tasman district council | Te Kaunihera o te tai o Aorere

Stormwater Activity Management Plan 2021-2051

Quality Assurance Statement		
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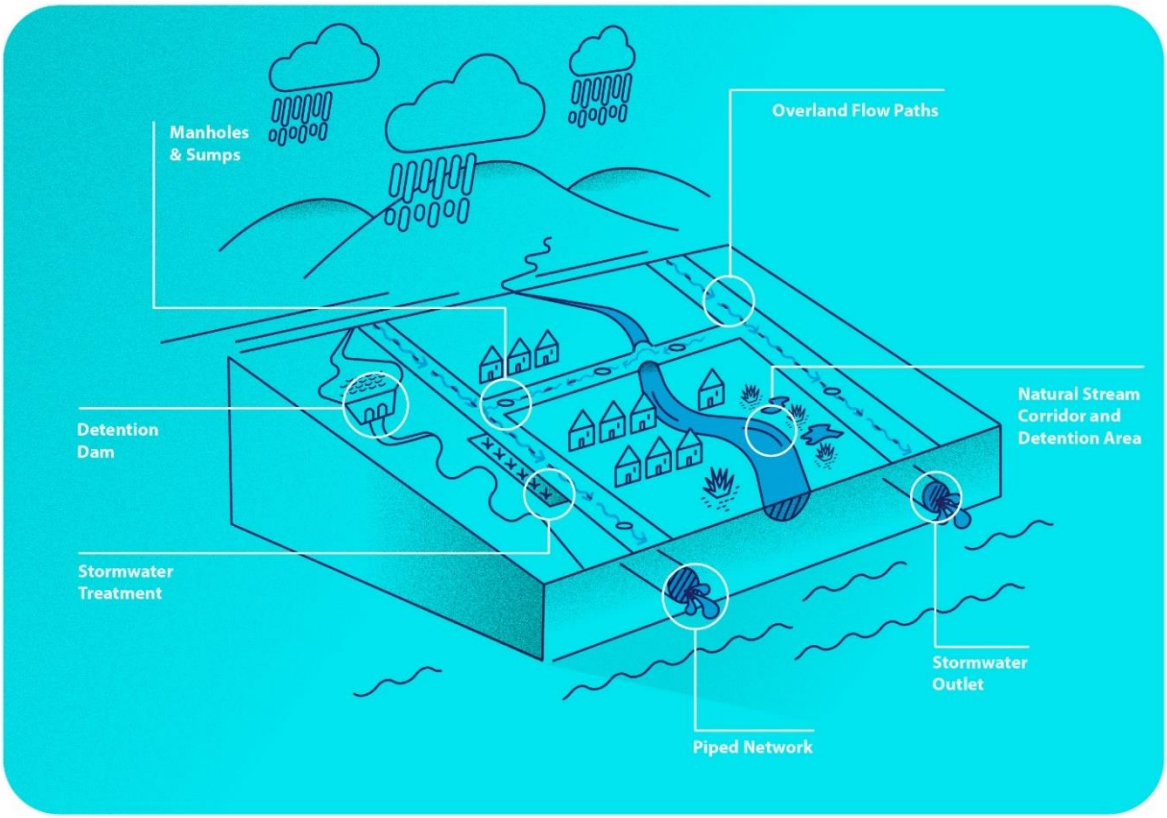
1 Executive Summary

1.1 What We Do

The stormwater activity encompasses the provision of stormwater collection, reticulation, and discharge systems in Tasman District. The assets used to provide this service include drainage channels, piped reticulation networks, tide gates, detention or ponding areas, inlet structures, discharge structures and quality treatment assets.

The stormwater sumps and road culvert assets are generally owned and managed by the Council's transportation activity or by the Waka Kotahi / New Zealand Transport Agency (NZTA), depending upon whether they are located on a local road or state highway. This stormwater activity does not include land drains or river systems. They are covered under the Council's Rivers activity. Nor does it cover stormwater systems in private ownership.



The Council manages its stormwater activities primarily within 15 Urban Drainage Areas (UDAs). Systems that are outside the UDA's include small communities with stormwater systems that primarily collect and convey road run-off to suitable discharge points.

1.2 Why We Do It

Activity Goal
We aim to provide cost-effective and sustainable stormwater systems that reduce flooding and meet environmental standards.

The Council undertakes the stormwater activity to minimise the risk of flooding of buildings and property from surface runoff and small urban streams. The Council enables the safe and efficient conveyance and disposal of stormwater from the urban drainage areas, this improves the economic and social well-being of the District by protecting people and property from surface flooding.

The Council has a duty of care to ensure that the effects of any runoff from its own properties is remedied or mitigated. Because most of its property is mainly in the form of impermeable roads in developed areas, this generally means that some level of reticulation system is constructed. The presence of this system means it also becomes the logical network for dealing with private stormwater disposal.

1.3 Our Levels of Service

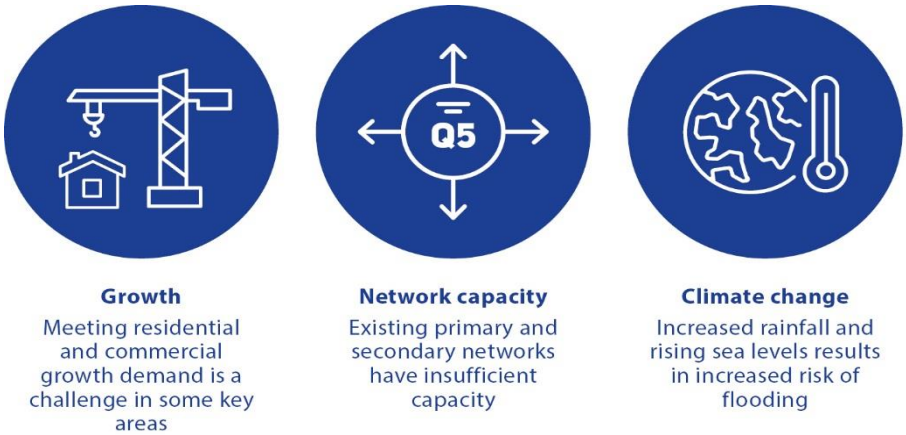
The Council aims to provide the following levels of service for the Stormwater activity:

Stormwater Flooding	Strategic Planning	Customer Satisfaction	Environment
We have measures in place to respond to and reduce flood damage from stormwater to property and risk to the community	We have strategies in place to manage our stormwater systems efficiently to ensure that our community receives best value for money	Our stormwater activities are managed at a level which satisfies the community	Our stormwater systems do not adversely affect or degrade the receiving environment

The Council has planned investments to improve the capacity of its primary and secondary networks as well as stormwater treatment to protect the receiving environment. In the short term, the Council plans to finalise the development of stormwater models and catchment management plans for all Urban Drainage Areas. Through these strategic plans the Council will develop a better understanding of the current and future performance of its networks against the agreed levels of service, identify gaps in performance, and programme works to address these gaps.

1.4 Key Issues

The most important issues relating to the stormwater activity are described below.



1.5 Responding to the Issues

1.5.1 Catchment Management Planning

Catchment Management Plans (CMPs) will assist the Council in identifying integrated solutions for the key issues by taking a holistic approach on a catchment wide basis. CMPs will be developed for each UDA, providing an overview of the current state of the network, objectives, issues and integrated solutions.

1.5.2 Growth

A number of projects are planned that are driven fully or partially by the need to cater for future growth, such as Borck Creek and Poutama Drain in Richmond and Motueka West development area. In order to undertake some of the stormwater capital works planned over the next 10 years, the Council will need to acquire land to enable the works to proceed.

To address the effects of stormwater discharges on our receiving environment, developers are required to implement water sensitive design principles within their developments, based on the following principles:

- Protection and enhancing the values of our natural ecosystems.
- Addressing the effects from stormwater as close to source as possible.
- Mimicking natural systems and hydrological processes for stormwater management.

1.5.2.1 Network Capacity

Many of the Council's stormwater pipes and drains are too small to cope with the intense rainfall events experienced over the past few years. It is not affordable to improve all the existing pipes and drains, at least not in the short to medium term. A better option is to make some investment in the primary network (the pipes) alongside work to protect and improve secondary flowpaths, so that when the intense rainfall events happen, the stormwater travels overland in areas where it does not damage property.

1.5.2.2 Climate Change

Rising sea levels and increased rainfall will put further strain on the already limited capacity of our networks. Our coastal communities in particular will experience increased risk of flooding, as high tides affect stormwater discharges. Increased rainfall intensities, rising sea level and storm surges will make this issue increasingly more difficult to deal with in future. The expected impact of climate change on flooding will be further investigated with the help of innovative flood modelling techniques. We will develop flood strategies to determine appropriate responses to these increased flood risks.

In some areas, especially low lying areas close to the coast, we have to accept that affordable and sustainable solutions may not be available. Our flood strategies will focus on avoiding damage to properties and hazard to life, as well as acceptance and adaption to nuisance flooding.

1.6 Operational Programme

The operational programme covers all day to day activities that are required to manage the stormwater activity. The Council has planned to spend approximately $42 million (inflated) over the next 30 years to operate and maintain its stormwater systems efficiently.

The major activities in this programme and the forecast inflated budgets over 30 years are summarised below.

- Operation and Maintenance (routine and reactive) $22m
- Asset costs (rates, electricity) $12m
- Overland flow path monitoring and floor level surveys $2.7m
- Consent monitoring $3.3m
- Catchment management planning and stormwater modelling $2.7m

1.7 Capital Programme

The Council plans to invest approximately $204 million (inflated) over the next 30 years on stormwater capital improvements. Below is a list of the key projects and investments that are planned: Values are inflated.

TIMELINE OF KEY INFRASTRUCTURE PROJECTS – STORMWATER

This timeline shows some of the major capital works planned for the next 30 years.

1.8 Key Changes

There are no significant changes to how the stormwater activity will be managed since the previous Long Term Plan 2018 – 2028. The Council will continue to focus on the development of Catchment Management Plans to guide how we manage stormwater in our urban drainage areas.

1.9 Key Risks and Assumptions

The Council has made a number of assumptions in preparing the Activity Management Plan. The most significant assumptions and uncertainties for stormwater infrastructure are:

- The Council has planned to continue developing and analysing stormwater models to gain a better understanding of the flood risks in the District. Stormwater models aim to simulate potential real-life flood scenarios. The model predictions provide an indication as to what could happen, not what will happen. The Council considers model predications together with local knowledge and monitoring data to select most likely scenarios. If the conclusions are incorrect, it may trigger the need to reconsider the scope of projects included in its stormwater programme.
- Extreme rainfall events and associated flood impacts can happen at any time and their occurrence may differ from what is expected. The Council develop stormwater management strategies, plans, and designs for events that have a 1% - 10% probability of occurring in any one year. When large events happen more frequently, this may trigger higher expectations from our community to provide a higher level of service. This requires more funding than has been budgeted for.
- We have prepared the stormwater programme based on information that was available at the time. Over the next few years, we plan to do more modelling and prepare catchment management plans. This will provide new and up-to-date information. This information will likely highlight the need for additional intervention, and we may need to plan further improvements and additional funding.
- Timing of growth-related projects is based on current assumptions within our growth model. The actual rate of development in our District will determine when projects and upgrades are required to meet demand. The uncertainty around timing of growth-related projects is a risk especially for development in Richmond West and South, Motueka West, and Māpua.

2 Introduction

The purpose of this activity management plan is to outline and to summarise in one place, the Council's strategic management and long-term approach for the provision and maintenance of its stormwater activity.

2.1 Rationale for Council Involvement

The provision of stormwater drainage to urban areas is something that the Council has always provided. The service provides many public benefits and it is considered necessary and beneficial to the community that the Council undertakes the planning, implementation and maintenance of the stormwater services within the urban areas.

The Council has no statutory obligation to provide for private stormwater runoff, just as it has no obligation to provide protection against wind or other natural events. This is clear in the Local Government Act (LGA) 2002 where it states that councils do not have to take responsibility for stormwater systems which service only private properties.

The Council does have a duty of care to ensure that any runoff from its own properties is remedied or mitigated. Because most of its property is mainly in the form of impermeable roads in developed areas, this generally means that some level of reticulation system is constructed. The presence of this system then becomes the logical network for private stormwater disposal.

2.2 Description of Assets and Services

2.2.1 Asset Overview

Table 1 provides an overview of the key stormwater assets that are owned and operated by the Council throughout the entire District.

Table 1: Assets Overview

Stormwater		Replacement Value	Depreciated Value (April 2017)
	14,900 property connections	$13.0M	$ 9. 3M
	204 km of piped stormwater network	$130.9M	$100.2M

Stormwater		Replacement Value	Depreciated Value (April 2017)
	30 km of maintained open drains and streams	$5.5M	$5.4M
	2472 manholes	$20.7 M	$16.7M
	742 sumps (an additional 2428 sumps and catchpits are located in the road reserves and managed through the transportation activity)	$2.8M	$2.1M
	10 detention dams	$1.3M	$0.9M
	Other stormwater assets (i.e. culverts, inlets and outlets)	$17.9M	$13.9M
TOTAL VALUE OF STORMWATER ASSETS AS AT 1 APRIL 2017	$192.1MM	$148.5M	

2.2.2 System overview

There are 15 stormwater Urban Drainage Areas (UDA) within the Tasman District and the residual non-urban area. A system overview describing the key aspects of each UDA is provided in Table 2.

Table 2: Urban Drainage Area System Overview

Urban Drainage Area	System Overview
Richmond	Richmond UDA is the most developed and densely populated UDA in the Tasman District. Much of the stormwater flows originate from the Richmond foothills, which slope up from the developed areas towards an elevation of approximately 600m. Significant areas of the foothills are forested and subject to periodic harvesting. There are a number of gullies, which route through stormwater flows into the urban area. The UDA has three major drainage catchments: • Borck Creek • Jimmy Lee Creek (CBD) draining into Beach Road Drain • Reservoir Creek. Much of the stormwater system within the developed area is piped. The major piped stormwater systems convey stormwater along Oxford Street, Queen Street, Salisbury Road and Gladstone Road. Much of the stormwater flows in a northerly direction from its source of origin into the town centre. In many places the existing piped stormwater system is under capacity, which is a result of the continuous development of Richmond originating from the town centre outwards towards the foothills. In some places, detention dams have been constructed to 'control' stormwater flows in strategic places to reduce peak flows and the severity/likelihood of flooding risk further downstream.
Brightwater	Brightwater is positioned between the Wai-iti and Wairoa Rivers, three kilometres upstream from their confluence. It is situated on a very flat floodplain with a number of old, shallow river and stream channels crossing it. Brightwater's urban stormwater network is positioned in the centre of these surrounding rivers and stream catchments. The Mt Heslington Stream passes through the Brightwater School then turns eastward to join the Wairoa River. The main urban areas of Brightwater discharge into piped systems either into one of the three streams or into the old river channels that lead into the Wairoa or Wai-iti Rivers.
Wakefield	Wakefield is a mixture of rural and urban development and lies between two waterways; the Wai-iti River and the Pitfure Stream. All the drainage systems in Wakefield eventually drain to one of these rivers. Most of the stormwater system was built during the late 1980s.
Murchison	The primary drainage system in Murchison consists of a network of open drains and creeks that drain to the Matakitaki River just south of Murchison. The area of piped stormwater systems is restricted to the central part of town and comprises of a number of small piped systems that collect highway drainage, most discharging into Ned's Creek which has flooded in recent years. Within the UDA, the majority of stormwater from residential dwellings is to ground soakage.
St Arnaud	St Arnaud is surrounded by the Nelson Lakes National Park and located on the shores of Lake Rotoiti. The steep, glacial terrain surrounding St Arnaud has high run off flows. While the majority of drainage within the built up area consists of small streams and roadside open channels, the more recent subdivisions have been developed with piped stormwater systems.

Urban Drainage Area	System Overview
Tapawera	Tapawera was developed by NZ Forest Service as a forestry headquarters village. There are a limited number of piped stormwater systems within the urban drainage area that discharge into a series of open channels which flow into the Motueka River. A cut-off drain was constructed at the bottom of hills on the eastside of town to divert flows from this upper catchment. A stream passes through the UDA, crossing Main Road Tapawera and Tadmor Valley Road, before leaving the UDA and discharging into the Motueka River. This is the keystone of the Tapawera stormwater system which collects stormwater flows from open drain and the piped stormwater systems.
Motueka	Motueka is the second largest settlement in the District but is less densely developed than Richmond due to the size of the properties, mostly quarter-acre sections. Stormwater drainage in Motueka is characterised by its low-lying nature, flat terrain, and alluvial gravels with high water table, proximity to the Motueka River and Tasman Bay. A considerable amount of stormwater drainage is by soakage to the underlying soils and gravels. The UDA drains to three main areas: • Motueka River in the north west via Staples Drain • Enclosed tidal lagoon through the Lammas Drains in the north east • Enclosed tidal lagoon in the south, through the Thorp and Woodlands Drains. The tidal lagoons are protected by tidal gates on Wharf Road and Old Wharf Road and are controlled via the Council's telemetry system. The dominant piped drainage direction is from west to east. The bulk of the central area drains to either the Thorp or Woodlands Drains which run north to south between High Street and Thorp Street. The remainder of Motueka is drained via small piped stormwater systems discharging directly to sea or adjacent open channels. Recent developments between Thorp Street and Motueka Quay have included the construction of detention ponds to enable piped coastal outlets to operate against high tidal levels. Other recent developments have seen the use of soak pits as the primary stormwater discharge system, returning storm flows to ground.
Mapua/Ruby Bay	Ruby Bay area is a coastal strip with relatively recent developed land with a piped network and stormwater detention systems. Mapua is a mixture of urban and semi-urban development with the majority of stormwater from earlier developments going to soakage. Only the more recent developments have included piped stormwater systems, which mostly discharge into open drains and into the Mapua estuary. A tidal gate at the end of the Aranui Road stormwater pipe protects the reticulated piped system from high tide backing up into the system. The catchment upstream of the Coastal Highway and Stafford Drive drains out through the Seaton Valley Stream. This passes through a culvert under Stafford Drive and discharges into the Toru Street inner estuary further downstream. The area draining into the Seaton Valley Stream accounts for 65% of the Mapua/Ruby Bay drainage area.
Tasman	Tasman is a small settlement with approximately 150 people, situated close to the south edge of the Moutere Inlet. Surface flows drain from south to north, discharging through the Marriages Stream, into the Moutere Inlet. The stream drains much of the catchment area and picks up open drains from rural land use. The stormwater system in the settlement is limited to some small piped systems although it is predominantly open drained.

Urban Drainage Area	System Overview
Kaiteriteri	The Kaiteriteri UDA contains mostly residential and holiday type home development with two significant motor camps. Discharges from either small piped systems or drains are directed towards the beach or into the Kaiteriteri Inlet. Much of the catchment above Kaiteriteri is forested and present at risk of increased runoff flows from logging activities. The Separation Point Granites that locally occur erode easily when exposed and present a risk of creating debris flows.
Takaka	Takaka is situated in the flood plain of the Takaka River. Stormwater runoff from the township on the Takaka River side of Commercial Street is piped to the Te Kakau Stream. The areas around Motupipi Street and Abel Tasman Drive drain into the Upper Motupipi River. A large number of residential properties on soakage into the underlying river gravels and are affected by fluctuating groundwater levels. Lake Killarney is located within the centre of Takaka and the water level is controlled by surrounding groundwater levels.
Pohara	Pohara consists of two parts, the main Pohara settlement area and the Pohara Valley area. Both areas have been subject to significant recent development. A series of piped stormwater systems have been installed and extended where further development has occurred. Road drainage is mostly open drains in both parts of the UDA and combined with piped stormwater systems. A number of streams drain the large hill catchments above Pohara and are known to cause flooding. The Separation Point Granites that locally occur erode easily when exposed and present a risk of creating debris flows.
Ligar Bay and Tata Beach	Ligar Bay and Tata Beach are similar settlements, separated by a short distance of coastline. Both are popular holiday retreats and have grown considerably in recent years. The catchments are both covered by forestry and native bush and are steep with numerous gullies, rising to approximately 300m on the ridgeline. Most properties are self-draining into open road drains with a small number of piped systems in place. The main stormwater flows come from the catchment behind the UDA. The Separation Point Granites that locally occur erode easily when exposed and present a risk of creating debris flows.
Collingwood	Collingwood consists of a north facing high ridge bounded by the Aorere River and tidal inlet. This steep sided ridge discharges stormwater to both the east and west sides. Most of the discharge off the high ground is through small road drains and minor open ditches. A small peninsula accommodates the commercial area of Collingwood and the public motor camp on the northern tip. This area is low lying and several small pipe systems discharge to the east and west sides of the peninsula. The main open drain passes down Gibbs Road before discharging to sea. A number of piped systems discharge into this drain. The remainder of the catchment is mostly served by piped stormwater systems.
Patons Rock	The Patons Rock UDA consists of small independent stormwater pipe systems which drain Patons Rock Road and are located at regular intervals along the length of the beach settlement. There are four beach outlets, and one new pipe system and outlet (2012) which drains to an open stream. Two of the beach outlet pipes have special fittings which help to prevent blockages from sand build-up.

3 Strategic Direction

Strategic direction provides overall guidance to the Council and involves specifying the organisation's objectives, developing policies and plans designed to achieve these objectives, and then allocating resources to implement the plans.

3.1 Our Goal

Activity Goal
We aim to provide cost-effective and sustainable stormwater systems that reduce flooding and meet environmental standards

3.2 Contribution to Community Outcomes

The Council operates, maintains and improves the stormwater infrastructure assets on behalf of its ratepayers. The Council undertakes the activity to meet the level of service that is required to enhance community well-being by reducing the risk of flooding of buildings and property from surface runoff. The stormwater activity contributes to the community outcomes as detailed below.

Table 3: Community Outcomes

Community Outcomes	Does Our Activity Contribute to the Community Outcome	Discussion
Our unique natural environment is healthy, protected and sustainably managed.	Yes	We manage stormwater so that the impact of the discharges does not adversely affect the health and quality of the receiving environment.
Our urban and rural environments are people-friendly, well planned, accessible and sustainably managed.	Yes	We aim to convey stormwater without putting the public at risk or damaging property, businesses or essential infrastructure. New developments take a water sensitive design approach to integrate multiple values such as ecology, amenity and cultural aspects.
Our infrastructure is efficient, cost effective and meets current and future needs.	Yes	Stormwater is an essential service that is provided to properties within urban drainage areas in appropriate size and capacity. We aim to efficiently manage the provision of stormwater infrastructure so that it provides best value for ratepayer's money.
Our communities are healthy, safe, inclusive and resilient.	Yes	We aim to safely transfer stormwater runoff through urban areas to minimise harm and property damage.

Community Outcomes	Does Our Activity Contribute to the Community Outcome	Discussion
Our communities have opportunities to celebrate and explore their heritage, identity and creativity.	Yes	We protect natural waterways that have high cultural, recreational, and biodiversity interests.
Our communities have access to a range of social, cultural, educational and recreational facilities and activities.	Yes	We take opportunities to provide multi-purpose facilities where possible. Often our stormwater corridors will incorporate cycle paths, footpaths and spaces for recreation.
Our Council provides leadership and fosters partnerships, a regional perspective, and community engagement.	Yes	We engage with mana whenua iwi and other community groups with regards to enhancing our natural waterways and educational programmes.
Our region is supported by an innovative and sustainable economy.	Yes	Stormwater supports the economy by enabling homes and businesses to exist with a low exposure to flood risk and damage. We also allow for climate change in our designs to provide adequately for the future.

3.3 Infrastructure Strategy

The Council's Infrastructure Strategy covers the provision of the Council's water supply, stormwater, wastewater, rivers and flood control, and transportation services. The purpose of the Strategy is to identify the significant infrastructure issues for Tasman over the next 30 years, and to identify the principal options for managing those issues and the implications of those options.

The key infrastructure priorities included in the Strategy are:

- Providing infrastructure services that meet the needs of our changing population
- Planning, developing and maintaining resilient communities
- Providing safe and secure infrastructure and services
- Prudent management of our existing assets and environment

The Council's Infrastructure Strategy and infrastructure activity management plans are directly linked. Information flows between the Strategy and the plans in both directions. Table 4 describes the structure of the Strategy and how it connects to the activity management plans.

Table 4: Links between Strategy and AMPs

Section	Section Overview	Connection to AMP
Executive Summary	A short consolidated summary of the current situation, investment priorities, key actions and total level of investment.	This section is intended to provide an outline of the Strategy to the reader. It does not have a direct connection to individual activity management plans.
Strategic Direction	Examines the context and issues surrounding the provision of infrastructure services. Sets the direction for infrastructure management and investment priorities. Sets out how the Council will: respond to growth or decline in demand; manage the renewal or replacement of existing assets over their lifetime; manage planned increases or decreases in levels of service will be allowed for, public health and environmental outcomes will be maintained or improved; and Natural hazard risks will be addressed in terms of infrastructure resilience and financial planning.	This section provides direction to the Council staff who prepare activity management plans for the relevant infrastructure activities. Each activity management plan is expected to consider the key priorities and identify actions that are in alignment with those priorities. It also provides a consolidated summary of this information from within the activity management plans.
Activity Summaries	For each activity: Provides an overview of the assets and their condition and performance; Outlines the levels of service; Considers the options to address key issues/priorities and identifies the preferred option; Summarises investment in the activity for the next 10 and 30 years; Lists the key assumptions and uncertainties.	This section provides a concise summary of the activity management plan for the topics listed in this table.

3.4 Financial Strategy

The Financial Strategy outlines the Council's financial vision for the next 10 to 20 years and the impacts on rates, debt, levels of service and investments. It guides the Council's future funding decisions and, along with the Infrastructure Strategy, informs the capital and operational spending for the Long Term Plan 2021-2031. The Financial Strategy outlines the Council's financial vision for the next 10 to 20 years and the impacts on rates, debt, levels of service and investments. It guides the Council's future funding decisions and, along with the Infrastructure Strategy, informs the capital and operational spending for the Long Term Plan 2021-2031.

Infrastructure expenditure forms a large proportion of the Council's spending being 38% of operational expenditure and 79% of capital expenditure over the next 10 years. Because of this, the Infrastructure Strategy and Financial Strategy are closely linked to ensure the right balance is struck between providing the agreed levels of service within the agreed financial limits.

Over the next 10 years, forecast rate income increases and debt levels are projected to be very near the Council's limits. The Council has had to work hard to prioritise and plan a work programme which addresses the most pressing key issues while staying within these limits. This means there is very little scope to add further work to the programme within the next five years.

3.5 Tasman Climate Action Plan

In 2019, the Council adopted the 'Tasman Climate Action Plan' (Action Plan). The Action Plan is the Council's initial response to the urgent need to take action on climate change, to build climate resilience and reduce greenhouse gas emissions.

The Action Plan sets out goals, targets and actions relating to three key themes:

- Mitigation – how we can reduce greenhouse gas emissions from the Council's activities.
- Adaptation – ways we can respond to our changing environment, including positive opportunities.
- Leadership – how we can lead by example, advocate and encourage others to take action.

The following goals are the long-term aspirations of the Council. They represent the first step towards a cohesive package of activities that address climate change issues.

1. The Council contributes to New Zealand's efforts to reduce greenhouse gas emissions (including net carbonemissions).
2. Tasman District becomes more resilient to the impacts of climate change.
3. The Tasman Community is informed of climate change actions and options for response.
4. The Council shows clear leadership on climate change issues.

Goals will be measured against targets and achieved by implementing the actions set out in the Action Plan. Targets and actions of direct relevance to this activity are listed below. Several other actions are also relevant (e.g. those relating to information provision and leadership goals) - see the online version of the Action Plan for details: www.tasman.govt.nz/climate-change.

Table 5: Relevant targets and actions from the Tasman Climate Action Plan (2019)

Goal	Targets	Actions (short-term) 2019 - 2021	Actions (medium-term) 2021 - 2024	Actions (long-term) 2024+
1. The Council contributes to New Zealand's efforts to reduce greenhouse gas emissions (including net carbon emissions).	1(a) The Council's emissions* of methane reduce by 10% below 2017 levels by 2030 and 47% by 2050 or earlier. The Council's net emissions* of all other greenhouse gases reduce to zero by 2050. *from the Council's own activities. Targets are based on Zero Carbon Bill. If necessary, revise targets once enacted.	(vi) Continue to work with communities to plant trees (e.g. riparian margin restoration, habitat enhancement, land stability, planting in Council parks and reserves and within some roading corridors, expand the Council nursery production), to sequester carbon.	Continue to work with communities to plant trees, to increase carbon sequestration.	Continue to work with communities to plant trees, to increase carbon sequestration.
2. Tasman District becomes more resilient to the impacts of climate change.	2(a) Progressively improve network infrastructure resilience to climate change risks across all the Council networks.	(ii) Review the Council's policy on emergency funds, to ensure it anticipates repair/replacement and relocation costs that factor in climate change risks ("build back better"). Investigate the potential funding requirements of implementing this policy.	The Long Term Plan 2021 - 2031 incorporates 'Emergency funds' that anticipate repair/replacement/relocation costs that factor in climate change risks ("build back better").	Funding maintained or increased as risks increase.

Goal	Targets	Actions (short-term) 2019 - 2021	Actions (medium-term) 2021 - 2024	Actions (long-term) 2024+
	2(c) Ecological adaptation to climate change is taken into account when making decisions.	(ii) Investigate options for how the Council can be more agile and responsive to increased biosecurity risks (including shipping biosecurity risks) and pest management requirements, in response to the rapidly changing climate.	Implement new options for biosecurity and pest management.	Implement new options for biosecurity and pest management.

3.6 Key Issues

The Council has identified key issues specific to the stormwater activity, which are discussed in Table 6 below. Each of these issues relate to the Council's infrastructure priorities. Key issues are interrelated and often, investing in solutions will likely to help address other issues to varying degrees.

Table 6: Key Issues

Key Issue	Discussion
Growth Meeting residential and commercial growth demand is a challenge in some key areas.	Growth is occurring faster than anticipated in the District and our existing networks have insufficient capacity to deal with increased stormwater runoff, restricting future residential and commercial development. Careful planning is required for our future growth areas in order to manage flood risks now and in the future. At the same time, the environmental effects from stormwater discharges need to be managed to avoid further degradation of our natural environment. Environmental effects stem from the fact that urban land uses such as roading, parking, industrial zones and certain building materials generate contaminants that are picked up by stormwater runoff and accumulate in fresh water and marine water receiving environments where they have an adverse effect on ecosystems. The main contaminants of concern are sediments, heavy metals and hydrocarbons. Similarly, construction sites and associated earthworks have the potential to generate high sediment loads which can be discharged into waterways and physically disturb the beds of the waterways and effect aquatic habitat. Other effects of urbanisation include the loss of aquatic habitats due to piping of streams, stream bank erosion and reduced base flows as a result of reduce groundwater recharge. To address the effects of stormwater discharges on our receiving environment The Council will adopt a water sensitive design approach that is based on the following principles: Protection and enhancing the values of our natural ecosystems Addressing the effects from stormwater as close to source as possible Mimicking natural systems and hydrological processes for stormwater management. Developers will be required to follow this approach in accordance with the Land Development Manual. The approach includes requirement of stormwater treatment and protecting stream health through infiltration and detention requirements. A number of projects are planned that are driven fully or partially by the need to cater for future growth, primarily in Richmond West and South as well as the Motueka West development area. In order to enable growth and undertake some of the stormwater capital works that are required to increase runoff capacity, the Council will need to purchase large amounts of land. The Council applies development contributions to growth projects so that developers meet the cost of the growth component of projects, rather than ratepayers.

Key Issue	Discussion
Climate Change Increased rainfall and rising sea levels results in increased risk of flooding	NIWA has predicted the effects of climate change in the Tasman District for the years 2040 and 2090 (*Climate Change and Variability Tasman District*, NIWA, August 2015). The anticipated effects from climate change in Tasman District that affect the stormwater activity include: Extreme rainfall: more frequent and more extreme rainfall events Rising sea levels, increased wave height and storm surges. The effects from climate change will put further strain on the already limited capacity of our networks. Discharging stormwater in our coastal communities will become increasingly difficult during high tide and may result in flooding more frequently. In other areas the increase in rainfall will lead to stormwater networks reaching their capacity sooner and the need to better manage overland flowpaths to avoid flooding of properties. The expected impact of climate change effects on flooding will be further investigated with the help of innovative flood modelling techniques. Providing solutions to appropriately address the effects of climate change will require significant investments that may not be affordable or cost effective. Due to the long-term nature of climate change predictions and different scenarios that are based on potential future greenhouse gas emissions the magnitude of the effects remain uncertain. The focus in our flood strategies will be on avoiding damage to properties and hazard to life as well as acceptance and adapting to nuisance flooding. In some areas, especially low-lying areas close to the coast, we may have to accept that in the long term affordable and sustainable solutions may not be available.
Network Capacity Our existing primary and secondary networks have insufficient capacity	Some of Tasman's stormwater pipes and drains are too small to cope with the intense rainfall events experienced over the past few years and do not meet current design standards. It is not affordable to improve all the existing pipes and drains to current design standards, at least not in the short to medium term. The main focus of the capital works is on protecting and improving secondary flowpaths. The secondary network, also known as overland flowpaths, enables stormwater to flow overland, when capacity of the primary network has been exceeded, without causing hazards or damage to properties. It is important for the community to realise that overland flowpaths are an essential part of the stormwater network and that any structures within flowpaths may obstruct flows and lead to increased flooding and damage to property. The Council will invest in establishing, protecting and enforcement of secondary flowpaths.

3.7 Prioritisation

The Council provides many services on behalf of Tasman's residents and there is often competing demands for the Council's investment across and within these services. The Council needs to decide how much, and when, to invest in these services in a way that maintains affordability for customers and ratepayers.

There are multiple factors that affect the priority of individual projects or work streams. These include:

- The need to protect public health and safety
- The need to conserve and enhance the natural environment
- Statutory compliance
- Meeting the needs of tomorrow's population
- Readiness to implement works
- Co-funding opportunities
- Creating functional and attractive public places
- Benefits and risks
- District distribution
- Strategic fit

The Council has applied the following principles when developing its programme of works i:

- To continue to meet its fiscal prudence, sustainability and environmental sustainability obligations.
- To keep the medium to long term in focus i.e. rather than being overly diverted by the shorter-term recovery from the Covid-19 pandemic.
- To understand the trade-off's or benefits across all of the well-being domains (social, environmental, economic and cultural).
- To capitalise on the economic environment (i.e. enhanced borrowing terms, and increased labour and skills availability).
- To make the most of the enhanced opportunities of Government funding, subsidies and other incentives to advance the community outcomes.
- To right size the Council staffing and operational expenditure.

The Council has taken all of the above into consideration in order to present a programme that is achievable and affordable. Generally, mandatory requirements such as statutory compliance take priority, and discretionary activities have been programmed second to this.

3.8 Catchment Management Plan Framework

Urban catchment management planning is an efficient and effective way of co-ordinating efforts to address multiple stormwater issues i.e. flood management, freshwater management, aquatic habitat management and amenity values within urban stormwater catchments.

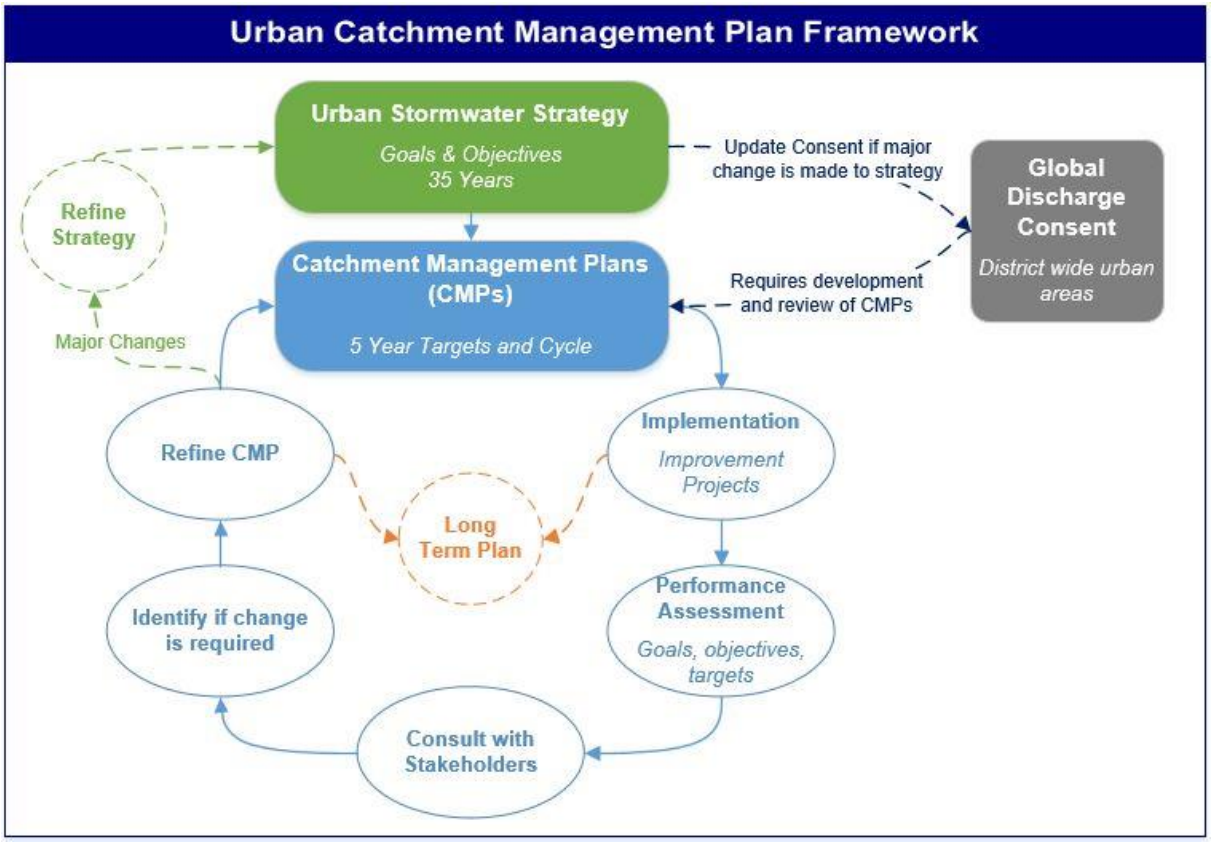
Catchment management plans (CMPs) will assist the Council in identifying integrated solutions to address existing issues and the ability to avoid or minimise risks for the future. Once in place they will also assist in cross Council alignment, collaboration and efficiency improvements. Although the focus of the catchment management plans will be on the urban areas, the catchments will have up and downstream rural areas that need to be taken into account.

The council has an obligation to manage adverse effects from stormwater discharges from its network. The CMPs will clarify how the Council will manage these effects and form the basis for authorisation of a global discharge consent.

The Stormwater Catchment Management Framework consists of three key components:

1. Urban Stormwater Catchment Strategy.
2. Catchment Management Plans.
3. District-wide Urban Stormwater Consent.

The contents of the framework provides direction to other Council processes and legal documents such as the Long Term Plan (LTP), Activity Management Plans (AMPs), Land Development Manuals (LDM) and Tasman Resource Management Plan (TRMP). It is important that these documents, including this Strategy, will be reviewed as and when required to ensure alignment. Figure 1 shows the different components of the strategy and how they interact together. The Catchment Management Framework and the three separate components are developed in close collaboration between the Council and iwi. Stakeholder consultation and public feedback is sought separately at appropriate times during development of the CMPs.



3.8.1 Urban Stormwater Strategy

The Council adopted an Urban Stormwater Strategy in August 2019. The purpose of the Strategy is to provide direction to the development of urban stormwater catchment management plans in the Tasman District to support the analyses, planning and management of stormwater, consolidated in urban catchment management plans and to support the development of other strategic documents.

The Strategy will provide the framework against which the assessments in the Catchment Management Plans will be undertaken. It is anchored on our vision to protect and enhance the mauri of wai / life force of water and to provide for:

- Te Hauora o Te Wai – the health of the water.
- Te Hauora o Te Taiao – the health of the environment.
- Te Hauora o Ngā Tangata – the health of the people.

Prudent stormwater management will contribute to this vision through an integrated and sustainable approach that supports economic vitality, desirable lifestyle and ecological health.

This Strategy has identified a range of goals and objectives. The Urban Stormwater Strategy identifies the following long term aspirations for stormwater management:

1. Our urban streams, aquatic habitats and coastal marine environment are healthy and accessible.
2. Stormwater discharges do not degrade water quality and ecosystem health of our streams and estuaries.
3. Stormwater flooding does not create a hazard to our community or cause damage to properties.
4. We enable water sensitive growth for future generations.
5. We manage stormwater in a holistic, efficient and cost effective manner.

3.8.2 Catchment Management Plans (CMPs)

Urban catchment management planning is an effective way of co-ordinating efforts to address multiple stormwater issues i.e. flood management, freshwater management, aquatic habitat management and amenity values within urban stormwater catchments.

Catchment management plans will assist the Council and communities in identifying integrated solutions to resolve existing issues and the ability to avoid or minimise risk for future issues. Once in place they will also assist in cross Council alignment and efficiency improvements. Although the focus of this strategy and the catchment management plans will be on the urban areas, the catchments may have up and downstream rural areas that need to be taken into account.

The Council will be able to use the Catchment Management Plans to implement water quality objectives of the NPS-FM within its urban areas.

CMPs are being developed for each Urban Drainage Area (UDA), providing an overview of the current state of our network, objectives, issues and solutions. Each CMP will be developed around the following key themes and aspirations as set out by the the Urban Stormwater Strategy.

The CMPs will establish a specific work programme for each township grouped around separate themes such as flooding, growth, water quality and stream health. The work programme is aimed at avoiding, remedying and mitigation of effects from stormwater discharges from our network in an integrated manner. The CMPs shall be presented in a digital spatial format (ESRI Story Map format) with supporting documents. This application forms an interactive and user friendly tool with links to underlying data and documents where appropriate.

The Richmond CMP was finalised and adopted by the **Council** on 1 August 2019. The Motueka CMP is currently being developed and is aimed to be finalised in 2021.

3.7.2 District Wide Urban Stormwater Consent

The third component of the Catchment Management Planning framework consists of the Tasman District Wide Urban Stormwater Consent that was granted on ##/##/##. This consent authorises the Council to discharge stormwater from its networks, provided that stormwater is managed in accordance with CMPs that are to be developed by the dates as set out in Table 7. The consent also requires the Council to monitor progress and review and amend its planning as required.

Table 7: Catchment planning development date

Urban Drainage Area	Catchment Management Plan Completion Date
Richmond	Completed Aug 2019
Motueka	June 2021
Brightwater / Wakefield	June 2022
Takaka	June 2023
Mapua / Ruby Bay	June 2024
Kaiteriteri	June 2025
Tasman	June 2025
Ligar Bay / Tata Beach	June 2026
Collingwood	June 2026
Patons Rock	June 2026
Tapawera	June 2027
St Arnaud	June 2027
Murchison	June 2027

The condition states that the Consent Holder may choose to change the order in which individual Catchment Management Plans are being developed to allow for changing priorities, provided that the same number of plans are developed in any year and the last Catchment Management Plan is completed by June 2027.

4 Key Linkages

In preparing this AMP, we examined external national drivers that influence this activity including legislation, national polices, regulations, strategies and standards. Local or internal drivers that influence the AMP include the Council's bylaws, polices, plans, strategies and standards.

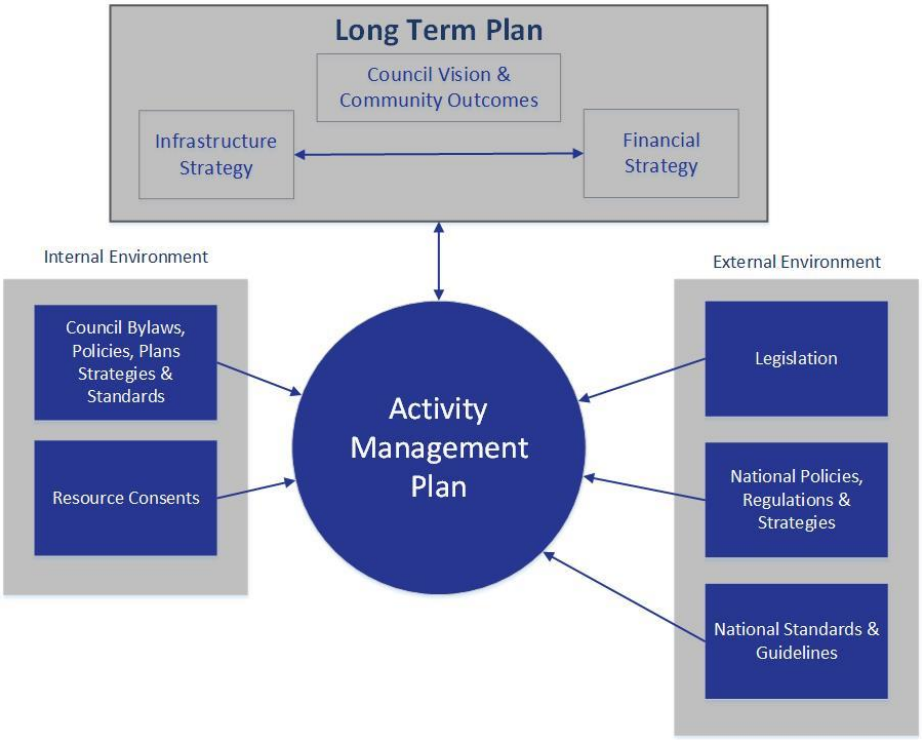


Figure 1: Overview of Key Linkages

4.1 Key Legislation

4.1.1 Local Government Act

The Local Government Act requires local authorities to prepare a ten-year Long Term Plan and 30-year Infrastructure Strategy, which are to be reviewed every three years. The Act requires local authorities to be rigorous in their decision-making by identifying all practicable options and assessing those options by considering the benefits and costs in terms of the present and future well-being of the community. This activity management plan provides information to support the decisions considered in the Long Term Plan.

The Local Government Act empowers District councils to provide public drains. It also empowers the Council to cleanse, repair and maintain their drainage infrastructure as necessary for effective drainage. The Council also has powers under the Land Drainage Act (1908), Rivers Boards Act (1908), and Soil Conservation and Rivers Control Act (1941). The Engineering Services Department takes on the service provider roles enabled through these Acts.

These statutes empower, but do not require, the Council to provide drainage works. However, once the Council does provide or take over control of systems, which enable and protect developments, there is an ongoing duty to continue this protection.

4.1.2 Resource Management Act

In relation to stormwater, the Resource Management Act (RMA) 1991 deals with:

- The control of the land use for the purpose of the maintenance and enhancement of the quality of water in water bodies and coastal water.
- Discharges of contaminants into water and discharges of water into water.
- the control of the taking, use, damming and diversion of water, including:
- The setting of any maximum or minimum levels or flows of water.
- The control of the range, or rate of change, of levels or flows of water.

The RMA requires the Council to sustain the potential of natural and physical resources to meet the reasonable foreseeable needs of future generations.

The Environment and Planning Department is responsible for the regulatory functions of a regional council to control the use, development and protection of land, discharges etc, and they do this through provisions and rules in the Tasman Resource Management Plan.

The Engineering Services Department is responsible for complying with those rules in the management of public stormwater systems.

The RMA also requires the Council to take into account the principles of the Treaty of Waitangi.

4.1.3 Building Act

This Act requires that buildings and site works are constructed to protect people and other property from the adverse effects of surface water. The Environment and Planning Department is responsible for the enforcement of the Building Code which is enabled through the Building Act.

The Building Code requires that:

- Urban runoff from a Q10 rain event is disposed of in such a way as to avoid likelihood of damage or nuisance to other property.
- Surface water from a Q50 event does not enter residential and communal buildings.
- Secondary flowpaths are taken into account.

4.1.4 Te Tiriti o Waitangi – Treaty of Waitangi

The Treaty of Waitangi is an agreement between Māori and the Crown. Under Section 4 of the Local Government Act 2002 local authorities are required to 'recognise and respect the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and to maintain and improve opportunities for Māori to contribute to local government decision-making processes'. Further sections of the Act, particularly 77 and 81, detail the scale of requirement for local authorities to seek contributions and involvement from Māori in consultation and decision-making processes.

4.1.5 Taumata Arowai–the Water Services Regulator Act 2020

The Act establishes Taumata Arowai - the Water Services Regulator as a new Crown Agent and provides for its objectives general functions, operating principles, and governance arrangements. Taumata Arowai is responsible for a small number of complementary functions relating to improving the environmental performance of stormwater networks.

A complementary Water Services Bill containing all of the details of the new drinking water regulatory framework that Taumata Arowai will administer is currently going through parliamentary process and likely be enacted later in 2021

4.1.6 The Climate Change Response Act 2002 and Climate Change Response (Zero Carbon) Amendment Act 2019

The effects of climate change has been identified as one of the key issues for how we manage stormwater in the district. Climate change legislation and our Tasman Climate Action Plan (see Section 3.5) focus on mitigation by greenhouse gas reduction and climate change adaptation. Stormwater management in the Tasman District is primarily focused on ways to respond to our changing climate (adaptation).

The Climate Change Response Act 2002 puts in place a legal framework to enable New Zealand to meet its international obligations under the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

The Act includes powers for the Minister of Finance to manage New Zealand's holdings of units that represent New Zealand's target allocation for greenhouse gas emissions under the Protocol. It enables the Minister to trade those units on the international market. It establishes a registry to record holdings and transfers of units. The Act also establishes a national inventory agency to record and report information relating to greenhouse gas emissions in accordance with international requirements.

In 2019, the Act was amended by the Climate Change Response (Zero Carbon) Amendment Act. These amendments provide 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 degrees Celsius above pre-industrial levels.
- Allow New Zealand to prepare for, and adapt to, the effects of climate change.

4.2 Key Planning, Policies and Strategies

4.2.1 National Policy Statement: Freshwater Management 2020

National policy statements are issued by central government to provide direction to local government about how they carry out their responsibilities under the Resource Management Act 1991 when it comes to matters of national significance. The matter of national significance to which the National Policy Statement for Freshwater Management 2020(NPS_FM) applies is the management of fresh water through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management.

The Freshwater NPS directs regional councils, in consultation with their communities, to set objectives for the state of fresh water bodies in their regions and to set limits on resource use to meet these objectives.

Some of the key requirements of the Freshwater NPS are to:

- Manage freshwater in a way that gives effect to Te Mana o te Wai.
- Improve degraded water bodies, and maintain or improve all others using bottom lines defined in the Freshwater NPS.
- Avoid any further loss or degradation of wetlands and streams, map existing wetlands and encourage their restoration.
- Identify and work towards target outcomes for fish abundance, diversity and passage and address in-stream barriers to fish passage over time.
- Set an aquatic life objective for fish and address in-stream barriers to fish passage over time.
- Monitor and report annually on freshwater (including the data used); publish a synthesis report every five years containing a single ecosystem health score and respond to any deterioration.

4.2.2 Industry Guidelines and Standards New Zealand

The primary documents that guide standards for stormwater drainage management and flood protection services are (refer to http://www.standards.co.nz).

Table 8: New Zealand Standards

Number/Source	Title
NZS 4404	Land development and subdivision
AS/NZS 1254	PVC pipes and fittings for stormwater and surface water applications
AS/NZS1260	uPVC Pipes and fittings for drain waste and vent applications
NZS7643	CoP for the installation of unplasticised PVC pipe systems
AS/NZS 2032	Installation of PVC pipe systems

Number/Source	Title
AS/NZS 2566	Part 1:1998 Buried flexible pipelines – Structural design and Supp 1 Commentary Part 2 – Buried flexible pipelines - Installation
NZS 3109	Concrete construction
NZS 3121	Specification for water and aggregate for concrete
AS/NZS 3725	Design for installation of buried concrete pipes
AS/NZS 4058	Pre-cast concrete pipes for (pressure and non-pressure)
NZS 4442	Welded steel pipes and fittings for water, sewage, and medium pressure gas
NZS 7643	Plastic Pipe
Ministry of Business, Innovation & Employment AS/NZS 3917:2013 Fixed Term Contract Management	NZ Building Code – E1 and B2 and associated acceptable solutions and verification methods Specifies requirements intended for use when contracts are let for maintenance or other building or engineering works where the contract is intended to run for a defined period of time, as opposed to a contract for a defined scope of work.

4.2.3 Regional and Local Bylaws, Policies, Regulations and Strategies

The Council also has several planning policy and/or management documents detailing its responsibilities under the legislative drivers listed above. The Council has two key statutory planning documents implementing its responsibilities under the Resource Management Act 1991 being:

- Tasman Regional Policy Statement (TRPS) operative 2001

  An overview of significant resource management issues with general policies and methods to address these.

- Tasman Resource Management Plan (TRMP)

  A combined regional and District plan with statements of issues, objectives, policies, methods and rules addressing the use of land, water, coastal marine area and discharges into the environment.

These documents guide the processing of resource consent applications for stormwater discharge to land and water bodies, and land disturbance or waterway interferences that may be associated with stormwater reticulation. They may impact on the location and method of stormwater disposal including quality requirements and the location, design and construction of reticulation networks. The plan also specifies requirements for onsite disposal.

4.2.3.1 Local Bylaws

The Council does not have a bylaw specific to stormwater, however the wastewater Bylaw has a direct reference to stormwater where it sets out requirements to prevent inflow and infiltration of stormwater into the wastewater network. The Wastewater Bylaw (2015) applies to all users of the wastewater system and includes trade waste and protection of the wastewater infrastructure.

4.2.4 Nelson Tasman Land Development Manual (NTLDM)

The purpose of the NTLDAM is to outline standards and good practice matters for land development and subdivision in the Nelson and Tasman Districts. The stornwater section of the manual aims to achieve flood management, environmental and amenity expectations in an effective and efficient matter. In all situations the provisions of the Nelson Tasman Land Development Manual (NTLDM) are also subject to the applicable Resource Management Plan (RMP).

The performance outcomes for the design and construction of stormwater systems sought by the standards and good practice matters in the NTLDM document are as follows:

- A management solution that is based on a holistic catchment-based assessment, including consideration of topography, soil and slope, vegetation, built development, existing drainage patterns, freshwater resources, stormwater network infrastructure, natural values and natural hazards.
- An integrated design approach to stormwater management, which accommodates stormwater functions including access for maintenance and operations, as well as amenity, recreation and ecological values.
- A network that manages stormwater flows to a standard that minimises people and property from harm or damage and nuisance effects, especially from risk to safety, health and well-being.
- A management approach that aims to improve water quality.
- Devices and design solutions that are robust, durable and easily maintained.
- A whole-of-life operations, maintenance and replacement or renewal programme that is clearly described, costed, and can be afforded.
- A stormwater system design that takes into account the foreseeable demands of future development.
- A resilient network infrastructure that performs well against the risk of geotechnical, seismic, flood hazards and coastal hazards (erosion and inundation).
- A design that maintains or improves values associated with freshwater resources, including riparian management and in-stream habitat values.
- Stormwater assets that have high amenity value, and shared use of open-space areas where practicable and agreed to by Reserves and Facilities Manager.
- A network that maintains a high visual amenity that enhances the value of adjoining property and neighbourhood values as a whole.

4.2.5 Assessment of Stormwater Systems in the District

The Council is using stormwater models to assess the functionality of our primary and secondary stormwater networks. Output from these models is used for the development of catchment management plans.

4.3 Strategic Studies

A number of strategic studies and modelling reports have been prepared to investigate existing issues and design solutions. Existing and most relevant studies to date are listed below:

District wide

- Urban Stormwater Strategy, 1 August 2019
- Overland Flowpath Mapping, April 2020
- Natural Stream Design Guideline, November 2019

Richmond

- Richmond Catchment Management Plan, 1 August 2019
- Richmond Stormwater Modelling, December 2017
- Richmond Borck Creek Greenway Adaptive Plan, Tasman District Council, revision 2, December 2020
- Kingsland Forest Stormwater, May 2019

Motueka

- Motueka Stormwater Modelling, August 2019
- Motueka Flood Hazard Options Assessment June 2020
- Floor level surveys 2019/2020

Brightwater and Wakefield

- Brightwater – Wakefield Flood Hazard Mapping, SKM, December 2013
- Brightwater – Wakefield Stormwater Model, December 2019

Murchison

- Ned's Creek Flood Modelling Murchison, MWH, November 2013

Mapua and Ruby Bay

- Mapua/ Ruby Bay stormwater model, August 2020

5 Levels of Service

A key objective of this plan is to match the levels of service provided by this activity with the agreed expectations of our customers and their willingness to pay for that level of service. These levels of service provide the basis for the life cycle management strategies and works programmes identified in this Plan.

Levels of service can be strategic, tactical or operational. They should reflect the current industry standards and be based on:

- Customer Research and Expectations: information gained from stakeholders on expected types and quality of service provided.
- Statutory Requirements: Legislation, regulations, environmental standards and the Council bylaws that impact on the way assets are managed (eg, resource consents, building regulations, health and safety legislation). These requirements set the minimum level of service to be provided.
- Strategic and Corporate Goals: Provide guidelines for the scope of current and future services offered and manner of service delivery, and define specific levels of service, which the organisation wishes to achieve.
- Best Practices and Standards: Specify the design and construction requirements to meet the levels of service and needs of stakeholders.

5.1 Our Levels of Service

Table 9 summarises the levels of service and performance measures for the Stormwater activity. Blue shaded rows are the levels of service and performance measures to be included in the Long Term Plan. Unshaded white rows are technical measures that are only included in the Activity Management Plan.

Table 9: Levels of Service and Performance Measures

Levels of Service	Performance Measure (we will know we are meeting the level of service if…)	Current Performance 2019/2020	Future Performance Targets			
			Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	By Year 10 2024/30
Stormwater flooding We have measures in place to respond to and reduce flood damage from stormwater to property and risk to the community	The number of flooding events that occur in the district and; For each flooding event, the number of habitable floors affected. (Expressed per 1000 properties connected to the territorial authority's stormwater system.) Habitable floor refers to a floor of a building (including a basement) but does not include ancillary structures such as stand-alone garden sheds or garages. A flooding event means an overflow of stormwater from the Council's stormwater system that enters a habitable floor. Target: <1 habitable floor flooded per event (expressed per 1000 properties connected) (Mandatory measure 1)	Achieved There was one habitable floor flooded in 2019/2020, which translated to 0.07 floors flooded per 1000 properties	<1 habitable floor flooded per event (expressed per 1000 properties connected)	<1 habitable floor flooded per event (expressed per 1000 properties connected)	<1 habitable floor flooded per event (expressed per 1000 properties connected)	<1 habitable floor flooded per event (expressed per 1000 properties connected)
	The median response time to attend a flooding event, measured from the time that council receives notification to the time that service personnel reach the site. Target: <2 hours (Mandatory measure 3) As recorded through the Operations and Maintenance contract (July 2017)	Achieved 35 minutes (There was one customer request for flooding during the year, which was attended in 35 minutes.)	<2 hours	<2 hours	<2 hours	<2 hours

Levels of Service	Performance Measure (we will know we are meeting the level of service if…)	Current Performance 2019/2020	Future Performance Targets			
			Year 1	Year 2	Year 3	By Year 10
			2021/22	2022/23	2023/24	2024/30
Stormwater flooding We have measures in place to respond to and reduce flood damage from stormwater to property and risk to the community	The number of complaints received by council about the performance* of its stormwater system, expressed per 1000 properties connected to the stormwater system. Target < 20 (Mandatory measure 4) As measured through confirm and NCS database Justified complaints about the performance of councils stormwater system Based on 14,139 connections *the performance of the stormwater network is defined as the ability of the stormwater system to convey stormwater (not amenity or aesthetic functions)	Achieved 4.4 complaints per 1000 properties	<20	<20	<20	<20
	Increase our understanding of habitable floors within urban drainage areas that are expected to flood as a result of a storm event with 1% annual exceedance probability (AEP) Measured as an estimate obtained through stormwater modelling and floor level surveys (FLS)	New performance measure	Continue stormwater modelling and floor level surveys for UDAs	Continue stormwater modelling and floor level surveys for UDAs	Continue stormwater modelling and floor level surveys for UDAs	Continue stormwater modelling and floor level surveys for UDAs
Strategic Planning We have strategies in place to manage our stormwater systems efficiently to ensure that our community receives best value for money	The number of Urban Drainage Areas that have Catchment Management Plans (CMP's) meets the target. Target: increasing from 1 to 15 over 10 years	Achieved CMP Richmond adopted in 2019	2 of 15	3 of 15	4 of 15	Increasing from 5 to 15

Levels of Service	Performance Measure (we will know we are meeting the level of service if…)	Current Performance 2019/2020	Future Performance Targets			
			Year 1	Year 2	Year 3	By Year 10
			2021/22	2022/23	2023/24	2024/30
Customer satisfaction Our stormwater activities are managed at a level which satisfies the community	Percentage of customers (who receive the service) that are satisfied with the stormwater service Target: ≥ 80% As measured through the annual residents survey	Achieved 84%	80%	80%	80%	80%
The environment Our stormwater systems do not adversely affect or degrade the receiving environment.	Compliance with the Council's resource consents for discharge from its stormwater system, measured by the number of: abatement notices (target ≤1) infringement notices (target 0) enforcement orders (target 0) Successful prosecutions (target 0) (Mandatory measure 2)	Achieved The Council is awaiting for their global consent application to be granted	≤1 0 0 0	≤1 0 0 0	≤1 0 0 0	≤1 0 0 0

5.2 Level of Service Changes

The Council reviews its levels of service every three years, as part of the Long Term Plan development. The Levels of Service from the previous LTP 2018 have been retained without any significant changes.

5.3 Level of Service Performance and Analysis

5.3.1 Stormwater Flooding

We have measures in place to respond to and reduce flood damage from stormwater to property and risk to the community.

The more significant rainfall events that were recorded in the District between January 2018 and December 2020 tended to be mostly short duration rainfall events rather than continuous rainfall over long periods. Even though localised flooding of roads and properties has occurred, the short duration of the events didn't result in large scale catchment wide flooding.

Ex-cyclones Fehi and Gita struck the District in February 2018 and provided an indication of what can be expected when sea surges hit coastal areas. There was significant damage to houses and properties in Ruby Bay due to the sea surges that occurred, as well as damage from river flooding and debris flows. The cyclones did not, however, result in significant rainfall on the Urban Drainage Areas in the District and the Council's stormwater networks coped relatively well with these events. The sea surges will become more of an issue for low lying coastal areas with future predictions of increased sea level rise, especially if high tides would coincide with big rainfall events.

On 12 May 2019 intensive rainfall occurred in Richmond. The intensity was 19mm in 10 minutes with an AEP close to 1%. This caused localised flooding but the capacity of the public stormwater system proved adequate for this type of short duration rainfall event. Repetitive flooding keeps occurring on High Street in Motueka. Flood events were recorded in 2019 on 21 April, 19 July (100mm in 24 hours) and 17 December as well as on 8 November and 26 December in 2020. The flooding along High Street seems to be caused by the limited pipe capacity under High Street.

The other Urban Drainage Areas also experienced some heavy rainfall events resulting in some localised flooding. The performance of the stormwater network for each town has largely been effective for these shorter period high intensity rainfall events. However, provision of adequate overland flowpaths still remains a concern when catchment wide, continuously heavy rainfall events occur.

A number of complaints with regards to flooding were received and recorded between January 2018 and December 2020. The level of service requires the Council to measure the number of habitable floors that were flooded per 1000 properties. Two floors were flooded over this period. The first was on 1 February 2018 in Richmond as a result of tidal inundation from ex-cyclone Fehi and is a house at the lower end of Borck Creek . The second was a basement in Motueka which flooded on 19 July 2019. This translates to 0.07 flooded floors per 1000 connections for each of the relevant report years, which meets the target of less than 1 flooded floor per 1000 connections in any one report year.

When a flood event occurs, the Council's aim is for service personnel to attend and assess the flooding within two hours of notification. The Council has not been able to measure this, because this is a new performance measure. The Council has a plan in place to enable this in the future.

The Council uses stormwater modelling in combination with floor level surveys to investigate and predict the number of properties that may be affected by flooding during extreme storm events. The Council aims to provide an affordable and cost effective stormwater service and categorises the effects of flooding and priorities into the following three categories:

1. Hazard to people — Top priority
2. Damage to property - as a result of flooding of habitable floors — High priority
3. Nuisance — Medium to low priority

The majority of the Council's existing primary stormwater network (pipes) is designed to cater for rainfall events that have a 20% to 50% chance of occurring in any year. During bigger rainfall events the capacity of these pipes will be exceeded and stormwater will flow via overland flowpaths towards the nearest stream and further to the coast. Because upgrading pipes to a higher level of service is not cost effective in the short to medium term, the Council's stormwater management is focussed on managing and protecting overland flowpaths. The Council invests in identification of overland flowpaths, as well as protection, inspections and enforcement actions to ensure that protected flowpaths remain free of obstacles.

The Council will invest in minimising flood hazards and damage to property. This means that a level of nuisance flooding is considered acceptable, and that nuisance flooding may be experienced more frequently in the future as a result of increased rainfall. The Council will still assist the community in dealing with nuisance flooding in some instances where it deems it necessary and appropriate.

5.3.2 Strategic Planning

We have strategies in place to manage our stormwater systems efficiently to ensure that our community receive best value for money.

The Council's district wide Urban Stormwater Strategy and the Catchment Management Plan (CMP) for Richmond were both adopted in August 2019. Both documents have been developed in close collaboration with the Council's iwi partners. Key stakeholders and the community were asked for their feedback before finalising the strategy and Richmond CMP. The limited feedback received was considered and addressed in the final version before that was adopted by the Council on 1 August 2020.

Following the Richmond CMP that has acted as a blueprint for future CMPs, the Council has started the development of Motueka CMP with CMPs for all other urban drainage areas (UDAs) to come in the following years. The process of developing CMPs focusses on collating existing data and creating a clear overview of the current state of our catchments. Each plan identifies integrated solutions to a variety of issues, such as flooding, contamination from stormwater, and degrading stream health. All CMP's are developed in a spatial and online format that can be easily updated over time when more information becomes available.

5.3.3 Customer Satisfaction

5.3.3.1 Our stormwater activity is managed at a level that satisfies the community.

Most residents (84%) that have a connection to the network are satisfied with the stormwater service that is provided to them by the Council. In the last three years customer satisfaction has been relatively stable at around 80%.Customer satisfaction only dropped significantly in 2013 when an major rain event occurred, causing widespread flooding. It is clear that customer satisfaction is driven by the big rain events and the flooding that occurred as a result of this. With the expected increase in rainfall as a result of climate change, it is important that the Council raises awareness within the community that overland flowpaths are an important part of stormwater is managed, but that this may lead to some nuisance i.e. a flooded road or garden.

There is a notable difference in satisfaction levels between residents inside the UDA's where the service is provided and overall satisfactory levels. The overall satisfactory survey includes areas outside the UDA's where the service is not provided and where residents contribute significantly less through their rates than residents that are living within one of the UDA's. This may result in residents outside the UDA's being less satisfied with how the Council manages stormwater than residents within the UDA's that directly benefit from the service.

The number of complaints that the Council received meets the target of less than 20. Customers are generally satisfied with how the Council manages its day to day operation. Many complaints relate to issues that are outside the control of council, relating for example to spills or nuisance that is experienced by birds such as ducks. The Council relies heavily on local residents to inform us of issues in order to provide an appropriate response. In some cases, it is known that members from the community go out and clean blocked culverts themselves in response to adverse weather forecasts.

5.3.4 The Environment

Our stormwater systems do not adversely affect or degrade the receiving environment. The Council has obtained a district wide discharge permit for stormwater discharge which also provides consent for the use and maintenance of the Council's stormwater networks.

The overall purpose of the Stormwater Discharge permit and catchment management planning frameworks is to avoid, remedy and mitigate the adverse effects from stormwater discharges across the urban areas of the district. This has particular importance as fresh and marine water resources are vital to the health of the environment and the well-being of our communities and are one of the defining features of the Tasman District. These resources include streams, rivers, lakes, wetlands, aquifers and springs; all ultimately discharging into the Coastal Marine Area either direct to the sea, or through various rivers and estuaries. Together these areas form an important part of the unique culture and natural values of the district, shaping the landscape and our heritage. They are of fundamental importance to Tangata Whenua, highly valued by residents and visitors and crucial to the health of the environment.

The consent is part of a wider set of actions as set out in the Council's Stormwater Catchment Management Framework and covers discharges from the stormwater network within the Urban Drainage Areas (UDA) in the Tasman District. It also includes consent for the physical stormwater network, including coastal outfall structures, where this is necessary. The following townships are within those drainage areas:

- Brightwater
- Collingwood
- Kaiteriteri
- Ligar Bay / Tata Beach
- Mapua/Ruby Bay
- Motueka
- Murchison
- Patons Rock
- Pohara
- Richmond
- St Arnaud
- Takaka
- Tapawera
- Tasman
- Wakefield

The conditions of consent require the Council to develop CMP's for all 15 UDA's by a specific date. Stormwater is required to be managed in accordance with these CMP's and progress will monitored in accordance with monitoring plans that are submitted to the Council's regulatory department within one year of each CMP being adopted.

6 Our Customers and Stakeholders

The Council engages and consults with iwi partners, customers, and stakeholders to gain an understanding of their needs, expectations and preferences. This enables the Council to provide outcomes that better meet the community's needs.

6.1 Iwi Partners

Māori are tangata whenua of Aotearoa / New Zealand. They have a long and rich association with Te Tauihu o te Waka-a-Māui (Te Tauihu) / the Top of the South Island. There are eight iwi that whakapapa and have Statutory Acknowledgements to places within Te Tauihu and Tasman District. They are represented by the following post settlement governance entities:

- Ngāti Apa ki te Rā Tō
- Ngāti Koata Trust
- Te Rūnanga o Ngāti Kuia Trust
- Te Rūnanga a Rangitāne O Wairau
- Te Rūnanga o Ngāti Rārua
- Ngāti Tama ki te Waipounamu Trust
- Te Ātiawa o te Waka-a-Māui
- Te Rūnanga o Toa Rangatira

Tasman District also covers the northern-western part of the Ngāi Tahu takiwā (tribal area/territory). Murchison is within the Ngāi Tahu takiwā and Ngāti Waewae are the Papatipu Rūnanga on this northwestern side.

Each iwi has their own unique history and association with places across Tasman District. These areas are not easily defined and do not match or stay entirely within the boundaries of Tasman District. Māori have a close relationship with water in all its forms and consider it a taonga (treasure). The health and wellbeing of some iwi is closely related to the health of local water bodies, therefore any decision related to water will likely be of high interest to Māori.

The new drinking water regulator (Taumata Arowai) has clearly indicated that Māori interests will be reflected in new legislation and the concept of Te Mana o te Wai will be supported. The legislation will also specify that the operating principles of the regulator will include the need to engage early with Māori; and that it will need to understand, support, and enable mātauranga Māori and tikanga Māori and kaitiakitanga to be exercised. A Māori Advisory Group will be established to advise the regulator on these matters.

The Council expect iwi / Māori to have a strong interest in the planning and delivery of the following projects:

- Catchment Management Planning.
- Stormwater Monitoring programmes.
- Natural stream design for future growth areas.

The Council staff aim to engage with iwi / Māori on matters that are of interest and importance to them. For the above projects, extra care will be taken to consider and apply the principles of the Tiriti o Waitangi / Treaty of Waitangi. The Council acknowledge that it is important to agree the appropriate level of engagement with iwi / Māori at the outset of a project. This may range from informing through to opportunities for co-governance. More information about iwi of Te Tauihu can be found on the Council's website at https://www.tasman.govt.nz/my-region/iwi/ and their own websites and social media channels.

6.2 Stakeholders

There are many individuals and organisations that have an interest in the management and / or operation of the Council's assets and services. The Council has a Significance and Engagement Policy which is designed to guide the expectations of the relationship between the Council and the Tasman community. The Council has made a promise to seek out opportunities to ensure the communities and people it represents and provides services to have the opportunity to:

- Be fully informed
- Provide reasonable time for those participating to come to a view
- Listen to what they have to say with an open mind
- Acknowledge what we have been told; and
- Inform contributors how their input influenced the decision the Council made or is contemplating

Engagement or consultation:

- Is about providing more than information or meeting a legal requirement;
- Aids decision making
- Is about reaching a common understanding of issues
- Is about the quality of contact not the amount; and
- Is an opportunity for a fully informed community to contribute to decision making.

The key stakeholders the Council consults with about the stormwater activity are:

- Elected members (Community Board members)
- Regulatory (consent compliance, Public Health)
- Fisheries organisations
- Public Health Service (Nelson-Marlborough District Health Board)
- Heritage New Zealand
- Civil Contractors New Zealand (Nelson - Marlborough)
- Service providers / suppliers (Network Tasman, power companies)
- Affected or interested parties (when applying for resource consents)
- Neighbours.

6.3 Consultation

6.3.1 Purpose and Types of Consultation

The Council consults with the public to gain an understanding of customer expectations and preferences. This enables the Council to provide a level of service that better meets the community's needs.

The Council's knowledge of customer expectations and preferences is based on:

- Feedback from residents surveys
- Other customer/user surveys, such as Yardstick visitor measures
- Levels of service consultation on specific issues
- Feedback from staff customer contact
- Ongoing staff liaison with community organisations, user groups and individuals
- Public meetings
- Feedback from elected members, advisory groups and working parties
- Analysis of customer service requests and complaints
- Consultation via the Annual Plan and Long-Term Plan processes

6.3.2 Consultation Outcomes

The most recent NRB Communitrak™ survey was undertaken in May 2020. This asked whether residents were satisfied with the stormwater system and included residents that had a Council service and some that were not on a Council service. The results from this survey are summarised in Figure 2 and Figure 3.

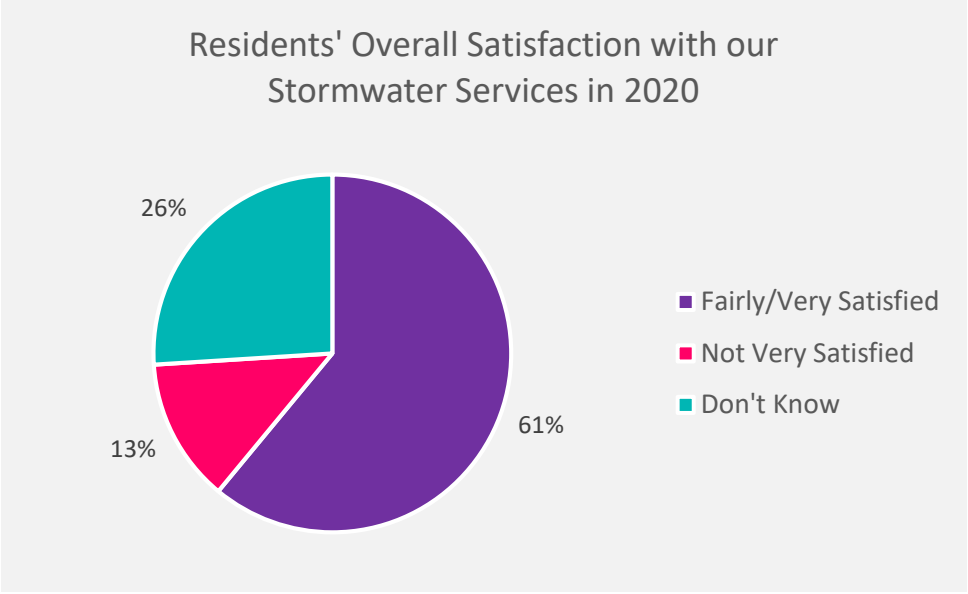


Figure 2: Overall customer satisfaction

61% of residents are satisfied with the stormwater services, including 26% who are very satisfied, while 13% are not very satisfied (17% in 2019) and 26% are unable to comment. The percent not very satisfied (13%) is on par with the Peer Group and National Averages.

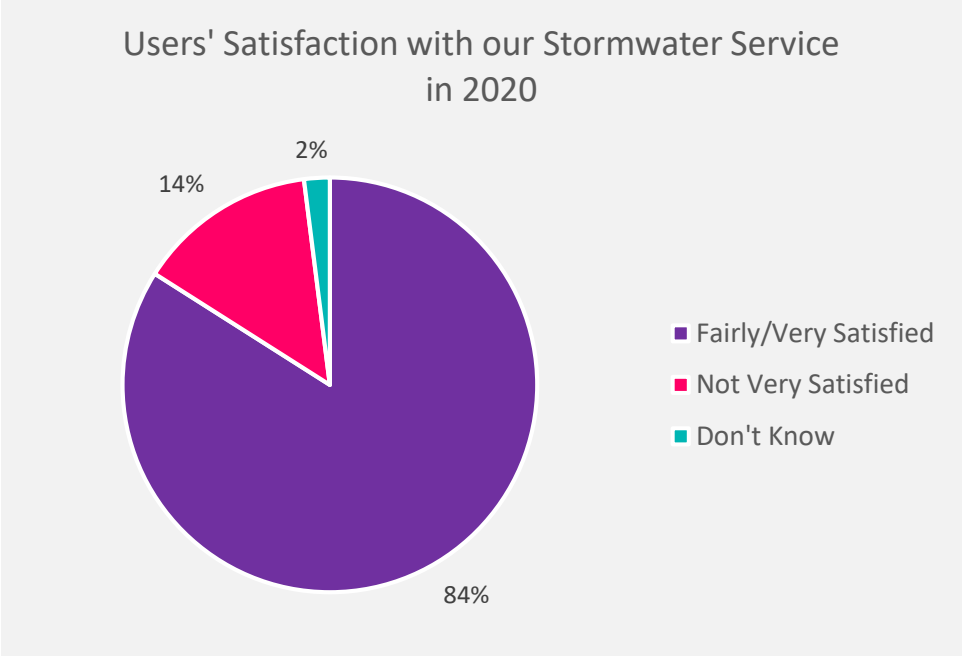


Figure 3: Customer satisfaction where service is provided (within urban drainage areas)

53% of residents are provided with a piped stormwater collection (62% in 2019) and, of these, 84% are satisfied and 14% not very satisfied.

Figure 4 shows that overall customer satisfaction levels with the stormwater service have been on a variable but slightly declining trend since 2009. It is important to note that this illustrates satisfaction overall (not satisfaction when a service is provided).

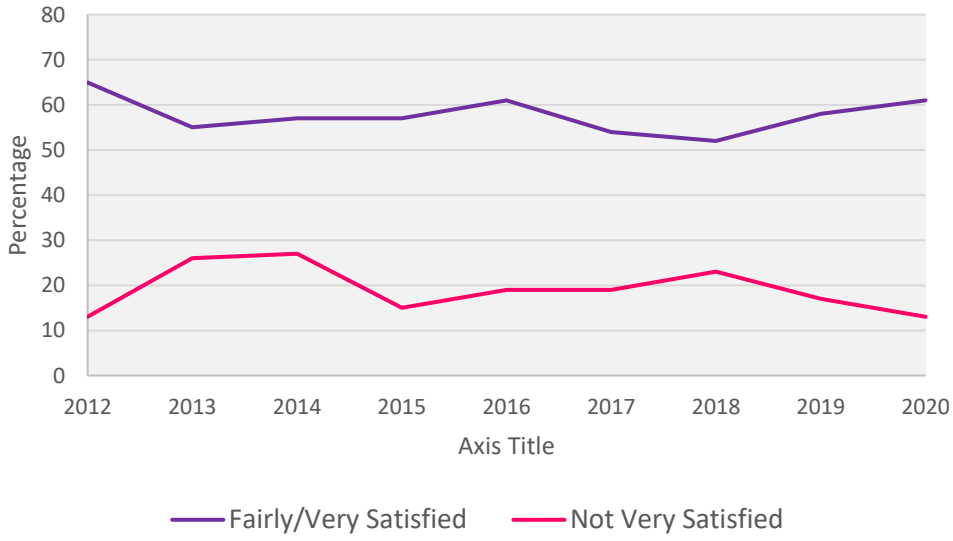


Figure 4: Residents Overall satisfaction with Stormwater

Longer term residents, those residing in the District more than 10 years are more likely to be not very satisfied with the stormwater services, than shorter term residents. The main reasons residents are not very satisfied with the stormwater services are:

- Flooding in street/area/surface flooding
- Drains/culverts blocked/need cleaning/maintenance
- Poor drainage/inadequate system/needs upgrading/improving.

When asked whether customers would like more to be spent, or less or about the same on stormwater management given that the Council cannot spend more without increasing rates or user charges, most said they would like to see about the same or more as illustrated in Figure 5.

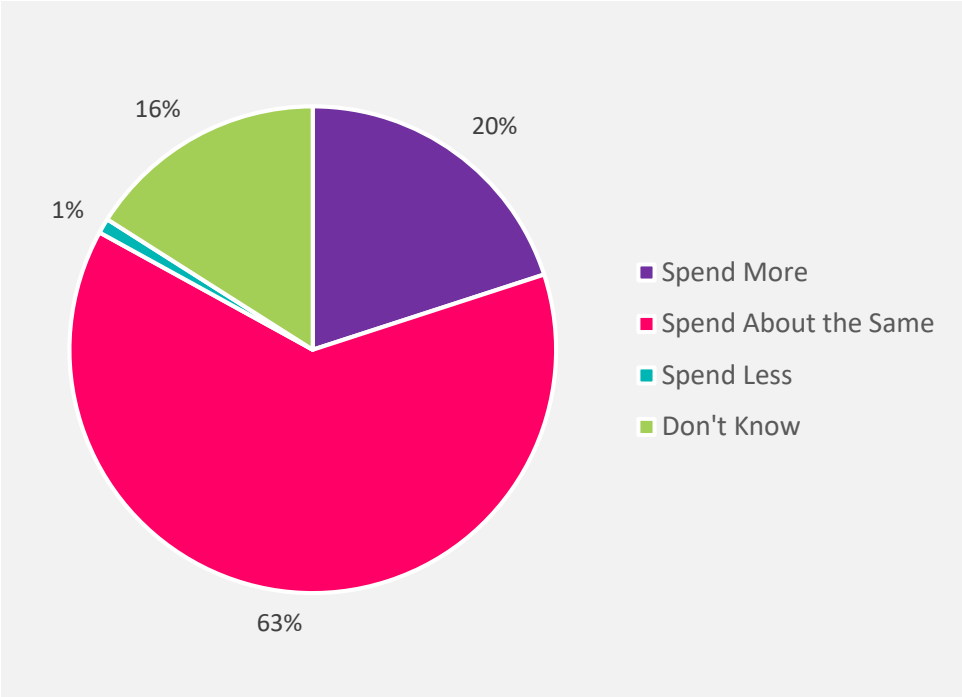


Figure 5: Summary of Customer Opinions on Stormwater Spending

7 Current and Future Demand

The ability to predict future demand for services enables the Council to plan ahead and identify the best way of meeting that demand. That may be through a combination of demand management and investing in improvements. This section provides and overview of key drivers of demand and what demand management measures the Council has planned to implement.

7.1 Demand Drivers

The future demand for stormwater services will change over time in response to a wide range of influences, including:

- Population growth and associated urban development
- Climate change and the anticipated increased rainfall and sea level rise
- Environmental effects
- Changing national, regional and district legislation and planning requirements

7.2 Assessing Demand

7.2.1 Population Growth

Population growth leads to intensification of development (infill housing) and new subdivisions.

Potential effects from increased population growth on the stormwater systems are:

- Increased flooding due to urbanisation and increased impervious surfaces; faster and larger runoff flows, which exceed system capacities.
- Decreased water quality due to change in land use and increasing urbanisation and;
- Decreased stream health and aquatic habitat due to change in land use and increasing urbanisation.

Population growth is assessed through the Council's growth modelling. The purpose of the growth model is to provide predictive information (demand and supply) for future physical development, to inform the programming of a range of services, such as network infrastructure and facilities, and District plan reviews. The model generates residential and business projections for 17 settlement areas and 5 ward remainder areas. The Council's growth assumptions have been reviewed and amended recently in light of the Covid-19 pandemic.

The key demographic assumptions under the updated medium growth scenario are:

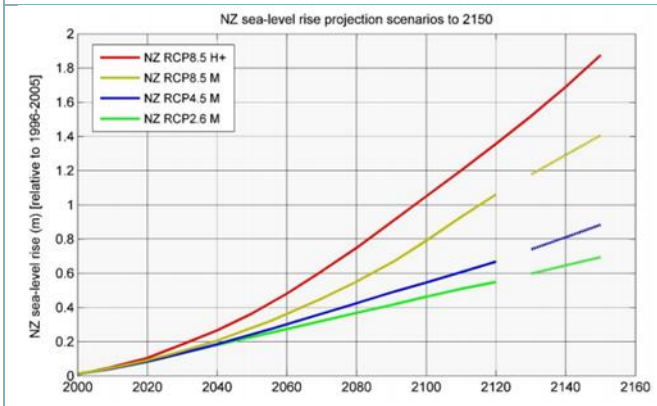
- Tasman's population is projected to increase by 7,700 between 2021 and 2031, to reach 64,300. Across the 30 years from 2021 to 2051, Tasman's population is projected to increase by 19,500, to reach 76,100.
- Dwelling numbers are projected to increase from 24,600 to 28,900 over the next 10 years (+4,300), and to 36,500 over the 30 years (+11,900 or 50%).

Tasman is expected to see an additional 160 new business lots developed over the next 10 years, and a further 335 between 2031 and 2051.

7.2.2 Climate Change

NIWA has predicted the effects of climate change in the Tasman District for the years 2040 and 2090. For the stormwater activity the most relevant changes to our climate relate to increased rainfall, rainfall intensities and rising sea levels. Anticipated changes and their impacts are summarised in Table 10.

Table 10: Impacts of anticipated changes

Changes to Climate in Tasman	Impacts and implications
Seasonal changes in rainfall patterns	
• Future precipitation projections indicate more rainfall in all seasons except spring for most of the district, however longer and more frequent dry period are also predicted. In all parts of the district the biggest rainfall increase is expected in winter. • A warmer atmosphere can hold more moisture (about 8% more for every 1°C increase in temperature), so there is potential for heavier extreme rainfall. Projections indicate more frequent and more extreme rainfall events throughout the district.	• Storm water infrastructure will increasingly be unable to cope with intense rainfall, resulting in more frequent and more severe surface flooding • Flood damage to public and private property. • Parks and recreation grounds are negatively affected by both prolonged dry and wet conditions. • Increased erosion leads to more sediment in waterways, causing poorer water quality and affecting aquatic habitat.
Sea level rise and storm surges	
• Sea levels will continue to rise and are expected to rise at an accelerated rate over time. Sea level rise scenarios and when a certain level will eventuate will vary depending on the different Representative Concentration Pathways (RCP) and to what extent carbon emissions will be reduced in the future. 	• Discharging stormwater in coastal settlements will become increasingly difficult during high tides. • Combined coastal and stormwater flooding in coastal areas will occur more frequently. • Storm surges are expected to become more frequent and increase in height. The probability of sea water levels reaching extreme levels (similar to above) during storm events will increase in the coming years.

Changes to Climate in Tasman		Impacts and implications
Sea Level Rise (SLR) (meters above 1986- 2005 baseline)	Expected between years	
+0.3m	2045 – 2060	
+0.5m	2060 – 2090	
+1.0m	2100 – 2170	
+1.5m	2130 - >2200	
+2.0m	>2150	

7.2.3 Environmental effects

Waterways are culturally significant and the protection or return to a healthy mauri of all waterbodies is important. Streams, stream corridors, estuaries and coastal waters are important features in the urban landscape and contribute to the general wellbeing of the community.

The potential adverse effects associated with stormwater discharges can be divided into 'quality', 'quantity' and 'stream modification' effects.

- **The quality effects** stem from the fact that urban land uses such as roads, parking, industrial zones and certain building materials generate contaminants, such as treated timber and zinc galvanised roofs that are picked up by stormwater runoff and accumulate in fresh water and marine water receiving environments where they have an adverse effect on ecosystems. The health of our streams, wetlands and coastal waters is affected by these discharges. It is acknowledged in the Council documents that urban stormwater runoff is very similar to that found in many other urban centres in New Zealand and often contains contaminants such as sediments, oils, greases, metals, rubbish, organic material and contaminants illegally discharged. Urban runoff may also lead to increased water temperature in summer which has an effect on stream life. Similarly, forestry activity and construction sites with the associated earthworks have the potential to generate high sediment loads which can be discharged into waterways and physically disturb the beds of the waterways and effect aquatic habitat. In addition, contamination also includes bacterial pollution in part from wastewater overflows and (leaky) sewers.

- **The quantity effects** stem from the fact that urbanisation leads to increased areas of impervious surface which in turn leads to a decrease in groundwater recharge and increased stormwater runoff. The increased runoff leads to higher flow velocities that can cause scour and streambank erosion. In more extreme storm events the increased runoff will contribute to flooding issues. Earthworks, compaction and deforestation also change the hydraulic response of an area leading to an increase in peak flows and volumes. The effect of reduced groundwater recharge leads to reduced base flows in streams especially during dry periods.

- **Stream modification** affects the health of the stream such as a result of changes in morphology, riparian margins, habitat, loss of seeps and springs, etc. Many of these changes are triggered by the desire to manage stormwater and facilitate urban development, with unintended and often avoidable effects. Examples are piping, lining of streams, removal of riparian vegetation, straightening, etc.

7.2.4 Changing Legislation

National, regional and District legislation and planning requirements evolve over time and guide how the Council manages the stormwater systems. Demand for new stormwater infrastructure has traditionally been driven by the capacity of our networks and ability to address flooding. Changing legislation requires us to take a wider and more holistic approach addressing multiple values such as water quality, ecology and amenity. It is expected that the demand for conventional solutions such as pipes and culverts will shift towards higher demand for solutions that are capable of addressing multiple values. This approach is also referred to as water sensitive design or low impact design and includes the implementation of stormwater treatment, stream restoration and management of riparian margins.

7.2.4.1 Three Waters Reform

Over the past three years central and local government have been considering solutions to challenges facing the regulation and delivery of three waters services. This has seen the development of new legislation and the creation of Taumata Arowai, the new water services regulator. Both central and local government acknowledge that there are broader challenges facing the delivery of water services and infrastructure, and the communities that fund and rely on these services. There has been regulatory failure, underinvestment in three waters infrastructure in parts of the country, and persistent affordability challenges.

Iwi/Māori also have a significant interest in te mana o te wai. Both central and local government acknowledge the importance of rights and interests under the Treaty of Waitangi and the role of the Treaty partners in progressing these issues.

Additional investment is required to increase public confidence in the safety of drinking water, and to improve environmental outcomes. The reform of three waters services will also support increased sustainability and resilience of communities to natural hazards and climate change.

Objectives of the Three Waters Reform Programme are:

- Significantly improving safety and quality of drinking water services.
- Ensuring all New Zealanders have equitable access to affordable three waters services.
- Improving resource coordination and unlocking strategic opportunities.
- Increasing resilience of three water services, particularly climate change and natural hazards.
- Moving three waters services to a financially sustainable footing.
- Improving transparency and accountability in cost and delivery of three waters services.

7.2.4.2 NPS Freshwater Management 2020

Through the National Policy Statement for Freshwater Management 2020 (Freshwater NPS) the Government has issued local authorities with new direction on how to manage freshwater under the Resource Management Act 1991. Central to this new direction is the concept of *Te Mana o te Wai*.

Te Mana o te Wai is a concept and framework which is derived out of Te Ao Māori (*the Māori world view that acknowledges the interconnectedness and interrelationship of all living and non-living things*) and reflects the recognition of freshwater as a natural resource whose health is integral to the social, cultural, economic and environmental wellbeing of communities. It refers to the essential value of water, and the importance of sustaining the health and wellbeing of water before providing for human health needs, and then to other uses.

There is a hierarchy of obligations in *Te Mana o te Wai* that prioritises (in order) the:

- Health and well-being of water bodies and freshwater ecosystems.
- Health needs of people (such as drinking water); and
- Ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The implementation of Te Mana o te Wai in the NPS-FM 2020 will be informed by the following six principles:

1. **Mana whakahaere**: the power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater
2. **Kaitiakitanga**: the obligation of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations
3. **Manaakitanga**: the process by which tangata whenua show respect, generosity, and care for freshwater and for others
4. **Governance**: the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and well-being of freshwater now and into the future
5. **Stewardship**: the obligation of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations
6. **Care and respect**: the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.

Figure 6: illustrates the interconnected principles of Te Mana o te Wai

Section 3.2(2) NPS-FM 2020 states every regional Council must give effect to Te Mana o te Wai. This will have implications on how the Stormwater Activity is managed and will likely impact stormwater discharges in the future. There is a lot of uncertainty around how and when Te Mana o te Wai will be implemented across New Zealand and the Council will work with the Government and our treaty partners to better understand and implement Te Mana o te Wai.

7.2.4.3 District Wide Stormwater Discharge Consent

The Council needs to meet the conditions of its Tasman District Wide Urban Stormwater Consent. This consent authorises the Council to discharge stormwater from its networks, provided that stormwater is managed in accordance with CMPs that are to be developed by the dates as set out in Table 11. The consent also requires the Council to monitor progress and review and amend its planning as required.

7.3 Demand Management

Demand management includes both asset and non-asset strategies to manage demand across the stormwater activity. The objective of demand management is to actively seek to modify customer demands for services in order to:

- Optimise utilisation/performance of existing assets
- Reduce or defer the need for new assets
- Meet the Council's strategic objectives
- Deliver a more sustainable service; and
- Respond to customer needs.

7.3.1 Asset Strategies to demand management

The Council programmes new assets and will upgrade existing assets in order to manage demand. Table 11 provides an overview of some key asset strategies, programmes or projects that the Council has in place to manage demand.

Table 11: Asset strategies to demand management

Projects and Programmes	Demand drivers
Richmond West and South stormwater channel upgrades A programme aimed at providing sufficient stormwater capacity for future development in Richmond West and South, incorporating natural channel design.	Growth, climate change and Environmental effects
Motueka West Stormwater discharge A project aimed at providing sufficient stormwater capacity for future development in Motueka West	Growth, climate change
Richmond Central Stormwater improvements A programme aimed at reducing flood risk in Richmond Central by upgrading existing stormwater networks	Climate change
Stormwater quality improvements A programme aimed at improving stream health and water quality affected by the Council's stormwater discharges	Changing legislation, Environmental effects
Overland flow path improvements A programme aimed at identifying and protecting overland flowpaths	Climate change

7.3.2 Non-Asset strategies to demand management

Table 12: Overview of some key non-asset strategies that the Council has in place to manage demand

Project and Programmes	Demand drivers
Catchment Management Planning Council efficiently manage demand through an integrated urban catchment management approach. The catchment management plans will assist the Council in identifying integrated solutions and balance competing needs.	Population growth, climate change, changing legislation, environmental effects

Project and Programmes	Demand drivers
Stormwater Modelling The anticipated population growth and associated future development is incorporated into our stormwater models. Our stormwater models help to predict and understand how growth affects stormwater flows and flooding and what response is required from the Council as well as private developers.	Population growth, climate change
Structure planning Model results will aid the Council in developing structure plans for future growth areas that will guide developers on how to manage stormwater effects on a catchment wide scale rather than on an individual site basis.	Population growth, climate change, environmental effects
Water Sensitive Design Council promotes, educates and champions the implementation of Water Sensitive Design. Water Sensitive Design approaches focus on reducing or eliminating stormwater runoff generation through source control, and utilising natural systems and processes to manage stormwater quantity and quality effects. WSD is inherently a context-specific approach which utilises a combination of conventional stormwater infrastructure, WSD devices (e.g. swales and raingardens), and enhanced natural systems to achieve the best practical stormwater management outcome. This includes the potential to utilise stormwater as a supply for potable water or irrigation. WSD is a design approach based on four guiding principles: • Mimic natural systems and hydrological processes • Address effects from stormwater as close to the source as possible. • Promote inter-disciplinary planning and design. • Protect and enhance the values and functions of natural ecosystems.	Climate change, environmental effects
Design standards New stormwater infrastructure is designed in accordance with the Nelson Tasman Land Development Manual. Infrastructure is required to be sized to cater for future 10% AEP events (primary networks) and future 1% AEP events (secondary network). Rainfall depth and duration details can be obtained from NIWA's High Intensity Rainfall Database (HIRDS) and should including climate change effects based on a 2°C temperature increase.	Climate change

8 Lifecycle Management

Lifecycle cost is the total cost to the Council of an asset throughout its life including, creation, operations and maintenance, renewal, and disposal. The Council aims to manage its assets in a way that optimises the balance of these costs. This section summarises how the Council plans to manage each part of the lifecycle for this activity.

8.1 Asset Condition and Performance

The Council needs to understand the current condition of its assets. Monitoring programmes should be tailored to consider how critical the asset is, how quickly it is likely to deteriorate, and the cost of data collection.

Condition assessment is not performed on individual reticulation assets; instead the reticulation systems as a whole is audited. The audits look at the condition of assets from site works or inspections. Manhole inspections are planned under the new contract Contract 1065 over the next three years. Our network is relatively young, so condition is not yet an issue, other than the possible problems in Motueka with some poor quality pipes laid close to the surface.

Critical assets have been defined as set out in section 8.1.1. Critical assets will be assessed for condition, especially those assets which are approaching the end of their theoretical useful life. the Council is also looking at ways to make better use of current information that is gathered but not stored in the asset register. Condition rating of stormwater pipes is conducted via CCTV surveys. Pipes have been rated both on structural (condition) and service (performance) defects basis.

Where condition rating is done, a 1-5 scale is used, as per the NZQA Infrastructure Asset Grading Guidelines, as shown in Table 13.

Table 13: Asset Condition Rating Table

Condition Grade and Meaning	General Meaning	
1 Very Good	Life:	10+ years.
	Physical:	Fit for purpose. Robust and modern design.
	Access:	Easy; easy lift manhole lids, clear access roads.
	Security:	Sound structure with modern locks.
	Exposure:	Fully protected from elements or providing full protection.
2 Good	Life:	Review in 5 – 10 years.
	Physical:	Fit for purpose. Early signs of corrosion/wear. Robust, but not latest design.
	Access:	Awkward; heavy/corroded lids, overgrown with vegetation.
	Security:	Sound structure with locks.
	Exposure:	Adequate protection from elements or providing adequate protection.

Condition Grade and Meaning	General Meaning	
3 Moderate	Life:	Review in 5 years.
	Physical:	Potentially impaired by corrosion/wear, old design or poor implementation.
	Access:	Difficult: requires special tools or more than one person.
	Secure:	Locked but structure not secure, or secure structure with no locks.
	Exposure:	Showing signs of wear that could lead to exposure.
4 Poor	Life:	Almost at failure, needs immediate expert review.
	Physical:	Heavy corrosion impairing use. Obvious signs of potential failure.
	Access:	Restricted, potentially dangerous.
	Secure:	Locks and/or structure easily breeched.
	Exposure:	Exposure to elements evident e.g. leaks, overheating.
5 Very Poor	Life:	0 years – broken.
	Physical:	Obvious impairments to use. Heavy wear/corrosion. Outdated/flawed design/build.
	Access:	Severely limited or dangerous.
	Security:	No locks or easily breeched.
	Exposure:	Exposed to elements when not specifically designed to be.

8.1.1 Asset Criticality

The Council developed an asset criticality assessment framework for water supply, waste water and stormwater and assessed vulnerability of critical assets to natural hazards and climate change effects. The frameworks is defined by:

- A 'Criticality Score' from one (very low criticality asset) to five (very high criticality asset).
- A set of 'Criteria' against which each asset will be assessed and assigned a Criticality Score (see one above).
- A set of straightforward, logical rules, measures and proxies under each criteria that can be assessed for each asset and enable a criticality Score to be assigned in a spatial (i.e. GIS) context.

For each asset, the criticality has been assessed against the following five criteria:

1. Number of people that would be effected if the asset failed.
2. Asset failure would prevent/impair use of a critical facility.
3. Ease of access/complexity of repair.
4. Asset failure has potential for environmental/health/cultural impacts.

5. Asset failure has potential to initiate cascading failures and/or asset has interdependencies with other assets.

Based on the above, asset criticality has been assessed for all assets across the district and mapped spatially in a GIS viewer.

The vulnerability of critical assets to natural hazards has been identified through the overlay of natural hazards information such as coastal inundation and sea level rise, stormwater and river flooding, fault lines, tsunami risk and liquefiable soils.

8.1.2 Asset Condition and Performance

The Council's piped network is at capacity in most of the UDA's and does not meet current design standards of 10% AEP (1 in 10 year) or more. Most of the existing pipe assets have a design capacity of 20% AEP (1 in 5 year) or 50% AEP (1 in 2 year). The performance of secondary flowpaths is potentially affected by blockages.

The following section provides a summary overview of the stormwater networks general condition.

Table 14: General Asset Condition

Urban Drainage Area	Asset condition
Richmond	All pipe assets and non-pipe assets were installed between 1950 and 2018. Generally, the assets in the Richmond UDA are relatively young and in good or very good condition. There are no major condition problems that signal the need for renewal expenditure.
Brightwater	All pipe assets and non-pipe assets were installed between 1964 and 2018. A small stormwater pumping station operates in the Brightwater Underpass but is a Roading asset. Generally, the assets in the Brightwater UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Wakefield	All pipe assets and non-pipe assets were installed between 1958 and 2018. Generally, the assets in the Wakefield UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Murchison	All pipe assets and non-piped assets were installed between 1970 and 2018. Generally, the assets in the Murchison UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
St Arnaud	All pipe assets were installed between 2000 and 2018. The installation date of non-pipe assets is not recorded in Confirm but assumed to be of the same age. The assets in the St Arnaud UDA are very young and in good or very good condition. There are no major condition problems that signal the need for renewal expenditure.

Urban Drainage Area	Asset condition
Tapawera	All pipe assets and non-pipe assets were installed between 1973 and 2018. Generally, the assets in the Tapawera UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Motueka	All pipe assets and non-pipe assets were installed between 1962 and 2018. While the stormwater systems in Motueka are older than many in the District, there is not a great deal of knowledge about the system's condition. From inspections carried out under the maintenance contract and local knowledge, it is thought likely that the condition of a number of the older assets is poor. Renewal work is typically preceded by CCTV investigations to identify works that need repair and to scope the severity and extent of the problems.
Mapua/Ruby Bay	All pipe assets and non-pipe assets were installed between 1971 and 2015. Generally, the assets in the Mapua/Ruby Bay UDA are relatively young and in good condition There are no major condition problems that signal the need for renewal expenditure.
Tasman	All pipe assets were installed between 1980 and 2006. Generally, the assets in the Tasman UDA are relatively and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Kaiteriteri	All pipe assets were installed between 1963 and 2018. Generally, the assets in the Kaiteriteri UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Takaka	All pipe assets were installed between 1970 and 2018. Generally, the assets in the Takaka UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Pohara	All pipe assets were installed between 1990 and 2018. Generally, the assets in the Pohara UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Ligar Bay and Tata Beach	All pipe assets were installed between 1986 and 2018. Generally, the assets in the Ligar Bay and Tata Beach are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.
Collingwood	All pipe assets were installed between 1980 and 2015. Much of the residential developed area has piped stormwater systems. The condition of the existing stormwater infrastructure is not known.
Patons Rock	All pipe assets were installed between 1970 and 2012. Generally, the assets in the Patons Rock UDA are relatively young and in good condition. There are no major condition problems that signal the need for renewal expenditure.

8.2 Operations and Maintenance

8.2.1 Key Operational and Maintenance Themes

The Council's operation and maintenance efforts for the next 10 years is focused on the following key themes:

- Inspection, unblocking and repairs of the stormwater reticulation system.
- Regular inspection and control of vegetation in drains and creeks.
- Removal of deposited gravels or sediment in drains and creeks and erosion protection when required.
- Inspection and general maintenance of detention dams.
- Response to storm events and flooding.
- Operate the tidal control gates in Motueka.

8.2.2 Maintenance Contracts

The operation and maintenance of the three waters has been incorporated into a performance-based contract. The key outcomes of the new contract include:

- A high degree of reliability of all services, systems, network and supply.
- Best value to the ratepayer.
- Consistently meeting regulatory requirements – no breaches of resource consents.
- High levels of customer satisfaction.
- Assets sustainably maintained to meet asset condition ratings.
- Innovations introduced that add value.
- Accurate and timely reporting to meet statutory requirements and contract targets.
- Up-to-date and accurate asset information.

8.2.3 Maintenance Strategies

The following maintenance strategies are in place to ensure that all aspect of the stormwater network are operating efficiently and in accordance with contract requirements:

- Inspection of stormwater assets – obtaining asset information during reactive works or from CCTV and other inspections.
- Pre-storm checks – Ensuring that the more critical and visible components of the stormwater system have been checked and are in good condition ahead of forecast storm events.
- Weather and tidal monitoring – Monitoring of weather forecasts/storm warnings and related tidal levels. In order to predict tidal control requirements and requests for pre-storm checks and checking availability of additional resources.
- Water quality – monitoring and treatment for stormwater quality and prevention and response to illegal discharges.

- Removal of sediments and gravels – checking for and removal of sediments and gravels in detention dams and drains.
- Open watercourses – Open watercourses are in general maintained by property owners apart from the major drains that are maintained on a regular basis by the Council. However, when there has been a significant impact to the watercourse from flooding events then the Council will consider undertaking restoration work.
- Overland flowpaths – Improvement to the provision for and maintenance of overland flowpaths.

8.2.4 Forecast Operations and Maintenance Expenditure

The 10 year forecasts for operations and maintenance costs are shown in Figure 7. For a more detailed programme see Appendix A.

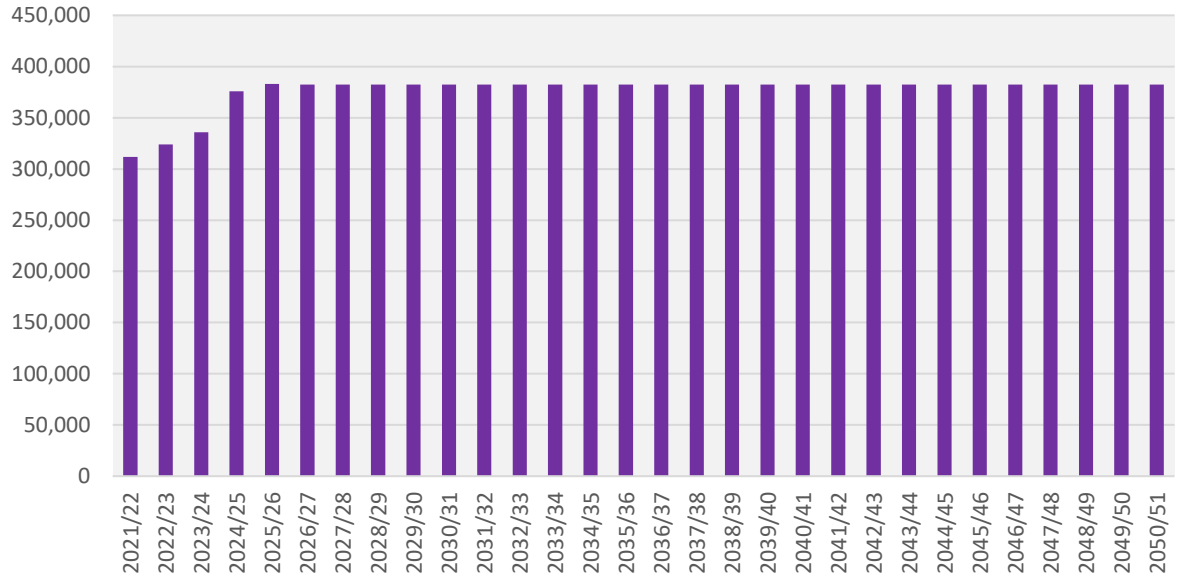


Figure 7: 2021 – 2051 Direct Operations and Maintenance Expenditure Excluding Inflation

8.3 Asset Renewal/Replacement

Renewal expenditure is major work that does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original capacity. Funding of work over and above restoring an asset to its original capacity is considered to be new capital works expenditure.

8.3.1 Key Renewal Themes

The Council has planned negligible asset renewals for the first 10 years, however some annual renewals are programmed for outlets, inlets and valves. Pipes and manhole renewals are programmed to commence from year 11 onwards.

Within the maintenance contract there is a requirement to assess the condition of each stormwater manhole over a three year period. Pipe inspections are usually undertaken using CCTV. Some CCTV records of stormwater pipes have been done and renewal works can be determined from condition and performance ratings of the stormwater pipe. Pipe condition can also be obtained from specific site works where stormwater pipes are exposed and found to need replacing.

8.3.2 Renewal Strategies

Assets are considered for renewal when:

- They near the end of their effective useful life.
- The cost of maintenance becomes uneconomical and the whole-of-life costs are less to renew the asset than keep up maintenance.
- The risk of failure of critical assets is unacceptable.

The renewal programme has generally been developed by the following:

- Taking asset age and remaining life predictions, calculating when the remaining life expires and converting that into a programme of replacements based on valuation replacement costs.
- Reviewing and justifying the renewals forecasts using the accumulated knowledge and experience of asset operations and asset management staff. This incorporates the knowledge gained from tracking asset failures and performance through the asset management system.
- The renewal programme is reviewed in detail every three years, by planning advisors, asset engineers and engineering management; and crossed referenced with other activities to determine if other projects are occurring in the same location. Timings may be fine-tuned to optimise overall programme to minimise disruptions to the public and realise potential costs saving in the reinstatement and preliminary and general works where possible.
- Every year the annual renewal programme is reviewed and planned with the input of the maintenance contractor.

Minor renewal projects are typically carried out by the relevant operation and maintenance contractor. Contracts for larger value renewal projects are tendered in accordance with the Procurement Strategy. Prior to the asset being renewed, the operations and maintenance contractor will inspect these assets to confirm whether renewal is actually necessary. In the event it does not need to be renewed, a recommended date of renewal is then entered back into the Confirm database. This new date will then be included in the next AMP update.

8.3.3 Deferred Renewals

Deferred renewal is the shortfall in renewals required to maintain the service potential of the assets. This can include:

- Renewal work that is scheduled but not performed when it should have been, and which has been put off for a later date (this can often be due to cost and affordability reasons).
- An overall lack of investment in renewals that allows the asset to be consumed or run-down, causing increasing maintenance and replacement expenditure for future communities.

Figure 8 compares the Council's cumulative renewal expenditure and cumulative depreciation for this activity. If the renewals expenditure starts falling behind the accumulative depreciation it can indicate that the assets may not be being replaced or renewed at the rate at which they are being consumed. If this continues unchecked for too long, future communities will inherit a run-down asset, high maintenance costs and high capital costs to renew failing infrastructure.

There is a significant difference between planned renewals and forecast depreciation over 30 years. This divergence is due primarily to the long useful life and age profile of our current assets. Most of our stormwater assets are not due for replacement within the next 30 years. As new assers are constructed, it will also contribute to the divergence between renewals and depreciation. The new assets contribute to higher depreciation but most don't need replacing within the next 30 years. While not shown here, the Council has compared the likely renewal requirements for 100 years with depreciation over the same time. This assessment shows that the gap closes in the long-run.

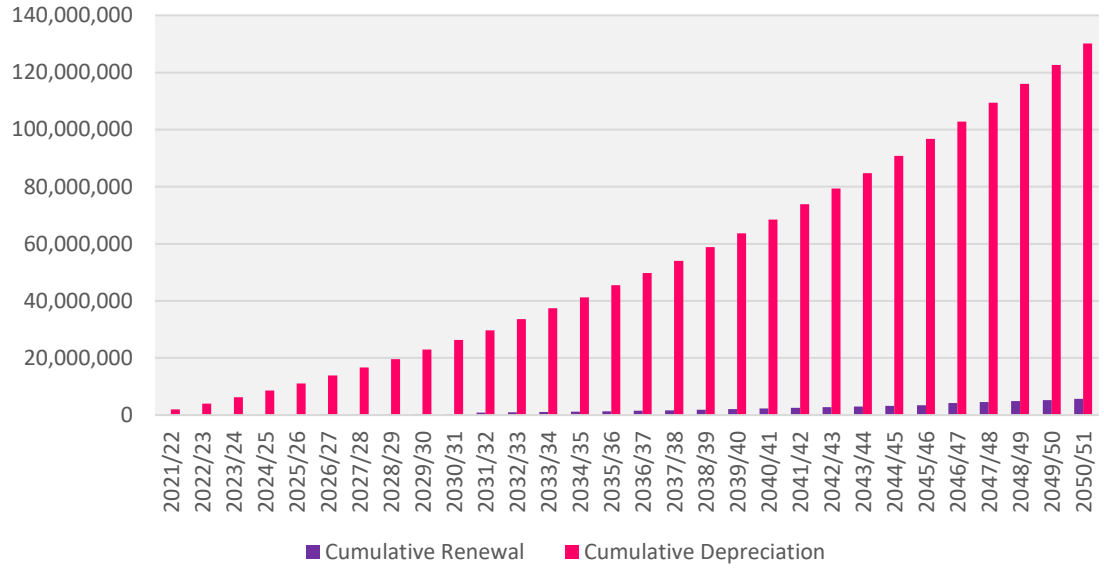


Figure 8: Cumulative Depreciation and Renewal Expenditure Comparison Including Inflation

8.3.4 Forecast Renewal Expenditure

Figure 9 below shows a summary of the expenditure forecast for renewals over the next 30 years.

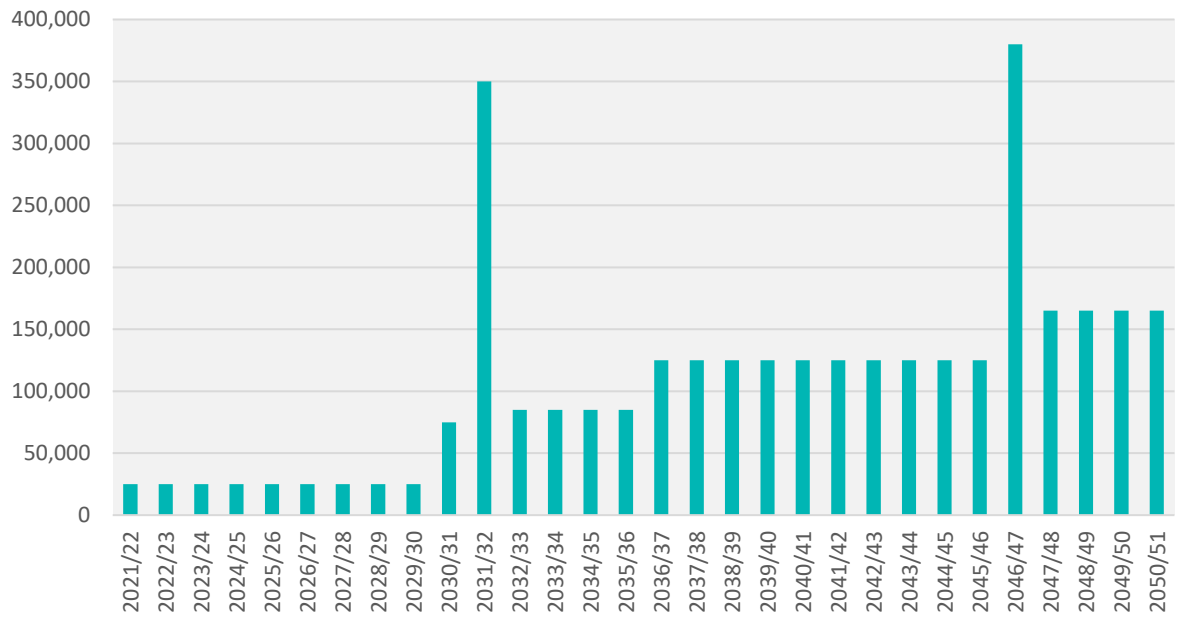


Figure 9: 2021 – 2051 Direct Renewals Expenditure Excluding Inflation

8.4 Asset Development

New capital expenditure is used to create new assets, expand or upgrade existing assets, or increase the capacity of existing assets beyond their original design capacity or service potential. This section summarises future new capital work requirements for this activity.

8.4.1 Key Asset Development Themes

Growth is occurring faster than anticipated in some settlements and where capacity is not available, or if the infrastructure does not exist, the Council will need to provide upgraded or new infrastructure to enable growth. The Council plans to improve its primary and secondary network to meet levels of service in areas that are prone to flooding.

8.4.2 Projects to Support Increasing Levels of Service

The Council is planning the following key projects to increase the levels of service:

- Takaka - Stormwater Improvements Lake Killarney
- Richmond Central Stormwater Diversion
- Motueka West Discharge System
- Stormwater quality improvements

8.4.3 Projects to Support Growth

The Council is planning the following key projects and programmes to address growth:

- Motueka West Discharge System.
- Richmond West and South stormwater channel upgrades.
- Mapua Stormwater Detention programme.

8.4.4 Forecast New Capital Expenditure

The capital programme that has been forecast for this activity where the primary driver is classed as New Works (ie, growth or levels of service) is summarised in Figure 10 below.

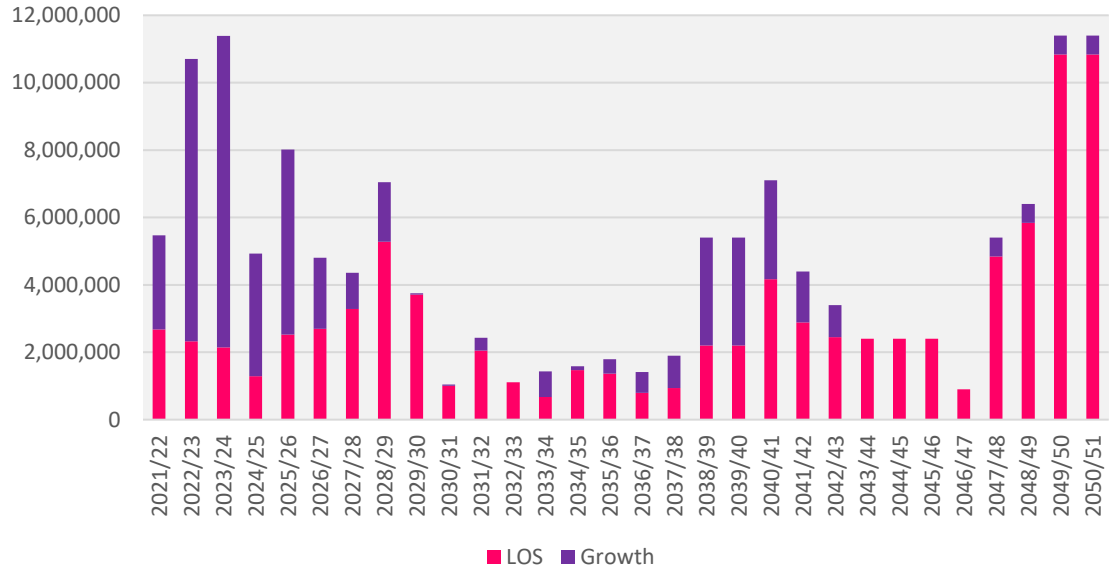


Figure 10: 2021 – 2051 New Capital Expenditure Excluding Inflation

8.5 Asset Disposal

The Council does not have a formal strategy on asset disposal and as such it will treat each asset individually on a case-by-case basis when it reaches a state that disposal needs to be considered. Asset disposal is generally a by-product of renewal or upgrade decisions that involve the replacement of assets.

Assets may also become redundant for any of the followings reasons:

- Underutilisation
- Obsolescence
- Provision of the asset exceeds the required level of service
- Uneconomic to upgrade or operate
- Policy change
- The service is provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social, vandalism).

Depending on the nature, location, condition and value of an asset it is either:

- Made safe and left in place
- Removed and disposed of
- Removed and sold
- Ownership transferred to other stakeholders by agreement.

In most situations assets are replaced at the end of their useful life and are generally in poor physical condition. Consequently, the asset with be disposed of to waste upon its removal. In some situations, an asset may require removal or replacement prior to the end of its useful life. In this circumstance the Council may hold the asset in stock for reuse elsewhere on the network. Otherwise, if this is not appropriate it could be sold off, transferred or disposed of.

When assets sales take place, the Council aims to obtain the best available return from the sale and any net income will be credited to that activity. The Council follows practices that comply with the relevant legislative requirements for local government when selling off assets.

There are currently no significant stormwater assets programmed for disposal.

9 Financials

The Council has planned a prudent financial approach to managing its assets and services. This section provides a summary of the total value of the activity and the investment that the Council has planned to make over the next 30 years.

9.1 Funding Sources

This activity is currently funded through a mixture of the sources as shown in the figure below.

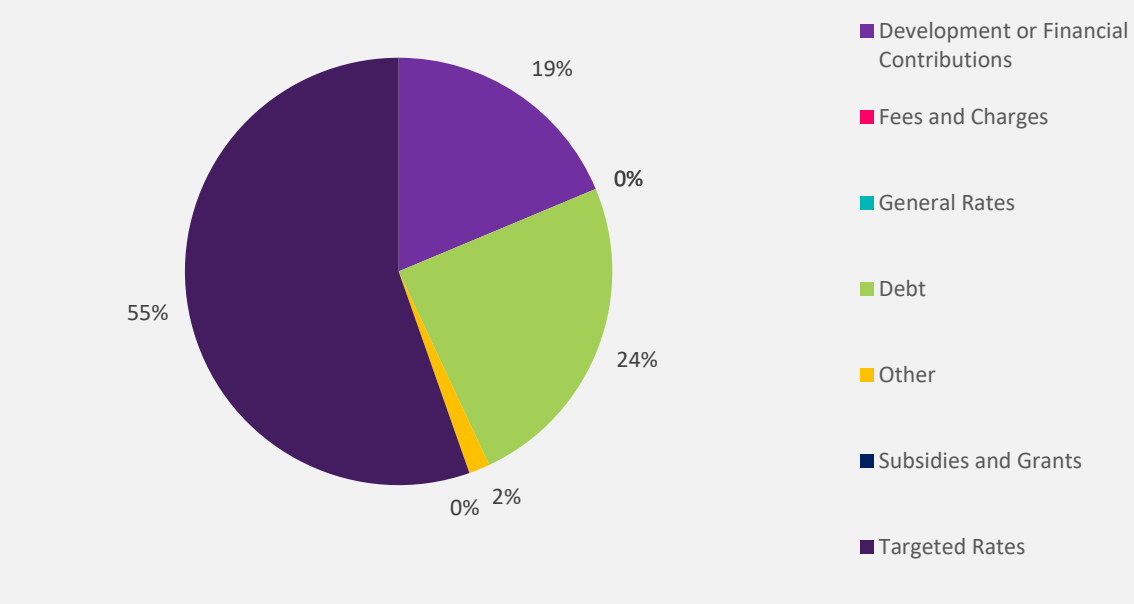


Figure 11: Funding Sources

9.1.1 Development Contributions

The Council's Development and Financial Contributions Policy can be found on our website at: www.tasman.govt.nz/policy/policies/development-contributions-policy.

The next updated of the Policy will be adopted in conjunction with the Council's Long Term Plan and will come into effect on 1 July 2021.

The Policy sets out the development contributions payable by developers, how and when they are to be calculated and paid, and a summary of the methodology and rationale used in calculating the level of contributions. The key purpose of the Policy is to ensure that growth, and the cost of infrastructure to meet that growth, is funded by those who cause the need for and the benefit from the new or additional infrastructure, or infrastructure of increased capacity. There are three water supply development contributions in place. Which charge is applicable depends on what catchment the development is located in.

Table 15: Stormwater Development Contribution Charges as at 1 July 2018

Catchment	Development Contribution per HUD $ (incl GST)*
Waimea	$6,374
Motueka	$9,300
Golden Bay	$1,091
Rest of District	Nil

HUD = Household Unit of Demand

* The value of the Development Contribution shall be adjusted on 1 July each calendar year using the annual change in the Construction Cost Index.

9.2 Asset Valuation and Depreciation

The Local Government Act 1974 and subsequent amendments contain a general requirement for local authorities to comply with Generally Accepted Accounting Practice ("GAAP").

The Council requires its infrastructure asset register and valuation to be updated in accordance with Financial Reporting Standards and the AMP improvement plan.

The valuations summarised below have been completed in accordance with the following standards and are suitable for inclusion in the financial statements for the year ending June 2020.

- NAMS Group Infrastructure Asset Valuation Guidelines – Edition 2.0.
- New Zealand International Public Sector Accounting Standard 17; Property, Plant and Equipment (PBE IPSAS 17) and PBE IPSAS 21 (Impairment of Non-Cash Generating Assets).

9.2.1 Latest Asset Valuation

Assets are valued every three years. The stormwater assets were last re-valued in June 2020 and are reported under separate cover1. Key assumptions in assessing the asset valuations are described in detail in the valuation report.

The majority of information for valuing the assets was obtained from the Council's Confirm database. The data confidence is detailed in Table 16.

Table 16: *Data Confidence

Asset Description	Confidence	Comments
Stormwater Assets	B - Good	The asset registers provide all the physical assets that make up each scheme. However, attribute information could be more detailed such as pipe and manhole depths, surface types etc.

*Based on NZ Infrastructure Asset Valuation and Depreciation Guidelines – Edition 2, Table 4.3.1: Data confidence grading system.

The Base Useful Lives for each asset type as published in the NZIAVDG Manual were used as a guideline for the lives of the assets in the valuation. Generally, lives are taken as from the mid-range of the typical lives indicated in the Valuation Manual where no better information is available. Lives used in the valuation are presented in Table 17 below.

Table 17: Asset Lives

Item	Life (years)	Minimum Remaining Life (years)
Pipelines		
AC, EW pipe	60	5
Concrete pipe	120	5
CI, DI, PE, PVC, Steel pipe	80	5
Miscellaneous pipework and fittings associated with treatment plants and pump stations	15	2
Valves	50	5
Manholes	120	5
Non Pipe Assets		
Concrete structures	80	5
Soak pits	80	5
Stormwater channel (open drain)	Not depreciated	
Control cabinets, electrical, telemetry	15	2

9.2.2 Depreciation

Depreciation of assets must be charged over their useful life. The Council calculates depreciation on a straight line basis on most infrastructural assets at rates which will write off the cost (or valuation) of the assets to their estimated residual values, over their useful lives.

The optimised replacement value, optimised depreciated replacement value and the annual depreciation of the stormwater assets are summarised in Table 18.

Table 18: Stormwater Asset Valuation Summary 30 June 2020

	Optimised Replacement Value ($000)	Optimised Depreciated Replacement Value ($000)	Annual Depreciation ($000/yr)
Stormwater Pipes	146,586	112,424	1,308
Stormwater Channels	5,462	5,387	4
Stormwater Surface features	40,026	30704	447
Total	192,074	148,515	1,759

9.3 Financial Summary

9.3.1 Funding Impact Statement

The Council's Funding Impact Statement (FIS) for this activity is included in the Table 19. It summarises in one place how this activity will be funded and how those funds will be applied over the next 10 years.

Table 19: Funding Impact Statement

	2020/21 AP $000	2021/22 Budget $000	2022/23 Budget $000	2023/24 Budget $000	2024/25 Budget $000	2025/26 Budget $000	2026/27 Budget $000	2027/28 Budget $000	2028/29 Budget $000	2029/30 Budget $000	2030/31 Budget $000
SOURCES OF OPERATING FUNDING											
General rates, uniform annual general charges, rates penalties	0	0	0	0	0	0	0	0	0	0	0
Targeted rates	5,050	4,882	4,700	4,687	5,201	5,548	5,910	5,909	6,093	6,723	6,899
Subsidies and grants for operating purposes	0	0	0	0	0	0	0	0	0	0	0
Fees and charges	0	0	0	0	0	0	0	0	0	0	0
Internal charges and overheads recovered	0	0	0	0	0	0	0	0	0	0	0
Local authorities fuel tax, fines, infringement fees, and other receipts	185	141	152	163	164	165	167	169	171	173	175
Total operating funding	**5,235**	**5,023**	**4,852**	**4,850**	**5,365**	**5,713**	**6,077**	**6,078**	**6,264**	**6,896**	**7,074**
APPLICATIONS OF OPERATING FUNDING											
Payments to staff and suppliers	1,504	1,580	1,620	1,644	1,681	1,749	1,743	1,704	1,777	1,814	1,886
Finance costs	869	889	841	744	760	712	647	604	606	682	680
Internal charges and overheads applied	715	404	470	690	990	1,096	1,247	1,271	1,303	1,408	1,405
Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
Total applications of operating funding	**3,088**	**2,873**	**2,931**	**3,078**	**3,431**	**3,557**	**3,637**	**3,579**	**3,686**	**3,904**	**3,971**
Surplus/(deficit) of operating funding	**2,147**	**2,150**	**1,921**	**1,772**	**1,934**	**2,156**	**2,440**	**2,499**	**2,578**	**2,992**	**3,103**

	2020/21 AP $000	2021/22 Budget $000	2022/23 Budget $000	2023/24 Budget $000	2024/25 Budget $000	2025/26 Budget $000	2026/27 Budget $000	2027/28 Budget $000	2028/29 Budget $000	2029/30 Budget $000	2030/31 Budget $000
SOURCES OF CAPITAL FUNDING											
Subsidies and grants for capital expenditure	0	0	0	0	0	0	0	0	0	0	0
Development and financial contributions	1,677	1,965	1,965	1,965	1,902	1,902	1,902	1,902	1,823	1,823	1,937
Increase (decrease) in debt	123	249	(709)	(1,052)	(1,323)	(424)	(182)	599	2,779	932	(2,111)
Gross proceeds from sale of assets	0	0	0	0	0	0	0	0	0	0	0
Lump sum contributions	0	0	0	0	0	0	0	0	0	0	0
Other dedicated capital funding	0	0	0	0	0	0	0	0	0	0	0
Total sources of capital funding	**1,800**	**2,214**	**1,256**	**913**	**579**	**1,478**	**1,720**	**2,501**	**4,602**	**2,755**	**(174)**
APPLICATIONS OF CAPITAL FUNDING											
Capital expenditure											
- to meet additional demand	179	31	32	32	33	34	35	36	37	38	39
- to improve the level of service	199	153	211	216	222	228	526	925	4,249	4,734	1,290
- to replace existing assets	1,927	4,875	9,928	10,858	4,689	7,981	4,515	3,780	3,573	(449)	(15)
Increase (decrease) in reserves	1,642	(695)	(6,994)	(8,421)	(2,431)	(4,609)	(916)	259	(679)	1,424	1,615
Increase (decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
Total applications of capital funding	**3,947**	**4,364**	**3,177**	**2,685**	**2,513**	**3,634**	**4,160**	**5,000**	**7,180**	**5,747**	**2,929**
Surplus/(deficit) of capital funding	**(2,147)**	**(2,150)**	**(1,921)**	**(1,772)**	**(1,934)**	**(2,156)**	**(2,440)**	**(2,499)**	**(2,578)**	**(2,992)**	**(3,103)**
Funding balance	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

9.3.2 Project Drivers

All expenditure must be allocated against at least one of the following project drivers.

- Operation and Maintenance: operational activities that do not involve the renewal or upgrade of assets, or work that is necessary in order to provide on-going services at the agreed levels.
- Renewals: significant work that restores or replaces an existing asset towards its original size, condition or capacity.
- Increase Level of Service: works to create a new asset, or to upgrade or improve an existing asset, beyond its original capacity or performance.
- Growth: works to create a new asset, or to upgrade or improve an existing asset, beyond its original capacity or performance to provide for the anticipated demands of future growth.

This is necessary for two reasons as follows.

- Schedule 13(1) (a) and section 106 of the Local Government Act require the Council to identify the total costs it expects to have to meet relating to increased demand resulting from growth when intending to introduce a Development Contributions Policy.
- Schedule 10(2)(1)(d)(l)-(iv) of the Local Government Act requires the Council to identify the estimated costs of the provision of additional capacity and the division of these costs between changes to demand for, or consumption of, the service, and changes to service provision levels and standards.

All new works have been assessed against these project drivers. Some projects may be driven by a combination of these factors and an assessment has been made of the proportion attributed to each driver.

9.3.3 Scope Risk and Funded Capital Programme

When developing this work programme, the Council needs to estimate how much to budget for each project. Often, the Council cannot be certain what the actual costs or scope of the project will be because the design is yet to be completed. Typically, the Council has more confidence in the cost and scope of projects that are planned within the first three years. After this, estimates are usually based on simple concept designs.

To address this uncertainty, the Council has incorporated funding of scope risk into capital project budgets. The amount of scope risk included varies from 10% to 40% of the project estimate, depending on the expected complexity of the individual project. Based on history, it is unlikely that all individual projects will need the full amount of allocated scope risk funding, in reality there will be some under and over spending.

It is also unrealistic to assume that we will deliver all of our projects on time. There are often delays associated with land access and consenting and other unforeseen issues that prevent us achieving on time delivery for some projects.

For the water, wastewater, stormwater, and rivers activities, we have made an overall downward adjustment to the total capital programme of 10% per year. This adjustment accounts for uncertainties in scope risk and programme delivery. By including this adjustment, we avoid over-funding the activities. Where we have applied the 10% adjustment, we refer to this adjusted budget as the total funded capital programme.

9.3.4 Total Expenditure

Figure 12 and Figure 13 show the total expenditure for the Stormwater activity for the first 10 and 30 years respectively. Total expenditure is made up of operational costs, totaling $34.6 million over the first 10 years and capital costs, totaling $62.8 million over the first 10 years.

The Council's total expenditure peaks in year two and three, which is caused by a number of large projects being programmed in these years, including:

- Motueka West Discharge System (Woodlands)
- Borck Creek SH60 bridge upgrade
- Borck Creek Channel widening
- Stormwater land purchase

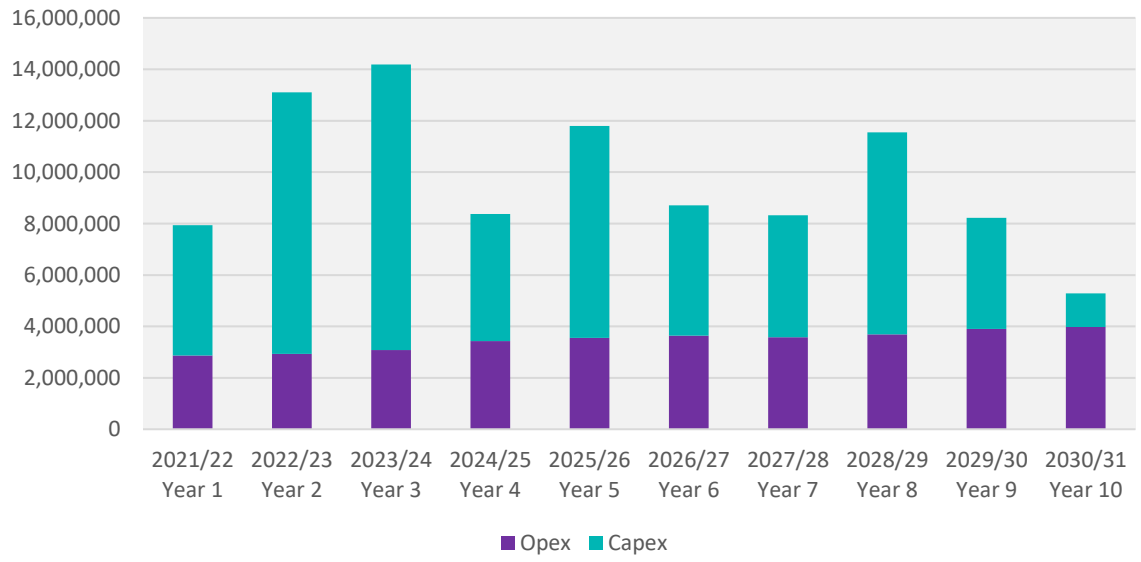


Figure 12: Total Annual Expenditure Years 1 to 10 Including Inflation

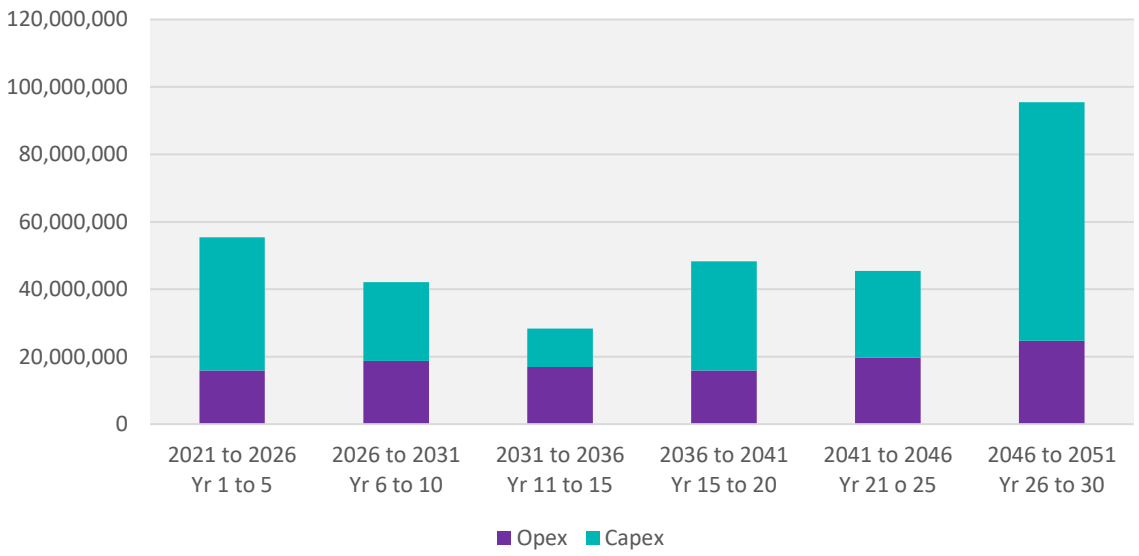


Figure 13: Five Yearly Total Expenditure Years 1 to 30 Including Inflation

9.3.5 Total Income

Figure 14 and **Figure 15** show the total income for the stormwater activity for the first 10 and 30 years respectively.

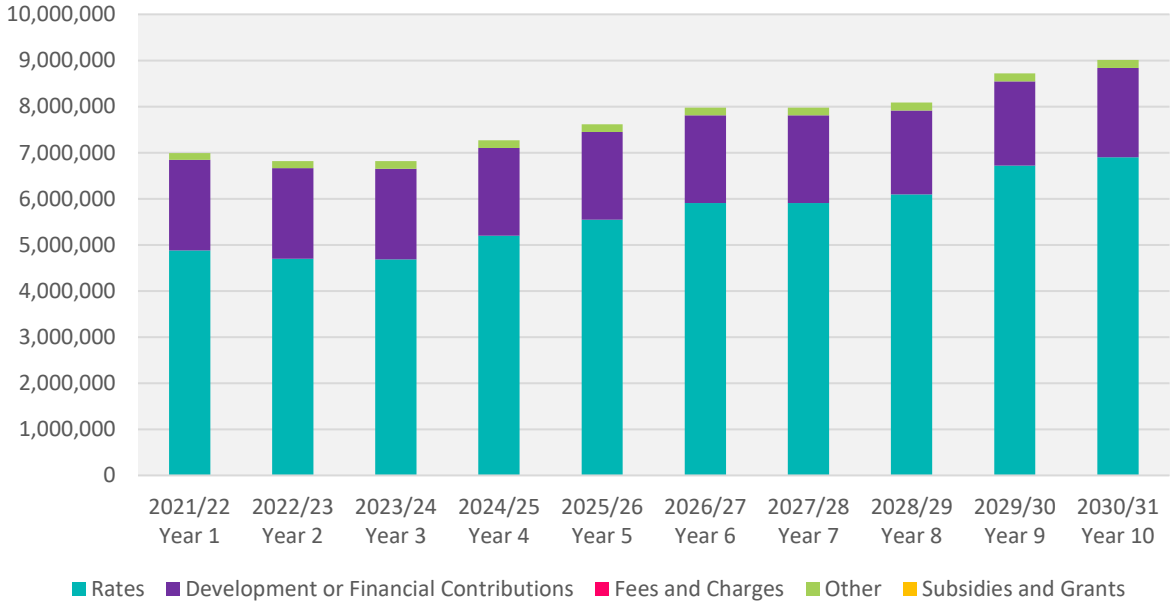


Figure 14: Total Annual Income Years 1 to 10

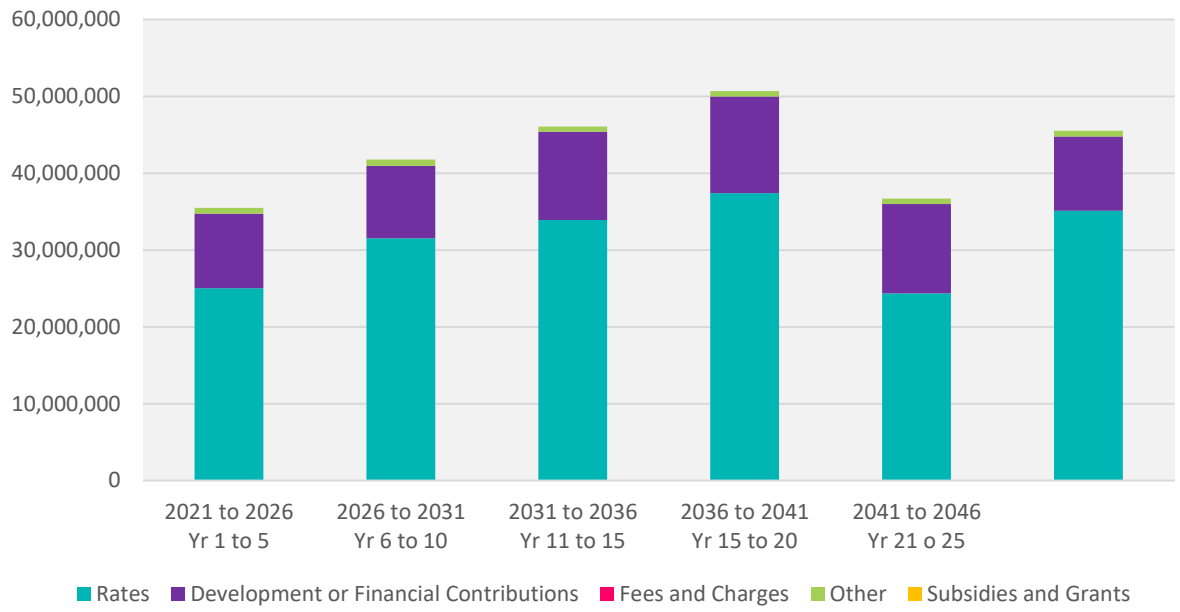


Figure 15: Five Yearly Total Income Years 1 to 30

9.3.6 Operational Costs

Figure 16 and Figure 17 show the total operating expenditure for the Stormwater activity for the first 10 and 30 years respectively.

Operational costs for the stormwater activity are forecast to increase by an average of 3.6% per year over the next 30 years. Direct operational costs are almost static for the duration of the 30 years, with increases largely due to inflation. Indirect costs increase on average 5.2% per year over the next 30 years largely due to varying loan interest costs and depreciation associated with the capital programme for this activity.

The majority of the operating costs are indirect costs and mainly made up of costs for staff, interest and depreciation.

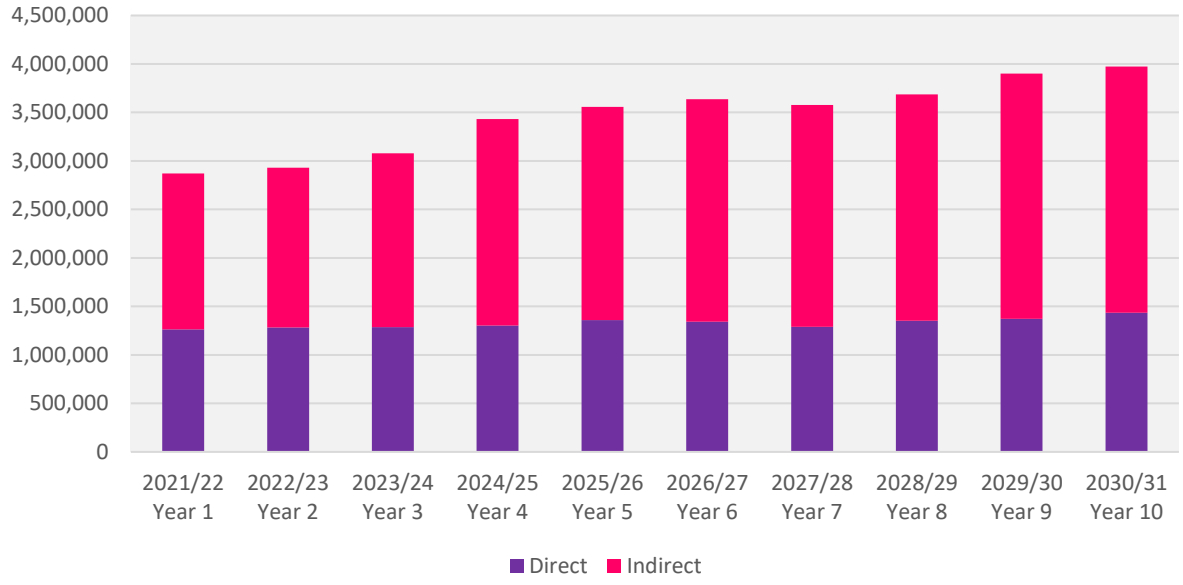


Figure 16: Direct and Indirect Annual Operating Costs Years 1 to 10 Including Inflation

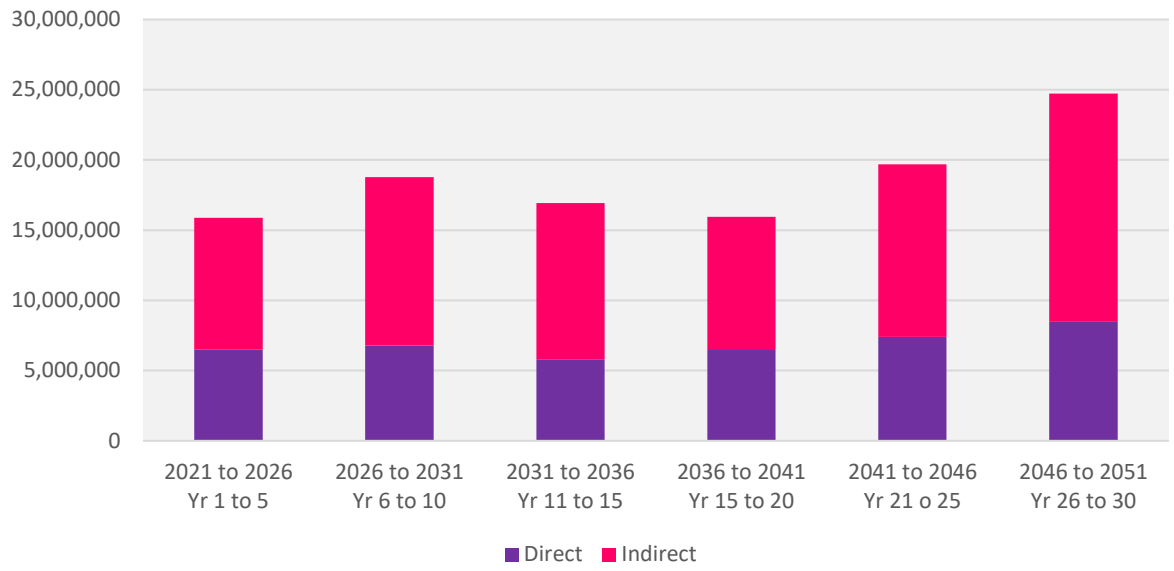


Figure 17: Direct and Indirect Five Yearly Operating Costs Years 1 to 30 Including Inflation

9.3.7 Capital Expenditure

Figure 18 and Figure 19 show the total capital expenditure for the Stormwater activity for the first 10 and 30 years respectively.

The Council has planned to spend around $63 million on capital improvements over the next 10 years. Of this, 54% is attributable to growth, 45% for level of service improvements, and 1% for asset renewal. The Council's stormwater assets are long life and are relatively young. This means that there is almost no asset renewal requirements over the next 30 years.

For the first 10 years, the Council has planned to undertake stormwater improvements with a focus on increasing capacity to cater for growth. After that, the focus shifts to improving levels of service. There is a notable increase in level of service expenditure between Year 26 and 30. This is caused by a large project aiming to reduce the risk of stormwater flooding in Motueka.

The Council will identify the need for further works through the catchment management plan process. It is likely that these works will be added to the programme after completion of the catchment management plans.

Over the next 30 years, the total funded capital programme is $203 million.

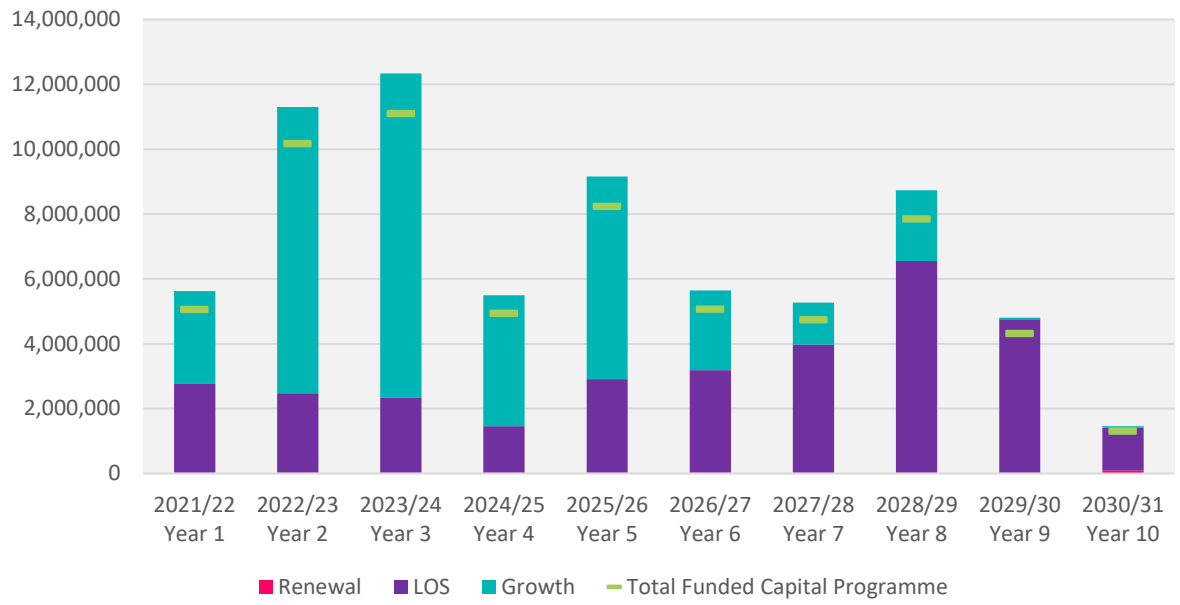


Figure 18: Annual Capital Expenditure Years 1 to 10 Including Inflation

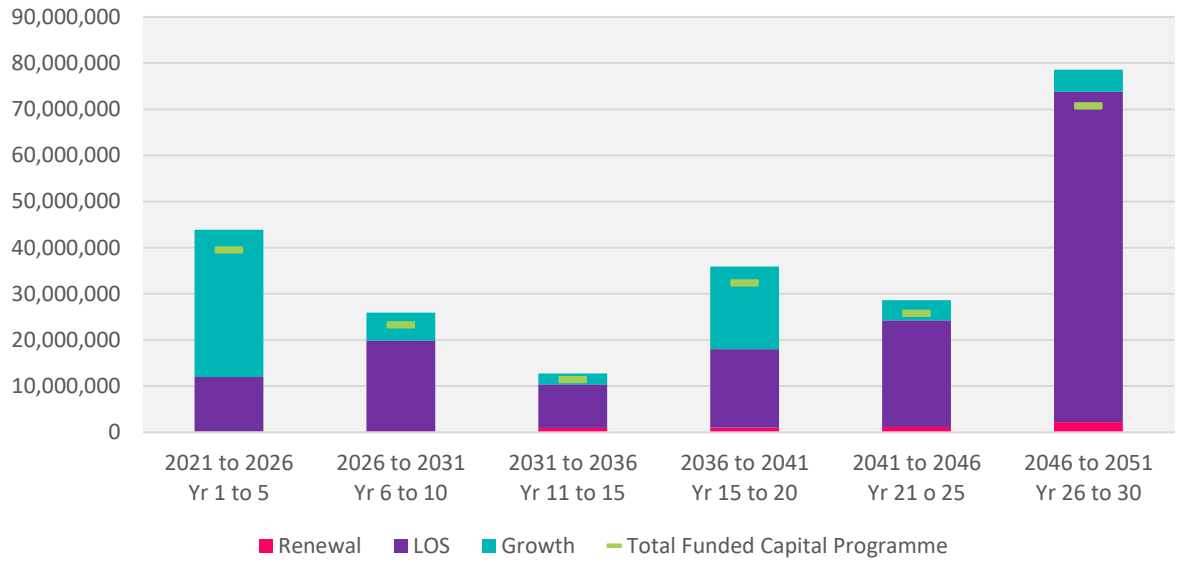


Figure 19: Five Yearly Capital Expenditure Years 1 to 30 Including Inflation

10 Sustainability and Environment

Sustainability means that we effectively balance the needs of present and future communities. From an asset management perspective, sustainability is critical, as many assets have a long lifespan and must be 'future-proofed'. The Council has a responsibility to manage this activity in a way that supports the environmental, social, cultural and economic well-being of current and future generations. This section focuses on social, cultural and environmental sustainability.

The Local Government Act 2002 requires local authorities to take a sustainable development approach while conducting their business, taking into account the current and future needs of communities for good-quality local infrastructure, and the efficient and effective delivery of services.

Sustainable development is a fundamental philosophy that is embraced in the Council's Vision, Mission and Objectives, and is reflected in the Council's community outcomes. The levels of service and the performance measures that flow from these inherently incorporate the achievement of sustainable outcomes.

Sustainability is measured against the triple bottom line framework that aims to create a balance between the three dimensions of performance, often referred to as people, planet and profit (3P's).

People –The effects of the activity on the social and cultural wellbeing of our community

The Council is guided by the Community Outcomes to assist in determining how decisions affect the social wellbeing of the community. The activity is undertaken to meet the level of service that is required to enhance community well-being by reducing the risk of flooding as well as integrating community values such as accessibility, amenity and biodiversity. The Council engages with mana whenua iwi and other community groups with regards to enhancing our natural waterways and provide educational programmes.

Planet – The effects of the activity on the environment

The receiving environments are affected by stormwater discharges from our urban areas. Urbanisation and other changes in land use have led to increased stormwater runoff that contribute to flooding, loss of aquatic habitat and water quality issues. It also impacts on the ability to utilise our natural resources for amenity and food gathering. The Council controls its discharges through discharge consents that are required under the Tasman Resource Management Plan. The Council will encourage and practice implementation of the proposed land development manual to protect and enhance the receiving environment.

Profit – The financial and overall long-term economic viability of the activity

The Council operates, maintains and improves the stormwater infrastructure assets on behalf of its ratepayers. The Council uses its Financial Strategy to guide the development of an affordable work programme. The Council's finances are managed within the set debt limits and rates income rises to ensure economic viability for current and future generations.

See also Section 3.5 - Tasman Climate Action Plan.

10.1 Potential Negative Effects

Schedule 10 of the Local Government Act (LGA) requires an outline of any significant negative effects that an activity may have on the local community. Potential negative effects associated with the stormwater activity are outlined in Table 20.

Table 20: Negative Effects

Effect	Description	Mitigation Measures
Flooding	Social/ cultural: Localised flooding may occur in residential areas due to under capacity of the stormwater system and affect the well-being of the community. Economic: Localised flooding can have significant immediate and ongoing economic consequences on local business. Environmental: Sediments, oils, greases, metals and organic material can be washed into natural water courses.	Catchment management planning Stormwater modelling Secondary flowpath mapping Capital works to increase network capacity and detention
Untreated stormwater discharges	Environmental: The discharge of untreated stormwater has an adverse effect on the quality of the receiving environment, eg, stormwater runoff from contaminant generating surfaces such as road and carparks contains contaminants such as metals, oils and sediment. Some building materials such as unpainted zinc or copper roofs can also be a source of contaminants. In rural areas, runoff may be contaminated with sediment, herbicides, pesticides, fertilisers and animal waste. Social / Cultural: Discharges have adverse effect on the quality of receiving environments and how these can be used by the community.	Catchment management planning. Resource consenting and compliance monitoring Capital works. Tasman Erosion and Sediment Control Guidelines (2014)
Erosion of streambanks and loss of aquatic habitat	Environmental: Increased stormwater flows can cause erosion of streambanks and loss of aquatic habitat. Social/ Cultural: Discharges have adverse effect on the quality of receiving environments and how these can be used by the community.	Land Development Manual
Impact to historic and wahi tapu sites.	Cultural: Physical works may have an adverse effect on sites. Uncontrolled stormwater may erode sites.	Consultation prior to works. Record of known heritage sites.

10.2 Potential Positive Effects

Potential positive effects are outlined in Table 21.

Table 21: Positive Effects

Effect	Description
Access and Mobility	The stormwater system maximises access during and after storm events. Stream corridors are widened and integrated with walk and cycle paths.
Amenity and recreation	The Council's policies promote the enhancement of recreational and environmental amenity value when developing new assets through water sensitive design.
Economic Development	The Council maintains stormwater collection to minimise damage to private and public assets.
Environmental Protection	The Council enhances the quality of the receiving environment through the development of natural stream channels such as Borck Creek. Fish passage and aquatic life is considered when implementing capital projects and often improved.
Safety and Personal Security	The Council maintains stormwater collection to minimise disruption to normal community activities and risk to life.

10.3 Resource Management

10.3.1 Resource Consents

The statutory framework defining what activities require resource consent is the Resource Management Act (RMA) 1991. The RMA is administered locally by the Council, as a unitary authority, through the Tasman Resource Management Plan (TRMP). The following section discusses key consents that the Council holds in order to undertake this activity.

The Council's Engineering Services Department has over 200 consents to manage. Some consents require active management to ensure reporting and monitoring conditions are met allow the timely management for lodging new applications before existing consents expire. A register of all active consents including their conditions, compliance actions and expiry dates are managed in Bravegen.

10.3.1.1 Global Network Discharge Consent

The Council needs to demonstrate compliance with the TRMP and, in particular, Part VI of that Plan: Discharges, Chapter 36. The Council has a legal obligation to manage adverse effects from stormwater discharges from its network. The Council obtained a Districtwide Stormwater Dicharge Consent that authorises stormwater discharges from the Council's network subject to meeting the conditions of consent.

Progressive improvement in stormwater quality from urban discharges is expected to be achieved by a works programme that is directed by the catchment management plan investigations. The development of catchment management plans for all Urban Drainage Areas will be required by conditions of consents. Proposed CMP Outcomes will be monitored through regular reviews of the

CMPs and required efforts will be adjusted accordingly to ensure compliance with the global discharge consent.

10.3.1.2 Discharges and Diversions

Any new stormwater discharges or water diversions require resource consent, unless it is in rural or open space zones. Resource consent will be required for water diversions including bunds and the situations where natural streams have been piped as part of an urban reticulation system.

Subdivision developments may involve new stormwater discharges or extensions to the existing network of stormwater assets that require resource consent that the Council will become responsible for when the new stormwater assets are transferred from the developer to the Council.

10.3.1.3 Inlet and Outlet Structures

Structures on or extending onto or over river or stream beds, or on a shoreline, may require resource consent. Inlet structures are usually installed where natural streams flow into piped systems. The provisions of Part IV of the Tasman Resource Management Plan: Rivers and Lakes, determine what resource consents are required for structures in river and stream beds.

10.3.1.4 Detention Dams and Ponding Areas

Detention dams and ponding areas can be used to manage peak flood flows within specific stormwater catchments, especially where urban development increases the rate of run-off. The Council now has responsibility for multiple detention dams and ponding areas within urban localities around the District. Structures used for the damming of water may require consent under the TRMP, the Building Act or both.

10.3.1.5 Channel Widening and Other Works in Waterways

Capital works to modify stream beds usually require resource consent. However, maintenance work is generally covered under the River Protection and Maintenance Works Resource Consent (under the jurisdiction of the Rivers activity).

10.3.2 Resource Consent Reporting and Monitoring

A detailed register of stormwater resource consents is held in the Council's consents databases BraveGen and Active Manuals. Where permits for discharges, water takes or coastal activities, or consents for river beds are required, the RMA restricts those consents to a maximum term of 35 years only. Hence there needs to be an ongoing programme of "consent renewals" for those components of the Council's stormwater activities, as well as a monitoring programme for compliance with the conditions of permitted activities or resource consents. Consent renewals have been programmed in the Capital programme. Use of the Council's BraveGen and Water Outlook monitoring databases allows the accurate programming required by the consents including renewal prior to expiry.

The Council has programmed the following consent renewals before they expire:

- Seaton Valley Drain Consent Renewal 2018/2019 – Expiry date 29 July 2019.
- Richmond Detention Dam Consents Renewals 2030 to 2033 – Expiry date 31 May 2030 (Bill Wilkes, Washbourn, Lodestone and Eden).

10.3.2.1 Auditing

Regular inspections of key sites are completed to ensure the Council's maintenance contractor is operating in accordance with a number of key performance indicators aligned to any consent conditions or other legislative requirements. Inspections increase prior to significant rain events to ensure stormwater will not be obstructed.

10.3.2.2 Environmental Reporting and Monitoring

In addition to audit assessments, any non-compliance incidents are recorded, notified to the Council's Compliance Monitoring team and mitigation measures put in place to minimise any potential impacts.

10.3.2.3 Council's Annual Report

The extent to which the Council has been able to meet all of the conditions of each permit is reported in its Annual Report.

10.3.3 Property Designations

Designations are a way provided by the RMA of identifying and protecting land for future public works. The Council has designated three areas in the Richmond urban area to ensure that improvements can be made to existing stormwater systems.

The following (Table 22) stormwater activity designations have a duration of 20 years (until 2029) for which to be 'given effect'. Once given effect, a designation remains valid for the life of the TRMP or until the requiring authority removes of alters the designation. Alterations to some designations (eg, boundaries) and outline plans for proposed work may be required from time to time. Designations do not negate the ongoing need for regional type resource consents (eg, watercourse and discharge) required for the designated site or purpose (refer to section 10.3.1 above).

Table 22: Property Designations

ID	Location	Site Name/Function	Purpose of Designation
D247	Waimea Inlet to Main Road Hope and Hill Street St South, Richmond	Borck Creek and related drains (Eastern, Hills, Bateup, Whites, Reed/Andrews)	Stormwater management and associated recreation opportunities
D248	Richmond South	Bateup Drain detention ponds (2)	Stormwater detention
D249	Richmond West	Poutama Drain	Stormwater management

It is anticipated that the Council will apply for additional designations in the future to address stormwater issues identified through the catchment management planning process.

11 Risk Management and Assumptions

This AMP and the financial forecasts within it have been developed from information that has varying degrees of completeness and accuracy. In order to make decisions in the face of these uncertainties, assumptions have to be made. This section documents the uncertainties and assumptions that the Council considers could have a significant effect on the financial forecasts, and discusses the potential risks that this creates.

11.1 Our Approach to Risk Management

A risk is any event that has the potential to impact on the achievement of the Council's objectives. The potential impact of a risk is measured by a combination of the likelihood it could occur, and the magnitude of its consequences on objectives.

The Council adopted a Risk Management Policy in November 2017 and is in the process of improving our risk management processes. The main purpose of these improvements is to support better planning and decision-making, and to increase the chance of achieving the Council's objectives.

The Council's Risk Management Framework is still being developed but key components will be:
Risk Categories:

- Service delivery
- Financial
- Governance and Leadership
- Strategic
- Reputation
- Legal
- Regulatory
- Health and Safety
- Security
- Business Continuity
- Table of Consequences which help set the Risk Appetite
- Enterprise Risk Register
- identifying risks
- measuring likelihood, consequence and severity
- documenting controls, actions and escalation
- Monitoring and Reporting, including to Senior Management and Audit and Risk Committee as appropriate.

The Council has adopted an approach to risk management following the Australian/New Zealand Standard ISO 31000:2009 Risk Management – Principles and guidelines.

Refer to the Council's Risk Management Policy for further information.

11.2 Activity Risks and Mitigation Measures

The key risks relevant to the stormwater activity are summarised in Table 23.

Table 23: Key Risks

Risk Event	Mitigation Measures
Extreme weather events overloading network	Current • Routine maintenance and pre-event checks and removal of blockages. • Stormwater modelling to better understand likelihood and consequence of flooding. Proposed • Preparation of CMPs to prioritise flood mitigation works. • creation and protection of secondary flowpaths; • Increased community education as to flowpaths and how to minimise potential impact.
Catastrophic failure of a network structure	Current • Routine maintenance and inspections are included in the network maintenance contract and asset management systems eg CCTV inspections. • Detailed inspections are completed for the entire bridge network every two years under the transportation AMP. • Reactive inspection preceding and following extreme weather events. Proposed • Additional key assets are brought under the Council ownership or maintenance control if required.
Premature deterioration or obsolescence of an asset	Current • Maintenance performance measures included in the maintenance contract. • Routine inspections. Proposed • Improved asset data coupled with life prediction analysis to foresee issues.

Risk Event	Mitigation Measures
Sub-optimal design and/or construction practices or materials	Current • Engineering Standards (Nelson Tasman Land Development Manual) and construction inspections; • Contract quality plans; • Professional services and construction contract specifications; • Third party reviews. Proposed • Ongoing staff training.
Ineffective partnerships and stakeholder engagement	Current • The Council holds regular meetings with iwi; • The Council's GIS software includes layers identifying cultural heritage sites and precincts. The Council staff apply for Heritage New Zealand authority when these known sites are at risk of damage or destruction; • Project management processes and the Council's consultation guidelines are followed.
Failure to gain property access	Current • Stakeholder management; • Works entry agreements; • Use of the Council's property team to undertake land purchase negotiations; • Public Works Act.
Obstructions of secondary flowpaths	Current • Optimise design and capital and operating expenditure increase as a result of secondary flow path management through CMP programme. Proposed • Review with each AMP cycle • Educate public regarding residual risk.

11.2.1 Natural Hazards and Resilience

The size and diverse nature of the Tasman landscape makes the region susceptible to a wide range of natural hazards. Tasman lies within a seismically active zone, has five major river catchments and a large coastal environment. As a result, Tasman residents have experienced the damaging effects of landslides, flooding and coastal inundation.

Some hazards have a slower onset period, for example sea level rise associated with the effects of climate change, and other hazards such as earthquakes can have little to no warning. Regardless of these timeframes, the Council needs to plan for these hazards and determine whether adaption, mitigation, or retreat is appropriate.

The Council's Infrastructure Strategy provides details of the relevant natural hazards in context to the Council infrastructure and outlines how we intend to manage risk and improve resilience. In addition to this, the Regional Civil Defence Emergency Management Group Plan provides a risk profile that outlines and ranks these natural (and other) hazards. The risk assessment determines the likelihood and consequence of the hazard occurring ranges between low to very high likelihood and insignificant to catastrophic consequences. For example on the extreme end of the scale, an Alpine Fault earthquake is considered possible and would result in catastrophic consequences for both people and infrastructure.

The Council needs to ensure it has robust planning in place and provides infrastructure that is resilient. The Council is taking a long term strategic approach by undertaking risk, resilience and recovery planning to provide better information on infrastructure resilience requirements. The Council will also continue to focus on planning and managing its critical assets and lifelines networks to ensure that the appropriate level of effort is being made to better manage, maintain and renew them.

As well as ensuring its assets are resilient, the Council has a range of financial provisions to assist with response to and recovery from major damaging events. These include:

- Annual emergency funding
- An established Emergency Fund that the Council aims to maintain to a value of $12.8 million
- Ability to reprioritise the Council's capital programme
- Insurance cover of 40% of the costs of a catastrophic disaster event, up to $125m
- Central Government support of up to 60% through the Local Authority Protection Programme
- NZ Transport Agency subsidy of at least 51% for subsidies transportation asset reinstatement.

11.3 Assumptions and Uncertainties

This AMP and the financial forecasts within it have been developed from information that has varying degrees of completeness and accuracy. In order to make decisions in the face of these uncertainties, assumptions have to be made.

Table 24 documents the uncertainties and assumptions that the Council consider could have a significant effect on the financial forecasts, and discusses the potential risks that this creates.

Table 24: Generic Assumptions and Uncertainties

Type	Uncertainties	Assumption	Discussion
Financial	Unless stated it can be unclear whether financial figures include inflation or not, as well as whether GST has been included or not.	That all expenditure has been stated in 1 July 2020 dollar values and no allowance has been made for inflation and all financial projections exclude GST unless specifically stated.	The LTP will incorporate inflation factors. This could have a significant impact on the affordability of each activity if inflation is higher than allowed for. The Council is using the best information practically available from Business and Economic Research Limited (BERL) to reduce this risk.
Asset Data Knowledge	The Council has inspection and data collection regimes in place for assets. These regimes do not allow for entire network coverage at all times. The Council's aim is to strike the right balance between adequate knowledge and what is practical.	That Council has adequate knowledge of the assets and their condition so that planned renewal works will allow the Council to meet the proposed levels of service.	There are several areas where the Council needs to improve its knowledge and assessments, but there is a low risk that the improved knowledge will cause a significant change to the level of expenditure required.
Growth Forecasts	Growth forecasts are inherently uncertain and involve many assumptions. The Council commissioned population projections for the LTP 2021-2031 as the basis for its growth planning. However, growth will vary depending on actual birth and death rates, as well as net migration.	That the district will grow or decline as forecast in the Council's Growth Model. The overall population of Tasman is expected to increase by 7,700 residents between 2021 and 2031, to reach 64,300. The District will experience ongoing population growth over the next 30 years but the rate of growth will slow over time. Based on these assumptions, the Council is planning a further 4,300 dwellings and 160 new commercial or industrial buildings will be required by 2031.	Growth forecasts are used to determine infrastructure capacity and when that capacity will be required. If actual growth varies significantly from what was projected, it could have a moderate impact on the Council's plans. If growth is higher than forecast, additional infrastructure may be required quicker than anticipated. If growth is lower, the Council may be able to defer the delivery of new or additional infrastructure.

Type	Uncertainties	Assumption	Discussion
Project Timing	Multiple factors affect the actual timing of projects e.g.: Consents Access to and acquisition of land Population growth Timing of private developments Funding and partnership opportunities	That projects will be undertaken when planned.	The risk of the timing of projects changing is high due to factors like resource consents, third party funding, and land acquisition and access. The Council tries to mitigate these issues by undertaking the investigation, consultation and design phases sufficiently in advance of when construction is planned. If delays occur, it could have an impact on the levels of service and the Council's financing arrangements.
Project Funding	Council cannot be certain that it will receive the full amount of anticipated subsidy or contribution. It depends on the funder's decision making criteria and their own ability to raise funds.	That projects will receive subsidy or third party contributions at the anticipated levels.	The risk of not securing funding varies and depends on the third party involved. If the anticipated funding is not received it is likely that the project will be deferred which may impact levels of service.
Accuracy of Cost Estimates	Project scope is often uncertain until investigation and design work has been completed, even then the scope can change due to unforeseen circumstances. Even if the scope has certainty there can be changes in the actual cost of work due to market competition or resource availability.	That project cost estimates are sufficiently accurate enough to determine the required funding level.	The risk of large underestimation is low; however, the importance is moderate as the Council may not be able to afford the true cost of the project. The Council tries to reduce this risk by undertaking reviews of all estimates and including an allowance for scope risk based on the complexity of the project.

Type	Uncertainties	Assumption	Discussion
Land Access and Acquisition	Land access and acquisition is inherently uncertain. Until negotiations commence, it is difficult to predict how an owner will respond to the request for access or transfer.	That the Council will be able to secure land and/or access to enable completion of projects.	The risk of delays to projects or changes in scope is high due to the possibility of delays in obtaining access. Where possible, the Council undertakes land negotiations well in advance of construction to minimise delays and scope change. If delays do occur, they may affect the level of service that the Council provides.
Legislation Changes	Often Central Government changes legislation to respond to emerging national issues and opportunities. It is difficult to predict what changes there will be to legislation and their implications for Council.	The Council assumes that it will be affected by changes to Government legislation. However, as the nature of these changes is not known no financial provision has been made for them except where noted elsewhere in the LTP 2021-2031 forecasting assumptions.	The risk of major changes that impact the Council is moderate. If major changes occur, it is likely to have an impact on the required expenditure. The Council has not planned expenditure to specifically mitigate this risk. It may be necessary for the Council to reprioritise planned work to respond to future legislation.
Emergency Reserves	It is impossible to accurately predict when and where a natural hazard event will occur. Using historic trends to predict the future provides an indication but is not comprehensive. The effects of climate change are likely to include more frequent emergency events.	That the level of funding reserves combined with insurance cover and access to borrowing capacity will be adequate to cover reinstatement following emergency events.	Funding levels are based on historic requirements. The risk of requiring additional funding is moderate and may have a moderate effect on planned works due to reprioritisation of funds.

Type	Uncertainties	Assumption	Discussion
Network Capacity	The Council uses a combination of as built data, network modelling and performance information to assess network capacity. The accuracy of the capacity assessment is based on the accuracy of asset and performance data.	That the Council's knowledge of network capacity is sufficient enough to accurately programme works.	If the network capacity is higher than assumed, the Council may be able to defer works. The risk of this occurring is low, however it should have a positive impact on the community because the level of service can be provided for longer before requiring additional capital expenditure. If the network capacity is lower than assumed, the Council may be required to advance capital works projects to provide the additional capacity sooner than anticipated. The risk of this occurring is low, however it could have a significant impact on expenditure.
Climate change	Continued greenhouse gas emissions will cause further warming and changes in all parts of the climate system. The level of continued emissions of greenhouse gases and the effectiveness of worldwide efforts to reduce them are not known. The full extent of the impacts of climate change and the timing of these impacts are uncertain.	The Council uses the latest climate predictions that have been prepared by NIWA for the Tasman District. Council assumes that it is not possible to reduce the mid-century warming, due to the amount of carbon dioxide already accumulated in the atmosphere – i.e. that the projections for mid-century are already 'locked in'. As a consequence of climate change, natural disasters will occur with increasing frequency and intensity. The weather-related and wildfire events the District has experienced in recent years are consistent with predictions of climate change impacts. For low lying coastal land there will be increasing inundation and erosion from sea level rise and storm surge. Adaptation can help reduce our vulnerability and increase our resilience to natural hazards.	It is likely that risk of low-lying land being inundated from the sea, and damage to the Council property and infrastructure from severe weather events, will increase. The Council will need to monitor the level of sea level rise and other impacts of climate change over time and review its budgets, programme or work and levels of service accordingly. The Council will continue to take actions to mitigate its own greenhouse gas emissions, to work with the community on responses to climate change and show leadership on climate change issues.

Type	Uncertainties	Assumption	Discussion
		We assume that sea levels will continue to rise and are likely to rise at an accelerated rate over time. Our plans assume a sea level rise (SLR) of up to 0.3m by 2045, 0.9m by 2090 and 1.9m to 2150 (metres above 1986-2005 baseline), in line with the Ministry for the Environment's Coastal Hazards and Climate Change Guidance (2017). For coastal subdivisions, greenfield developments and major new infrastructure, we are planning for 1.9m SLR by 2150. All sea-level rise assumptions are based on the RCP8.5H+ scenario set out in the MfE guidance (2017).	

Table 25: Stormwater Specific Assumptions and Uncertainties

Type	Uncertainties	Assumption	Discussion
Network Capacity	The Council uses stormwater modelling and other performance information to assess network capacity. The accuracy of the capacity assessment is based on the accuracy of asset and performance data.	That Council's knowledge of network capacity is sufficient enough to accurately programme works.	If the network capacity is higher than assumed, the Council may be able to defer works. The risk of this occurring is low; however, it should have a positive impact on the community because the level of service can be provided for longer before requiring additional capital expenditure. If the network capacity is lower than assumed, the Council may be required to advance capital works projects to provide the additional capacity sooner than anticipated. The risk of this occurring is low; however, it could have a significant impact on expenditure.
Stormwater Discharge Quality	The current documentation on discharge water quality and receiving environment water quality is limited. The quality required of stormwater discharges to at least maintain the existing conditions is therefore also unknown. Money has been allocated for stormwater treatment devices however, the quantity and spread of the programme will need to be assessed and prioritised as the CMPs are completed.	The budget allocation for water quality improvements is sufficient	Although monitoring data of urban runoff is not available, the potential for contaminant generation from urban catchments is well understood and based on a wide variety of scientific and monitoring studies that were done nationally and internationally. It's fair to assume that the contaminant generation from our urban catchments will be very similar to what is monitored elsewhere. Appropriate mitigation measures and treatment options are widely available, however retrofitting treatment devices may be challenging.
Future rainfall events	Significant future events may lead to increased community pressure for higher Levels Of Service or faster implementation of the works programmes	The impact of any further significant rainfall events and the resultant community expectations of higher levels of service will be minimal.	The Council will communicate the anticipated response and prioritisation of flooding issues through catchment management plans, Long Term Plan and activity management plans.

Type	Uncertainties	Assumption	Discussion
Climate change	Continued emissions of greenhouse gases will cause further warming and changes in all parts of the climate system. The International Panel on Climate Change (IPCC) has developed four scenarios named RCPs (Representative Concentration Pathways) that represent different climate change mitigation scenarios with varying levels of CO_2 emission (low – medium – high). The likelihood of any of the scenarios occurring as predicted is uncertain and depends on many different factors.	The Council uses the latest climate predictions that have been prepared by NIWA for New Zealand and more specifically for the Tasman District.	It is likely that risk of low-lying land being inundated from the sea, and damage to the Council property and infrastructure from severe weather events, will increase. The Council will need to monitor the level of sea level rise and other impacts of climate change over time and review its budgets, programme or work and levels of service accordingly. The expected impact of climate change effects on flooding will be further investigated with the help of flood modelling techniques. Due to the long-term nature of climate change predictions and different scenarios that are based on potential future CO_2 emissions, the magnitude of the effects remain uncertain and variability in results should be considered.

12 Asset Management Processes and Practices

Good quality data and asset management processes are the heart of effective planning. This section outlines our approach to asset management, our processes, and provides an overview of our data management systems and strategies that underpins the stormwater activity.

12.1 Appropriate Practice Levels

The Office of the Auditor General (OAG) has chosen to use the International Infrastructure Management Manual (IIMM) as the benchmark against which New Zealand councils measure their activity management practices. There are five maturity levels in the IIMM; Aware, Basic, Core, Intermediate and Advanced. The IIMM sets out what the requirements are for each level against each area of the activity management system.

In 2020, the Council reviewed its Activity Management Policy and adopted an updated version. The Policy sets out the Council's activity management objectives and appropriate levels of practice. For the stormwater activity the Council has determined that the appropriate level of practice is 'intermediate' with 'advanced level' of practice for demand forecasting, asset register data and asset condition

12.2 Service Delivery Reviews

12.2.1 Activity and asset management teams

The Council has an organisational structure and capability that supports effective asset management planning. Multiple teams across the Council are responsibility for the different aspects of activity and asset management. The focus of the teams ranges from a strategic focus at the Long Term Plan/Infrastructure Strategy level which involves a cross-Council team, through to detail/operational focus at the Operational team level.

Within the Engineering Services department, the asset management planning function is managed by the Activity Planning team. Operations are the responsibility of the Utilities and Transportation teams, while Projects and Contracts are managed by the Programme Delivery team.

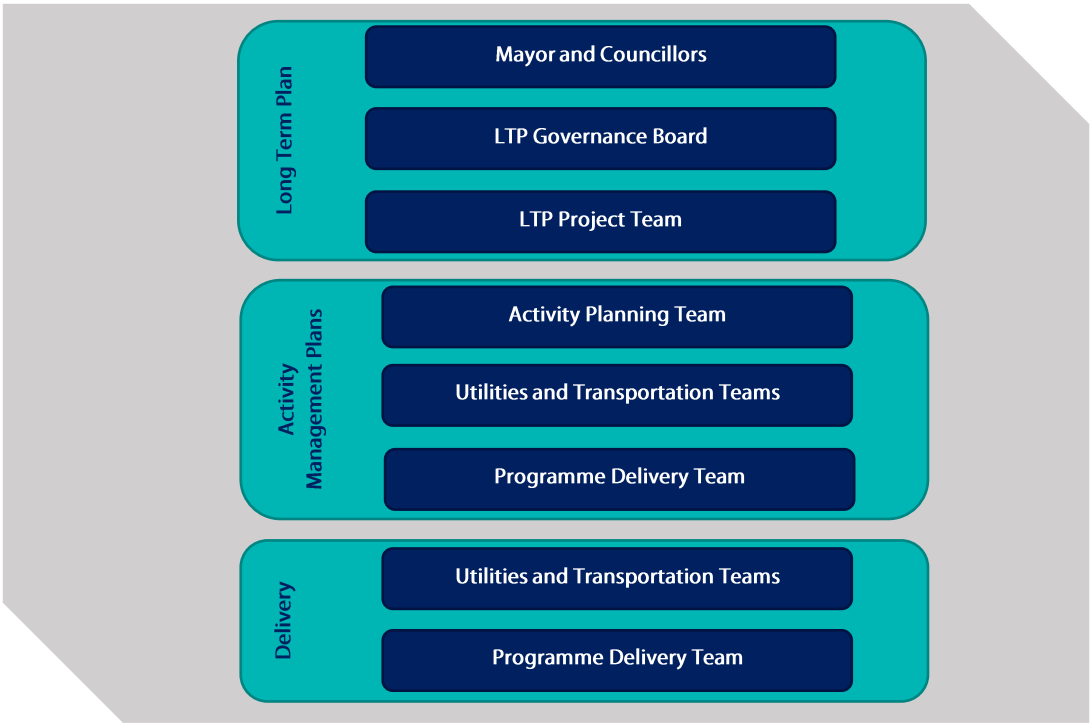


Figure 20: Teams Involved in Activity and Asset Management

The Activity Planning Team is responsible for the update of the activity management plans every three years, as well as implementation of the improvement plan. Each plan is assigned to the respective Activity Planning Advisor who is responsible for updating it. The Activity Planning Advisor works in with the activity's Asset Engineer to ensure that the current and future operating and maintenance aspects of the activities are adequately incorporated into the document. All activity management plans are reviewed by the Activity Planning Programme Leader who holds a National Diploma in Infrastructure Asset Management. The quality assurance process for the Engineering Services activity management plans is provided below.

- Preparation — Activity Planning Advisor
- Check — Utilities or Transportation Manager, and relevant Asset Engineer
- Review — Activity Planning Programme Leader
- Approve — Engineering Services Manager
- Adopt — Full Council

12.2.2 Staff Training

The Council maintains an annual budget for staff training that is managed by the Engineering Services Manager for the Engineering Services department. This budgets allows for continued development of staff to ensure that best practice is maintained and that the Council retains the skills needed to make improvements in asset management practices. This includes on-going technical and professional training as well as specific asset management training.

12.2.3 Professional Support

The Engineering Services Department has a need to access a broad range of professional service capabilities to undertake investigation, design and procurement management in support of its significant transport, utilities, coastal management, flood protection and solid waste capital works programme, as well as support with activity management practice. There is also a need to access specialist skills for design, planning and policy to support the in-house management of the Council's networks, operations and maintenance.

To achieve this Council went to the open market in late 2013 for a primary professional services provider as a single preferred consultant to undertake a minimum of 60% in value of the Council's infrastructure professional services programmes. The contract was awarded to Stantec New Zealand Ltd (, beginning on 1 July 2014 with an initial three-year term and two three-year extensions to be awarded at the Council's sole discretion. In 2020, the second of these discretionary three-year extensions was granted, with the proportion of the Council's professional services programmes reduced to 50%. In addition to this, a secondary professional service panel was also appointed through an open market tender process for a period of three years, to provide professional services that will not be supplied by Stantec.

12.2.4 Procurement Strategy

The Council has a formal Procurement Strategy that it follows in order to engage contractors and consultants to assist the Engineering Services department. This strategy has been prepared to meet NZ Transport Agency's requirements for expenditure from the National Land Transport Fund, and it describes the procurement environment that exists within the Tasman District. It was developed following a three-year review of the strategy and was approved in November 2013. It principally focuses on Engineering Services activities but is framed in the NZ Transport Agency procurement plan format, which is consistent with whole-of-government procurement initiatives. A review of the strategy was commenced in 2017/18.

12.2.5 Service Delivery Reviews

In 2014, Section 17A was inserted into the Local Government Act which requires the Council to review the cost effectiveness of its current arrangements for providing local infrastructure, services, and regulatory functions at regular intervals. Reviews must be undertaken when service levels are significantly changed, before current contracts expire, and in any case not more than six years after the last review. In addition to the regular reviews, the Act requires the Council to complete an initial review of all functions by August 2017.

Table 26 summarises the reviews that have been completed to date and when the next review is required for this activity.

Table 26: Summary of Reviews

Scope of Review	Summary of Review	Review Date	Next Review
Three Waters Operations and Maintenance Contract	An initial review found that current operations and maintenance contract arrangements were appropriate and that the new contract would be procured on a similar basis. A full review is to be conducted in collaboration with Nelson City Council at a later date.	2017	2022

In addition to the Section 17A reviews, the Engineering Services department reviewed its current capability and capacity against the requirements of the future programmes of work set out in its activity management plans. To enhance the department's ability to deliver the capital and operational works programme the following actions have been taken:

- Undertaken a detailed review of the capital programme for the next five years to better understand project complexities and delivery requirements.
- Implemented Planview a new project management system to track and report project delivery progress.
- Increased the number of Project Managers from four to 5.5 full time equivalent staff resources.
- Introduced enhanced performance requirements for our lead technical consultant for delivery of technical advice and engineering design.
- Tendered for a new supporting professional services panel with enhanced performance requirements.

12.3 Asset Management Systems and Data

12.3.1 Information Systems and Tools

The Council has a variety of systems and tools that support effective operation and maintenance, record asset data, and enable that data to be analysed to support optimised life-cycle management. These are detailed below in Figure 21 below. There is a continual push to incorporate all asset data into the core asset management systems where possible; where not possible, attempts are made to integrate or link systems so that they can be easily accessed.

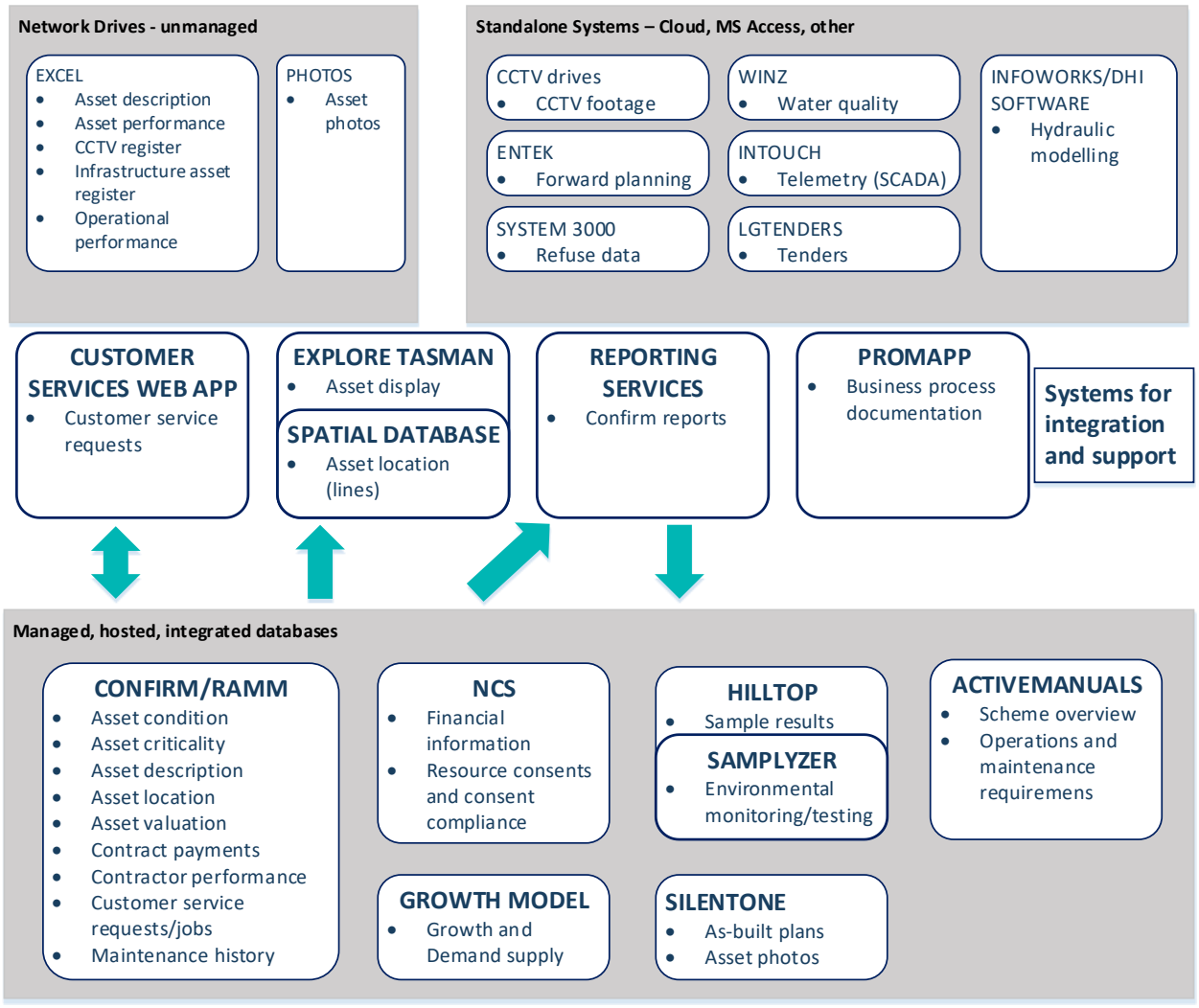


Figure 21: Council's Information Systems and Tools

12.3.2 Asset Data

Table 27 summarises the various data types, data source and how they are managed within the Council. It also provides a grading on data accuracy and completeness where appropriate. the Council is considering a staged alignment to the NZ Asset Metadata Standards.

Table 27: Data Types and Information Systems

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness	
As-built plans	DORIS (Digital Office and Record Information System)		As-built plans are uploaded to DORIS, allowing digital retrieval. Each plan is audited on receipt to ensure a consistent standard and quality.	2	2
Asset condition	Confirm		Assets are inspected by a consultant or staff and the inspection information is entered directly into Confirm using the Connect mobile application.	N/A	N/A
Asset criticality	Confirm		When a new asset is created, the activity planner and engineer will make an assessment on criticality. Criticality of asset can be modified by authorized users should circumstances change.	4	3
Asset description	Confirm/spreadsheets		All assets are captured in Confirm's Site and Asset modules, from as-built plans and maintenance notes. Hierarchy is defined by Site and three levels of Asset ID (whole site, whole asset or asset). Assets are not broken down to component level except where required for valuation purposes. It is also possible to set up asset connectivity but this has not been prioritised for the future yet. Detail on some datasets held in spreadsheets relating to Utilities Maintenance Contract 688; work is in progress to transfer this detail to Confirm as resourcing allows.	2	2
Asset location	Confirm (point data) / GIS (line data)		Co-ordinates for point data completely (NZTM) describe spatial location. Line data links to GIS layers that describe the shape.	2	2
Asset valuation	Confirm		Valuation of assets done based on data in Confirm and valuation figures stored in Confirm.	2	2
Contract payments	Confirm		All maintenance and capital works contract payments are done through Confirm. Data on expenditure is extracted and uploaded to NCS.	N/A	N/A
Contractor performance	Confirm		Time to complete jobs is measured against contract KPIs through Confirms Maintenance Management module.	N/A	N/A

Data Type	Information System / Management strategy	Data Accuracy	Data Completeness	
Corporate GIS browser	Local Maps (Tasman ArcGIS Portal)	Selected datasets are made available to all Council staff through this internal GIS browser via individual layers and associated reports.	N/A	N/A
Customer service requests	Customer Services Application / Confirm	Customer calls relating to asset maintenance are captured in the custom-made Customer Services Application and passed to Confirm Enquiry module or as a RAMM Contractor Dispatch.	N/A	N/A
Environmental monitoring / testing	Hilltop / spreadsheet	Laboratory test results performed on monitoring and testing samples (from treatment plants and RRCs) are logged direct into Hilltop via an electronic upload from the laboratories. Due to historical difficulties in working with Hilltop data, it is duplicated in spreadsheets.	2	2
Financial information	NCS Database	The Council's corporate financial system is NCS, a specialist supplier of integrated financial, regulatory and administration systems for Local Government. Contract payment summaries are reported from Confirm and imported into NCS for financial tracking of budgets. NCS also holds Water billing information, while asset details and spatial component are recorded in Confirm and cross-referenced.	N/A	N/A
Infrastructure Asset Register	Spreadsheet	High-level financial tracking spreadsheet for monitoring asset addition, disposals and depreciation. High-level data is checked against detail data in the AM system and reconciled when a valuation is performed.	2	2
Forward planning	Spreadsheets, GIS Mapping	Forward programmes for Council's activities are compiled in excel, These are loaded onto GIS based maps for information and in order to identify clashes and opportunities.	N/A	N/A
Growth and Demand Supply	Growth Model	A series of linked processes that underpin Council's long term planning, by predicting expected development areas, revenues and costs, and estimating income for the long term.	2	2

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness	
Hydraulic modelling	Infoworks / DHI Software		Models have been developed for a number of schemes and catchments. Copies of the models are held on the Council's network drives.	2	4
Maintenance history	Confirm		Contractor work is issued via Confirms Maintenance Management module. History of maintenance is stored against individual assets. Prior to 2007 it was logged at a scheme level.	2	2
Photos	Network drives / DORIS		Electronic photos of assets are mainly stored on Council's network drives. Coastal Structures and Streetlight photos have been uploaded to SilentOne and linked to the assets displayed via Explore Tasman.	N/A	N/A
Processes and documentation	Promapp		Promapp is process management software that provides a central online repository where Council's process diagrams and documentation is stored. It was implemented in 2014 and there is a phased uptake by business units.	2	5
Resource consents and consent compliance	NCS		Detail on Resource Consents and their compliance of conditions (e.g. sample testing) are recorded in the NCS Resource Consents module.	2	2
Reports	Confirm Reports		Many SQL based reports from Confirm and a few from RAMM are delivered through Confirm Reports. Explore Tasman also links to this reported information to show asset information and links (to data in SilentOne and NCS).	N/A	N/A
Tenders	GETS (NZ Government Electronic Tendering Service)		Almost all New Zealand councils use this system to advertise their tenders and to conduct the complete tendering process electronically.	N/A	N/A

Table 28: Data Accuracy and Completeness Grades

Grade	Description	% Accurate
1	Accurate	100
2	Minor Inaccuracies	+/- 5
3	50 % Estimated	+/- 20
4	Significant Data Estimated	+/- 30
5	All Data Estimated	+/- 40

Grade	Description	% Complete
1	Complete	100
2	Minor Gaps	90 – 99
3	Major Gaps	60 – 90
4	Significant Gaps	20 – 60
5	Limited Data Available	0 – 20

12.4 Critical Assets

Knowing what's most important is fundamental to managing risk well. By knowing this, the Council can invest where it is needed most, and it can tailor this investment at the right level. This will avoid over investing in assets that have little consequence of failure, and will ensure assets that have a high consequence of failure are well managed and maintained. For infrastructure, this is knowing Tasman's critical assets and lifelines. These typically include:

- Arterial road links including bridges
- Water and wastewater treatment plants
- Trunk mains
- Main pump stations
- Key water reservoirs
- Stopbanks
- Detention dams

During 2016, the Council in partnership with Nelson City Council, the Regional Civil Defence Emergency Management Group and other utility providers, prepared the Nelson Tasman Lifelines Report. This report summarises all lifelines within Nelson and Tasman. Within the report there was a number of actions identified to improve the Region's infrastructure resilience.

The Council also recently developed an asset criticality assessment framework for water supply, waste water and stormwater. The frameworks is defined by:

- A 'Criticality Score' from one (very low criticality asset) to five (very high criticality asset).
- A set of 'Criteria' against which each asset will be assessed and assigned a Criticality Score (see one above).

- A set of straightforward, logical rules, measures and proxies under each criteria that can be assessed for each asset and enable a criticality Score to be assigned in a spatial (i.e. GIS) context.

For each asset, the criticality has been assessed against the following five criteria:

1. Number of people that would be effected if the asset failed.
2. Asset failure would prevent/impair use of a critical facility.
3. Ease of access/complexity of repair.
4. Asset failure has potential for environmental/health/cultural impacts.
5. Asset failure has potential to initiate cascading failures and/or asset has interdependencies with other assets.

Based on the above, asset criticality has been assessed for all assets across the district and mapped spatially in a GIS viewer. The vulnerability of critical assets to natural hazards has been identified through the overlay of natural hazards information such as coastal inundation and sea level rise, stormwater and river flooding, fault lines, tsunami risk and liquefiable soils.

The asset criticality framework will help to ensure that the appropriate level of effort is being made to manage, maintain and renew them, and will extend to ensuring that the Council has adequate asset data to enable robust decisions to be made regarding the management of those assets.

12.5 Quality Management

The Council has not implemented a formal Quality Management system across the organisation. Quality is ensured by audits, checks and reviews that are managed on a case by case basis. Table 29 outlines the quality management approaches that support the Council's asset management processes and systems.

Table 29: Quality Management Approaches

Activity	Description
Process documentation	The Council uses Promapp software to document and store process descriptions. Over time, staff are capturing organisational knowledge in an area accessible to all, to ensure business continuity and consistency. Detailed documentation, forms and templates can be linked to each activity in a process. Processes are shown in flowchart or swim lane format, and can be shared with external parties.
Planning	The Long Term Plan and associated planning process are formalised across the Council. There is a LTP project team, LTP governance team, and AMP project team that undertakes internal reviews prior to the Council approval stages. Following completion of the AMPs, a peer review is done, and the outcomes used to update the AMP improvement plans.
Programme Delivery	This strictly follows a gateway system with inbuilt checks and balances at every stage. Projects cannot proceed until all criteria of a certain stage have been completely met and formally signed off.

Activity	Description
Subdivision Works	Subdivision sites are audited for accuracy of data against the plans submitted. CCTV is performed on all subdivision stormwater and wastewater assets at completion of works and again before the assets are vested in the Council. If defects are found, the Council requires that they are repaired before it will accept the assets.
Asset Creation	As-built plans are reviewed on receipt for completeness and adherence to the Engineering Standards and Policies. If anomalies are discovered during data entry, these are investigated and corrected. As-built information and accompanying documentation is required to accompany maintenance contract claims.
Asset Data Integrity	Monthly reports are run to ensure data accuracy and completeness. Stormwater, water, wastewater, coastal structures, solid waste and streetlight assets are shown on the corporate GIS browser, Explore Tasman, and viewers are encouraged to report anomalies to the Activity Planning Data Management team.
Operations	Audits of a percentage of contract maintenance works are done every month to ensure that performance standards are maintained. Failure to comply with standards is often linked to financial penalties for the contractor.
Levels of Service	Key performance indicators are reported annually via the Council's Annual Report. This is audited by the Office of the Auditor General.
Reports to the Council	All reports that are presented to the Council by staff are reviewed and approved by the Senior Management Team prior to release.

13 Improvement Planning

The activity management plans have been developed as a tool to help the Council manage their assets, deliver on the agreed levels of service and identify the expenditure and funding requirements of the activity. Continuous improvements are necessary to ensure the Council continues to achieve the appropriate level of activity management practice along with delivering services in the most sustainable way while meeting the community's needs.

Establishment of a robust, continuous improvement process ensures that the Council is making the most effective use of resources to achieve an appropriate level of asset management practice.
Assessment of our Activity Management Practices

13.1 Assessment of our Activity Management Practices

In late 2016/early 2017, the Council undertook an assessment of its current asset management practices for the stormwater activity. This was a self-assessment, but the targets where developed in consultation with Waugh Infrastructure Management Ltd to ensure there were appropriate for the activity given:

- Criticality of the Assets
- Value of the Assets
- Value spent on maintaining the assets

The maturity levels were based on the IIMM descriptions to maturity.

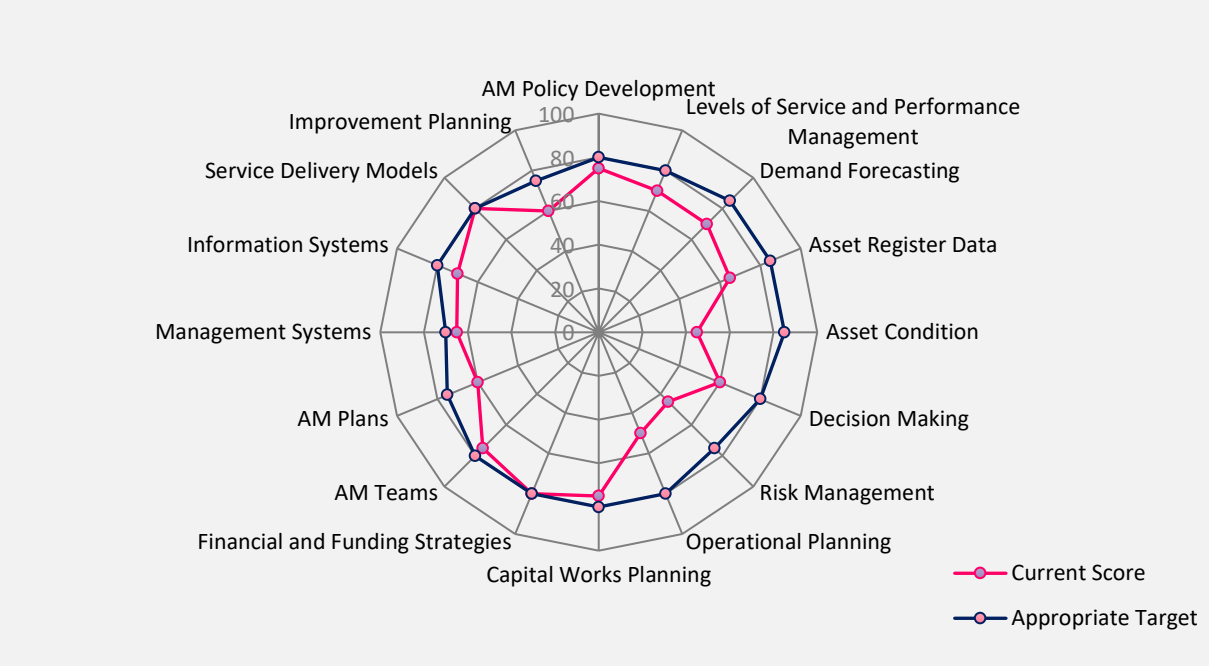


Figure 22: Stormwater Maturity Levels

Figure 22 shows that there are some gaps between where the Council's current practice is and where it is desired to be. Focus areas for improvements are Asset Register Data, Asset Condition, Decision Making, Risk Management, and Operational Planning. The actions required to close these gaps have been included in the Improvement Plan.

13.2 Peer Reviews

13.2.1 Waugh Review

In early 2018, the Council engaged Waugh Infrastructure Management Ltd to undertake a peer review on the consultation version of this activity management plan. The peer review considered all Engineering Services activities and included the following analysis:

- Overview analysis and consideration of AMP progress completed since the Waugh Infrastructure detailed 2011 AMP Compliance Report (in summary not detail).
- Review of AMPs against general industry practice as observed by Waugh Infrastructure in the past 12 months.
- Review and commentary on the adequacy of the AMP structure against current industry practice and requirements, as set out in IIMM 2015, ISO 55000.
- Analysis of AMP individual section strengths and emphasis, including analysis of overall AMP 'message' verses issues identified.
- Overview analysis of AMP status against appropriate asset management practice levels adopted in the Council's Activity Management Policy (summary not detail).
- Analysis of the AMPs against Local Government Act 2002 amendment requirements, both 2012, and 2014 – identification of any issues or 'misses'.
- Provide review comments of AMP strengths and weaknesses identified, with commentary on any suggested priority changes to be completed before LTP 2018.

It is important to note that the peer review only considered what was included in the consultation version of this activity management plan. There are aspects of the Council's asset management processes that are not discussed in this activity management plan and are therefore not incorporated into the scoring.

The overall findings of the Peer Review were that the Council's AMPs are well developed to support the Council's Long Term Plan. Some of the AMPs had sections that required completion, but overall missing elements noted were relatively minor.

The AMP template has been updated to incorporate recent Local Government Act changes. The AMP template developed and used by the Council has allowed clear, concise presentation of information in a logical manner.

The overall compliance status is shown below in Figure 23.

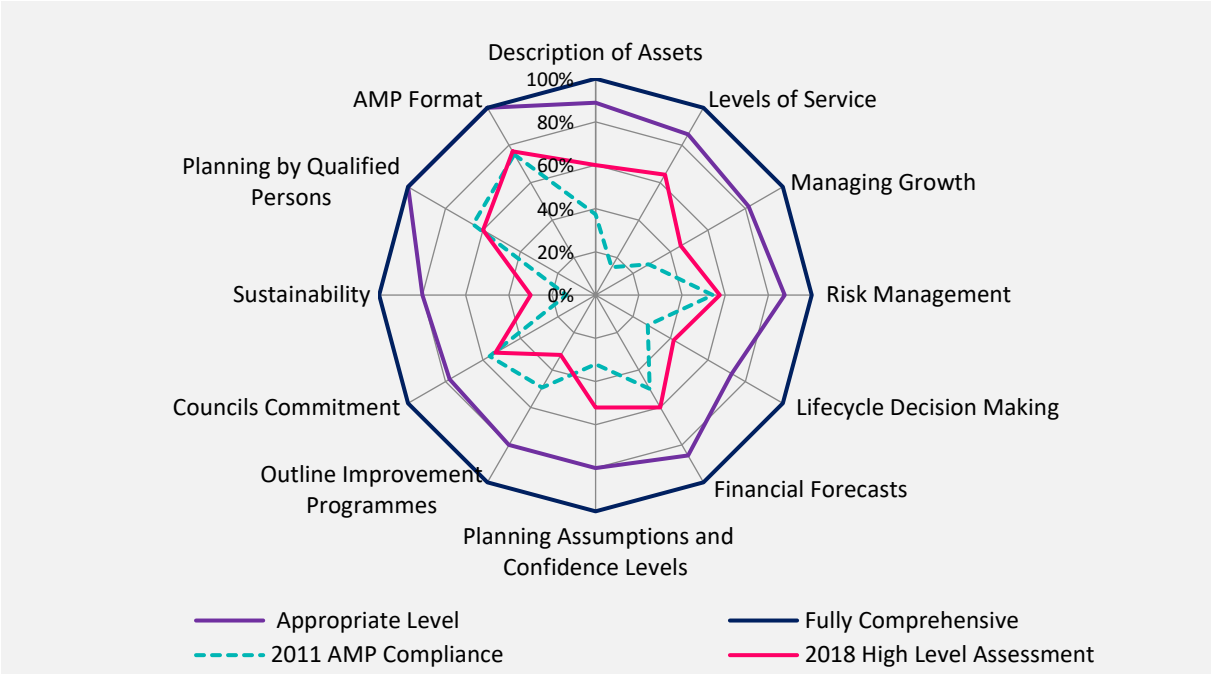


Figure 23: 2018 Peer Review Compliance Status Summary

The Council staff have reviewed and prioritised the feedback received in the peer review report. Improvements that could be made immediately have been incorporated into the final version of this activity management plan. Other improvements have been ranked and included in the Improvement Plan.

There has been a minor decrease in scores for Outline Improvement Programmes, Council's Commitment, and Planning by Qualified Persons. This is not due to a change in the Council's practice or performance, but due to a change in the activity management plan template. After receiving the peer review feedback, additional discussion has been included in Section 12 and Section 13 to address these issues.

13.2.2 Water New Zealand's National Performance Review

The Council voluntarily participate in Water New Zealand's National Performance Review (NPR). It is an annual benchmarking exercise of the Three Waters (water supply, wastewater and stormwater) service delivery. NPR benchmarks are used to identify potential opportunities to improve service delivery and compare specific performance results against other District, City Council and Council-Controlled Organizations. The report provides decision makers and the public with a transparent picture of the Council's performance within the sector.

13.3 Improvement Plan

Establishment of a robust, continuous improvement process ensures that the Council is making the most effective use of resources to achieve the appropriate level of asset management practice. The continuous improvement process includes:

- Identification of improvements
- Prioritisation of improvements

- Establishment of an improvement programme
- Delivery of improvements
- On-going review and monitoring of the programme.

All improvements identified are included in a single improvement programme encompassing all Engineering Services activities and is managed by the Activity Planning Programme Leader. In this way opportunities to identify and deliver cross-activity or generic improvements can be managed more efficiently, and overall delivery of the improvement programme can be monitored easily.

13.3.1 Summary of Recent Improvements

Based on the peer review by Waugh Infrastructure Management Ltd and internal evaluations and reviews, the Council has made improvements to its activity management plan and specific asset management processes. The key improvements and areas of strengths of the current activity management plan include our asset descriptions, Levels of Service, financial forecasting and the Council's Infrastructure Strategy.

Some of the Council's key achievements in the asset management processes over the previous three years include:

- Secondary flowpath mapping and regulation through integration in the resource management plan through plan changes such as Richmond Intensive Development Area (RIDA).
- The Council is committed to catchment management planning and established a Catchment Management Framework which includes a stormwater strategy and discharge consent component. Stormwater modelling and flood mapping as well as the development of CMP Richmond and Motueka is progressing well.
- The Nelson Tasman Land Development Manual is being developed and includes provisions for environmental improvements.
- The renewed Operation and Maintenance contract results in better and more efficient asset management as well improved data collection.

13.3.2 Summary of Planned Improvements

A list of the planned activity specific improvement items is in Table 30.

Table 30: Stormwater Specific Improvement Items

Improvement Item	Further Information	Need for Improvement	Priority	Status	% Complete	Expected Completion Date	Cost/Resource Type	Comments
Reporting and analysis of rainfall events in relation to their AEP, known flood events and complaints received	Rain gauges / Hill top	Improved understanding of extreme rainfall occurrences across the district is required	Medium	Started	N/A	Ongoing	Staff time	Currently done in an ad hoc way. Need for a database of "events" with complaints received etc.
Promoting and providing technical support for water sensitive design measures	In relation with LDM, practice notes and external design guidelines	Improve successful implementation of water sensitive design	High	Complete	100%	Ongoing	Staff time	LDM adopted May 2019 and industry training underway. Moved to BAU.
Investigate and manage effects of forestry harvesting	Modelling	Improved understanding of water quality and quantity effects of plantation forestry in relation to urban stormwater runoff is required	Medium	Complete	100%	Dec-19	Staff time	Considered as part of Kingsland Forest Management Plan

Improvement Item	Further Information	Need for Improvement	Priority	Status	% Complete	Expected Completion Date	Cost/Resource Type	Comments
Develop stormwater modelling standards	Modelling	Improve consistency and confidence in stormwater modelling results	High	Complete	100%	2018	Consultants and staff time	
Stormwater quantity and quality monitoring for model calibration and consent monitoring	Modelling	Improve reliability of stormwater modelling results and monitor effectiveness of stormwater improvements	Medium	Started	10%	Jun-24	Consultants and staff time	Development of water quality monitoring plans is underway. Water level sensors purchased and to be installed
Stormwater system capacity mapping	Modelling	Improve understanding of piped network capacity for Richmond	High	Complete	100%	2019	Consultants and staff time	Developed as part of modelling Richmond

Improvement Item	Further Information	Need for Improvement	Priority	Status	% Complete	Expected Completion Date	Cost/Resource Type	Comments
Summarise the Council and private ownership responsibilities of stormwater assets	Transportation (road drains) and river activities	Improve public understanding of stormwater maintenance responsibilities	Medium	Not started		Jun-24	Staff time	

A list of general across activity improvement items is given in Table 31.

Table 31: General Activity Management Improvement Items

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Team Responsible	Cost/Resource Type
Create Critical Asset Framework		Only the initial assessment has been undertaken, the framework was never re-tested.	High	In Progress	Jun-20	Activity Planning	Staff Time
Provide data confidence ratings for groups of assets within the valuation for each activity.		In the valuation reports data confidence is only assessed across the activity and not for the different types of asset groups. It is likely that data confidence varies considerably between buried assets and above ground assets and this is not reflected in the reports.	Medium	Not started	Jun-20	Data Analyst – Utilities	Consultants and staff time Budget $33,500 in 2019/20
Consider how levels of service options are presented to the community	Consider how to better engage the community in agreeing appropriate levels of service through specific work streams (e.g. Risk, Resilience, Recovery Planning).	Engagement is required to determine an appropriate level of service	Medium	Not started	2021	Activity Planning	Staff time

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Team Responsible	Cost/Resource Type
Capture and track maintenance data	Historical costs should be analysed to calculate forward budgets	Improve the consistency and confidence when planning operations and maintenance budgets	Medium	Not started	Ongoing	Activity Planning and Utilities Data Analyst	Staff Time

Appendix A: Detailed Operating Budgets

ID	Name	Description	Total Budget	Financial Year Budget ($)										Total Budget	
			2021-51	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031-41	2041-51
62001	Stormwater Modelling	Develop UDA models and model scenarios to identify cost effective solutions to reduce flood risks	925,000	75,000	65,000	65,000	40,000	40,000	40,000	25,000	25,000	25,000	25,000	250,000	250,000
62002	Structure Planning and Designation	Preparation of structure plans for future growth areas	550,000	65,000	40,000	40,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000	150,000
62003	Legal Fees	Procurement of legal advice	150,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	50,000
62004	Consultants	Professional Services, one-off modelling work and SW development support	2,100,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	700,000	700,000
62005	Overland Flow path Monitoring	(1) Develop OLFP management framework (2) Apply framework region wide (3) Monitor and enforce OLFP's	1,500,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	500,000
62006	Operation and Maintenance Contract Tender	Retender allowance	180,000	0	0	0	0	15,000	15,000	0	0	0	30,000	60,000	60,000
62007	Land Acquisitions/Easements	Procurement of easements and processing land acquisitions	300,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000	100,000
62009	Catchment Management Plans	Mapua/ Ruby bay, Brightwater/ Wakefield, Takaka, combination of smaller CMPs	930,000	70,000	70,000	70,000	70,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000	250,000
62010	Strategic planning professional advice	estimating, programming, reviews, risk and resilience	500,000	10,000	20,000	20,000	10,000	20,000	20,000	10,000	20,000	20,000	10,000	170,000	170,000
62013	Valuations	Valuations three yearly reviews	120,000	0	12,000	0	0	12,000	0	0	12,000	0	0	48,000	36,000
62014	Floor level surveys	Survey of floor levels in areas prone to flooding	375,000	75,000	75,000	75,000	75,000	75,000	0	0	0	0	0	0	0
62016	Drains and Creeks Operation and Maintenance		2,300,000	40,000	50,000	60,000	70,000	80,000	80,000	80,000	80,000	80,000	80,000	800,000	800,000
62018	Other Operation and Maintenance		60,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000	20,000
62019	Richmond Central Business Case	Develop programme business case to identify programme of works in central Richmond to improve levels of service	120,000	60,000	60,000	0	0	0	0	0	0	0	0	0	0
62021	Reticulation Contract Routine		1,200,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000	400,000
62022	Drains and Creeks Contract Routine		7,650,000	200,000	205,000	235,000	250,000	260,000	260,000	260,000	260,000	260,000	260,000	2,600,000	2,600,000
62029	Reticulation Contract Reactive		2,990,000	100,000	100,000	90,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000
62030	Drains and Creeks Contract Reactive		300,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000	100,000
62033	Electricity		81,000	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	27,000	27,000
62034	Insurance	Annual Allowance	1,838,038	141,222	151,107	161,685	173,003	173,003	173,003	173,003	173,003	173,003	173,003	173,003	0
62035	Rates and Water	Rates - District Wide	2,744,215	274,421	274,421	274,421	274,421	274,421	274,421	274,421	274,421	274,421	274,421	0	0
62036	General Operations		183,914	8,000	6,066	6,066	6,066	6,066	6,066	6,066	6,066	6,066	6,066	60,660	60,660
62037	SCADA/ Telemetry		161,595	15,000	5,055	5,055	5,055	5,055	5,055	5,055	5,055	5,055	5,055	50,550	50,550
62039	Consent Monitoring	Consent Monitoring	2,105,000	35,000	30,000	45,000	55,000	65,000	75,000	75,000	75,000	75,000	75,000	750,000	750,000
	Feasibility Studies	Feasibility Studies	64,850	0	0	0	0	0	33,000	0	0	0	0	31,850	0
	Headingly Lane House Repairs and Management		210,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	70,000	70,000
	Third Party Recoveries		300,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000	100,000

Appendix B: Detailed Capital Budgets

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2021-51	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031-41	2041-51
66001	Borck Creek Widening - Reed Andrews to SH6	Final section of Borck Creek to be upgraded	94	6	0	1,563,000	0	0	0	0	0	0	63,000	1,500,000	0	0	0	0
66006	Mapua Drive Detention Wetland	Detention wetland to reduce peak flows to pre-development levels for catchment within DA 9R, 8R and 31B	90	10	0	500,000	0	0	0	500,000	0	0	0	0	0	0	0	0
66007	Motueka West Discharge System	Growth areas north of King Edward Street and to the east of SH60 require a stormwater system in place to convey stormwater from the development area across High Street, into the existing drain and beyond.	89	11	0	5,500,000	100,000	2,400,000	3,000,000	0	0	0	0	0	0	0	0	0
66008	Motueka - Tidal Gate Renewal	Renewal of gates, hydraulics, control cabinets and telemetry at Woodlands Drain and Wharf Road	0	0	100	430,000	0	0	0	0	0	0	0	0	0	0	215,000	215,000
66009	Eastern Hills Drain Upgrade	Eastern Hills Drain needs to be realigned through Mytton property following it's disconnecting from Bateup Drain. Approximately 60 m will need to be financed by the Council while the next section up to the connection with Borck's Creek will be done by the developer.	34	66	0	1,650,000	1,650,000	0	0	0	0	0	0	0	0	0	0	0
66013	Bateup Drain Upgrade Stage 1	Widening of the existing drain and construction of environmental strip along Bateup Drain from Cardiff to Paton Rise development.	89	11	0	200,000	0	0	0	25,000	175,000	0	0	0	0	0	0	0
66015	Gladstone Road - Poutama Drain Stormwater Link	Construction of Washbourn Pressure Pipe will cut off parts of Gladstone Rd/ Waverley St catchment and connections to existing 1200 mm pipes along Gladstone Rd needs to be provided	0	100	0	1,140,000	0	0	0	0	60,000	270,000	810,000	0	0	0	0	0
66016	Reed / Andrews Drain Upgrade	Increase capacity of Reed/Andrews drain to cater for increased flows in Bateup Drain.	94	6	0	562,500	0	0	0	562,500	0	0	0	0	0	0	0	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2021-51	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031-41	2041-51
66017	Pipe and Manhole Renewals	District wide budget for renewal of pipes and manholes in poor condition	0	0	100	2,000,000	0	0	0	0	0	0	0	0	0	0	800,000	1,200,000
66018	Bateup Drain Upgrade Stage 3	Widening of the existing drain and construction of environmental strip along Bateup Drain from Arizona Development to Hill Street	87	13	0	503,000	0	0	0	0	0	46,000	457,000	0	0	0	0	0
66019	Takaka Stormwater Improvements	Takaka Sw improvements, including Lake Killarney protection	0	100	0	1,100,000	0	0	0	0	0	0	75,000	1,025,000	0	0	0	0
66020	Commercial Street Stormwater Pipe Upgrade		0	100	0	500,000	0	0	0	0	0	0	0	500,000	0	0	0	0
66022	Secondary Flow path Improvements	District wide improvements as derived from OLFP mapping	0	100	0	6,750,000	50,000	50,000	50,000	50,000	50,000	300,000	300,000	300,000	300,000	300,000	2,500,000	2,500,000
66023	Stormwater Outlets, Inlets and Valves Renewals	District wide budget to replace outlets, inlets and valves that are in poor condition	0	0	100	750,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000	250,000
66031	Stormwater Quality Improvements	Implementation of measures to improve the quality of stormwater runoff at strategic locations	0	100	0	1,450,000	0	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	500,000
66032	Seaton Valley Stream Upgrade - Stage 2	Continuation of the upstream section of the stream widening to achieve additional capacity required to serve the new developments.	74	26	0	450,000	0	0	0	100,000	350,000	0	0	0	0	0	0	0
66036	Washbourn Drive Stormwater Culvert Upgrade	Stormwater from Bill Wilkes Reserve needs to be diverted to Washbourn Garden pond	0	100	0	760,000	0	0	0	0	0	0	0	0	0	25,000	735,000	0
66037	Seaton Valley Stormwater Detention Dam Construction	Stormwater detention dam to serve growth in north-western Mapua.	59	41	0	550,000	0	0	0	0	0	0	0	550,000	0	0	0	0
66038	Aranui Detention Wetland	Detention wetland within Aranui Park providing ecological, amenity and stormwater functions for part of DA 8R	94	6	0	500,000	0	0	0	0	500,000	0	0	0	0	0	0	0
66039	Minor Stormwater Improvements	District wide minor stormwater improvements for isolated level of service improvements	0	100	0	3,000,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000
66040	Upper Seaton Valley Road Wetland	Detention wetland to reduce peak flows to pre-development levels for catchment DA27-R	76	24	0	1,000,000	0	0	0	0	0	0	0	0	0	0	1,000,000	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2021-51	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031-41	2041-51
66041	Motueka West Discharge System stage 2		64	36	0	16,200,000	0	0	0	0	0	0	0	0	0	0	16,200,000	0
66044	SH6 Richmond Deviation Stormwater Improvements	Properties along State Highway 6 including the school experience occasional flooding. Stormwater needs to be efficiently conveyed under the state highway to the opposite side to prevent flooding. Upgrade the existing and construct a new culvert under SH 6 Richmond Deviation.	19	81	0	2,100,000	0	0	0	0	0	0	0	0	50,000	50,000	2,000,000	0
66045	Richmond Central Stormwater diversion	Diversion of stormwater from Washbourn Gardens to Poutama Drain to protect Richmond town centre from flooding	0	100	0	6,480,000	0	0	0	0	0	0	320,000	2,960,000	3,200,000	0	0	0
66046	Lower Queen Street Bridge Capacity Upgrade	The span of the existing bridge over Borck Creek at Lower Queen Street needs to be lengthen to match the new width of the creek bed.	53	47	0	6,995,000	0	0	160,000	160,000	3,300,000	3,375,000	0	0	0	0	0	0
66047	Borck Creek SH60 Bridge Capacity upgrade	The existing culvert needs to be replaced with a bridge spanning 55m width of Borck Creek.	92	8	0	6,900,000	300,000	3,400,000	3,200,000	0	0	0	0	0	0	0	0	0
66048	Reed/Andrews Drain: SH6 Culvert and Network Tasman drain upgrade	Replace the existing culvert under SH6 with new box culvert to match the increased flow capacity of Reed/Andrews drain and upgrade drain through Network Tasman site.	92	8	0	3,700,000	0	0	100,000	1,800,000	1,800,000	0	0	0	0	0	0	0
66049	Bateup Drain Paton Road Culvert Upgrade	The capacity of the existing concrete culvert where Paton Rd crosses over Bateup Drain needs to be increased to match the increased design flow along the drain driven by growth.	87	13	0	140,500	0	0	0	0	140,500	0	0	0	0	0	0	0
66050	Cemetery dam Upgrade	Cemetery Detention Dam upgrade from temporary to permanent infrastructure	0	100	0	1,000,000	0	0	0	0	0	0	0	0	0	0	1,000,000	0
66051	Borck Creek Widening - Headingly Lane to Estuary	Channel widening within designation to 65m to enable growth (sections A and B1)	51	49	0	2,500,000	0	0	1,500,000	1,000,000	0	0	0	0	0	0	0	0
66056	Motueka flood mitigation	Green corridor and pipe upgrades to reduce flood	0	100	0	29,500,000	0	0	0	0	0	0	0	0	0	0	0	29,500,000

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2021-51	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031-41	2041-51
		risk in Greenwood/ Clay/ Moffatt Street Area.																
66057	Borck Creek Widening - SH6o to Reed/Andrews	Capacity of Borck Creek between SH6o and Reed/Andrews needs to be upgraded for the future growth.	92	8	0	4,400,000	400,000	1,500,000	2,500,000	0	0	0	0	0	0	0	0	0
66058	Whites Drain Upgrade	Widening of the existing drain and construction of environmental strip from the connection with Reed/Andrews Drain and Paton Rd.	95	5	0	500,000	0	0	0	0	500,000	0	0	0	0	0	0	0
66059	Richmond Stormwater Land Purchase	Land purchase to enable construction of new stormwater assets	51	49	0	9,425,000	2,800,000	3,000,000	700,000	550,000	740,000	480,000	1,155,000	0	0	0	0	0
66061	Hunt Street Stormwater Extension	Collecting flow from the general Hunt Street area and diverting it to Gladstone - Poutama Link.	0	100	0	860,000	0	0	0	0	0	0	0	0	0	0	860,000	0
66066	Upper Queen St Stormwater Diversion	Stormwater diversion from Queen St, along Washbourn Dr and into Washbourn Gardens.	0	100	0	543,000	0	0	0	0	0	0	0	30,000	25,000	488,000	0	0
66068	Lower Queen Street Coastal Discharge	Construct catchment solution to discharge stormwater to the coast	48	52	0	455,000	0	0	0	0	0	0	0	0	0	0	455,000	0
66069	Growth Allowance for Stormwater Infrastructure	Allowance to increase pipelines reactively due to growth	100	0	0	300,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0	0
66070	Richmond CBD Treatment	Stormwater treatment system for contaminated runoff from Richmond Central carparks	0	100	0	900,000	0	0	0	0	0	150,000	750,000	0	0	0	0	0
66071	Richmond - Detention Dam Consent Renewals	Consents expire 31 May 2030 (Bill Wilkes, Washbourn, Lodestone, Eden)	0	0	100	100,000	0	0	0	0	0	0	0	0	0	50,000	50,000	0
66073	Bateup Drain Upgrade Stage 2	Increase capacity of Bateup Drain to suit growth from Paton Rise Development to Paton Rd	89	11	0	220,000	0	0	0	0	220,000	0	0	0	0	0	0	0
66077	Richmond flood mitigation Reservoir Creek catchment		0	100	0	6,000,000	0	0	0	0	0	0	0	0	0	0	0	6,000,000
66078	Richmond flood mitigation Eastern Hill Catchment		0	100	0	6,000,000	0	0	0	0	0	0	0	0	0	0	2,000,000	4,000,000
66079	Richmond South Whites Rd Area		56	44	0	2,000,000	0	0	0	0	0	0	0	0	0	0	1,000,000	1,000,000

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2021-51	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031-41	2041-51
66080	Richmond South - upper Borck creek		56	44	0	4,000,000	0	0	0	0	0	0	0	0	0	0	0	4,000,000
66081	Richmond West and McShane Pipe upgrades	Pay Richmond West Development Company for increased pipe sizes to allow for flow from upstream catchments	100	0	0	210,000	40,000	170,000	0	0	0	0	0	0	0	0	0	0
66082	Ruby Bay SW flooding and Coastal inundation	Solution to reduce combined flooding from stormwater and coastal inundation	0	100	0	250,000	0	0	0	0	0	0	250,000	0	0	0	0	0
66083	Stormwater detention Jefferies Road Growth Area		95	5	0	2,000,000	0	0	0	0	0	0	0	0	0	0	0	2,000,000
66084	Lower Moutere Growth Area	Stormwater discharge infrastructure	97	3	0	300,000	0	0	0	0	0	0	0	0	0	0	300,000	0
	Capital Programme Scope Risk Adjustment	Capital Programme Scope Risk Adjustment	0	100	0	-7,241,850	-274,750	-536,250	-570,750	-247,625	-402,025	-241,300	-219,250	-353,500	-189,000	-55,900	-1,543,250	-2,608,250