PART 5
INFRASTRUCTURE STRATEGY

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1. EXECUTIVE SUMMARY

WHAT IS INFRASTRUCTURE?

Infrastructure is a type of physical asset that the Council provides and owns. This strategy deals with infrastructure that is needed to support the Council's water supplies, stormwater, wastewater, rivers and flood control, solid waste and transportation (roading) activities. Council has other infrastructure that supports community activities such as libraries, parks and reserves, pools and halls. They are not covered by this strategy.

Infrastructure provides the foundations on which the Tasman District is built – it is essential to health, safety, and for the transport of both people and freight. It enables businesses and communities to flourish, and failure to invest in it would inhibit the economic performance, health and prosperity of the District.

Infrastructure is a core part of what Tasman District Council provides its communities – it makes up the majority of the Council's spending, and over $1 billion worth of assets.

The Council has introduced a new Financial Strategy aimed at placing the Council on a financially sustainable footing. Under the new strategy, limits have been placed on borrowing and rates increases, constraining the Council's ability to invest in new infrastructure at the same time as maintaining existing infrastructure. It is not possible to do everything that it is desirable to do – choices have to be made about how the Council will manage it assets and its infrastructure investment.

HOW THE COUNCIL WILL MANAGE IT ASSETS AND INVESTMENT

The Council manages its infrastructure to provide the community and businesses with infrastructure at agreed levels of service, cost effectively, and within an acceptable level of service delivery risk. This strategy signals a significant change to how the Council aims to achieve these objectives compared to the Long Term Plan 2012–2022. In particular, the Council intends to be more selective in its investment focus for infrastructure. This means:

- Reducing the number of service level improvements by focusing on and prioritising essential improvements;
- Prioritising new capital works that provide the greatest benefit to the community, and facilitate growth; and
- Sensibly managing asset renewal risks by ensuring investment is justified on economic and service level grounds. This can be done by making better use of information about our assets.

FIG 1. YEARS 1-10. SPLIT OF OPERATIONAL COSTS

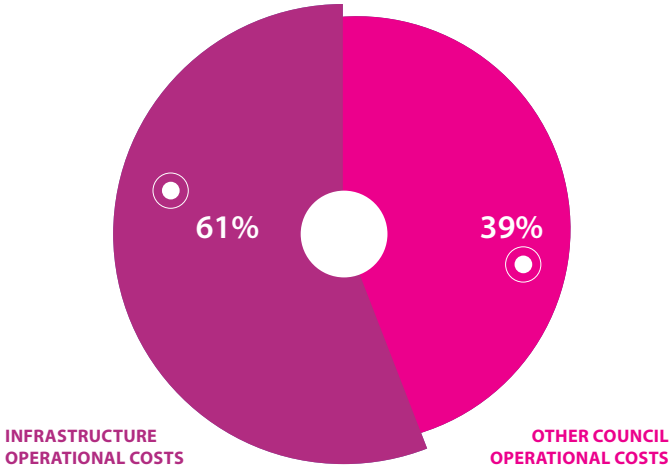
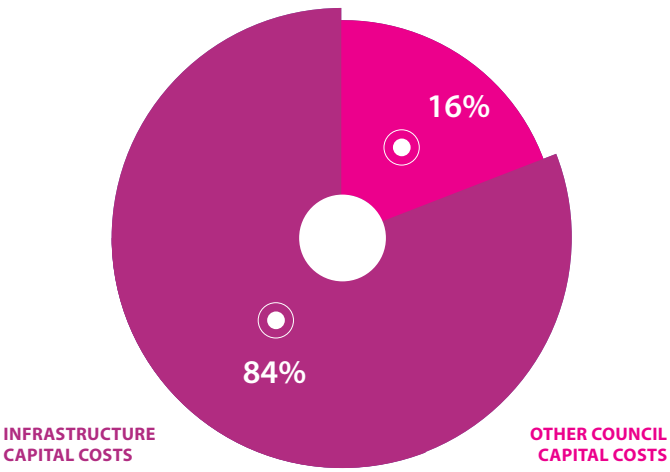


FIG 2. YEARS 1-10. SPLIT OF CAPITAL COSTS



In the short term, the Council's highest priority for service level improvements will be on ensuring water security for the Waimea urban water supply areas and stormwater improvements in the District. The Council plans to improve urban water security by contributing to the construction of the Waimea Community Dam. The Dam will provide the water needed for the urban water supplies – at the same time providing public benefits including improving flows in the river, access to water for irrigators and economic growth. The Council has slightly increased its budgets for stormwater improvements, despite making savings in most other activities. A catchment management plan will be developed for each settlement to determine the best way to manage stormwater in that settlement and to prioritise when capital works are carried out. This process will be rolled out across the District progressively over several years.

The Council will provide infrastructure for growth and development – ensuring the trunk services are in place to ensure growth can be accommodated and that there is sufficient land supply. The Council will take an active role in directing where development will occur and over what timeframe, to make the most of public and private investment in growth. Much of this growth and related expenditure is expected in five principal areas – Richmond, Brightwater, Wakefield, Motueka and Mapua. Richmond is expected to grow by several thousand and Brightwater, Wakefield and Mapua settlements by around 500 people over the next 25 years. Motueka is also experiencing growth with additional land and services provided in Motueka West.

Previously, the Council managed the risk of infrastructure failures by planning a heavy programme of renewals. This approach to renewals, together with growth and improvements works, resulted in a large expenditure programme and created a financial risk related to increasing debt. Greater emphasis is now being placed on active risk management of the network alongside a smaller renewals programme. This means the Council will pursue a smaller renewals programme, carefully monitor asset performance, invest in better asset condition information, and retain the financial capacity to invest more if the need arises.

The financial benefits of the new approach to infrastructure planning and management are significant. Over the next 10 years, the capital works programme in our activity management plans for infrastructure has been reduced by over $100 million. This short term financial squeeze helps reduce our borrowings.

SIGNIFICANT INFRASTRUCTURE ISSUES

Significant infrastructure issues are those which cost a lot, have the potential to impact on public health or property, and/or are a big change to the approach signalled in the Long Term Plan 2012-2022. The significant infrastructure issues signalled in this strategy are:

- Waimea Plains water security. Extended periods of dry weather or drought have occurred nearly every summer since 2001, with impacts on the Waimea River, related aquifers and the communities reliant on it for water. Recent changes to the Tasman Resource Management Plan mean that water rights will be much more constrained in the future if the Waimea Community Dam is not constructed.
- Stormwater management. Most residential areas in the District are subject to some level of flood hazard, and many of the District's stormwater systems are under capacity.
- Joint solid waste initiative with Nelson City Council. It will be more efficient to operate a single landfill servicing both areas at any one time, reducing operating costs and avoiding the duplication of capital. We are planning for joint operations at the York Valley landfill from July 2016 (one year later than previously proposed).

NATURAL HAZARDS AND RESILIENCE

The Council is aware of the growing importance of managing the effects of more intense storm events, rising sea levels and other natural hazards. The Council is doing the work needed to understand the future impacts of these issues. As a result of this work, we expect these issues to become more prominent in future Infrastructure Strategies and Long Term Plans. In the interim, the Council has increased its funding for responding to emergencies and natural hazards for roading, stormwater, and coastal structures.

2. INTRODUCTION

This is Tasman's first infrastructure strategy. Previously, the Council's main planning tool for managing the District's infrastructure has been its asset management plans (one for each activity), covering the lifecycle of the assets. The new infrastructure strategy provides a single, long term strategy for all of the core infrastructure assets combined; it is an overarching framework for the more detailed asset management plans.

Infrastructure strategies are a new requirement for local authorities, introduced by the 2014 amendments to the Local Government Act 2002. A 30-year infrastructure strategy is to be prepared as part of the Long Term Plan. This is aimed at ensuring all councils are planning effectively for future infrastructure needs, beyond the 10-year horizon of the Long Term Plan.

The purpose of the infrastructure strategy, as prescribed by the Local Government Act, 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.

In setting out how the Council intends to manage the District's infrastructure assets, it must consider how:

- To respond to growth or decline in demand;
- To manage the renewal or replacement of existing assets over their lifetime;
- 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.

SCOPE

This strategy covers the following essential infrastructure:

- Urban Water Supply
- Stormwater
- Wastewater
- Transportation
- Rivers and flood control
- Solid Waste

The infrastructure strategy will be reviewed every three years, and community facilities may be included in future.

3. CONTEXT, TRENDS, AND STRATEGIC ISSUES

This section outlines how population changes, economic growth, the geography of Tasman, as well as future trends, are likely to affect infrastructure management in the future. There will always be a degree of uncertainty about how significant these factors are going to be, but they all have the potential to exert wide influence. For this reason they will require ongoing consideration, and the Council will need to take a flexible approach to adapt to changing conditions.

These key strategic issues are:

- Population changes
- Affordability
- Legislation and the Tasman Resource Management Plan
- Natural hazards and resilience to climate change
- Opportunities for shared services with Nelson City Council
- Economic trends

There are many other factors that need to be taken into account when developing the Council's Activity Management Plans, Long Term Plan, Financial Strategy and Infrastructure Strategy. Significant assumptions common to all of the Council's activities are listed in "Accounting Information", which can be found in Volume 1 of this Long Term Plan. Any other significant assumptions specific to an individual infrastructure activity and its programme are listed in section 7 (Activity Summaries), while detailed planning assumptions can be found in the individual activity management plans for each activity.

POPULATION CHANGES FROM 2014 TO 2039

Summary of Population Projections, 2006 (Base) to 2046 [Source – Statistics New Zealand]

REGIONAL COUNCIL AREA (1)	PROJECTION (2)	POPULATION AT 30 JUNE							POPULATION CHANGE 2013–43	
		2013(3)	2018	2023	2028	2033	2038	2043	NUMBER	AVERAGE ANNUAL (4) (PERCENT)
TASMAN DISTRICT	HIGH		52,000	54,600	57,000	59,100	60,800	62,200	13,400	0.8
	MEDIUM	48,800	50,900	52,300	53,300	54,000	54,300	54,000	5,200	0.3
	LOW		49,800	49,900	49,600	48,900	47,700	46,000	-2,800	-0.2

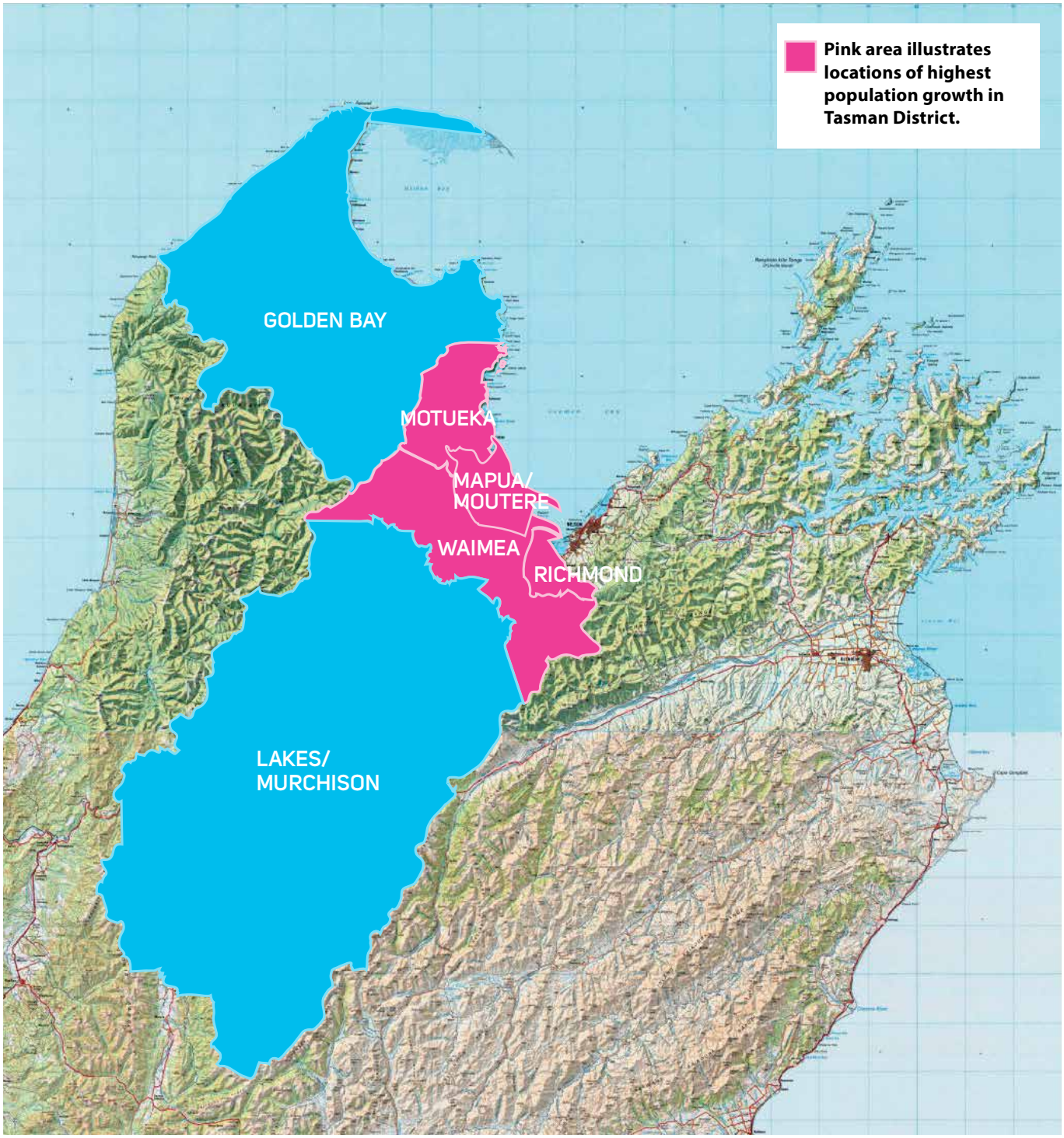
(1) Boundaries at 1 January 2014.

(2) Three alternative projections have been produced using different combinations of new births, mortality, and migration assumptions for each area.

(3) These projections have as a base the estimated resident population of each area at 30 June 2013.

(4) Calculated as a constant rate of population change over the period.

Tasman has a relatively small population, spread over 16 principal settlements and a large rural area. An indication of where growth is expected is illustrated below.



Over the next 30 years, three population factors are expected to have a major bearing on infrastructure management in Tasman:

- Tasman's dispersed population and small settlements
- Growth is concentrated in the main settlements
- Aging population and smaller households

Tasman's dispersed population creates infrastructure challenges due to the distances across which services need to be delivered. Five settlements have populations ranging from around 1,200 (Takaka) to 2,000 (Mapua / Ruby Bay), while nine settlements have populations of less than 500 people. This can result in the duplication of infrastructure (such as water and wastewater treatment plants), while the relatively low population density in some settlements can drive up costs per household.

Tasman District's moderate population growth is expected to continue, with over 5,200 more people expected in Tasman by 2043, based on Statistics New Zealand's medium growth projections. Most of this growth is expected to be concentrated around five settlements – Richmond, Brightwater1, Wakefield, Motueka and Mapua/Ruby Bay. Richmond is expected to grow the most quickly, with nearly 3,000 more people expected to live in Richmond by 2043.

Growth in most of the other settlements and rural areas is expected to be fairly low on an individual basis, although collectively they are still expected to account for around 40% of overall population growth.

A high proportion of the population growth is occurring as a result of people moving to Tasman (rather than current residents having children). The growth projections indicate that many of these people are older and are choosing to live in larger settlements with easier access to services. They are more likely to be living in one or two person households, reinforcing an existing trend towards older, smaller households.

The implications for the provision of infrastructure are that there will be more houses for which to provide services, but with potentially fewer people in each household lowering demand per household, and potentially more elderly people on fixed incomes to fund the infrastructure.

Within Tasman, water supply and stormwater infrastructure are the biggest infrastructure constraints on growth – especially in the high population growth areas. The Council is addressing these constraints by investing in water reticulation and stormwater systems in high growth areas, although the investment will be staged.

Nearly all of the high growth areas are serviced by water sourced from the Waimea River or related aquifers. If the Waimea Community Dam does not proceed, minimum flows in the river will be reached more often, triggering water rationing. This may affect how the Council manages water and future development patterns in these areas.

AFFORDABILITY

As noted earlier, Tasman's relatively small and spread out population can put pressure on the affordability of providing and maintaining our existing infrastructure services. At the same time, the Council must also meet the challenge of accommodating growth, and funding essential improvements. The challenge will not recede with population growth. Tasman is a median wage economy, and an increasing proportion of residents will be over 65 years old and potentially on fixed incomes. This limits our ratepayers' ability to absorb rate rises.

LEGISLATION AND THE TASMAN RESOURCE MANAGEMENT PLAN

Legislation, Government regulations and the Tasman Resource Management Plan play a major role in influencing the Council's investment programme. For example:

- The Tasman Resource Management Plan rules relating to water allocation and residential development;
- The New Zealand Coastal Policy Statement policies on planning for climate change over the next 100 years – including avoiding development in areas that are at risk;
- The Drinking Water Standards for New Zealand (2005);
- Development of a Housing Accord for Tasman; and
- The potential for legislation change that requires roads
  to provide for increasingly heavier vehicles (as is the trend in Australia).

As legislation and regulation evolves and changes over time, so will the Council's investment programme.

NATURAL HAZARDS AND RESILIENCE

Tasman experiences a diverse range of weather. Weather events can adversely impact on infrastructure in one part of Tasman while having minimal effects in other areas. Examples are the heavy rainfall event causing slips in Golden Bay and major damage in Pohara in December 2011 and the flash flooding in Richmond in April 2013.

Climate change has the potential to increase flooding risks and to cause coastal inundation and erosion. The Ministry for the Environment recommends that councils plan for a sea level rise of between 0.5 metres to 0.8 metres between 1990 and 2090. This issue is significant for Tasman District Council's infrastructure because:

- Many of the settlements are close to the coast, including Mapua/Ruby Bay, Motueka, parts of Richmond, Collingwood and Pohara; and
- Other settlements are prone to flood risk due to their proximity to major rivers, including Brightwater, Motueka and Takaka.

Climate change projections generally anticipate increasing erosion, inundation and damage associated with increasing storm intensity and rising sea levels. How the Council manages these impacts is extremely important. It will have a significant impact on large tracts of coastline, land use planning, private property and the Council's infrastructure and finances.

Potential impacts include:

- Saltwater intrusion into bore water (making the water undrinkable and eroding infrastructure). This is a public health issue, as well as an issue for stock drinking water;
- Rising water tables, with more water entering the sewerage system;
- Low lying soak pits may cease to function effectively; and
- Stormwater flood gates won't be effective when sea level rises.

The Council does not yet have a full understanding of how sea level rise will impact on Tasman. Improving our knowledge of the risks is the first step in establishing how the risks can be managed. Inundation modelling, which studies the effects of predicted sea level rise, has been carried out for Mapua (including Ruby Bay). Inundation modelling is also being carried out for Motueka and the results will be available to inform the 2018 review of the Council's infrastructure strategy.

Adapting to climate change will become a more prominent feature of the Council's work programme in future, as more risk assessments are completed and that information becomes available for managing flood and inundation risks in Tasman. However, it isn't possible, or feasible, for all of the infrastructure in Tasman to be designed to cope with all potential events. Some difficult decisions will be required regarding the best approach to managing these challenges. The Council will be guided by the Government and international best practice in its future planning and infrastructure management.

Earthquakes are another natural hazard risk that Tasman is subject to, particularly for Richmond due to its proximity to an active fault line. The Council's management of this risk includes building setbacks from active fault lines as a requirement in the Tasman Resource Management Plan, the Nelson Tasman Engineering Lifelines (NTEL) project (for rapid restoration of essential infrastructure in emergency situations) and seismic valves near reservoirs.

OPPORTUNITIES FOR SHARED SERVICES WITH NELSON CITY COUNCIL

The proximity of Tasman settlements to Nelson presents opportunities for the two councils to share services. This proximity and willingness to collaborate has led to approximately 100 shared services or arrangements, including the shared wastewater treatment plant on Bell Island, cross boundary water supply, the commitment to operate a single landfill, and joint development of plans such as the joint waste minimisation and management plan. Tasman District Council will continue to work with Nelson City Council to identify and, wherever feasible, to act on opportunities to maximise the efficiency of our infrastructure services and reduce costs to ratepayers in both districts.

ECONOMIC TRENDS

In 2013 the annual growth in Nelson-Tasman's regional GDP per capita was 4.2% (compared with the national average of 2%). Approximately 30% of Nelson-Tasman's GDP is generated from bulk commodity production. Forestry, horticulture, seafood and pastoral farming are currently the four most significant primary industries in the Top of the South, and they are all heavily reliant on the road network and water. An efficient road network is essential to all of these industries as it is the only means of getting export products to the port or airport. Ongoing and increasing water shortages have major implications for Tasman's horticulture industry. Tourism is equally reliant on Tasman's road network which provides road access to three national parks and other tourist destinations.

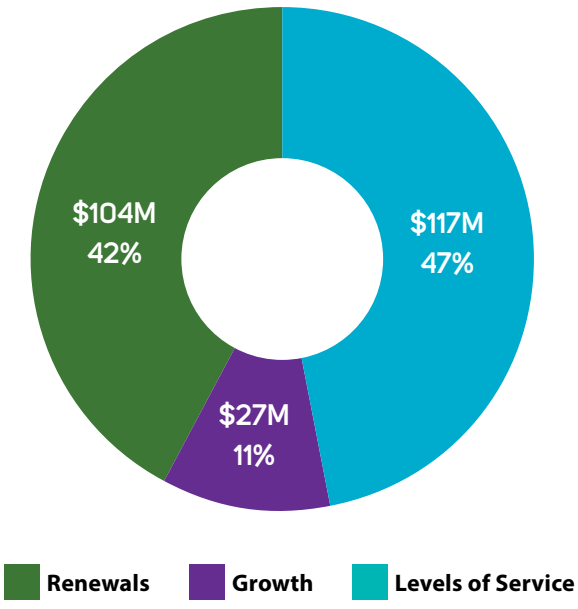
4. TASMAN'S APPROACH TO INFRASTRUCTURE MANAGEMENT

The Council manages its infrastructure to provide the community and businesses with infrastructure at agreed levels of service, cost effectively, and within an acceptable level of service delivery risk. To do this, the Council must make decisions and manage its assets through the entire lifecycle of an asset – build, operate, maintain and renew.

The key investment decisions are about how much the Council should spend on infrastructure, the timing of investment, and what proportions of that spending should relate to each of the following three areas:

- Replacement of existing infrastructure (renewals)
- Investment in improvements to the existing services (levels of service)
- Providing new infrastructure for growing communities (growth).

FIG 3. YEARS 1-10: PROPORTION OF SPENDING FORECASTS FOR EACH OF THESE DRIVERS



REPLACEMENT OF EXISTING INFRASTRUCTURE (RENEWALS)

Renewals are the replacement of existing infrastructure. This is needed as most infrastructure assets deteriorate over time, leading to reduced performance, breakages and increased maintenance costs.

The long term renewal forecasts in this strategy are generally based on expected remaining lives of the Council's assets. Renewal expenditure is programmed only if there is an asset that is expected to need replacing because it is at the end of its useful life – as recorded in our asset management systems. The useful lives are based on industry standards, expert opinion and engineering judgment and are reviewed as part of the revaluation of the Council's assets every 2-3 years.

For example, the assumed useful life for most pipes is 80 years, while asbestos cement pipes used for water supply have an assumed life of only 60 years as they deteriorate more quickly under pressure. Conversely, cement stormwater pipes have an assumed life of 120 years as they are not generally subject to the same pressures or corrosion that affects water or wastewater pipes.

The expected life of an individual asset can be affected by premature deterioration. For example, heavy vehicle use can undermine road pavement, or tree roots can damage pipes. Consequently, it is important to monitor the condition of assets to see whether they are deteriorating prematurely or in better than expected condition. The Council has good information on the condition of the roading network, which it has used to help plan the renewals programme.

However, the Council does not have the same level of condition information for its other assets – particularly piped assets. Previously, the Council managed uncertainty associated with this issue through an emphasis on renewals. This approach, together with growth and improvements works, resulted in a large expenditure programme that created financial risk related to increasing debt.

REPLACEMENT OF EXISTING INFRASTRUCTURE (RENEWALS) (CONT.)

Greater emphasis is now being placed on active risk management of the network alongside a smaller renewals programme. This means the Council will:

- Carefully monitor asset performance;
- Manage the short term replacement programme to achieve a balance between optimal timing of replacement from a long term cost perspective and service levels. In practice, this means the Council will not renew an asset unless its existing condition or performance is likely to result in an unacceptable level of service delivery risk, and renewal is the least long term cost option available to the Council;
- Invest in better asset condition information. Over the next few years, the Council intends to undertake a programme of inspections of the reticulation network to improve the condition information we have and to assess whether its condition is consistent with the asset lives assumed in these forecasts. This will focus on critical assets because they service large numbers of properties, essential services, and businesses. As a result of the work, the Council's long term renewal programme is likely to change further; and
- Retain the financial capacity to invest more if the need arises.

INVESTING IN IMPROVEMENTS TO THE EXISTING SERVICES (LEVELS OF SERVICE)

Investing in improvements to existing service levels or to address gaps in current levels of service is a key driver of Council infrastructure spending. Such investments are made for a variety of reasons, ranging from strong community desire for a higher level of service through to legislative or regulatory requirements. For example:

- Addressing any gaps between the Council's agreed existing levels of service and actual performance
- Acting on opportunities for potential cost savings or improvements in services at no additional cost
- Meeting the requirements of legislation or regulation
- Managing the effects of natural hazards and climate change
- Addressing issues with health or safety concerning Council's staff, contractors or the public
- Taking advantage of investment required to accommodate growth.

CHANGES TO LEVELS OF SERVICE

Previous investment by the Council means the District's infrastructure is generally a good standard and will require fewer improvements in the next few years. As a result, the Council has pulled back on many projects to lift service levels, particularly in the first 10 years of the Long Term Plan to help achieve our financial goals. Our focus is on investing in improvements in essential infrastructure. Cuts to non-essential projects or delays to others will not reduce the levels of service enjoyed by our communities.

For some activities and services, there will be improvements to levels of service. In the short term, the Council's highest priority for service level improvements will be on ensuring water security for the Waimea urban water supply areas and stormwater improvements in the District. Other important improvements to levels of service that have been programmed are:

- Improvements to comply with drinking water standards;
- Improvements to stormwater drainage in some catchments;
- Increased services for recycling solid waste; and
- Improvements to comply with new wastewater resource consent requirements.

PROVIDING NEW INFRASTRUCTURE FOR GROWING COMMUNITIES (GROWTH)

The Council will provide infrastructure for growth and development – ensuring the trunk services are in place to ensure that growth can be accommodated and that there is sufficient land supply to keep housing affordable. This requires the Council to anticipate where development will occur, over what timeframe, and where greatest benefit to public and private investment can be leveraged.

As noted earlier, much of this growth (and related expenditure) is expected in five principal areas – Richmond, Brightwater, Wakefield, Mapua/Ruby Bay, and Motueka. The Council will continue to invest in these areas to accommodate growth over the next 10-20 years. However, the Council cannot afford to invest in growth infrastructure in all areas at the same time. Consequently, the programme has been staged to ensure there are sufficient services to meet expected growth without the Council funding too many "growth fronts" at one time.

In Richmond, water and stormwater works needed for growth will be progressively rolled out over 20 years from Richmond West through to Richmond South. It also means water upgrades to allow for more growth in Mapua have been programmed in year 11, as there is already sufficient serviced land in Mapua to accommodate growth for around 10 years. This staging, and the need to control the Council's expenditure, means that developers will need to provide and fund any required infrastructure should they wish to develop land ahead of the Council's programme.

CRITICAL ASSETS

To help make future management and investment decisions, the Council is developing a new critical assets hierarchy that will determine how critical assets are to the network. This framework will help prioritise investment in condition assessments, renewals, and new capital. A draft framework for making these assessments for each infrastructure activity is largely complete, but has yet to be tested, finalised and implemented. This will occur over 2015 and 2016.

5. SIGNIFICANT INFRASTRUCTURE ISSUES

Three infrastructural issues over the Long Term Plan period 2015-2025 have been identified as significant, based on the following criteria:

- Significant changes in levels of service
- Public interest
- Significant changes to funding, for both operational expenditure (opex) and capital expenditure (capex).

The issues that meet these criteria are:

- Waimea Plains urban water security
- Stormwater management
- Joint solid waste initiative

WATER SECURITY FOR THE URBAN USERS ON THE WAIMEA PLAINS

The Council needs to ensure it can provide sufficient water to meet the current demands of its reticulated water users, in Brightwater, Richmond, and Mapua / Ruby Bay during dry summer periods. The Council also needs to ensure it has sufficient water to enable long term growth in these areas.

The Tasman Resource Management Plan requires Council to make a decision by 30th June 2015 on whether or not it will provide for a dam in the Lee Valley in the Long Term Plan 2015-2025.

If Council decides not to proceed with the Waimea Community Dam, there will be more water restrictions. The new rules mean the restrictions would be likely to occur more often, last longer, and be harsher than previous years.

Water restrictions would have an impact on existing and future urban, rural and commercial water users in Richmond, Waimea Plains horticultural and agricultural water users, Brightwater, Redwood Valley and Mapua. The effect on users would, in turn, have a significant negative effect on the economy of our region, and eventually may impact the growth of some settlements. For these reasons, the Council has been considering a range of options – including the construction of the Waimea Community Dam (the Dam) in the Lee Valley.

WHY IS IT A PROBLEM?

In times of dry weather, there is a shortage of water in the Waimea River and aquifers. There is not enough water to provide for a healthy river ecosystem while at the same time meeting the demands of reticulated urban and rural water users. Recent changes to the Tasman Resource Management Plan (TRMP) have been made that will reduce the amount of water that can be extracted.

As a major water user from the Waimea River system, restrictions on the amount of water that can be taken will affect the Council's ability to supply the Richmond, and surrounding areas with reticulated water.

PRINCIPAL OPTION TO RESPOND TO THIS ISSUE

In December 2014, the Council resolved to provide a water augmentation scheme for the Waimea River. The Council has included $25 million in the Long Term Plan 2015-2025 as our contribution to the Waimea Community Dam to enable this. The $25 million would be funded through general rates, water rates and charges. If the funds are not used for the Waimea Community Dam a portion will be needed to meet the cost of an alternative community water supply.

Of the $25 million, approximately $8 million dollars has been budgeted to meet the needs of reticulated water supplies. The remaining amount will contribute to the establishment of the CCO and costs associated with the public benefits of the dam (i.e. environmental, economic, cultural).

The urban water supply component (i.e. reticulated water users) would be paid via a 'club approach' – i.e. all properties that are supplied with reticulated water (with the exception of parts of Motueka) are in the urban water club. They would all contribute towards the urban water supply capacity costs of the Dam. This is consistent with the current club approach to funding other urban water supply investments. If the project is to go ahead the other major water users, irrigators mostly, will need to investigate and provide their own funding.

TIMING:

The change in approach since 2014 and the development of an investment proposal for external funders is likely to see up to a two year delay to the project. Construction is now proposed to begin in 2018/2019.

TASMAN RESOURCE MANAGEMENT PLAN:

The Council will need to amend the water management provisions set out in the Tasman Resource Management Plan (TRMP). The amendments will relate to the water allocation rules for the Waimea Plains. These amendments will be separately notified as part of a Plan Change process.

IMPLICATIONS OF THE OPTION

Greater water security for reticulated water supply users that source water from the Waimea River system. Increased river flows will reduce the need for restrictions and offset impacts of water takes on the ecology of the river.

The Council will need to collect an additional $100,000 in the first year through water charges. Over subsequent years, charges will vary but remain within the total 3% rates income limit set in the Financial Strategy.

Levels of service will be secured for reticulated water users that source water from the Waimea River system.

ALTERNATIVE OPTIONS CONSIDERED

1. Improve demand management (i.e. more water conservation)
2. Do nothing (live without the Dam)
3. Find alternative water supplies or develop alternative water storage facilities i.e. augment the reticulated water supply to meet most or all of the reduction in Council's permitted water take.

IMPLICATIONS OF THE ALTERNATIVE OPTIONS:

Improve demand management (i.e. more water conservation):

- Council may need to improve water demand management and water conservation programmes to increase the time within which Council can live within current consent allocations and to demonstrate that Council uses water wisely during periods of water shortage.
- Alone, this option does not provide sufficient water savings to meet reticulated water demands in periods of dry weather.

Do nothing option:

- Greater water rationing for residents, businesses, and irrigators would be required most years.
- Significant reductions in water rights as a result of changes to the Tasman Resource Management Plan. The Council will need to manage the impact of new rules on the urban water supply.
- Council would need to adopt a work programme to ensure greater water conservation.

For the Alternative Supply option:

- A range of possible alternative sources have been considered. The alternatives must be capable of supplying approximately 4000m3 per day, have good security of supply, and be feasible in terms of costs, technical challenges and environmental impacts.
- There are uncertainties associated with the alternatives, such as water treatment costs and potentially significant hurdles in getting resource consent.
- Low volume alternatives do not provide sufficient water security in periods of dry weather as the population grows and water demand increases.
- Reticulated water rates will likely rise. The amount of the rate is uncertain until alternative viable options are reviewed and costing undertaken.
- No anticipated change to general rates.
- Levels of service are likely to drop as alternative water sources are also likely to be restricted in times of dry weather.

ASSUMPTIONS OR UNCERTAINTY

While Council assumes that external funding can be obtained for the Waimea Community Dam, the funding has not been confirmed at the time of writing this Infrastructure Strategy. External funding is likely to establish the extent of water uptake and financial commitment of irrigators.

The viability of the 'do nothing' and alternative supply options, is uncertain due to dry weather water restrictions affecting multiple water sources at the same time. Alternatives have yet to be formally priced or tested for viability through the resource consent process. Indicative cost estimates are in the $10-16 million range.

STORMWATER MANAGEMENT

Most residential areas in Tasman are subject to some level of flood hazard. Our communities want us to improve stormwater services because recent storm events have shown that our systems may not provide sufficient protection for flooding.

WHY IS IT A PROBLEM?

Only about 70% of the urban stormwater infrastructure across Tasman has the capacity to manage a 1 in 5 year storm flow. The new design standard is 1 in 10 years minimum for the primary network (pipes and drains). Based on the timing of the renewal programme, it will take more than 80 years to bring the network up to the new standard. Continued investment in upgrading the pipe and channel systems, combined with establishing and protecting secondary flow paths is critical to protect properties from flooding. However, secondary flow paths have not yet been created, mapped or protected for most of Tasman.

PRINCIPAL OPTION TO RESPOND TO THIS ISSUE

The Council has chosen not to reduce the stormwater budget because it is important to protect our communities. We are planning to carry out a major information gathering and planning process in our urban areas to create catchment management plans. These plans will be a comprehensive summary of how stormwater-related matters are currently managed and will identify opportunities for future improvements in each main settlement.

The Catchment Management Plan process will involve data gathering, modelling and consultation. This will include consultation with residents to gain information about properties at risk of having floors flooded to identify any new works that are not currently scheduled. Flood modelling will investigate the effect of long and short duration events, ponding, moving flood water, interaction with coastal surges and climate change, and how the Council could respond to these issues.

The process will have as much focus on mapping, establishing, and protecting secondary flow paths as it will have on developing improved reticulation. In most cases, secondary flow management will provide more cost-effective protection than building new pipes.

The proposed levels of service targeted through this process are shown below. These will be refined in consultation with each community as part of the preparation of each Catchment Management Plan.

TABLE 3: FUTURE STORMWATER DESIGN LEVELS OF SERVICE (LOS)

TOPIC	LOS
General new primary (piped) design standard	1 in 10 year storm, climate change adjusted (see notes)
Town centre areas primary design standard	1 in 20 year storm, climate change adjusted (see notes)
New secondary system design standard	1 in 100 year storm, climate change adjusted (see notes)

Table 3 Notes

- All stormwater design will be based on HIRDS rainfall data with 2°C climate change adjustment.
- Existing systems will be retrofitted to optimum level considering the cost-benefit and in particular the number of flooded floors that would be avoided.
- Council works will be based on these LOS from 2015.
- Developer works will be based on these LOS from the release of the next update to the Engineering Standards; until then the 2013 version will apply.

The catchment management plan schedule for this work is shown below.

TABLE 4: STORMWATER CMP PROGRAMME

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Richmond	✓								
Motueka		✓							
Takaka			✓						
Mapua/Ruby Bay			✓						
Wakefield				✓					
Brightwater				✓					
Kaiteriteri					✓				
Pohara					✓				
Tasman						✓			
Ligar Bay/Tata Beach						✓			
Murchison							✓		
St Arnaud							✓		
Collingwood								✓	
Patons Rock								✓	
Tapawera									✓

IMPLICATIONS OF THE OPTION

This option involves substantial cost to the Council and will take time to implement. In some cases properties may be flooded before works are undertaken and/or secondary flow paths are identified and installed. Even when all work is completed, some storms will exceed the stormwater network's design capacity.

Active secondary flow path management coupled with greater community education about the role of secondary flow paths on private property is seen as a more reliable way for the Council to have confidence that the community will be protected from most urban storm events.

STORMWATER MANAGEMENT (CONT.)

ALTERNATIVE OPTIONS CONSIDERED

At a high level, the alternative options available to the Council are to:

A) Increase the stormwater budget and upgrade the piped network more quickly, or

B) Reduce the Council's levels of service and reduce the overall programme.

IMPLICATIONS OF THE ALTERNATIVE OPTIONS:

A) Increase the stormwater budget and upgrade the piped network more quickly.

This option involves considerable expenditure. An estimate for providing 100 year pipe capacity for the Richmond urban area alone (excluding Borck Creek) is in excess of $100 million. The cost to reticulate all 16 settlements could approach upwards of $200 million. This is considered unaffordable and the new levels of service statements adopted (refer Table 3) provide for targeted increased capacity at a more acceptable cost.

B) Reduce the Council's levels of service and reduce the overall programme.

Tasman has been subject to several large and damaging storms since 2010. The community has indicated to the Council that they expect, and are willing to pay for better stormwater management.

ASSUMPTIONS OR UNCERTAINTY

- The Council doesn't yet know how much the solutions coming out of the catchment management plans will cost. The Council will review all options and choose the most cost effective solution that the community supports, and include budgets for these solutions in subsequent long term plans.
- How quickly climate change related changes to the frequency and intensity of storms will occur.

JOINT SOLID WASTE INITIATIVE WITH NELSON CITY COUNCIL

Tasman and Nelson councils currently run two different landfills close to each other. The Eves Valley Landfill is approximately 5 km north-west of Brightwater. Nelson City Council also operates a landfill, located in York Valley, Bishopdale, near the city.

The two councils have assessed options for joint landfill operations. The Council's preferred solution is to send all regional waste to the York Valley landfill and to mothball the Eves Valley landfill.

The York Valley landfill is expected to last 15 years (to 2030) and after this date the Tasman District Council will provide a regional landfill at Eves Valley. In the meantime, Eves Valley would be available in an emergency. This means that in the event of an earthquake, fire or other event closing the York Valley landfill there will be two years capacity for the whole region available at Eves Valley while a longer term solution is established.

While the Councils had originally been working to commence regional operations from 1 July 2015, there has been a delay in reaching agreement on the arrangement. The key outstanding issue the Councils need to resolve is how to allocate the interest costs for Eves Valley debt from 2027 onwards.

WHY IS IT A PROBLEM?

It will be more efficient to operate a single landfill at any one time, reducing operating costs and avoiding duplication of capital.

PRINCIPAL OPTION TO RESPOND TO THIS ISSUE

Cease operation of Eves Valley Landfill and operate York Valley Landfill as a regional landfill over the next 15 years (beginning in July 2016). Investigate and fund establishment of a future regional landfill at Eves Valley.

IMPLICATIONS OF THE PRINCIPAL OPTION

A reduction in capital expenditure and net operational cost savings to Tasman District Council of $3 million over 10 years, and more joint waste minimisation opportunities.

ALTERNATIVE OPTION CONSIDERED

Continue operation of the Eves Valley Landfill and proceed with developing new landfill capacity (estimated cost $18.6 million) by 2019.

IMPLICATIONS OF THE ALTERNATIVE OPTION:

The alternative option would result in duplication of capital within the region and inefficient operations at each landfill. Operation of two landfills is likely to result in competition for waste, reduction in waste minimisation activities and earlier consumption of landfill capacity. The alternative option holds high financial risks for each of the Councils.

ASSUMPTIONS OR UNCERTAINTY

- It was originally anticipated that an agreement would be finalised in time for regional operations from June 2015, but the timetable for agreement has now been extended by 12 months. While both councils continue to support one regional landfill, there remains a risk that agreement will not be reached.
- In the event that agreement is reached, the regional solution reduces risk, but there is still some uncertainty around future waste tonnages and income in the future.
- Tasman and Nelson councils will also review their waste operations in 2015. This may result in changes to the councils' other waste operations, funding or governance of the solid waste activity.

6. THE BIG PICTURE – MAJOR PROJECTS TIMELINE AND OVERALL FINANCIAL PROJECTIONS

TIMELINE OF THE MAJOR PROJECTS

MAJOR PROJECTS TIMELINE		
YEARS	PROJECTS	BUDGET
2015 – 2025	Richmond central improvements (stormwater)	$15m
2015 – 2032	Borck Creek capacity upgrade (stormwater)	$14.1m
2015 – 2020	Waimea Community Dam (water)	$25m
2018 – 2023	Mapua/Ruby Bay rising mains and pump stations upgrades (wastewater)	$5.1m
2018 – 2026	Pohara to Tarakohe pump station and rising main upgrades (wastewater)	$6.1m
2023 – 2035	Wastewater trunk main upgrade from Wakefield to Three Brothers corner (wastewater)	$12.5m
2024 – 2026	Richmond new ground water source (water)	$4.5m
2026 – 2032	Richmond South trunk water supply and low and high reservoirs (water)	$7.1m
2026 – 2028	Thorp Street Motueka trunk main replacement and upgrade (wastewater)	$5.5m
2026 – 2035	Lower Queen Street widening (roading)	$12.8m
2027 – 2044	Eves Valley Landfill – development of stage 3 (solid waste)	$18.6m
2040	Pohara's new urban water supply (water)	$11.5m
2032	Coastal Tasman water supply pipeline (water)	$27m
2032	Full water reticulation for Motueka (water)	$18.2m

Note: For the purpose of this section, 'major' refers to projects or programme changes valued at approximately $5 million or more.

OVERALL FINANCIAL SUMMARY

The Council is taking a prudent financial approach to managing its infrastructure, with moderate overall cost increases and a steady capital investment programme.

These forecasts are inflation adjusted.

OPERATING COSTS

The annual operating costs for the Council's infrastructure are forecast to rise from around $62 million in 2015 to $86 million in 2025, and $155 million by 2045. This results in an annual increase in costs of around 3.6% on average in the first 10 years, and 3.1% over 30 years.

FIG 4. YEARS 1-10: INFRASTRUCTURE ANNUAL OPERATING COSTS

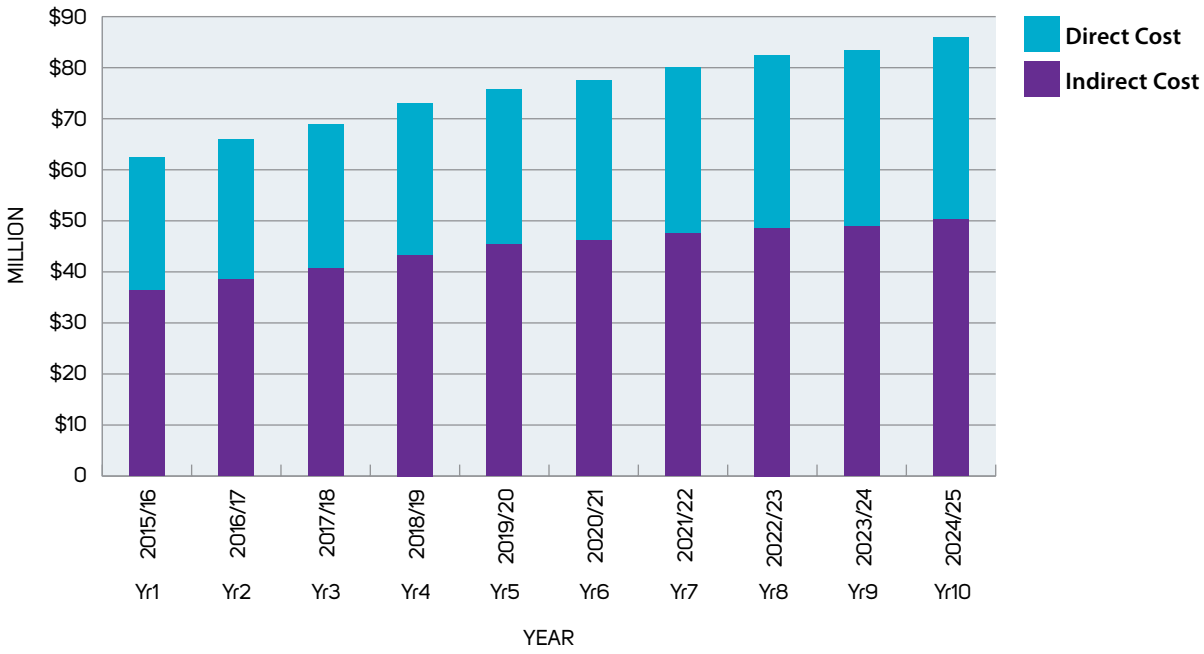
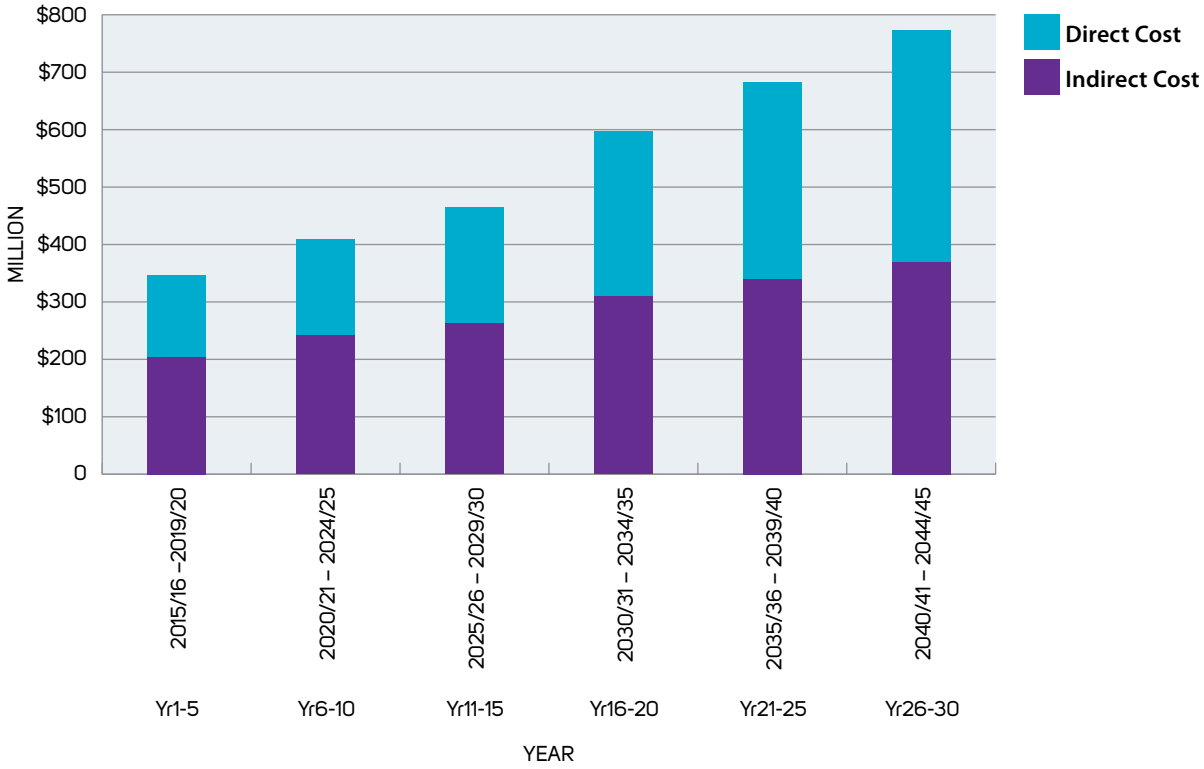


FIG 5. YEARS 1-30: INFRASTRUCTURE 5 YEARLY OPERATING COSTS



OVERALL FINANCIAL SUMMARY (CONT.)

CAPITAL EXPENDITURE

Council is forecasting capital expenditure of over $270 million in the next 10 years, and around $1 billion over the next 30 years. Over this time, the Council's investment in capital will grow from an average of around $27 million per year in the first 10 years to around $33 million per year in the last 10 years.

In the first 10 years, around 50% of the investment is for service levels improvements (including the Waimea Community Dam), around 40% for renewals, and 10% for growth. In the longer term, the Council's investment focus shifts to maintaining our infrastructure through renewals, as more of our assets become due for replacement. Just over half of the Council's capital expenditure in years 11-30 is for renewals.

FIG 6. YEARS 1-10: INFRASTRUCTURE ANNUAL CAPITAL EXPENDITURE

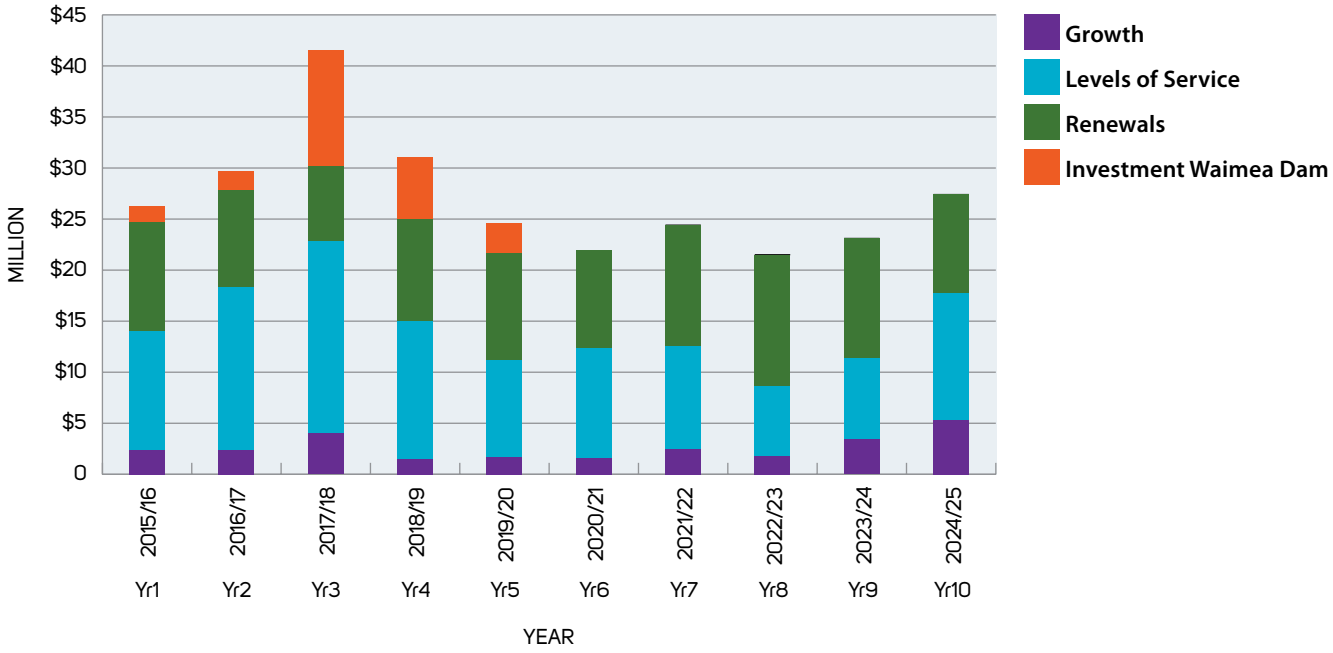
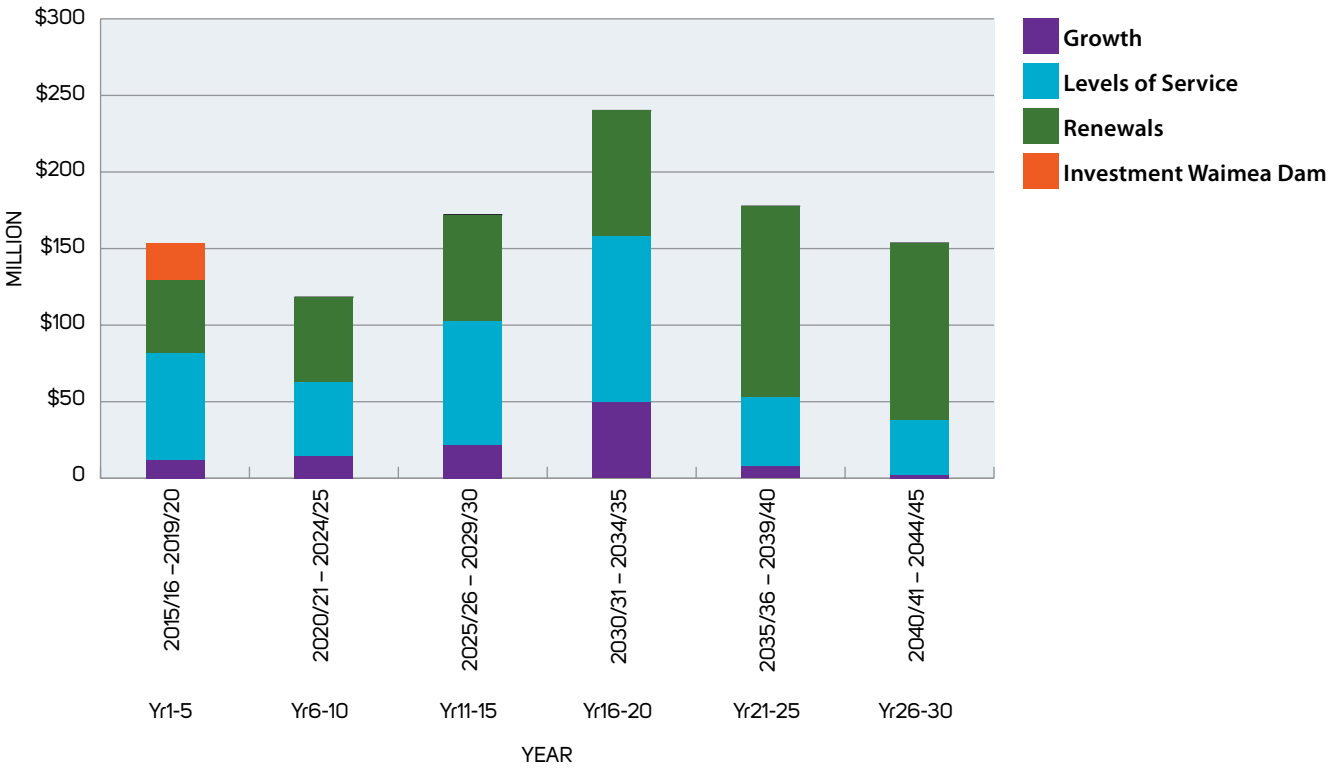


FIG 7. YEARS 1-30: INFRASTRUCTURE 5 YEARLY CAPITAL EXPENDITURE TOTALS

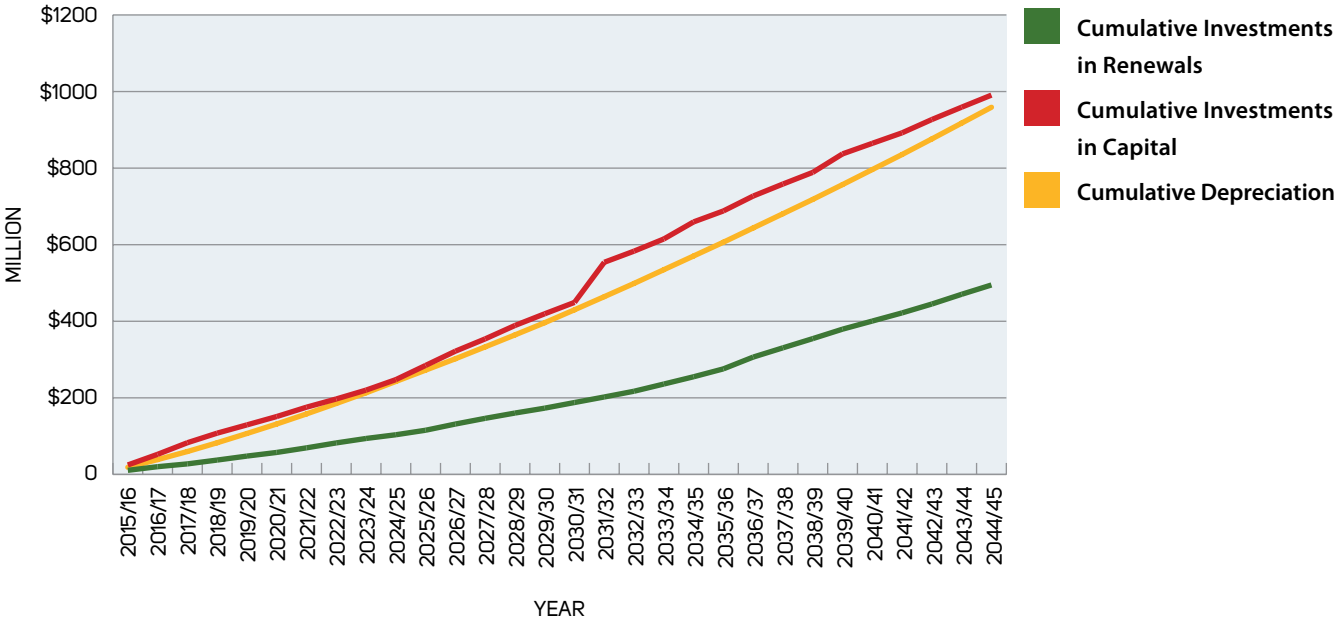


CAPITAL EXPENDITURE VS DEPRECIATION

The Council's overall investment programme roughly keeps pace with depreciation over the next 30 years. However, investment in renewals is lower than depreciation. This gap is primarily driven by the age profile of the Council's infrastructure. Renewal expenditure is programmed only if there is an asset that is expected to need replacing because it is at the end of its useful life.

The Council is shifting to fund depreciation from operating income, rather than through borrowing. This means the gap between renewals and depreciation lowers the amount that needs to be borrowed and associated interest costs. It also helps ensure the Council has the financial capacity to borrow for renewals later when needed.

FIG 8. YEARS 1-30: INFRASTRUCTURE EXPENDITURE VS DEPRECIATION



7. ACTIVITY SUMMARIES

WATER ACTIVITY SUMMARY

This activity provides potable water (suitable for use and consumption by people) to properties within 15 water supply areas. The water supply areas include 10 urban water supply schemes (known as the urban water club), Motueka water supply scheme, three rural supply schemes and the Hamama community scheme.

The Council's water network is valued at around $100 million.

KEY ISSUES FOR WATER

WAIMEA BASIN WATER SECURITY AND THE WAIMEA COMMUNITY DAM

The Waimea Basin is a good quality but limited groundwater resource. There is a high demand for water in the area and the water is already over allocated. This is leading to an increase in the incidents of water rationing and in dry weather can lead to flows in the Waimea River that drop below what is needed for maintaining environmental flows. If a way to resolve these issues is not found, the Tasman Resource Management Plan rules will require reduced water takes and future constraints on growth in Brightwater, Richmond, and Mapua/Ruby Bay.

A dam has been proposed as the potential solution to these issues. It would also deal with the wider Waimea Basin and Council water supply issues. $8 million has been allocated to assist with funding the reticulated water supply component of the Dam capacity.

Without the Dam, the Council will need to examine alternative water sources to improve water security for its reticulated supply network.

Due to the importance of the project, the issue is discussed in more detail in section 5 (Significant Infrastructure Issues).

NEW DRINKING WATER STANDARDS

Following introduction of the Health (Drinking Water) Amendment Act 2007 (HDWAA), it is now mandatory to comply with Drinking Water Standards New Zealand (DWSNZ). This change means that the cost of providing water will continue to increase over the coming 10 years due to the need for Council to upgrade and operate its water supplies to meet the standards.

While most supplies in Tasman obtain water from good quality groundwater sources, they are currently not meeting the standards. The main reason for non-compliance is a lack of protozoa treatment at the treatment plants. The HDWAA also requires the completion and implementation of Water Safety Plans (WSPs) for all Council water supplies. These must be completed by specific dates. Council is well advanced with programme of WSP documentation and water treatment plant upgrade works.

RURAL WATER SUPPLIES

Council's rural water supplies, including Dovedale, Redwood Valley and Eighty Eight Valley are nearly fully allocated, and the Council has closed these water supplies to new connections. There are some projects planned that will provide some capacity improvements, but not enough to cope with any significant additional demand. The cost of further expanding capacity in the schemes to cater for growth is very high compared to the potential growth that would take advantage of any additional capacity.

MEETING GROWTH NEEDS

Water supply can be a major constraint on growth. Consequently, there are a number of water supply projects planned that are driven fully or partially by the need to cater for future growth, particularly in Wakefield, Brightwater, Richmond, Mapua, Motueka, and longer term – in Pohara and Coastal Tasman.

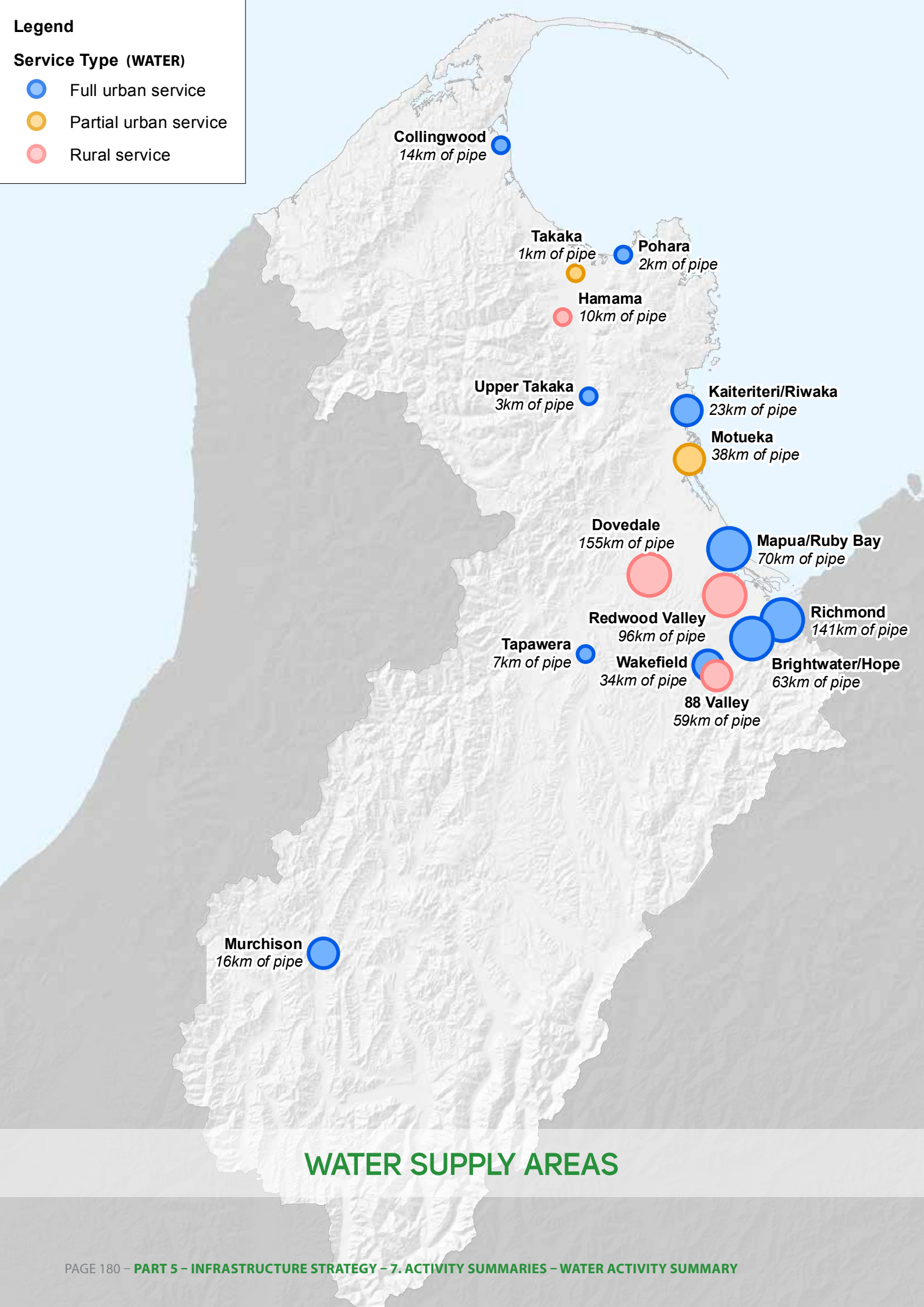
FULL MOTUEKA AND COASTAL TASMAN RETICULATION

Parts of Motueka have a reticulated water supply. However, about two thirds of Motueka residents currently rely on water sourced from private bores on their own properties. That makes it the largest urban area in New Zealand which does not have a full water supply network and reticulated firefighting coverage. Provision of a fully reticulated water supply was proposed to be provided in 2020/21, at a cost of approximately $20 million, of which the Government would contribute $4 million. However, this subsidy is no longer available, making the project more expensive for Tasman District Council. As a result, full reticulation of Motueka is now planned for 2031/32.

Previously, the Council intended to supply water to the Coastal Tasman Area and additional water to Mapua by 2024 via the Coastal Tasman Pipeline. However, while fully reticulated high quality water might be desirable, it would be very expensive to provide this through the Coastal Tasman Pipeline. The Council plans to defer the project which means the wider Coastal Tasman area will not be reticulated until 2031/32. Instead the Council will meet Mapua's growth in the demand for water by upgrading the existing supply pipelines and storage in Mapua/Ruby Bay.

INADEQUATE ASSET INFORMATION

Age and condition data for some water assets is inadequate, creating uncertainty about the need and timing of renewals for these assets. The Council intends to improve asset information to reduce this uncertainty. This may also significantly affect the programme and budgets for renewals in future long term plans.



WATER SUPPLY AREAS

MAJOR PROJECTS >$2 MILLION*

* Excludes renewals

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Telemetry upgrades	Telemetry allows Council to remotely monitor and control what is happening with infrastructure. Upgrading the technology improves reliability and reduces maintenance costs.	Not undertake the upgrade. This would lead to operational cost increases and result in a less reliable system.	Technology will continue to develop. It will be appropriate and cost-effective to upgrade systems.	$3.2 million	1-30
Waimea Community Dam (investment)	Achieve water security on the Waimea Plains for urban, industrial, agricultural and environmental flow uses, for an extended period into the future.	Without the Dam, water restrictions and limitations on industry and urban growth are likely. The Council would also need to develop alternative water sources for reticulated water supplies.	The Dam will not be owned by the Council. Funding for the irrigators share of the Dam is secured.	$25 million	1-5
Construction of a new water treatment plant for Wakefield	Continued population growth, the new Drinking Water Standards and the fact that the current bores are unreliable mean a new water supply is needed for Wakefield.	Upgrade the existing plant to meet the Drinking Water Standards. This will not improve capacity or reliability.	The new bores will deliver the volumes of water predicted on a reliable basis.	$4.1 million	2-4
Mapua growth facilitation **Stage 1: storage upgrade year 4** **Stage 2: pipeline renewal year 11-12**	Mapua has limited water supply and storage capacity. No new connections to the existing water supply are currently permitted. The existing supply pipeline is subject to regular breakages. The storage upgrade and pipeline renewal projects aim to address these two issues.	Either (a) maintain the existing pipeline (with potentially increasing frequency of breakages and continued prohibition on new connections), or (b) undertake a more costly project to convey water from Motueka.	Growth continues, but not at a rate that requires the project to be brought forward. The cost of future breaks justify earlier renewals.	$4.1 million	4, 11-12
Wakefield and 88 Valley network upgrade	Predicted growth in Wakefield and 88 Valley means more water needs to be supplied and the network requires reconfiguration.	Not accommodate growth in Wakefield and surrounds.	The new Wakefield water source construction project successfully proceeds and growth occurs as predicted.	$2.7 million	7-9

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
New groundwater source Richmond	A new groundwater source is needed for Richmond as protection against the existing bores becoming unviable, due to salt water intrusion.	Not securing a new groundwater resource. This would result in a severely limited water supply and/or saltwater intrusion into the water supply.	Salt water intrusion will continue to be a threat and an alternative source will be needed.	$4.5 million	10-11
Richmond South rising main and low level reservoir	A supply pipeline and low level reservoir are required, to enable growth in Richmond South. These will provide a reliable water supply for urban usage, including fire fighting.	Either (a) not accommodate growth in Richmond South, or (b) install temporary solutions that have a higher cost and lower reliability.	Growth continues, but not at a rate that requires the project to be brought forward.	$4.9 million	12-14
Richmond South rising main and high level reservoir	A supply pipeline and high level reservoir are required, to enable growth in Richmond South. These will provide a reliable water supply for urban usage, including fire fighting.	Either (a) not accommodate growth in Richmond South, or (b) install temporary solutions that have a higher cost and lower reliability.	Growth continues, but not at a rate that requires the project to be brought forward.	$2.2 million	15-17
Coastal Pipeline	Supply water to Mapua, Tasman and the rural residential clusters near the coast. Without these works, growth in this area is likely to be constrained.	Council has programmed water storage upgrade and pipeline renewal projects for Mapua (see the Mapua growth facilitation project above). This alternative to the Coastal Pipeline will address issues in Mapua in the short to medium term.	Growth continues, but not at a rate that requires the project to be brought forward. The cost-benefit ratio of the project will improve over time and justify the expenditure.	$27 million	17
Reticulation of water supply for Motueka	Provide a reliable reticulated water supply for Motueka, that meets drinking water and fire fighting standards.	Status quo – most of the town continue to provide their own water from individual bores.	Project receives a government subsidy. Growth continues, but not at a rate that requires the project to be brought forward. Groundwater contamination does not occur.	$18.2 million	17
Pohara new town water supply	Pohara has been identified as a settlement that would justify a reticulated supply, due to the population growth projected to occur within the medium term.	Not provide a reticulated supply. This will mean residents will continue to rely on roof and tankered water supplies, potentially affecting growth.	Growth continues, but not at a rate that requires the project to be brought forward.	$11.5 million	25

KEY WATER ASSUMPTIONS, UNCERTAINTIES, AND RISKS

This section summarises significant uncertainties and assumptions that are specific to the water activity and its programme.

ASSUMPTIONS AND UNCERTAINTIES

The key assumptions and uncertainties for water infrastructure are:

- The future source of reticulated water supply for Richmond, Brightwater and Mapua and associated rural extensions if the Waimea Community Dam does not proceed. Options are being developed and assessed at present.
- Frequency and duration of dry weather and the long term impact on reticulated water supplies.
- Major Industrial Water Users (IWU) and provision of water to some Nelson South properties – it is assumed that the IWUs and properties in Nelson South will continue to require the same amount of water that is currently being provided.
- The impact improved age and condition data for water assets will have on the Council's forward works programme. This information may significantly affect renewal forecasts in the future.

RISKS

- Significant failures may occur due to deferred renewals or because of inadequate age and condition data for some assets, increasing operations and maintenance costs and customer dissatisfaction, and potentially requiring renewal funds to be brought forward.
- Mapua growth or repair costs may require pipe upgrade project to be brought forward.
- Higher than forecast growth in Richmond South or West may require reticulation and storage works to be brought forward.
- Groundwater contamination in Motueka may require the full reticulation project to be brought forward.
- Industrial Water Users may reduce their demand, leading to significant drop in demand and operational income.

FINANCIAL SUMMARY

This section summarises key financial information associated with water infrastructure. These forecasts are inflation adjusted.

OPERATING COSTS

The operating costs for the Council's water infrastructure are currently $11 million per annum. These are expected to rise to around $17 million in 10 years, and $31 million in 30 years. This results in an annual cost increase of around 4.3% in the first 10 years and around 3.4% over the whole period. Cost increases in the first 10 years are largely driven by indirect cost increases, principally as a result of loan costs for the Waimea Community Dam affecting this activity.

FIG 9. YEARS 1-10: WATER ANNUAL OPERATING COSTS

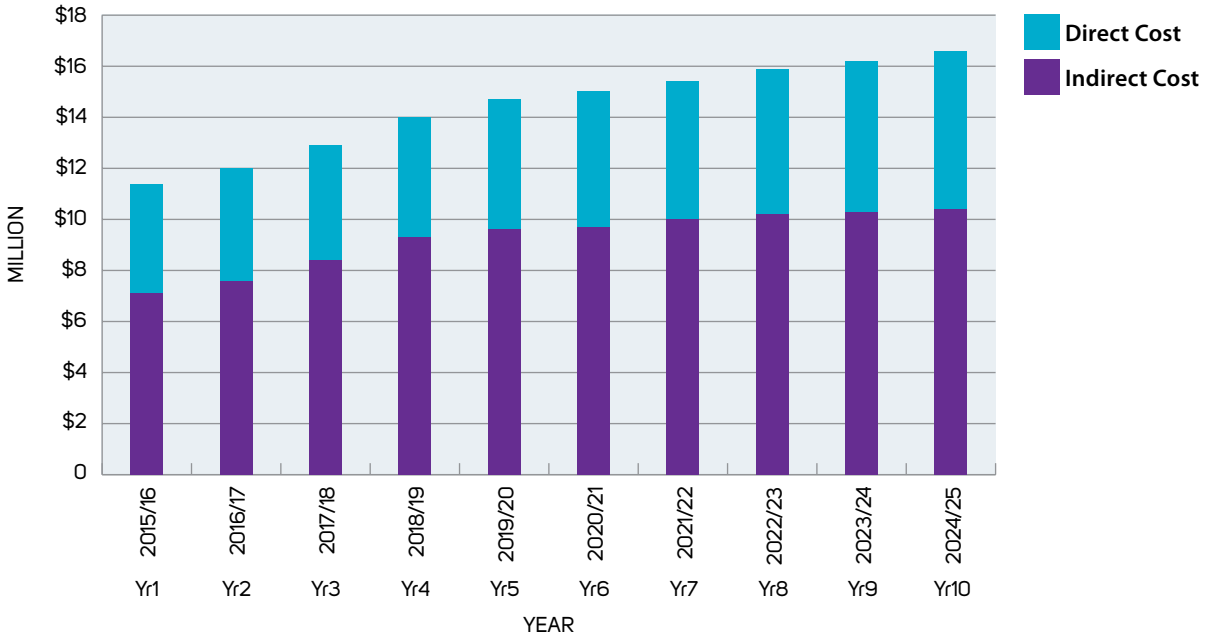
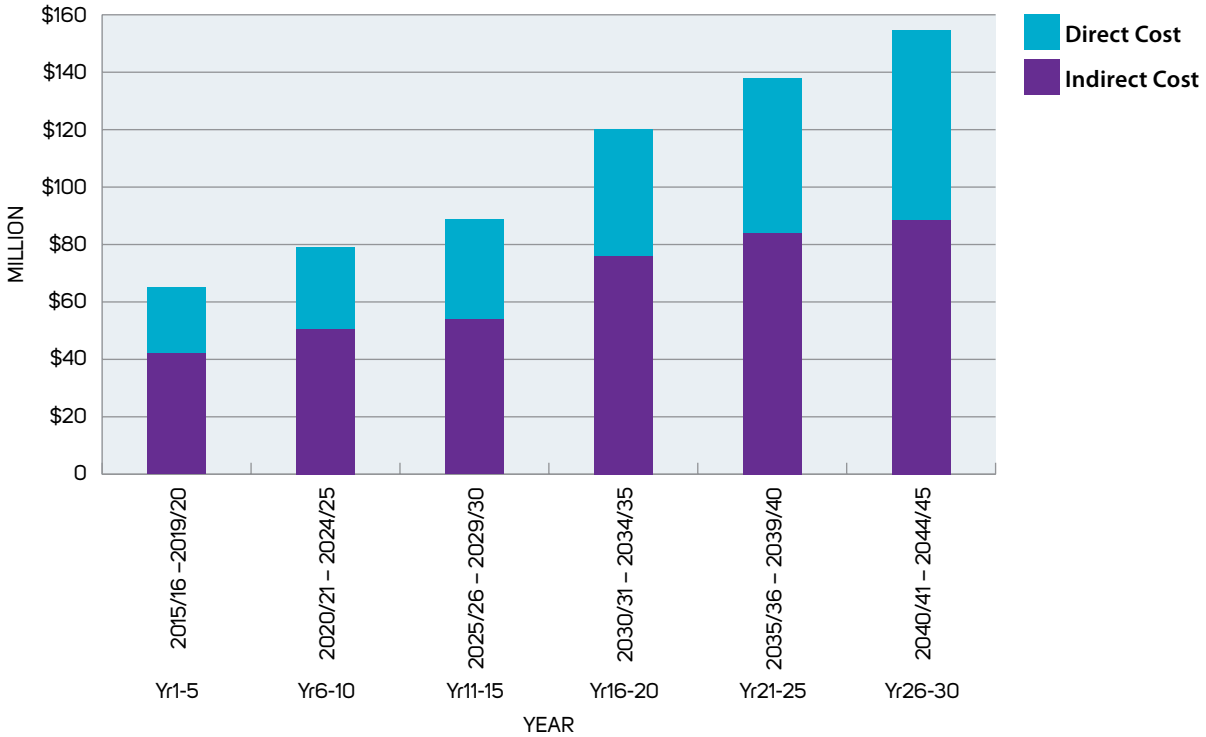


FIG 10. YEARS 1-30: WATER 5 YEARLY OPERATING COSTS



CAPITAL EXPENDITURE

Just over $67 million in capital expenditure is forecast over the next 10 years, and nearly $255 million over 30 years. Forecast expenditure in the first five years is particularly high, mainly as a result of expected investment in the Waimea Community Dam. The large spike in the years16-20 is due to the construction of full reticulation of Motueka, and the Coastal Tasman pipeline.

FIG 11. YEARS 1-10: WATER ANNUAL CAPITAL EXPENDITURE

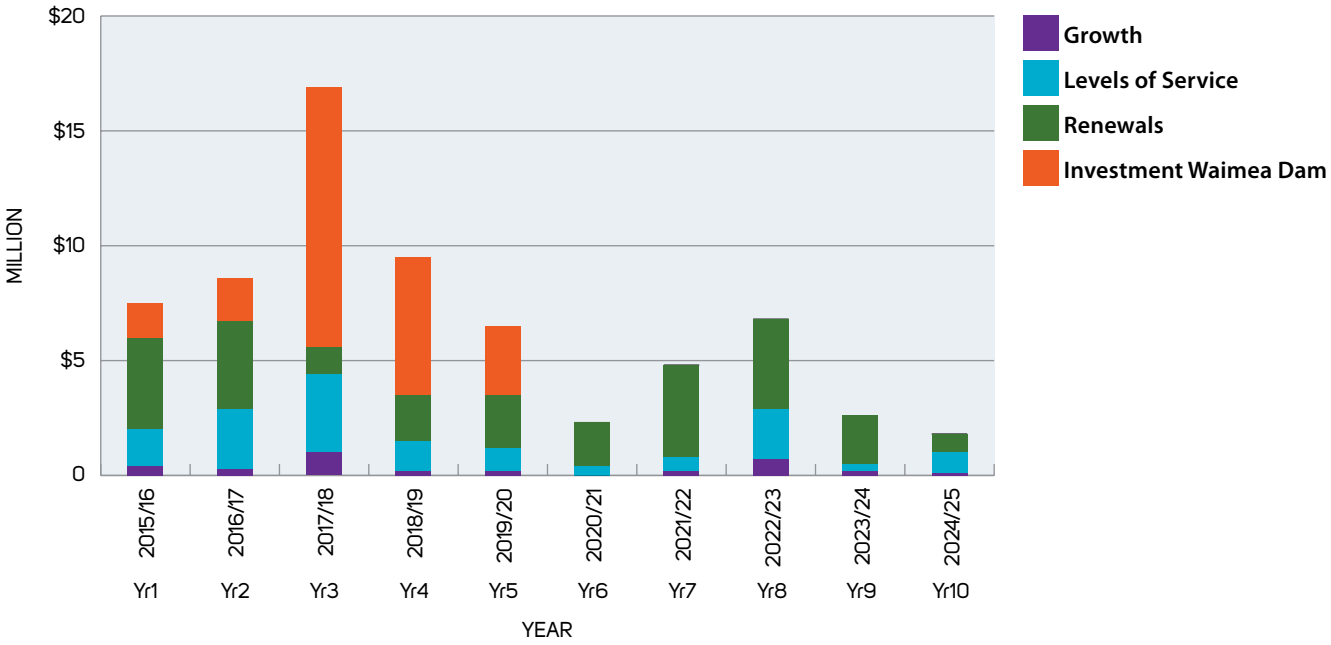
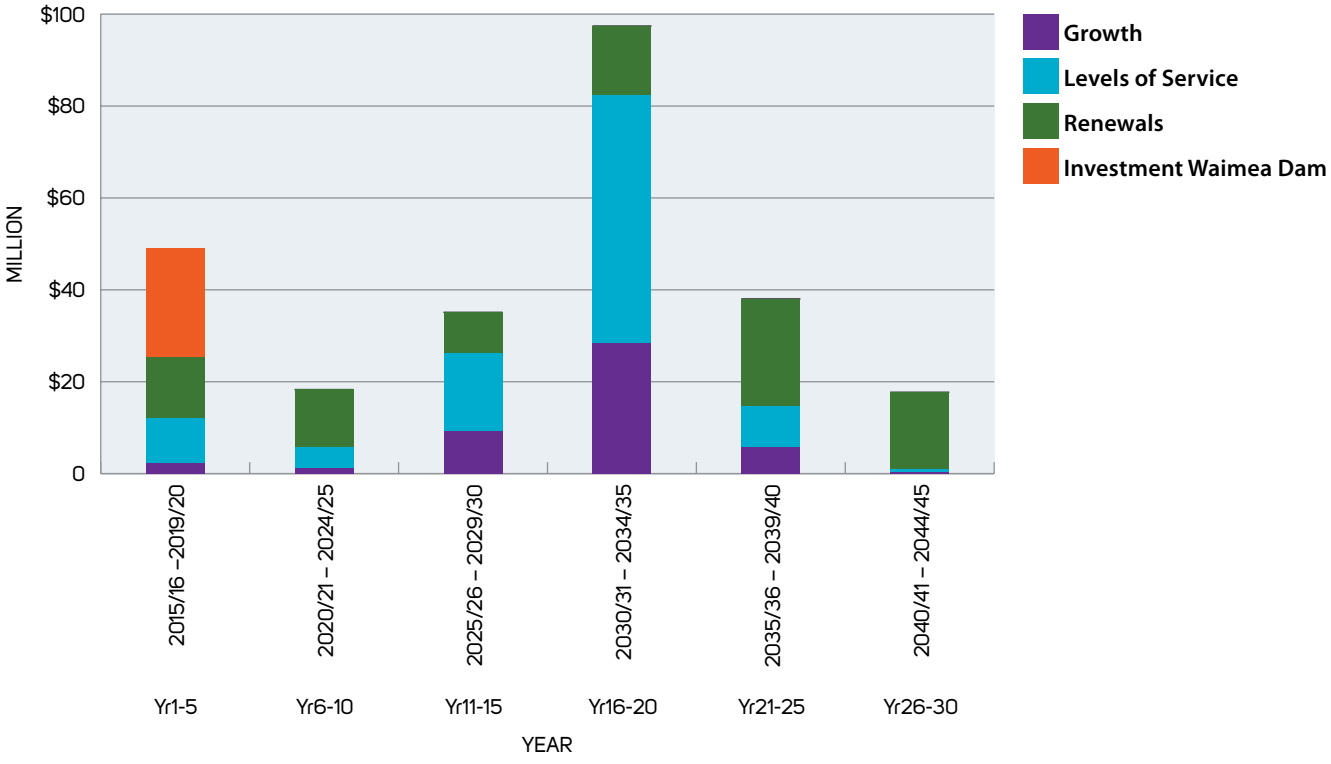


FIG 12. YEARS 1-30: WATER 5 YEARLY CAPITAL EXPENDITURE TOTALS

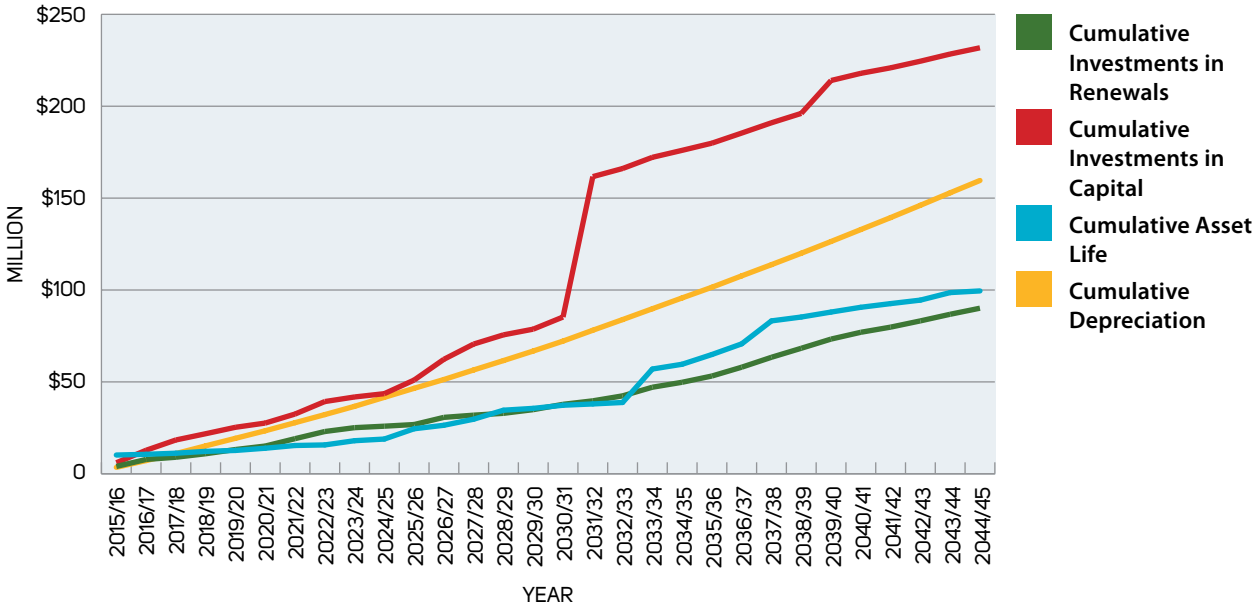


CAPITAL EXPENDITURE VS DEPRECIATION

Overall capital expenditure is forecast to keep track with depreciation consistently over the next 30 years. However, forecast renewals are consistently lower, being only around 55% of depreciation.

The renewals programme is largely based on the expected remaining life of our water assets. This is shown clearly in the graph below when comparing when assets need to be replaced based on assumed remaining asset lives in the Council's Asset Management Systems, and the Council's water renewals programme. The Council renewals programme closely matches when assets need to be replaced, although a gap forms in the last 10 years.

FIG 13. YEARS 1-30: WATER CAPITAL EXPENDITURE VS DEPRECIATION



STORMWATER ACTIVITY SUMMARY

This activity includes stormwater collection, reticulation, and discharge systems. 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. It does not include stormwater systems in private ownership.

The Council's stormwater network is valued at around $115 million (see stormwater map overleaf).

KEY ISSUES FOR STORMWATER

STORMWATER MANAGEMENT

Most of Tasman's stormwater pipes and drains are too small to cope with the intense rainfall events experienced over the past few years. In response, the Council has maintained a significant programme of works to improve stormwater management in Tasman. However, it is not affordable to improve all the existing pipes and drains, at least in the short to medium term. A better option is to make some investment in the primary network (the pipes) alongside work to protect secondary flow paths, so that when the intense rainfall events happen, the stormwater travels overland in areas where it does not damage property.

In order to undertake some of the stormwater capital works projects planned over the 10 years, the Council will need to purchase land. The costs of this land are reasonably significant and in some cases, potentially controversial as owners may not wish to sell.

Due to the importance of stormwater management, the issue is discussed in more detail in section 5 (Significant Infrastructure Issues).

DAMAGE TO STORMWATER ASSETS FROM STORMS AND HEAVY RAINFALL EVENTS

In December 2010, December 2011 and April 2013 Tasman experienced extremely heavy rainfall which led to flooding, slips and debris flows resulting in damage to Council infrastructure and private property. This was particularly destructive in Murchison and Golden Bay in 2010, Golden Bay in 2011, and Richmond in 2013.

These events depleted the Council's disaster funds. Consequently, more provision for future events has been included in the Council's programme.

CATCHMENT MANAGEMENT PLANNING

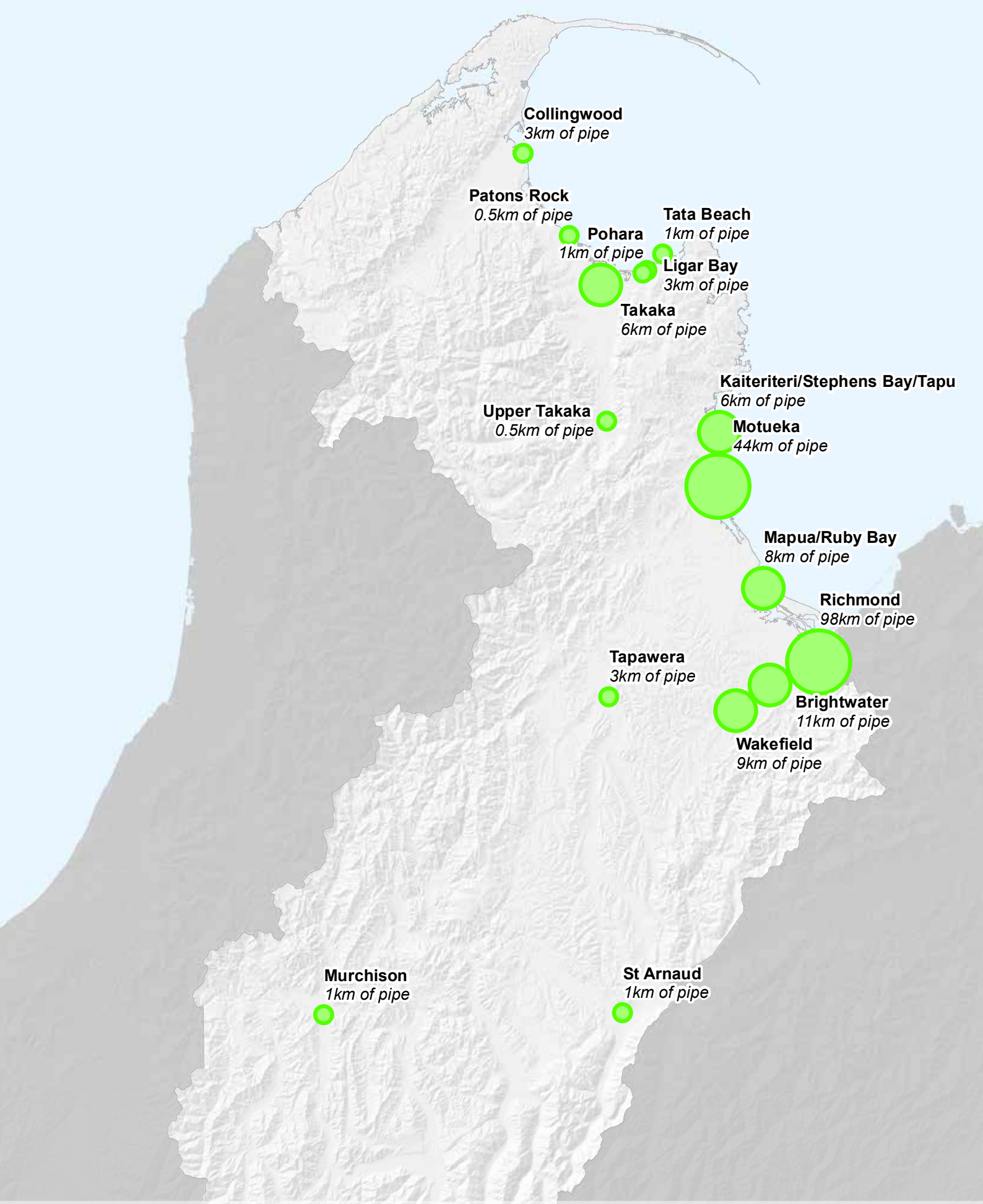
The Council plans to undertake Catchment Management Plans (CMPs) to enable it better manage and mitigate the impacts of stormwater discharges on receiving environments. This planning work needs to involve the regulatory part of the Council which controls discharges into the environment, and engineering staff responsible for managing stormwater infrastructure. Hydraulic modelling, identification and protection of significant assets and secondary flow paths and water quality are key components of the CMPs.

STORMWATER POLICY

There is a lack of policy regarding the management of stormwater systems. For example the ownership and maintenance of key waterways and the responsibility for stormwater from private land and from state highways managed by the New Zealand Transport Agency. The Council has initiated work (Project Stormwater) to address these issues.

MEETING GROWTH NEEDS

Stormwater management can be a major constraint on growth. Consequently, there are a number of projects planned that are driven fully or partially by the need to cater for future growth, such as Borck Creek and Poutama Drain in Richmond.



STORMWATER URBAN DRAINAGE AREAS

MAJOR PROJECTS >$2 MILLION*

* Excludes renewals

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Borck Creek Catchment (Richmond): Outlet to State Highway 6 – land purchase and capacity upgrading works	To protect Richmond South and West from flooding and enable urban growth.	Not undertake the works and/or push costs onto developers. This would result in an unacceptable level of flooding, that will stifle and increase the cost of development.	Land will be secured in a timely fashion to allow the works to proceed.	$14.1 million	1–17
Borck Creek Catchment (Richmond): State Highway 6 to headwaters – land purchase and capacity upgrading works	To protect Richmond South from flooding and facilitate further urban growth.	Not undertake the works. This would result in an unacceptable level of flooding, that will stifle and increase the cost of development.	Land will be secured in a timely fashion to allow the works to proceed.	$4.3 million	1, 4, 11–17
Stormwater network upgrades for the central Richmond Poutama Link, Beach Road and Salisbury Road (Richmond)	Part of a comprehensive package of works aimed at delivering a higher level of flood protection for the central area of Richmond including the town centre.	To invest in an alternative stormwater management project for the Richmond town centre, or to maintain the current level of flood risk.	The necessary land access is achieved and technical challenges can be overcome, to allow works to proceed.	$15.0 million	1–10
Secondary flow management initiatives, as derived from Catchment Management Plans	To provide a higher level of flood protection to urban areas throughout the District.	Invest more heavily in the primary stormwater network, or allow the current level of flood risk to remain.	The catchment management plans and the associated modelling will proceed and secondary flowpaths will be identified in each settlement area.	$4.3 million	1-20
Install new drainage system for Middlebank Drive, Richmond	To allow the cemetery detention dam to be decommissioned and increase stormwater protection for this part of Richmond.	To do nothing. Under this scenario, there will be insufficient room for future burials at Richmond Cemetery and the current level of flood risk will remain.	The Borck Creek works proceed, creating sufficient stormwater capacity to avoid additional flooding downstream.	$4.1 million	3-5
Mt Heslington drain diversion, Brightwater	Brightwater School and the industrial subdivision are suffering from frequent flood events; this project aims to reduce their frequency.	To invest in another solution or allow the flooding to continue.	A cost-effective solution is designed and the necessary technical, land access and consenting aspects are successfully managed.	$2.3 million	5–6

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Woodland Development Area Motueka: network extension and upgrade to accommodate new development area	To allow increased stormwater runoff flow from a major development area to be efficiently transferred to the coast.	Investing in an alternative stormwater management project for this area, or stifling development in Motueka West.	The private development will proceed as planned and the timing will remain as programmed. The developer will build a detention dam and a small diameter outfall pipe, to convey stormwater flows until such time as Council completes its project.	$2.8 million	10

KEY STORMWATER ASSUMPTIONS, UNCERTAINTIES, AND RISKS

This section summarises significant uncertainties and assumptions that are specific to the stormwater activity and its programme.

ASSUMPTIONS AND UNCERTAINTIES

- The timing of the Borck Creek upgrade programme is maintained to support growth in Richmond West and South.
- Improved primary and secondary flow management will be facilitated by the catchment management plan programme and implemented progressively throughout Tasman.
- The impact of any further significant rainfall events and the resultant community expectations of higher levels of service.

RISKS

- The Richmond town centre will still be vulnerable to flooding until the full series of improvements are completed. Other urban areas are yet to be modelled and have remedial works planned and programmed.
- Capital expenditure and operating expenditure costs may increase as a result of secondary flow path management.
- The primary stormwater system, even after reprioritisation, will not have sufficient capacity to contain a 1 in 5 year rainfall event throughout Tasman.
- Progress in secondary flow management may be slow, leaving properties at risk.

FINANCIAL SUMMARY

This section summarises key financial information associated with stormwater infrastructure. These forecasts are inflation adjusted.

OPERATING COSTS

Operating costs are expected to rise by around 6.4% per annum on average over the next 10 years. These cost increases are largely driven by a heavy investment programme in improving stormwater management, which pushes up depreciation and interest costs for this activity. Longer term, costs increases are more modest, at 3% per year on average.

FIG 14. YEARS 1-10: STORMWATER ANNUAL OPERATING COSTS

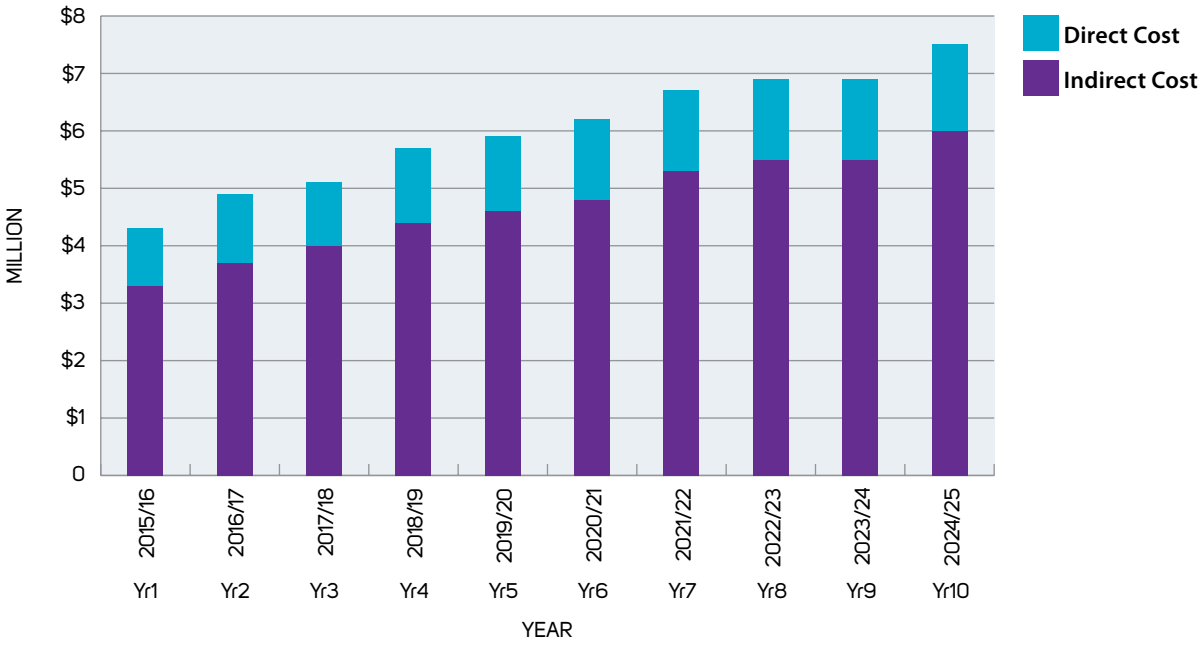
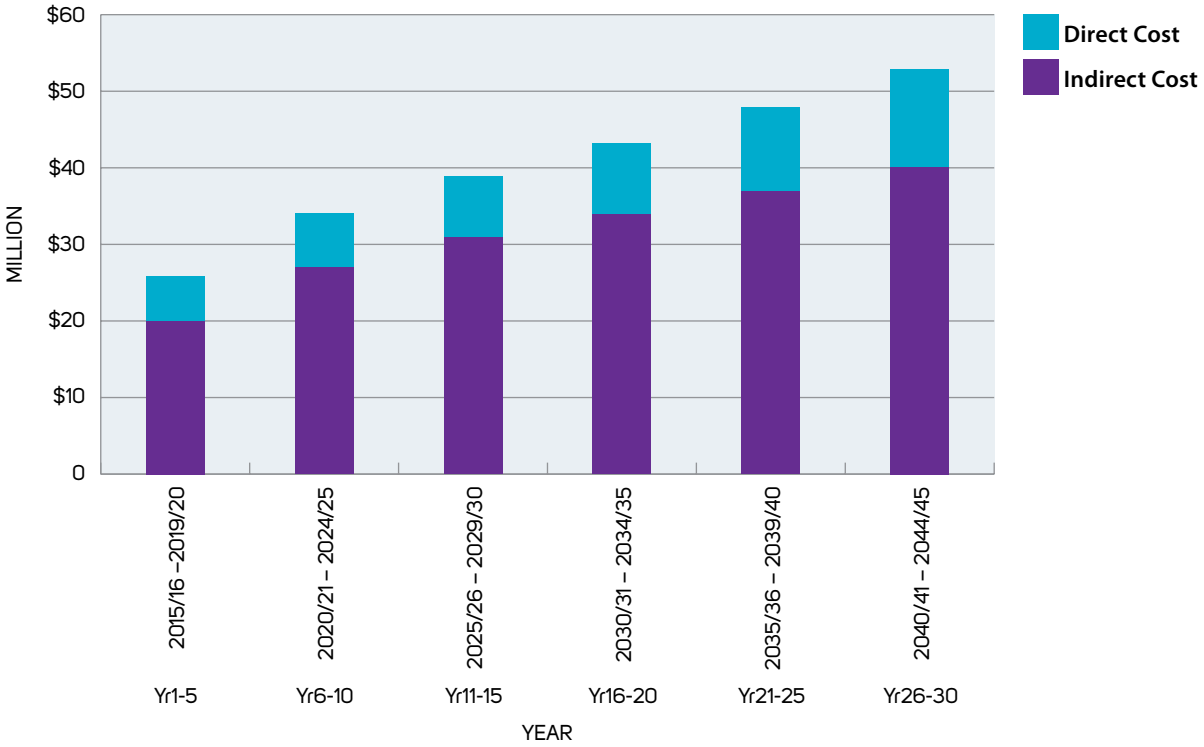


FIG 15. YEARS 1-30: STORMWATER 5 YEARLY OPERATING COST TOTALS



FINANCIAL SUMMARY (CONT.)

CAPITAL EXPENDITURE

Capital expenditure over the next 10 years is fairly steady at between $4 million–$6 million per annum, totaling around $54.4 million over this period. This expenditure is mainly in service level improvements, with improvements accounting for two thirds of total capital expenditure.

Longer term, forecast stormwater capital expenditure drops away sharply. This will change in the future as the catchment management planning process rolls out across Tasman District and improvements are identified and programmed into subsequent plans.

FIG 16. YEARS 1-10: STORMWATER ANNUAL CAPITAL EXPENDITURE

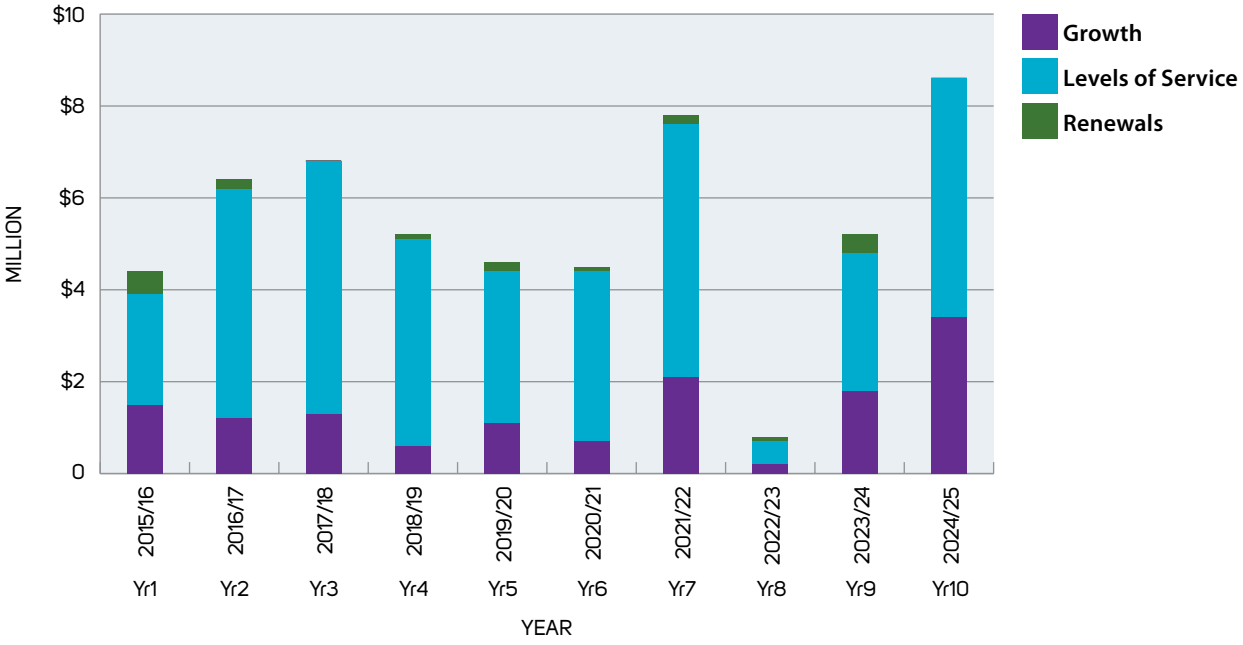
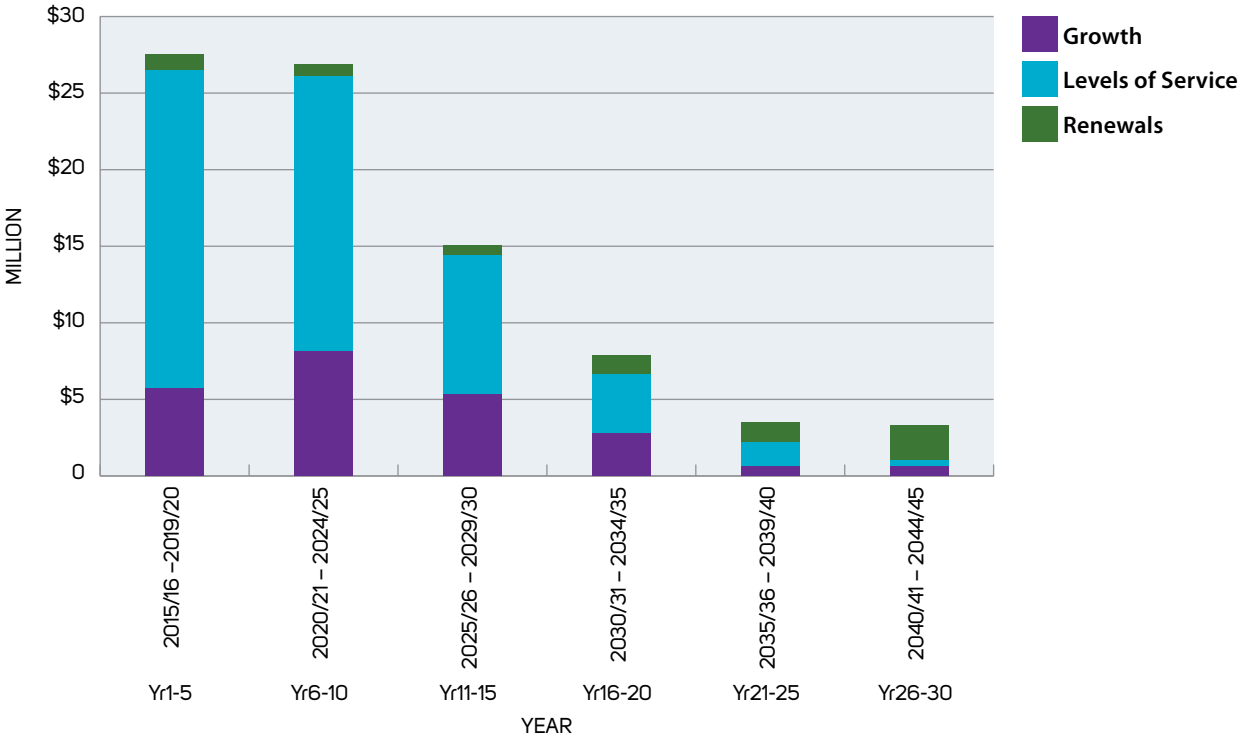


FIG 17. YEARS 1-30: STORMWATER 5 YEARLY CAPITAL EXPENDITURE TOTALS



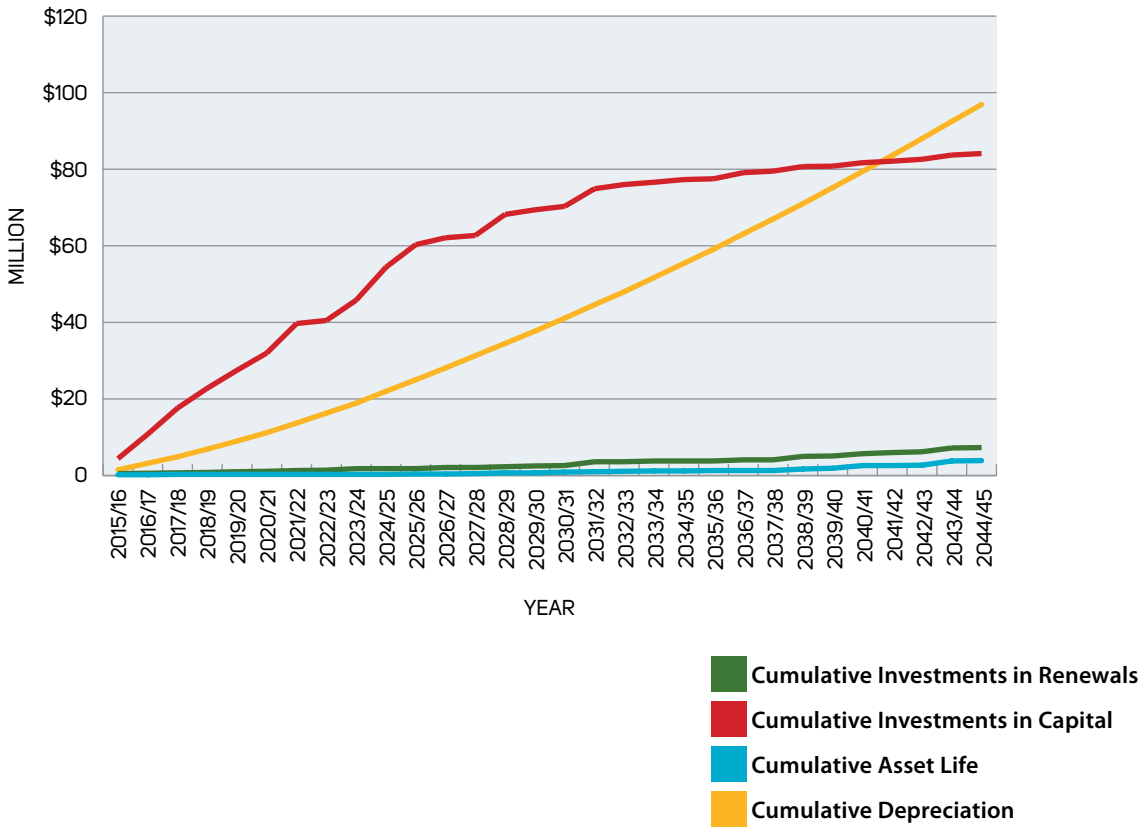
CAPITAL EXPENDITURE VS DEPRECIATION

There is a large gap forecast between depreciation and investment in renewals. The renewals programme is largely based on the expected remaining life our stormwater assets. As these assets have a very long life (80–120 years), a large programme of renewals is not needed over the next 30 years.

This is shown in the graph below comparing when assets need to be replaced based on remaining asset lives, and the Council's stormwater renewals programme. The Council's renewal programme closely matches when assets need to be replaced, with very few assets needing to be replaced over the next 30 years because of deterioration.

However, many of the Council's stormwater assets require upgrading to provide adequate levels of protection. As a result, elements of the network will be will be replaced early. Consequently, total capital expenditure on stormwater is relatively high, and exceeds depreciation out to 2040.

FIG 18. YEARS 1-30: STORMWATER CAPITAL EXPENDITURE VS DEPRECIATION



WASTEWATER ACTIVITY SUMMARY

This activity provides and manages wastewater collection, treatment and disposal facilities for ratepayers connected to the Council's twelve wastewater networks. These networks convey wastewater to eight treatment plants, seven of which are owned and managed by Council. The largest treatment plant, Bell Island, is owned by both Nelson and Tasman councils on a 50:50 basis but is managed by the Nelson Regional Sewerage Business Unit.

The Council's wastewater network is valued at around $130 million.

KEY ISSUES FOR WASTEWATER

INFILTRATION INTO THE WASTEWATER NETWORK

Stormwater and groundwater infiltration is a significant issue for some wastewater networks, causing the overloading of pipe networks and wastewater treatment plants during very heavy rainfall events. This may result in occasional overflows from the sewer network, breaches of resource consent conditions and potential public health risks.

MEETING GROWTH NEEDS

There are a number of projects planned that are driven fully or partially by the need to cater for future growth. For example, the current Mapua wastewater system is operating close to capacity. None of the existing pump stations have sufficient capacity to handle future growth. The Council has outlined a programme of upgrades and reconfigurations of the network to accommodate future growth.

NELSON REGIONAL SEWERAGE BUSINESS UNIT (NRSBU) BUDGETS

The NRSBU is proposing major capital expenditure to upgrade the pipelines to the Bell Island treatment plant in coming years. The wastewater budgets contained in this Long Term Plan contain an allowance for Council's contribution to the costs of the NRSBU. If Council's contribution to the costs of the NRSBU is different from the projections, the actual pan charges may vary each year from those contained in the Long Term Plan.

ODOUR FROM WASTEWATER ASSETS

Long pipelines for raw wastewater with pump stations in series can lead to development of hydrogen sulphide gas and odours. These odours can be disruptive to the public if air release valves, pump stations, or wastewater treatment plants are close to residential properties.

There are existing programmes to monitor hydrogen sulphide levels to warn of likely odour issues as well as an Odour Management Plan that is implemented each summer for the Pohara and Kaiteriteri networks. Key assets such as air valves and pump stations have carbon filters and chemical dosing installed. The Motueka wastewater treatment plant has a biological scrubber and carbon filter to treat gas extracted from inlet works.

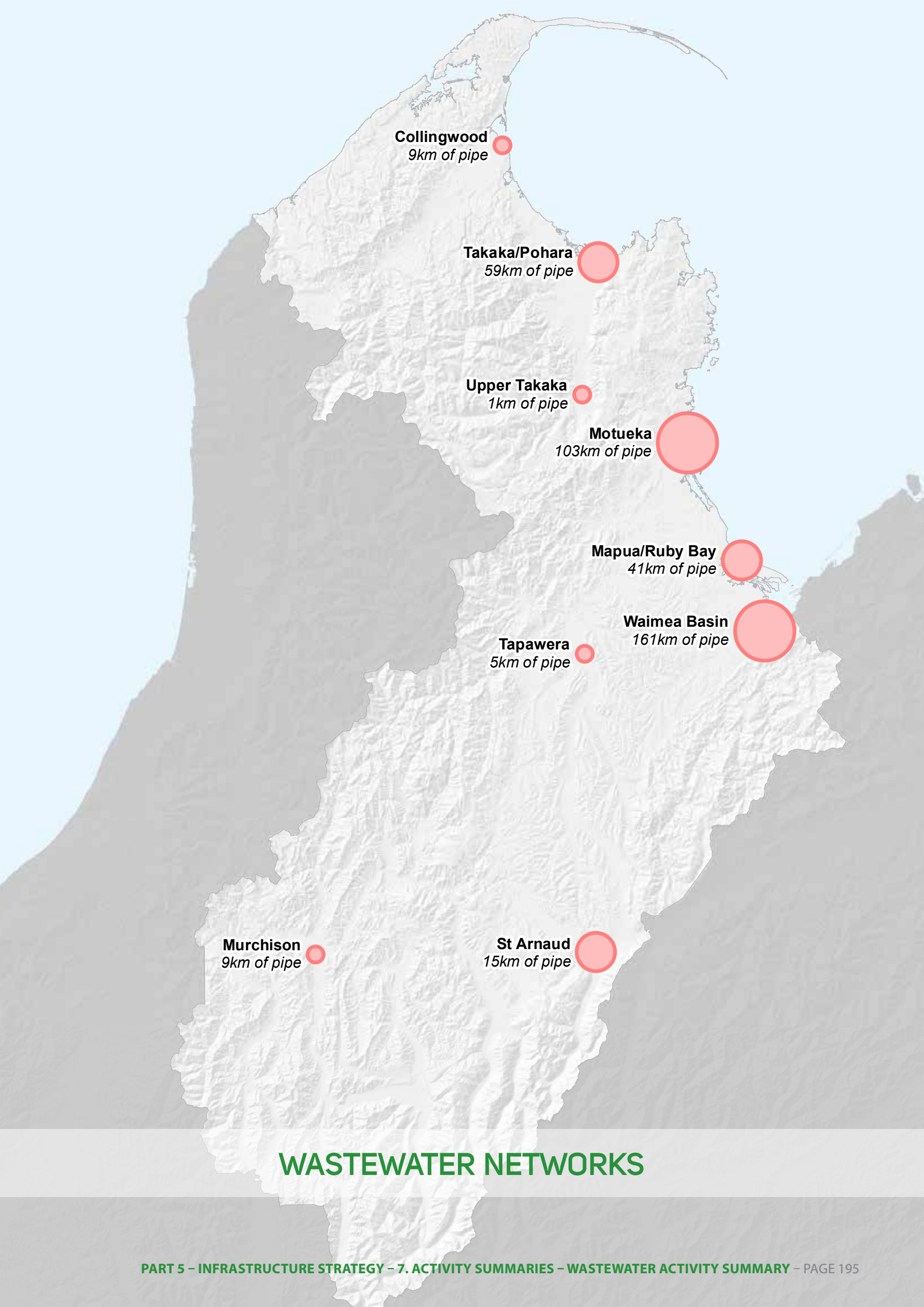
LACK OF TELEMETRY

Many of the smaller or more remote pump stations do not have telemetry so Council is reliant on the public to advise of alarms or issues. This can lead to overflows occurring before the site can be attended to. A lack of telemetry also means there is very little operational information to make good decisions about operational changes or upgrading.

ASSET AND OPERATIONAL INFORMATION

Historically, the Council has relied on the knowledge of operators to know where assets are, how they operate and what the maintenance needs are. However in recent years there has been a higher turnover of operators and this knowledge has been lost. It is clear that the Council's records are incomplete and in some cases incorrect. This leads to higher operational costs and has led to unnecessary overflows.

The Council has been working to improve the as-built information obtained from repairs, new connections, new assets, asset age and condition information, as well as developing some rudimentary System Operating Plans for most wastewater networks.



WASTEWATER NETWORKS

MAJOR PROJECTS >$0.5 MILLION*

* Excludes renewals

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Motueka Waste Water Treatment Plant Upgrade	The existing wastewater disposal system has failed. Greater treatment capacity and improved final treated wastewater quality is needed.	No short to medium term alternatives have been identified that adequately meet social, cultural, public health or environmental objectives.	Consents for proposed upgrade concept will be granted.	$2.8 million	1
Tapu Bay rising main replacement	The existing resource consents will soon expire (the expiry date was set by the Environment Court). Council has worked with iwi and agreed on a land based route for the replacement rising main.	Apply for resource consent to continue using the existing pipeline. It is highly unlikely that resource consent would be granted.	Consents for the proposed land based route will be granted.	$3.9 million	1-3
Upgrade rising mains and pump stations in Ruby Bay, through to Mapua Wharf pump station	Population growth in these areas is driving the need for greater capacity.	Not complete the planned upgrading works. This would restrict development in Mapua/Ruby Bay.	Upgrading is timed to meet predicted growth.	$5.1 million	3-8
Pohara to Tarakohe pump station and rising main upgrade	Population growth in these areas is driving the need for greater capacity.	Not complete the planned upgrading works. This would restrict development from Pohara to Tata Beach.	Upgrading is timed to meet predicted growth.	$6.1 million	3-4, 8-11
Upgrade trunk main from Wakefield to Three Brothers Corner, Richmond	Population growth in Wakefield and Brightwater is driving the need for greater capacity.	Not complete the pipeline upgrades. This would restrict development from Richmond South to Wakefield.	Upgrading is timed to meet predicted growth.	$12.5 million	8-10, 15-20
Thorp Street Trunkmain	The condition of the shallow asbestos cement main is unknown and nearing the end of asset life. Additional capacity may be needed if developments occur to the West of Motueka.	Replacement is needed, although the timing could change depending on breakage trends.	Upgrading or replacement will only occur if needed.	$5.5 million	11-13
Ligar Bay and Tata Beach pump station and rising main upgrades	Population growth in these areas is driving the need for greater capacity.	Not complete the planned upgrading works. This would restrict development in Ligar Bay and Tata Beach.	Upgrading is timed to meet predicted growth.	$2.9 million	12-14

KEY WASTEWATER ASSUMPTIONS, UNCERTAINTIES, AND RISKS

This section summarises significant uncertainties and assumptions that are specific to the wastewater activity and its programme.

ASSUMPTIONS AND UNCERTAINTIES

- Pipeline renewals in Motueka will provide capacity for growth within the network and at the treatment plant by eliminating inflow and infiltration.
- Reduction in renewals will not materially affect operating and maintenance costs. This assumption is based on the Council's forecast cumulative investment in renewals exceeding the investment needed to replace aging assets (based on remaining asset lives).
- The renewals programme is largely based on replacing aging and faulty pipes. However, pipe rehabilitation technology may enable improvements to the network without the need to replace pipes, and at lower cost.
- Asset information improvements will enable more accurate forward works programmes. This may significantly affect renewal forecasts in the future.

RISKS

- Operation and maintenance costs may increase as a result of tendering a new contract in 2016/17.
- Earlier than anticipated development may require pump station, rising main and trunk main upgrades to be brought forward.
- Motueka maintenance costs may increase significantly depending on the upgrade pursued for the Motueka treatment plant.

FINANCIAL SUMMARY

This section summarises key financial information associated with wastewater infrastructure. These forecasts are inflation adjusted.

OPERATIONAL COSTS

Operating costs are forecast to rise modestly for wastewater, from $14.6 million now to $17 million in 10 years. This represents an increase in costs of less than 2% per annum over this period. Cost increases longer term are also forecast to be around 2% per annum . These increases are less than the cost of inflation, meaning the "real" costs of operating the wastewater network is forecast to fall over time.

FIG 19. YEARS 1-10: WASTEWATER ANNUAL OPERATING COSTS

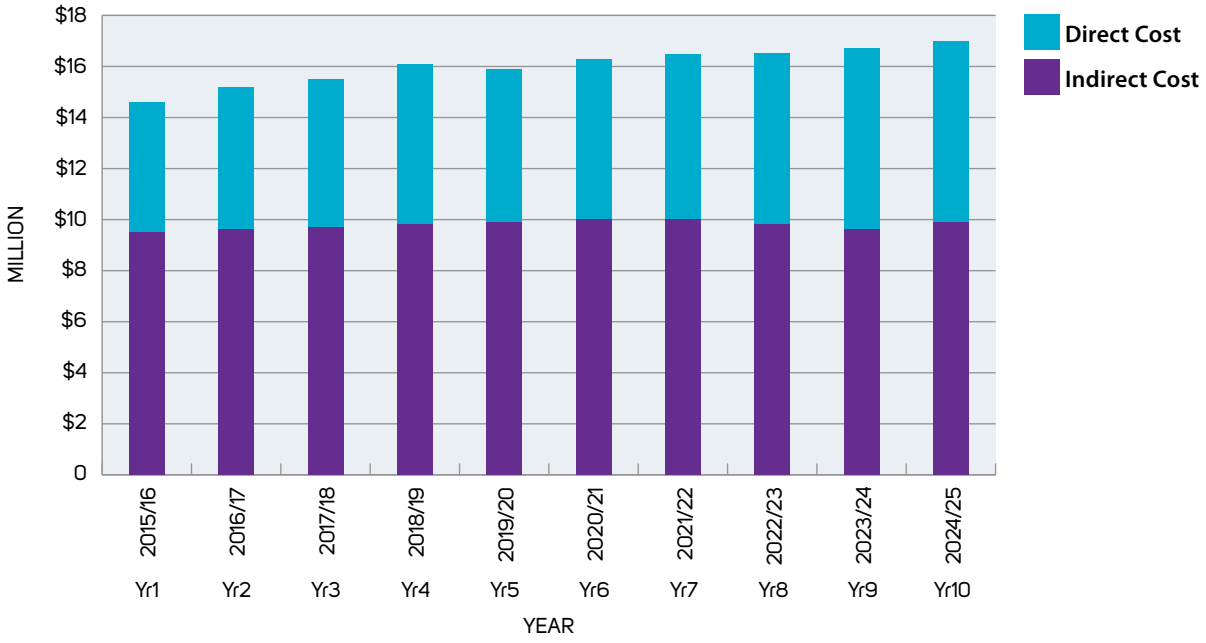
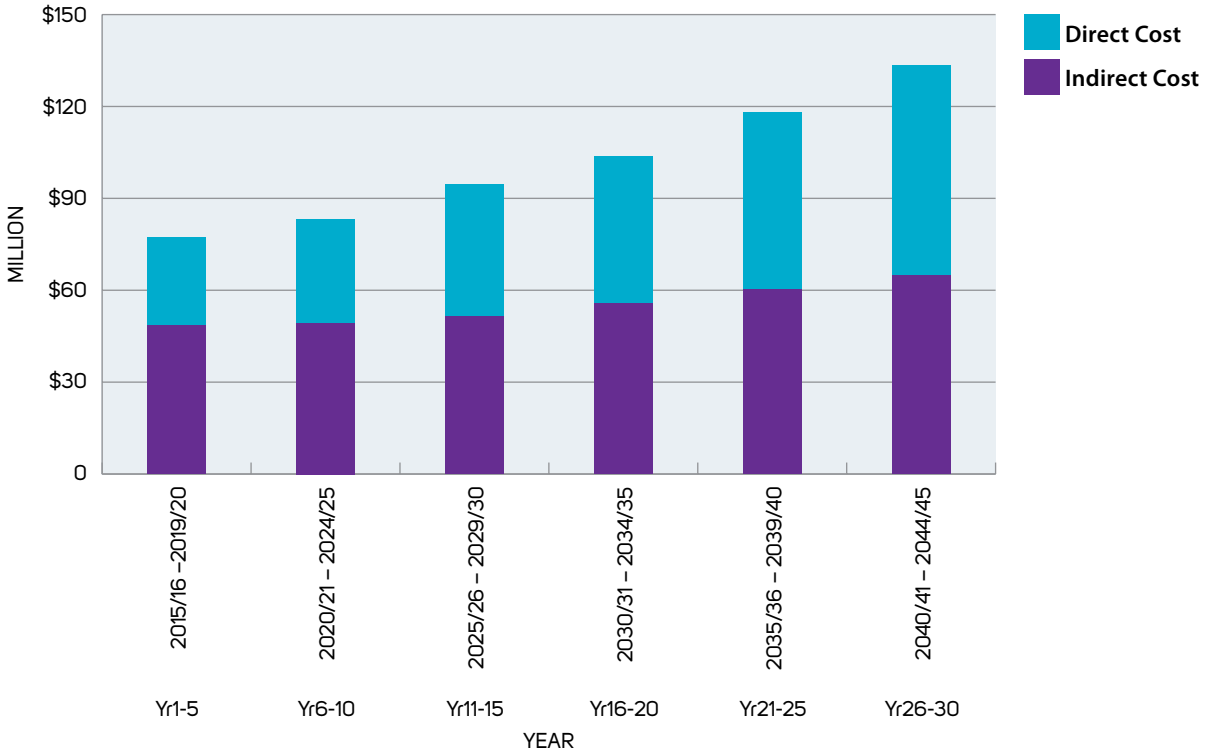


FIG 20. YEARS 1-30: WASTEWATER 5 YEARLY OPERATING COST TOTALS



CAPITAL EXPENDITURE

Capital expenditure of around $30.8 million is programmed over the next 10 years – mainly in level of service improvements associated with resource consent requirements or reducing the risk of overflows. Longer term, the focus of the programme changes to undertaking renewals as many of Tasman District Council's wastewater pipes start to become due for replacement.

FIG 21. YEARS 1-10: WASTEWATER ANNUAL CAPITAL EXPENDITURE

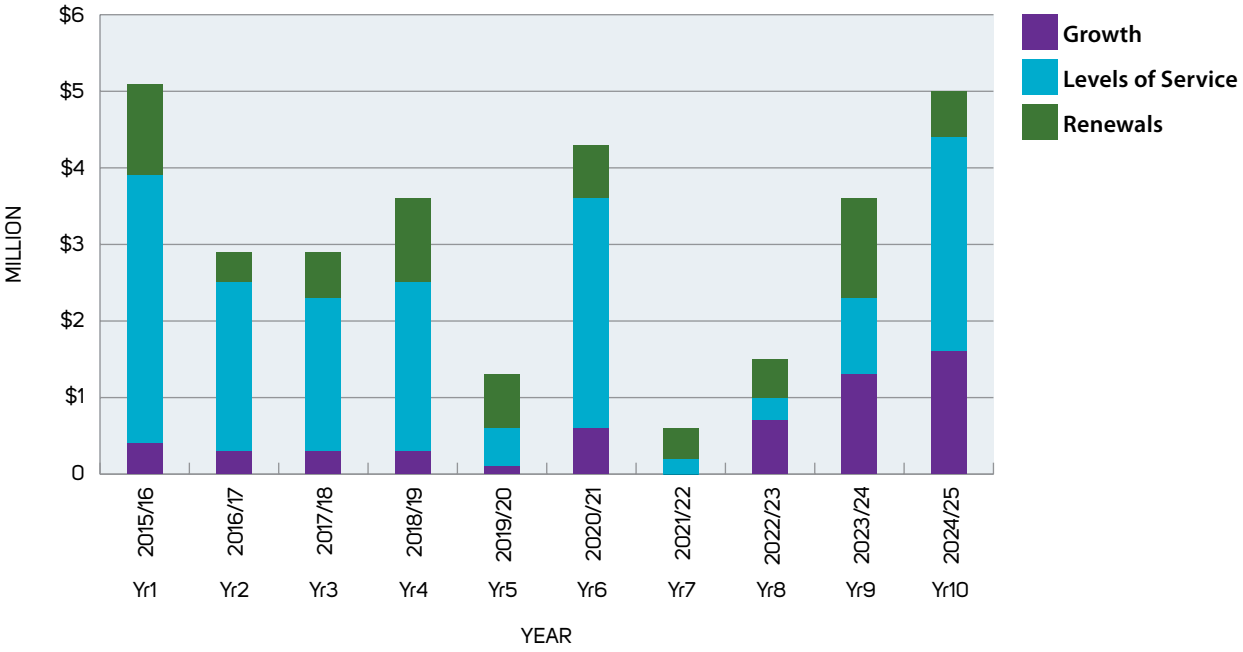
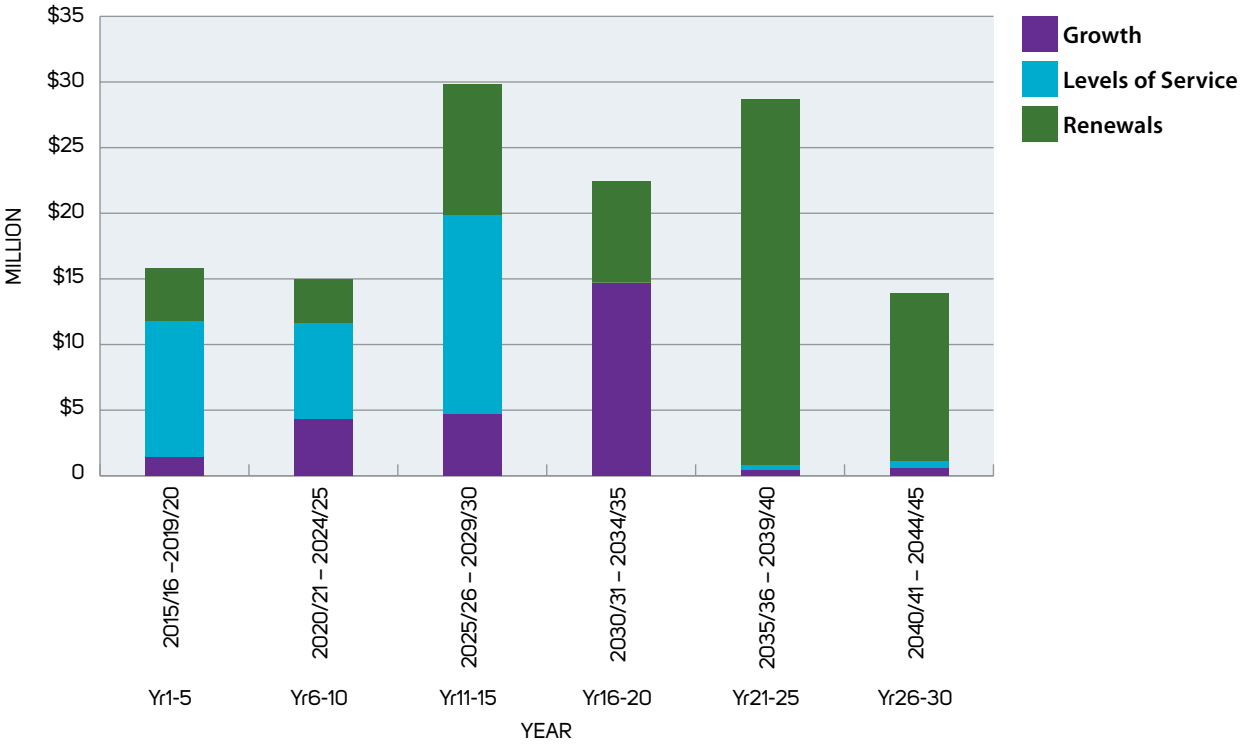


FIG 22. YEARS 1-30: WASTEWATER 5 YEARLY CAPITAL EXPENDITURE TOTALS

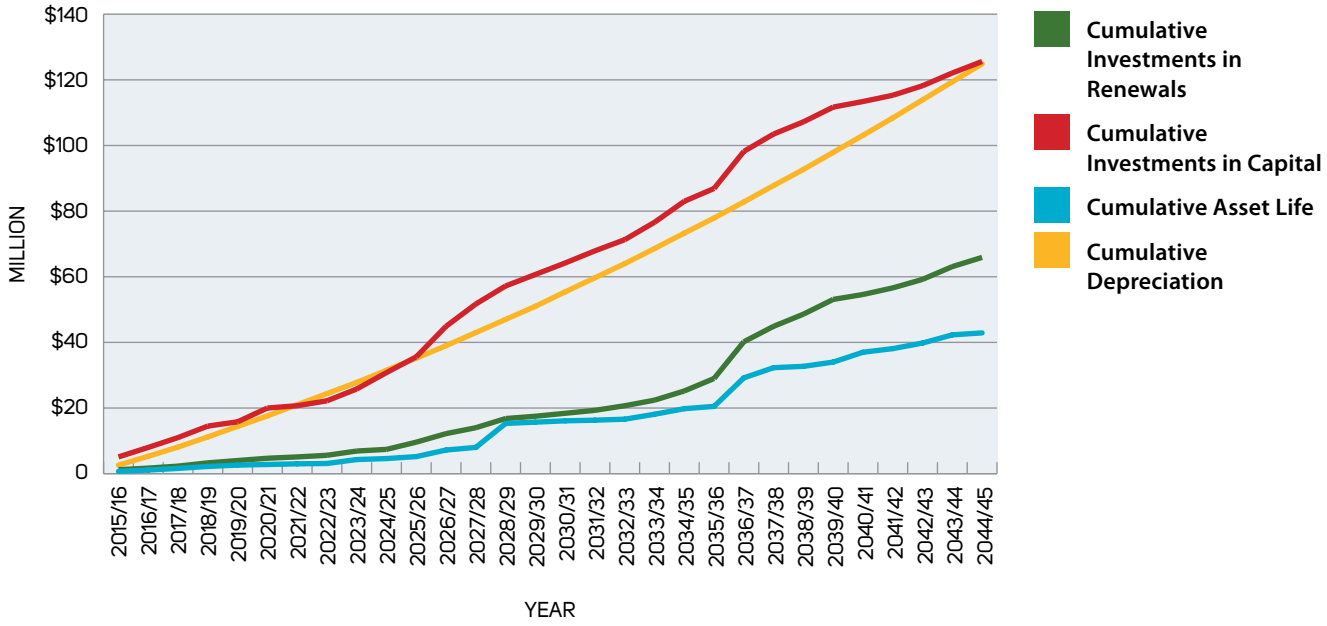


CAPITAL EXPENDITURE VS DEPRECIATION

There is a significant gap between forecast cumulative depreciation and renewals, although overall capital expenditure is forecast to keep pace with depreciation. The renewals programme is largely based on the expected remaining life our wastewater assets. As these assets have a very long life (80+ years), a large programme of renewals is not needed until after 2035.

This is shown clearly in the graph below when comparing the assets that need to be replaced based on assumed remaining asset lives to the Council's wastewater renewals programme. The Council renewals programme closely matches when assets need to be replaced, with marked increases starting in years 20-30.

FIG 23. YEARS 1-30: WASTEWATER CAPITAL EXPENDITURE VS DEPRECIATION



TRANSPORTATION ACTIVITY SUMMARY

The Council manages a transportation network which includes approximately 1,741km of roads, (955km sealed and 786km unsealed), 483 bridges (including footbridges), and associated footpaths, walkways, cycleways, car parks, streetlights, traffic signs, culvert pipes, and Tasman's Great Taste Trail. This activity also includes transport planning, road safety, and public transport services.

The Council's roading network makes up around two thirds of the total value of Council's infrastructure – around $640 million.

KEY ISSUES FOR TRANSPORTATION

ONE NETWORK ROAD CLASSIFICATION (ONRC)

The One Network Road Classification (ONRC) has been developed by the NZ Transport Agency and is to be implemented by road controlling authorities across New Zealand by 2018.

The ONRC involves categorising roads based on the functions they perform as part of an integrated national network. The classification will help local government and the NZ Transport Agency to plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country. In addition to this the NZ Transport Agency has set out the customer levels of service and associated performance measures for each road hierarchy within the ONRC.

The Council has taken the first step towards aligning to the ONRC by including the six key factors; safety, resilience, amenity, value for money, travel time and accessibility into its levels of service. A transition plan has also been completed which outlines the Council's current position and what is required in order to achieve compliance with the ONRC by 2018. The Council will need to focus on implementing the transition plan over the next three year period.

GOVERNMENT FUNDING PRESSURE

Tasman District Council did not receive a net increase in our funding assistance rate as a result of the NZ Transport Agency's recent funding assistance review. In addition, NZ Transport Agency has not provided the Council with an inflation adjustment for its share of the funding for local roads over the last three years.

This has effectively caused a gradual reduction in the amount the NZ Transport Agency contributes towards funding of Tasman's local roads. The NZ Transport Agency has continued with this approach to road funding and will not provide for inflation adjustments for the next three years (2015-2018).
This will have the effect of reducing the funds available to manage roads and other transportation activities. The Council has decided to inflation adjust its share of funding local roads, even though the NZ Transport Agency has not done so.

The Council has and will continue to develop innovative ways to manage the challenges of reduced funding.

FOCUS ON MAINTAINING THE EXISTING NETWORK AND CRITICAL IMPROVEMENTS

The Council is under increasing pressure to minimise its long term debt forecast and keep rate raises to a minimum. In order achieve this, the Council has reduced its planned expenditure on transportation by approximately $50 million. The Council is focusing on delivering critical core infrastructure projects and maintaining its existing network, rather than providing new assets or improved assets that will require on-going maintenance and expenditure. This may mean that some Tasman residents may be unhappy with the lack of work planned for the transportation network.

DAMAGE TO ROADS AND THE TRANSPORTATION ASSETS FROM STORMS AND HEAVY RAINFALL EVENTS

In December 2010 and December 2011 Tasman experienced extremely heavy rainfall which led to flooding, slips and debris flows resulting in damage to the Council's infrastructure and private property. This was particularly destructive in Golden Bay in 2011 and in Murchison and Golden Bay in 2010.

As well as these more significant events, there has been an increase in the severity and frequency of storm events occurring in Tasman during recent years. This has resulted in a significant increase in emergency works costs. Consequently forecast expenditure has been increased to $2 million per year to align with recent trends.

KEY ISSUES FOR TRANSPORTATION (CONT.)

INCREASING DEMAND FOR TRANSPORTATION SERVICES DUE TO GROWTH

Residential growth in the Richmond area is creating extra pressure and demand on the Council's transportation network. This growth will increase traffic volumes and may cause congestion on urban arterial routes. A number of projects are planned to occur within the Richmond Ring Route to improve traffic flows, these include intersection improvements on Salisbury Road and widening on Oxford Street.

MAJOR PROJECTS >$2.0 MILLION*

* Excludes renewals

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Richmond Central Improvements – Queen Street Town Centre Renewal	Re-instate Queen Street, following the stormwater system upgrade. The reinstatement will provide a safer shared space for pedestrians and motorists.	Do nothing and accept the existing safety issues faced by pedestrians and motorists.	The timing of this project will coincide with the utilities underground project.	$4.4 million	1–3
Tasman's Great Taste Trail Construction	Complete the loop from Wakefield through to Woodstock. This project allows for construction of the trail between the Spooner's Tunnel and Woodstock.	If this project does not proceed the loop will not be completed and tourism growth associated with the trail will be limited.	The Council has assumed it will receive match funding, or 50% of the cost will be met by a third party. If this match funding is not secured the project will be at risk of not proceeding.	$2.3 million	1–4
Bateup Road Widening	Residential and commercial growth is expected to occur in the short term in the Richmond South area. Bateup Road is a primary collector route for this area and requires upgrading to provide for the expect increase in vehicle and pedestrian numbers.	The principal alternative is to leave the existing carriageway as is. This would likely result in safety and congestion problems.	The timing and scale of the project is based on the expected growth.	$2.9 million	3

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Lower Queen Street Widening	Provide a wider road to cater for the increased vehicle and pedestrian traffic expected to be generated by forecast growth in the Richmond West area.	To leave the existing carriageway as is. This would likely result in safety and congestion problems.	The timing and scale of the project is based on the expected growth.	$12.8 million	11, 15, 20
Riwaka – Kaiteriteri Road Upgrade	Provide a new road alignment that better caters for large and towing vehicles travelling to and from Kaiteriteri. At some curves in the road it is not possible for large vehicles to travel around them without crossing the centreline.	To either (a) leave the road alignment as it is, or (b) widen and ease the alignment of the existing route. The latter is difficult due to the proximity of private properties and the difficult terrain.	Land can be secured for the route.	$2.5 million	11–12
New Footpaths	Fill gaps in the existing footpath network to increase connectivity for pedestrians.	Do nothing and maintain the footpath network as is.	No significant assumptions.	$2.5m	1–30
Minor Improvements	Programme of individual road improvement projects up to a total cost of $300,000 each. Generally includes intersection and road safety improvements.	Do nothing, accept minor safety issues and maintain the network as is.	That the Council will be able to secure access to land as required.	$29m	1–30

KEY TRANSPORTATION ASSUMPTIONS, UNCERTAINTIES, AND RISKS

This section summarises significant uncertainties and assumptions that are specific to the roading activity and its programme.

ASSUMPTIONS AND UNCERTAINTIES

- The long term impact of the NZ Transport Agency's one network road classification framework on the provision of transportation services.
- NZ Transport Agency funding levels are 51% long term, and that there will not be any significant changes in NZ Transport Agency funding criteria.
- Future fuel prices, and the impact on travel choices is also not yet known. However, due to the fact the population is spread over a large area, the community is likely to remain dependent on private vehicular transport in future.

RISKS

- The reduction in renewals expenditure may have a negative impact on the condition of the road network, in effect reducing the level of service and/or increasing maintenance costs. Road pavements are typically slow to fail and it is expected that this risk can be managed through condition monitoring.

FINANCIAL SUMMARY

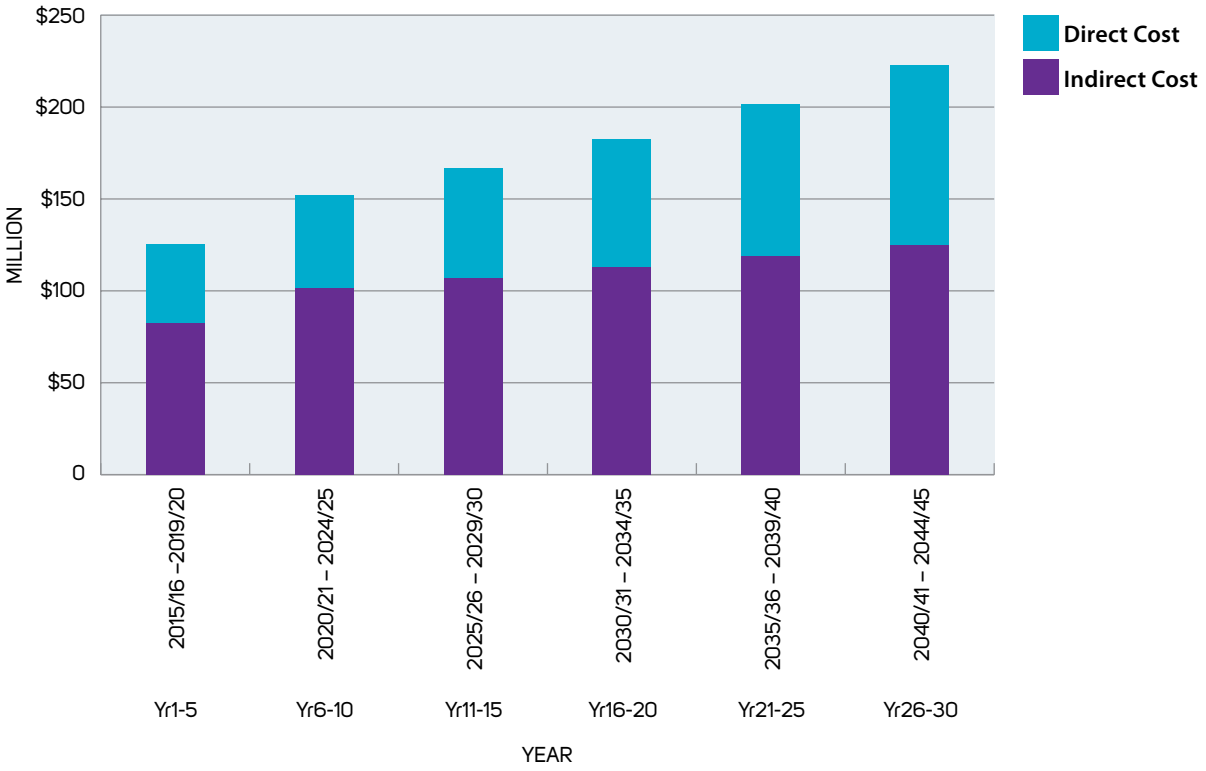
This section summarises key financial information associated with transportation infrastructure. These forecasts are inflation adjusted.

OPERATIONAL COSTS

Operating costs for roading increase by around 3.9% per year on average over years 1-10, with indirect costs such as interest and depreciation, rising more quickly than direct costs. Longer term, costs are forecast to increase by around 2.3% per year.

FIG 24. YEARS 1-10: TRANSPORT ANNUAL OPERATING COSTS

FIG 25. YEARS 1-30: TRANSPORT 5 YEARLY OPERATING COST TOTALS



CAPITAL EXPENDITURE

Around $10 million per year in capital expenditure is forecast on average for years 1–10. A small spike in year three is associated with upgrades to Bateup Road. Both in the short term and longer term, the bulk of capital works programme is focused on maintaining the existing network through renewals, accounting for around 70% of the total capital spend.

FIG 26. YEARS 1-10: TRANSPORT ANNUAL CAPITAL EXPENDITURE

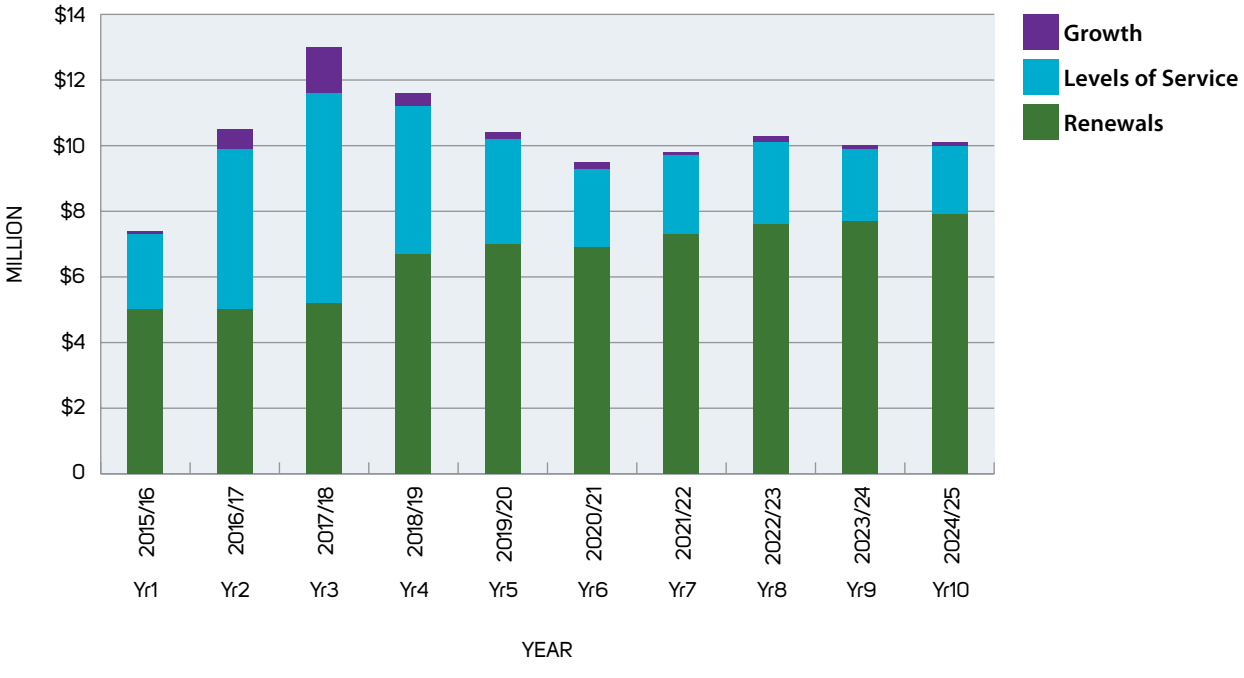
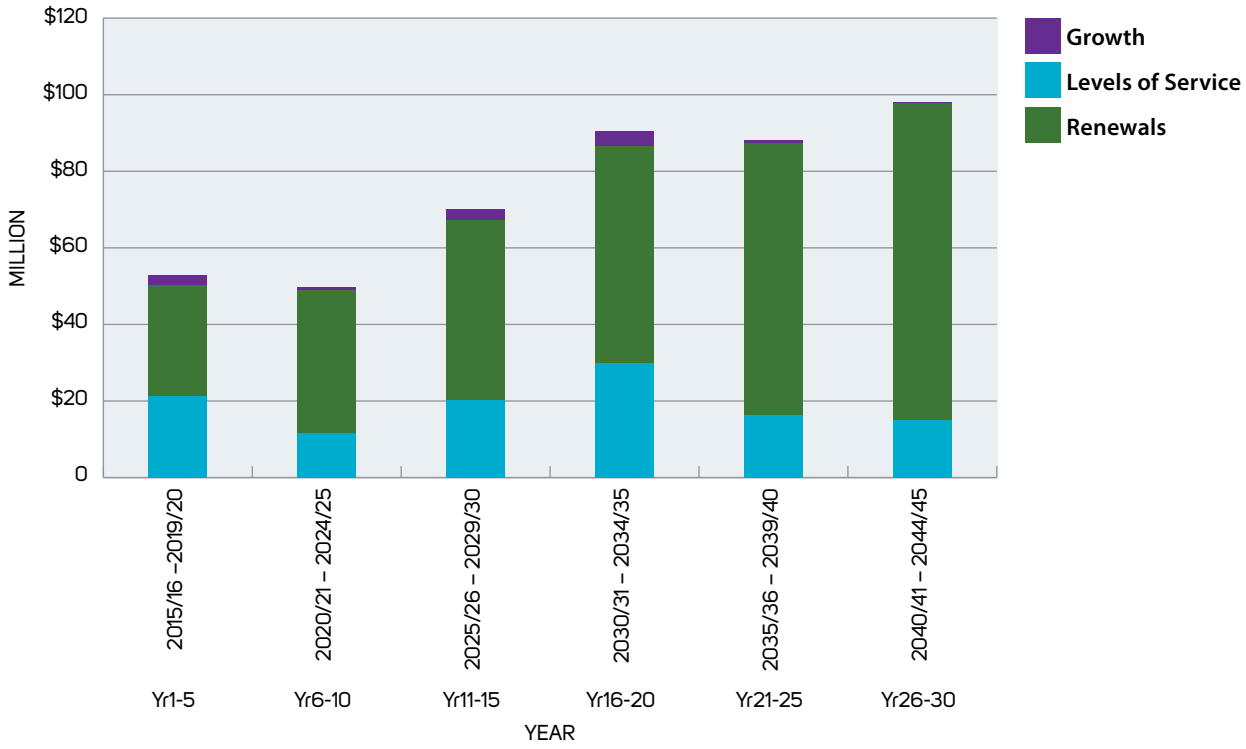


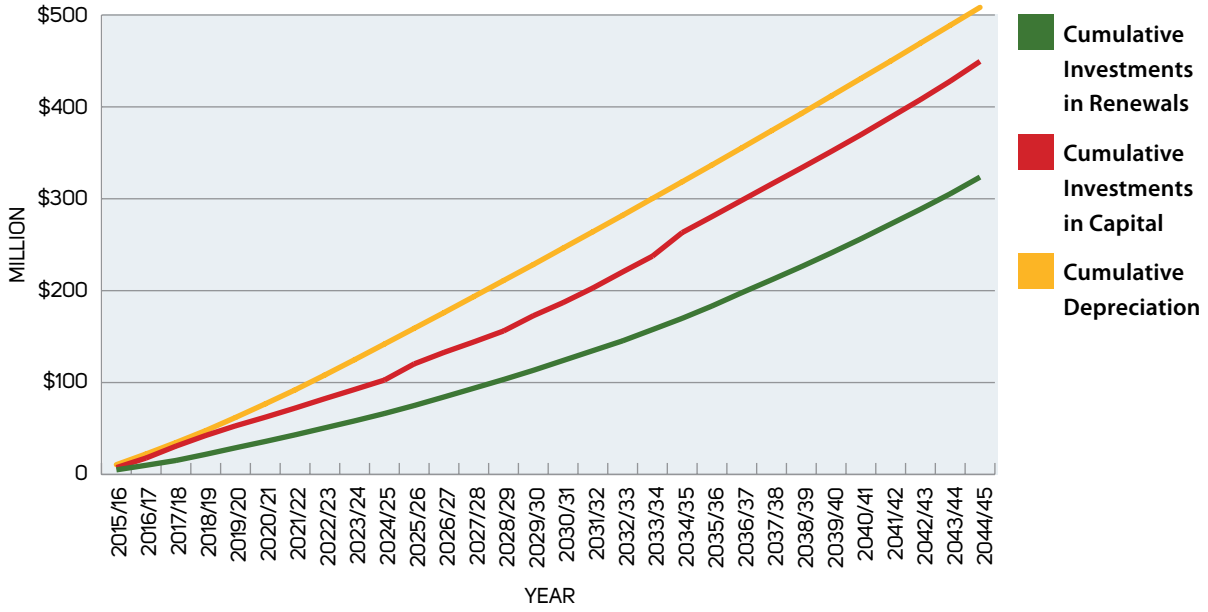
FIG 27. YEARS 1-30: TRANSPORT 5 YEARLY CAPITAL EXPENDITURE TOTALS



CAPITAL EXPENDITURE VS DEPRECIATION

There is a significant gap between forecast cumulative depreciation and renewals, although the gap is relatively small when compared to overall capital expenditure. The Council has based its renewals programme on detailed assessments of the condition and expected remaining life of its major asset classes. For example, bridge renewals are based on a condition assessment of all bridges in Tasman, and pavements reseals are based on current practice and experience and confirmed by deterioration modelling. Consequently, the Council is confident our programme will not run down the asset or create a major back-log of works to be undertaken.

FIG 28. YEARS 1-30: TRANSPORT CAPITAL EXPENDITURE VS DEPRECIATION



RIVERS AND FLOOD CONTROL ACTIVITY SUMMARY

The Council maintains 285km of Tasman's rivers in order to carry out its statutory roles to promote soil conservation and mitigate damage caused by floods and riverbank erosion. By implementing and maintaining quality river control and flood protection schemes, the Council improves protection to Council infrastructure and neighbouring properties, and mitigates the damage caused during flood events.

The Council's rivers assets are valued at around $45m.

KEY ISSUES FOR RIVERS AND FLOOD CONTROL

RIVER MANAGEMENT APPROACH

A fundamental change in the way operations and maintenance in our rivers system is managed is gradually being introduced. A holistic approach which considers water quality, ecology and visual enhancement as well as erosion management is being developed. The aim of this approach is to increase the amount of proactive versus reactive work that is carried out in the rivers system. Ultimately, there should be less rock revetment work occurring and more riparian plantings plus improved channel management taking place instead. This approach should be beneficial to the river channel capacity.

ONGOING DAMAGE TO THE FLOOD PROTECTION AND RIVER CONTROL ASSETS FROM STORMS AND HEAVY RAINFALL EVENTS

Tasman has experienced several major storm events since 2010. Council infrastructure and private property has suffered damage from the associated flooding, slips, erosion and debris flows. Council has a 'Classified Rivers Protection Fund'. Works required for river systems as a result of storm damage are usually subsidised from this fund. Council has previously funded up to 50% of the costs of works undertaken within 'River Z areas', with the landowner paying for the remaining 50%. In 2014, Council resolved to lower the percentage of funding to be made available for works in the River Z catchments (i.e. River Z works now receive a smaller Council subsidy). This change to the level of service may not align with community expectation.

LOWER MOTUEKA FLOOD CONTROL PROJECT

The Council previously planned to provide improved flood control system for the Lower Motueka River (Brooklyn, Motueka and Riwaka communities). This work was intended to reduce the risk of a breach in the stopbanks, as well upgrade the stopbanks to contain a 1 in 100 year flood. Modelling work shows that the existing stopbanks can contain a 1 in 100 year flood event, although the stopbanks are still prone to saturation failure over a prolonged event. However, at $17 million, a full upgrade is unaffordable. Providing lower cost improvements in targeted areas of the stopbanks would not resolve this issue.

Consequently, the Council has decided to remove the Lower Motueka Flood Control project from the Long Term Plan 2015-2025. There is a level of risk associated with this decision, although the risk of stopbank failure can be reduced through active maintenance.

TAKAKA AND RIWAKA FLOOD CONTROL

The Takaka River poses a flood risk to a number of commercial and residential buildings in Takaka, and to public infrastructure.

Indicative funding for a project proposed to commence in 2027/2028 has been included in the Council's programme. Further investigation, consultation and development of potential solutions will take place alongside the development of the Takaka Catchment Management Plan. The outcomes from this work will be considered in future long term plans where more detailed funding options will be proposed (if required) for consideration by the community.

Indicative funding for a project to raise the freeboard level of the Riwaka River stopbanks has been included in the Council's programme.

MAJOR PROJECTS >$0.5 MILLION*

* Excludes renewals

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Takaka Flood Protection Project	Investigate and provide flood protection to the township of Takaka.	Do nothing and accept the existing flood risk.	Land access and ownership will not impede solutions. The solution will be considered affordable by the local community .	$2.6 million	13-22
Riwaka Flood Protection Project	Raise the freeboard on the Riwaka River stopbanks to provide improved flood protection to the township of Riwaka.	Do nothing and accept the existing flood risk.	Land access and ownership will not impede solutions. The solution will be considered affordable by the local community.	$0.6 million	12-14

KEY RIVER ASSUMPTIONS, UNCERTAINTIES, AND RISKS

This section summarises significant uncertainties and assumptions that are specific to the rivers activity and its programme.

ASSUMPTIONS AND UNCERTAINTIES

- Tasman is increasingly experiencing extreme weather that in some cases has damaged the rivers. It is not yet known whether such events will increase the expenditure needed for river maintenance in the long term.
- With the adoption of the 'holistic' river management approach, operational costs are expected to increase initially. It is assumed that over time these costs will reduce, as outlay on material will decrease.

RISKS

- Large flood events place unanticipated demands on the rivers activity to increase capital expenditure.
- Access to the Riwaka stopbank is limited and the Council has no controls over land use on the stopbank.

FINANCIAL SUMMARY

This section summarises key financial information associated with rivers infrastructure. These forecasts are inflation adjusted.

OPERATIONAL COSTS

Operational costs for rivers are forecast to increase by around 4.7% per year for the first 10 years, and 3.3% per year over 30 years. These increases are mainly driven by high annual increases in depreciation – which is a consequence of the proposed capital expenditure programme. Direct cost increases average only around 2.8% per year.

FIG 29. YEARS 1-10: RIVERS ANNUAL OPERATING COSTS

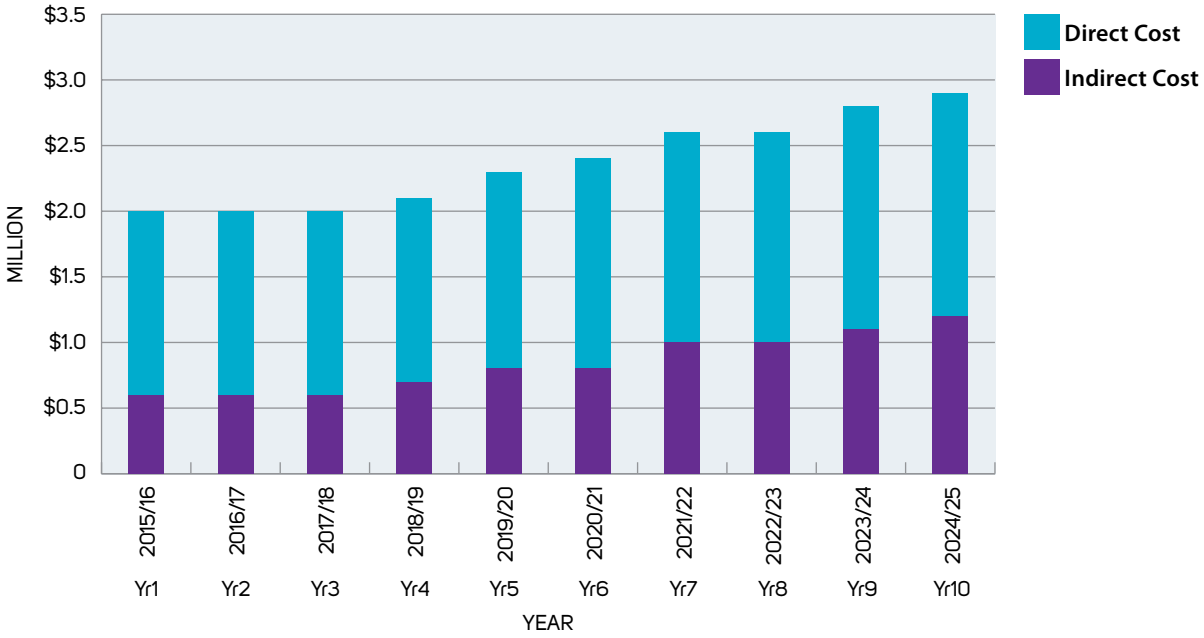
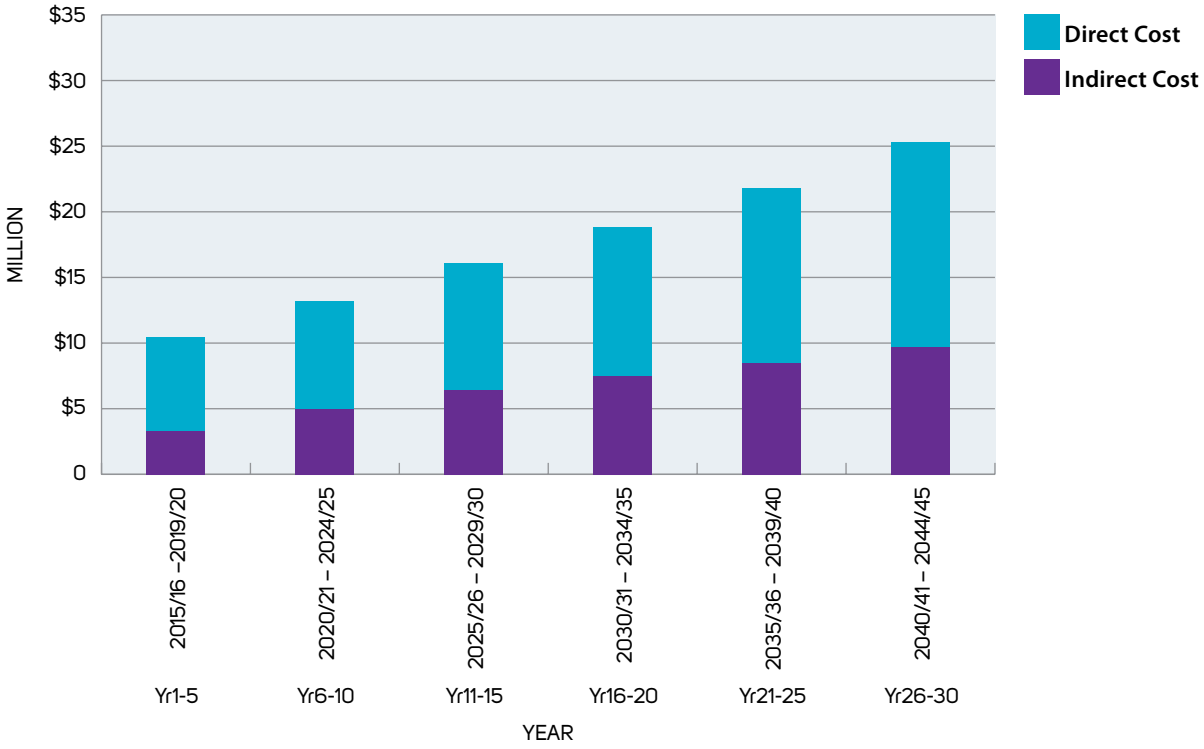


FIG 30. YEARS 1-30: RIVERS 5 YEARLY OPERATING COSTS



CAPITAL EXPENDITURE

Capital expenditure for rivers is forecast to grow by 3.1% per year in the first 10 years, and 2.8% per year longer term. All expenditure is classified as new capital and no renewals are forecast. This is due of the nature of the assets, which typically involve rock revetment that does not need to be replaced, but may need to be repaired or improved when damaged by storms.

FIG 31. YEARS 1-10: RIVERS ANNUAL CAPITAL EXPENDITURE

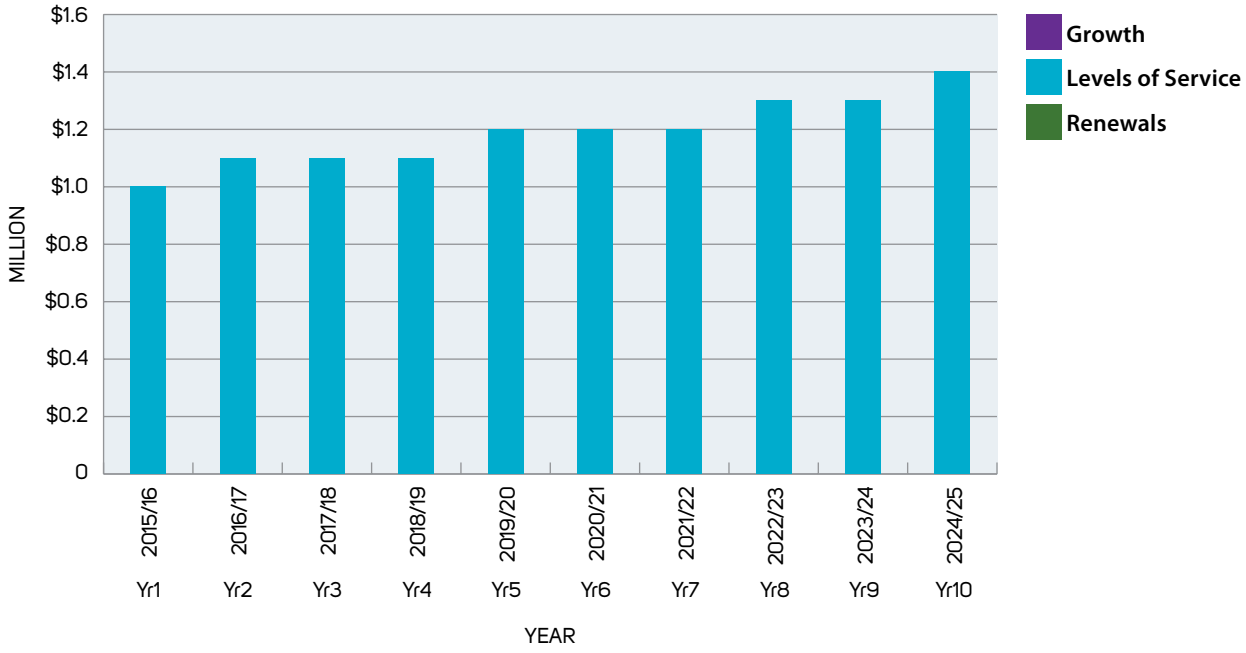
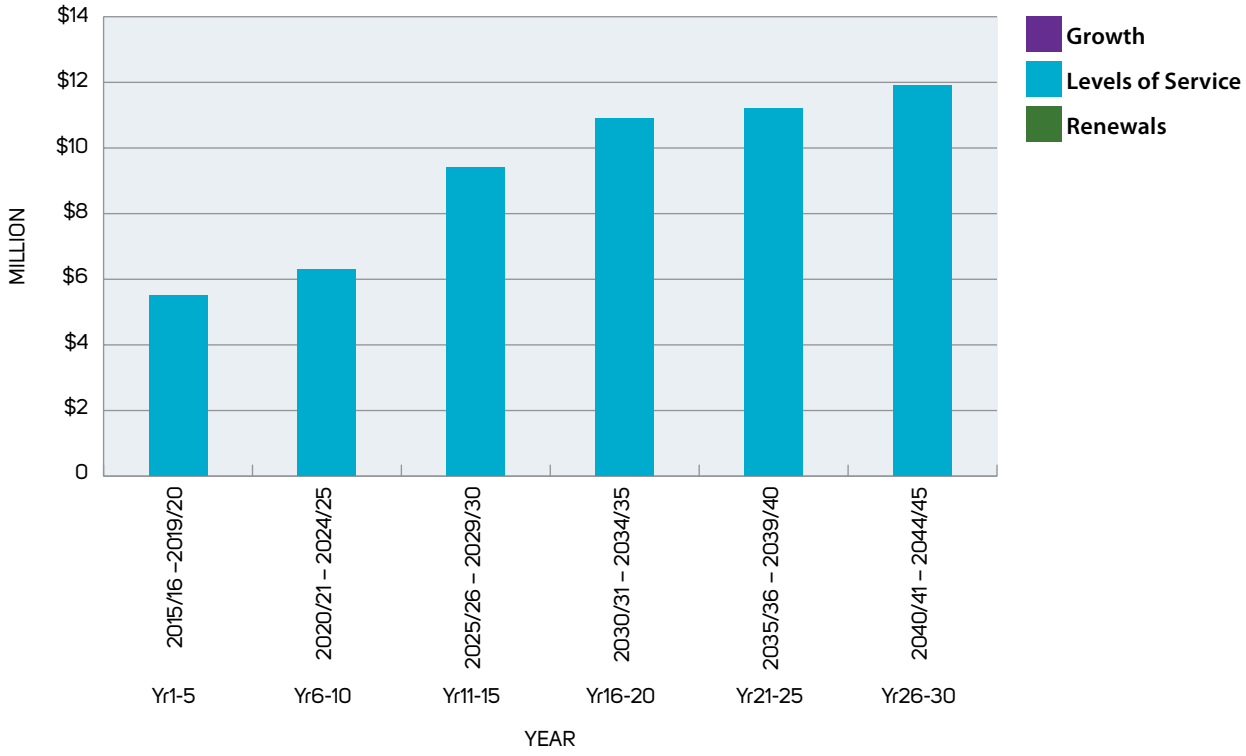


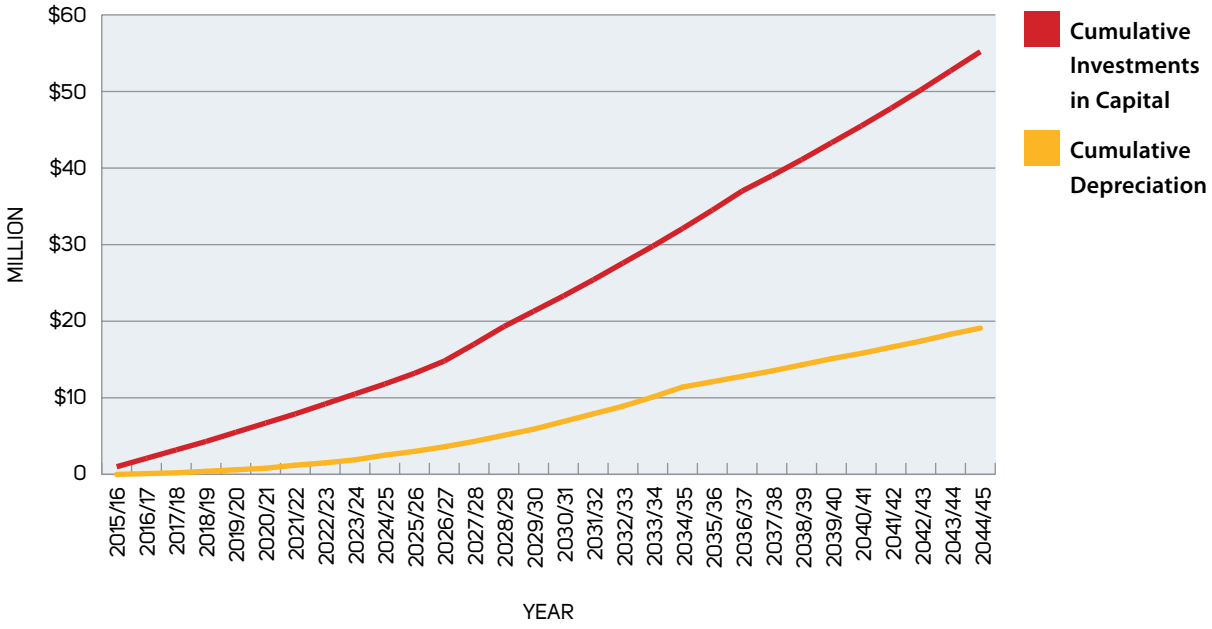
FIG 32. YEARS 1-30: RIVERS 5 YEARLY CAPITAL EXPENDITURE TOTALS



CAPITAL EXPENDITURE VS DEPRECIATION

Forecast investment in capital significantly exceeds forecast depreciation over the next 30 years. As noted above, due of the nature of the assets, all expenditure is classified as new capital.

FIG 33. YEARS 1-30: RIVERS CAPITAL EXPENDITURE VS DEPRECIATION



SOLID WASTE ACTIVITY SUMMARY

This activity includes kerbside recycling and waste collection services, and five resource recovery centres – at Richmond, Mariri, Takaka, Collingwood and Murchison. Waste disposal from these sites is currently transferred to a Council-owned landfill at Eves Valley and recyclable material is processed and on-sold by Council contractors.

The Council's solid waste assets are valued at around $8 million.

KEY ISSUES FOR SOLID WASTE

JOINT SOLID WASTE MANAGEMENT WITH NELSON CITY COUNCIL

The Councils are working to mothball the Eves Valley landfill and use the York Valley landfill in Nelson as a regional facility from July 2016. This agreement will be more efficient, reduce duplication of capital and provide opportunity for improved waste minimisation.

Transition to regional landfill activities will require early closure and mothballing of the Eves Valley landfill. Council also needs to provide funding for reopening of the landfill in 2030.

Due to the importance of this arrangement to both Tasman District and Nelson City Councils, the issue is discussed in more detail in section 5 (Significant Infrastructure Issues).

NEW RECYCLING SERVICES

An improved kerbside recycling service, using 240 litre mobile bins, commenced in July 2015. This is expected to increase diversion of waste from landfill. A new materials recovery facility (MRF) in Richmond will provide opportunity for commercial recycling and regional cooperation.

REVIEW OF SERVICES

The Councils have agreed to a review of services and a joint waste assessment in 2015/16 and review of the Joint Waste Management and Minimisation Plan in 2016/17. This will provide opportunity to review services and facilities over the wider region in the context of a joint landfill. The outcome of this review of services will influence the next Long Term Plan.

RENEWALS AND MAINTENANCE STRATEGY

With a transition to funding depreciation, a greater focus on asset valuation and condition assessment and asset life will be required.

MAJOR PROJECTS >$0.5 MILLION*

* Excludes renewals

PROJECT	RATIONALE	PRINCIPAL ALTERNATIVES	ASSUMPTIONS	COST (2015)	YEAR(S)
Eves Valley landfill – investigations and consenting for use of Stage 3 as a regional facility	The Nelson-Tasman region requires adequate landfill capacity for waste disposal. The York Valley landfill is expected to be full by 2030 and Tasman District has given a commitment to provide new landfill capacity from then.	Investigate and consent alternative locations.	That Eves Valley is the most suitable site. That cost of consenting is similar to other landfill locations.	$0.70 million	12-13
Eves Valley landfill – design and construction of Stage 3 as a regional facility (including work required on Stage 2)	The Nelson-Tasman region requires adequate landfill capacity for waste disposal. The York Valley landfill is expected to be full by 2030 and Tasman District has given a commitment to provide new landfill capacity from then.	Fund a landfill at an alternative location within Tasman District. Fund further development of York Valley.	The capital cost is based on current landfill practices and regulations. These may change. The closure date of York Valley is based on existing and predicted waste patterns. If these change the timing of the work at Eves Valley may change.	$18.6 million	13-30
Mariri Resource Recovery Centre – improve traffic flow and layout	The Council wishes to separate traffic flows for waste and recycling, to reduce queuing.	Maintain current configuration, with queues.	That a new waste compactor and related works will be completed in 2014/15.	$0.63 million	1 & 3

KEY SOLID WASTE ASSUMPTIONS, UNCERTAINTIES, AND RISKS

This section summarises significant uncertainties and assumptions that are specific to the solid waste activity and its programme.

ASSUMPTIONS AND UNCERTAINTIES

- That the Councils will reach agreement on a regional landfill from July 2016
- That there will be no material changes in waste patterns
- Revenue distribution of $2.1 million per annum from Nelson City from landfill from July 2016
- New capital at Eves Valley is funded by Tasman District Council and that interest costs of new borrowing will be treated as an operating expense
- No significant change in activity costs when new operations contracts are awarded and that any industry cost increases will be reflected in cost fluctuation provisions.

RISKS

The regional landfill proposal has a number of risks and uncertainties, including:

- Reaching agreement with Nelson City Council on regional landfill activities in 2015/2016
- Obtaining resource consents for the Eves Valley landfill (Stage 3) in time to enable operations if required
- Timing of capital expenditure for further development of the Eves Valley landfill
- Waste flow patterns – current model assumes all wastes flow through resource recovery centres, but there would be advantages in rationalising some transport of this waste
- Waste income projections for the resource recovery centres are based on 'price following' of Nelson City Council.

FINANCIAL SUMMARY

This section summarises key financial information associated with solid waste infrastructure. These forecasts are inflation adjusted.

OPERATING EXPENDITURE

Council's operating expenditure in the solid waste activity is dominated by payments to suppliers. These are largely made up of payments to operations contractors and to Nelson City Council for landfill disposal from 2016/2017.

FIG 34. YEARS 1-10: SOLID WASTE ANNUAL OPERATING COSTS

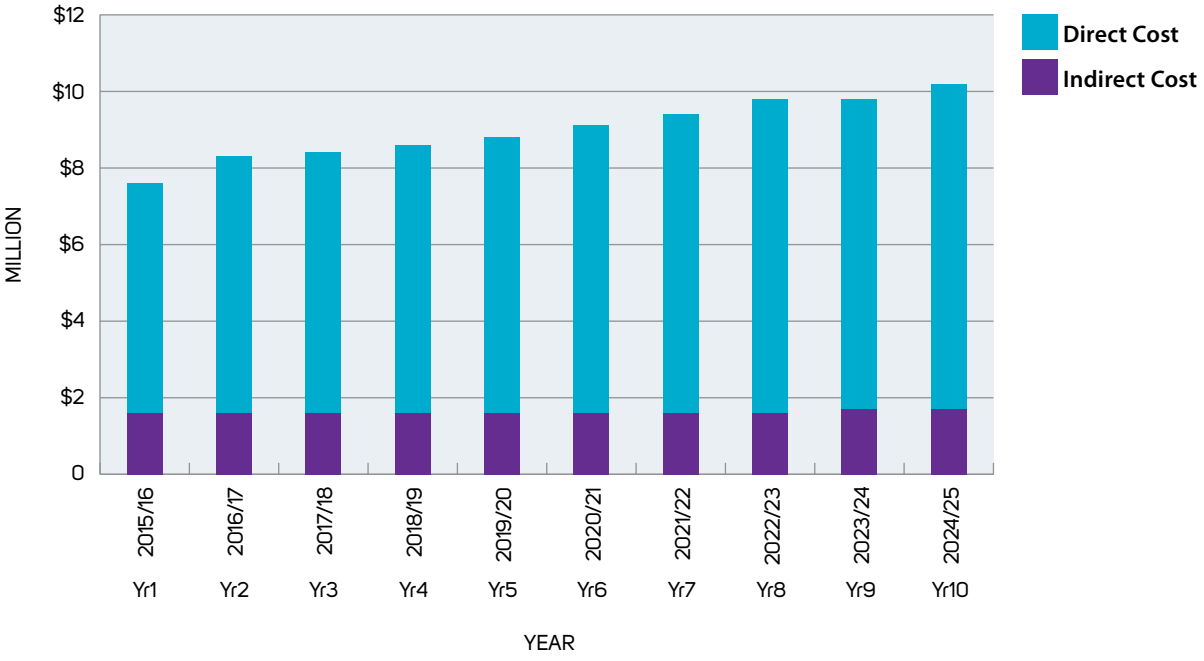
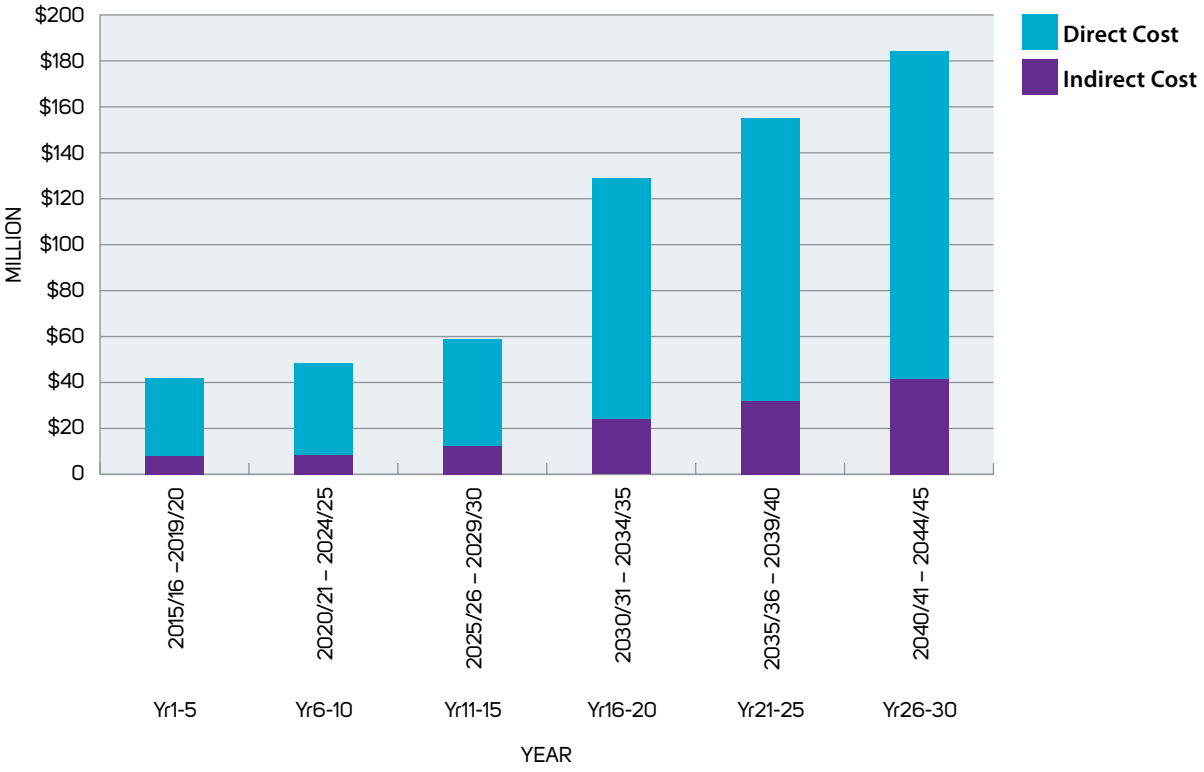


FIG 35. YEARS 1-30: SOLID WASTE 5 YEARLY OPERATING COSTS



CAPITAL EXPENDITURE

The following graph of capital expenditure shows a relatively low level of new capital expenditure in the first ten years, which increases substantially from 2025 onwards.

This trend reflects a "pause" on new capital development following improvements which have lifted levels of service in recent years. It also reflects a transition to regional landfill activities and new recycling services from 2016/17.

Capital expenditure in the last twenty year period is dominated by Stage 3 of the Eves Valley landfill. This new landfill capacity has been treated as new capital. Renewals projects include replacement of waste compactors and bins at Richmond and new resource consents at Eves Valley.

FIG 36. YEARS 1-10: SOLID WASTE ANNUAL CAPITAL EXPENDITURE

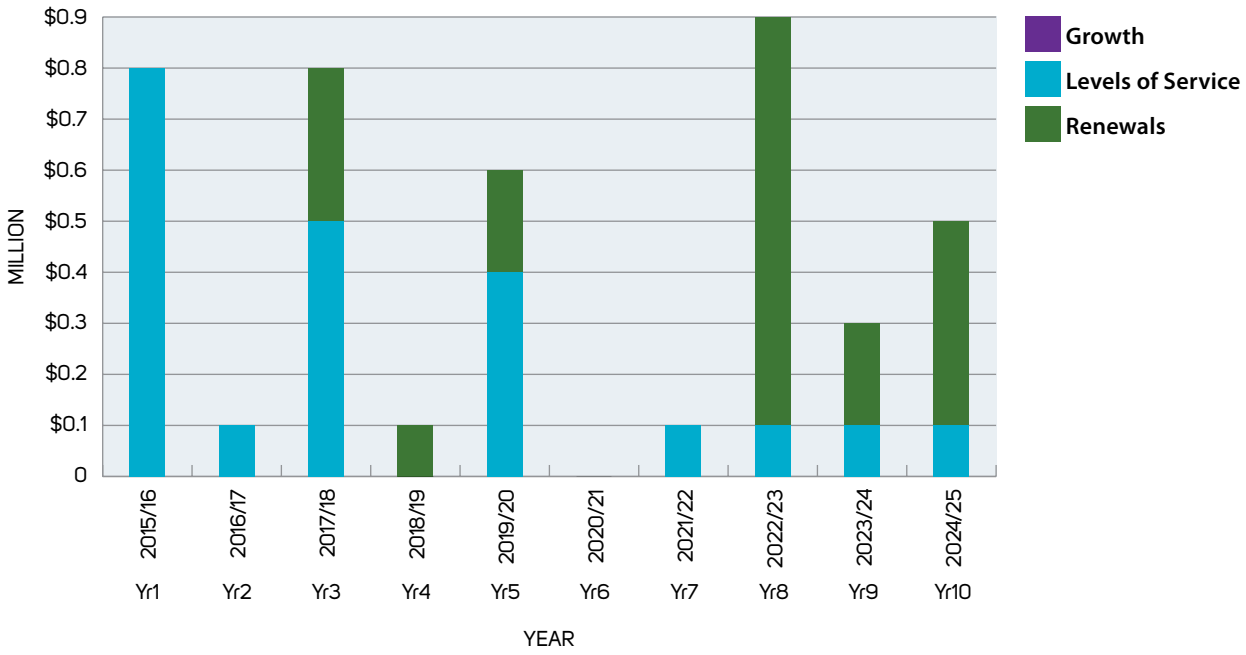
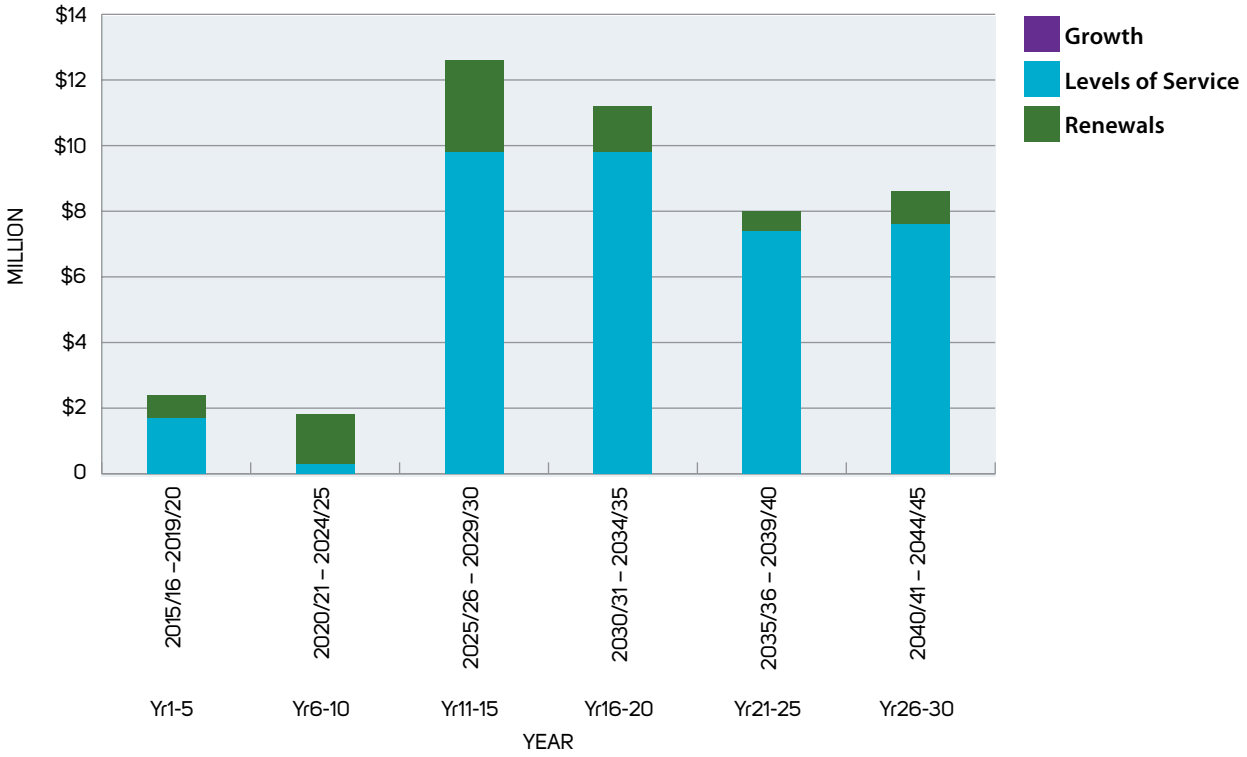


FIG 37. YEARS 1-30: SOLID WASTE 5 YEARLY CAPITAL EXPENDITURE TOTALS



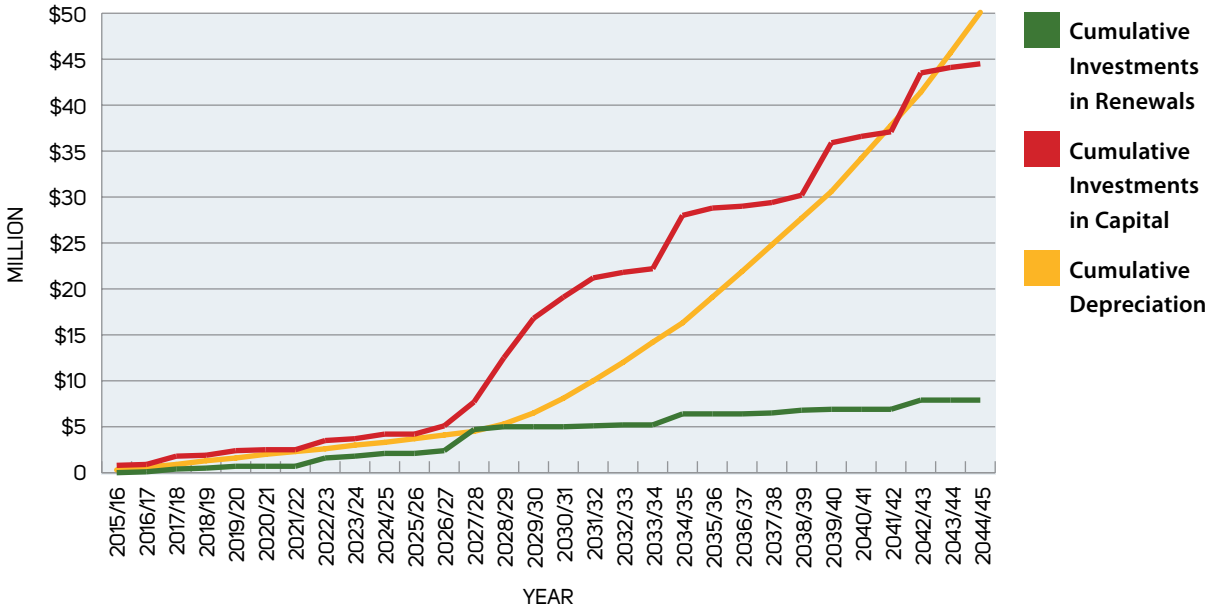
CAPITAL EXPENDITURE VS DEPRECIATION

As shown in the following graph, investment in renewals lags depreciation over the first ten years, but total capital spend almost matches depreciation. The relatively low level of renewals is also a reflection of the fact that significant capital work has been completed in recent years, and these assets are moderately young.

Years ten to thirty renewals also lag depreciation, but new capital significantly exceeds depreciation. The new capital in the latter years is for construction of Stage 3 of the Eves Valley landfill (as a regional site), which provides regional landfill capacity for at least 15 years.

Further work is programmed to improve the asset valuation and remaining life for key assets, which may change Council's accumulated depreciation profile.

FIG 38. YEARS 1-30: SOLID WASTE CAPITAL EXPENDITURE VS DEPRECIATION



8. GLOSSARY

CAPITAL EXPENDITURE

This expenditure relates to the purchase or creation of assets that are necessary to assist in the provision of services. They have useful lives in excess of one year and are therefore included in the Statement of Financial Position. Capital expenditure includes the creation of assets that did not previously exist or the improvement or enlargement of assets beyond their original size and capacity.

LEVEL OF SERVICE

This term describes what the Council will deliver. Performance measures are specific indicators used to demonstrate how the Council is doing regarding delivery of services. The measures are described in each Activity Management Plans. The Council reports on the levels of service it delivered and on the performance measures each year through the Annual Report.

OPERATING COSTS (OR OPERATING EXPENDITURE)

These expenses, which are included in the Prospective Income Statement, are the regular costs of providing ongoing services and include salaries, maintaining assets, depreciation and interest. The benefit of the cost is received entirely in the year of expenditure.

PRIMARY NETWORK

The network of pipes and open drains that manage stormwater for most rainfall events.

SECONDARY FLOW PATH

The locations that stormwater flows when the primary network is full or blocked.

TRUNK SERVICES

The network elements that service larger segments of a community beyond a single street or subdivision.