

2015-
2025

LONG TERM PLAN



30 year Infrastructure Strategy

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1. INTRODUCTION

Infrastructure provides an important foundation for healthy, thriving communities and prosperous economies.

'Infrastructure' refers to the fixed, long-lived structures that facilitate the production of goods and services and underpin many aspects of quality of life¹. The infrastructure covered in this strategy includes that for the provision of water supply, wastewater, stormwater and roading networks.

Investing in and effectively managing our roads and footpaths, water supply, wastewater and stormwater infrastructure accounts for a significant proportion of Councils annual expenditure.

The Coromandel Peninsula covers some 230,000 hectares of land, with around 400 kilometres of coastline. The peninsula is located within the Hauraki Gulf Marine Park; a national park of the sea and an area of natural richness. Our location and the characteristics of our district offer many advantages, attracting people to live and visit the peninsula, but also present some challenges. Our location, rugged terrain and coastal nature mean that we are susceptible to a range of natural hazards such as storms and weather events, coastal erosion, rising sea levels, tsunami and flooding and inundation. These types of hazards can have an impact on our infrastructure and this comes at a cost.

Our many small communities are diverse and approximately 55% of our ratepayers do not live full time in the District. Our population varies at different times of the year.

The dispersed nature of the District's settlements means that much of our networked infrastructure has to be provided separately to the different communities.

2. SCOPE AND PURPOSE

This strategy has been prepared under the requirements of section 101B of the Local Government Act 2002 (LGA) which states that the purpose of the infrastructure strategy is to identify:

- significant infrastructure issues for Thames-Coromandel District Council over the next 30 years
- the principal options for managing these issues and the implications of these options

As required by section 101B of the LGA, this strategy covers infrastructure assets used to provide services by or on behalf of Council in relation to the following groups of activities:

- water supply
- sewerage and the treatment and disposal of sewerage (referred to as wastewater in this strategy)
- stormwater drainage
- roads and footpaths
- *flood protection and control works*

Flood protection and control assets are the responsibility the Waikato Regional Council and will be covered in the Regional Councils Infrastructure Strategy, not in this strategy.

This strategy does not cover state highways. Planning for, providing and managing state highways is the responsibility of the New Zealand Transport Agency.

¹ National Infrastructure Plan, 2011, <http://www.infrastructure.govt.nz/plan/2011>

3. CONTEXT

3.1 Overview of infrastructure assets

This strategy covers assets used to provide services by or on behalf of Thames-Coromandel District Council (Council) in relation to; water supply, wastewater, stormwater drainage, local roads and footpaths. Thames-Coromandel District Council currently owns assets, for the purpose of delivering these activities, estimated at over \$774 million. These range from pipes under the ground to reservoirs and roads. Some key information about each of the infrastructure types dealt with in this strategy is provided below.

Roads and Footpaths

Council is responsible for the planning, provision, development, operations and maintenance of the District's land transportation network and facilities to local communities including local roads, footpaths, service lanes, street lighting, bridges and carparks owned by us. This ensures that the movement of people and goods around our District and within local communities is safe, efficient, convenient and pleasant.

Water Supply

Water Supply is the provision of clean water to dwellings and commercial premises. This helps ensure availability of safe water for drinking and cleaning purposes to maintain public health, and the provision of water for firefighting to assist public safety. In addition, we promote efficient water use and ensure that water demand management practices are implemented.

Wastewater

Council collects, treats and safely disposes of treated wastewater (sewage) from properties and businesses. The effective management of the District's wastewater is important to maintain public and environmental health. In areas where they are in place, wastewater systems help protect the environment by ensuring that untreated wastewater does not infiltrate our water catchments and coastal areas.

Stormwater

Stormwater is the result of heavy or sustained rainfall resulting in the need to manage the disposal of surface water. The Coromandel is particularly vulnerable to heavy rainfall due to its geography. We have a number of stormwater systems throughout our District to manage runoff and reduce surface ponding to reduce risks to public health, safety and property.

3.2 Physical Context

The Thames-Coromandel District covers around 230,000 hectares of land, of which around 65% is covered by indigenous forest and approximately one third of the district is conservation land managed by the Department of Conservation. The District is a diverse area, with the steep and rugged Coromandel Ranges running down the middle of the peninsula. The nature of the peninsula means that some parts of the District are prone to landslides, subsidence, geological instability and rock falls.

The peninsula's 400 kilometre coastline consists mostly of short beaches and bays separated by rocky cliffs. The Coromandel township area and eastern coast of the peninsula are characterised by natural harbours. The coastal environment is subject to coastal processes including erosion and inundation, tsunami and the effects of climate change. The climate of the Thames-Coromandel District is relatively moderate, with warm summers and moderate winters. The District has a fairly high rainfall due to the high ranges although this varies depending on location. The geography of the district means that it is prone to adverse weather events and natural hazards such as landslides and flooding and tsunami.

The effects of climate change will impact the environment globally and locally; with changes in wind and weather patterns, sea level rise, and increased flood risk and frequency of extreme weather events

predicted². Climate change is not expected to create new hazards but may change the frequency and intensity of hazards. Changes in climate are likely to affect low-lying and coastal areas of the Coromandel District. Council is responsible for a range of functions that may be affected by climate change, including resource management, land use planning and the provision of infrastructure such as stormwater drainage, water supply and roads.

The Ministry for the Environment highlights³ the southern Firth of Thames as an area at risk of coastal inundation due to the effects of sea level rise. Coastal erosion is expected to increase as a result of sea level rise and fluctuations, frequency and magnitude of storm surges, change in tides and rainfall patterns. With a number of coastal roads and townships around the district, coastal erosion combined with rising sea levels could become a significant issue to infrastructure.

The peninsula shows considerable signs of previous volcanic activity. It covers the eroded remnants of the Coromandel Volcanic Zone. Geothermal activity is still present on the peninsula, with hot springs in several places, including at Hot Water Beach.

The District is exposed to a variety of naturally occurring events; these types of events can result in disruption to services and damage to our infrastructure assets which can lead to unforeseen and often high costs to remedy these.

3.3 Demographic Context

Knowing where and how the population of the Thames-Coromandel District is changing is a critical factor for the effective management of infrastructure.

The largest settlements in the Thames-Coromandel District are Thames, Coromandel, Matarangi, Whitianga, Cooks Beach, Tairua, Pauanui and Whangamata. Each of these main settlements has different population and growth characteristics.

Demographic Change

The Thames-Coromandel District has an aging population. In 2013 the proportion of people aged 65 and over made up around 27% of the usually resident population. This is nearly twice the national average (14%). This trend is projected to continue, with the proportion of people aged 65 and over expected to increase to over 40% of the usually resident population by 2045.

The average household size for the district is also expected to decline across all parts of the District. This is likely to be partly driven by factors such as our ageing population.

In general, the incomes of residents of the District are lower than for New Zealand as a whole. In 2013, 43% of people in the Thames-Coromandel District aged 15 years and over received personal income of less than \$20,000, compared to 38% across New Zealand. Furthermore, fewer residents received personal income in excess of \$50,000 than for New Zealand (17% compared to 28%). The median personal income (half the usually resident population of the District earned more than this amount and half earned less) of people living in the Thames-Coromandel District in 2013 was \$23,200 compared to \$28,500 for New Zealand. As our population ages over the next 30 years, more of our residents are likely to be on lower fixed-incomes.

Population Change

Population projections indicate that the usually resident population of the Thames-Coromandel District, as a whole, is anticipated to increase gradually over the next 30 years; with an expected net increase of around 20 people per year. The rate of growth is projected to be higher in the next 10-15 years after which time growth is expected to slow slightly.

In terms of geographic spread of growth, the majority of the growth is expected to occur in the Mercury Bay and Coromandel-Colville Community Board areas with the usually resident population expected to decrease in other parts of the District.

² <http://www.mfe.govt.nz/sites/default/files/preparing-for-climate-change-guide-for-local-govt.pdf>

³ <http://www.mfe.govt.nz/publications/climate-change/coastal-hazards-and-climate-change-guidance-manual-local-government-n-21>

The usually resident population of the Mercury Bay Community Board area is expected to increase by around 0.8% or 58 people per year and the Coromandel-Colville Community Board area is expected to increase by around 0.2% or 6 people per year.

The population in the other community board areas is projected to decline; Tairua-Pauanui by around -0.5% or a loss of 11 people per year, Thames by -0.2% or a loss of about 20 people per year and Whangamata by -0.4% or a loss of around 15 people per year. These results are consistent with recent trends.

Housing and Rating Unit Growth

The number of houses is projected to increase across the District. The Mercury Bay and Coromandel-Colville community boards are expected to experience the highest growth in new houses, at around 90 and 20 dwellings per year respectively. In other parts of the District growth in the number of houses is expected to be lower, at around 10 new houses per year.

Much of the expected growth in the number of houses is expected to occur in the Peninsula's popular holiday settlements.

3.4 Strategic Context

Our approach to investing in and managing our infrastructure assets will be guided by Council's vision and values and by our Council outcomes - the outcomes we aim to achieve for our district.

Council's Vision

We will be a leading District Council in New Zealand through the provision of quality services and facilities, which are affordable, and delivered, with a high standard of customer service.

We will earn respect, both as a good community citizen and through our support of community organisations, economic development and the protection of the environment.

Through our actions, the Coromandel will be the most desirable area of New Zealand in which to live, work and visit.

Council's Values

- Displaying empathy and compassion
- Fiscally responsible and prudent with ratepayers money
- Integrity, transparency and accountability in all our actions
- Treating all employees fairly and evenly in accordance with good employer practice
- Being a great place to work where staff are inspired to be the best they can
- Working with and having meaningful and on-going consultation with all of our communities
- Creating strong partnerships with our district's Iwi
- Having pride in what we do
- Being a highly effective and fast moving organisation

Council Outcomes

Our Community Outcomes set out what we want to achieve. On behalf of the Coromandel Peninsula, the Council aims to achieve:

- A prosperous district
- A liveable district, and
- A clean and green district

4. SIGNIFICANT INFRASTRUCTURE ISSUES

4.1 Overview of significant infrastructure issues

Peak Demand

Around 55% of our ratepayers do not live in the District full-time and our population varies significantly at different times of the year. Demand on Thames Coromandel District Council's infrastructure is at its highest during the summer period. This is due to the large proportion of non-resident ratepayers who occupy their holiday homes over this period and to the holiday-makers and tourists who visit the District. The District also experiences fluctuating peaks during popular events held during the non-summer holiday period. During peak periods the population increases to be much larger than the usually resident population. This presents some challenges for how we plan for, and provide, infrastructure and services.

Demand in the tourism industry remains high with projected visitor numbers to the District expected to increase over the next 30 years as is the proportion of houses in the District that are holiday homes. This means that peak demand pressures will continue and may increase slightly over the next 30 years.

Changes in farming, horticulture or the forestry industries in the Thames-Coromandel District could impact on water demand and result in an increase in the traffic volumes, particularly for heavy vehicles. This could result in increased traffic flows on the road network and in increased demand for water over the peak summer period.

Managing demand for services provided by our roading, water supply, wastewater and stormwater assets during peak periods will be critical.

Natural Hazards

The District is exposed to a variety of natural hazards that can result in disruption to services and damage to our assets which can lead to unforeseen and often high costs to remedy these. Significant natural hazards which may affect the Thames/Coromandel District include:

- Flooding
- Severe storm events
- Sea level rise and coastal inundation
- Coastal erosion
- Landslides
- Tsunami
- Drought
- Earthquakes
- Volcanic eruption

The Coromandel ranges attract high intensity rainfall events on a regular basis which makes the Thames-Coromandel District prone to frequent flooding⁴. The Coromandel ranges have short, steep catchments which provide short warning times before flooding.

Predictions suggest that whilst climate change is not expected to create new hazards it may result in increased frequency and intensity of some hazards, such as storm events and flooding, coastal erosion and coastal inundation. Informed and proactive planning now will help to minimise the direct and indirect costs of climate change.

Coastal Erosion and Sea Level Rises

The peninsula's 400 kilometre coastline is subject to coastal processes including erosion and inundation and these are likely to be intensified by the effects of climate change and rising sea levels. The Ministry of Environment highlights⁵ the southern Firth of Thames as an area at risk of coastal inundation due to the effects of sea level rise. Coastal erosion is expected to increase as a result of sea level rise and fluctuations, frequency and magnitude of storm surges, change in tides and rainfall patterns. With a

⁴ www.thamesvalleycivildefence.co.nz

⁵ <http://www.mfe.govt.nz/publications/climate-change/coastal-hazards-and-climate-change-guidance-manual-local-government-n-21>

number of coastal roads and townships around the district, coastal erosion combined with rising sea levels could become a significant issue to infrastructure. This may have an impact on our infrastructure assets particularly in low-lying and coastal areas of the Coromandel District.

Some of our infrastructure is already at increased risk in areas where coastal erosion is occurring. For example, the wastewater outlet pipe at Brophys Beach has been uncovered by recent coastal erosion and is now at increased risk of damage. This may in turn have a negative impact on our water quality and on the health of our communities and natural ecosystems.

Over the next 30 years we are likely to need to protect infrastructure assets from the impacts of coastal erosion and will need to plan carefully before choosing where to locate and build new infrastructure assets to reduce future risks and impacts.

Age and Condition of Assets

The age and condition of our assets affects the level of service that Council can deliver and the likelihood that assets will fail. Regular maintenance, renewal and replacement of our assets are important to ensure that they continue to deliver services and provide the foundation for a prosperous economy and healthy, thriving communities across the District.

Managing our assets for their full-lifecycle requires good integrated planning and good underlying data. Decision-makers need good information about their assets and future asset needs to manage maintenance and renewal needs and to make sound decisions about when to invest in new infrastructure assets⁶. Assessing the condition of many of our infrastructure assets accurately and regularly can be difficult, particularly for those that are underground, like water supply pipes. We have good information about the age and condition of some of our assets, like our roads and footpaths, but need to improve the age and condition information for our 3-Waters infrastructure assets. This will be a focus for Council in the next five years.

The Districts 3-Waters infrastructure is of varying age and condition. A significant portion of the piped networks located in the Thames and Coromandel townships are coming to the end of their useful life, and will require renewal within the 30 year period. The Eastern Seaboard is predominantly newer and as such, there will be limited renewals within these townships over the 30 year period.

The Roding network is on a continual renewal programme to address age and condition deficiencies, and as such this strategy will need to continue over the 30 year period to ensure the levels of service are met.

We will need to ensure that we minimise our costs through the application of good asset management practices and by providing services for the least whole of life cost.

Growth and Demographic Change

Growth in the number of people who live in the Thames-Coromandel District, on a permanent basis, and in the number of new residential dwellings that will be built is expected to be relatively modest over the next 30 years. Where growth will occur differs across the District, with the majority of the growth expected to occur in the Mercury Bay and Coromandel-Colville Community Board areas while the usually resident population is expected to decrease in other parts of the District. Our approach to managing our existing roading, water supply, wastewater and stormwater infrastructure assets will need to take these factors into account.

Different demographic groups have different needs and preferences and this affects demand for infrastructure and services. The demographic characteristics of the Thames-Coromandel District have changed over time and will continue to do so; this means demand for infrastructure and services is also likely to change. As our usually resident population ages, an increasing proportion of our community will be reliant on fixed-incomes and will be less able to absorb increasing costs. We will need to be flexible and responsive to changing preferences and demand for infrastructure and services.

⁶ <http://www.oag.govt.nz/2013/managing-public-assets/docs/managing-public-assets.pdf>

Changing Standards and Service Expectations

The age and condition of our infrastructure can have a negative impact on our environment and on public health. Our existing infrastructure sometimes fails to meet national standards, such as drinking water standards and environmental standards. National standards and expectations around how we treat our environment have changed and are likely to continue to change over the next 30 years. Not all of our current water supply schemes meet the water quality standards introduced in 2005, and revised in 2008. Meeting the drinking water standards will require these water supply schemes to be upgraded or replaced; there would be costs associated with this. Some of our infrastructure assets require resource consents which require assets to meet certain standards or conditions around the impact that they have on our natural environment. As our assets age or when consents are renewed new standards or conditions may be required. If our assets do not meet these conditions there may be costs associated with renewing or upgrading assets so that they comply.

4.2 How our infrastructure issues impact on our assets and options for managing these issues

	Significant Infrastructure Issues	Principle Options for Managing the Issue	Implications of the option(s)
Roads and Footpaths	<p>Security of the road network</p> <p>Some parts of our road network are prone to flooding or slips due to severe storm events and to coastal erosion.</p> <p>Some of our communities, such as Pauanui, have restricted access (or single access) by road and these roads can become blocked.</p> <p>Some of our coastal roads may be damaged or inaccessible in the event of a tsunami.</p>	<p>Ongoing investment, maintenance and renewal activities so that the condition and integrity of the asset is maintained.</p> <p>Minimise reactive renewals by taking a proactive planned approach to renewal of the network.</p> <p>Council maintains a disaster reserve fund for the purpose of remediation of infrastructure after significant weather or emergency events. The predominant use of this fund is for roading assets. A provision of \$500,000 per year has been made to ensure there is sufficient reserves for this purpose.</p>	<p>Extreme weather events continue to cause considerable damage and disruption to our network. The repair and clean up needed to reinstate our infrastructure places considerable financial strain on our resources. Changes in the way in which the new Zealand Transport Agency funds disaster repairs may impact on our ability to fund the repair work associated with disaster events.</p> <p>Risk of communities being cut off in the event of roads being blocked, eroded or damaged, or residents and road facing long detours until access can be restored or damages to roads repaired.</p> <p>In the event of communities being inaccessible by road after a significant event, it may make restoring other critical assets or services difficult and this may pose health and safety risks.</p>

	Significant Infrastructure Issues	Principle Options for Managing the Issue	Implications of the option(s)
Water Supply	<p>Asset age and condition</p> <p>Some parts of our water supply network are ageing and will reach the end of their economic life over the next 30 years.</p> <p>In particular, parts of the Thames South water supply network are nearing the end of its useful life and is in need of renewal.</p> <p>It is likely that the Tairua water treatment plant will be in need of renewal within the next 30 years.</p>	<p>Increase focus on asset management activities such as investigations, data gathering, systems integration, renewal candidate assessments, field verification and capital lead-in works. Improve asset records and information about asset condition.</p> <p>Minimise reactive renewals by taking a proactive planned approach to renewal of the stormwater networks.</p> <p>The following programme of renewal and replacement projects have been planned:</p> <ul style="list-style-type: none"> During the first ten years our programme of renewals focuses on the Thames South water supply network. Approximately \$5.2 million dollars will be invested in renewing the Thames South water supply network and improving service levels to customers of this network Upgrade the Tairua water treatment plant at an estimated cost of around \$1.26 million dollars. We expect to undertake this upgrade in 2033. 	<p>As our water supply assets age they become more likely to be subject to service interruptions or to fail which may affect levels of service and the resilience of our water supply networks.</p> <p>Those parts of our network which are ageing or in poor condition are more likely to leak, meaning that a percentage of all water that we source and or treat is lost. Water leakage increases our operational costs and will intensify the impact of peak demand on our water supply capacity.</p>
	<p>Infrastructure capacity and peak demand</p> <p>Demand on Thames Coromandel District Council's infrastructure is at its highest during the summer period. The District also experiences fluctuating peaks during popular events held during the non-summer holiday period.</p> <p>During peak periods the population increases to be much larger than the usually resident population. This presents some challenges for how we plan for and provide infrastructure and for</p>	<p>Increasing the capacity of our water supply networks to cater for peak demand would be costly and during non-peak periods will result in redundant capacity.</p> <p>Our approach will be to:</p> <ol style="list-style-type: none"> Prioritise demand management to reduce the impact of peak demand on our existing infrastructure assets Ensure that we invest in new infrastructure or increase the capacity of 	<p>If we are unable to effectively manage peak demand in a water supply network it will place pressure on the network and this may impact on:</p> <ul style="list-style-type: none"> our ability to maintain supply and reduced service levels(e.g. consistency and or quality) during peak for that network the condition of the network, resulting in unplanned water interruptions and increased maintenance and renewals costs

	Significant Infrastructure Issues	Principle Options for Managing the Issue	Implications of the option(s)
	<p>how we manage the impact of peak demand on our assets and levels of service.</p> <p>Most of our water supply networks have sufficient capacity to cater for peak demand. However, over the next 30 years, water demand may exceed capacity, during peak demand periods, for some of our water supply networks. For example, based on expected trends, peak demand is likely to exceed capacity for the Tairua water supply network within the next 30 years.</p>	<p>existing infrastructure only where demand is certain and long term</p> <p>To ensure we are able to effectively manage demand we are developing a Water Demand Management Strategy. In developing the strategy we will investigate and develop a suite of demand management tools and techniques that we can use to assist us to manage demand. In the meantime we will continue to use demand management tools, such as water restrictions.</p> <p>Upgrade the Tairua water treatment plant to at an estimated cost of around \$1.26 million dollars. We expect to undertake this upgrade in 2033.</p>	
	<p>Increasing standards</p> <p>Over the next 30 years a number of resource consents relating to our water supply will need to be renewed. For example, around the amount of water that we are allowed to draw from a particular water source.</p> <p>The conditions for new resource consents may not be met based on age, condition and or design of existing infrastructure.</p>	<p>During the next ten years we need to renew the following resource consents and will undertake a programme of renewals to ensure that these schemes meet consent conditions:</p> <ul style="list-style-type: none"> • Thames South - Omahu Water Take • Coromandel Water Takes • Matarangi Groundwater • Matarangi Water Take • Whitianga Water Take • Hahei Groundwater • Whangamata - Manuka Place Groundwater <p>This programme of work is estimated to cost around \$1.15 million. The estimated cost of renewing each resource consent varies depending on our estimate of the level of work required and risk.</p>	<p>Some level of uncertainty exists around whether consent conditions will change over next 30 years and what impact this might have on our water supply and infrastructure assets.</p>

	Significant Infrastructure Issues	Principle Options for Managing the Issue	Implications of the option(s)
	<p>Increasing standards</p> <p>Some of our water supply schemes do not comply with Drinking Water Standards 2005 (Revised 2008)</p>	<p>Over the next ten years we are planning to undertake a programme of work to improve service levels for the Thames, Coromandel, Matarangi, Whitianga, Tairua, Pauanui, Onemana and Whangamata water supply schemes, with the aim of meeting the Drinking Water Standards 2005 (amended 2008).</p> <p>We have budgeted an estimated \$2.93 million to undertake this programme of work.</p>	<p>We have taken a conservative approach when estimating the level of work that will be required to meet the Drinking Water Standards. This approach means that our estimated budgets are high but should be sufficient to achieve compliance.</p> <p>The 2005 (revised 2008) drinking water standards were brought in to improve the quality of drinking water and public health. If we do not undertake this programme of work our communities will not benefit from improved quality of drinking water or enhanced public health.</p>
	<p>Fire Fighting Standards</p> <p>Compliance with Fire Fighting Standards within our reticulated network</p>	<p>If our reticulated water supply networks increases as a result of new connections on the periphery of a networks we:</p> <ul style="list-style-type: none"> • May need to set an urban boundary which means that some (outer) parts of our reticulated networks receive a lower level of service. This is our preferred approach. • Alternatively we may need to increase the capacity of our piped reticulated network and this will have an associated cost 	<p>To reduce risk to communities which are part of our reticulated water supply network but are outside the urban boundary (for the purpose of firefighting standards) we will need to work closely with the Fire Service to ensure that:</p> <ul style="list-style-type: none"> • Service level boundaries are clear and that the Fire Service has adequate information to ensure they are able to appropriately respond depending on locational levels of service <p>Communication between Council, the Fire Service and communities will be key to ensuring preparedness and reducing risk.</p>

	Significant Infrastructure Issues	Principle Options for Managing the Issue	Implications of the option(s)
Stormwater	<p>Asset age and condition</p> <p>Some parts of our stormwater network are ageing. The majority of the Thames network was installed in the 1920s and a significant proportion of this infrastructure is nearing the end of its useful life and is in need of renewal. The Stormwater network in Coromandel township and in some parts of Whitianga are also ageing and in need of renewal.</p>	<p>Increase focus on asset management activities such as investigations, data gathering, systems integration, renewal candidate assessments, field verification and capital lead-in works. Improve asset records and information about asset condition.</p> <p>As our asset information improves we will minimise reactive renewals by taking a proactive planned approach to renewal of the stormwater networks.</p> <p>Our focus for the first few years of the 2015-25 Long-Term Plan to focus on improving our asset information. This will assist us to plan for and prioritise which parts of our networks most need to be maintained and renewed.</p> <p>From 2017/18 to 2024/25 we have set aside a District Renewals budget of between \$0.8 million and \$1.0 million. This budget will be used to fund prioritised renewals.</p>	<p>As our stormwater assets age they become more likely to fail which may affect the resilience of our stormwater networks.</p> <p>Ageing or poor condition stormwater assets may also result in:</p> <ul style="list-style-type: none"> • increased flooding in areas which are low lying and or prone to flooding • increased runoff or untreated stormwater into the natural environment and this may have a negative impact on the quality of our environmental or on public health

	Significant Infrastructure Issues	Principle Options for Managing the Issue	Implications of the option(s)
Wastewater	<p>Increasing standards</p> <p>Over the next 30 years a number of resource consents relating to our wastewater networks will need to be renewed.</p> <p>The conditions for new resource consents may not be met, based on age, condition and/or design of existing infrastructure.</p>	<p>During the next ten years we will need to renew the following resource consents and will undertake a programme of renewals to ensure that these schemes meet consent conditions:</p> <ul style="list-style-type: none"> • Thames Disposal • Oamaru Bay Disposal • Coromandel Disposal • Matarangi Disposal • Cooks Beach Disposal • Hahei Disposal • Onemana Disposal <p>The consent renewal programme of work is estimated to cost around \$1.0 million. The estimated cost of renewing each of resource consents varies depending on our estimate of the level of work required and risk.</p>	<p>Some level of uncertainty exists around whether consent conditions will change over next 30 years and what impact this might have on our wastewater infrastructure assets.</p>
	<p>Asset age and condition</p> <p>Some parts of wastewater network are ageing. A significant number of pipe assets have an unknown construction date or were constructed prior to 1930. The majority of this infrastructure is located in Thames. A significant portion of this infrastructure is now at the end of its useful life and is in need of renewal.</p> <p>A significant amount of wastewater infrastructure was installed as part of residential developments. This development peaked in the 1980s and 1990s on the Eastern Seaboard of the Thames-Coromandel District.</p>	<p>Increase focus on asset management activities such as investigations, data gathering, systems integration, renewal candidate assessments, field verification and capital lead-in works. Improve asset records and information about asset condition.</p> <p>As our asset information improves we will minimise reactive renewals by taking a proactive planned approach to renewal of the wastewater networks.</p> <p>Our focus for the first few years of the 2015-25 Long-Term Plan to focus on improving our asset information. This will assist us to plan for and prioritise which parts of our networks most need to be maintained</p>	<p>As our wastewater assets age they become more likely to be subject to service interruptions or to fail which may affect levels of service and the resilience of our wastewater supply networks.</p> <p>Those parts of our network which are ageing or in poor condition are the natural are more likely to have a negative impact on the quality of our environment on the public health of residents and visitors to the District.</p>

		<p>and renewed.</p> <p>From 2017/18 to 2024/25 we have set aside a District Renewals budget of between \$1.2 million and \$1.8 million each year. This budget will be used to fund prioritised renewals.</p>	
	<p><i>Infrastructure capacity and peak demand</i></p> <p>Demand on Thames Coromandel District Council's infrastructure is at its highest during the summer period. The District also experiences fluctuating peaks during popular events held during the non-summer holiday period.</p> <p>During peak periods the population increases to be much larger than the usually resident population. This presents some challenges for how we plan for and provide infrastructure and for how we manage the impact of peak demand on our assets and levels of service.</p> <p>Most of our wastewater supply networks have sufficient capacity to cater for peak demand. However, over the next 30 years a number of our wastewater schemes, including Matarangi, Cooks Beach and Whitianga, are likely to need to be upgraded or optimised to accommodate projected growth and demand.</p>	<p>Increasing the capacity of our wastewater networks to cater for peak demand would be costly and during non-peak periods will result in redundant capacity.</p> <p>Our approach will be to:</p> <ol style="list-style-type: none"> 3. Prioritise demand management to reduce the impact of peak demand on our existing infrastructure assets 4. Ensure that we invest in new infrastructure or increase the capacity of existing infrastructure only where demand is certain and long term <p>The development of a Water Demand Strategy will also assist with managing wastewater demand as a reduction in water usage tends to also result in a reduction in wastewater.</p> <p>Upgrade the Cooks Beach wastewater treatment plant to at an estimated cost of around \$1.14 million dollars. We expect to undertake this upgrade in 2019/20.</p> <p>Install a balance tank at the Whitianga wastewater treatment plant to cater for expected growth in the short to medium-term, at an estimated cost \$3.37 million. We expect to undertake this work in 2023/24. In the longer-term the Whitianga wastewater treatment plant will be expanded, with the addition of a third reactor, increasing capacity</p>	<p>If we are unable to effectively manage peak demand it will place pressure on the network and this may:</p> <ul style="list-style-type: none"> • reduced service levels during peak for that network • have a negative impact on the condition of the network, resulting in interruptions, increased maintenance and renewals costs, and increase the likelihood of asset failure <p>Wastewater assets which are in poor condition are the natural are more likely to have a negative impact on the quality of our environment on the public health of residents and visitors to the District.</p>

		accommodate projected growth. The addition of a third reactor is estimated to cost around \$12.97 million and we expect to undertake this in 2033.	
Roads and Footpaths, Water Supply, Wastewater, Stormwater	<p>Resilience</p> <p>The resilience of our infrastructure is affected by a range of factors. The impact of infrastructure failure due to natural hazards has been highlighted by the Canterbury earthquakes. The Thames-Coromandel District is subject to a number of natural hazards which can impact on infrastructure networks. These include, storm events, flooding, land slips, coastal erosion and tsunami. Some of these natural hazards are likely to be intensified by the predicted impacts of climate change and rising sea levels.</p> <p>Natural hazards are however, not the only factors which pose a risk to the resilience of our infrastructure networks. The nature of settlement patterns in the District means that we have many small settlements each with separate water supply, waste water and stormwater networks. The nature of these small networks means that they can be vulnerable to service interruptions and or asset failure. For example, many of our water supply networks have single supply pipes from source to treatment plant and if the pipe is damaged supply to all those on the network will be interrupted.</p> <p>The age and condition of our assets also impact on the resilience of networks; with likelihood of service interruption or asset failure increasing where asset condition is poor.</p>	<p>Regular maintenance, renewal and replacement of our assets are important to ensure that they continue to deliver services and provide the foundation for a prosperous economy and healthy, thriving communities across the District.</p> <p>Focus on minimising reactive renewals by taking a proactive planned approach to renewal of the stormwater networks.</p> <p>Managing our assets for their full-lifecycle requires good integrated planning and good underlying data. We have good information about the age and condition of some of our assets, like roads and footpaths, but need to improve the information that we have about the age and condition of our water supply, wastewater and stormwater assets.</p> <p>Focus on building resilient communities that are prepared for and able to manage during service interruptions. This approach is supported by our Civil Defence and Emergency Management group who assist with building resilient, prepared communities.</p> <p>Upgrading or building new assets for the purpose of adding spare capacity to improve resilience would be expensive; we do not believe that this is a practical option in our District.</p> <p>Water network assets are insured to provide additional assurance against the financial impacts of any failure due to natural hazards.</p>	<p>There is a risk of communities:</p> <ul style="list-style-type: none"> • being cut off in the event of roads being blocked, eroded or damaged • being without services, such as water supply, or removal and treatment of sewerage • being placed at risk due to flooding <p>This may result in:</p> <ul style="list-style-type: none"> • health and safety risks • damage to our natural environment • damage to public and private property • little or no access for emergency services and maintenance services

		A natural disasters reserve account is maintained to be used to fund repairs to the roading network. This is increased by \$500,000 per annum.	
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5. INFRASTRUCTURE STRATEGY

Managing networked infrastructure like roads, water supply, wastewater and stormwater with low levels of growth while standards and service level expectations continue to increase and our population fluctuates significantly at different times of the year will be challenging. Finding the right balance between competing demands, preferences and needs against available financial resource, extreme weather events and the rugged topography of the Coromandel ranges are just some of the unique challenges we must manage together.

Our delivery of infrastructure services is through out-sourced contracts for operations, maintenance and capital projects, including renewals while asset management, planning and contract management is delivered from within the Council.

Our approach to ensuring that we manage our existing assets efficiently and effectively and invest in new infrastructure assets wisely will be based on the following principles:

Making best use of our existing infrastructure and ensuring good stewardship of the investment that we have already made

Our approach to the management of existing infrastructure assets will be one of regular, programmed and prudential maintenance.

Managing our assets based on quality information

Managing our assets for their full-lifecycle requires good integrated planning and good underlying data. Decision-makers need good information about their assets and future asset needs to manage maintenance and renewal needs and to make sound decisions about when to invest in new infrastructure assets⁷. This means that we need to collect good data about the condition of our assets and we need to use this information to help us plan when we should maintain, renew or replace assets in a manner consistent with best practice asset management.

Many of our infrastructure assets have long lives and assessing their condition accurately and regularly can be difficult, particularly for those that are underground, like water supply pipes.

Over the next 30 years some of our assets may be at risk from rising sea levels, increased frequency or severity of storm events and or flooding due to climate change. Information about what parts of our district are prone to these types of events and the potential for increased risk is important so that we can understand the risk and plan appropriately.

"Right sizing" our infrastructure assets

Given reliance on growth in properties owned by absentee owners and the high level of uncertainty inherent in these projections we intend to plan for and build major asset renewals or new infrastructure with little redundant capacity. This approach will need to be supported by demand management to ensure that assets are not placed under undue stress during peak demand periods, increasing the risk of asset failure or negative impacts on service levels.

Ensuring that we invest in new infrastructure only where demand is certain and long-term

Much of our current infrastructure has sufficient capacity to meet demand, except at peak times such as over the summer. We will use demand management, workarounds and innovation to manage peak demand, rather than investing in new or additional infrastructure. Given the uncertainty around future growth and demand for infrastructure and services we intend to take a "just-in-time" or "catch up" approach to delivery of additional infrastructure. This means that while we need to continue to plan for and monitor the demand for new infrastructure; investment in new infrastructure will not commence until it is reasonably certain that predicted demand will occur.

Taking a careful approach to adopting increased service levels

⁷ <http://www.oag.govt.nz/2013/managing-public-assets/docs/managing-public-assets.pdf>

Our resident population is expected to decline in some parts of the District and as our population ages we will have more residents with fixed incomes who may not be able to absorb the cost of increased service levels. Increasing service levels can increase the cost of operating and maintaining our assets; we need to assess the long-term costs and benefits before increasing service levels. It may also be difficult to reduce costs in future if population declines and an increased number of households with lower fixed incomes lead to affordability issues.

Taking a careful approach to investing in new infrastructure, primarily, for the purpose of achieving broader objectives

Before investing in new infrastructure assets we will need to carefully assess the expected benefits relative to the cost of building, maintaining and operating the asset. We will also need to be clear about the potential impacts on future affordability over the lifetime of the asset and understand any potential risks or impacts if the expected benefits or broader objectives are not realised.

6. MOST LIKELY SCENARIO FOR MANAGING INFRASTRUCTURE ASSETS

Our most likely scenario is to deliver to current day standards while remaining affordable.

To achieve this scenario over the next 30 years we will focus on:

- maintenance and renewals programmes based on quality information
- priority safety improvements
- a small number of growth related projects
- investment to improve standards and meet consent conditions where necessary
- local network improvements

6.1 Total Expenditure

This strategy covers assets used to provide water supply, wastewater, stormwater drainage, local roads and footpaths. Thames-Coromandel District Council currently owns assets, for the purpose of delivering these activities, estimated at over \$774 million. These range from pipes under the ground to reservoirs and roads.

The table below shows total expected capital and operational expenditure for each infrastructure asset class over the 30 year period between 2015 and 2045.

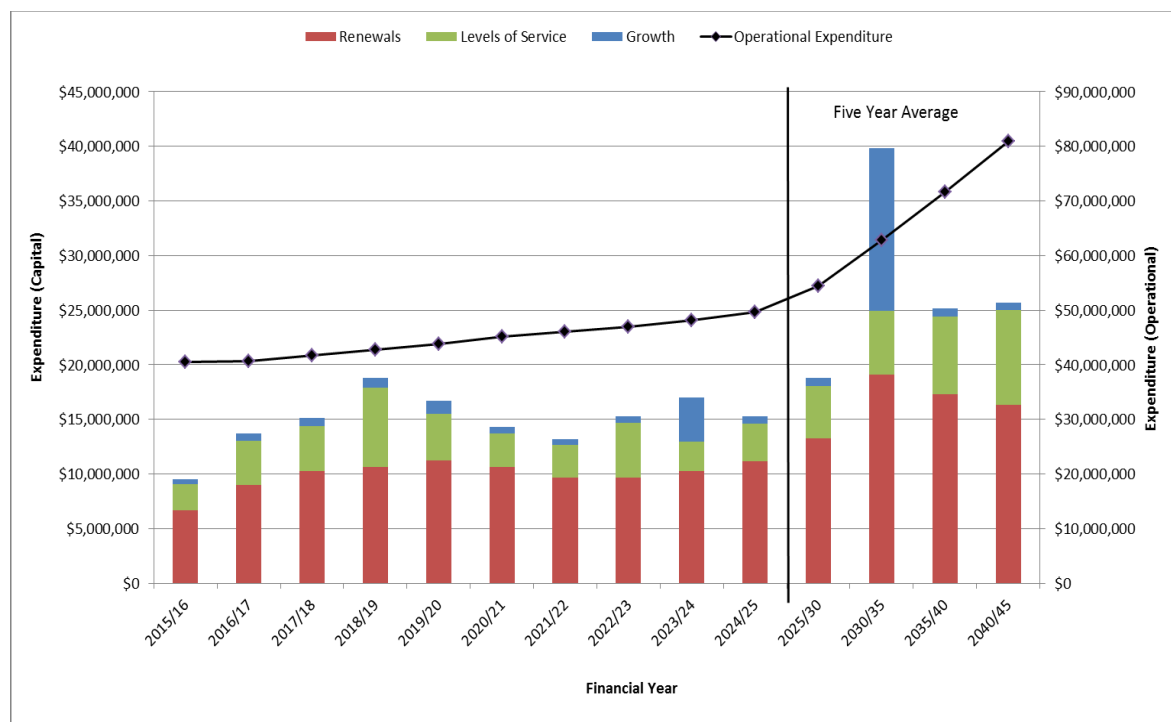
Infrastructure Activity	Capital Expenditure	Operational Expenditure
Roads and Footpaths	\$402 million	\$644 million
Water Supply	\$69 million	\$419 million
Wastewater	\$134 million	\$592 million
Stormwater and Drainage	\$34 million	\$141 million
Total	\$639 million	\$1.8 billion

The figure below shows expected expenditure across the four types of infrastructure assets for the period from 2015 to 2045.

Over the next 30 years we expect that:

- Given future growth estimates there is be limited growth related infrastructure planned. The bulk of growth related infrastructure is planned for 2023/24 and during the 2030/35 period. This expenditure relates to an expansion of the wastewater treatment in Whitianga and to an upgrade of the existing Tairua water treatment plant to cater for projected growth. Further detail about these projects can be found in Section 6.3.
- Operational expenditure, including the costs of labour, depreciation, materials and maintenance accounts for the majority of expenditure.
- Our expenditure on renewals, across all infrastructure categories is variable over the 30 year period. We know that we have ageing water supply, wastewater and stormwater assets in some of our older settlement and these will be the focus of a prioritised programme of work. We also know that we need to improve our asset information to ensure that we plan and prioritise our renewals programme; this will be a focus over the first few years of the strategy.
- Our expenditure on levels of service improvements will see us focusing on a programme of upgrades to our water supply schemes to meet the Drinking Water Standards 2005 (revised 2008) and on optimising service levels at a number of our wastewater treatment plants. In 2018/19 we are also planning to upgrade Wentworth Valley road (\$1.5 million) and construct the Wentworth Valley Cycleway (\$0.93 million).

Further detail about our expected operational and capital expenditure for transport, water supply, wastewater and stormwater is set out in sections 6.4 to 6.7 of this strategy.



6.2 Assumptions

Description	Assumption	Risk
Population growth	<p>Our growth assumptions are based on a low growth scenario. This will result in our usually resident population increasing gradually over the next 30 years; with an expected net increase 0.1% per year</p> <p>The usually resident population of the Mercury Bay Community Board area is expected to increase by around 0.8% per year and the Coromandel-Colville Community Board area is expected to increase by around 0.2%.</p> <p>The usually resident population in the Tairua-Pauanui is expected to decline by around -0.5% per year, Thames by - 0.2% per year and Whangamata by -0.4%</p>	<p>Level of uncertainty: medium</p> <p>Potential impact: if we have underestimated the level or location of population growth we may have insufficient capacity to meet demand and this will place pressure on our assets and networks and may impact on levels of service. If we overestimate the level or location of growth we will have an oversupply of capacity and the cost of servicing our infrastructure networks may become unsustainable given our smaller than expected rating base.</p>
Peak Demand	The summer seasonal peak and peak days will continue based on historical trends and locations	<p>Level of uncertainty: medium</p> <p>Potential impact: if peak demand increases at a rate greater than expected it will place pressure on our networks and this may impact on our ability to maintain levels of service.</p>
Inflation	All costs have been adjusted to include inflation in accordance with the guidelines provided by the Society of Local Government Managers; set out in the BERL <i>Forecasts of Price Level Change Adjustors – 2014 Update</i> .	<p>Level of uncertainty: Medium</p> <p>Potential impact: Variation will impact on expected operational and capital costs and on rating requirements</p>
Vested Assets	Vested assets are assumed to be received by Council in proportion to the growth of the District.	<p>Level of uncertainty: Low</p> <p>Potential impact: A higher level of vested assets than expected would impact on capital and operational costs and on rating requirements</p>
Development Contributions	Any contributions have been included based on estimated growth forecasts. This funding is used to provide growth related asset development.	<p>Level of uncertainty: Medium</p> <p>Potential impact: If growth does not occur or occurs a slower rate than expected this will have an impact on Councils debt levels.</p>
Legislation	The strategy has been developed based on the current the legislative	Level of uncertainty: Medium

Description	Assumption	Risk
	framework and provisions.	Potential impact: The potential impact of legislative change would depend on the nature of the change
Depreciation	Depreciation for water supply, wastewater, and stormwater assets has only been accounted in years 11-30 for significant new works	Level of uncertainty: Low Potential impact: The quantum of depreciation may be understated which may impact on future funding and rates
	Wastewater depreciation will only be fully funded from 2019	Level of uncertainty: Low Potential impact: There is potentially a funding shortfall for asset renewals
Service Levels	Infrastructure provision over the next 30 years will be at current levels of service as contained in the 2014/15 Annual Plan	Level of uncertainty: Medium Potential impact: Infrastructure demand during the summer seasonal peak and over peak days may impact on the ability to maintain levels of service
Infrastructure Programme	The future infrastructure programme is based upon the respective asset management plans and Council continuing to fund at the levels stated in the 2014/15 Annual Plan for the next 30 years	Level of uncertainty: Low Potential impact: Incomplete/outdated asset and financial information may have implications on the forecast asset funding and budgets
Financial Forecasts	Replacement cost, annual depreciation, and depreciated replacement cost are based on assumptions related to asset quantities, construction date, expected life, condition, and unit cost contained in the asset management plans	Level of uncertainty: Low Potential Impact: Incomplete/outdated asset information may have implications on the forecast asset funding and budgets

6.3 Significant Decisions about Capital Expenditure

The table below shows the likely timing and estimated cost of significant capital projects.

	Description	Timing	Estimated Cost
Project: Whitianga Town upgrade			
Most Likely Scenario	Upgrade of Whitianga Town to improve levels of service and renew roading and footpath infrastructure assets.	2015/16 – 2019/20	\$3.14 million over a five year period
Project: Lees Road seal extension⁸			
Most Likely Scenario	Roading project which is being undertaken to improve service levels and to achieve economic development objectives; the project will support the development of the aquaculture industry.	2016/17	\$1.05 million
Project: Stormwater: Sarah Ave, Whitianga			
Most Likely Scenario	To resolve flooding at 8 low-lying properties in Sarah Ave that suffer from flooding and high tide impacts.	2016/17	\$0.74 million
Project: Drinking Water Standards Upgrade Programme			
Most Likely Scenario	Programme of work to improve service levels for the Thames, Coromandel, Matarangi, Whitianga, Tairua, Pauanui, Onemana and Whangamata water supply schemes, with the aim of meeting the Drinking Water Standards 2005 (amended 2008).	2016/17 - 2021/22	\$2.93 million over a six year period
Project: Thames South Water Supply Renewals Programme			
Most Likely Scenario	Programme of renewals and service level improvements to address ageing water supply infrastructure assets in the Thames South network.	2016/17 - 2021/22 and 2024/25	\$5.20 million Over a seven year period
Project: Te Kouma Road intersection⁹			
Most Likely Scenario	Roading project which is being undertaken to improve services levels and to achieve economic development objectives; the project will support the development of the aquaculture industry.	2016/17	\$0.65 million
Project: Windy Point improvements¹⁰			
Most Likely Scenario	Roading renewal which is being undertaken to achieve economic development objectives; the project will support the development of the aquaculture industry.	2016/17	\$1.03 million

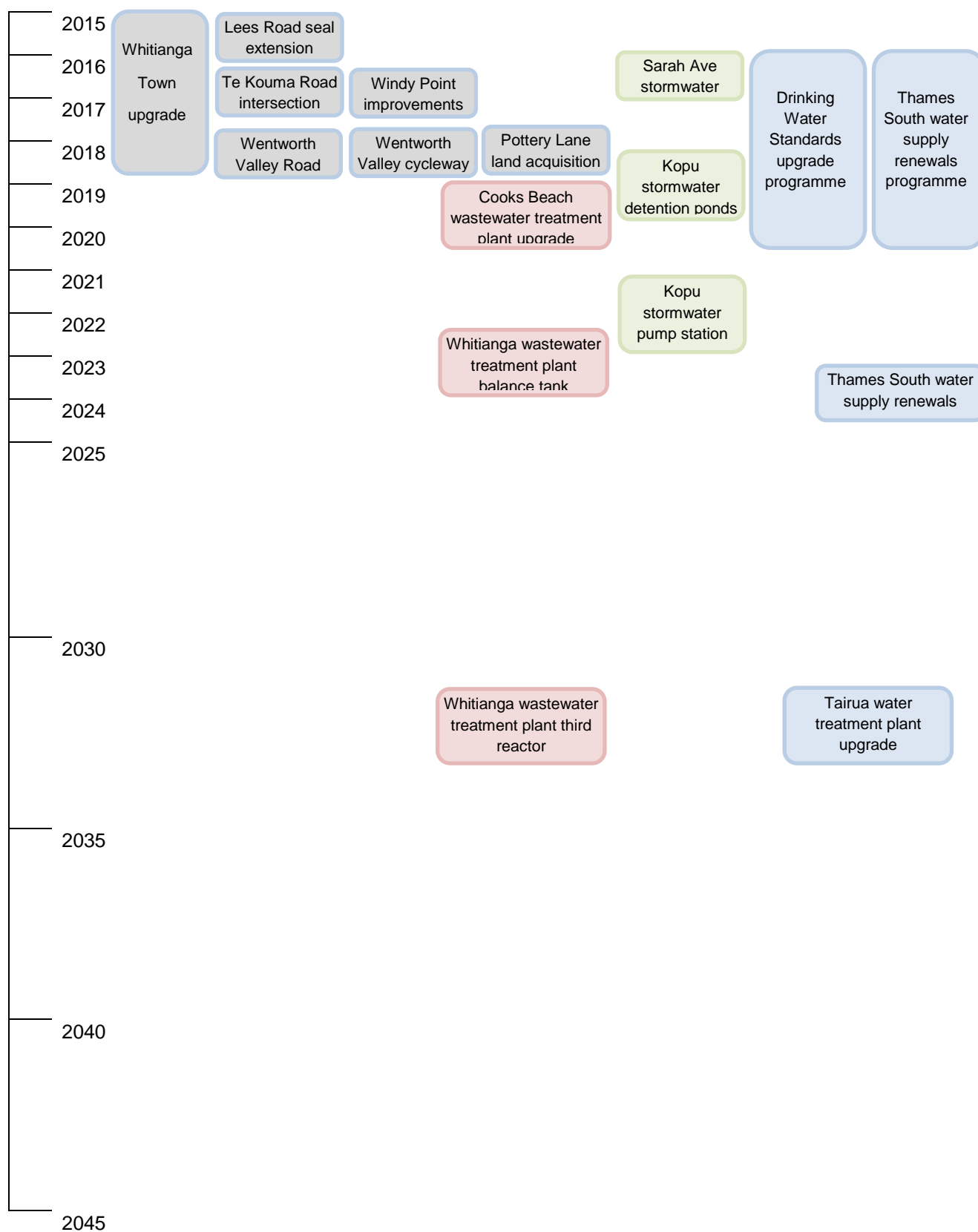
⁸ This project is funded through Councils Economic Development rate and is not included in the Roothing and Footpaths budgets

⁹ This project is funded through Councils Economic Development rate and is not included in the Roothing and Footpaths budgets.

¹⁰ This project is funded through Councils Economic Development rate and is not included in the Roothing and Footpaths budgets.

	Description	Timing	Estimated Cost
Project: Kopu Stormwater			
Most Likely Scenario	Detention ponds	2018/19	\$0.76 million
	Pumpstation	2022/23	\$2.58 million
	These projects will improve potential to develop industrial land. Kopu industrial area is important for District's economy and need adequate access to properties.		
Project: Wentworth Valley Road upgrade			
Most Likely Scenario	Upgrade to Wentworth Valley road to improve service levels and increase capacity to accommodate projected growth.	2018/19	\$1.5 million
Project: Wentworth Valley Cycleway			
Most Likely Scenario	Construction of the Wentworth Valley Cycleway to improve levels of service.	2018/19	\$0.93 million
Project: Coromandel Pottery Lane Service Lane land acquisition and construction			
Most Likely Scenario	Coromandel Pottery Lane Service Lane land acquisition and construction of service lane to improve levels of service.	2018/19	\$1.04 million
Project: Cooks Beach Wastewater Treatment Plant Upgrade			
Most Likely Scenario	Upgrade to increase capacity and likely consent requirement to improve effluent quality.	2019/20	\$1.14 million
	Reduce wastewater discharge impact on waterways.		
Project: Whitianga Wastewater Treatment Plant Balance Tank			
Most Likely Scenario	Defers expansion of the existing Whitianga Wastewater Treatment (Third Reactor), to cater for projected growth.	2023/24	\$3.37 million
Project: Whitianga Wastewater Treatment Plant – Third Reactor			
Most Likely Scenario	Expansion of the existing Whitianga Wastewater Treatment plant to cater for projected growth.	2033	\$12.97 million
Project: Tairua Water Treatment Plant upgrade			
Most Likely Scenario	Upgrade of the existing Tairua Water Treatment plant to cater for projected growth.	2033	\$1.26 million

6.3.1 Major Projects Timeline



6.4 Transport and Footpaths Infrastructure Expenditure

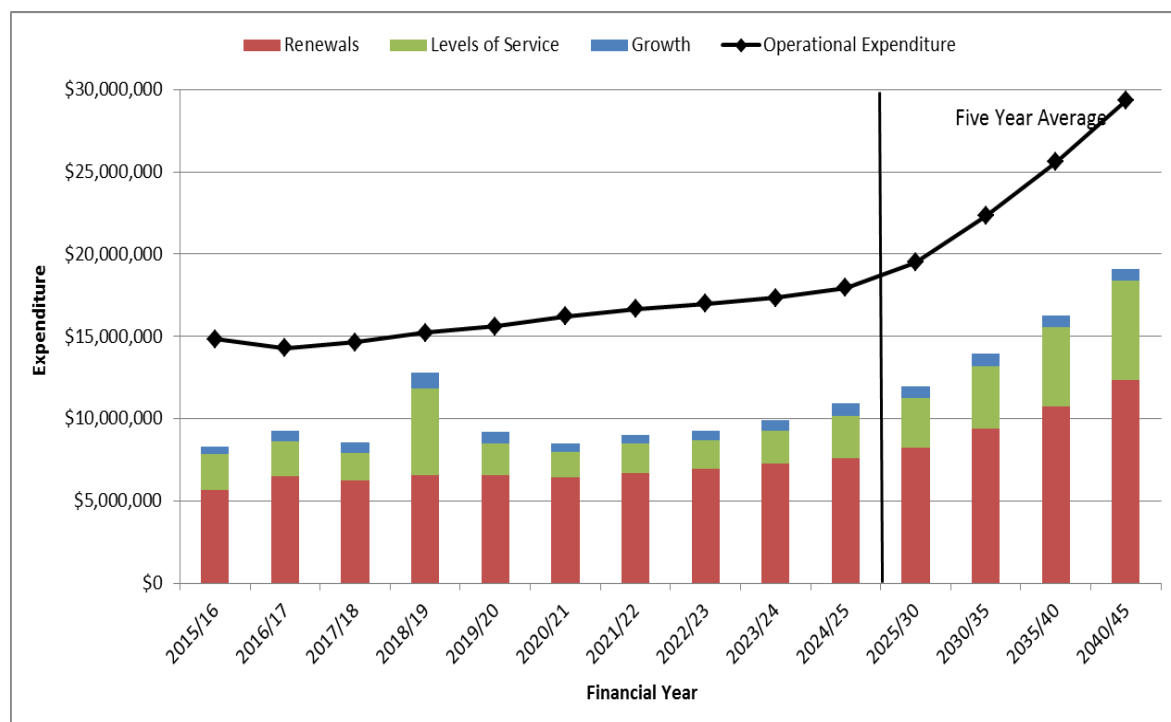
Our road transportation network currently comprises of around 400 kilometres of sealed roads, over 250 kilometres of unsealed roads, and approximately 150 bridges and other associated infrastructure such as signage.

The activity accounts for around 25% of Council's annual budget and our transport assets have a replacement value in excess of \$391 million. Over the years we have made significant investment in the development and improvement of our transportation services and will continue to do so in years to come.

Council is not responsible for the management of the entire roading corridor. State highways are managed by the New Zealand Transport Agency and responsibility encompasses functions that enable people to move around within local communities such as local roads and footpaths.

Over the next 30 years we expect that:

- Operational expenditure, including the costs of labour, depreciation, materials and maintenance accounts for the majority of expenditure.
- Growth related expenditure will be relatively modest and will largely relate to minor safety improvements to ensure that as our roads get busier they remain safe and to a district wide program that will increase the area covered by our network of footpaths.
- There are a number of residential subdivisions where new roads, footpaths and associated infrastructure will be built by the developer and the assets will on completion be vested with Council. Council will then become responsible for the management, maintenance and operational costs of these assets and this will have an impact on our expenditure.
- Expenditure on levels of service improvements vary over the 30 year period, the increased expenditure in 2018/19 includes an upgrade to the Wentworth Valley road (\$1.5 million), the construction of the Wentworth Valley Cycleway (\$0.93 million).

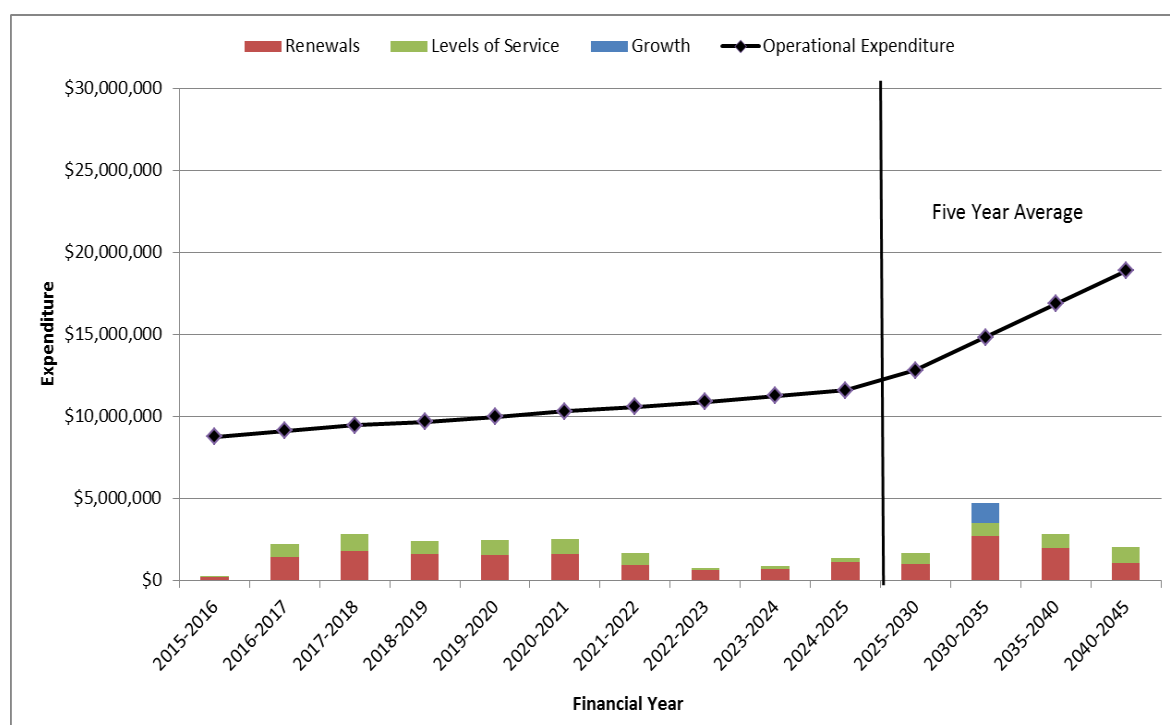


6.5 Water Supply Infrastructure Expenditure

Thames-Coromandel District Council owns and operates nine treated water supply schemes¹¹ and one rural scheme¹² that supply water to domestic, commercial and industrial properties in each of the areas. The water supply networks are managed directly by the Council with operations and maintenance activities contracted to a third party. Thames-Coromandel District Councils water supply assets are valued at around \$137 million. Council's water supply networks include 8 major treatment plants and 3 minor treatment plants distribute water through 596 kilometres of network pipes, 48 reservoirs and 35 pumping stations.

Over the next 30 years we expect that:

- Based on future growth estimates there is limited growth related water supply infrastructure planned. We intend to upgrade the Tairua water treatment plant, to accommodate projected growth, in 2033.
- Operational expenditure, including the costs of labour, depreciation, materials and maintenance accounts for the majority of expenditure.
- Our expenditure on renewals relates to the replacement of infrastructure in our older settlements including planned expenditure of around \$5.2 million over a seven year period in Thames.
- Expenditure on levels of service improvements in the first 10 years relates to a programme of work to upgrade the Thames, Coromandel, Matarangi, Whitianga, Tairua, Pauanui, Onemana and Whangamata water supply schemes to meet the Drinking Water Standards 2005 (revised 2008). This programme of work will cost around \$2.93 million and be undertaken over a six year period from 2016/17 to 2021/22.



¹¹ Thames, Coromandel, Matarangi, Whitianga, Hahei, Tairua, Pauanui, Onemana, and Whangamata

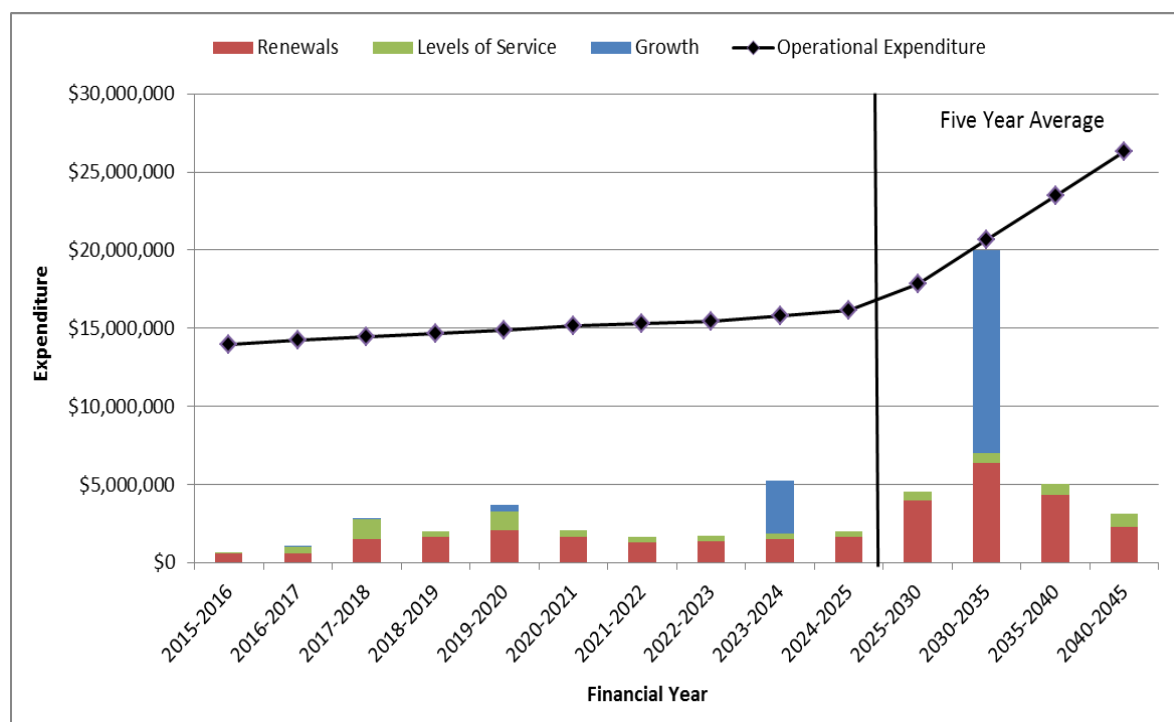
¹² Thames South

6.6 Wastewater Infrastructure Expenditure

Council collects, treats, and disposes of wastewater at ten treatment plants. Each area supplied with a wastewater network has a treatment facility apart from Tairua where wastewater is pumped under the estuary to Pauanui's treatment plant. Thames-Coromandel District Council has wastewater assets valued at \$158.2 million; including ten treatment plants 392 kilometres of network pipes and 131 wastewater pump stations.

Over the next 30 years we expect that:

- Based on future growth estimates we are planning to undertake a number of growth related wastewater infrastructure projects. We intend to upgrade the Cooks Beach wastewater treatment plant, in 2019/20 at a cost of around \$1.14 million. We also intend to spend around \$3.37 million on a balance tank at the Whitianga wastewater treatment plant in 2023/24 and around \$12.97 million on a third reactor in 2033.
- Operational expenditure, including the costs of labour, depreciation, materials and maintenance accounts for the majority of expenditure.
- Our focus in the first few years will be on improving our asset information. This will assist us to plan and prioritise which parts of our wastewater networks most need to be renewed. We have set aside a District Renewals budget which will be used to fund prioritised renewals.
- Expenditure on levels of service improvements will largely be focused on optimising and improving service levels at a number of our treatment plants and pump stations, including the Whitianga pump station at Moewai (at a cost of around \$.51 million in 2017/18), the Hahei Treatment Plant (at a cost of around \$0.28 million in 2017/18) and at the Cooks Beach treatment plant (at a cost of around \$0.70 million in 2019/20)



6.7 Stormwater Infrastructure Expenditure

Thames-Coromandel District Council has stormwater assets valued at \$87.9 million; including 4 stormwater pump stations, 6 detention ponds, 5 soakage cell systems and 198 kilometres of network pipes. Council collects and disposes of stormwater throughout the district. Each area is supplied with their own networks to collect and dispose stormwater into the ocean.

Over the next 30 years we expect that:

- There will be no new or growth related stormwater infrastructure funded directly by Council.
- Operational expenditure, including the costs of labour, depreciation, materials and maintenance accounts for the majority of expenditure.
- Our focus in the first few years will be on improving our asset information. This will assist us to plan and prioritise which parts of our wastewater networks most need to be renewed. We have set aside a District Renewals budget which will be used to fund prioritised renewals.
- Expenditure on levels of service improvements will largely be focused on reducing the risk of flooding in Sarah Ave (at an estimated cost of \$0.59 million in 2016/17) and on reducing the risk of flooding near the Kopu industrial precinct. In Kopu we intend to construct stormwater detention ponds in 2018/19 (at an estimated cost of \$0.76 million) and to construct a Stormwater Pumpstation in 2022/23 (at an estimated cost of around \$2.58 million).

