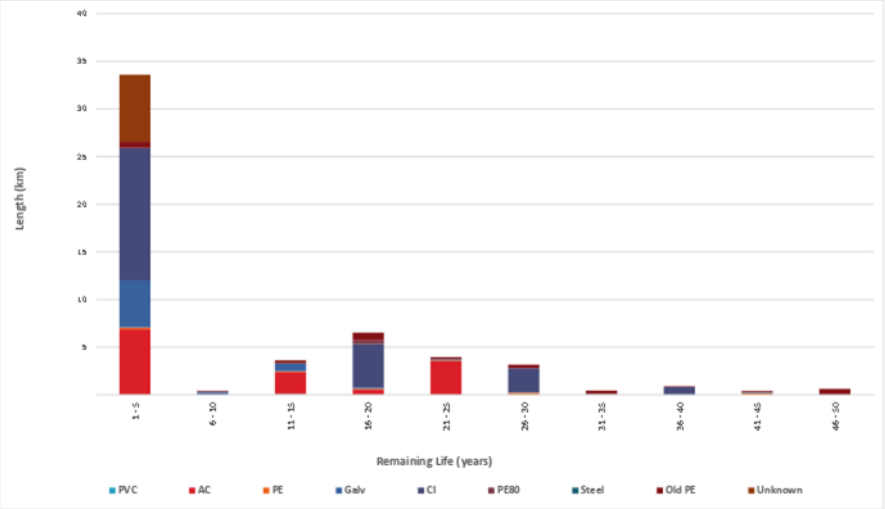


Appendix Figure 5: Remaining Life of all Assets – Long Term

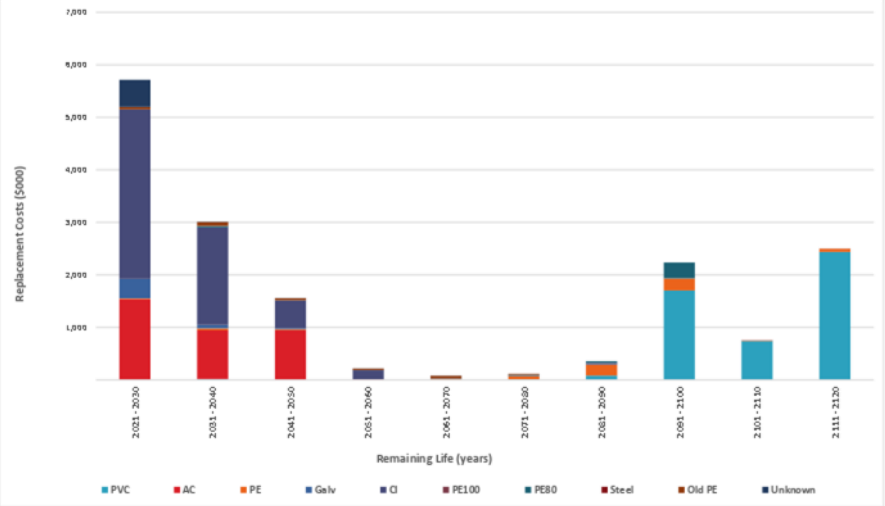


At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

Appendix Figure 6: Water Mains Replacement (Length) – Long Term



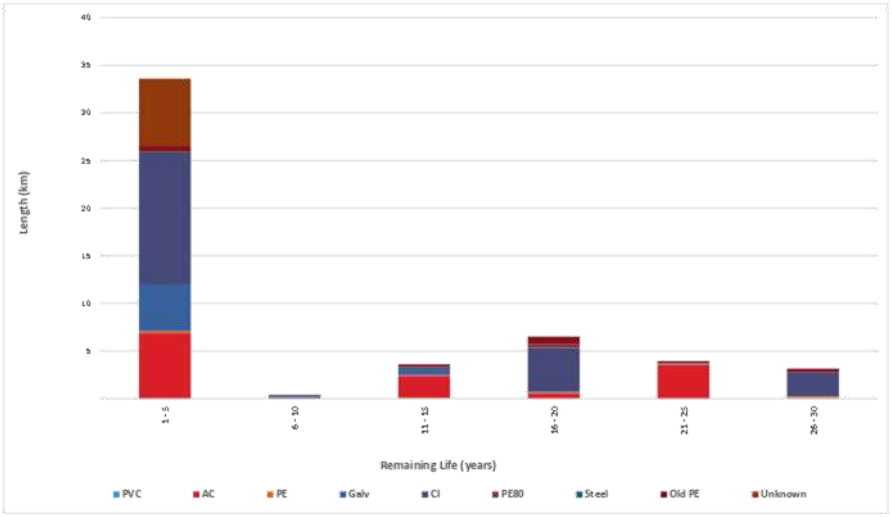
Appendix Figure 7: Water Main Replacement Value – Long Term



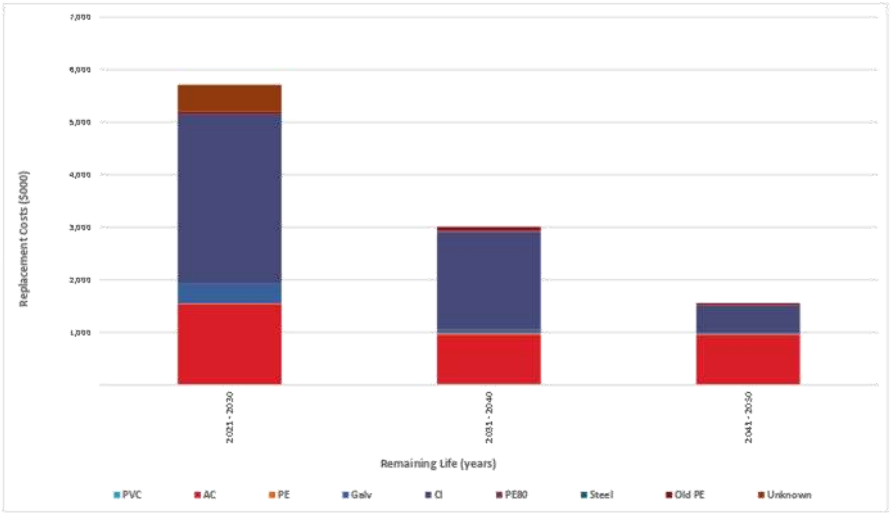
Appendix A:

Individual System Description & Overview

Appendix Figure 8: Water Main Replacement (Length) - 1 to 30 Years



Appendix Figure 9: Water Main Replacement Value 1 to 30 Years

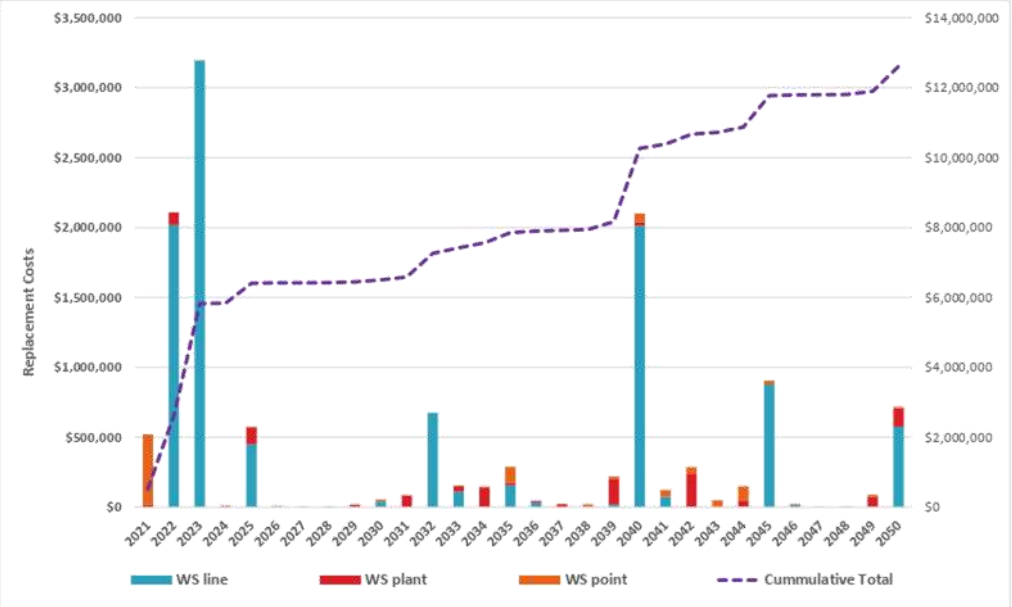


Appendix Table 3: Plant Replacement Value 1 to 30 Years

Asset Group	Remaining Useful Life (5 year groups)						
	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Abstraction						61,480	61,480
Chlorine	26,721		44,541	12,420			83,682
Control	50,151	1,037	21,072	77,320	434		150,014
Digital I/O	435		803	3,623			4,861
Distribution			3,341	13,339		6,874	23,554

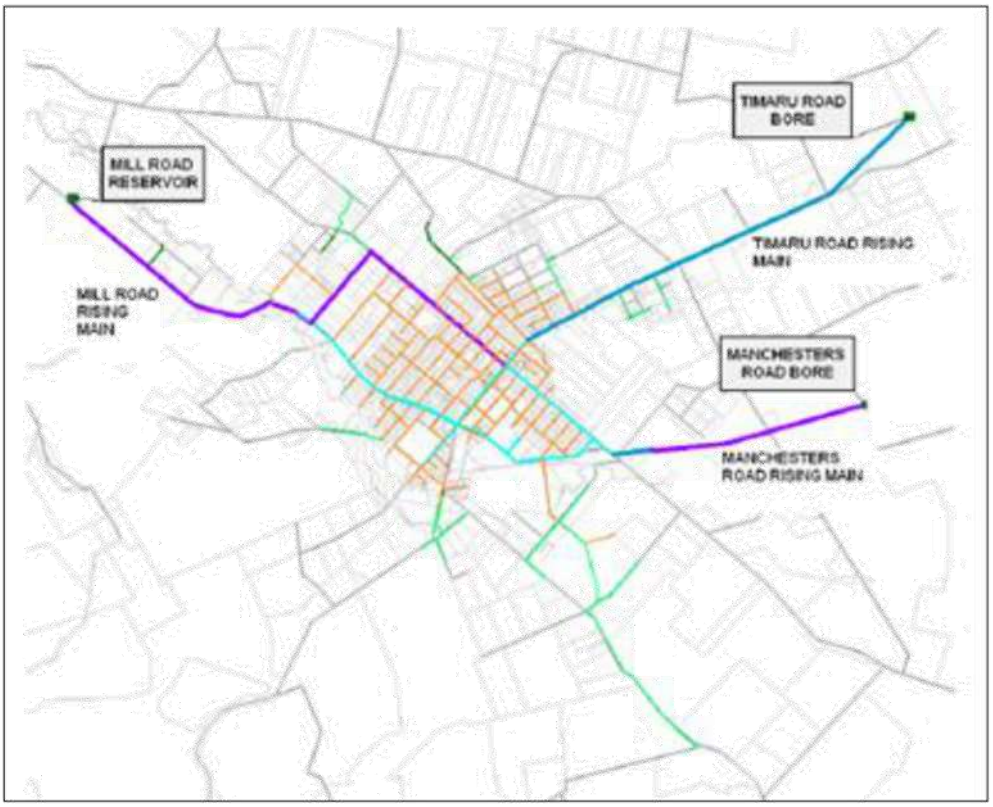
Asset Group	Remaining Useful Life (5 year groups)						
	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
FAC Remote			13,616				13,616
Filtration			82,279		233,580		315,859
Hand	347						347
Land						26,978	26,978
Lime					42046		42046
Measurement	4,685	580	43,200	11,162	1,414		61,041
Pipe				6,100		8,621	14,721
Process		504					504
Reservoir	104,637			20,120		91557	216314
SCADA	8,101		8,894	20,607		524	38,126
Security				5,971			5,971
Sodium Hypochlorite			544				544
Submersible	36,005	14,148	36,819	26,735			113,707
Surface	3,301			28,256			31,557
Transmission						4,690	4,690
UV			26,227				26,227
Valve	3,385	204	6,88	8,680	4,519		17,476
Vessel						1178	1,178
Grand Total	**237,768**	**16,473**	**282,024**	**234,333**	**281,993**	**201,902**	**1,254,493**

Appendix Figure 10: 30 Year Renewal Programme



The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 11: Waimate Urban Water Scheme



A.2 Cannington Motukaika Water Scheme

Overview

The Cannington-Motukaika rural water supply scheme is a "small drinking water supply" that supplies water to 50 connections with a total population of about 120. The Waimate District Council target rates 31 properties for the supply of water in this scheme. Some scheme consumers have more than one point of supply connection on their rated property. Each point of supply connection is required to have water storage for 96 hours (four days) in case of interruption of the water supply.

The intake is located in the Mt Nimrod Stream which gravity feds to a balance/contact tank where chlorine disinfection is undertaken. The treatment plant does not have any protozoal treatment barriers, only a roughing filter and chlorine disinfection. A majority of the reticulation network is gravity fed from this balance/contact tank. Midway in the reticulation a booster pump supplies a reservoir, and reticulation network, in the southwest part of the scheme.

The length of the Cannington-Motukaika reticulation network is approximately 57km over an area of 83 km^2. The majority of pipe network was installed in 1973 and is 45 years old.

A large proportion of the water produced for the supply is consumed for the purposes of commercial agriculture. About 37 habitable dwellings have access to the water supply. This equates to 14% human consumption of the sold volume (based on 1500L/day/dwelling).

History

The Cannington Motukaika water supply scheme assets were installed in 1973 and the majority of scheme reticulation is 44 years old. Very infrastructure have been installed since 1973. A schematic diagram of the scheme follows.

System Description

Source and Catchment:

Raw water is sourced from the Mt Nimrod Stream, which is fed from the surrounding 543 hectare hill catchment. The majority of the catchment is made up of upland pasture, with 71 hectares of native bush and forest above the intake.

The whole 543 hectares of the catchment is protected under the Waimate District Council District Plan "Water Supply Protection Area". Around the intake weir there is 21.9 hectares of Regional Council "Community Drinking Water Protection Zone", which is partial overlapped the "Protection Area".

The upland pasture is made up of pastoral grasses and tussocks. Livestock such as sheep (<100) and beef cattle (<40) intermittently graze in the catchment. There are also small numbers of feral animals like pig, deer and goats in in the area. Wallabies are also present and the population can get up to 80 animals. There are regular culling programmes to keep wallaby numbers down.

There are also low volume farm tracks in the upland pastoral area for access. These farm tracks are maintained by the landowner, and grassed to reduce exposed soil.

The native bush and forest above the intake, and around the intake is managed by the Department of Conservation (DoC). This area is known as the Mt Nimrod Reserve. Recreational activities in the Mt Nimrod Reserve are controlled by DoC.

In the reserve, there are day walk tracks up around through the bush, with a camping ground 400m below the intake. The track is to the intake weir is not a part of the DoC walking tracks.

In the reserve there is "river canyoning" on Mt Nimrod Stream, which is inside the "Water Supply Protection Area" and "Protection Zone". DoC have granted Big Rock Adventures Ltd from Geraldine concession for 10 years to run this activity in the reserve, which commenced 1 May 2011, and expires 30 April 2021.

Big Rock Adventures Ltd have procedures in place around toileting and protection of the environment that they and their clients must follow. These procedures have been viewed by the Waimate District Council, and are satisfied that any associated risks of contamination are controlled. This is a summertime activity and not all year round, therefore poses minimal risks.

The overall assessment of the catchment, plus the impact from human and agricultural activities, equates to a 4 Log treatment process requirement to provide wholesome, compliant drinking water to the consumers on the Cannington-Motukaika Rural Water Supply.

Abstraction:
The raw water is abstracted from Mt Nimrod Stream by an instream weir that diverts water over a roughing filter adjacent to the stream. Surplus flow is diverted back to the stream below the weir.

Maximum consented take is 5.5 L/sec and total volume of 3,325 m^3 per week.

Transmission:
Water flows via a 150mm AC gravity pipeline, approximately 1.3km east, to the treatment plants balance / contact tank. Flow into the tank is controlled by a ballcock valve, and is activated by outflow demand.

Treatment Plant:
The treatment plant consist of a balance / contact tank that is equipped with an ballcock valve, inline stainless steel mesh filter at the tank inlet, solar electrical system, dose pump and a chlorine solution shed.

Raw water passes through the course inline filter before entering the tank. A flow switch on the inlet pipe detects flow and controls chlorine dosing. When initiated by flow the chlorine pump injects a chlorine solution at an operator input set rate. The ballcock setup is designed to allow for a full flow when open, therefore either on or off. This aids chlorination dosing by keeping the flow relatively constant and free available chlorine (FAC) levels consistent.

The tank also serves as a contact tank for chlorination. At an average outflow of 2.8L/sec, contact time is around an hour to two hours. Minimum contact time is around 30 minutes, at maximum outflow of 5.5L/sec.

Power for the chlorine dose pump is generated by four solar panels, and is stored in four large 12-volt deep cycle batteries. The batteries are for nighttime use and low sun days due to cloud or bad weather.

The present treatment plant has no protozoal treatment barriers. For the plant to be protozoal compliant under the Drinking Water Standard for New Zealand 2005 (revised 2018), the plant needs log four (4) treatment processes to be in place.

Two monitoring samples taken at the treatment plant (during October 2020) showed bacterial transgressions greater than 10 E.coli per 100ml in each sample. This was related to chlorine dosing equipment failure. A permanent boil water notice has been in place since March 2013, mainly due to a lack of digital connectivity, and the ability to monitor changes in the scheme remotely in real-time.

Mains power, monitoring and control, telemetry (SCADA), and a building (to house monitoring, telemetry [SCADA] equipment) have been recently installed at the Cannington Treatment Plant site in 2021. This was installed as a part of an agreement with The Ministry of Health, instead of full upgrade of the treatment plant, to allow for potential changes in legislation and standards (Acceptable Solutions), for rural agriculrual water supplies.

Distribution:
The majority of the scheme is gravity supplied from the balance / contact tank. Flow out of the tank is determined by demand.

At the south end of the supply a booster pump station is required. It is known as Pratts pump station, and is situated at the end of Pratts Road. The pump station pumps to a reservoir known as Lambs Reservoir at the west end of Howells Road, and supplies the high level properties in the south west of the supply. The Cannington-Motukaika water supply services an area of approximately 83 km². The supply is the most remote of the six rural water supplies administered by Waimate District Council.

Management and Operation:
The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Business Unit (UBU) based at Michael Street nearby. Five qualified field staff operate and maintain the rural water scheme plant, fixing leaks etc as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing.

With the age and size of the rural water supply there is limited availability of on-site standby plant within the system. Essential spare equipment is kept at the Councils Michael street Yard for maintenance and replacement. There is also currently no electronic supervision or control of the system (SCADA).

Even though the Cannington Motukaika is a small and remote water supply, it has a cooperative and pro-active water scheme committee, who participate in the governance of the Cannington Motukaika rural water supply scheme. Under their own initiative they have set up a communication system via phone and email between Council, committee and the community, to aid in notification of issues and events. They have also organised surveys to help in future planning for the scheme.

Currently the Cannington Motukaika rural water supply has a "Permanent Boiled Water Notice". The notice was issued with the agreement of the Drinking water Assessor in September 2014. The notification is regularly advertised in local papers, Waimate District Council's website and Facebook page, along with Rural Delivery mail drops. The local water committee also reminds locals on request. In recent times organisations such as the local Mobile Kindy have helped advertise the "Permanent Boil Water Notice".

A large proportion of the water produced for the supply is consumed for the purposes of commercial agriculture, and the supply could potentially qualify as a rural agricultural drinking water supply. Waimate District Council had previously considered the option of point of use treatment on the rural supplies, and discounted the option at that time because of cost and maintenance issues. The option of "point of use treatment" was looked at again with the release of

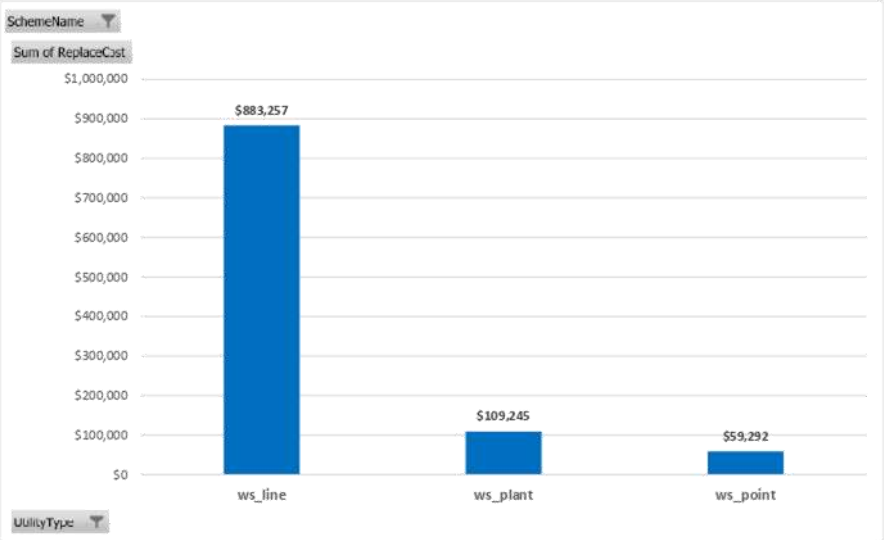
the Rural Agricultural Drinking Water Supply Guidelines (RADWS) in March 2015. Some questions were raised again about actual cost, pre-treatment, maintenance, responsibility issues and liability. Those questions were investigated by exploring successful examples of private "point of entry treatment" supplies under the RADWS in the Waitaki District Council. However, after the Havelock North Stage 1 Enquiry, the issues and risks of such a system make the RADWS not a viable option.

Coucil has lobbied Government to review the current legistlation and standards for Rural Agricultral Water Supplies. Since then the Department of Internal Affairs (DIA) and the new regulator Taumata Arowai have been, and still currently working on an Acceptable Solution option, using point of use (PoE) treatment, which could be used in rural argicultral water supplies.

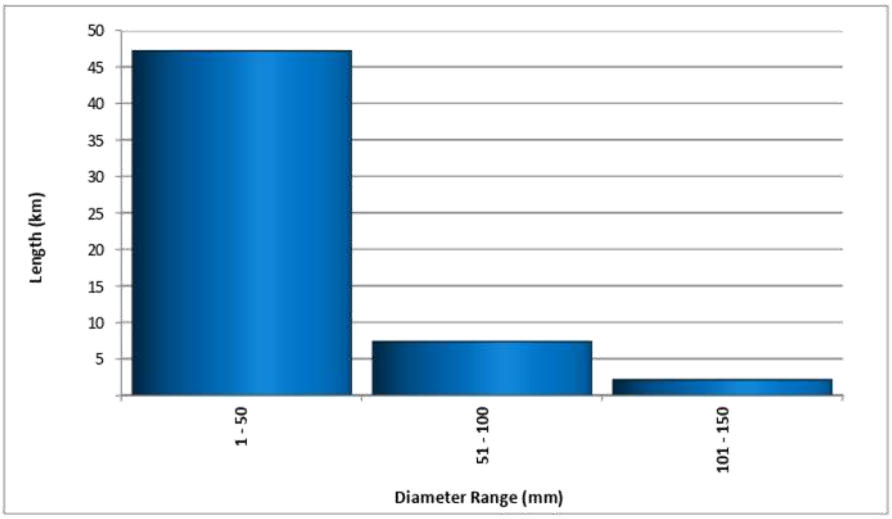
System Information

System Information – Cannington Motukaika			
Connections	46	**Treated Water Storage (Reservoir)**	
- Metered unrestricted	-	Backline Rd	
- Metered restricted	46	Built (yr)	1973
- Unmetered Residential	-	Capacity	25 m³
		Material	
Water Sources	(Consent volumes)	**Treatment**	
Mt Nimrod Stream	475 m³/day	Screen	
		Chlorine	
Resource Consent	Expiry date	To	
CRC092155	1/10/2044	Take water	
Replacement Cost		**Reticulation length**	
Total Scheme	$1.05m	56.7 km	

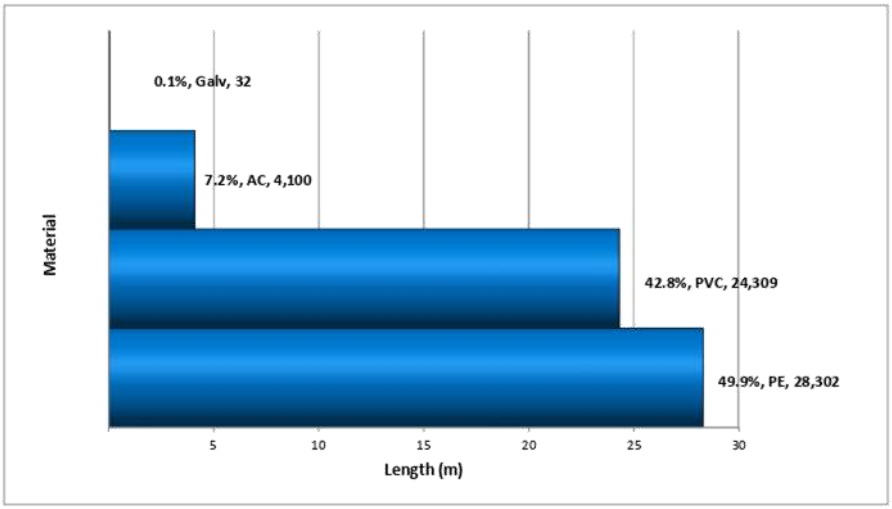
Appendix Figure 12: Scheme Components



Appendix Figure 13: Water Mains Diameter Range

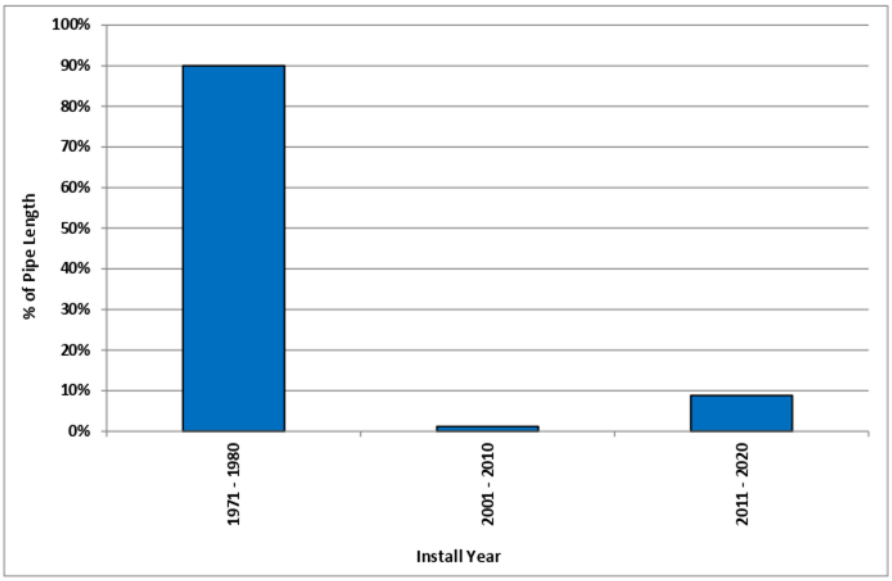


Appendix Figure 14: Water Mains Length and Material

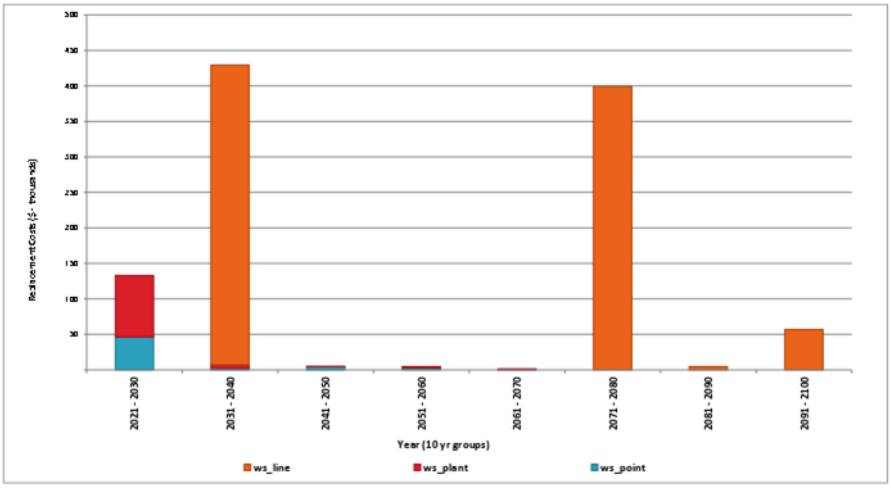


Approximately 90% of the Cannington Motukaika water supply scheme reticulation were installed during 1973 and are 47 years old. The remaining 10% have been installed since 2001 and are aged between 1-20 years. The reticulation consists mainly of PE (50%) and PVC (43%).

Appendix Figure 15: Water Mains Install Year (10 Year Groups)



Appendix Figure 16: Remaining Life of all Assets – Long Term

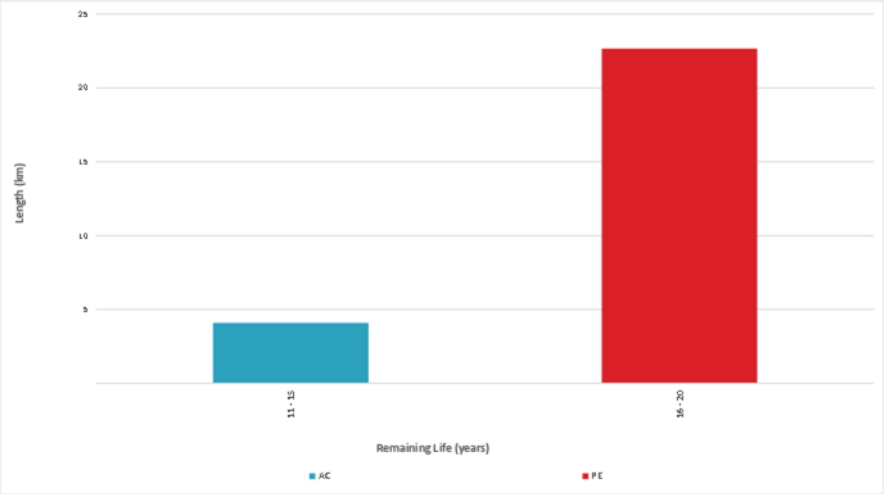


At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

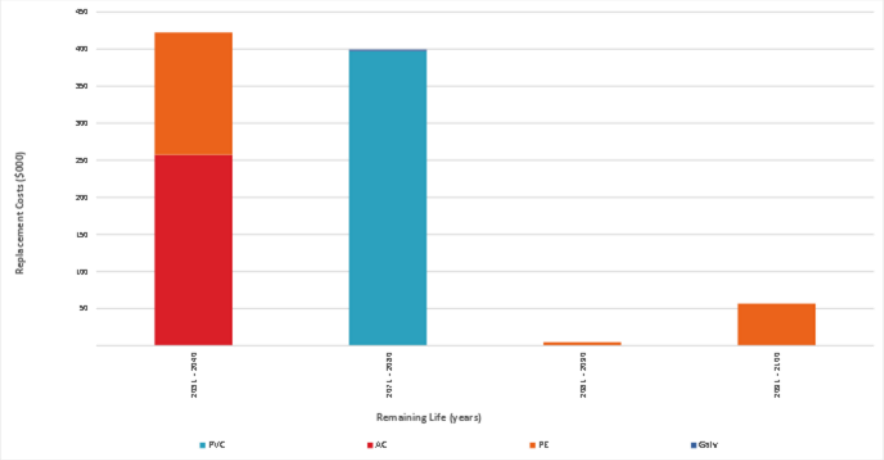
Appendix A:

Individual System Description and Overview

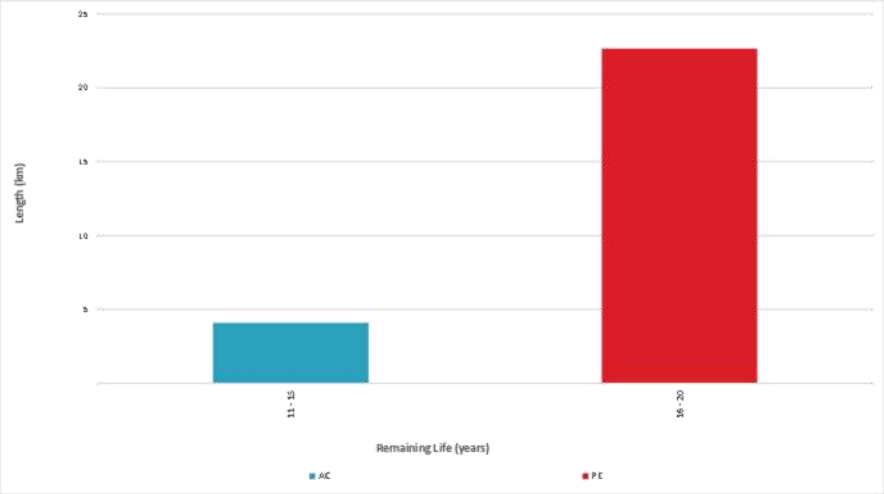
Appendix Figure 17: Water Mains Replacement (Length) – Long Term



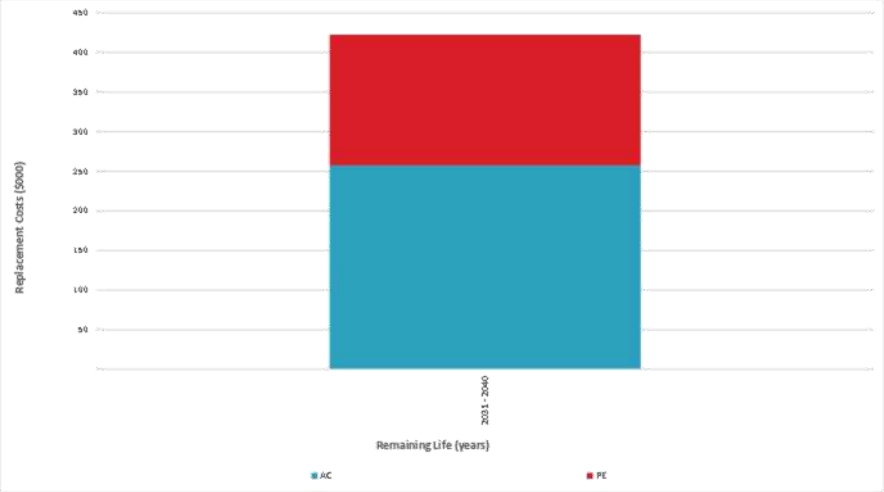
Appendix Figure 18: Water Main Replacement Value – Long Term



Appendix Figure 19: Water Main Replacement (Length) - 1 to 30 Years



Appendix Figure 20: Water Main Replacement Value - 1 to 30 Years



Appendix Table 4: Plant Replacement Value 1 to 30 Years

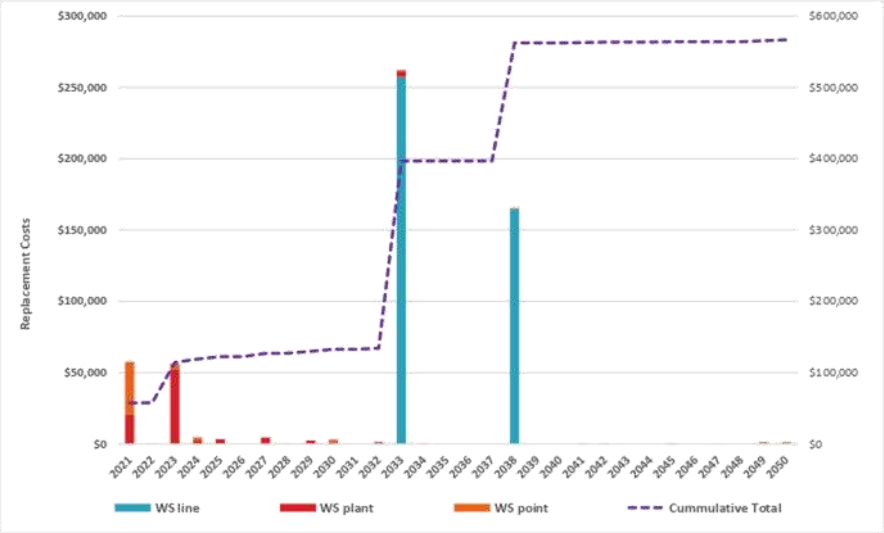
Asset Group	Remaining Useful Life (5 year groups)					
	1 - 5	6 - 10	11 - 15	16 - 20	26 - 30	Grand Total
Abstraction	12,882					12,882
Building	11,978					11,978
Cabinet			1,162			1,162
Control	1,962					1,962
Digital I/O	1,356	301				1,657

Appendix A:

Individual System Description and Overview

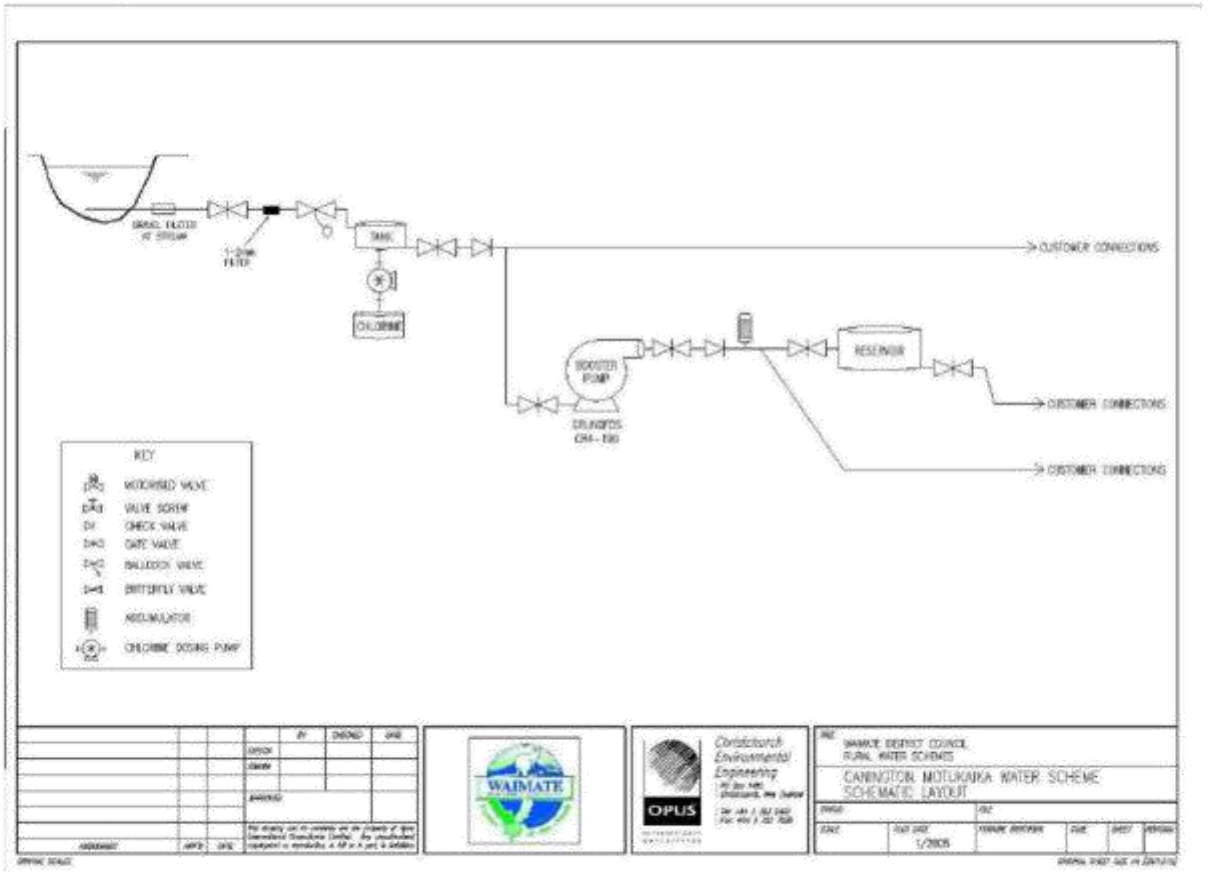
Asset Group	Remaining Useful Life (5 year groups)					
	1 - 5	6 - 10	11 - 15	16 - 20	26 - 30	Grand Total
Distribution	3,437					3,437
Measurement		3,263				3,263
Pipe	2,419					2,419
Reservoir	7,058					7,058
Screening	6,520					6,520
Sodium Hypochlorite	2,345	544				2,889
Solar	2,428					2,428
Surface		4,012	4,012			8,024
Transmission	18,095					18,095
Valve	5,502		167	71		5,740
Vessel	2,795					2,795
Grand Total	**78,777**	**8,120**	**5,341**	**71**		**92,309**

Appendix Figure 21: 10 Year Renewal Programme

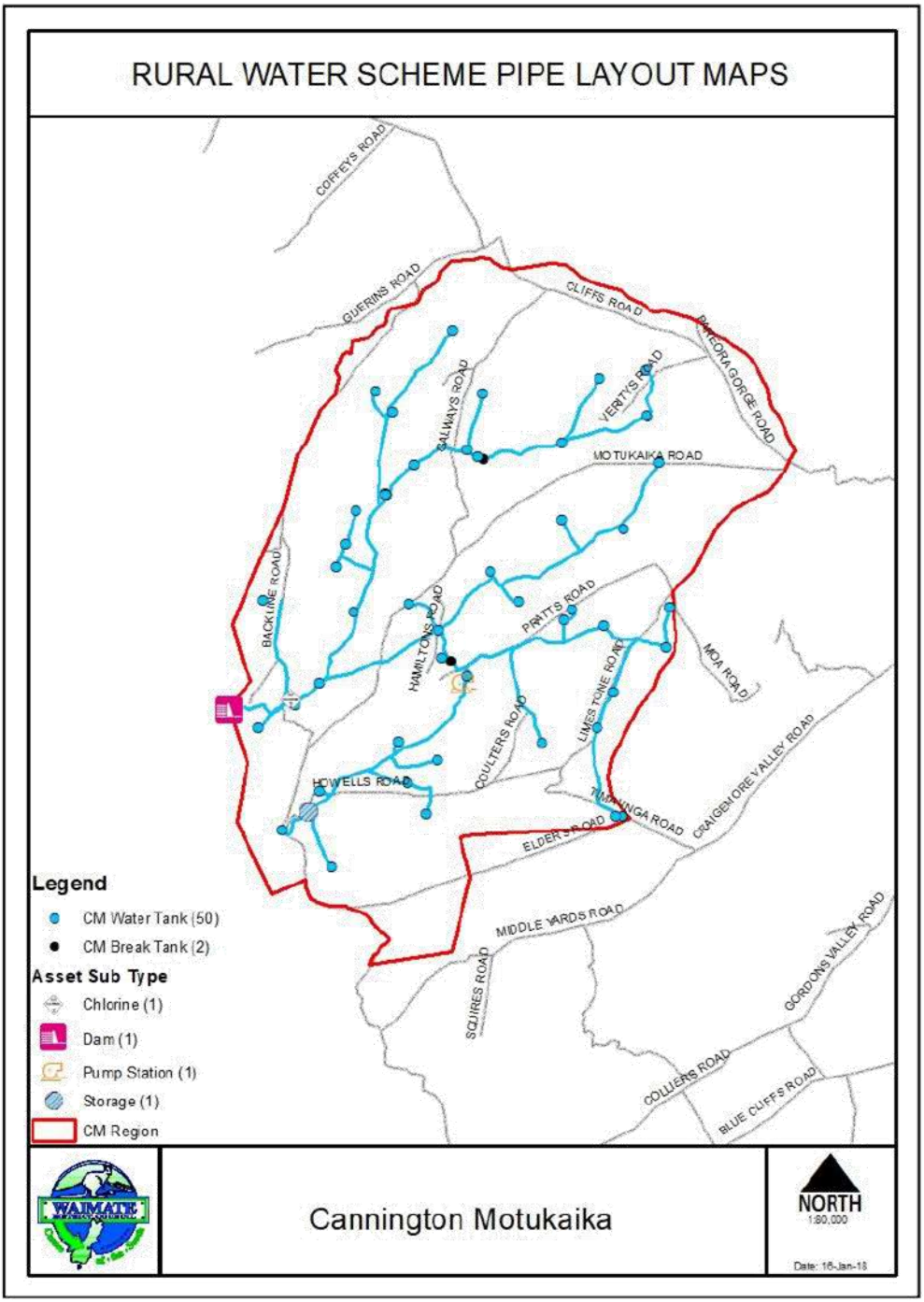


The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 22: Cannington Motukaika Schematic



Appendix Figure 23: Cannington Motukaika Scheme Plan



A.3 Hook Waituna Water Scheme

Overview

The Hook Waituna water supply scheme is a "minor drinking water supply" and supplies water to 513 connections with a total population of about 1,350. Out of those figures there are 54 connections, with a population of 97 on the Hook Water Supply Scheme known as the Willowbridge area. This area is augmented with treated water from Waimate Urban Water Supply (WINZ Code: WAI033, Grading Ab). The Waimate District Council target rate 431 properties for the supply of water in this scheme. Some scheme consumers have more than one point of supply connection on their rated property. Each point of supply connection is required to have water storage for 96 hours (four days) in case of interruption of the water supply.

Water is sourced from an intake on the Hook River approximately 300m upstream of the Upper Hook Road Bridge. The raw water gravitates 220m to the Hook Treatment Plant which was upgraded 2013/14. Due to fine particulate found later in the raw water, the plant does not have any functioning protozoal treatment barriers, only chlorine disinfection. Duty/standby pumps deliver chlorinated water into the reticulation. There are four booster pump stations in the supply distribution.

The length of the Hook-Waituna reticulation network is approximately 252km over an area of 152 km². The majority of pipe network was installed in 1973 and is 45 years old.

There are conditions and issues that limit the options for treatment to treat the fine particulate. Those conditions and issues range from noise, visual impact, use of chemicals, sludge discharge, capital and operational costs, plus consenting of discharge. An option that has the most potential is un-validated membrane filters. Investigation and trailing started in 2017. This form of treatment so far meets the requirements for capital and operational costs, space, visual impact, chemical free, sludge discharge.

History

The Hook Waituna water supply scheme was established in 1973 and the majority of the scheme reticulation dates from this time. In 1997 a booster pump was installed at the intake site to resolve an air-locking problem in the reticulation going away from the plant. In later years the booster pump was used to boost pressure in the scheme during peak demand times.

Two supply connections from the Waimate urban supply were completed in 2001, to provide better pressure and flow in the lower supply catchment. One connection is at Mill Rd and can supply Garlands Road, down to Uretane Road if required. The second connection is on Manchesters Road and can supply the area around Manchesters Road, up to Timaru and Maytown Road intersection, and around Molloys Road down to Studholme. It also supplies Mitchells Road down to Hannaton Road.

Later an extension was constructed to service the Willowbridge Community in 2003. This second connection is now known as the Willowbridge line and is permanently on below Molloys Road to Willowbridge and Nukuroa Hall on Hannatons Road.

The intake gallery intake has been washed out a number of times over the years, with the last time in June 2013

In late 2013 with the aid of the Capital Assistance Programme (CAP) funding the Hook Intake Plant was upgraded to comply with the Drinking Water Standards for New Zealand. The plant could not be fully commissioned in early 2014, due to the discovery of fine particulate in the raw water source. The fine particulate affected the filtering processes and rendered the UV reactor inoperable. At present the plant is operating in a reduced state where there is only chlorination.

System Description

Source and Catchment:

Hook Waituna Rural Water Supply sources its raw water from an intake on the Hook River approximately 300m upstream of the Upper Hook Road Ford.

Raw water sourced from the Hook River is fed from the surrounding 1,071 hectare hill catchment. Just over half of the catchment at 550 hectares is made up of bush and forest, with the remaining 521 hectares upland pasture and tussock above the intake.

The geology of the soil make up around the Hook River clay and rock. This clay is believed to be the source of the fine particulate that affects the present filtration process.

The whole 1,071 hectares of the catchment is protected under the Waimate District Council District Plan "Water Supply Protection Area". Around the intake gallery and weir there is 12.1 hectares of Regional Council "Community Drinking Water Protection Zone", which is overlapped by the "Protection Area".

The upland pasture is made up of pastoral grasses and tussocks. Livestock such as sheep (≤500) and intermittently graze in the catchment. There are also small numbers of feral animals like pig (≤25), deer and goats (≤25) in the area. Wallabies are also present and there are regular culling programmes to keep wallaby numbers down.

Human impact is minimal, but there are three domestic sewerage systems just inside the protection area. Two are secondary treatment process and the third below the intake, and is an older style septic tank system. There also a fourth domestic sewerage systems just outside the "Protection Area".

The overall assessment of the catchment, plus the impact from human and agricultural activities, equates to a four (4) Log treatment process requirement to provide wholesome, compliant drinking water to the consumers on the Hook-Waituna Rural Water Supply.

Abstraction

The intake is an infiltration gallery which comprises a pair of 150mm PVC, slotted (2mm slots) pipes (total length 10m) laid in the river bed behind a weir constructed of rock filled gabion baskets.

Transmisson:

The raw water flows by gravity through the infiltration gallery, into a 150mm AC pipeline (240m), and down to the treatment plant.

Treatment Plant:

The treatment plant consists of pump operation, pre-screening, cartridge filtration, UV irradiation, and chlorination.

At the treatment Plant the raw water quality is monitored for inlet turbidity (NTU). There are set-points for maximum critical turbidity, if reached will shut down the plant, open a bypass to discharge to waste (allowing for continued turbidity monitoring), and initiate an alarm.

When the turbidity is in working range, the raw water is pumped up to a set-point working pressure by two of three inline (duty/standby) VFD controlled centrifugal pumps, for the filters and distribution to function.

The first part of treatment is filtration, starting with 50 micron a pre-screen self-cleaning strainer to remove larger particulate. The raw water proceeds through a cartridge filter in a single housing unit with 3x 1 micron cartridges. The pre-screen strainer and cartridge filter are monitored by a pre and post pressure gauge on each unit to monitor pressure head-increase. A PLC controls the monitored pressure with set-points to protect the filters, and warn of replacement. To protect filters if high pressure differential across the filter housings are reached, the PLC can stop pumps, shut down the plant and discharge to waste, and initiate an alarm.

The post filtered water is continuously sampled for turbidity and transmittance (UVT). Set-points on both analysers control plant operations via PLC, and if critical; shut down the plant, discharge to waste, and initiate an alarm.

When turbidity (NTU) and transmittance (UVT) levels are in working range, the filtered water enters the UV reactor, and is irradiated to disinfect for protozoa.

The filtered/UV irradiated water is then chlorinated to a set-point. Chlorine dose is controlled by the analyser by monitoring flow, Cl2 residual (set-point) and pH. After chlorination, water enters the distribution system.

Council's SCADA system monitors the Hook treatment plant, recording daily water usage, pump hours, NTU, pressure differential, UVT, chlorine dosage, temperature, pH and outgoing pressure. When parameters are breeched in some of the above and other functions, the SCADA can also send out alarms via txt/sms to all operators. The SCADA system also provides a control function to switch pumps on and off as required.

The maximum output the plant can do is 20 L/sec, and is throttled by an orifice to govern it, so it cannot exceed 20 L/sec.

At present the filtration and UV process is not functioning due to a fine particulate issue in the raw water source. This fine particulate blinds and causes damage to the plant filters and rendered the UV reactor inoperable, by clogging the turbidity meters and UV analyser. Therefore the plant does not have any operable protozoal treatment barriers, only chorine disinfection at present.

Because of the fine particulate issue, the old plant has not been dismantled. This is so it can be used if required due to a failure, and or during the proposed stage two upgrade of the new plant.

Therefore, the raw source water can still flow into the old Hook Plant control tank when required, which is controlled by a ballcock valve. Flow out of the tank is determined by demand. A stainless steel mesh filter is installed at the tank inlet.

The tank serves as a contact tank for chlorination as well as a holding/balancing tank. Chlorine is injected only when flows enter the tank, controlled by a flow switch on the intake. When running, the chlorine pump injects chlorine at an operator input set rate irrespective of the actual flow into the tank.

During peak demand, a pump (fixed speed, controlled by tank level measurement and timer [on/off]) located immediately downstream of the tank can be manually operated to boost supplies but the success of this operation is limited by the small capacity (25 m^3) of the tank. This pump is also used to clear airlocks in the reticulation and restart the supply.

Distribution

Four booster pump stations operate on pressure switch and timer control process in the supply distribution. They are located at Brownleas Rd (not in use), Triangle Rd, Waituna School Rd and Garlands Rd.

The Hook Waituna scheme extends to Willowbridge settlement, some 20 km away (as the crow flies) and also encircles urban Waimate. The urban water supply network and the Hook Waituna network cross at numerous locations. At two such points the supplies are connected at Manchesters Road and Mill Road. This has the effect of boosting the supply into the rural water scheme network. Non-return valves prevent backflow from the rural scheme into the urban supply.

The area known as Willowbridge at present is permanently supplied by the Waimate Urban water Supply from the Manchesters Road connection. This is because the Hook Water Supply under normal demand cannot provide enough treated water via the reticulation. In peak high demand periods the Waimate Urban Water Supply can also supply the Studholme and Bathgates Road Area from the Manchesters Road connection. Also Garlands to Uretane Road Area from the Mill Road Connection. The Waimate Water Supply (WINZ Code: WAI033, Grading Ab) has a current Water Safety Plan (Waimate Water Supply Water Safety Plan, Version 2.0 February 2014).

Management and Operation:

The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Services Unit (USU) based at Wilkin Street nearby. Five qualified field staff are appointed to operate and maintain the rural water scheme plant, fixing leaks etc. as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing.

The issue at the time of writing this WSP has been submicron particulate in the raw source water, which has been causing the blinding and damage of the 50 micron screen, and blinding of the 1 micron filter. This has meant that the 50 micron screen, the 1 micron filter and UV reactor are offline due to the submicron particulate issue. The only process still functioning is chlorine disinfection.

Council recognises that the way the treatment plant is functioning does not comply with protozoal compliance under the NZDWS 2005 (rev 2018). Attempts have been made to rectify, such as the aggressive flushing of the transmission line from the intake to the treatment plant with no improvement. The next was the rebuilding of the intake gallery, which was also unsuccessful in the attempt of stopping the submicron particulate entering the treatment process.

A particulate analysis was done to identify the percentage of particulate size and quantity, and from those results it was recognise that it was the submicron particulate that was cause of the blinding and damage issues. It was also recognised because of its size it couldn't be easily stopped from entering the abstraction and treatment process.

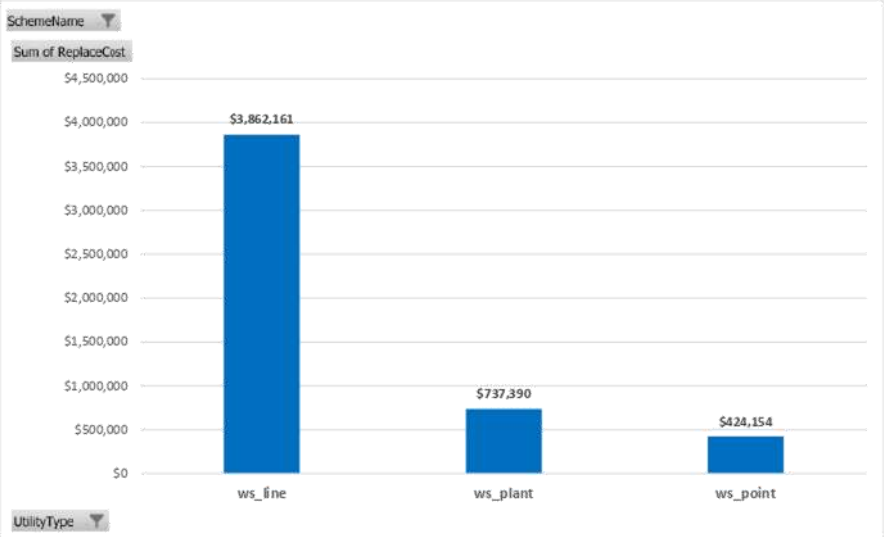
The Waimate District Council currently (2021) is putting a request for proposal (RFP) together, using the earlier contractor involvement procurement method for a build design contract. This RFP will also include the DWSNZ 2005 (Revised 2018) upgrade for Lower Waihao. This method of procurement and design build gives greater assurity in achieveing functional, reliable and DWSNZ

2005 (Revised 2018) compliant plants that produce safe drinking water for consumers. Both plants historically have had a fine particulate issue. There is also some costing saving beneifits where some equipment from Hook Treatment Plant can be used at the upgraded Lower Treatment Plant.

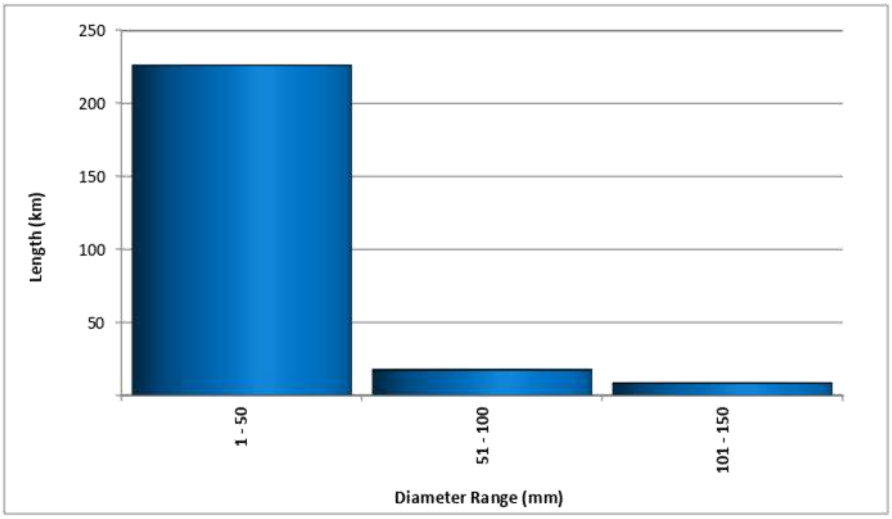
System Information

System Information – Hook Waituna			
Connections	502	**Treated Water Storage (Reservoir)**	
- Metered unrestricted	-	**Upper Hook Rd**	
- Metered restricted	502	Built (yr)	1974
- Unmetered Residential	-	Capacity	25 m^3
		Material	Concrete
Water Sources	(Consent volumes)	**Treatment**	
Hook River	1,728 m^3/day	Screen	
		Chlorine	
Resource Consent	**Expiry date**	**To**	
CRC980385	21/05/2034	Construct a rock weir	
CRC980386	21/05/2034	Take water	
Replacement Cost		**Reticulation length**	
Total Scheme	$5.02m	252 km	

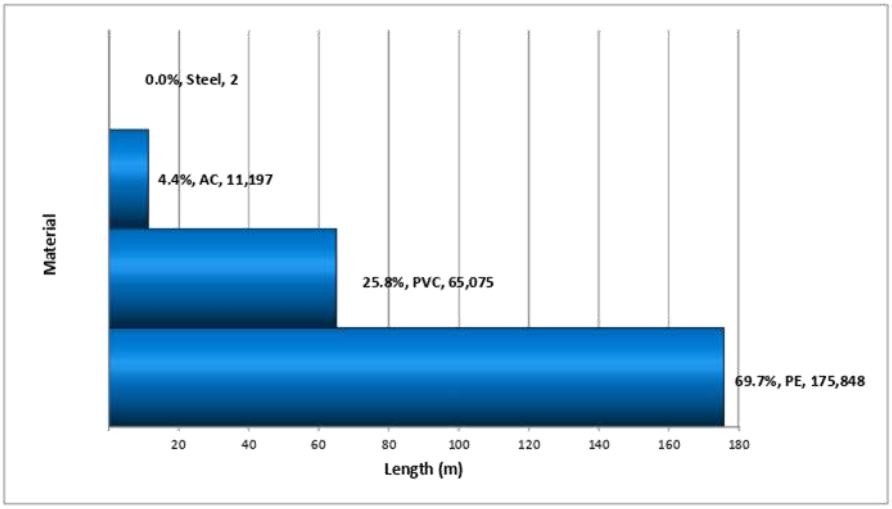
Appendix Figure 24: Scheme Components



Appendix Figure 25: Water Mains Diameter Range

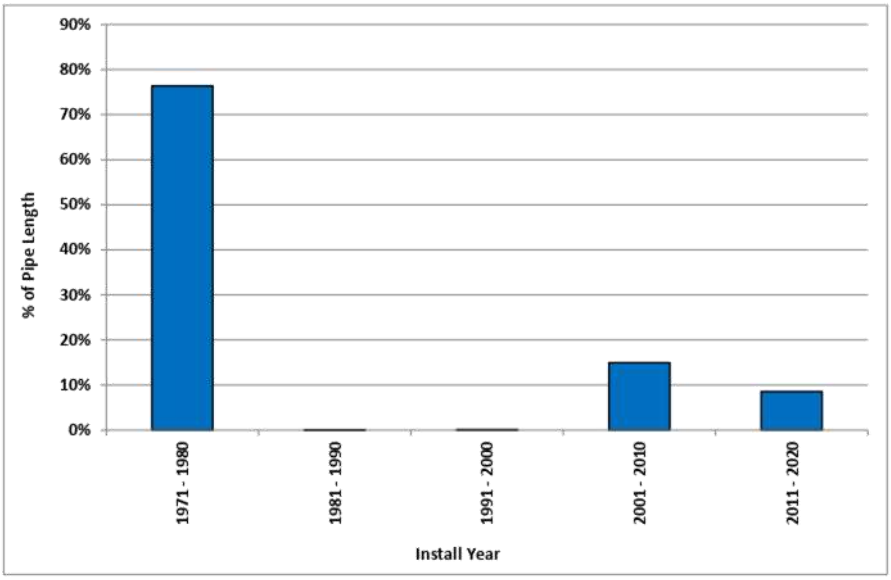


Appendix Figure 26: Water Mains Material Length



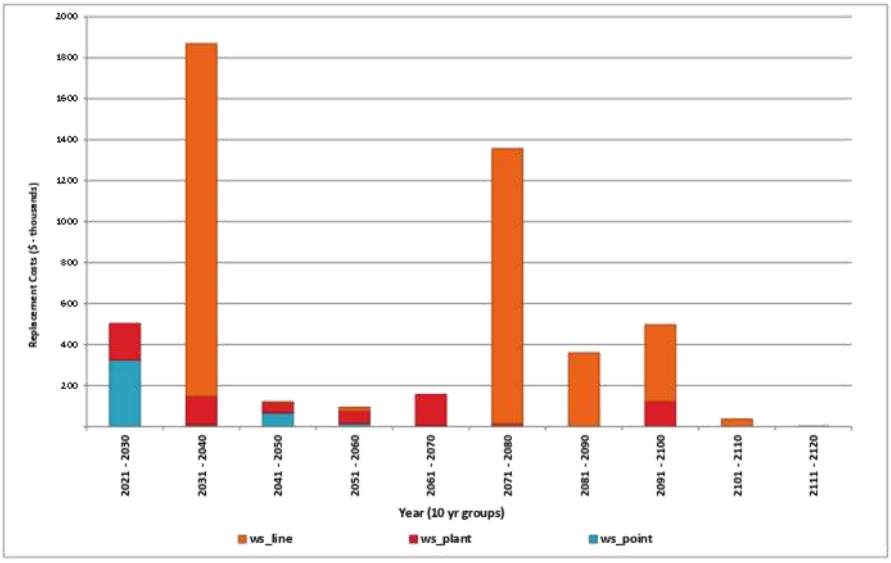
Approximately 70% (176km) of the reticulation is PE, of which 120km of pipe will reach its expected economic useful life within 18-32-year window. The remainder of the network consists mainly of PVC (26%) and AC (4%). There is 2m of steel which will be pipes from bore to surface pump.

Appendix Figure 27: Water Mains Install Year (10 Year Groups)



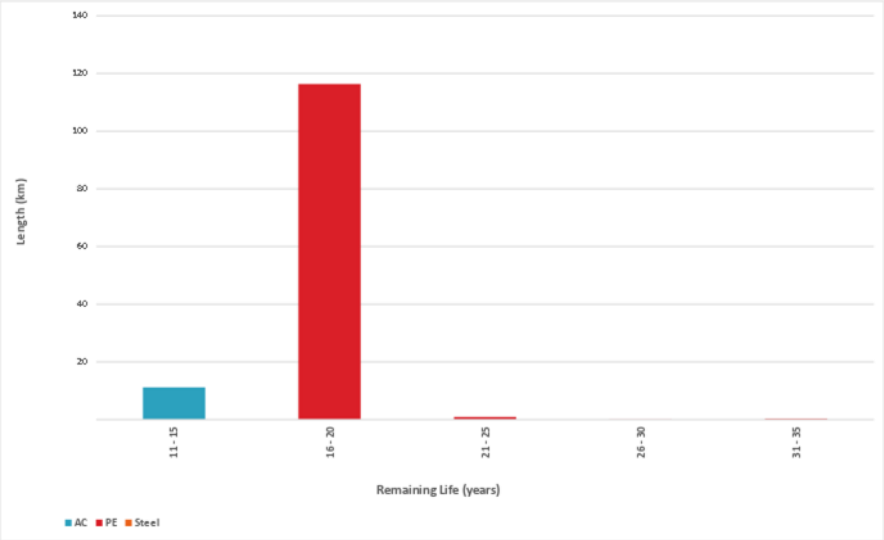
Approximately 76% of the Hook Waituna water supply scheme assets were installed in 1973 and are 47 years old. The remaining 24% have been installed since 2001 and are aged between 1 – 19 years.

Appendix Figure 28: Remaining Life of all Assets – Long Term

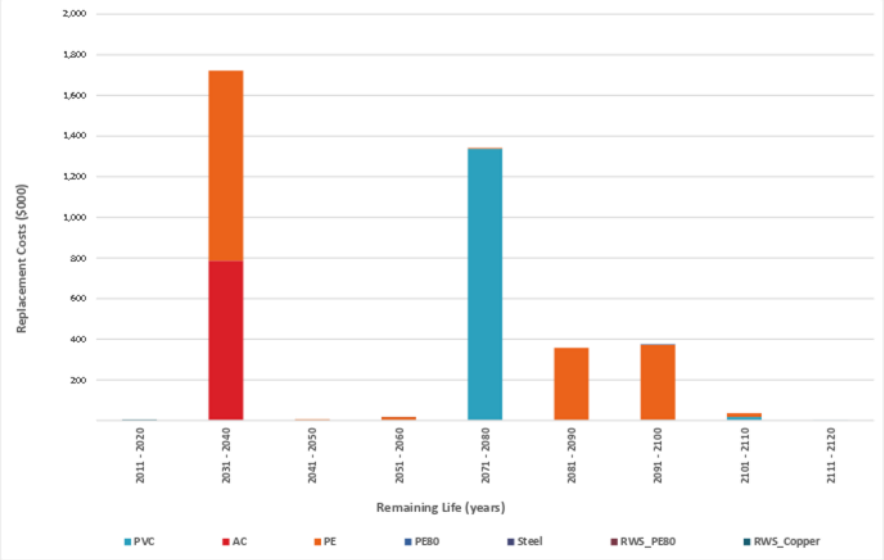


At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

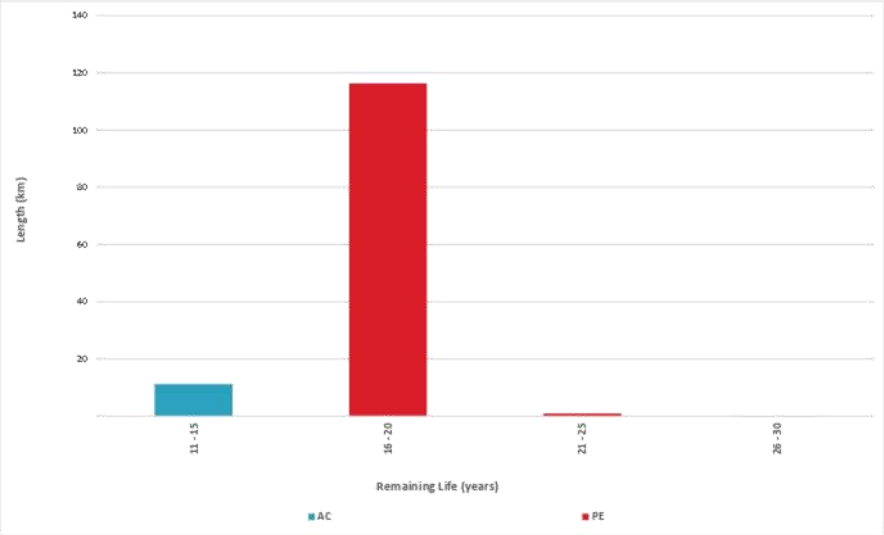
Appendix Figure 29: Water Mains Replacement (Length) – Long Term



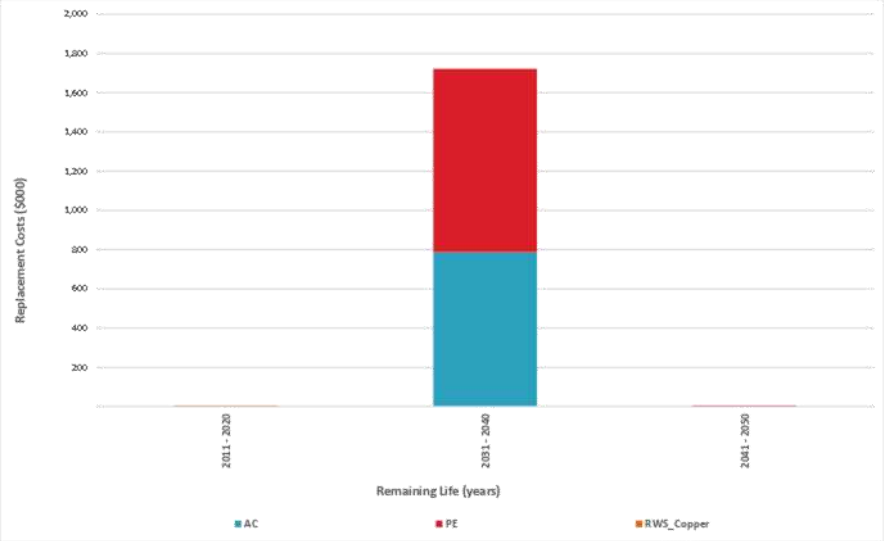
Appendix Figure 30: Water Main Replacement Value – Long Term



Appendix Figure 31: Water Main Replacement (Length) - 1 to 30 Years



Appendix Figure 32: Water Main Replacement Value 1 to 30 Years

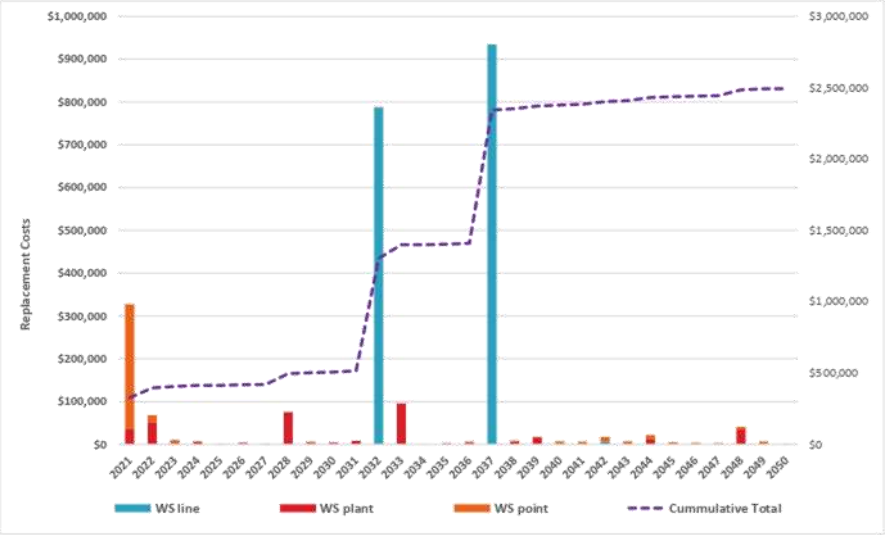


Appendix Table 5: Plant Replacement Value 1 to 30 Years

Asset Group	Remaining Useful Life (5 year groups)						
AssetType	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Abstraction		15,874					15,874
Building	17,967			8,390	5,395		31,752
Cabinet	1,153					651	1,804
Chlorine		20,274	10,843				31,117

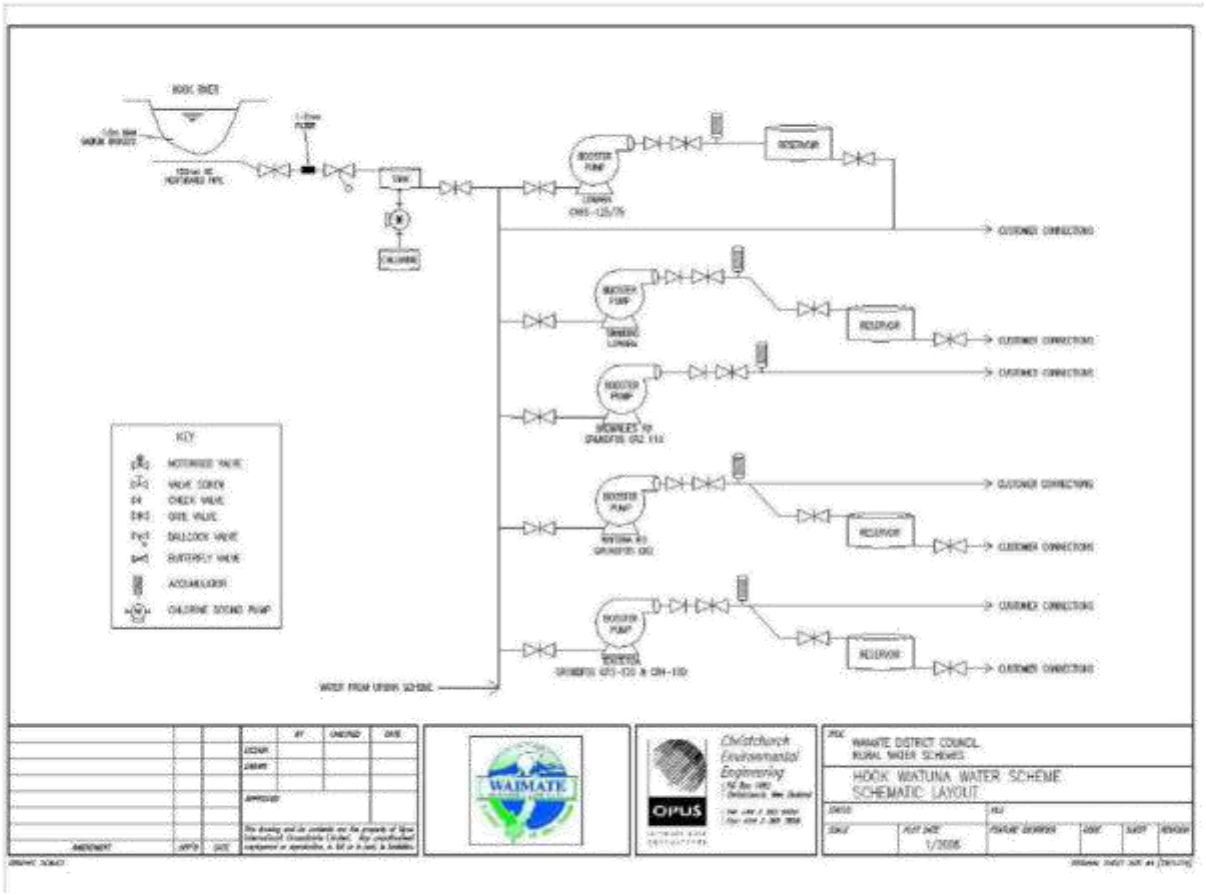
Asset Group	Remaining Useful Life (5 year groups)						
AssetType	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Control	9,480	4,927	39,882	504		10,889	65,682
DC Supply		93					93
Digital I/O	2,110	312					2,422
Distribution	10,023	3,341				21,772	35,136
FAC Remote			768				768
Measurement	1,082	26,812	5,410		63		33,367
Pipe	2,703			28	3,028		5,759
Process	504						504
Reservoir	12,925		3,166				16,091
SCADA		7,349	4,061				11,410
Screening	6,520						6,520
Sodium Hypochlorite	3,433						3,433
Surface	6,952	4,012	31,531	10,877			53,372
Transmission	1,899			1,347	1,386		4,632
Valve	11,306	503	12,984	5,929	1,684	3,027	35,433
Vessel	6,220			3,110			9,330
Grand Total	**94,277**	**83,497**	**108,645**	**30,185**	**11,556**	**36,339**	**364,499**

Appendix Figure 33: 30 Renewal Programme

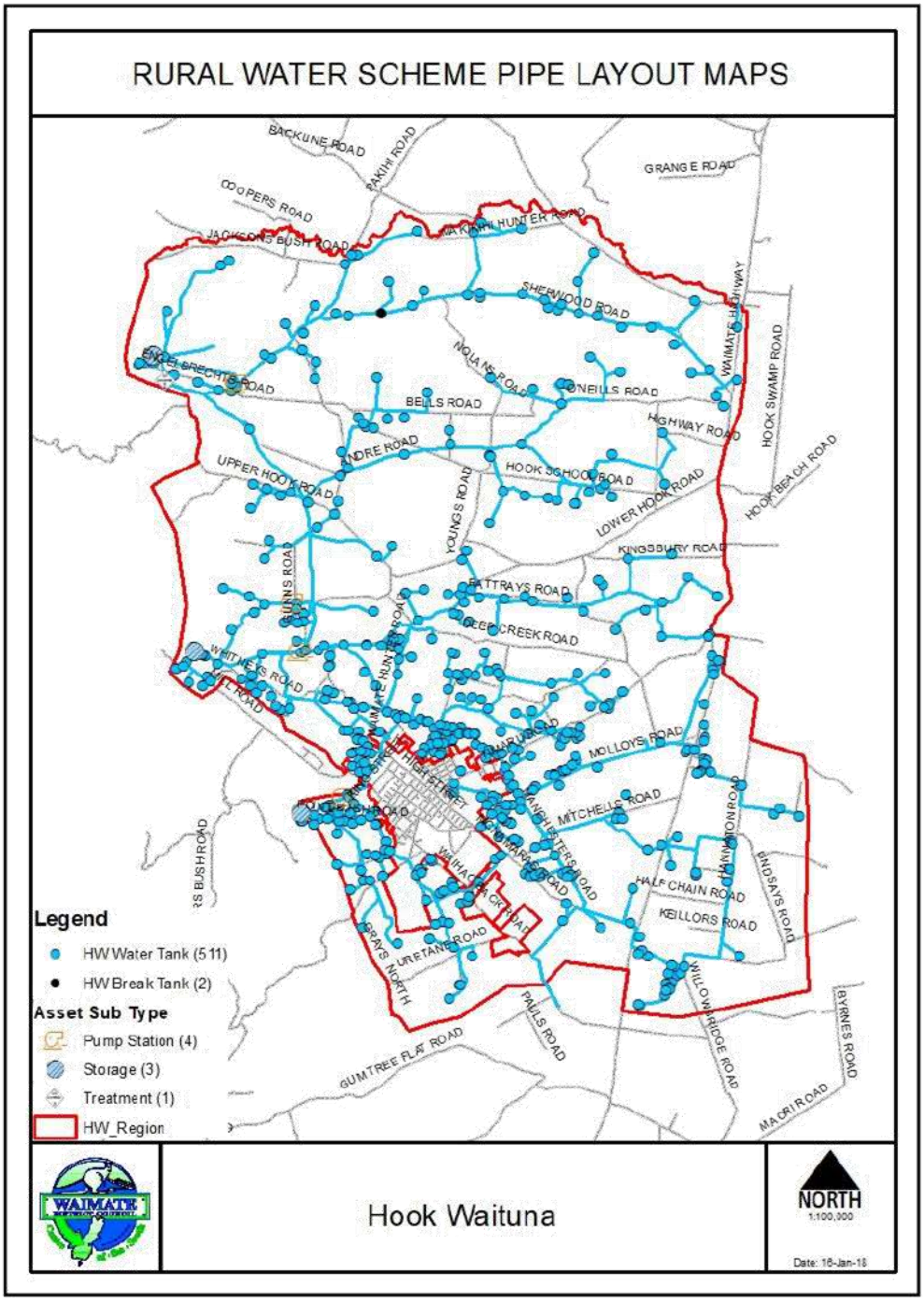


The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 34: Hook Waituna Schematic



Appendix Figure 35: Hook Waituna Scheme Plan



A.4 Lower Waihao Water Scheme

Overview

The Lower Waihao water supply scheme is a "minor drinking water supply" that supplies water to 235 Lower Waihao Rural Water Scheme connections with a population of about 483. It also supplements 72 Waikakahi Rural Water Scheme connections in the Waikakahi East area, with a population of about 132. This makes a total population of about 615 served by the Lower Waihao water supply scheme. The Waimate District Council target rate 233 properties for the supply of water in this scheme. Some scheme consumers have more than one point of supply connection on their rated property. Each point of supply connection is required to have water storage for 96 hours (four days) in case of interruption of the water supply.

The Lower Waihao sources it water from a shallow 14m bore in the road reserve on Ferry Road, Glenavy, near the Waitaki River. This bore suffers from a fine particulate issue. A submersible pump pumps the water into a balance tank. The treatment plant does not have any protozoal treatment barriers, only chlorine disinfection. The raw water is chlorinated and boosted to a booster pump station, then onto a reservoir located some 4.5 km away at Pikes Point corner. The Lower Waihao augments Waikakahi East via two booster pumps that supply a reservoir in the Waikakahi Scheme

The length of the Lower Waihao reticulation network is approximately 125km over an area of 176 km². The majority of pipe network was installed in 1978 and is 42 years old.

History

Approximately 95% of the Lower Waihao water supply scheme assets were installed in 1978 and are 42 years old. The remaining 5% have been installed between 1999 and 2002 and are aged between 15 and 18 years.

The Lower Waihao water supply scheme was established in 1978 and the majority of the scheme reticulation dates from this time.

The original shallow bore was found to run dry during Project Aqua low flow regime trials in 2001/02. A new, deeper well was constructed adjacent to the existing well.

Approximately 3.2 km of asbestos-cement pipes was replaced in 2006 (with PVC-U pipe) due to repeated failures occurring in this section.

In 2007 a replacement supply source from the lower Waihao RWS was connected to the Clayton Reservoir serving the eastern portion of the Waikakahi RWS. This effectively joins this supply area to the Lower Waihao scheme. The Clayton Reservoir is no longer supplied from the Waikakahi source.

With the changes in environment, technology and legislation, the upgrading of the Lower Waihao Intake was deemed to be necessary.

Three attempts were made to find a secure bore source. Bores were drilled on Ross Road, Ferry Road and Pikes Point Road. The raw water quality at Ross Road and Ferry Road suffered from fine sand particulate, and raw water quantities (Litres per second) were insufficient. At Pikes Point Road the raw water quality suffered from high hardness (250mg/L), and the cost of treatment made it prohibitive.

The existing site was re-looked at, and the mitigation of the observed risks. It was noted that since the installation of pivot irrigators on the adjacent land owner's property, and the lining of the stream that passes the intake, favourable effects on the raw water quality at the Intake had been observed.

Owners of the properties inside the Lower Waihao Intake Group or Community Drinking-water Protection Zone (Environment Canterbury) and Water Supply Protection Area (Waimate District Council) were informed of Councils intentions to remain at the existing intake. The two landowners directly affected, where invited to a meeting on the 2 July 2015. Present were Dan Mitchell (WDC Asset Group Manager), Paul Roberts (WDC Water & Waste), Gerardus Vant'Klooster, Joy Burke and her consultant. From that discussion it was agreed that a Water Safety Plan would be drafted to look at the risks for the new plant, and how to mitigate those risks, and then proceed.

On the 7 August 2015 a new shallow bore was drilled and established for the construction of a new treatment plant. The bore is a shallow bore at 14m's deep, with a 273mm diameter 304 stainless steel casing, and a stainless steel wedge wire screen set a 5 - 7m below ground level. The bore is situated approximately 220m from the Waitaki River (on the road reserve of Ferry Road, Glenavy).

After the discovery on 30 March 2016 of a significant groundwater level reduction by 1.7 metres in the two existing wells, and with no signs of recovery. A new submersible pump was installed in the recently established 14m shallow bore, plus a variable speed drive, level switches, balance tank where installed and commissioned on the 14 April 2016, by council staff and contractors. This was successful in ensuring that the scheme continued to meet consumers' expectations. The setup will remain in operation until the Ministry of Health Subsidy Upgrade, where the assets purchased will be re-used in the upgrade.

The Lower Waihao Intake was due in 2015/16 to be upgraded with the aid of the Capital Assistance Programme (CAP) funding to comply with the Drinking Water Standards for New Zealand. Work was put on hold due to the discovery of fine particulate in the raw water source in the new bore. Testing on a 1-micron filter indicated that the fine particulate would cause issue, after blinding and breaking through the 1-micron filter in 5 days. As the fine particulate issue is similar to the Hook Treatment Plant Intake, the option of an un-validated membrane is a possible solution. The Trailing of a small un-validated membrane unit is planned for early 2018.

System Description

Source and Catchment:

The lower Waihao sources it water from a shallow 14m bore in the road reserve on Ferry Road, Glenavy, near the Waitaki River. Around the bore the land is almost entirely low land pasture used for dairy farming under private ownership. The wider catchment above the Lower Waihao Water Supply the catchment is extensive, and it includes the Waitaki River that extends over 150 km inland to the Main Divide, taking in a wide range of land use activities, including the Waitaki hydroelectric power schemes. Part of that catchment includes the flat terraced land from the Stonewall (SH 82) to Ferry Road. In this area, there is predominantly dairy farming and irrigation used. This equates overall to >7615 hectares of wider catchment.

The nearby catchment around the bore is protected under the Waimate District Council District Plan "Water Supply Protection Area", which runs approximately 2 km north and west of the supply bore. The "Protection Area" is divided into two areas, "Inner" at 83 hectares, and the "Outer" at 330 hectares. The Regional Councils "Community Drinking Water Protection Zone" partially over laps the "Protection Area" and extends into the Waitaki River at 332 hectares.

Inside the "Inner Protection Area" there is agricultural activity such as dairy farm grazing, irrigation and three silage pits. There is also a consented diverted lined stream that runs down the west side of Ferry Road and across from the shallow bore. In the "Outer Protection Area" there is human and agricultural activates that include dairy farming, irrigation, a dairy shed with effluent pond, wintering over barn, and two dwellings with septic tanks.

In the wider catchment in the low land pasture made up of pastoral grasses, with livestock such as sheep (>100), beef cattle (>100) and dairy cows (>1000) that graze in the catchment. There is also estimated 50 secondary-treated sewage systems, 70 septic tanks, and 8 dairy effluent ponds.

The overall assessment of the catchment, plus the impact from human and agricultural activities, equates to a four (5) Log treatment process requirement to provide wholesome, compliant drinking water to the consumers on the Hook-Waituna Rural Water Supply.

Abstraction:
Water is sourced from a single 14m shallow bore in a 273mm diameter, 304 stainless steel casing and with a stainless steel wedge wire screen set a 5 - 7m below ground level. The bore is situated approximately 220m from the Waitaki River in the road reserve of Ferry Road, Glenavy. A VFD controlled submersible pump set at 10 meters below ground level, pumps according to demand, to keep the pre-treatment balance tank to a set point level.

The other two onsite wells for the Lower Waihao Intake plant are unable to produce sufficient quantities of raw water to be useable.

Treatment Plant:
The Lower Waihao Intake plant does not have any protozoal treatment barriers, only chorine disinfection. From the pre-treatment balance tank a single duty 37 kW delivery pump draws off the raw water. Disinfection is by way of chlorine gas injection directly into the suction side of the reticulation delivery pump, on the rising main. The chlorinator dose rate is automatically controlled to maintain a Free Available Chlorine (FAC) set-point level as measured and monitored by a chlorine analyser (automated closed loop process controller). The chlorination system operates whenever the reticulation delivery duty pump is running.

Council's SCADA system monitors the intake and reservoirs recording daily water usage, pump hours, chlorine dosage, and reservoir levels. The onsite SCADA PLC's also provides a control function between the remote units (RTU) at the intake and reservoir to switch pumps on and off as required.

Distribution:
The Lower Waihao Intake plant duty pump on Ferry Road, delivers water at a constant rate to a reservoir located some 4.5 km away at 110m above sea level. To boost the supply a single in-line booster pump is installed at the Pikes Point Road pump house approximate 4km from the main pump house but prior to the final 50m of lift to the reservoir. The pumping system is controlled by sensors located within the reservoir. The control system is linked to SCADA.

Water gravitates from the reservoir into the distribution network. A portion of the distribution zone is served from direct connections to the pumped rising main. This means that when the pump is running water is pumped directly to these connections. When the pump is off water gravitates back down the rising main to maintain supply.

The Lower Waihao supply is connected to the Waikakahi Rural supply (WINZ Community Code WAI032). Two booster pumps (Pikes Point Road and Dog Kennel Road) elevate water to Dog Kennel Hill reservoir, serving East Waikakahi connections. An average of 180m³/day is supplied.

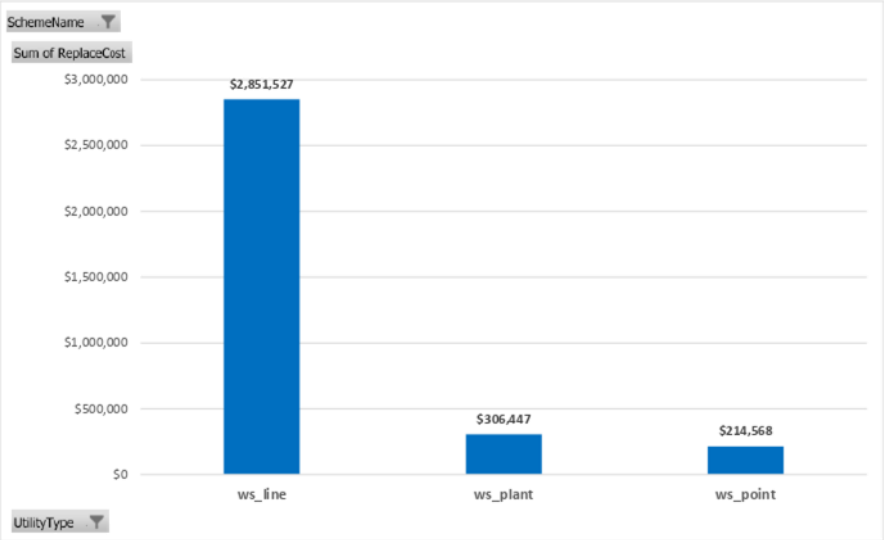
Management and Operation:
The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Services Unit (USU) based at Wilkin Street nearby. Five qualified field staff are appointed to operate and maintain the rural water scheme plant, fixing leaks etc as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing.

The Waimate District Council currently (2021) is putting a request for proposal (RFP) together, using the earlier contractor involvement procurement method, for a build design contract. This RFP will also include upgrade for Hook Treatment Plant. This method of procurement and design build, gives greater assurity in achieveing functional, reliable and DWSNZ 2005 (Revised 2018) compliant plants that produce safe drinking water for consumers. Both plants historically have had a fine particulate issue. There is also some costing saving beneifits where some equipment from Hook Treatment Plant can be used at the upgraded Lower Treatment Plant.

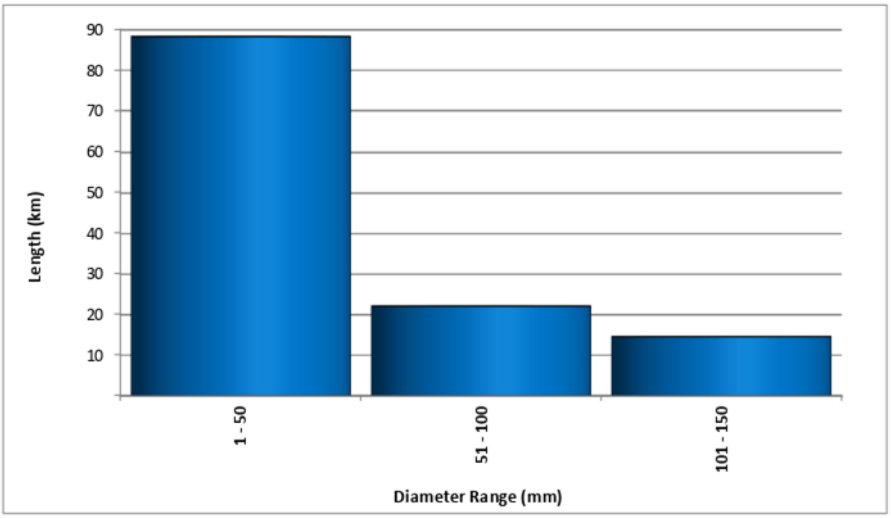
System Information

System Information – Lower Waihao			
Connections	223	**Treated Water Storage (Reservoir)**	
- Metered unrestricted	-	**Ferry Rd**	
- Metered restricted	-	Built (yr)	1978
- Unmetered Residential	-	Capacity	350 m³
		Material	
Water Sources	(Consent volumes)	**Treatment**	
Waitaki River (bore)	1,633m³/day	Chlorine	
Resource Consent	**Expiry date**	**To**	
CRC940846	23/02/2029	Take groundwater	
Replacement Cost		**Reticulation length**	
Total Scheme	$3.37m	125.1 km	

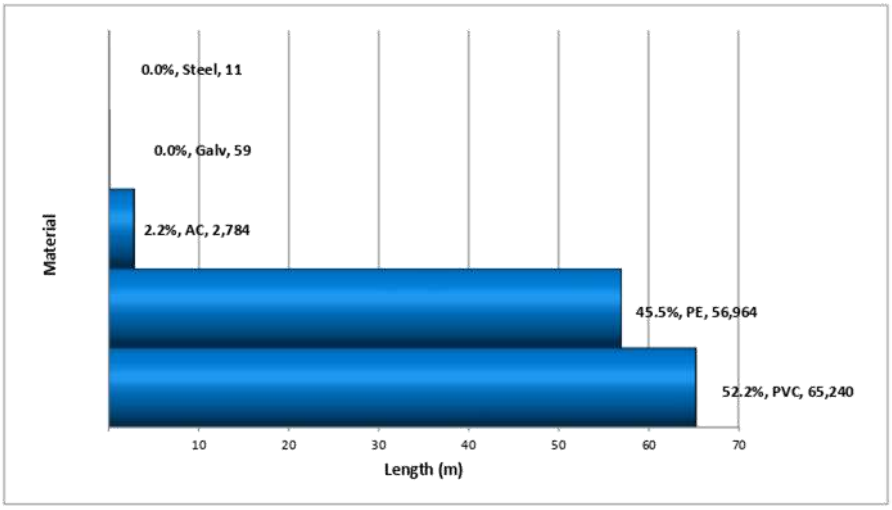
Appendix Figure 36: Scheme Components



Appendix Figure 37: Water Mains Diameter Range

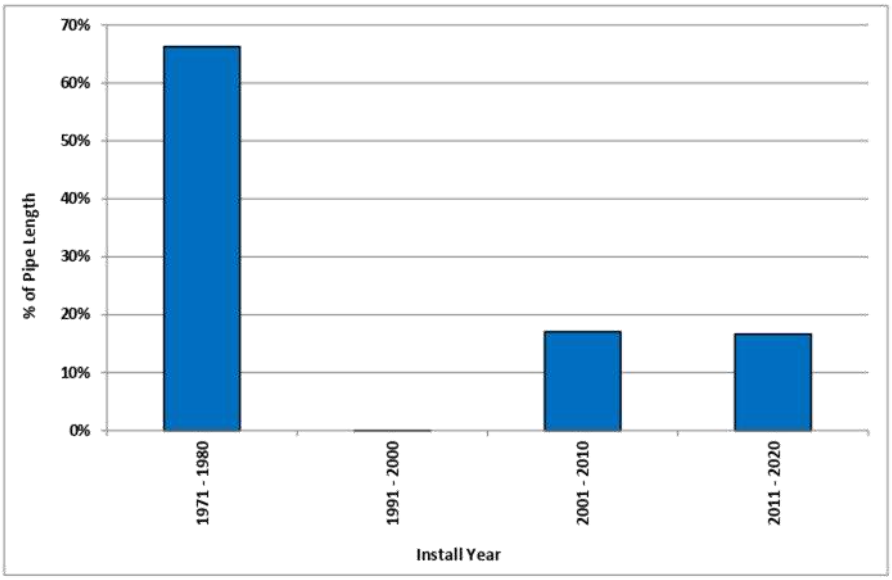


Appendix Figure 38: Water Mains Material Length

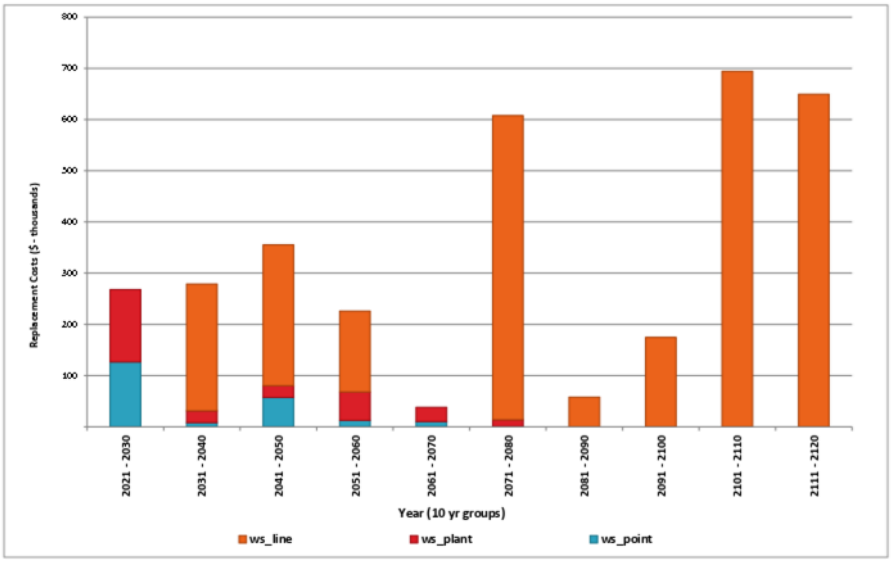


Approximately 66% of the Lower Waihao water supply scheme reticulation were installed during 1978 and are 42 years old. The remaining 34% have been installed since 2001 and are aged between 1-19 years. The reticulation consists mainly of PVC (52%) and PE (46%).

Appendix Figure 39: Water Mains Install Year (10 Year Groups)

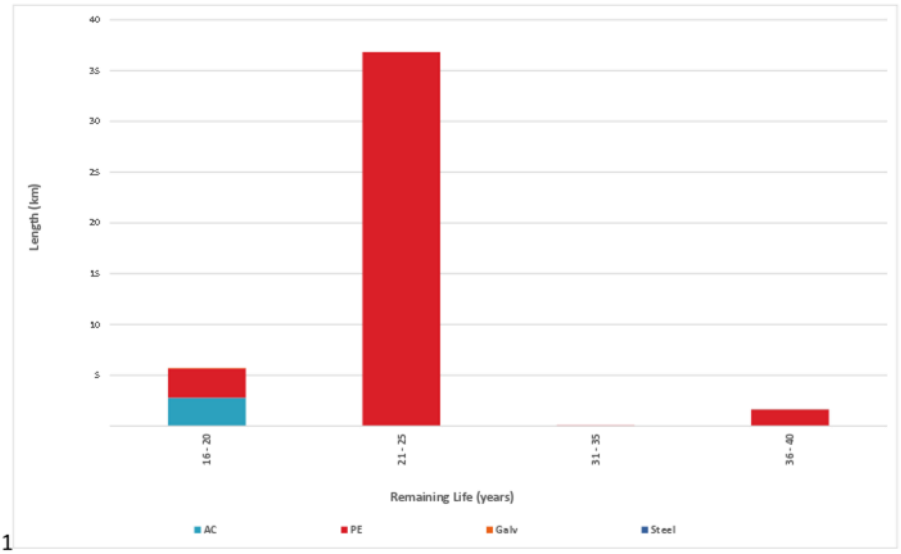


Appendix Figure 40: Remaining Life of all Assets – Long Term



At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

Appendix Figure 41: Water Mains Replacement (Length) – Long Term



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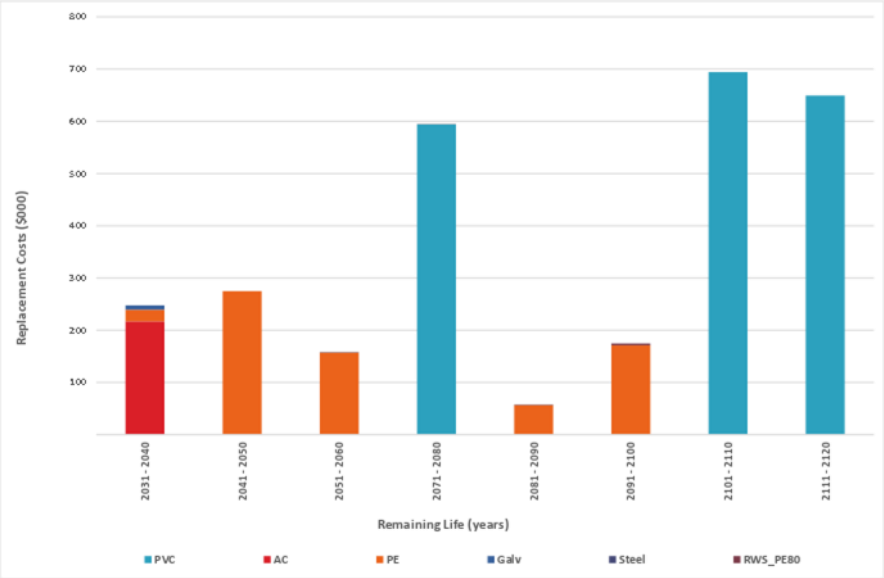
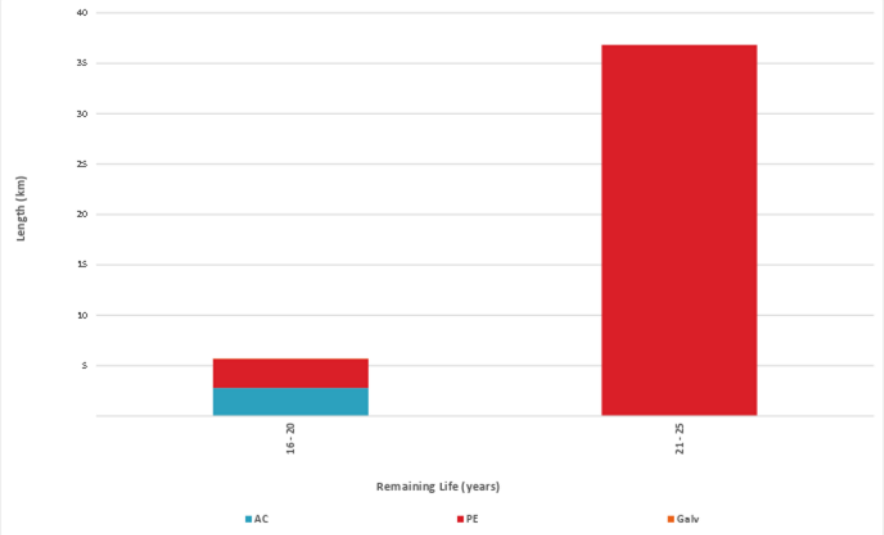
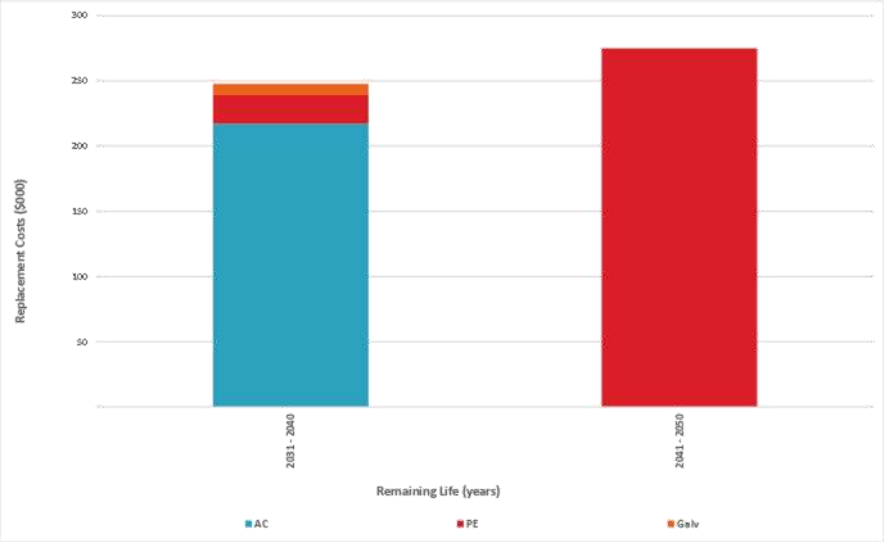
Appendix Figure 42: Water Main Replacement Value – Long Term



Appendix Figure 43: Water Main Replacement (Length) – 1 to 30 Years



Appendix Figure 44: Water Main Replacement Value 1 to 30 Years

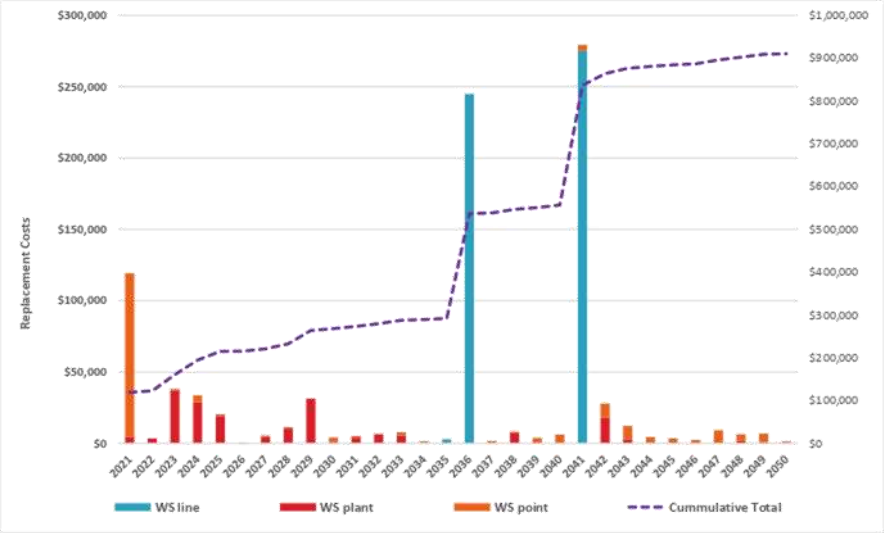


Appendix Table 6: Lower Waihao Plant Replacement Value 1 to 30 Years

Asset Group	Remaining Useful Life (5 year groups) ($)						
	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Abstraction	3,230						3,230
Building	18,945						18,945
Cabinet	1,004						1,004
Chlorine	16,406	10,843					27,249
Control	8,615	5,611		291			14,517
Distribution				3,341	18,168	96	21,605
Measurement	580	3,766	9,664	3,618			17,628
Pipe	5,696		6,089				11,785
SCADA	16,750						16,750
Security	1,936	595					2,531
Solar		1,754					1,754
Surface	14,038	24,903					38,941

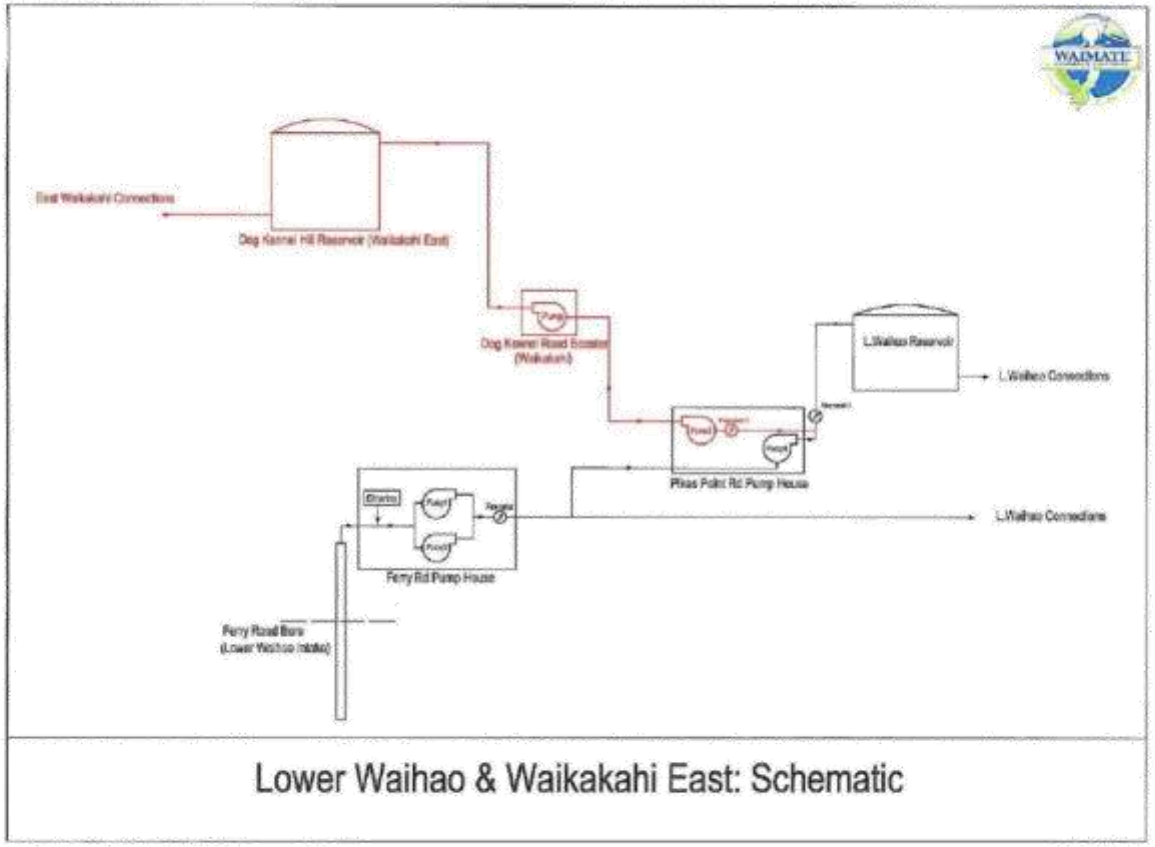
Valve	6,323	465			3,187	1,756	11,731
Vessel		141					141
Grand Total	**93,523**	**48,078**	**15,753**	**7,250**	**21,355**	**1,852**	**187,811**

Appendix Figure 45: 30 Year Replacement Programme

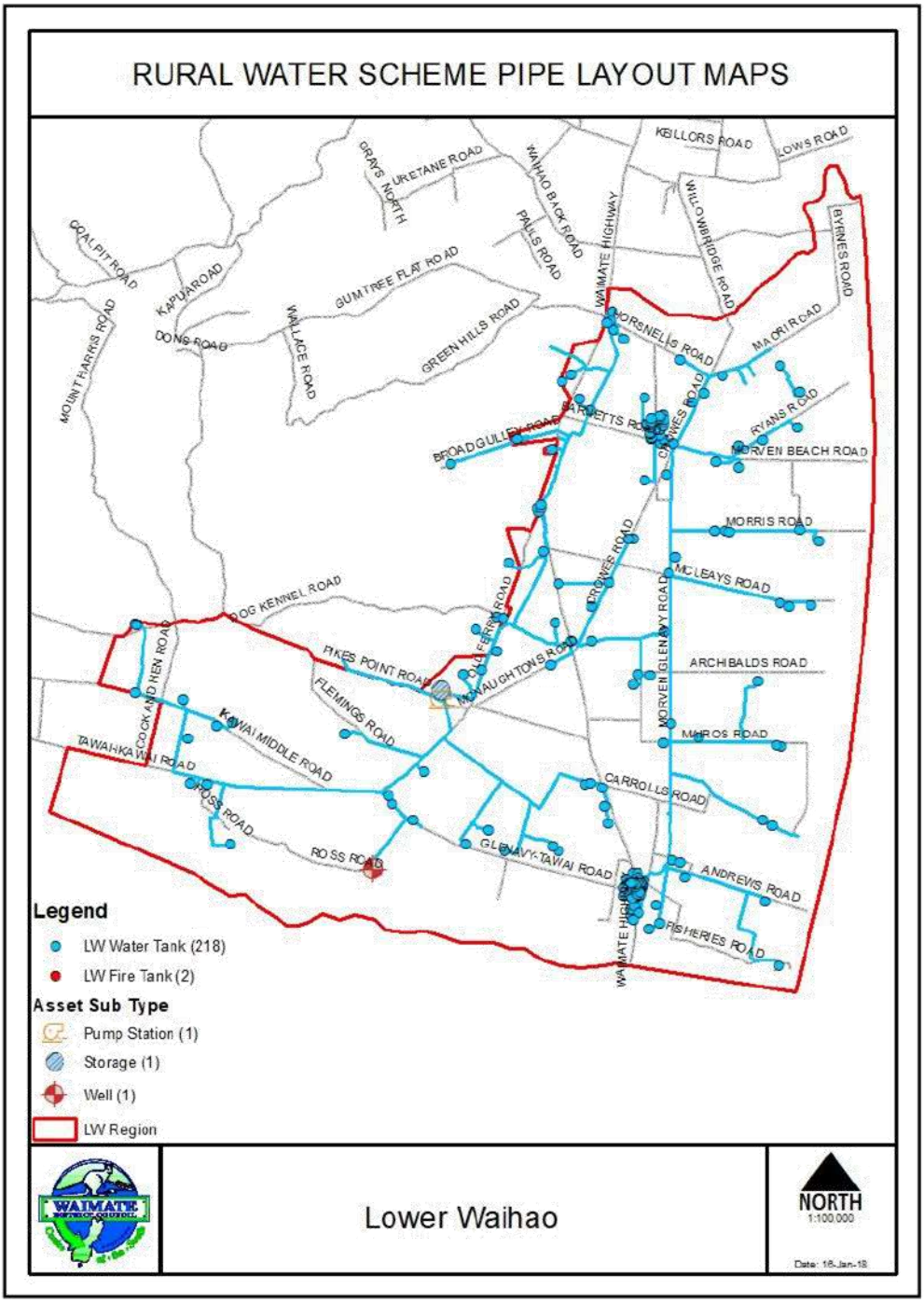


The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 46: Lower Waihao Schematic



Appendix Figure 47: Lower Waihao Scheme Plan



A.5 Otaio Makikihi Water Scheme

Overview

The Otaio Makikihi water supply scheme is a "small drinking water supply" that supplies water to 213 tank connections (170 different owners) with an estimated population of 430. The Waimate District Council target rates 162 properties for the supply of water in this scheme. Some scheme consumers have more than one point of supply connection on their rated property. Each point of supply connection is required to have water storage for 96 hours (four days) in case of interruption of the water supply, and is a requirement of the Rural Water Scheme Policy.

The Otaio-Makikihi rural water supply's primary source of raw water is from the Tavistock Bore. Currently the bore is "Provisionally Secure" and is protozoal compliant. Ground water is drawn from the bore, chlorinated and pumped into the reticulation. A booster pump station up on Esk Valley Road boost water up towards the old Otaio Reservoir, and back towards to Pakihi Road. There is a second surface water take for the supply that is not used. This source is not protozoal compliant or readily operable due to damage of the gallery from a weather event, but could be made operational if needed.

The approximate length for the reticulation network is 155 km.

History

The Otaio-Makikihi water supply scheme was established in 1969 and the majority of the scheme reticulation dates from this time. The intake and pumping equipment was upgraded and relocated in 1999. A 10km supply loop upgrade was commissioned in 2004. Treatment control improvements (automatic dosing, chorine analyser, pH monitoring) and SCADA were completed in 2008.

In December 2013 Tavistock Bore and Campbell Forrest Booster were commissioned. Tavistock Bore Intake became the main duty intake as of that time. The Otaio Gorge Intake is now a standby system. The Otaio Gorge Intake is isolated form the distribution network by two valves at the Otaio Reservoir.

The upgrading of Otaio-Makikihi Intake to the new Tavistock Bore came about through the Governments TAP and CAP (Technical Assistance Programme and Capital Assistance Programme, to help communities comply with DWSNZ 2005 [revised 2018], and provide safe drinking water) funding, plus the finding/drilling of a suitable bore on Tavistock Road.

In the winter of 2015 a heavy rain event washed away the Otaio Gorge Intake gallery infiltration bed and wedge wire screen, along with a short section of rising main to the Otaio Reservoir.

On 26 October 2016 >1 E.coli was found in a monthly monitoring sample of raw ground water at Tavistock Bore. The bore lost its "Secure Bore" status and became "Provisionally Secure". 12months of monitoring started immediately to achieve compliance again with criterion 3 of the DWSNZ 2005(revised 2018) for bore water security. The first three months of weekly monitoring were clear and so was the remaining 9 months of monthly monitoring.

System Description

Source and Catchment:

Raw water for the Otaio-Makikihi rural water supply can be sourced from two intakes. The primary source is a ground water take called Tavistock Bore on Tavistock Road, and the second/standby source is a surface water take on the Otaio River, called Otaio Gorge Intake.

Tavistock Bore is in road reserve on Tavistock Road near the Sodwall/Horseshoe Bend Road, which is on top of a hill ridge amongst rolling hill country. The surrounding country land use is a mixture of arable cropping, pastoral grasses, sheep and dairy farming. With the bore being 156.3 m deep, it is not directly influenced by the near land use activities. The Regional Council "Community Drinking Water Protection Zone" is a 100m radius circle around the bore at 3.1 hectares. The precise location of the catchment is unknown. It could be somewhere in either the Cannington basin or the upper South Coastal Canterbury area. From bore the logs it would indicate that the bore is drilled in what is known as the Cannington gravels, and most likely drawing from the Lower Kowai Formation. The ground water from the bore has a mean age of 134 years, and less than 0.005% water less than a year old.

The overall assessment of the Tavistock Bore catchment, plus the impact from human and agricultural activities has no known impacts.

Otaio Gorge is the secondary backup source for raw water and not used unless required. The wider catchment around the Otaio Gorge Intake is approximately 4830 hectares. The wider catchment is made up largely of upland pasture grasses and tussock. There are small pockets of bush and forests in the upland area as well. Nearer to the intake there is small proportion of lowland pastures. In the catchment there can be around 200 beef cattle grazing intermittently, and seasonal grazing of about 1000 sheep. In the upland hill catchments there are small numbers of feral pigs, deer, goats and wallabies.

In the catchment only 16% of it is protected. The Waimate District Council District Plan "Water Supply Protection Area" is only 780 hectares and completely overlaps the Regional Council "Community Drinking Water Protection Zone" of 18.2 hectares. In the "Protection Area and Zone", there are at least two if not three septic tanks. One is at the Department of Conservation Camp ground beside the river. The other one or two around the Otaio Gorge Station Homestead and buildings.

The overall assessment of the Otaio Gorge catchment, plus the impact from human and agricultural activities, equates to a four (4) Log treatment process requirement to provide wholesome, compliant drinking water to the consumers on the Otaio-Makikihi Rural Water Supply.

Abstraction:

Tavistock Bore

The raw water for Tavistock Bore is drawn from a 200mm Ø steel cased bore at 156.3m, with 3m stainless steel screen set between 153.6 and 156.3m. A 30 kW submersible pump is set at 132m below ground level to abstract the ground water. Static ground water level is 104m below ground level. The bore is currently is "Provisionally Secure" and is protozoal compliant.

"Secure Bore" status has not been sought after for this bore, as it is a questionable methodology to prove that the water drawn from it is safe. Instead Council will seek to meet criterion 2 (Borehead Security) DWSNZ 2005 (revised 2018) and use treatment at the Plant for bacterial and protozoal compliance.

Otaio Gorge
The Otaio Gorge Intake raw water was sourced from an infiltration gallery consisting of a single 175mm Ø, 9m Stainless Steel wedge wire screen (1mm gaps) located in the bed of the Otaio River. From the gallery the water would enter a shallow well on the north bank of the river. In the shallow well there are two submersible pumps housed within shrouds. However, in the winter of 2015 the gallery infiltration bed and wedge wire screen were washed away, along with a short section of rising main to the Otaio Reservoir. The intake in its current state is inoperable, but could be temporally made operational if required.

Treatment Plant:

Tavistock Bore
The raw water enters the Tavistock treatment plant and passes through a UV reactor, to treat for protozoa and flows through into a balance tank. A chlorine gas solution is dropped into the balance tank. The chlorine solution is made with chlorine gas via a venturi on the dose water line to the balance tank. The dose is controlled by chlorine analyser monitoring flow, Cl2 residual (setpoint) and pH.

Otiao Gorge
The Otaio Gorge plant does not have any protozoal treatment barriers, only course filtration and chorine disinfection. If required a dose pump can pump a chlorine solution (sodium hypochlorite) directly into the rising main at the top of the submersible pump riser when the duty pump was running. The chlorinator dose rate was automatically controlled to maintain a Free Available Chlorine (FAC) set-point level as measured and monitored by a chlorine analyser (automated closed loop process controller). The chlorination system operates whenever the submersible duty pump is running.

Note, this plant is only a back up if there was ever a failure at Tavistock Bore Treatment Plant, and it could not produce water for supply.

Distribution:
Tavistock Bore and treatment plant is the primary and current source of water for the Otaio Makikihi supply. Distribution of compliant chlorinated water is drawn from the balance tank, and pumped around the scheme by four VFD surface pumps (duty/standby setup) working to a setpoint line pressure. It is also boosted at Campbell and Forrest Road at the Campbell Forrest Booster. Note the old reservoir is not used in this distribution setup.

If required as a second source of supply, the Otaio Gorge Intake and its submersible pump can deliver water back across the river (if temporally repaired) at a constant rate to the Otaio Reservoir located some 5.5 km away at 220m above sea level. From there water would gravitate into the distribution network. Booster pumps are not required when the Otaio Gorge Intake is operating. The pump is controlled by sensors located within the reservoir. The control system is linked to SCADA and all inputs are powered by mains electricity. Low level protection for the main pump is provided. As mentioned this is only a back up option if it was required.

Council's SCADA system monitors both intakes and reservoir recording daily water usage, pump hours, chlorine dosage, temperature, pH and reservoir levels. When parameters are breeched in some of the above and other functions, the SCADA can also send out alarms via txt/sms to all operators. The SCADA system also provides a control function to switch pumps on and off as required.

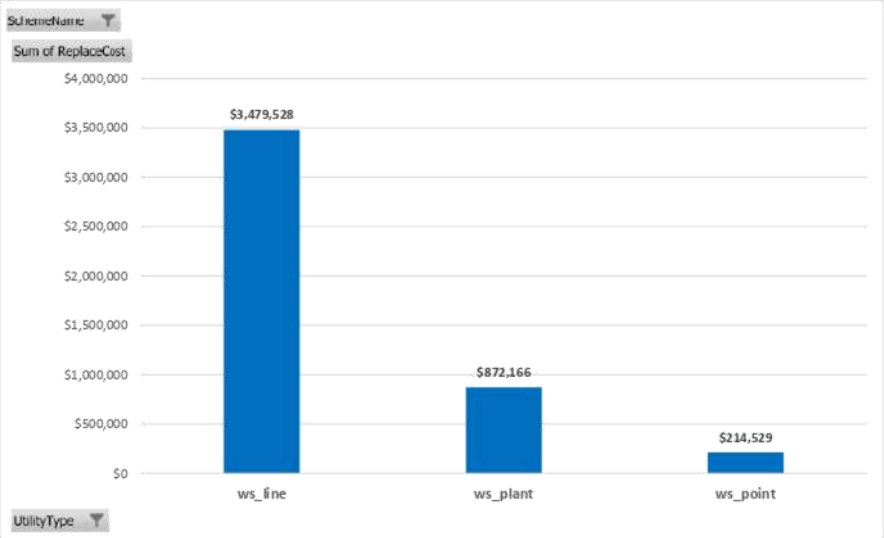
Management and Operation:

The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Services Unit (USU) based at Michael Street nearby. Five qualified field staff are appointed to operate and maintain the rural water scheme plant, fixing leaks etc as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing weekly, with results being entered into WINZ database.

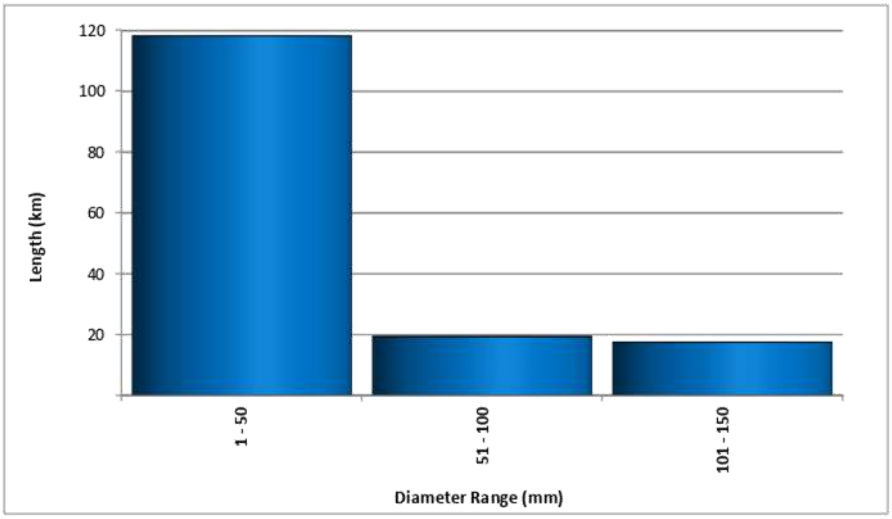
System Information

System Information – Otaio Makikihi			
Connections	206	**Treated Water Storage (Reservoir)**	
- Metered unrestricted	-	Colliers Rd	
- Metered restricted	206	Built (yr)	1969
- Unmetered Residential	-	Capacity	360m³
		Material	
Water Sources	(Consent volumes)	**Treatment**	
Otaio River	929m³/day	Chlorine	
Resource Consent	Expiry date	To	
CRC981876.1	22/04/2034	Take surface water	
CRC992050	22/04/2034	Install & maintain intake	
Replacement Cost		**Reticulation length**	
Total Scheme	$4.57m	155.1 km	

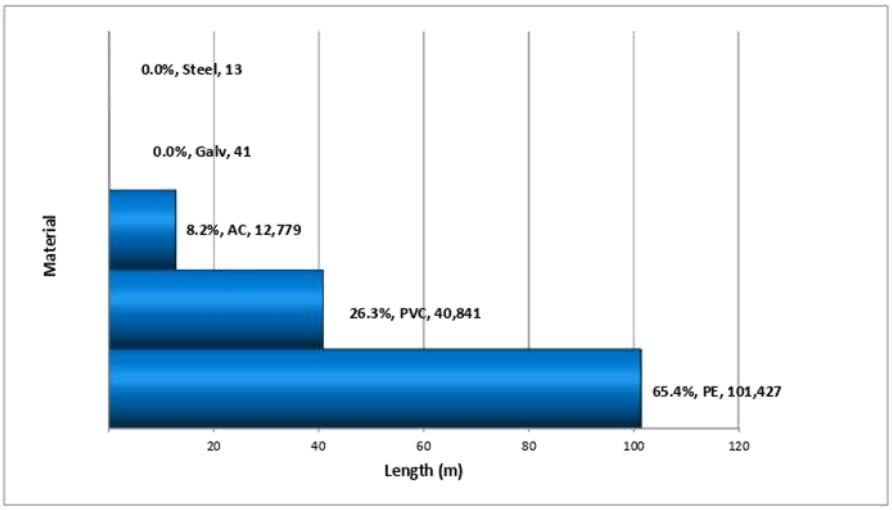
Appendix Figure 48: Scheme Components



Appendix Figure 49: Water Mains Diameter Range

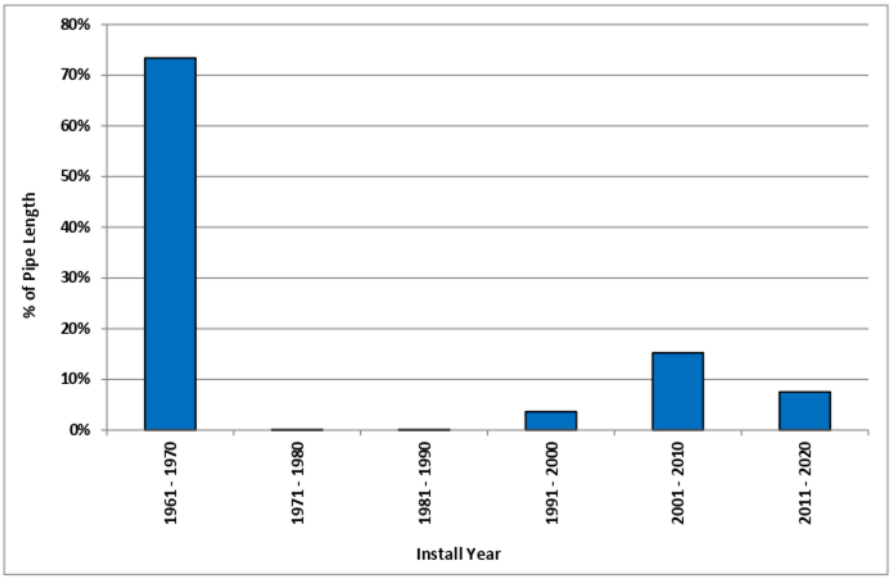


Appendix Figure 50: Water Mains Material Length

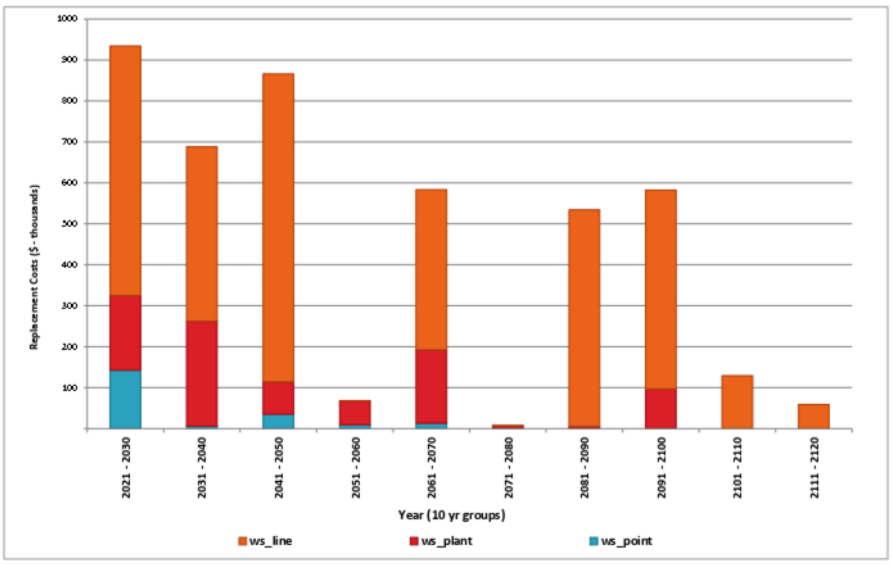


Approximately 73% of the Otaio Makikihi water supply scheme reticulation were installed during 1969 and are 51 years old. The remaining 27% have been installed since 1971 and are aged between 1-49 years. The reticulation consists mainly of PE (65%) and PVC (26%).

Appendix Figure 51: Water Mains Install Year (10 Year Groups)

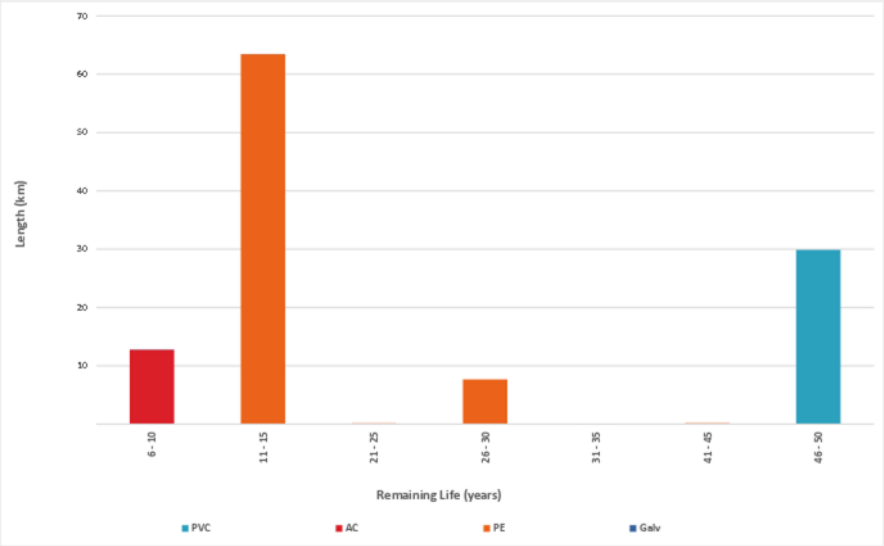


Appendix Figure 52: Remaining Life of all Assets – Long Term

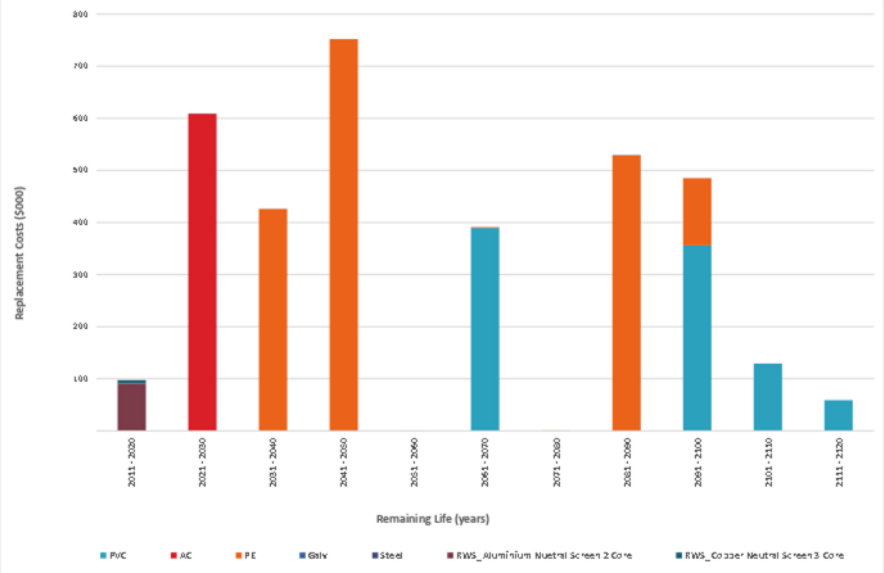


At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

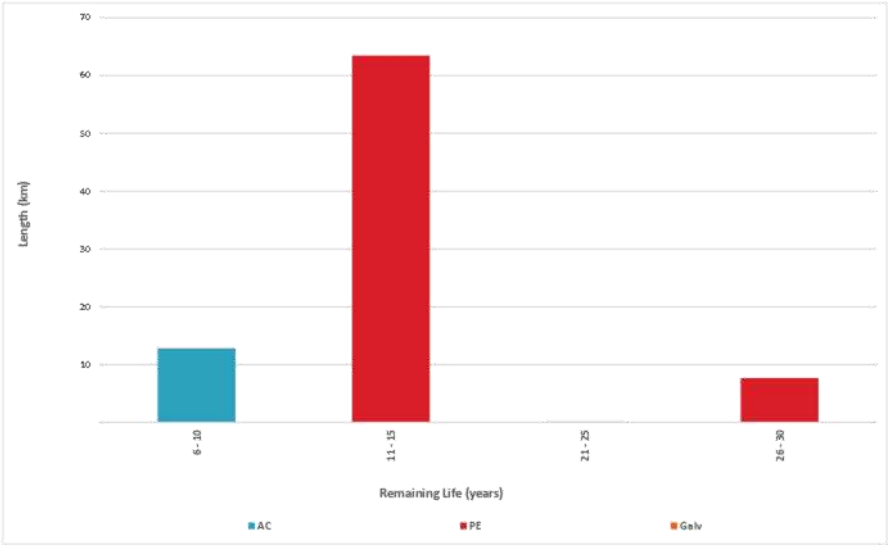
Appendix Figure 53: Water Mains Replacement (Length) – Long Term



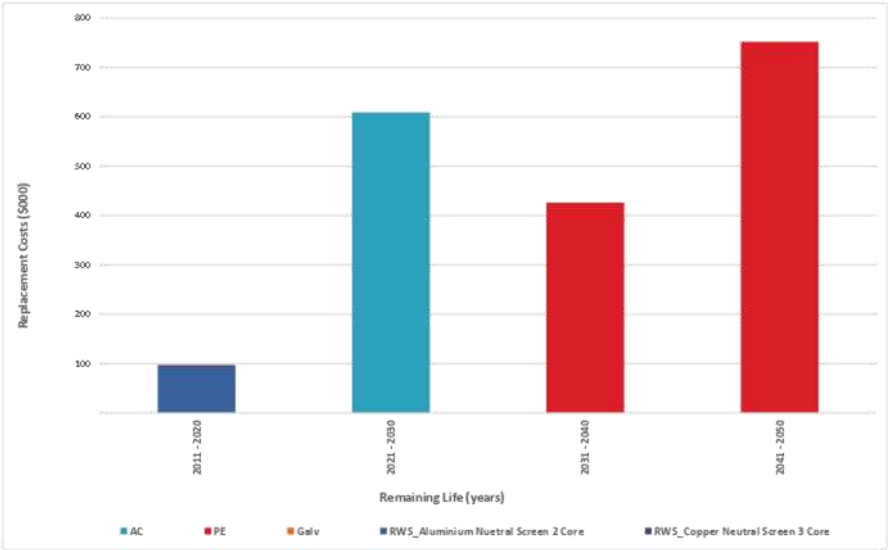
Appendix Figure 54: Water Main Replacement Value – Long Term



Appendix Figure 55: Water Main Replacement (Length) - 1 to 30 Years



Appendix Figure 56: Water Main Replacement Value 1 to 30 Years

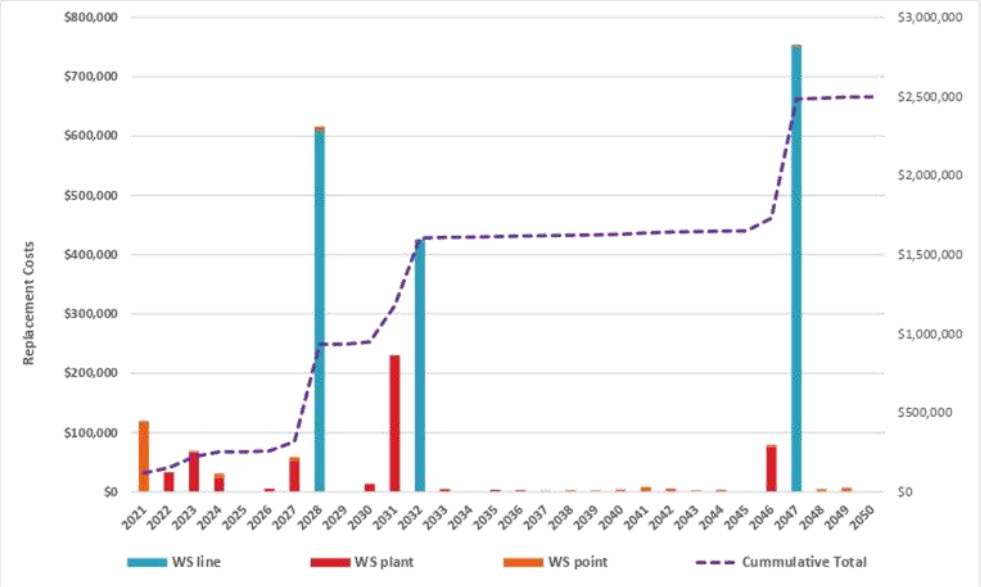


Appendix Table 7: Otaio Makikihi Plant Replacement Value 1 to 30 Years

Asset Group	Remaining Useful Life (5 year groups)						
	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Abstraction						11,397	11,397
Building						4,534	4,534
Cabinet		781					781

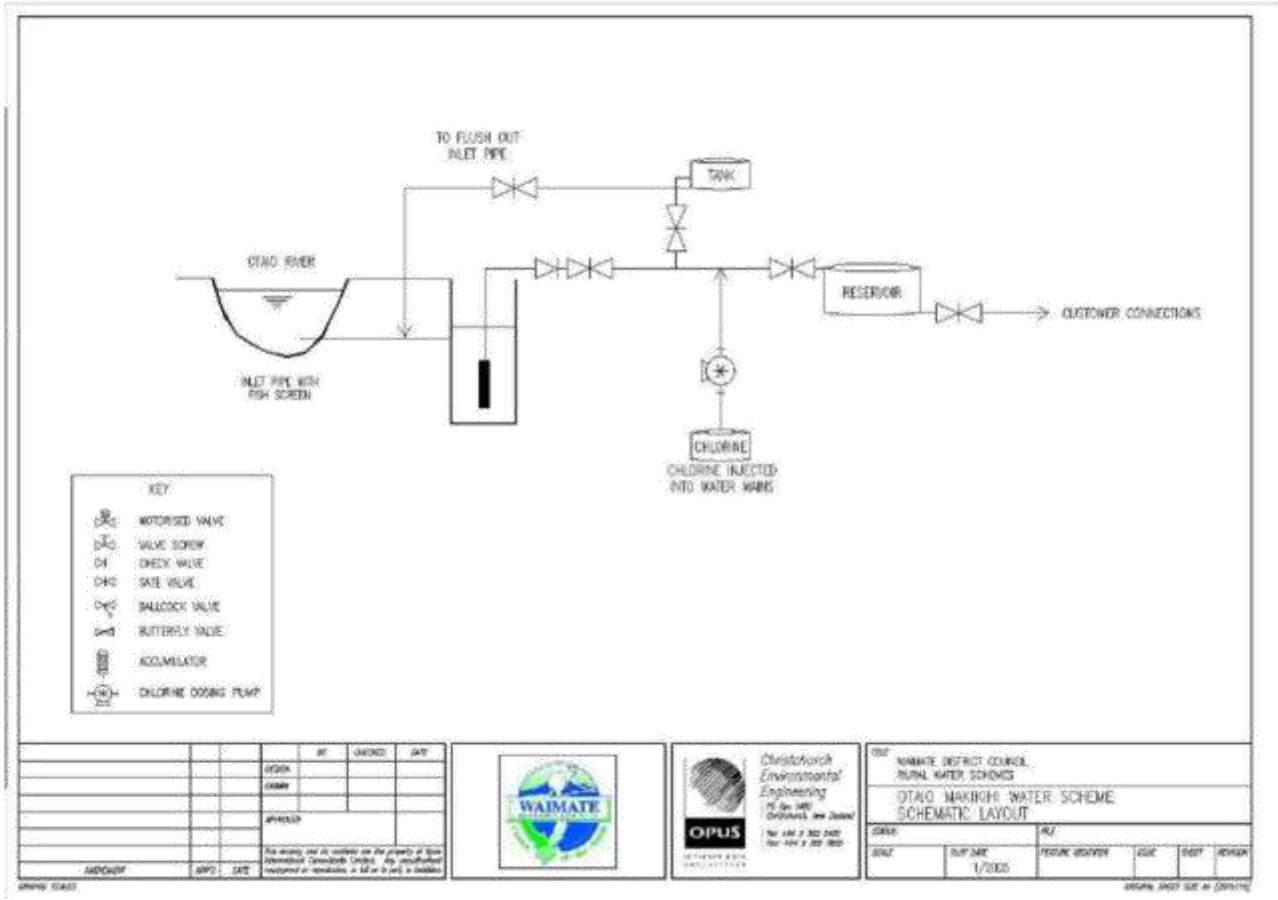
Asset Group	Remaining Useful Life (5 year groups)						
	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Chamber	1,369						1,369
Chlorine		20,274	10,843				31,117
Control	1,671	14,845	87,439	939		19,069	123,963
Digital I/O		882	435				1,317
Distribution			3,341	3,341		39,230	45,912
Measurement	2,097	5,262	35,797				43,156
Pipe	929		13,332				14,261
Process	504						504
Reservoir	58,391						58,391
SCADA	10,882	14,698					25,580
Security				1,330			1,330
Sodium Hypochlorite	15,836	2,345					18,181
Solar	579			413			992
Submersible	28,870		50,204				79,074
Surface			46,027				46,027
Transmission						1,617	1,617
Valve	2,749		324	2,744	1,866	1,288	8,971
Grand Total	**123,877**	**59,087**	**247,742**	**8,767**	**1,866**	**77,135**	**518,474**

Appendix Figure 57: 30 Year Replacement Programme

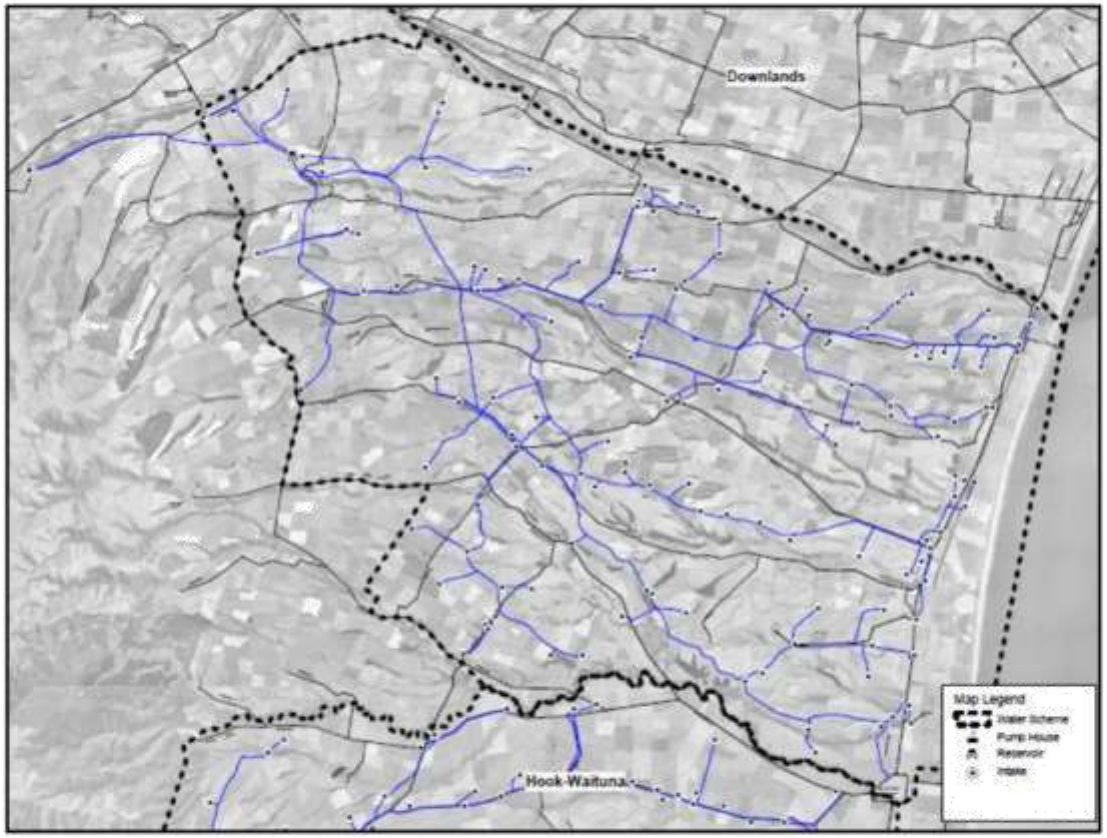


The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 58: Otaio Makikihi Schematic



Appendix Figure 59: Otaio Makikihi Scheme Plan



A.6 Waihaorunga Water Scheme

Overview

The Waihaorunga rural water supply scheme is a "small drinking water supply" and supplies water to 47 connections with a total population of about 141 *(WINZ data)*. The scheme supplies an area of 105 square km on the north bank of the Waitaki River and to the west of the Waikakahi water supply. The Waimate District Council target rates 30 properties for the supply of water in this scheme. Some scheme consumers have more than one point of supply connection on their rated property. Each point of supply connection is required to have water storage for 96 hours (four day) in case of interruption of the water supply.

The supply has two raw water sources from surface takes. Both sources take water from separate streams via galleries. The Main Intake does not have any protozoal treatment barriers, only chlorine disinfection before pumping up to the Main Reservoir, and into the distribution network. Tavendale also does not have any protozoal treatment barriers, only a pre-treatment roughing filter with chlorine disinfection, then supplies water by a combination of gravity and pumping into the distribution network.

Although the Waihaorunga water supply scheme operates in two separate zones each with separate intakes and treatment, the main pump intake can supply the total scheme area.

The approximate length for the reticulation network is 67km.

A large proportion of the water produced for the supply is consumed for the purposes of commercial agriculture. About 41 habitable dwellings have access to the water supply. This equates to 19% human consumption of the sold volume (based on 1500L/day/dwelling).

History

The Waihaorunga water supply scheme assets were installed in 1977 and the majority of scheme components are 40 years old. A second gravity source was installed in 1993 and the main pump station was refitted in 2000.

System Description

Sources and Catchment:

Waihaorunga Main

The Waihaorunga water supply has two raw water sources. The Waihaorunga Main from an infiltration gallery in Waihaorunga Creek, and Tavendale from a shallow gallery in a tributary to Waihaorunga Creek.

Around the Main Intake, the wider catchment is predominately upland pasture with some lowland pasture around the intake, totalling 1519 hectares approximately. 29.9 hectares of that catchment is "Water Supply Protection Area" under the Waimate District Council District Plan, which overlaps the 28.9 hectare Regional Council "Community Drinking Water Protection Zone". There is some riparian management around the Waihaorunga Creek, upstream from the gallery that is fenced off from stock. The land in the wider catchment is dry stock country and mainly sheep at approximately 1.6 sheep per hectare in the wider catchment. This can mean up to 3000 sheep can be area, or part of rotating through. There are also about 150 beef cattle in the area too, along with pest animals such as wallabies (150 approx.). There are regular culling programmes to reduce wallaby numbers. Also in the wider catchment there are three dwellings with septic tanks, two woolsheds, and a small

irrigation dam on one of the tributaries of the Waihaorunga Creek, as well as a dual silage pit that are outside of the "Protection Area" and "Zone".

Tavendales
The Tavendale Intake has a much larger catchment of 115 hectares. The District Plan "Water Supply Protection Area" covers the whole area that is the physical catchment for Tavendale, and over laps the Regional Council "Community Drinking Water Protection Zone", which is only 17 hectares inside the catchment. This catchment is also predominately upland pasture with some tussock and scrub. Again it is dry stock land with up to 500 head of sheep and 100 beef cattle on and off through the year. This catchment also suffers from pests such as wallabies (100 approx.) 600 square metres approximately has been fenced off around the gallery itself. This protects the gallery and has allowed native scrub to establish itself around the stream, giving it some riparian protection.

The overall assessment of both catchments plus the impact from human and agricultural activities, equates to a four (4) Log treatment process requirement at both sites to provide wholesome, compliant drinking water to the consumers on the Waihaorunga Rural Water Supply.

Abstraction:

Waihaorunga Main
The Waihaorunga Main draws raw water from the infiltration gallery in Waihaorunga Creek. There is about 1 -1.5 metres cover over a perforated pipe. The perforated pipe takes the infiltrate by gravity from the creek to a stilling chamber. Two submersible pumps (duty/standby) in the stilling chamber, pump water into the distribution zone and to the Main Reservoir.

Tavendales
Tavendale intake shallow gallery has a perforated pipe under a shallow bed of rock and gravels in a gabion mat. The raw water infiltrate enters the perforated pipe and flows away by gravity from the creek to the treatment plant site at the end of Tavendale Road.

Transmission:

Waihaorunga Main
There is no extensive transmission at Waihaorunga Main Treatment Plant as the intake gallery and Treatment Plant are within 30m of each other.

Tavendales
Tavendale has 1.81 km, 40mm PVC pipeline from the Waihaorunga tributary stream intake gallery to the Tavendale Treatment Plant. The raw water flows under gravity from the stream intake gallery to the Plant.

Treatment:

Waihaorunga Main
Both sources of water for the supply are chlorinated. At the Waihaorunga Main source, the gallery stilling chamber serves as a contact tank for chlorination. Chlorine (sodium hypochlorite solution) is only dosed when the pumps are operating. When running, the chlorine dose pump injects chlorine at an operator set input rate.

Tavendales
The Tavendale Treatment Plant consists of a small cartridge roughing filter and chlorine disinfection (sodium hypochlorite solution). Water flows into the plant, through the roughing filter, and then chlorine is injected at rate of demand generated by a pulse out of the water meter. The amount

injected by the dose pump is manual set by the operator. The flow rate of water supplied is dictated by the demand from the distribution zone, which is gravity and pump fed.

The present treatment plant has no protozoal treatment barriers. For the plant to be protozoal compliant under the Drinking Water Standard for New Zealand 2005 (revised 2018), the plant needs log four (4) treatment processes to be in place.

Monitoring and control, plus telemetry (SCADA), have been recently installed at the Waihaorunga and Tavendales Treatment Plant sites in 2020 and 2021. This equipment was installed as a part of an agreement with The Ministry of Health, instead of full upgrades of the treatment plants, to allow for potential changes in legislation and standards (Acceptable Solutions), for rural agriculrual water supplies.

Distribution:
The disinfected water is distributed from both Treatment Plants. They can supply two separate portions of the scheme, or can be linked by valving to augment the other if required.

Waihaorunga Main Intake supplies to the majority of consumer. Two submersible pumps in the gallery stilling chamber pump water into the distribution zone and to the Main Reservoir. From the reservoir a series of pump stations and reservoirs are used to supply the areas at a higher elevation than the Main Reservoir. The Melford pump is located downstream of the Waihaorunga Main reservoir and pumps to the Melford reservoir. The Takitu pump is located downstream of the Melford reservoir and pumps to the Takitu reservoir.

Tavendale Treatment Plant delivers water to the smaller northern portion of the supply around Tavendale Road. The majority of this northern portion is gravity feed from Tavendale Treatment Plant. A booster pump at Tavendale Treatment Plant supplies only two consumer "points of supply" and the Tavendale Reservoir.

There has been in the past limited availability of standby plant within the system. This is being progressively resolved with budgeted capital expenditure, and the purchasing of spare replacement pumps for Takitu and Tavendale pump stations. The Main Intake has always had a duty and standby pump available, and a duty and standby pump at the Melford pump station. Currently there is no electronic supervision or control of the system (SCADA).

Management and Operation:
The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Business Unit (UBU) based at Michael Street nearby. Five qualified field staff operate and maintain the rural water scheme plant, fixing leaks etc as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing. Currently the Waihaorunga rural water supply has a "Permanent Boil Water Notice". The notice was issued with the agreement of the Drinking water Assessor in September 2014. The notification is regularly advertised in local papers, Waimate District Council's website and Facebook page, along with Rural Delivery mail drops. The local water committee also reminds locals on request. In recent times organisations such as the local school and Mobile Kindy have helped advertise the "Permanent Boil Water Notice".

A large proportion of the water produced for the supply is consumed for the purposes of commercial agriculture, and the supply could potentially qualify as a rural agricultural drinking water supply. Waimate District Council had previously considered the option of point of use treatment on the rural supplies, and discounted the option at that time because of cost and maintenance issues. The option of "point of use treatment" was looked at again with the release of

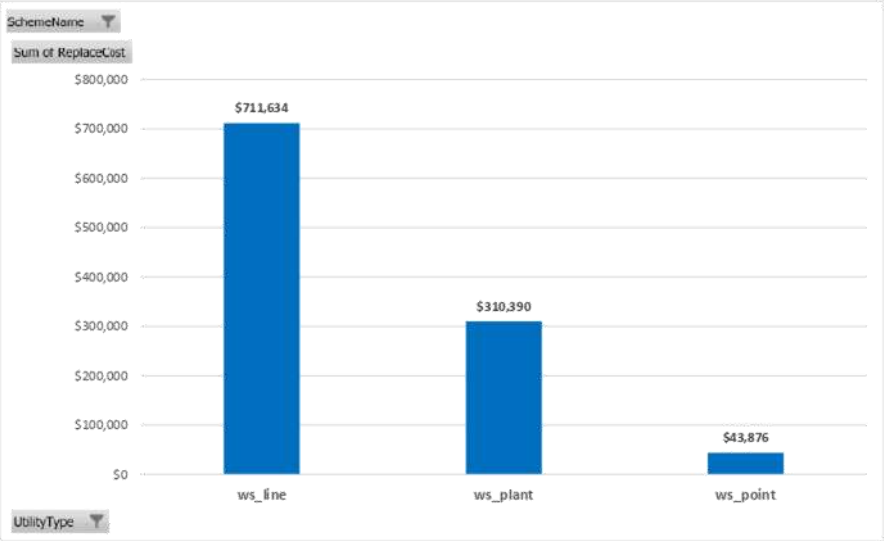
the Rural Agricultural Drinking Water Supply Guidelines (RADWS) in March 2015. Some questions were raised again about actual cost, pre-treatment, maintenance, responsibility issues and liability. Those questions were investigated by exploring successful examples of private "point of entry treatment" supplies under the RADWS in the Waitaki District Council. However, after the Havelock North Stage 1 Enquiry, the issues and risks of such a system make the RADWS not a viable option.

Coucil has lobbied Government to review the current legistlation and standards for Rural Agricultral Water Supplies. Since then the Department of Internal Affairs (DIA) and the new regulator Taumata Arowai have been, and still currently working on an Acceptable Solution option, using point of use (PoE) treatment, which could be used in rural argicultral water supplies.

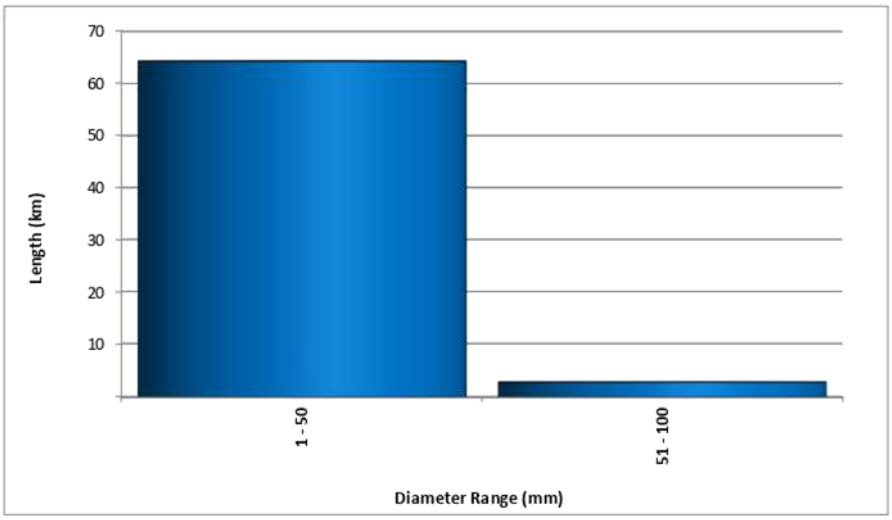
System Information

System Information – Waihaorunga			
Connections	**50**	**Treated Water Storage (Reservoir)**	
- Metered unrestricted	-	**Colliers Rd**	
- Metered restricted	50	Built (yr)	1977
- Unmetered Residential	-	Capacity	150 m³
		Material	
Water Sources	(Consent volumes)	**Treatment**	
Waihaorunga Creek	455 m³/day	Chlorine	
Tributary of Waihaorunga Creek	121 m³/day		
Resource Consent	**Expiry date**	**To**	
CRC084608	17/12/2043	Take surface water	
CRC084606	16/12/2043	Take surface water	
Replacement Cost		**Reticulation length**	
Total Scheme	$1.07m	67 km	

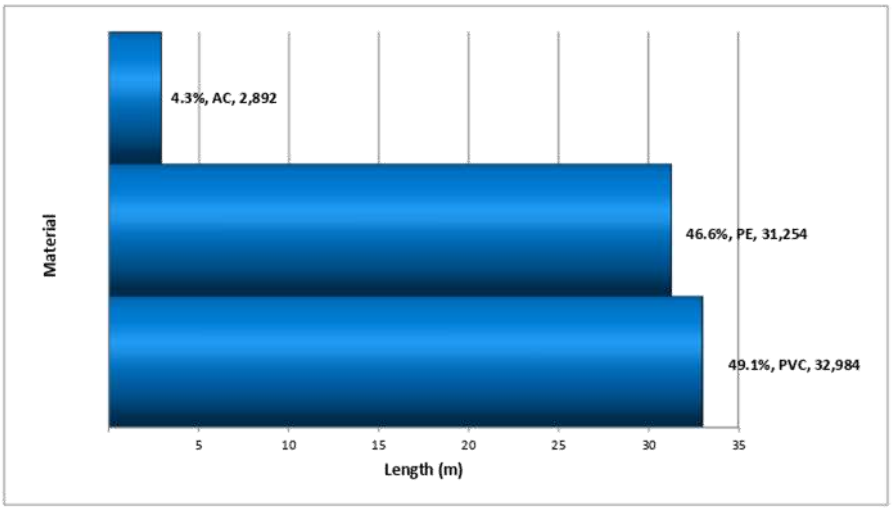
Appendix Figure 60: Scheme Components



Appendix Figure 61: Water Mains Diameter Range

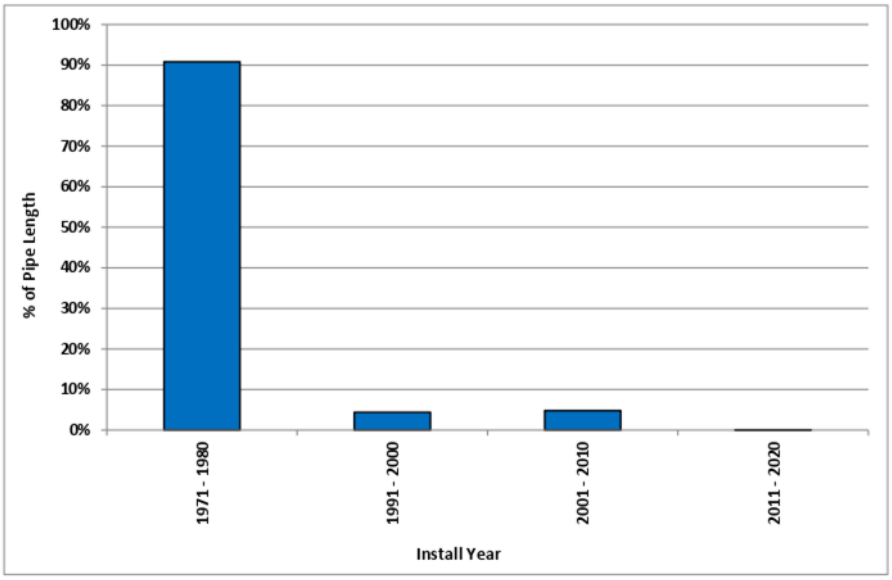


Appendix Figure 62: Water Mains Material Length

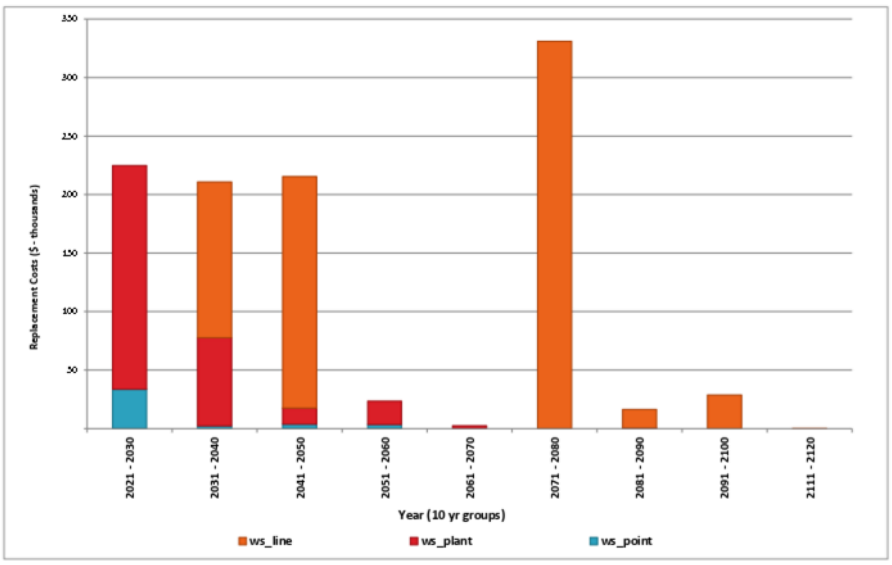


Approximately 91% of the Waihaorunga water supply scheme reticulation were installed during 1977 and are 43 years old. The remaining 9% have been installed since 1991 and are aged between 1-29 years. The reticulation consists mainly of PVC (49%) and PE (47%).

Appendix Figure 63: Water Mains Install Year (10 Year Groups)

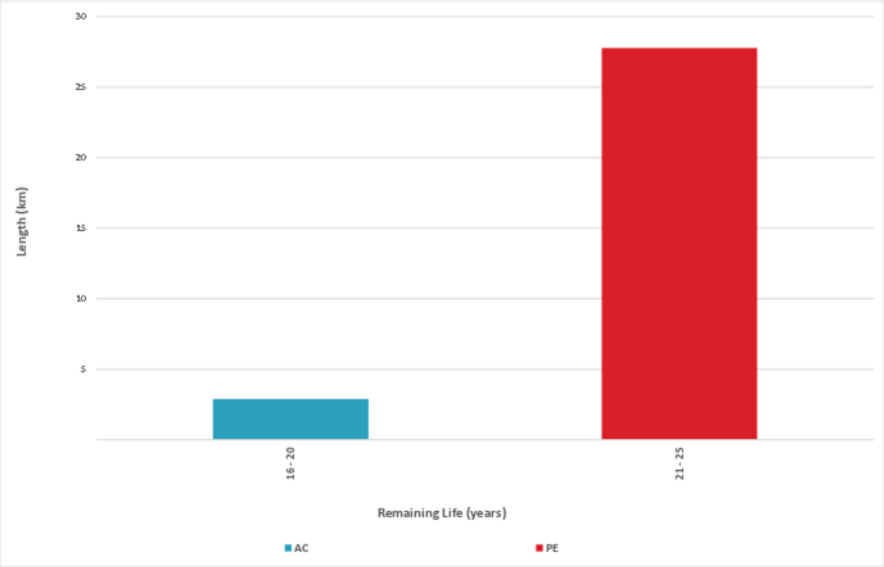


Appendix Figure 64: Remaining Life of all Assets – Long Term

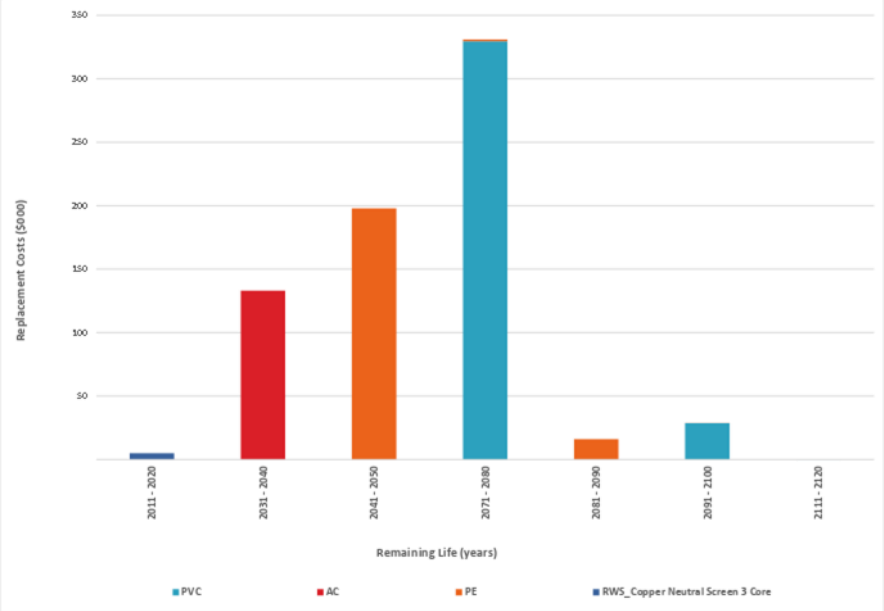


At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

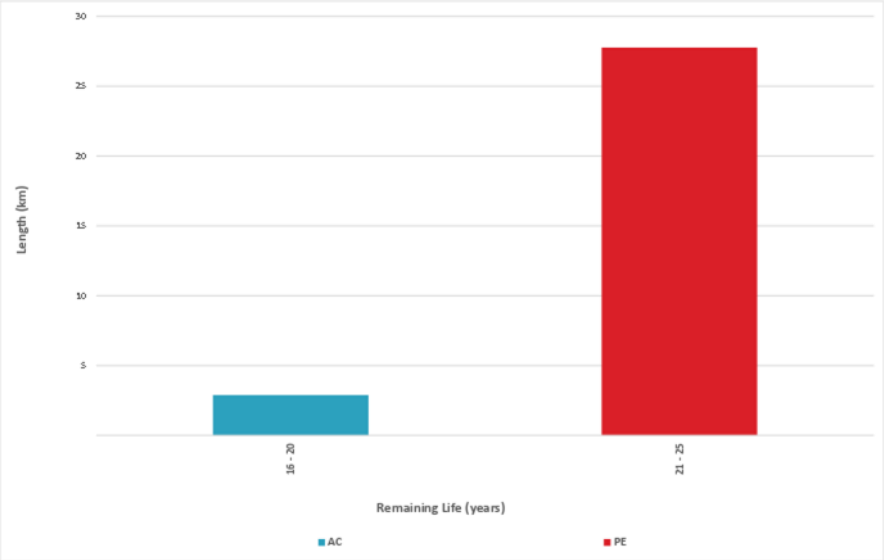
Appendix Figure 65: Water Mains Replacement (Length) – Long Term



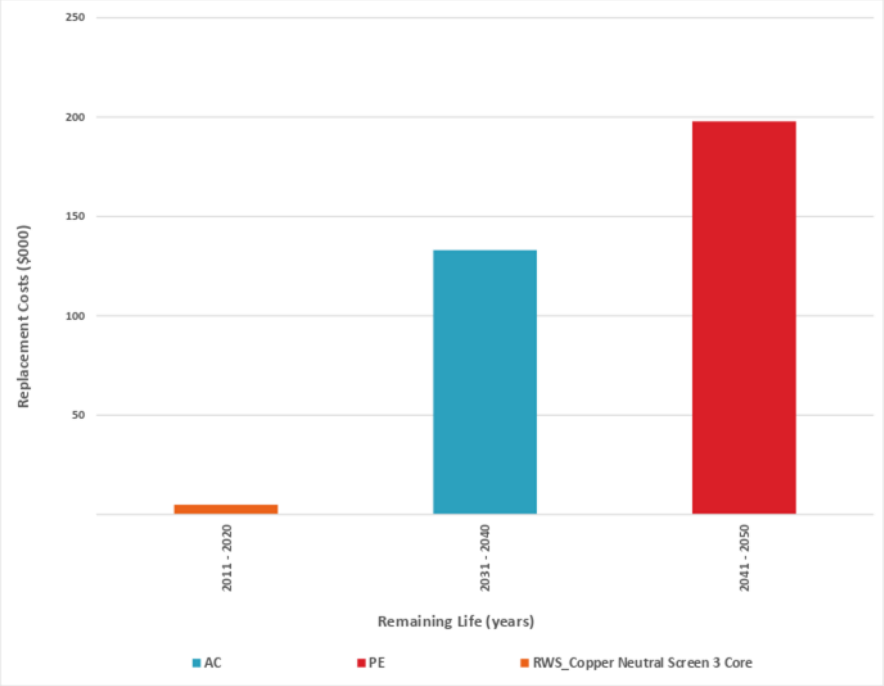
Appendix Figure 66: Water Main Replacement Value – Long Term



Appendix Figure 67: Water Main Replacement (Length) - 1 to 30 Years



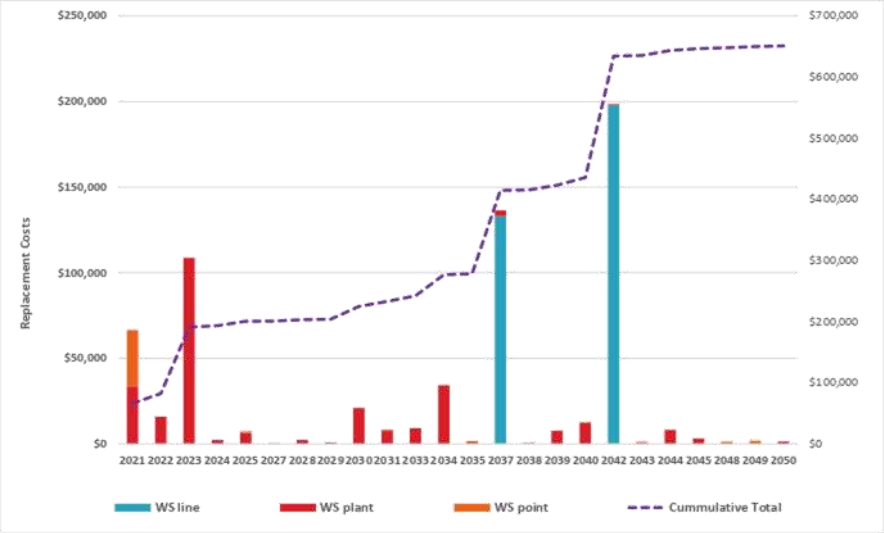
Appendix Figure 68: Water Main Replacement Value 1 to 30 Years



Appendix Table 8: Waihaorunga Plant Replacement Value 1 to 30 Years

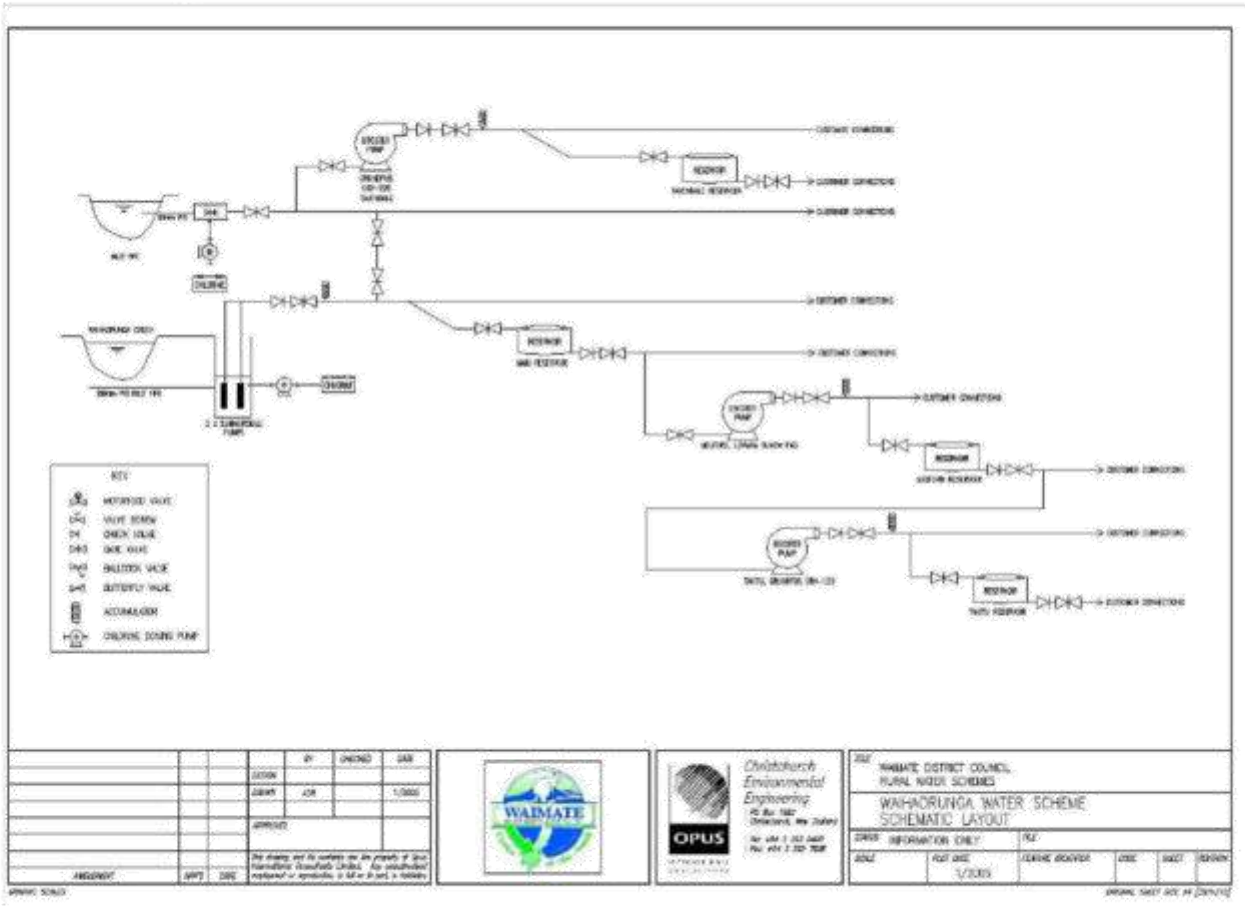
Asset Group	Remaining Useful Life (5 year groups)						
AssetType	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Abstraction	3,205						3,205
Building	23,956				2,995		26,951
Control	7,519	5,330	7,631				20,480
Digital I/O	2,110						2,110
Distribution	10,023			3,341			13,364
Measurement	2,427	717	10,618		4,587	189	18,538
Pipe	4039		4015				8,054
Reservoir	41,113						41,113
SCADA			8,101				8,101
Screening					613		613
Security	1,804						1,804
Sodium Hypochlorite	3,357	2,345	10,089	3,890			19,681
Submersible	12,419		11,240	13,130			36,789
Surface	13,072	15,230		2,949			31,251
Transmission	26,632						26,632
Valve	8,423	734	264	40	4,281	1,186	14,928
Vessel	6,850						6,850
Grand Total	**166,949**	**24,356**	**51,958**	**23,350**	**12,476**	**1,375**	**280,464**

Appendix Figure 69: 30 Year Replacement programme

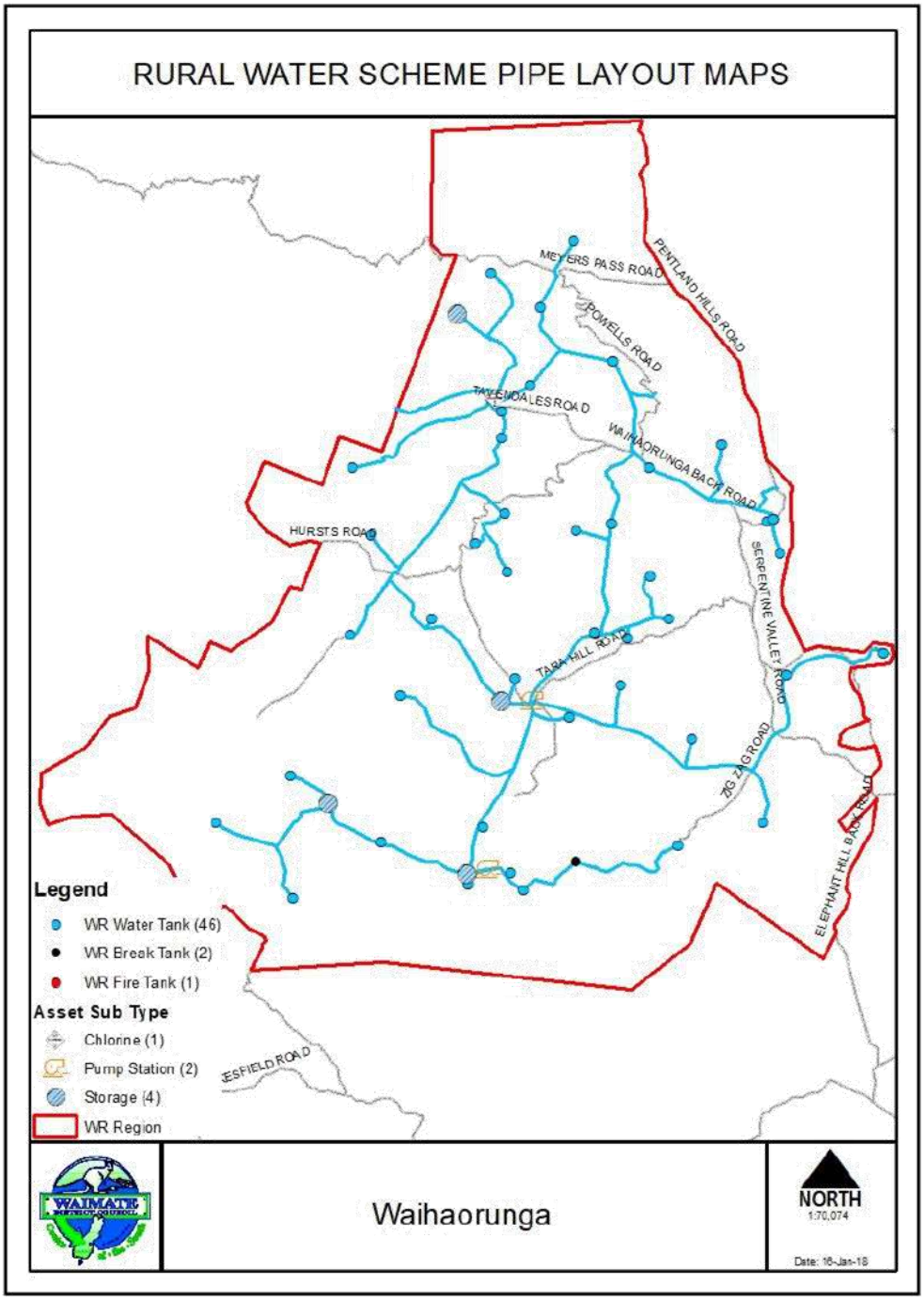


The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 70: Waihaorunga Schematic



Appendix Figure 71: Waihaorunga Scheme Plan



A.7 Waikakahi Water Scheme

Overview

The Waikakahi rural water supply scheme supplies water to 173 connections with a total population of about 360. Of those 173 connections, 57 are in the Waikakahi East area, with a population of about 132. This area is augmented with water from the Lower Waihao rural water supply (WINZ Code: LOW002). The Waimate District Council target rates 121 properties for the supply of water in this scheme. Some scheme consumers have more than one point of supply connection on their rated property. Each point of supply connection is required to have water storage for 96 hours (four days) in case of interruption of the water supply.

The source for the reticulation network is a tributary of the Waitaki River known as the Clear Stream. The intake does not have any protozoal treatment barriers, only pre-treatment roughing filters and chlorine disinfection. Duty/standby pumps deliver chlorinated water to a reservoir 3km away. The reservoir gravity feeds the reticulation network to the west and central part of the scheme. A reservoir that supplies the eastern part of the scheme is supplied via a new rising main from the Lower Waihao Intake via two new booster pumps. This reservoir now receives approximately 180m3 water per day from the Lower Waihao intake.

The approximate length for the reticulation network is 176km.

A large proportion of the water produced for the supply is consumed for the purposes of commercial agriculture. About 136 habitable dwellings have access to the water supply. This equates to 18% human consumption of the sold volume (based on 1500L/day/dwelling).

History

The Waikakahi water supply scheme was established in 1973 and the majority of the scheme reticulation dates from this time. Replacements of the larger diameter PVC pipes were carried out in 1980. A connection to the Lower Waihao scheme was completed in 2005 to supply the Waikakahi East area.

System Description

Source and Catchment:

Water is sourced from an intake in a stream originating on the terrace adjacent to the Waitaki River, at the Stonewall site near Ikawai. The stream is known as Clear Stream and the catchment area includes surrounding farmland and the Waitaki River (1562 Ha approx.).

The land use in the catchment around the Waikakahi Intake is mostly upland pasture, with a small percentage of arable cropping, lowland pasture, and riverbed, The activity in the land catchment is predominately dairy, with approximately 1200 dairy cows in the catchment. There is also a small amount of cropping, and bailage. It is important to note that the Waitaki River is also a part of the catchment, and can influence the intake in peak flood times, making the overall catchment very large.

202 hectares of the catchment is protected under the District Plan "Water Supply Protection Area" for Waikakahi rural water supply. This "Area" is mainly in the Waitaki River bed and is overlapped by the Regional Council "Community Drinking Water Protection Zone" (155.5 hectares), with 63.5 hectares inside the "Protection Area", and the other 92 hectares of the "Zone" covers the Waitaki

River bed. Inside both the "Protection Area" and "Zone" there is one pre-existing septic tank for a dwelling. Outside the "Protection Area" and "Zone" there are another two known septic tanks for dwellings/buildings in the wider catchment.

In weather events, the tributaries that come off the surrounding farmland and hills can influence Clear Stream. In these conditions, the stream becomes very turbid with debris and organics. With the recent development of farmland to dairying in the catchment, there has been a negative impact on the water quality in the stream. This has led to silt and nutrient loading, which encourages waterweed growth in Clear Stream. A recent Total Organic Carbon (TOC) analyses (May 2017) found 2.1 g/m3 TOC present in the raw water.

The Waitaki River at high flows can also infiltrate and influence Clear Stream, but has less negative impacts on the Clear Stream source.

Natural occurring iron in the clay, in the catchment area does affect Clear Stream's chemical content in the form of soluble iron. Levels of iron in the raw water are around Guideline Values (GV) for iron. Because of the iron, it has also been identified that in warm conditions, a species of algae will flourish feeding on the iron. This was identified about 2009 and confirmed by ECan.

The overall assessment of the catchment, plus the impact from human and agricultural activities for the existing source site, equates to a 5 Log treatment process requirement to provide wholesome, compliant drinking water to the consumer on the Waikakahi Rural Water Supply.

Abstraction:
The intake comprises a fish screened pipe laid into the stream. Water flows by gravity into the short pipeline and passes through into a roughing filter chamber to remove debris.

Pre-treatment:
The roughing filter consist of a 5.7 cubic meter concrete chamber with two course screens

Transmission:
From the roughing filter chamber, the pre-treated raw water travels 55 metres via a 200mm PVC pipe to a stilling well inside the Waikakahi (Stonewall) Intake treatment plant.

Treatment Plant:
The pre-treated raw water is drawn out of the stilling well by the duty high-lift distribution pump. A gas chlorine solution is dosed into the suction pipe rising out of the stilling well. Chlorine is dosed only when the high-lift distribution pumps are running, and is controlled by a flow switch on the delivery main. When the duty pump is running, chlorine is dosed at a rate controlled by a chlorine analyser at the pump station. At present the chlorine dose is run manually due to the poor raw water quality fouling the chlorine probe.

Because of the iron content in the raw water and the oxidising effect of chlorine, iron precipitate forms during the chlorination process and settles out in the rising main to the reservoir. The rising main is flushed bi-monthly to remove the iron precipitate. It has been observed that the iron precipitate does not appear to go beyond the reservoir.

Due to the algae that feeds on the naturally occurring iron, plus the use of chlorine for disinfection, a disinfection by-products (DBP) for trihalomethanes (THM's) analyses was done about 2012, and found that DBP levels were negligible and well below MAV. The DBP analyses was redone in July 2017 with the Sum of THM MAV ratios at less than one at 0.065, but the Sum of HAA MAV ratios was 1.5.

The present treatment plant has no protozoal treatment barriers. For the plant to be protozoal compliant under the Drinking Water Standard for New Zealand 2005 (revised 2018), the plant needs log five (5) treatment processes to be in place. Or chose another site with four (4) log treatment processes requirement.

Turbidity monitoring and control has been installed at the Waikakahi Treatment Plant site in 2019. This equipment was installed as a part of an agreement with The Ministry of Health, instead of full upgrades of the treatment plants, to allow for potential changes in legislation and standards (Acceptable Solutions), for rural agriculrual water supplies.

Distribution:

Two high-lift pumps elevate the treated water to the reservoir, which supplies consumers by gravity. Either pump is capable of providing the full flow required by the water supply, and only one pump operates at a time. The onsite SCADA PLC's at the intake and reservoir provide a control function between the two remote units (RTU) to switch pumps on and off as required to fill the reservoir.

The Waikakahi scheme supplies much of the area on the north side of the Waitaki River between the Lower Waihao and Waihaorunga schemes.

A second pumping station, at Claytons Rd, can supply the Waikakahi East area. This pump is no longer in use, as the Waikakahi East area is now supplied from the adjacent Lower Waihao water supply. Two booster pumps, Waikakahi Booster and Dog Kennel Booster stations pump water from the Lower Waihao supply up to the Clayton Reservoir, to supply Waikakahi East. In an emergency the Claytons Rd pump would be able to be used to supply the Waikakahi East area.

Management and Operation:

The scheme is administered at the main council offices in Queen Street, Waimate and operated and managed by the Council's Utilities Business Unit (UBU) based at Michael Street nearby. Five qualified field staff operate and maintain the rural water scheme plant, fixing leaks etc as generally advised by the public. Water samples are sent to MedLab laboratories for bacteriological testing.

The main pump station is linked to WDC's SCADA system, which monitors FAC, pH and the flow from the pump station.

A large proportion of the water produced for the supply is consumed for the purposes of commercial agriculture, and the supply could potentially qualify as a rural agricultural drinking water supply. Waimate District Council had previously considered the option of point of use treatment on the rural supplies, and discounted the option at that time because of cost and maintenance issues.

The option of "point of use treatment" was looked at again with the release of the Rural Agricultural Drinking Water Supply Guidelines (RADWS) in March 2015. Some questions were raised again about actual cost, pre-treatment, maintenance, responsibility issues and liability. Those questions were investigated by exploring successful examples of private "point of entry treatment" supplies under the RADWS in the Waitaki District Council. However, after the Havelock North Stage 1 Enquiry, the issues and risks of such a system make the RADWS not a viable option at that time.

Coucil has lobbied Government to review the current legistlation and standards for Rural Agricultral Water Supplies. Since then the Department of Internal Affairs (DIA) and the new regulator Taumata Arowai have been, and still currently working on an Acceptable Solution option, using point of use (PoE) treatment, which could be used in rural argicultral water supplies.

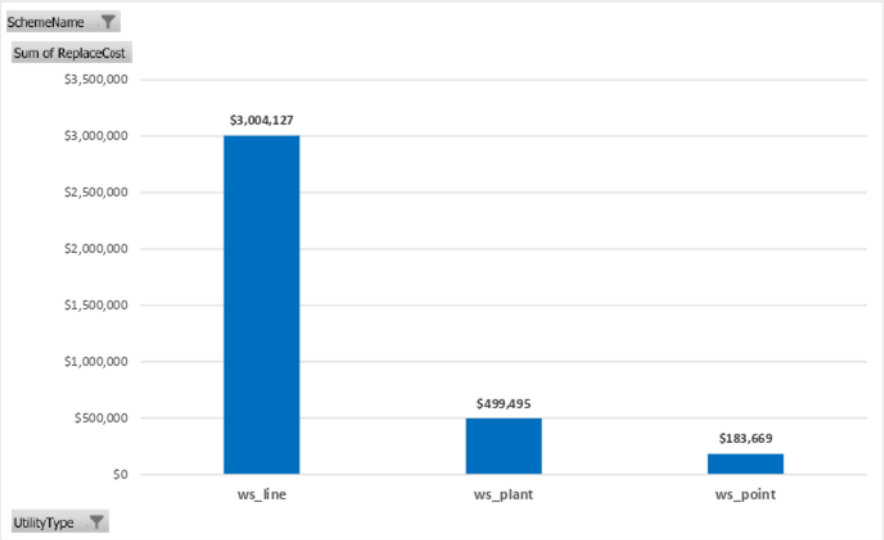
Currently the Waikakahi rural water supply has a "Permanent Boiled Water Notice". The notice was issued with the agreement of the Drinking water Assessor in November 2016. The notification is regularly advertised in local papers, Waimate District Council's website and Facebook page, along with Rural Delivery mail drops. The local water committee also reminds locals on request. In recent times organisations such as the local school and Mobile Kindy have helped advertise the "Permanent Boil Water Notice".

In the last WSP (Public Health Risk Management Plan V 1.0 [PHRMP], December 2009), Meridian Energy were in the process of preparatory work on the North Bank Tunnel project for extra power generation. This project would have affected the Waikakahi Intake (Stonewall) site, and it was expected that Meridian Energy were going to pay for the costs for moving intake and plant. But Since the 2010 earthquakes affecting Christchurch, and other economic factors, the project has now been indefinitely postponed. This means the option of a new source of water, and upgraded plant been put back to the reviewing and planning phase.

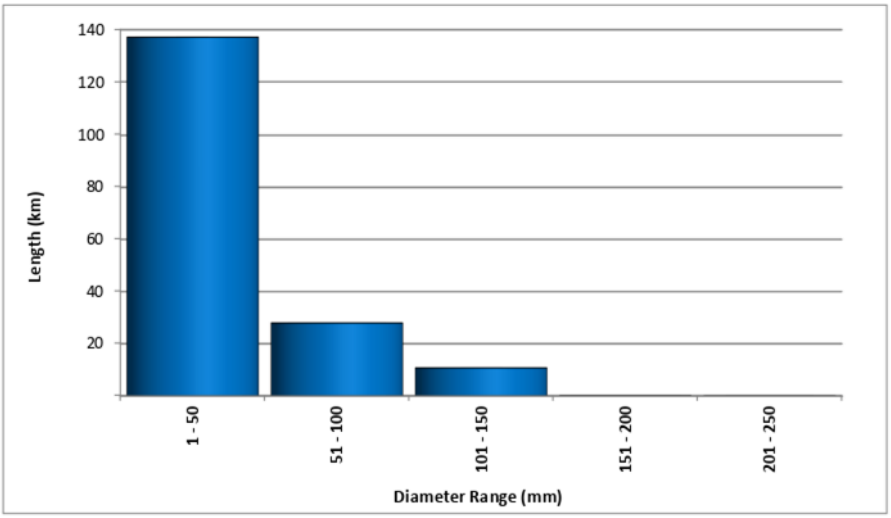
System Information

System Information – Waikakahi			
Connections	**177**	**Treated Water Storage (Reservoir)**	
- Metered unrestricted	-	**Hakataramea Ikawai Highway**	
- Metered restricted	177	Built (yr)	1973
- Unmetered Residential	-	Capacity	450m³
		Material	
Water Sources	(Consent volumes)	**Treatment**	
Waitaki River	1,469m³/day	Chlorine	
Resource Consent	**Expiry date**	**To**	
CRC96254.1	29/05/2031	Take water	
CRC970320	29/05/2031	Maintain a weir	
CRC970321	29/05/2031	Dam water	
Replacement Cost		**Reticulation length**	
Total Scheme	$3.7m	176km	

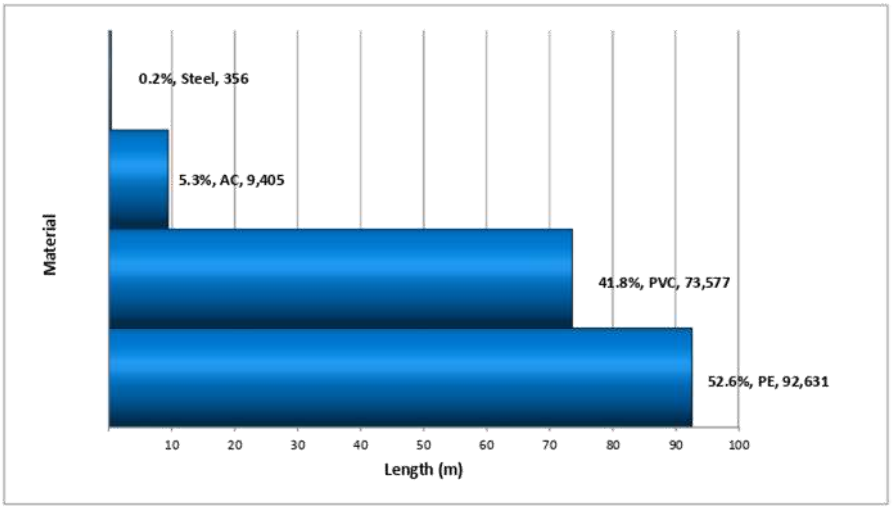
Appendix Figure 72: Scheme Components



Appendix Figure 73: Water Mains Diameter Range

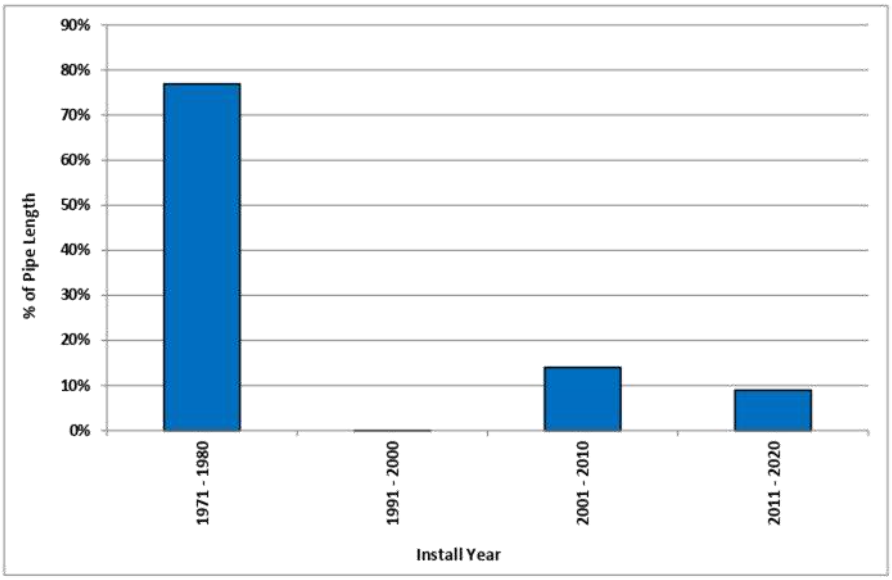


Appendix Figure 74: Water Mains Material Length

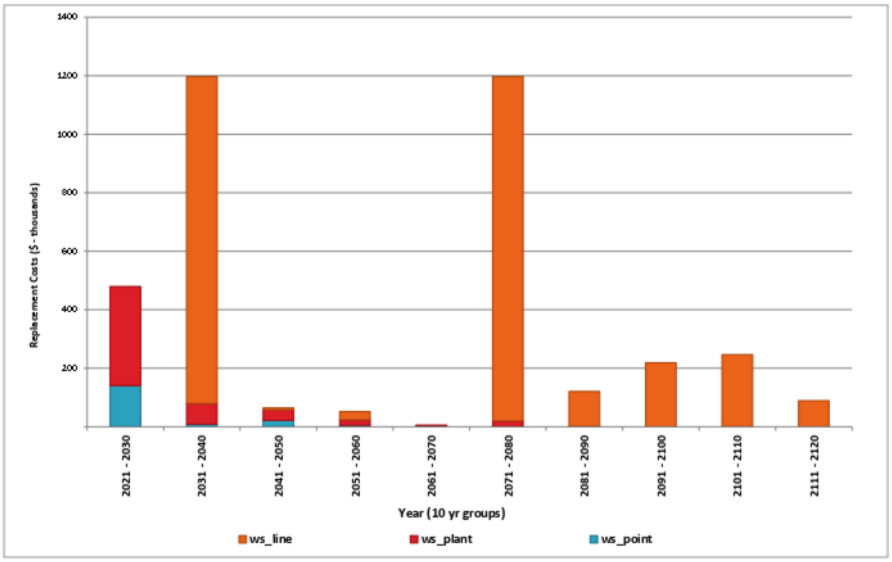


Approximately 78% of the Waikakahi water supply scheme reticulation were installed during 1973 and are 47 years old. The remaining 22% have been installed since 2001 and are aged between 1-19 years. The reticulation consists mainly of PE (53%) and PVC (42%).

Appendix Figure 75: Water Mains Install Year (10 Year Groups)

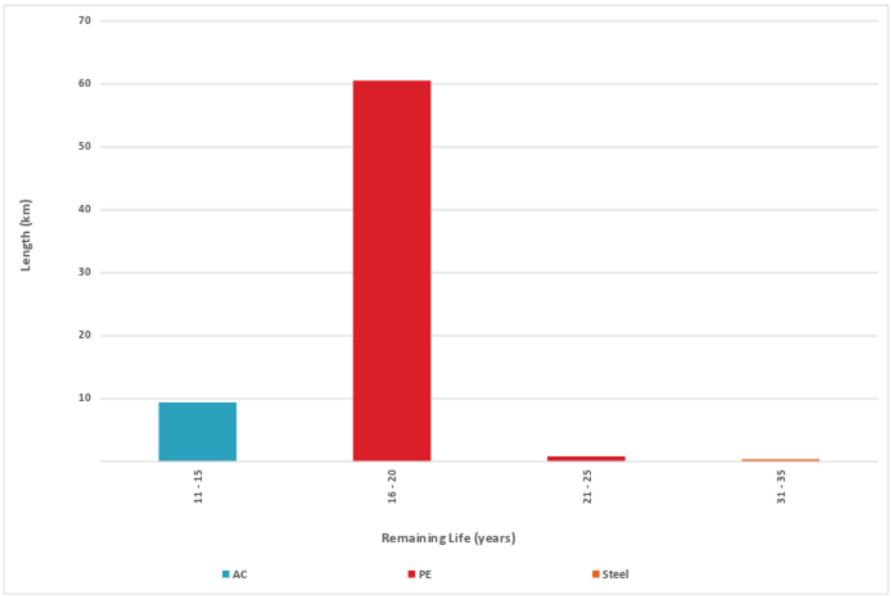


Appendix Figure 76: Remaining Life of all Assets – Long Term

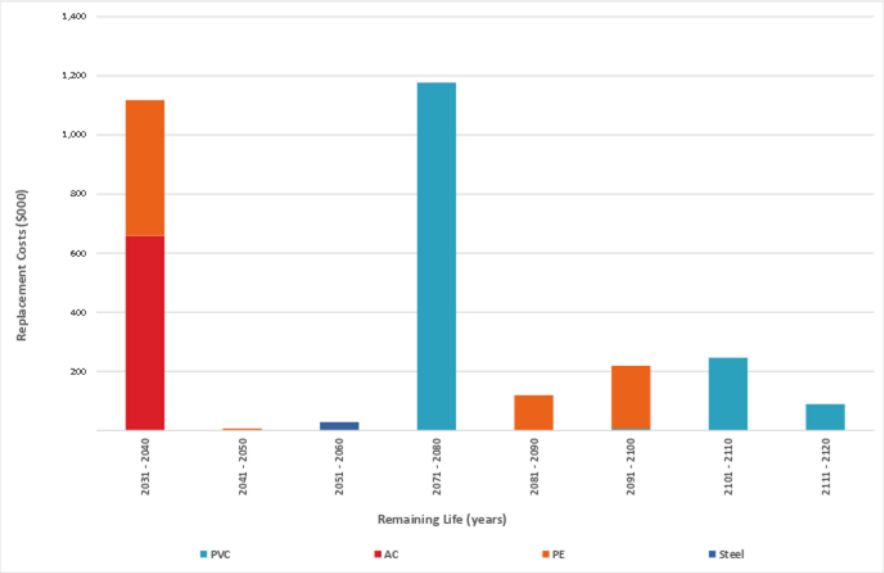


At present asset useful lives are based primarily on book values with some adjustment for known risk factors. These will be refined by determining evidence-based useful lives using a combination of condition and performance data.

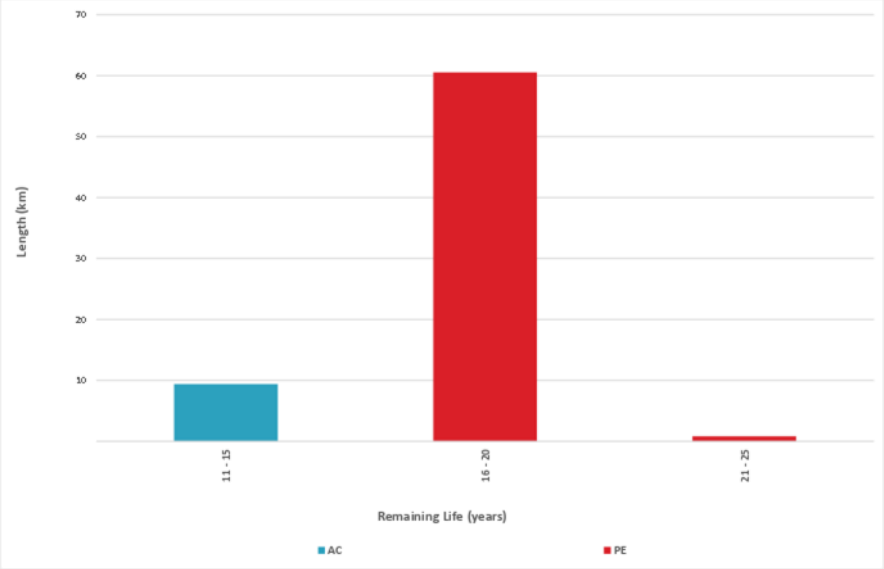
Appendix Figure 77: Water Mains Replacement (Length) – Long Term



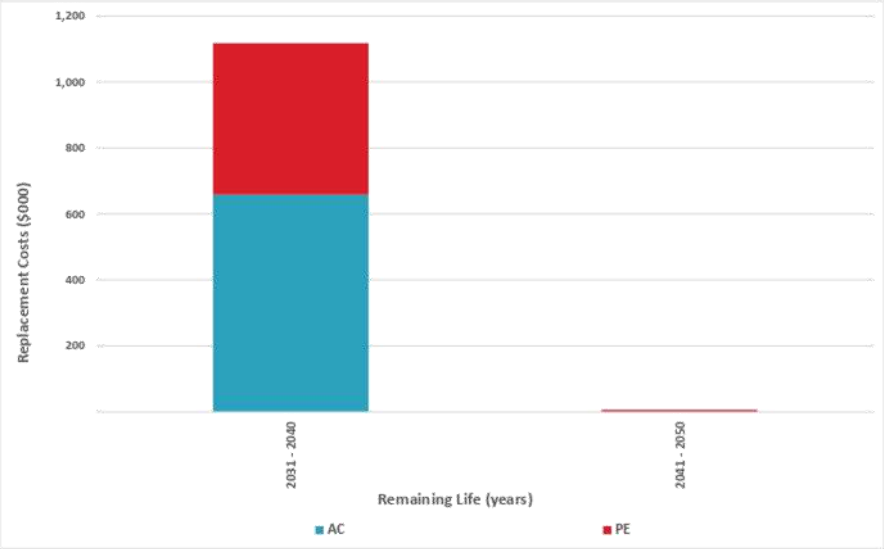
Appendix Figure 78: Water Main Replacement Value – Long Term



Appendix Figure 79: Water Main Replacement (Length) - 1 to 30 Years



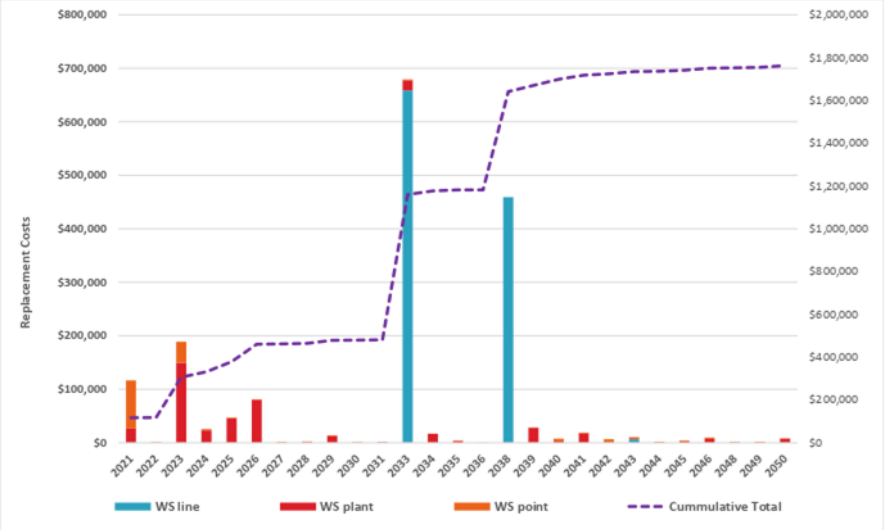
Appendix Figure 80: Water Main Replacement Value 1 to 30 Years



Appendix Table 9: Waikakahi Plant Replacement Value 1 to 30 Years

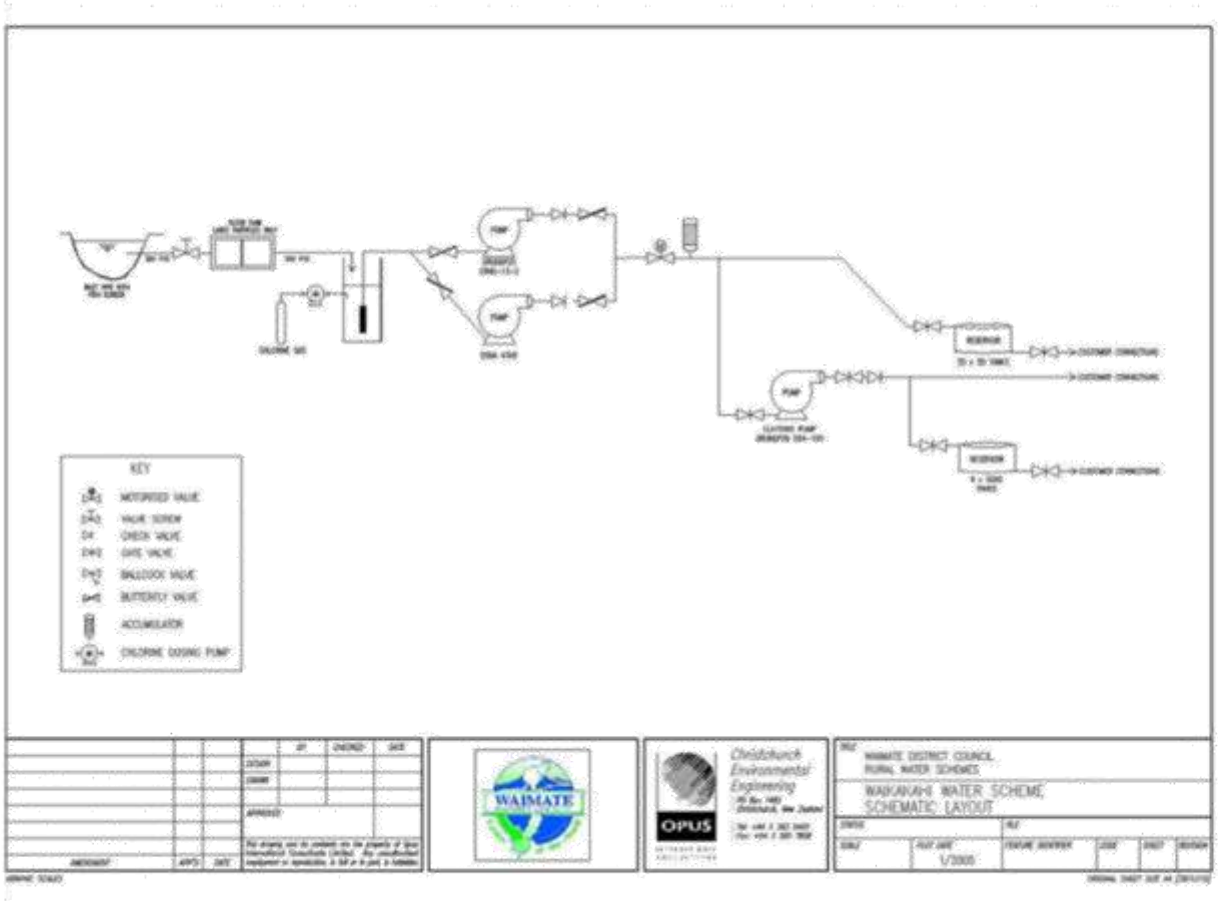
Asset Group	Remaining Useful Life (5 year groups)						
AssetType	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	Grand Total
Abstraction	5,701			1,329		6,902	13,932
Box		697				663	1,360
Building	50,846						50,846
Chlorine	16,406	10,843					27,249
Control	4,769	54,586	1,161				60,516
Digital I/O	1,958						1,958
Distribution	3,341				17,406	4,199	24,946
Measurement	6,105	4,346	4,524				14,975
Pipe	2,468		9,952		60		12,480
Reservoir	80,829		3,388				84,217
SCADA	8,164	266	12,543				20,973
Security	2,331						2,331
Solar	1,158	2,599	613				4,370
Submersible				660			660
Surface	45,954	21,353	8,395	27,419			103,121
Transmission	2037						2,037
Valve	11,177	167	32	844	2,371	4,049	18,640
Vessel	1,178						1,178
Grand Total	**244,423**	**94,857**	**40,608**	**30,252**	**19,837**	**15,813**	**445,790**

Appendix Figure 81: 30 Year Replacement Programme

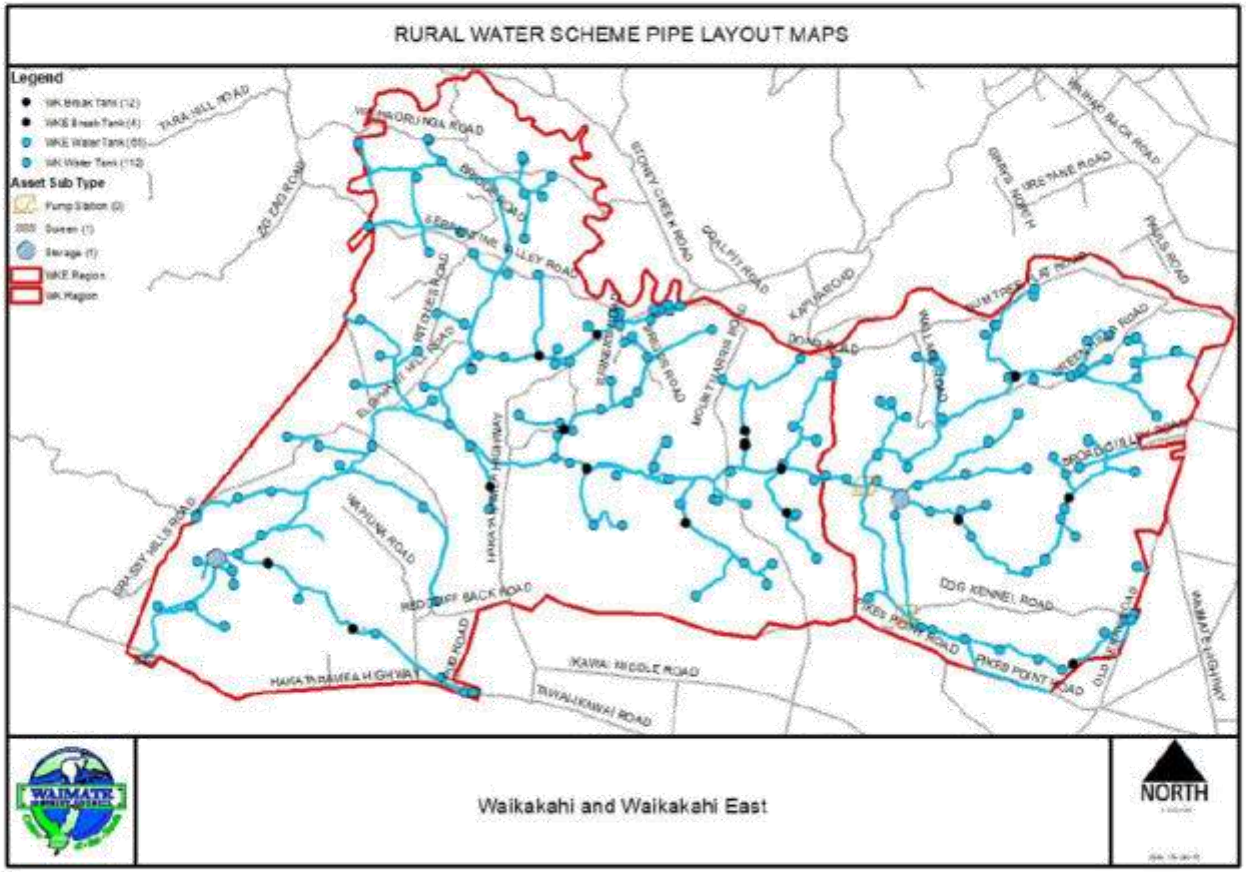


The above figure shows the theoretical replacement programme based on asset expected useful lives.

Appendix Figure 82: Waikakahi Schematic



Appendix Figure 83: Waikakahi Scheme Plan



Appendix B WSP: Minor Projects and Operational Improvements

The following details the Minor Projects and Operational Improvements that are shown in the current and submitted Waimate District rural and urban Water Safety Plans.

Current and submitted Water Safety Plans (WSP).

- Cannington-Motukaika Water Supply Water Safety Plan *Version 2.1 January 2019 (approved)*
- Hook-Waituna Water Supply Water Safety Plan *Version 3.0 November 2020 (submitted)*
- Lower Waihao Water Supply Water Safety Plan *Version 3.0 November 2020 (submitted)*
- Otaio-Makikihi Water Supply Water Safety Plan *Version 3.0 (under development)*
- Waihaorunga Water Supply Water Safety Plan *Version 2.2 December 2019 (approved)*
- Waikakahi Water Supply Water Safety Plan *Version 2.1 December 2019 (approved)*
- Waimate Water Supply Water Safety Plan *Version 3.0 January 2019 (approved)*

Appendix B:

PHRMP: and WSP Minor Projects and Operational Improvements

Appendix Table 10: Scheme Improvement Schedule - Minor Projects and Operational Improvements

Cannington-Motukaika Rural Water Supply Improvement Schedule *Cannington-Motukaika Water Supply Water Safety Plan Version 2.1 January 2019 (approved)*				Part II: Minor Projects and Operational Improvements			
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Source	S1.1	Ongoing liaison with landowners in the water supply catchment to raise/maintain awareness of catchment protection. Encourage best practice agricultural activities and riparian management.	WWM	Staff time	Annual Ongoing
1	Extreme	Distribution	D2.1, D2.2, D2.3	Develop and implement lifecycle management plan for pipe maintenance and renewals to minimise breakages and potential for contamination and/or loss of supply.	WWM	$5000 + staff time	2020/21
1	Extreme	Treatment	P11	Implement and use Assetfinda (Asset Management System [AMS]) for programming for WSP reviews, manuals and procedures.	WWM	Staff time	2018/19
2	High	Treatment	P7.1	Install chlorine equipment monitoring device with cellular phone link to monitor chlorine dosing.	WWM	$500 + Staff time	2017/18
2	High	Distribution	D2.2, D2.3	Undertake a criticality analysis of the network to assist renewals planning.	WWM	Staff time	2015/18 ***In process***
2	High	Distribution	D2.2, D2.3	Undertake condition assessment of AC mains.	WWM	$2000 + staff time	2015/18 ***In process***
2	High	Distribution	D2.1, D2.2, D2.3	Undertake a reservoir condition assessment and plan maintenance/replacement as appropriate.	WWM & UTL	Staff time	2020/21
2	High	Distribution	D2.2, D2.3	Internal audit of flushing points.	WWM & UTL	Staff time	2020/21
2	High	Pre-Treatment	P4.1	Cyanobacteria Monitoring training. Create a Cyanobacteria management plan to be used in an event of a bloom.	WWM	Operational + staff time	2018/21
2	High	Treatment	P7.1	Monitor raw water pH at plant and log	UTL	Staff time	2017/18
3	Moderate	Other	G1	Prepare Operation and Maintenance Manual including routine operation procedures, preventative maintenance task, inspections, monitoring, record keeping, and instrument calibration.	WWM	Staff time	2020/21
3	Moderate	Other	G1	Implement and use Assetfinda (Asset Management System [AMS]) for programming and monitoring regular maintenance and inspection/ monitoring tasks	WWM	Staff time	2017/18 & onwards

Cannington-Motukaika Rural Water Supply Improvement Schedule **Part II: Minor Projects and Operational Improvements**
Cannington-Motukaika Water Supply Water Safety Plan Version 2.1 January 2019 (approved)

Priority	Risk Level	Water Supply Area	Reference to Risk Table	Details of Proposed Works	Person Responsible	Expected Cost	Intended date of Completion
3	Moderate	Other	G1	Ensure all plant records – including manuals, drawings, procedure instructions and emergency response plan are available at the plant.	WWM	Staff time	2020/21
3	Moderate	Other	P11	Formalise hygiene procedures for maintenance works. Implement refresher training for hygiene and disinfection procedures	UTL	Staff time	2018/19
3	Moderate	Distribution	D1	Audit reservoir and break tank roof drainage and security. Investigate option of drainage preventable, lockable lids for reservoirs/break tanks.	WWM & UTL	Staff time	2018/19
3	Moderate	Distribution	D2.3	Internal audit of Cannington Motukaika water supply of what areas that need a cleaning programme, e.g. scouring, pigging or flushing for low flow dead end areas.	WWM & UTL	Staff time	2019/20
3	Moderate	Treatment, Distribution	P11, D1, D2.3	Formalise hygiene procedures for maintenance works. Implement refresher training for hygiene and disinfection procedures.	WWM & UTL	Staff time	2018/19
4	Low	Abstraction	P1.1	Contact Department of Conservation to improve signage on walking track to keep walkers on the main track and away from intake.	WWM	Staff time	2018/19
4	Low	Source, Treatment, Distribution	S1.2, P7.1, D2.1, D2.3	Review Priority 2a, 2b and 2c Determinands, which will include heavy metals and plumbosolvency.	WWM	Operational + staff time	2018/19
4	Low	Treatment, Distribution	P1.1, P.2, D1	Promote 96 hour (4 days) point of supply storage policy.	WWM	Staff time	2017/18 & onwards
4	Low	Treatment, Distribution	P7.1, P11, D1	Review generator use, transport and procedures over all the schemes. Create register of generator hire companies.	WWM & UTL	Staff time	2018/19
4	Low	Distribution	D2.4	Backflow Register	UTL	Staff time	2018/19
4	Low	Treatment	P11	Make use of shared digital resources for recording information i.e. pump hours, events, maintenance, etc., via IPads/tablets, Sharepoint.	WWM	$10,000 + Operational + staff time	2018/19 & onwards
4	Low	Treatment, Distribution	D2.2	Telemetry (SCADA) monitoring and control for Pratts.	WWM	$16,000	2021/22
4	Low	Treatment, Distribution	P10.2, D2.2	Investigate pump life and reconditioning programme and establish.	WWM & UTL	Staff time	2018/19

Appendix B:

PHRMP: and WSP Minor Projects and Operational Improvements

Hook Waituna Improvement Schedule Part II: Minor Projects and Operational Improvements *Hook-Waituna Water Supply Water Safety Plan Version 3.0 November 2020 (submitted)*							
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Source	S1.1	Ongoing liaison with landowners in the water supply catchment to raise/maintain awareness of catchment protection. Encourage best practice agricultural activities and riparian management.	WWM	Staff time	Ongoing
2	High	Distribution		Undertake condition assessment of AC mains.	WWM	$4000 + staff time	2015/18 Ongoing annually as required
3	Moderate	Other	G1	Prepare Operation and Maintenance Manual including routine operation procedures, preventative maintenance task, inspections, monitoring, record keeping, and instrument calibration.	WWM	Staff time	2021/22 Completed but plant does not fully meet compliance. **Future upgrade still required to make plant compliant**
3	Moderate	Other	G1	Implement and use Asset Management System (AMS) for programming and monitoring regular maintenance and inspection/monitoring tasks.	WWM	Staff time	2015/16 & onwards **In process but to be improved**
3	Moderate	Other	G1	Ensure all plant records – including manuals, drawings, procedure instructions and emergency response plan are available at the plant.	WWM	Staff time	2022/23 Completed but need to align with new plant

Lower Waihao Rural Water Supply Improvement Schedule *Lower Waihao Water Supply Water Safety Plan Version 3.0 November 2020 (submitted)*				**Part II: Minor Projects and Operational Improvements**			
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Source	S1.1	Ongoing liaison with landowners in the water supply catchment to raise/maintain awareness of catchment protection. Encourage best practice agricultural activities and riparian management.	WWM	Staff time	Ongoing
1	Moderate	Other	G1	Prepare Operation and Maintenance Manual including routine operation procedures, preventative maintenance task, inspections, monitoring, record keeping, and instrument calibration.	WWM	Staff time	2022/23
1	Moderate	Other	G1	Ensure all plant records – including manuals, drawings, procedure instructions and emergency response plan are available at the plant.	WWM	Staff time	2022/23 **Completed** but need to align with new plant

Otaio Makikihi Rural Water Supply Improvement Schedule *Otaio-Makikihi Water Supply Water Safety Plan Version 3.0 (under development)*				**Part II: Minor Projects and Operational Improvement**			
1	Extreme	Source & Source Abstraction	S1.1	Ongoing liaison with landowners in the water supply catchment to raise/maintain awareness of catchment protection. Encourage best practice agricultural activities and riparian management.	WWM	Staff time	Ongoing
2	High	Distribution System	C55	Undertake condition assessment of AC mains. N.B. Assessment are done as required and ongoing i.e. samples taken from pipe failure events.	WWM	$2000 + staff time	2018/21 ***In process***
4	Low	General Elements	C58	Seek DWA review and approval of DWSNZ monitoring programme.	WWM	Staff time	Ongoing Annually
3	Moderate	General Elements	C59	Prepare Operation and Maintenance Manual including routine operation procedures, preventative maintenance task, inspections, monitoring, record keeping, and instrument calibration.	WWM	Staff time	Ongoing
3	Moderate	General Elements	C59	Implement and use Asset Management System (AMS) for programming and monitoring regular maintenance and inspection/monitoring tasks.	WWM	$2000 + staff time	Ongoing

Appendix B:

PHRMP: and WSP Minor Projects and Operational Improvements

Otaio Makikihi Rural Water Supply Improvement Schedule Part II: Minor Projects and Operational Improvement *Otaio-Makikihi Water Supply Water Safety Plan Version 3.0 (under development)*							
3	Moderate	General Elements	C59	Ensure all plant records – including manuals, drawings, procedure instructions and emergency response plan are available at the plant.	WWM	Staff time	Ongoing

Waihaorunga Rural Water Supply Improvement Schedule Part I: Major Projects and Capital Works *Waihaorunga Water Supply Water Safety Plan Version 2.2 December 2019 (approved)*							
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Source Treatment	S1.1, P1.1, P7.1, P10, P10.2, P11, D2.3	Increase monitoring and control at Waihaorunga Main Treatment Plant as an interim measure before upgrades. • Telemetry (SCADA) • FAC & Turbidity monitoring and control • Control – Plant shutdown (selective abstraction)	WWM	$36,500 (from the $1,007,500 LTP budget for Plant upgrade brought forward)	2018/19
1	Extreme	Source Treatment	S1.1, P1.1, P2, PPT, P7.1, P10, P10.2, P11, D2.3	Increase monitoring and control at Tavendales Treatment Plant as an interim measure before upgrades. • Telemetry (SCADA) • FAC & Turbidity monitoring and control • Control – Plant shutdown (selective abstraction) ***Note:*** *Investigate running the entire supply network off the Main Treatment Plant. If not able to, then increase monitoring and control at Tavendales Treatment Plant.*	WWM	$41,000 (from the $1,007,500 LTP budget for Plant upgrade brought forward)	2019/20

Waihaorunga Rural Water Supply Improvement Schedule *Waihaorunga Water Supply Water Safety Plan Version 2.2 December 2019 (approved)*				Part I: Major Projects and Capital Works			
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Source Treatment	P1.1, P7.1, P10, P10.2, P11, D2.3	Upgrade Waihaorunga Main treatment plant to comply with the DWSNZ 2005 (revised 2008). • Upgrade Waihaorunga Main Treatment Plant site to Log 4 treatment. o Add selective abstraction based on turbidity. o Pre-treatment with an invalidated membrane o 1µm Filter. o UV reactor o Disinfection – Sodium hypochlorite o Install telemetry for data acquisition and control (SCADA) o Make provision for a bypass so a granulated activated carbon filter can be added if ever required. • Abandon Tavendales plant. • Connect Tavendale Intake Gallery to new Waihaorunga Main Treatment Plant, then boost treated water back to Tavendales booster.	WWM	$1,007,500	2021
2	High	Source	S1.1	Ongoing investigation into options for alternate sources. ***Note:*** *There are not many options for alternate sources of raw water for Waihaorunga. Work will continue to make sure all options are investigated thoroughly before work starts on the upgrade to existing sites.*	WWM	Staff time	2019/20 ***In process***

Waikakahi Rural Water Supply Improvement Schedule *Waikakahi Water Supply Water Safety Plan Version 2.1 December 2019 (approved)*				Part II: Minor Projects and Operational Improvements			
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Treatment	P7.1	Visit treatment plants and adjust chlorine dosing rate if required following a rain event.	WWM	Staff time	As required until 2020/21

Appendix B:

PHRMP: and WSP Minor Projects and Operational Improvements

Waikakahi Rural Water Supply Improvement Schedule *Waikakahi Water Supply Water Safety Plan Version 2.1 December 2019 (approved)*				Part II: Minor Projects and Operational Improvements			
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
1	Extreme	Source	S1.1	Ongoing liaison with landowners in the water supply catchment to raise/maintain awareness of catchment protection. Encourage best practice agricultural activities and riparian management.	WWM	Staff time	Annual ongoing
1	Extreme	Treatment	P11	Implement and use Assetfinda (Asset Management System [AMS]) for programming for WSP reviews, manuals and procedures.	WWM	Staff time	2019/20
2	High	Distribution	D2.2, D2.3	Undertake condition assessment of AC mains. N.B. Assessment are done as required and ongoing i.e. samples taken from pipe failure events.	WWM	$2000 + staff time	2018/21 In process
2	High	Distribution	D2.1, D2.2, D2.3	Undertake a reservoir condition assessment and plan maintenance/replacement as appropriate.	WWM	Staff time	2020/21
2	High	Distribution	D2.2, D2.3	Internal audit of flushing points.	WWM & UTL	Staff time	2020/21
2	High	Pre-Treatment	P4	Cyanobacteria monitoring training. Design a Cyanobacteria management plan to be used in an event of a bloom.	WWM	$1000 + Staff time	2019/20
2	High	Treatment	P7.1	Monitor raw water pH at plant and log	UTL	Staff time	2019/20
3	Moderate	Other	G1	Prepare Operation and Maintenance Manual including routine operation procedures, preventative maintenance task, inspections, monitoring, record keeping, and instrument calibration.	WWM	Staff time	2020/21
3	Moderate	Other	G1	Implement and use Assetfinda (Asset Management System [AMS]) for programming and monitoring regular maintenance and inspection/ monitoring tasks. Including looking at other options i.e. Water Outlook.	WWM	Staff time	2017/18 & onwards
3	Moderate	Other	G1	Ensure all plant records – including manuals, drawings, procedure instructions and emergency response plan are available at the plant.	WWM	Staff time	2020/21
3	Moderate	Distribution	D1	Audit reservoir and break tank roof drainage and security. Investigate option of drainage preventable, lockable lids for reservoirs/break tanks.	WWM & UTL	Staff time	2020/21

Waikakahi Rural Water Supply Improvement Schedule **Part II: Minor Projects and Operational Improvements**
Waikakahi Water Supply Water Safety Plan Version 2.1 December 2019 (approved)

Priority	Risk Level	Water Supply Area	Reference to Risk Table	Details of Proposed Works	Person Responsible	Expected Cost	Intended date of Completion
3	Moderate	Distribution	D2.3	Internal audit of Waihaorunga water supply of what areas that need a cleaning programme, e.g. scouring, pigging or flushing for low flow dead end areas.	WWM & UTL	Staff time	2020/21
3	Moderate	Distribution	D2.3	Programme of regular backwashing for Waihaorunga Main and Tavendales intake gallery beds.	UTL	Staff time	2019/20
3	Moderate	Source, Treatment, Distribution	S1.2, P7.1, D2.1, D2.3	Review Priority 2a, 2b and 2c Determinands, which will include heavy metals and plumbosolvency.	WWM	Operational + staff time	2018/19 & onwards
3	Moderate	Treatment, Distribution	P11, D1, D2.3	Formalise hygiene procedures for maintenance works. Implement refresher training for hygiene and disinfection procedures.	WWM & UTL	Staff time	2019/20
3	Moderate	Distribution	D1	Review additional post-treatment storage	WWM	Staff time	2021/22
4	Low	Treatment, Distribution	P1.1, P.2, D1	Promote 96 hour (4 days) point of supply storage policy.	WWM	Staff time	2017/18 & onwards
4	Low	Treatment, Distribution	P7.1, P11, D1	Review generator use, transport and procedures over all the schemes. Create register of generator hire companies.	WWM & UTL	Staff time	2020/21
4	Low	Distribution	D2.4	Backflow Register	UTL	Staff time	2020/21
4	Low	Treatment	P11	Make use of shared digital resources for recording information i.e. pump hours, events, maintenance, etc., via IPads/tablets, Sharepoint.	WWM	$10,000 + Operational + staff time	2018/19 & onwards
4	Low	Treatment, Distribution	P10.2, D2.2	Investigate pump life and reconditioning programme and establish.	WWM & UTL	Staff time	2020/21
4	Low	Distribution	D1	Investigate telemetry (SCADA) options at network reservoir sites.	WWM	Staff time	2021/2024
4	Low	Distribution	D1	Investigate telemetry (SCADA) options at network pumpstations - Melford	WWM	Staff time	2021/2024
4	Low	Distribution	D1	Takitu Pumphouse - New Board and Telemetry (SCADA)	WWM	$22,000	2022/2023

Appendix B:

PHRMP: and WSP Minor Projects and Operational Improvements

Waimate Rural Water Supply Improvement Schedule *Waimate Water Supply Water Safety Plan Version 3.0 January 2019 (approved)*				Part II: Minor Projects and Operational Improvements			
Priority	**Risk Level**	**Water Supply Area**	**Reference to Risk Table**	**Details of Proposed Works**	**Person Responsible**	**Expected Cost**	**Intended date of Completion**
2	High - Extreme	Treatment	P11	Make use of shared digital resources for recording information i.e. pump hours, events, maintenance, etc., via mobile technology i.e. tablets	WWM	Staff time	2019/20
2	High	Distribution	D2.4	Review of Backflow Protection device use on the Waimate Urban Supply.	WWM & UTL	Staff time	2020/21
2	High	Distribution	D2.4	Public Backflow Prevention education	WWM & UTL	Staff time	2020/21
2	High	Source	S1.1	Monthly Constant Composition Testing. Monitoring variances (coefficient and standard) of Conductivity, Chloride and Nitrate at Manchesters Road Bore and Timaru Road Bore. ***Note:*** *This method of analysis will be used for demonstrating Criterion 1 Bore Security as well as regular monitoring.*	WWM	$980 + staff time Annually	2019/20 onwards
2	High	Source	P1.3, P10, P11	Investigate Emergency alternate water sources i.e. the old town supply at Kelcys Bush.	WWM	Staff time	2018/20
2	High	Treatment	P7.1, P10, P11	Review generator use, transport and procedures over all the schemes. Create register of generator hire companies.	WWM & UTL	Staff time	2018/19
2	High	Waimate WS	C1, C3	Complete Councils Emergency Response Plan. ***Note:*** *This WSP and all approved Waimate District Council WSP's are part of the Councils Emergency Response Plan.*	CDEM	Staff time	***ERP in Process. WATER COMPLETED***
2	High	Waimate WS	S3, D2.4	Backflow prevention policy – Formalise a BFP policy to define clear requirements for different property types and activities, and required BFP devices testing regimes *(also review if a separate policy is required)*. ***Note:*** *Existing Backflow prevention Bylaw in Place (Section 1419.1) and other external factors such as the "New Zealand Building Code Clause G12 Water Supplies", "Acceptable Solutions G12/AS1, Section 3.0" & AS/NZS 3500 Pt 1 2018.*	WWM	Internal	~~Dec 2014~~ ***Risk Managed*** 2020/21
3	Moderate	Treatment, Distribution	P1.3, P11, D1, D2.3	Formalise hygiene procedures for maintenance works. Implement refresher training for hygiene and disinfection procedures.	UTL	Staff time	2020/21

Appendix C

Significant Forecasting Assumptions

The following table details the significant forecasting assumptions as at March 2021.

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Significant Forecasting Assumptions

Appendix Table 11: Significant Forecasting Assumptions as at March 2021

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
POPULATION CHANGE						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
DEMOGRAPHIC CHANGES						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups
OIL PRICE						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum	WDC	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups

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Significant Forecasting Assumptions

market has historically demonstrated a tendency to stabilise rapidly, where possible.		frequency and/or greater severity.		demand for alternative methods of transport.		

2021-2031 LTP SIGNIFICANT FORECASTING ASSUMPTIONS

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
CLIMATE CHANGE						
The effects of climate change are expected to manifest in three categories: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) general socio-economic consequences of such changes, and c) socio-economic consequences of policies/ measures designed to curb the adverse effects of climate change.	WDC	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

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Significant Forecasting Assumptions

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY (NZTA) REVENUE						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidized works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths
GRANTS AND SUBSIDIES						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will	WDC	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property

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not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.				reduced level of service.		

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
NEW ZEALAND DRINKING WATER STANDARDS & SERVICE DELIVERY						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	WDC Central Government	Legislation changes under urgency in Parliament that must be implemented immediately.	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply
RESOURCE CONSETS						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	WDC	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply
WATER IRRIGATION SCHEMES						
Council does not expect major irrigation schemes to be introduced into the	WDC	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal	Council will monitor the environment in regard to any potential development, and	Roading and Footpaths, Rural Water

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Appendix C:

Significant Forecasting Assumptions

district over the period of the Long Term Plan.				impact on Council, but a more considerable impact on the district's agricultural sector.	seeks to remain involved in discussions/proposals.	Supply, Sewerage

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
EMERGENCY EVENT						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	WDC	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups
DEVELOPMENT CONTRIBUTIONS						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable	WDC	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups

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Significant Forecasting Assumptions

under each system will be broadly similar.						

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
DISTRICT ECONOMY						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	WDC	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices- the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups
USEFUL LIVES OF SIGNIFICANT ASSETS AND DEPRECIATION						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support WDC asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply
REVALUATION OF NON-CURRENT ASSETS						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets:	WDC	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property

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Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%						

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FUNDS FOR FUTURE REPLACEMENT OF SIGNIFICANT ASSETS						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	WDC	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage
RETURN ON INVESTMENT- ALPINE ENERGY						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it	WDC (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance

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is assumed the dividend will remain at 6c.				unlikely to maintain dividends at the proposed level.		

ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
FORESTRY ASSETS VALUES						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	WDC	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance
CAPITAL DELIVERY						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	WDC	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in any given year, and carried over to subsequent years.	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021,	Water Supply & all other activities

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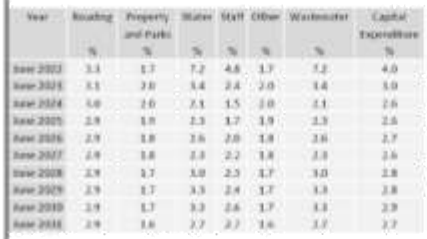
					or very early in the 2021/22 financial year. Due to the nature of the rates smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	
ASSUMPTION	**SOURCE**	**RISK**	**LEVEL OF UNCERTAINTY**	**IMPACT OF VARIATION**	**MANAGEMENT OF RISK**	**ACTIVITY**
RETURN ON INVESTMENTS- OTHER						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	WDC (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance
INFLATION						

Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL). 	Business and Economic Research Ltd.	Inflation will be higher or lower than anticipated.	Moderate	A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.	Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan. In the event of significant changes to the underlying costs supporting work in the activity areas, mitigation planning will feature in the Annual Plan.	All activity groups

Year	Roading	Property and Parks	Water	Staff	Other	Wastewater	Capital Expenditure
	%	%	%	%	%	%	%
June 2022	3.1	1.7	7.2	4.8	1.7	7.2	4.0
June 2023	3.1	2.0	3.4	2.4	2.0	3.4	3.0
June 2024	3.0	2.0	2.1	1.5	2.0	2.1	2.6
June 2025	2.9	1.9	2.3	1.7	1.9	2.3	2.6
June 2026	2.9	1.8	2.6	2.0	1.8	2.6	2.7
June 2027	2.9	1.8	2.3	2.2	1.8	2.3	2.6
June 2028	2.9	1.7	3.0	2.3	1.7	3.0	2.8
June 2029	2.9	1.7	3.3	2.4	1.7	3.3	2.8
June 2030	2.9	1.7	3.3	2.6	1.7	3.3	2.9
June 2031	2.9	1.6	2.7	2.7	1.6	2.7	2.7

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ASSUMPTION	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION	MANAGEMENT OF RISK	ACTIVITY
BORROWING COSTS						
Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.	WDC (in conjunction with its financial advisors)	Interest rates will differ significantly from those estimated.	Low	If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.	Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.	Investment and Finance
UNIDENTIFIED LIABILITIES						
It is assumed that Council does not have any unidentified liabilities.	WDC	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

Appendix C:
Significant Forecasting Assumptions

- Water Asset Management Plan 2015

Appendix D:

Risk Assessments

Appendix D

Risk Summary Table

The following table details the Risk Summary Table that was established in 2011, which identifies risk management strategies to minimise risks associated with the provision of the Water, Wastewater, Stormwater and Solid Wastes services.

For site-specific risk assessment tables see "Risk Tables" in all current and submitted Water Safety Plans (WSP).

- Cannington-Motukaika Water Supply Water Safety Plan *Version 2.1 January 2019 (approved)*
- Hook-Waituna Water Supply Water Safety Plan *Version 3.0 November 2020 (submitted)*
- Lower Waihao Water Supply Water Safety Plan *Version 3.0 November 2020 (submitted)*
- Otaio-Makikihi Water Supply Water Safety Plan *Version 3.0 (under development)*
- Waihaorunga Water Supply Water Safety Plan *Version 2.2 December 2019 (approved)*
- Waikakahi Water Supply Water Safety Plan *Version 2.1 December 2019 (approved)*
- Waimate Water Supply Water Safety Plan *Version 3.0 January 2019 (approved)*

These risk assessment tables are based on the Ministry of Health Water Safety Plan Guides available at http://www.health.govt.nz/publication/water-safety-plan-guides-drinking-water-supplies . The risk assessment tables cover risks associated with Source, Treatment Processes, Distribution Systems and General Elements of all the Waimate District Council water supplies. They go into detail about the known risks and the measures in place to control.

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Risk Assessments

Risk Summary Table – all Services

No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
1		Higher Level Policies, Procedures and Controls				
1.1	Subdivision Code, District Plan not up to date	Inappropriate development and/or poor design of assets.	Moderate	Subdivision and Development Code up to date and activity to have input to District Plan.	Low	
1.2	Operations Manuals not up-to-date	Failure to supply water or cause adverse health effects due to poor operation of assets.	Moderate	Operating Manuals substantially complete and ensure staff comply with requirements.	Low	The existing operation and maintenance manuals are to be updated where required. Particularly when treatment processes are updated
1.3	Not having clear direction on public consultation	Council in breech of LGA2002 with respect to Public Consultation.	Low	Need ability to get advice from specialist council staff on consultation plan for each project.	Low	
1.4	Districts Bylaws not up to date	Inability to properly control inappropriate behaviour by others.	Low	Bylaws up to date	Low	Bylaws are being updated prior to 30 June 2018
1.5	The Council does not have an acceptable position on the impact of climate change on service delivery	Financial loss due to liability for property damage, loss of asset. Not able to provide service.	Significant	Council needs policy and relevant action plans including relevant design parameters) on Climate Change.	Low	Strategies to implement Councils future policy on the effects of climate change
1.6	Inaccurate growth information or growth not considered	Inappropriate decisions made about development.	Moderate	Growth developed by Council	Low	
2		Financial				
2.1	Lack of long-term financial planning	Higher than necessary financial costs	Significant	Existing network models are up to date and available	Low	
2.2	Service levels vs funding and works not clear	Service levels not being met due to lack of funding as decision makers not aware of implications for Service Levels.	Significant	Set performance targets for next 10 years and monitor and report on performance. Impacts of delayed capital works reported to Council.	Low	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
2.3	Assumptions for financial forecasting not always understood	Additional costs incurred because assumption/uncertainties not accounted for i.e.: asset valuations, depreciation	Significant	Finance/managers need to be aware of assumptions and uncertainties behind financial forecasting information.	Moderate	
2.4	Unforeseen Additional Costs	Reputation of Council detrimentally affected	Significant	Ensuring AMPs and asset information up to date	Low	
2.5	Valuations not accurate for asset facilities	Fixed Asset Register not reconciling with existing assets causing incorrect valuations and affecting true financial requirements	Low	Asset register reviewed and updated	Low	
2.6	Development Contributions policy not implemented and/or do not have robust system for calculating contributions from developers	Adequate contributions for development not obtained costing the Council more than it should. Council faces legal action if contributions not in line with Section 199 of the LGA 2002.	Moderate	Development Contributions Policy implemented.	Low	Changes to the RMA are likely to impact financial contributions.
2.7	All potential sources of Government and other external funding (Third Party funding) not appreciated or obtained	Higher cost to Council than should have been	Moderate	Identify potential availability of third party funding and apply / take advantage of it.	Low	
2.8	Insurance cover needs review	Insurance not adequate and unnecessary costs incurred	High	Insurance cover reviewed to ensure adequate cover on annual basis.	Low	
3		Organisational Management				
3.1	Lack of Strategic Thinking/ Long-Term planning	Inefficient use of time and money.	Moderate	Implementation of AMP and undertake condition assessments.	Low	
3.2	Failure to act on identified risk - e.g. Water Safety Plans Plans	Possible legal action against Council if event occurs which Council knew about. Public Health adverse affected.	Moderate	WSP's have been carried out and recommendations being implemented	Low	Need to monitor outcomes of Havelock North Enquiry and proposed 3Waters review

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
3.3	Lifelines Plan not up to date or implemented	Large scale asset failure due to a naturally occurring event resulting in prolonged and substantial loss of service to District	Significant	Ensure Lifelines Plan up-to-date and recommendations implemented that includes having a high level of risk reduction, readiness, response and recovery during and following Civil Defence Emergency.	Significant	Update lifelines plan, engage with regional lifelines group
3.4	Legislative requirements not understood	Council faces legal action because legal requirements are not met	Moderate	Annual reviews	Low	
4		Human Resources				
4.2	Accountabilities not clear	Staff not accountable for actions allowing apparent problems to continue	Moderate	Up-to-date job descriptions. Staff performance monitored and dealt with if not performing.	Low	
4.3	Information in peoples heads or inappropriate recording of information	Organisational knowledge lost with staff leaving	Significant	Ensure staff document and appropriately file everything that is relevant. Ensure good management succession when existing staff leave.	Moderate	Formalise and update maintenance schedules and procedures, contingency and operation and maintenance manuals.
4.4	Insufficient staff or not appropriately skilled	Programmed work not completed due to insufficient staffing or skill levels, having negative impact on service levels and creating public health risk.	High	Skill levels are appropriate	Low	Formal training programme required that includes the use of activity management plans
4.5	Inadequate attention to staff succession	Organisational knowledge lost with staff leaving	High	Implement good staff/management succession plan and document procedures	Moderate	Implement good staff/management succession plan and document procedures
5		Health and Safety				
5.1	Do not have a good health and safety culture	High accident rate	Moderate	Council health and safety procedures implemented, appropriate training undertaken and manuals up-to-date.	Low	
5.2	Health and Safety Risks not identified or managed appropriately	Council faces legal claims for not meeting health and safety obligations	Moderate	Health and Safety manuals up to date and be effectively managed.	Low	
6		Asset Management				

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.1	Network modelling, condition assessments not undertaken.	Capital Works programme not optimised. Renewal works not completed due to lack of knowledge causing failure of assets. Future forecasting not accurate.	Significant	Undertake condition assessments of network and develop robust renewals programme based on sound knowledge.	Moderate	Development and maintenance of network model.
6.2	As-built information can be slow or incorrect coming from maintenance staff, Contractors, Consultants	Council faces legal action because of incorrect information provided (particularly with regard to LIMS)	Significant	Ensure As-builts up to-date and on record promptly. Ensure GIS capability	Low	
6.3	Criticality assessment not undertaken	Failure of critical assets resulting environmental damage or not meeting service levels	Significant	Undertake criticality assessment of assets and implement strategy for managing critical assets	Low	Incorporate criticality assessment of reticulated assets, undertake criticality assessment of plant assets and implement strategy for managing critical assets
6.4	Asset Risk Register and Asset Risk Plan not implemented	Council faces legal action because of asset failure or unnecessary costs incurred due to asset failure	Moderate	Maintain Asset Risk Register and Asset Risk Plan	Moderate	Improve risk plan to reduce residual risk
6.5	Asset management systems not up-to-date or completed	Failure to of utility systems because maintenance work not completed or management system not operational.	Significant	Asset Management System in place and updated as required	Moderate	Review AM system practices and processes
6.6	Performance monitoring of service levels not completed	Target Service levels not met resulting in customer dissatisfaction.	Moderate	Monitoring programme established and reviewed regularly.	Low	
6.7	Poor standards of constructed assets due to design and/or construction of infrastructure	Substandard physical works resulting in poor asset performance	Moderate	NZS4404 is updated regularly and Contractors & Consultants are familiar with this. Contractors/Consultants take responsibility for work done.	Low	Perhaps develop Sub-Division Code of Practice

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
6.8	Capital works delayed due to unforeseen circumstances	Programmed Capital Works not completed. Target Service Levels not met	Significant	Staff held accountable for delays & Staff trained in project management.	Moderate	Develop projects process that provides for project plans to be prepared for every approved renewal and capital development item.
6.9	Deferred renewal and maintenance not recorded or not done	Deferred maintenance not recorded causing unexpected, additional costs from asset failure	High	Record all deferred maintenance and renewals	Significant	Ensure all deferred renewals work recorded and management aware of impact on service levels if not funded.
6.10	Not all easements recorded or obtained	Council faces legal action or cannot carry out its activities because it does not have legal right to cross a property	Significant	Keep up-to-date record of easements. Establish clear policy for processes to be followed when easements are required.	Significant	Easement information needs to be improved with all identified easements provided with details of interested part. Legal situation to be clarified.
6.11	Insufficient documentation of escalating process decision making	Response to emergency situations reduced, higher expenditure	Significant	Employment of staff with the appropriate qualifications and skills	Low	
7		Resource Consents and Designations				
7.1	Review of Designations required	Council faces legal action because water assets have not been designated in the District plan	Moderate	Designations reviewed every three years to ensure these are appropriate.	Low	
7.2	Resource Consents	Council faces legal action because resource consents not applied for or conditions not met. Public dissatisfaction with environmental damage being caused.	Moderate	All consents that are required are obtained and consents monitored and reported on as required.	Low	
8		Asset Risks - Water				
8.1	Some treatment plants not capable of meeting drinking water standards	Dissatisfaction of customers from not meeting target water supply gradings due to non compliance with drinking water standards.	Significant	Upgrade of water supplies to meet standards underway with monitoring programme in place.	Low	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
8.2	Reticulation - Inaccurate and/or unknown location of main	Asset broken - inability to supply service	Low	Maintain good as-builts that are current via GIS	Low	Update locations as and when data becomes available
8.3	Insufficient reticulation capacity	Low pressure	Low	Maintain reticulation model with updates as required	Low	
8.4	Poor reticulation condition - reduced flows	LoS not achieved	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network	Low	
8.5	Insufficient reservoir storage	Fire fighting Code of practice not achieved	Moderate	Maintain reticulation model with updates as required	Low	
8.6	Insufficient Operational Pump Station Capacity	Low pressure/insufficient flow	Low	Good understanding of schemes capacities and on-going monitoring of usage	Low	
8.7	SCADA Failure	No alarm available, no water	Significant	Back up systems and procedures	Low	Backup system already implemented
8.8	Treatment Plant - Equipment/component Failure	Failure to meet consent conditions, reduced water pressure	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
8.9	Vandalism at facility	Reduced LoS	Significant	Warning via SCADA of any issue at facilities	Moderate	
8.10	Rising Mains - Insufficient Capacity	Insufficient water during peak usage periods	Significant	Good understanding of schemes capacities and on-going monitoring of usage	Moderate	
8.11	Operator Error	Failure to achieve consent conditions or facility failure	Significant	Employment of staff with the appropriate qualifications, skills and training	Moderate	Upskill staff when new training becomes available.
8.12	Power failure for extended periods	No water - reservoirs run dry	Significant	Standby generators made available in an event of extended power failure	Moderate	Review generator use if there are changes in level of expectation and or demand
8.13	Fire at facility	Control equipment failure with resulting lack of ability to supply demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
8.14	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
8.15	Snow and wind	Power failure - see power failure	Significant	Standby generators made available in an event of extended power failure	Moderate	Review generator use if there are changes in level of expectation and or demand
8.16	Flooding	Intakes flooded - poor water quality or inability to pump water	Significant	Management and operational staff have the skills to manage natural events	Moderate	
9		Asset Risks Wastewater				
9.1	Blocked mains occurring on frequent basis	Flooding of roads, health risk	Moderate	Cleaning (via water blasting) those areas most effected on an annual basis	Low	
9.2	Manholes - Insufficient maintenance	Failure leading to blockages - Flooding of roads, health risk	Low	Inspections of key points within network during high rainfall periods	Low	Document and schedule manhole inspections in AssetFinda
9.3	Reticulation - Inaccurate and/or unknown location of main	Asset broken - inability to supply service	Low	Maintain good as-builts that are current via GIS	Low	
9.4	Insufficient reticulation capacity	Surcharging in wet weather - health issues	Low	Maintain reticulation model with updates as required	Moderate	Address known surcharging.
9.5	Poor reticulation condition (blockages)	Failure leading to blockages - Flooding of roads, health risk	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network	Low	Log all blockages in AssetFinda
9.6	Insufficient grades or flow to achieve self cleansing velocities	Build up of fats - blockages - Flooding of roads, health risk, increased costs for cleaning	Low	Maintain reticulation model with updates as required. Good renewals programme that understands the issues with the network. Known areas within network that have issues are inspected on regular basis	Low	
9.7	Chemical damage of pipes	Decreased asset life - premature replacement	Moderate	Inspections of network CCTV, cleaning etc	Moderate	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
9.8	Pump Stations - Equipment or component Failure	Wastewater discharges to the environment having an impact on environmental, cultural and health issues. Customer complaints	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
9.9	Pump Stations - Insufficient Wet Weather Storage Capacity	Insufficient storage or capacity resulting in wastewater discharges to the environment having an impact on environmental and cultural issues	Moderate	Good understanding of schemes capacities and on-going monitoring of flows	Moderate	
9.10	Pump Stations - Corrosion and sulphur attack of electrical/control equipment	Surcharging in wet weather - health issues	Low	Monitoring of facilities on a regular basis	Low	
9.11	Insufficient Operational Pump Station Capacity	Surcharging in wet weather - health issues	Low	Good understanding of schemes capacities and on-going monitoring of flows	Low	
9.12	SCADA Failure	No alarm available	Significant	Back up systems and procedures	Low	
9.13	Treatment Plant - Equipment/component Failure	Failure to meet consent conditions.	Moderate	Early warning via SCADA & site monitoring by staff	Moderate	
9.14	Ponds - Overloading of Components Treatment Capacity	Failure to comply with resource consents and Customer complaints.	Moderate	Good understanding of treatment capacities and on-going testing and monitoring of flows	Moderate	
9.15	Odours at treatment plant, or reticulation		Moderate	Good understanding of treatment capacities	Moderate	
9.16	Vandalism at facility		Moderate	Warning via SCADA of any issue at facilities	Moderate	
9.17	Overloading of Components Treatment Capacity	Discharge of Biosolids to environment. Failure to comply with resource consents. Customer complaints	Moderate	Good understanding of treatment capacities and on-going testing and monitoring of flows	Moderate	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
9.18	Rising Mains - Insufficient Capacity	Wastewater discharged to the environment at pump stations having an impact on environmental and cultural issues.	Moderate	Good understanding of scheme capacities and on-going monitoring of flows	Moderate	
9.19	Operator Error	Failure to achieve consent conditions or facility failure	Moderate	Employment of staff with the appropriate qualifications and skills	Moderate	
9.20	Power failure	Treatment capacity diminished	Low	Standby generators will be made available in an event of power failure if required	Low	Review generator use if there are changes in level of expectation and or demand
9.21	Fire at facility	Control equipment failure with resulting lack of ability to continue service	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
9.22	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
9.23	Snow and wind	Power failure - see power failure	Low	Standby generators will be made available in an event of power failure if required	Moderate	Review generator use if there are changes in level of expectation and or demand
10		Asset Risks Stormwater				
10.1	Mains - Blocked mains prior to storm events	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.2	Manholes - Insufficient maintenance	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.3	Outlets, culverts, Blocked & erosion with insufficient cleaning	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.4	insufficient cleaning	Flooding of houses and properties	Moderate	Council staff have good maintenance and monitoring provisions	Moderate	
10.5	Insufficient overland flow paths	Flooding of houses and properties	Significant	Modelling of system will ascertain flow path requirements	Moderate	Complete modelling area to reduce risk and identify overland flow paths to protect.

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
10.6	Overland Flow Paths located on private property - no maintenance (overgrown/built upon)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.7	Overland Flow Paths Located on Councils property or roads - no maintenance (overgrown etc.)	Flooding of houses and properties	Significant	Council staff have good maintenance and monitoring provisions	Moderate	
10.8	Power failure	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
10.9	Fire	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
10.10	Movement failure caused by, Earthquake, landslide or settlement.	Inability to supply all or majority of demand	Low	Management and operational staff have the skills to manage natural events	Low	
10.11	Snow and wind	Possible flooding	Moderate	Management and operational staff have the skills to manage natural events	Moderate	
10.12	Hail	Possible flooding	Moderate	Management and operational staff have the skills to manage natural events	Moderate	Utilise good design parameters on pipe entry structures.
11		Asset Risks - Solid Wastes				
11.1	Landfills - Non compliance of consents	Attention by Ecan	Low	Defined post closure procedures	Low	
11.2	Landfills - Erosion of closed land fills by streams or rivers	exposure of old wastes to the environment	Moderate	Watching brief	Moderate	

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No.	Weakness or Vulnerability	Risk	Gross Risk	Mitigation Strategies	Residual Risk	Improvement Required
11.3	RRP (resource Recovery Park): Power failure	Nil	Low	Management and operational staff have the skills to manage natural events	Low	
11.4	Fire	Emergency closure	Low	Redirect to temporary site or TDC	Low	
11.5	RRP - Movement failure caused by, Earthquake, landslide or settlement.	Inability to carry out service	Low	Management and operational staff have the skills to manage natural events	Low	
11.6	Snow and wind	Disruption of collection cycle	Low	Management and operational staff have the skills to manage natural events	Low	
11.7	RRP - Major Flood	Short term closure	Low	Redirect to temporary site or TDC	Low	
11.8	RRP - Chemical spill	Short term closure	Moderate	Redirect to temporary site or TDC	Low	
11.9	RRP - Dust & noise nuisance	Reputation of Council detrimentally affected	Low	Good practices and processes carried out on site	Low	
11.10	RRP - Loss of market for recyclables	Build up of recyclables	Significant	Different Markets for each recyclable	Low	Contractor wears this risk
11.11	Bin/bag collection - spillage	Litter over wide area	Moderate	Contract processes	Low	
11.12	Bin/bag collection -Loss of contractor providing service	Collection disruption	Low	Management and operational staff have the skills to manage contractual issues and resolution	Low	

Appendix E:
References

Appendix E

References

The following details reports and other significant reference areas associated with the four utilities

#	Title	Issue Date	Sector	Author /Consultant
1	Water Safety Plans		Water	Paul Roberts Water & Waste Manager * = Submitted for approval
	- Cannington-Motukaika	Dec-17 *		
	- Hook Waituna	Oct-15		
	- Lower Waihao	Nov-15		
	- Otaio-Makikihi	May-15		
	- Waihaorunga	Dec-17 *		
	- Waikakahi	Dec-17 *		
	- Waimate Urban	Feb-14		
2	Waimate Stormwater Investigation – Study Report	May-09	Stormwater	Opus
3	Queen Street Stormwater Issues and Options Report	Jul-17	Stormwater	Opus
4	Cast Iron Pipe Assessments	Mar-11	Water	Opus
5	AC Pipe Evaluation Reports	On-going	Water	Opus
6	Pressure Management Study	Jul-09	Waimate Water	Opus
7	Capital Assistance Programme Funding – Otaio-Makikihi	Complete	Water	Dan Mitchell Asset Group Manager
8	Capital Assistance Programme Funding – Lower Waihao	On-going	Water	P Roberts Water & Waste Manager
9	Capital Assistance Programme Funding – Hook Waituna	On-going	Water	P Roberts Water & Waste Manager
10	2020 Valuation	Sep-17	Three Waters	In-house / BECA
11	Disaster Resilience Summary Report	2006	All	COUNCIL Asset Management Group
12	Stormwater AMP 2014	2015	Stormwater	Opus
13	Solid Waste AMP 2014	2015	Solid Waste	Opus
14	Water AMP 2014	2015	Water	Opus
15	Parks and Recreation AMP 2014	2015	Parks and Reserves	Opus
16	Wastewater AMP 2014	2015	Wastewater	Opus
17	Leak Detection programme	Jul-05	Water	Detection Services
18	Waimate Water Supply Leakage Detection and Analysis Study	Jul-09	Water	Opus

Appendix E:

References

#	Title	Issue Date	Sector	Author /Consultant
19	Council's Assessment of Water & Sanitary Services	Jun-11	All	M McTigue Water & Waste Manager
20	Leak Detection Programme	Oct-98	Water	Opus
21	Issues & Options for Universal Water Metering	Oct-98	Water	Opus
22	Waimate AMP Compliance Status	Feb-11	All	Waugh Infrastructure Management Ltd