

Thames-Coromandel District Council

Draft 2018 Infrastructure Strategy

Infrastructure Strategy

Introduction

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

Alongside assets like roads, and water networks, when we think about infrastructure we include social assets like halls, libraries, coastal assets, parks and swimming pools. We include them because like our transport and water infrastructure they are fixed, long-lived assets, they are in Councils domain and the money spent on them influences the overall quality of life for people who live and visit our district¹. Investing in and effectively managing our infrastructure assets accounts for a significant proportion of Council's 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 rich natural value. Our location and the characteristics of our District offer many advantages, attracting people to live and visit the peninsula, but also presents some challenges. Our location, rugged terrain and coastal nature mean that we are susceptible to a range of natural hazards such as storms, coastal erosion, rising sea levels, inundation, landslides and tsunamis. These types of hazards can have an impact on our infrastructure which comes at a cost. Climate change will increase the occurrence and severity of these events.

Our many small communities are diverse. Around 50% of our ratepayers do not live in the District full-time and our population varies at different times of the year. The dispersed nature of the District's settlements means that much of our infrastructure has to be provided separately to the different communities. As expectations around standards and service levels change we will need to consider how we ensure infrastructure and facilities remain fit-for-purpose while ensuring ongoing affordability and financial sustainability.

Purpose

The Infrastructure Strategy provides an overview of the:

- Issues that we have identified as likely to have a significant impact on our infrastructure over the next 30 years
- Options that we have identified for managing each of these issues and the implications of these options
- Significant capital projects that we expect to undertake over the next 30 years.

Our infrastructure strategy at a glance

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
- Managing our assets based on quality information
- "Right sizing" our infrastructure assets
- Ensuring that we invest in new infrastructure only where demand is certain and long-term
- Taking a careful approach to adopting increased service levels.

¹ <http://www.infrastructure.govt.nz/plan/2015/nip-aug15.pdf>

Our infrastructure journey since 2015

In 2015 we completed our first 30-year Infrastructure Strategy, which covered roads and footpaths, water supply, wastewater and stormwater assets, and identified that there were some areas where we could improve how we manage our infrastructure assets. In particular, we acknowledged that we need to improve our understanding of the condition of our water supply, wastewater and stormwater (referred to as the 3-waters) infrastructure assets.

Decision-makers need good information to make sound decisions about how best to manage existing assets and when to invest in new infrastructure assets.

In response to this, we put in place a three year programme of work to improve information about our 3-waters assets. As we progressed with this work, we identified further opportunities to improve asset information and the management of our infrastructure. In particular:

- How we collect, maintain and store asset information across different types of assets was inconsistent and information about some of our asset groups was poor
- The database we were using to store much of our asset information was outdated and no longer fit-for-purpose
- The level of resource dedicated to maintaining and managing our asset data was insufficient
- Responsibility for the management of some of our assets groups, such as community facilities and council buildings, was fragmented across different parts of council; resulting in an inconsistent approach to the management of these assets.

What we have achieved

To address identified issues with our asset data and improve asset management, over the last three years, we have:

- Introduced new asset management software to provide consistent and sustainable management across all of our assets. In addition, to storing information about our assets, the new software enables us to more effectively and efficiently analyse condition and performance information to support asset planning and decision-making.
- Introduced new software that provides real time information on how our water and wastewater treatment plants are operating
- The level of resource dedicated to maintaining and managing our asset data has been increased
- Centralised responsibility for the management of assets; this ensures a consistent approach to how assets are managed and provides opportunities for efficiencies
- Increased focus on the ongoing development of consistent asset management processes and practices to guide how all assets are managed
- Commenced our programme of investigations into underground 3-waters assets. This has included analysis of existing VHS tape of network assets, CCTV of Whitianga and Thames stormwater assets to assess condition and network modelling to assess capacity.

We have made a good start but this Strategy continues to signal that further work is needed.

Infrastructure included in this strategy

This Infrastructure Strategy is prepared under the requirements of section 101B of the Local Government Act 2002 and must cover infrastructure used to provide roads and footpaths, water supply, wastewater, and stormwater. Our Strategy also covers other infrastructure groups, in recognition of the important services that they provide across our District.

This Strategy covers infrastructure assets used to provide the following services:

 Roads and footpaths	 Solid Waste
 Water supply	 Community facilities
 Stormwater	 Coastal assets
 Wastewater	 Corporate and commercial buildings

Thames-Coromandel District Council currently owns assets, for the purpose of delivering these activities, estimated at over \$707 million². These range from pipes under the ground to reservoirs, roads, footpaths, wharves, boat ramps, libraries, and community halls, public toilets, changing rooms, playgrounds, and sports fields.

Some of our assets are defined as “critical assets” – or assets where failure would result in unacceptable consequences. The failure of a critical asset may, for example, have an unacceptable impact on our ability to deliver necessary services, on the health and safety of our communities on our economy, or on the quality of our environment. Key information, including critical assets, about each of the infrastructure types covered in this Strategy is provided in the following section.

Overview of infrastructure assets

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. Critical roading and footpath assets include, bridges and large culverts, retaining structures and traffic signals.

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. Critical water supply assets include water sources, treatment plants, filter stations, pump stations, reservoirs and large trunk mains.

² Asset values in this document are based on market valuation for buildings and depreciated replacement cost for all other assets. Asset values are as at 30 June 2016.



Stormwater

Stormwater is the result of heavy or sustained rainfall resulting in the need to manage the disposal of surface water. The Thames-Coromandel District 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. Critical stormwater assets include stormwater pump stations, detention ponds, soakage cells and large bulk stormwater assets which conveying large quantities of stormwater.



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. Critical wastewater assets include wastewater Treatment Plants, wastewater pump stations and large bulk mains.



Solid waste

The rubbish and recycling activity provides for rubbish to be properly disposed of to protect public health and the environment. The activity also promotes recycling, reuse and resource recovery with the objectives of reducing the amount of waste going to landfill. In addition to a weekly kerbside refuse and fortnightly recyclables collection service, the Council manages closed landfill sites and operates transfer stations where waste and recycling can be dropped off. Critical solid waste assets include the Coromandel, Matarangi, Pauanui, Tairua, Thames, Whangamata and Whitianga refuse transfer stations.



Community facilities

Community spaces and facilities are important to the vibrancy and wellbeing of our local communities. Council provides a wide range of community spaces and facilities including:

- Community centres, halls and libraries which support the social, cultural and educational needs of the community
- Parks, reserves, sports facilities, playgrounds and swimming pools which provide recreation and leisure opportunities
- Public conveniences such as public toilets, changing facilities and showers which provide for the convenience and public health of visitors and residents
- Airfields in Thames and Pauanui which provide for recreational use with some commercial activity; they are also a useful resource in some emergency situations
- Cemeteries which meet the burial, remembrance and heritage needs of the community.

Critical community facilities assets include community facilities and spaces used for civil defence and emergency management purposes, and play grounds and load bearing parks structures.



Coastal assets

Council provides a range of coastal assets including boat ramps, boat trailer parking, wharves, pontoons, seawalls, rock protection and soft assets such as native planting and access routes. Council provides harbour facilities to support recreation, tourism-related activities, commercial fishing and aquaculture. Council also undertakes dune replenishment and beach nourishment to manage the effects of coastal hazards on existing development and infrastructure. Council, along with the Waikato Regional Council, plays a role in planning for and managing the effects of coastal hazards. Critical coastal assets include Hannafords Jetty, Sugarloaf Wharf and Jetty, Thames Wharf, Ferry Landing Wharf, Whitianga Wharf, Whangamata Wharf, the Moanataiari Seawall, including the stormwater pump station and the Whitianga erosion protection wall.



Administrative and Commercial buildings

Council owns a portfolio of administrative and commercial buildings. This includes, administrative buildings and service centres in Thames, Coromandel, Whitianga and Whangamata; which accommodate council staff and provide the public with access to council services. Council also owns a range of buildings that are leased to external parties for a range of uses; including as visitor information centres, Citizens Advice Bureau, clubrooms, the Wintec campus and as business premises. Some of these buildings generate income for Council while others provide premises for the use of community groups and clubs. Critical administrative and commercial building assets include the district administrative building and server room, depots used by key Council roading, waters and waste service providers and the Thames dog pound.

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 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, flooding and low lying areas are at risk of 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 predicted³. 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 Thames-Coromandel District.

³ <https://www.mfe.govt.nz/sites/default/files/preparing-for-climate-change-guide-for-local-govt.pdf>

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 patterns⁴. 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.

Demographic context

Understanding where, how and when the population of the Thames-Coromandel District is likely to change in the future is critical for the effective planning and management of our infrastructure. Different demographic groups have different needs and preferences.

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

Demographic change

The Thames-Coromandel District has an aging population. In 2013 around 27% of our usually resident population was aged 65 and over. 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 around 45%, of the usually resident population, by 2048.

The average household size for the District is also expected to decline across all parts of the District, decreasing from 2.2 residents per household in 2013 to around 2.0 residents per household in 2048.

In general, the income of residents of the District is lower than for New Zealand as a whole. In 2013, 43% of people in the Thames-Coromandel District, aged 15 years and over, had 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 median⁵ personal income 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 expected to increase between 2018 and 2028, followed by a gradual decline in population from 2028 to 2048. Overall, the usually resident population of Thames-Coromandel District is projected to decrease slightly over the next 30 years.

⁴ <http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/coastal-hazards-summary.pdf>

⁵ Half the usually resident population of the District earned more than this amount and half earned less than this amount.

In terms of the geographic spread of growth, the usually resident population of Mercury Bay Community Board is projected to grow, by around 0.5% each year, over the next 30 years. The usually resident population is expected to decline in all other parts of the District over the next 30 years.

Housing and rating unit growth

The number of houses is projected to increase across all parts of the District over the next 30 years; with an increase of around 3,580 new houses between 2018 and 2048. Much of the projected growth in the number of houses is expected to occur in the Peninsula's popular holiday settlements. Tairua and Whitianga are projected to experience relatively strong housing growth, with around 1.2% (23 dwellings) and 0.8% (32 dwellings) per year respectively. Growth in other settlements is expected to occur at a more modest rate of between 0.4% and 0.6% per year.

The proportion of unoccupied dwellings (houses owned by non-resident ratepayers) in our District is projected to increase from 48% in 2018 to around 52% in 2048.

The number of rating units across the District is expected to increase by around 4,135 between 2018 and 2048; an increase of around 0.5% (138 rating units) per year. Growth in rating units is largely driven by housing growth. However, the number of industrial and commercial rating units are projected to increase in all settlements and the number of farming and horticultural rating units are also expected to increase.

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 provide 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.

The Coromandel is a desirable place 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.

Significant infrastructure issues

Overview of significant infrastructure issues

Peak demand

Around half 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 infrastructure is at its highest during the summer period; when the population of the District is estimated⁶ to increase to around five times the normal resident population.

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. This presents some challenges for how we plan for, and provide, infrastructure and services.

Demand in the tourism industry also remains high with projected visitor numbers to the District expected to increase over the next 30 years. This means that peak demand pressures will continue and is likely to increase over the next 30 years.

Managing demand for services and usage of our assets during peak periods will be critical.

Climate change and coastal hazards

Climate change poses an increasing risk to our coastal areas. 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.

Coastal erosion is expected to increase as a result of rising sea levels and fluctuations, frequency and magnitude of storm surges, change in tides and rainfall patterns. Rising sea levels combined with coastal erosion could have a significant impact on our infrastructure assets particularly those in low-lying and coastal areas. Some of our infrastructure is already at risk from coastal hazards.

Rising sea levels could also result in a higher groundwater table, causing salination of low-lying water supplies and reducing how quickly water drains away after rain⁷. This may in turn have a negative impact on our water quality and on the health of our communities and natural ecosystems.

Informed and proactive planning will help to minimise the direct and indirect costs of climate change. Infrastructure planning will need to ensure that future assets are of sufficient standard and have adequate capacity to cater for predicted climate change. Future

⁶ A recent study by Qrious, estimated that during the period between 22 December 2016 and January 22 2017 our population reached a peak of around 126,298 overnight visitors and around 146,456 day visitors.

⁷ <http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/coastal-hazards-summary.pdf>

infrastructure works (to build new or renew existing infrastructure) will need to consider projected sea level rise. Relocation of assets may need to be considered if they are at risk.

Council is currently developing a Coastal Management Strategy to provide strategic direction, enable effective planning and support the adaptation of council assets and services and our coastal communities to coastal hazards. The Council uses guidance and direction from the New Zealand Government to inform how we plan and prepare for the predicted impacts of climate change. The Government has recently released updated guidance, taking into account new scientific information. We are using this to inform our understanding of the risk to our District and how we plan for the likely effects of climate change on our District.

Natural hazards

The District is exposed to a variety of other 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
- Landslides and slips
- 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 significant water ponding and inundation⁸. The Coromandel Ranges have short, steep catchments which provide short warning times before the effects of heavy rain impact; this can be exacerbated by coastal locations and high tides. Predictions suggest that climate change may result in increased frequency and intensity of some hazards, such as storm events and flooding.

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 infrastructure, in particular our critical assets, is 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 assets to manage maintenance and renewal needs and to make sound decisions about when to invest in new infrastructure assets. 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 much of our infrastructure, including for 3-waters, community facilities, administrative and commercial buildings and coastal assets. This will be a focus for Council in the next few years.

⁸ www.thamesvalleycivildefence.co.nz

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.

Limited change is expected in the management of our assets as long term maintenance contracts are in place to ensure continuity of service to set standards. These contracts were secured through the Council's adopted procurement practices.

We have developed fit-for-purpose practice project management systems within Council to ensure we approach the delivery of service to maintain assets and build new assets in a professional manner. These systems will be continually reviewed and revised.

Growth and demographic change

Growth in the number of people who live in the Thames-Coromandel District, on a permanent basis is not expected to change much and growth 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 area while the usually resident population is expected to stay the same or decrease in other parts of the District. Our approach to managing our 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. Our usually resident population is ageing, but many of those who visit our District during the year are younger and have different needs and preferences; we will need to balance the needs of our aging resident population with the expectations and preferences of our non-resident ratepayers and visitors.

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 need to be flexible and responsive to changing preferences and demand for infrastructure and services.

Changing standards and service expectations

The age and condition of our infrastructure can have a negative impact on our environment and on public health. Some of our existing infrastructure sometimes fail to meet national standards, environmental standards or the expectations of our community.

National standards and expectations around how we treat our environment have changed and are likely to continue to change over the next 30 years. Some of our infrastructure assets need resource consents, which require assets to meet certain standards or conditions around the impact that they have on our natural environment. For example, resource consents place restrictions on the amount of water we are allowed to draw from a water supply source and on the impact that stormwater and wastewater discharges have on our environment and water quality. As our assets age or when resource consents are renewed new standards or conditions may be required. If our assets do not meet these conditions there are likely to be costs associated with renewing or upgrading assets so that they comply with higher standards.

National standards require that buildings owned by Council meet standards, including how they would perform in the event of an earthquake. A new national system for identifying and managing earth-quake prone buildings was introduced in 2017 and this may require us to upgrade some buildings to ensure we meet standards and protect people from harm.

As the expectations, preferences and demands of our communities for different types of services change we will need to consider how we ensure infrastructure and facilities remain fit-for-purpose while ensuring ongoing affordability and financial sustainability.

Infrastructure strategy

Managing infrastructure with modest growth while standards and service level expectations continue to increase and our population fluctuates significantly at different times of the year is 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.
- As all assets eventually need to be replaced, we will identify the most cost-effective time to renew assets, while maintaining service levels and managing risk.

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 assets¹⁰. This means that we need to collect good data about the condition of our assets; 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 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

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 our 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.

Linkage to other strategies and plans

This Strategy is closely linked with the Council’s financial strategy. The financial strategy sets the direction for Council’s finances over the next ten years and describes how we intend to pay for the services and infrastructure we provide to our communities in way which is affordable and sustainable now and in the future. Council’s financial strategy signals that, in relation to infrastructure, our future approach will be to:

Future proof the District’s infrastructure:

- Have the capacity to fund improvements for potential increases in quality standards for key infrastructure.
- Have capacity to fund expansion of our current networks subject to affordability.
- Rebuild and maintain Council’s disaster reserve to address damage from recent events and have provision for future events.

Address the past under delivery in asset management:

- Improve our levels of asset maintenance and renewals, especially for some of our community facilities and property assets.
- Commence asset management of 24 Council owned roads that have previously be unmaintained by Council (referred to in this strategy as the road maintenance extents programme).

Council is responsible for renewing assets to ensure best value from the asset for the benefit of ratepayers now and in the future. We do this by funding the depreciation on our assets to


build up depreciation reserves which we use to fund the renewal of our assets. This ensures that all generations that enjoy the benefits from these assets pay a share of the capital cost. In the past we have sometimes utilised these reserves for building new assets which has reduced the cost for today's ratepayers but has also reduced the reserves available for renewals.

We intend to stop using the depreciation reserves for funding new assets to ensure that we have appropriate reserves in place for our future renewals programme. This means that in the future all new assets (ones that are not replacing an old asset) will be loan funded. Funding new assets through debt allows us to ensure that future residents and ratepayers contribute a fair share towards the cost of the assets that they use. However, we need to be careful not to overburden future ratepayers by living beyond our means today.


Our Infrastructure Strategy is also informed by and provides strategic direction to our asset management plans


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


Roads and Footpaths



Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Security of the road network</p> <p>Some parts of our road network are prone to erosion, flooding or slips due to severe storm events and coastal erosion.</p> <p>Some of our communities, such as Pauanui, have restricted 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>Our local road network is reliant on the resilience and operation of the state highways.</p>	<p>Minimise reactive renewals by taking a proactive planned approach to renewal of the network.</p> <p>Ongoing investment, maintenance and renewal activities to ensure that the condition and integrity of the asset is maintained.</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.</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.</p> <p>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>There is a risk of communities being cut off in the event of single access roads being blocked or damaged; or residents may face long detours until damage to roads is repaired and access is restored.</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>


Water Supply

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<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, some parts of the Thames South water supply network is 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>Many of our water supply networks are reliant on single supply pipes; meaning that damage to or failure of these assets results in significant service disruption. It is important that we understand the condition of and take a proactive approach to maintenance and renewals of these types of critical assets.</p>	<p>Improve asset records and information about asset condition. Increase focus on asset management activities such as investigations, data gathering, systems integration, renewal candidate assessments, field verification and capital lead-in works.</p> <p>Minimise reactive renewals by taking a proactive planned approach to renewal of the water supply networks.</p> <p>The following programme of renewal and replacement projects have been planned:</p> <ul style="list-style-type: none"> • A programme of renewals focusing on the Thames South water supply network has commenced. Further work is planned with, approximately \$3.06 million still to 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 \$1.04 million dollars. We expect to undertake this upgrade in 2033/34. 	<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>



Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<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>This presents 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 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>Increasing the capacity of our water supply networks to cater for peak demand would be costly and during non-peak periods would result in redundant capacity.</p> <p>Our approach will be to:</p> <ul 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 existing infrastructure only where demand is certain and long term. <p>To ensure we are able to effectively manage demand we have developed a Water Demand Management Strategy. The Strategy provides a suite of demand management tools and techniques that we can use to assist us to manage demand.</p> <p>Upgrade the Tairua water treatment plant, 2033/34, at an estimated cost of around \$1.04 million dollars.</p>	<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. <p>Demand management requires cooperation from our residents and visitors to succeed.</p>

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<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 and the standards that we are required to meet are likely to change. For example, the amount of water that we are allowed to draw from a particular water source may change.</p> <p>The conditions for new resource consents may not be met based on age, condition and or design of existing infrastructure.</p> <p>In 2017 the government released a revised National Policy Statement on Freshwater Management (NPS-FM) which aims to improve freshwater quality over time. This is likely to have an impact on the conditions that we are required to meet when water supply consents are renewed.</p>	<p>A programme of renewals will be undertaken to ensure water supply schemes meet consent conditions.</p> <p>This programme of work is estimated to cost around \$0.82 million over the next ten years. The cost of renewing each resource consent varies depending on the level of work required.</p>	<p>Direction set out in the 2017 NPS-FM is likely to have an impact on resource consent conditions; however, the extent of impact is not yet clear.</p> <p>The Waikato Regional Council is undertaking work to consider how they will respond to directions set out in the NPS-FM and this work will determine to what extent and when water supply resource consent conditions will change. This will impact on when and what level of expenditure is required.</p> <p>Some level of uncertainty exists around whether other policy or standards will impact on resource consent conditions over next 30 years and what impact this might have on our water supply and infrastructure assets.</p>



Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
 <p>Increasing standards</p> <p>Some of the Council water supply schemes do not comply with the Drinking Water Standards 2005 (Revised 2008).</p>	<p>Our 2015 Infrastructure Strategy acknowledged that not all Council water supply schemes complied with Drinking Water Standards and some work to improve service levels has been undertaken over the last three years.</p> <p>Over the next three years we are planning to undertake a programme of further work to improve service levels, with the aim of meeting the Drinking Water Standards. We have budgeted an estimated \$15.83 million to undertake this programme of work.</p>	<p>The 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 and we will not comply with the Drinking Water Standards.</p>
 <p>Increasing standards</p> <p>Some developments and settlements in our District have private water supply schemes. These may not comply with the Drinking Water Standards.</p>	<p>Some of these private water supply schemes may be vested in or transferred to Council within the next few years.</p> <p>For schemes that are transferred to Council, it is likely that some level of investment will be required to improve service levels and ensure that these supply systems meet the Drinking Water Standards.</p> <p>The cost to upgrade these schemes will vary depending on the level of work required to meet standards. A programme of investigations, to identify the level of work required to meet standards, estimated costs and timing, will be undertaken.</p>	<p>If private water supply schemes are not transferred to council and we do not undertake work to ensure these schemes comply with standards these communities will not benefit from improved quality of drinking water or enhanced public health.</p> <p>The costs associated with improving service levels, with the aim of meeting the Drinking Water Standards, of private schemes vested in or transferred to Council are unknown until we have undertaken further investigations.</p>


Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
 <p>Fire Fighting Standards</p> <p>Compliance with Fire Fighting Standards within our reticulated network.</p>	<p>If our reticulated water supply networks increase as a result of new connections on the periphery of a network 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>We have known constraints and issues in some parts of our water supply networks and will continue to undertake modelling to identify where there are issues. Options for managing these issues can then be tailored to the specific network.</p>	<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 • Communication between Council, the Fire Service and communities will be key to ensuring preparedness and reducing risk.

Stormwater



Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Asset age and condition</p> <p>Some parts of our stormwater network are ageing.</p> <p>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.</p> <p>The Stormwater network in Coromandel township and in some parts of Whitianga are also ageing and in need of renewal.</p>	<p>Continue to focus on improving our asset information and on asset management activities such as investigations, data gathering, systems integration, renewal candidate assessments, field verification and capital lead-in works.</p> <p>This will assist us to plan for and prioritise which parts of our networks most need to be maintained and renewed.</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>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.
<p> Increasing standards</p> <p>Our comprehensive stormwater discharge consent expires in 2031 and will need to be renewed.</p> <p>National standards, such as those set out in the NPS-FM and the New Zealand Coastal Policy Statement, and regional standards that we must meet are increasing, for example in relation to the impact that stormwater discharges have on water quality.</p> <p>The conditions for new resource consents may not be met, based on age, condition and/or design of existing infrastructure.</p>	<p>A programme of renewals will be undertaken to ensure that wastewater schemes meet resource consent conditions.</p> <p>The actual cost of renewals will vary depending on our estimate of the level of work required, to meet standards, and risk.</p>	<p>The 2017 NPS-FM is likely to have an impact on our comprehensive stormwater consent conditions; however, the extent of impact is not yet clear.</p> <p>The Waikato Regional Council is undertaking work to consider how they will respond to the NPS-FM and is also undertaking a review of the Waikato Regional Plan and Regional Coastal Policy. This work will determine to what extent and when resource consent conditions will change. This will impact on when and what level of expenditure is required.</p> <p>Some level of uncertainty exists around how much standards and consent conditions will change over next 30 years and what impact this might have on our wastewater infrastructure assets.</p>


Wastewater

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Asset age and condition</p> <p>Some parts of wastewater network are ageing.</p> <p>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 has been 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>Continued 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>Improved asset information will also assist us to plan for and prioritise which parts of our networks most need to be maintained and renewed.</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 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> 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 national standards, such as those set out in the NPS-FM and the New Zealand Coastal Policy Statement, and regional standards that we must meet are increasing.</p> <p>The conditions for new resource consents may not be met, based on age, condition and/or design of existing infrastructure.</p>	<p>A programme of renewals will be undertaken to ensure that wastewater schemes meet consent conditions.</p> <p>The consent renewal programme of work is estimated to cost around \$1.19 million over the next ten years. The actual cost of renewing each of resource consents will vary depending on our estimate of the level of work required and risk.</p>	<p>The 2017 NPS-FM is likely to have an impact on our wastewater resource consent conditions. The Waikato Regional Council is undertaking work to consider how they will respond to the NPS-FM and is also undertaking a review of the Waikato Regional Plan and Regional Coastal Policy; this work will determine to what extent and when resource consent conditions will change. This will impact on when and what level of expenditure is required.</p> <p>Some level of uncertainty exists around how much standards and consent conditions will change over next 30 years and what impact this might have on our wastewater infrastructure assets.</p>


Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<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>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 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. Our approach will be to:</p> <ul style="list-style-type: none"> • Prioritise demand management to reduce the impact of peak demand on our existing infrastructure • Ensure that we invest in new infrastructure or increase the capacity of existing infrastructure only where demand is certain and long term. <p>We plan to upgrade the Matarangi wastewater treatment plant at an estimated cost of \$11.32 million. We expect to undertake this upgrade from 2020/21 to 2024/25.</p> <p>We plan to 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 \$4.23 million. We expect to undertake this work in 2022/23 and 2023/24. In the longer-term the Whitianga wastewater treatment plant will be expanded, with the addition of a third reactor, increasing capacity to accommodate projected growth. The addition of a third reactor is estimated to cost around \$11.30 million and we expect to undertake this in 2033/34.</p>	<p>If we are unable to effectively manage peak demand in it will place pressure on the network and this may:</p> <ul style="list-style-type: none"> • Reduce service levels during peak • 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 more likely to have a negative impact on the quality of our environmental and on the public health of residents and visitors to the District.</p>



Solid waste

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Peak demand</p> <p>During peak periods the population of our District increases to be much larger than the usually resident population and this has a significant impact on demand for solid waste services.</p> <p>This presents some challenges for how we plan for and provide solid waste services to manage the impact of fluctuating demand during the year.</p>	<p>To meet increased demand, during peak summer periods, Refuse Transfer Stations are open longer hours and the frequency of kerbside rubbish and recycling collection services are increased.</p> <p>Undertake a full review of waste services to improve our understanding of demand for waste services across our District; this will assist us to focus our efforts and to meet the goals set out in our Waste Management and Minimisation Plan.</p>	<p>Failure to manage peak demand for services results in customer complaints and dissatisfaction with our solid waste service. This could result in increased usage of private solid waste services; undermining the cost-effective operation of councils solid waste service. It could also result in increased fly-tipping or illegal dumping of waste.</p>
<p> Age and condition of assets</p> <p>Some of our solid waste infrastructure, in particular our Refuse Transfer Stations, have now deteriorated to the point where they no longer meet service expectations. The Whitianga Refuse Transfer Station, for example, is our busiest and is now in poor condition and is no longer fit-for-purpose.</p> <p>The condition of our Refuse Transfer Stations is also impacting on our ability to achieve the goals set out in our Waste Management and Minimisation Plan.</p>	<p>A programme of renewals will be undertaken at Refuse Transfer Stations to replace pavements, compactors, weighbridges and other assets. Litter bins, drop off points and waste compactor pods also need to be renewed.</p> <p>Redevelop the Whitianga Refuse Transfer Station, to improve service levels at a cost of \$1.95 million. The redevelopment is most likely to occur on the existing site, and include a new site for greenwaste and hardfill next to the Whitianga Wastewater Treatment Plant.</p>	<p>If we do not undertake this programme of work, service levels will be reduced, health and safety risks are likely to increase and we may not be able to achieve the goals set out in our Waste Management and Minimisation Plan.</p>


Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Changing standards and expectations</p> <p>We have a District-wide service level which is difficult to maintain in some parts of our District, particularly at the top of the peninsula, and this may become more of an issue as service expectations change over time.</p> <p>Over the summer peak, non-resident ratepayers and visitors to the District are unfamiliar with our services and can have higher expectations.</p> <p>Some of our Refuse Transfer Stations are in residential areas; these sites generate noise, particularly over the summer peak season, and this impacts on those who live nearby.</p> <p>We have a number of closed landfills and Refuse Transfer Stations. These need resource consents which require us to meet certain conditions or standards, for example in relation to the control of dust and ongoing environmental impacts. Overtime the standards which our closed landfills must comply with may change.</p>	<p>Our solid waste service is delivered through a joint contract with the Eastern Waikato Councils; effective management of this contract is our key strategy for ensuring service levels are met.</p> <p>Undertake a full review of waste services to improve our understanding of demand for waste services across the District. This will inform what services we procure in the future, through our joint Eastern Councils Solid Waste Services Contract.</p> <p>To meet increased demand, during peak summer periods, Refuse Transfer Stations are open longer hours and the frequency of kerbside rubbish and recycling collection services are increased.</p> <p>Take the effects of noise into account when determining the location of Refuse Transfer Stations.</p> <p>Ongoing monitoring of closed landfills and Refuse Transfer Stations to ensure continued compliance with current resource consent conditions. In the event that consent conditions or standards change, monitoring information will assist us to identify options for meeting new standards.</p>	<p>If we do not manage changing standards and expectations it could:</p> <ul style="list-style-type: none"> • Result in increased dissatisfaction with our solid waste services • Result in increased usage of private solid waste services; undermining the cost-effective operation of councils solid waste service • May have negative effects on the health and amenity of residents who live near our Refuse Transfer Stations • Have a negative impact perceptions of the quality of our natural environment.


Community facilities

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Peak demand</p> <p>During peak periods the population of our District increases to be much larger than the usually resident population.</p> <p>Usage of community facilities such as parks and reserves, playgrounds and public conveniences, is at its highest during the summer period. The District also experiences fluctuating peaks on long weekends and popular events during the non-summer holiday period.</p> <p>This presents some challenges for how we plan for and provide community facilities and for how we manage the impact of peak demand on our assets and levels of service.</p>	<p>Increasing capacity to cater for peak demand would be costly and during non-peak periods could result in facilities being poorly used.</p> <p>Our approach will be to improve our understanding of demand for and usage of our community facilities. This will assist us to:</p> <ul style="list-style-type: none"> • Understand and manage demand for our community facilities • Ensure that we invest in new infrastructure or increase the capacity of existing infrastructure only where demand is certain and long term • Investigate alternative options for meeting peak demand, for example, portable toilets to meet peak demand rather than building additional public conveniences <p>Cleaning frequency of facilities such as public conveniences is increased over the peak summer season to cater for additional demand.</p>	<p>If we are unable to effectively manage peak demand in it will place pressure on some of our existing community facilities:</p> <ul style="list-style-type: none"> • Reducing service levels during peak periods • Have a negative impact on the condition of community facilities, resulting in increased maintenance and renewals costs. <p>Community facilities which are in poor condition are more likely to fail, increasing risk to the safety of residents and visitors to the District.</p>



Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Age and condition of assets</p> <p>Our portfolio of community facilities varies in age and condition, some are nearing the end of their economic life or are now in poor condition. The Thames Aquatic Facility is for example, now nearing the end of its life and must be relocated from the current site.</p> <p>The information that we have on the condition of some of our community facilities is limited.</p> <p>The management of some of our community facilities has in the past been fragmented and this has resulted in inconsistent approaches to maintenance and renewals.</p>	<p>Focus on improving information about the condition of our community facilities and about how and when they are used. This will assist us to plan for and prioritise which community facilities most need to be maintained and renewed. As our asset information improves we will minimise reactive renewals by taking a proactive planned approach to renewal of the renewal of community facilities.</p> <p>A number of options for the replacement of the Thames Aquatic facility have been considered. The most likely option is the development of a jointly funded sub-regional aquatic facility at an estimated cost of around \$21.10 million. This option would depend on funding from external parties.</p>	<p>If our community facilities are in poor condition:</p> <ul style="list-style-type: none"> • We may not be able to meet service levels and residents and visitors will stop using our facilities • Some facilities could become unsafe and may need to be closed.
<p> Growth and demographic change</p> <p>Different demographic groups have different needs and preferences and this affects demand for infrastructure and services.</p> <p>Our usually resident population is ageing. However, the demographics of those who visit our District over our summer peak season are different. Over the next 30 years growth in our resident population will be modest, but we expect the number of non-resident ratepayers and visitors to increase.</p> <p>This presents challenges around how we plan for and balance the needs of our aging resident population with the expectations and preferences of our non-resident ratepayers and visitors.</p>	<p>Our approach will be to:</p> <ul style="list-style-type: none"> • Improve our understanding of how our facilities are used and how demand for services differs during peak and non-peak periods • Consider how existing facilities can meet new demand before developing new facilities • Explore potential options to meet demand including optimisation and multiple-use of existing facilities, re-purposing of existing facilities that are no longer meeting needs, partnerships and non-asset solutions • Ensure decisions are based on robust evidence and that demand is certain and long-term. 	<p>If our facilities do not meet the preferences of non-residents and visitors it could result in dissatisfaction with council facilities. Some visitors may choose to visit other areas; and this may impact on our economy.</p> <p>If we build facilities to meet the preferences for non-residents and visitors, these could be under-utilised during the year and increase operational and maintenance costs.</p>

Coastal assets


Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
<p> Peak demand</p> <p>Recreational usage of harbour facilities like boat ramps and wharves, is at its highest during the summer period.</p> <p>Some of our harbour facilities are also used for commercial purposes; seasonal peaks in commercial activities combined with peak recreational usage can cause frustration for users and places assets under pressure.</p> <p>This presents some challenges for how we plan for and provide harbour facilities and for how we manage the impact of peak demand on our assets and levels of service.</p> <p>There are also congestion issues at Whitianga Wharf that need to be addressed in the longer-term.</p>	<p>Increasing capacity to cater for peak demand would be costly and during non-peak periods may result in redundant capacity.</p> <p>Our approach will be to ensure that we invest in new infrastructure or increase capacity only where demand is certain and long term. We are planning to:</p> <ul style="list-style-type: none"> • Undertake a renewal and extension of the Royal Bill Point Boat ramp, the Pauanui Wharf pontoon and access bridge to alleviate congestion, improve service levels and address issues with asset condition • Develop a new Whitianga boat ramp reclamation, new tourist boat berthage and public recreation areas to separate conflicting activities and reduce health and safety issues. <p>Manage demand by providing information about our facilities and through pricing mechanisms.</p>	<p>If peak demand for our harbour facilities is not managed:</p> <ul style="list-style-type: none"> • It may place harbour facilities under pressure and some could become unsafe and may need to be closed • We may not be able to meet service levels • Residents, visitors will stop using our facilities • Commercial operators may stop using our facilities and some may relocate their operations to other areas; having a negative economic impact on our District.

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
 <p>Age and condition of assets</p> <p>Our portfolio of coastal assets varies in age and condition and some of our assets are now nearing the end of their economic life and are in need of renewal.</p> <p>The information that we have on the condition of some of our coastal assets is limited.</p> <p>The management of coastal assets has in the past been fragmented and this has resulted in inconsistent approaches to maintenance and renewals.</p>	<p>Focus on improving information about the condition of our assets and about how and when they are used. This will assist us to plan for and prioritise maintenance and renewals.</p> <p>As our asset information improves we will minimise reactive renewals by taking a proactive planned approach to renewals.</p> <p>We plan to undertake:</p> <ul style="list-style-type: none"> • A total replacement of the Thames Wharf to improve the condition of the Wharf • Remedial works on the Coromandel Wharf to improve condition. 	<p>If our harbour facilities are in poor condition or are no longer fit-for-purpose:</p> <ul style="list-style-type: none"> • Some of our harbour facilities could become unsafe and may need to be closed • We may not be able to meet service levels • Residents, visitors will stop using our facilities • Commercial operators may stop using our facilities and some may relocate their operations to other areas; having a negative economic impact on our District.


Corporate and commercial buildings

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
 <p>Age and condition of assets</p> <p>Some of our administrative and commercial buildings are older and our asset records and information about the condition of some of these buildings is poor.</p>	<p>To support effective management and enable sound decision making, improve asset records and information about asset condition. Minimise reactive renewals by taking a proactive planned approach to renewal.</p> <p>A programme of comprehensive condition assessments is underway to evaluate the condition of our administrative and commercial buildings. This will improve our asset data and inform the development of a prioritised programme of renewals.</p> <p>Review property holdings to ensure that they continue to reflect the current and future needs of the District, taking into account the need to balance affordability with the long-term contribution that a property makes to the achievement of Councils objectives.</p>	<p>Buildings which are in poor condition may pose risks to health and safety and may need to be closed if not fit for purpose and safe to use.</p> <p>The condition of our administrative buildings may impact our ability to deliver uninterrupted services.</p> <p>Balancing affordability with the long-term contribution that a building makes to the achievement of Councils objectives may require some hard decision in the future.</p>
 <p>Changing standards and expectations</p> <p>A new national system for identifying and managing earth-quake prone buildings was introduced in 2017 and this may require us to upgrade some buildings to ensure we meet standards and protect people from harm.</p> <p>Building standards and regulations change over time in response to new information and new legislation, such as the 2014 Health and Safety at Work Act, can change the standards that the buildings we own need to comply with.</p>	<p>A programme of assessments is underway to establish the earthquake rating of our administrative and commercial buildings and if seismic strengthening work is required.</p> <p>The timing for our programme of assessments and for any seismic strengthening will be in accordance with the requirements of the national system for identifying</p> <p>Minimise reactive renewals by taking a proactive planned approach to renewal.</p>	<p>In the event of an earthquake, buildings that do not meet seismic standards could have significant impact on public safety.</p> <p>If administrative or commercial buildings require seismic strengthening work, to meet standards, investment will be required.</p> <p>Balancing affordability with the long-term contribution that a building makes to the achievement of Councils objectives may require some hard decision in the future.</p>

All infrastructure assets covered by this strategy

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
 <p>Climate change and coastal hazards</p> <p>Some of our existing infrastructure is in low lying and or coastal areas and will be prone to the effects of rising sea levels, coastal erosion and inundation.</p> <p>Coastal inundation, storm surges and rising sea levels are expected to result in the degradation of the coast in parts of our District. Council needs to be able to plan for and manage the effects of coastal hazards such as erosion and inundation. There is poor information of coastal erosion risks for the peninsula as a whole and in particular for the west coast.</p> <p>Over the medium to long-term as climate changes become more prevalent Council will need to consider the implications of climate change and coastal hazards when planning for residential, commercial and industrial properties, existing and new infrastructure.</p> <p>Where aquifers are at risk of being affected by salt water intrusion, alternative water supply methods will need to be considered.</p>	<p>Informed, proactive and adaptive planning will help to minimise the direct and indirect effects of climate change. Council uses guidance and direction from the New Zealand Government to inform how we plan and prepare for the predicted impacts of climate change.</p> <p>Council is currently developing a Coastal Management Strategy to provide direction and guide how Council advocates for and funds coastal management practices into the future. We also plan to improve our understanding of the potential impact of climate change and rising sea levels across the District.</p> <p>Our infrastructure planning will need to:</p> <ul style="list-style-type: none"> • Ensure that future assets are of sufficient standard and have adequate capacity to cater for predicted climate change • Take the potential impacts of rising sea levels and coastal erosion into consideration when investing in existing infrastructure in low-lying coastal areas, for example: <p>The Matarangi wastewater treatment plant is low-lying and as sea level rise and the frequency of storm events increase, the risk of inundation increases. Inundation would result in significant environmental and public health impacts. An upgrade of the treatment plant is planned and we will consider the impact of climate change and the viability of the current location. In the medium-term it is assumed that the wastewater treatment plant will remain at the current site and to reduce the risk of inundation we plan to undertake flood protection works in 2040/41 at an estimated cost of \$0.49 million.</p> <p>The Coromandel and the Thames Wastewater</p>	<p>If council does not take an informed, proactive and adaptive approach to planning for and making decisions around the long-term impacts of climate change and coastal processes on infrastructure and communities, this could have significant cost implications for council, home owners and businesses in some parts of our District.</p> <p>In the short-term there is likely to be continued demand from landowners to protect against the impacts of climate change and rising sea levels. Protecting our coastline, infrastructure and property for the impacts of climate change and rising sea levels has cost implications.</p>

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
	<p>treatment plants are also known to be at risk of flooding and this is likely to increase sea levels rise. To reduce risk, we also plan to undertake protection works at these sites, in 2040/41, at an estimated cost of \$0.49 million per site.</p> <p>An upgrade of the Rhodes Park grandstand is planned. However, Rhodes Park is low-lying and located in the Kauaeranga Spillway. The spillway is part of the Kauaeranga flood protection scheme which protects the Thames urban area. It would be difficult to protect the site from inundation, without compromising the operation of the flood protection scheme.</p> <p>As sea levels rise and storm events increase Rhodes Park may no longer be viable for use as a sports field. Decisions around the level of investment in upgrading the facility will take into account climate change predictions and how long the site is likely to be able to be used.</p> <ul style="list-style-type: none"> • Take the potential impacts of rising sea levels and coastal erosion into consideration when planning the location and design of new infrastructure, for example: <p>The preferred location of the proposed sub-regional aquatics facility is in an area protected from flooding by the Waihou River Scheme. As sea levels rise the level of protection provided by the Waihou River Scheme may be reduced. Flood protection risk and the latest climate change guidance will be considered as part of the site selection and detailed design.</p> <p>Relocating assets may need to be considered if they are at risk.</p>	

Significant infrastructure issues	Principal options for managing the issue	Implications of the option(s)
 <p>Resilience</p> <p>The resilience of our infrastructure is affected by a range of factors.</p> <p>The Thames-Coromandel District is subject to a number of natural hazards which can impact on our infrastructure. These include, storm events, inundation, land slips, coastal erosion and tsunamis. Some of these are likely to be intensified by the predicted impacts of climate change and rising sea levels.</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>The nature of our Districts settlement patterns also effects the resilience of networked infrastructure. We have many small settlements each with separate water supply, waste water and stormwater networks. These small networks 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>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>However, when upgrading existing assets or building new assets we will proactively seek to identify cost effective and sustainable opportunities to future proof and improve the resilience of our infrastructure.</p> <p>Minimising reactive renewals by taking a proactive planned approach to renewals. 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>Build 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>The resilience of our infrastructure effects the risk of communities:</p> <ul style="list-style-type: none"> • Being cut off in the event of roads being blocked • Being without key services, such as water supply, or the removal and treatment of sewerage • Being placed at risk due to flooding. <p>If our approach is not effective it 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.

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
- Demand management
- Local network improvements.

Total expenditure

The infrastructure assets covered in this Strategy include local roads and footpaths, water supply, wastewater, stormwater and drainage, solid waste, community facilities, harbour facilities and coastal protection, corporate and commercial buildings. Thames-Coromandel District Council currently owns assets, for the purpose of delivering these activities, estimated at over \$707 million. These range from underground pipes to reservoirs, roads, footpaths, wharves, boat ramps, libraries, community halls, public toilets, changing rooms, playgrounds, and sports fields

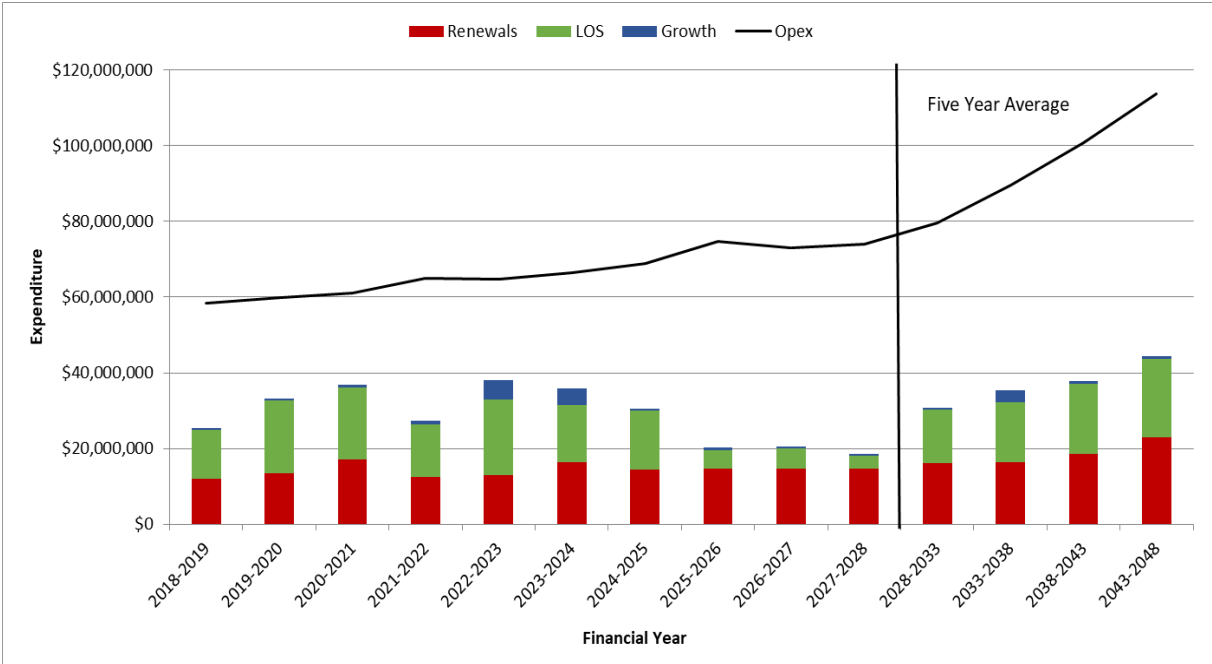
The table below shows total expected capital and operational expenditure for each infrastructure asset group over the 30 year period between 2018 and 2048.

Infrastructure Activity	Capital Expenditure	Operational Expenditure
Roads and Footpaths	\$358 million	\$656 million
Water Supply	\$117 million	\$386 million
Wastewater	\$155 million	\$562 million
Stormwater	\$85 million	\$121 million
Solid Waste	\$16 million	\$267 million
Community Facilities including Harbours	\$267 million	\$523 Million
Corporate and Commercial Buildings	\$30 million	\$70 Million
Total	\$1.02 billion	\$2.59 billion

The figure below shows expected expenditure across all infrastructure assets, included in this Strategy, for the period from 2018 to 2048.








Over the next 30 years we expect that:









- Given modest estimates of growth in our usually resident population and our strategy of “right-sizing” our infrastructure assets, limited growth related infrastructure has been planned. The bulk of growth related infrastructure is planned for 2022/23, 2023/24 and during the 2030 to 2035 period. This expenditure relates to an expansion of the wastewater treatment plant in Whitianga and to an upgrade of the existing Tairua water treatment plant to cater for projected growth.
- 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 infrastructure and this 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 continue be a focus.
- Our expenditure on levels of service improvements will see us focusing 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 over 2021/22 to 2024/25 we plan to replace the Thames Centennial Pool with a sub-regional aquatics facility.










Significant Decisions about Capital Expenditure

The table below shows the likely timing and estimated cost of significant capital projects or programmes of work; where capital expenditure is estimated to be over \$1 million. Where the project is considered to cause a significant change in operational costs, these have been included. The opex costs are total costs for the period of the Infrastructure Strategy.

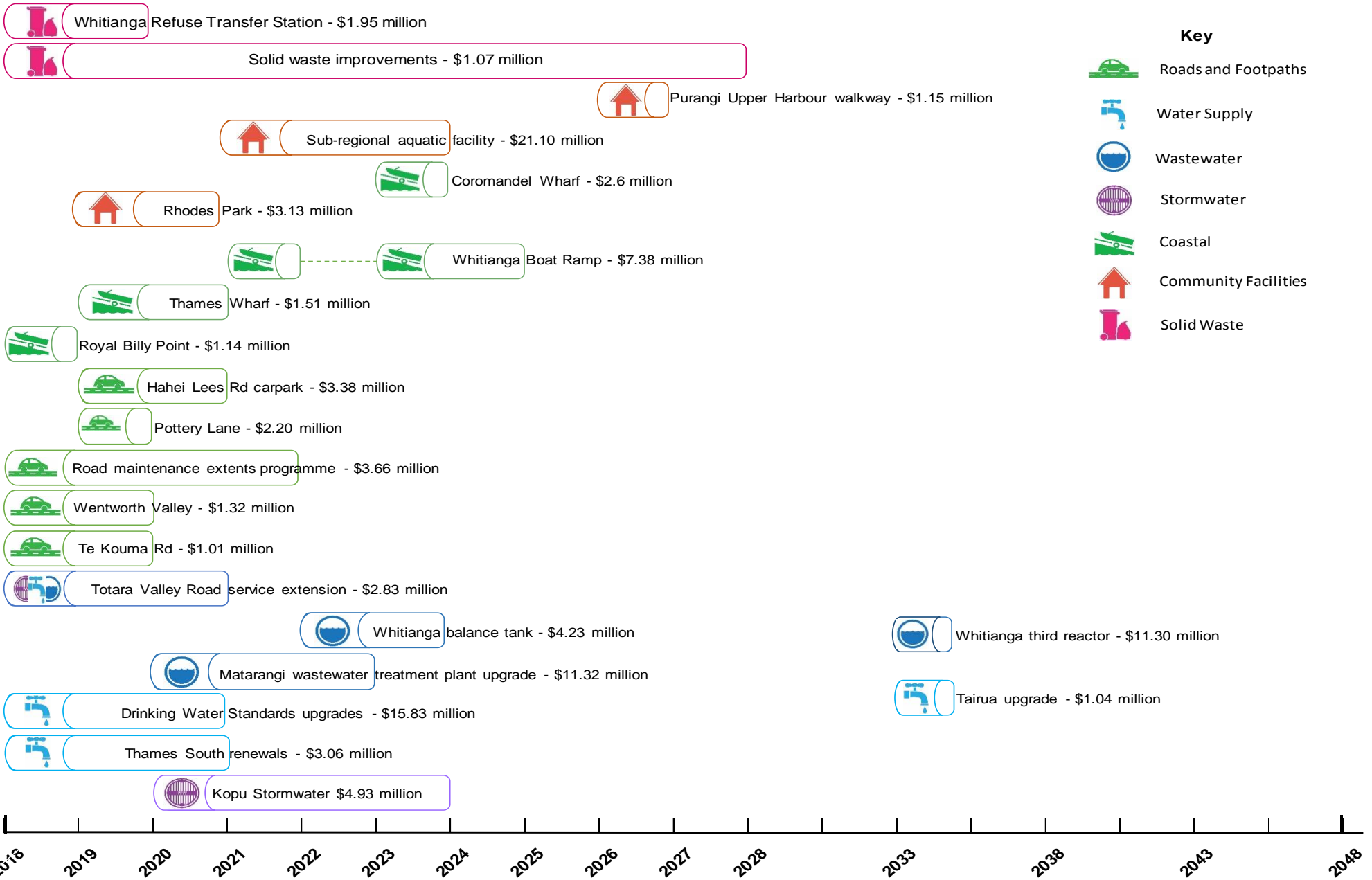
	Description	Timing	Estimated cost
Project: Royal Billy Point Boat Ramp and Pontoon and Pauanui Wharf Pontoon			
 Most likely Scenario	Renewal and extension of the existing Royal Billy Point Boat Ramp, the Pauanui wharf floating pontoon and access bridge. This project addresses issues with asset conditions and alleviates congestion. <u>Primary driver: level of service</u>	2018/19	\$1.14 mill (capex)
Project: Te Kouma Rd intersection			
 Most likely Scenario	This project will to improve services levels and achieve economic development objectives by supporting the development of the aquaculture industry. <u>Primary driver: level of service</u>	2018/19 – 2019/20	\$1.01 mill (capex)
Project: Wentworth Valley upgrade			
 Most likely Scenario	Upgrade to Wentworth Valley road to improve service. <u>Primary driver: level of service</u>	2018/19-2019/20	\$1.32 mill (capex)
Project: Thames Wharf replacement			
 Most likely Scenario	Total replacement of the Thames Wharf to improve the condition of the wharf. <u>Primary driver: renewal</u>	2019/20 – 2020/21	\$1.51 mill (capex)
Project: Road maintenance extents programme			
 Most likely Scenario	Programme of work to upgrade and maintain culverts and structures on formed roads that are not currently being maintained by Council; to reduce risks to public health and safety and improve service levels. <u>Primary driver: level of service</u>	2018/19 – 2021/22	\$3.66 mill (capex) \$2.6 mill (opex)
Project: Thames South water supply renewals programme			
 Most likely Scenario	Ongoing programme of renewals and service level improvements to address ageing water supply assets in the Thames South network. <u>Primary driver: renewal</u>	2018/19 – 2020/21	\$3.06 mill (capex)
Project: Kopu stormwater			
 Most likely Scenario	Stormwater improvements and detention ponds to improve potential to develop industrial land. Kopu industrial area is important for the District's economy and need adequate access to properties. <u>Primary driver: level of service</u>	2020/21 – 2023/24	\$4.93 mill (capex)

	Description	Timing	Estimated cost
Project: Whitianga refuse transfer station			
 Most likely Scenario	Redevelopment of the Whitianga Refuse Transfer Station (on the current site) and development of a new site for greenwaste and hardfill adjacent to the Whitianga Wastewater Treatment Plant. <u>Primary driver: renewal</u>	2018/19 – 2019/20	\$1.95 mill (capex)
Project: Drinking Water Standards upgrade programme			
 Most likely Scenario	A programme of work to improve service levels for water supply schemes, with the aim of meeting the Drinking Water Standards 2005 (amended 2008). <u>Primary driver: level of service</u>	2018/19 – 2020/21	\$15.83 mill (capex) \$22.4 mill (opex)
Project: Solid waste improvements			
 Most likely Scenario	Programme of Improvement work at Refuse Transfer Stations to improve customer experience, reduce health and safety risks and assist Council to achieve goals in the Waste Management and Minimisation Plan. <u>Primary driver: level of service</u>	2018/19 – 2027/28	\$1.07 mill (capex)
Project: Totara Valley Service Extension			
 Most likely Scenario	An extension of the water supply, wastewater and stormwater networks. (includes some roading) <u>Primary driver: level of service</u>	2018/19-2020/21	\$2.83 mill (capex)
Project: Rhodes Park upgrade			
 Most likely Scenario	Upgrade of the existing facilities at Rhodes Park. <u>Primary driver: renewal</u>	2019/20 – 2020/21	\$3.13 mill (capex)
Project: Hahei Lees Road carpark			
 Most likely Scenario	Development of a new car park and roading improvements at Lees Road Hahei. <u>Primary driver: level of service</u>	2019/20 – 2020/21	\$3.38 mill (capex)
Project: Pottery Lane			
 Most likely Scenario	Coromandel Pottery Lane Service Lane land acquisition and construction of service lane to improve levels of service. <u>Primary driver: level of service</u>	2019/20 – 2021/22	\$2.20 mill (capex)
Project: Whitianga boat ramp reclamation			
 Most likely Scenario	Development of a new reclamation, new boat launching facility, tourist boat berthage and public recreation areas to separate conflicting activities and reduce health and safety issues. <u>Primary driver: growth</u>	2021/22, 2023/24 - 2025/25	\$7.38 mill (capex)
Project: Matarangi wastewater treatment plant upgrade			

	Description	Timing	Estimated cost
 Most likely Scenario	An upgrade of the Matarangi wastewater treatment plant. Given that the current site of the plant is relatively low lying, the upgrade will consider the impacts of climate change and the viability of the current location. <u>Primary driver: level of service</u>	2020/21 – 2022/23	\$11.32 mill (capex) \$18.8 mill (opex)
Project: Eastern Waikato sub-regional aquatics facility			
 Most likely Scenario	Development of a sub-regional aquatics facility to replace the current Thames Centennial Pool in a new location. The estimated cost is \$21.10 million and Council is seeking to secure part-funding from external parties. <u>Primary driver: level of service</u>	2021/22 – 2023/24	\$21.10 mill (capex) \$77.6 mill (opex) - includes operating cost, depreciation, loan repayment and interest.
Project: Coromandel Wharf renewal			
 Most likely Scenario	A full replacement of the council-owned parts of the wharf. <u>Primary driver: renewal</u>	2023/24	\$2.6 mill (capex)
Project: Whitianga wastewater treatment plant balance tank			
 Most likely Scenario	Defers the expansion of the existing Whitianga Wastewater treatment (Third Reactor), to cater for projected growth <u>Primary driver: level of service</u>	2022/23 – 2023/24	\$4.23 mill (capex)
Project: Purangi upper harbour walkway			
 Most likely Scenario	Provides walkway access around and across the Purangi upper harbour giving access between Stella Everit Farm and Cooks Beach. <u>Primary driver: level of service</u>	2026/27	\$1.15 mill (capex)
Project: Tairua water treatment plant upgrade			
 Most likely Scenario	Upgrade of the existing Tairua Water Treatment Plant to cater for projected growth. <u>Primary driver: growth</u>	2033/34	\$1.04 mill (capex)
Project: Whitianga wastewater treatment plant – third reactor			
 Most likely Scenario	Expansion of the existing Whitianga Wastewater Treatment Plant to cater for projected growth <u>Primary driver: growth</u>	2033/34	\$11.30 mill (capex) \$1.3 mill (opex)

Major Projects Timeline

Dollar values shown are the estimated capital expenditure.



- Key**
-  Roads and Footpaths
 -  Water Supply
 -  Wastewater
 -  Stormwater
 -  Coastal
 -  Community Facilities
 -  Solid Waste



Roads and Footpaths Infrastructure Expenditure

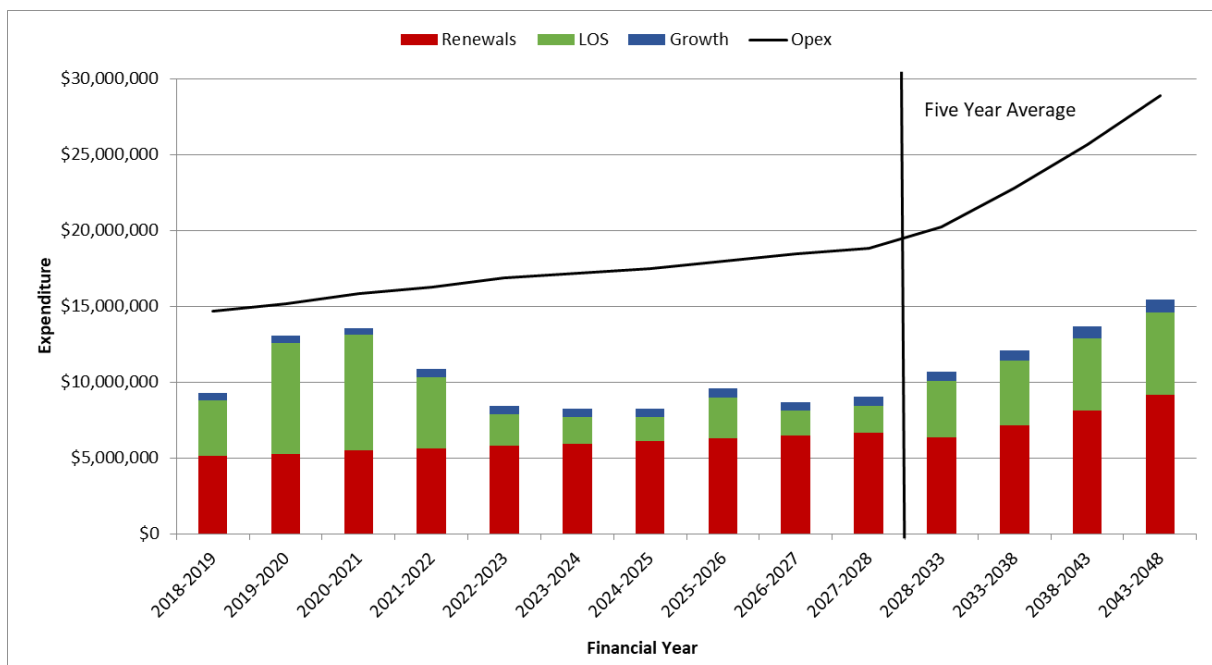
Our road transportation network currently comprises of around 400 kilometres of sealed roads, over 250 kilometres of unsealed roads, and approximately 150 bridges and other associated infrastructure. The roads and footpaths activity is responsible for enabling people to move around our local communities.

The activity accounts for around 25% of Council's annual budget and our transport assets are valued at over \$302 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 in the District; state highways are managed by the New Zealand Transport Agency.

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
- 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. Increased expenditure over 2019/20 to 2020/21 includes improvements to the Hahei Lees Road carpark (\$3.38 million) and maintenance extents upgrades programme (\$3.66 million).



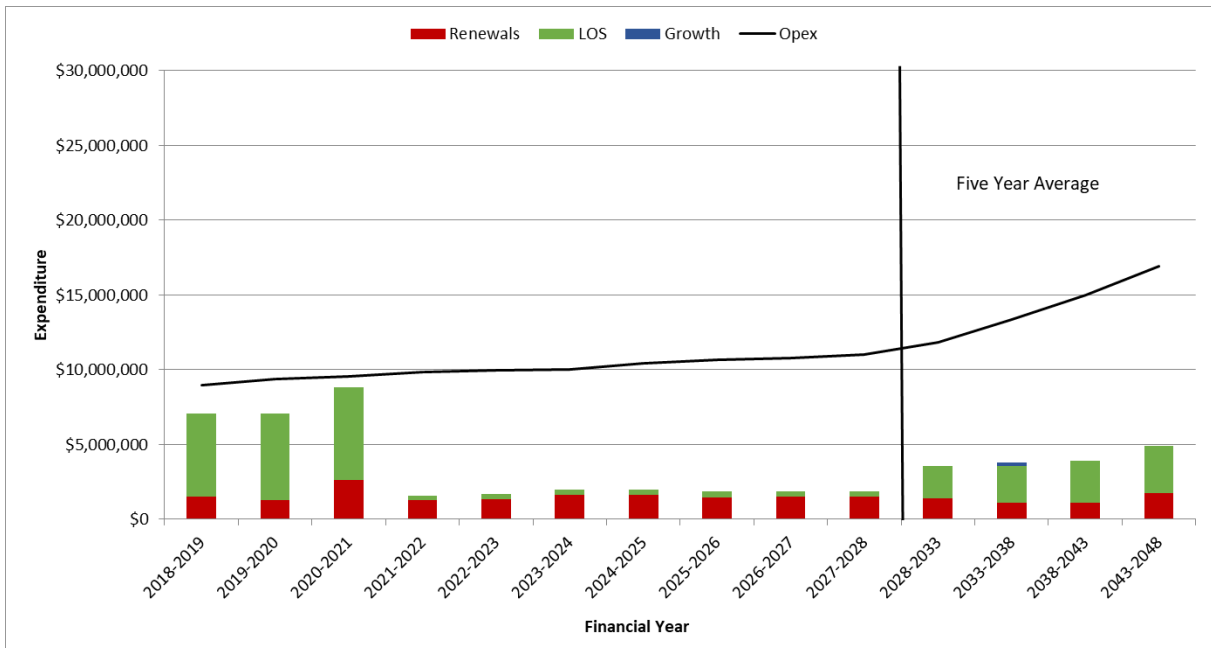


Water Supply Infrastructure Expenditure

Thames-Coromandel District Council owns and operates nine treated water supply schemes and one rural scheme 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 over \$104 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:

- Operational expenditure, including the costs of labour, depreciation, materials and maintenance will account for the majority of expenditure.
- 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 2033/34, at an estimated cost of \$1.04 million.
- Our expenditure on renewals relates to the replacement of infrastructure in our older settlements, including planned expenditure of around \$3.65 million over a seven year period in Thames.
- Expenditure on levels of service improvements, in the first three years will focus on a programme of further work to update our water supply schemes to meet the Drinking Water Standards 2005 (revised 2008). This programme of work will cost around \$15.83 million and be undertaken over a three year period from 2018/19 to 2020/21.



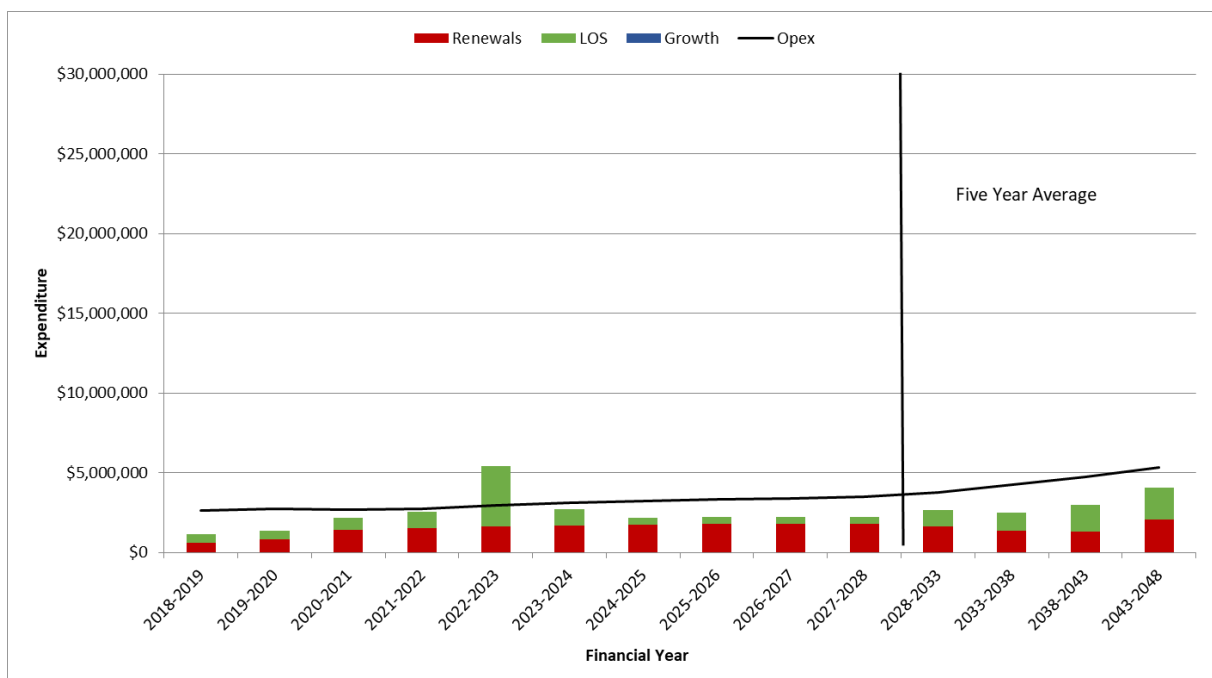


Stormwater Infrastructure Expenditure

Thames-Coromandel District Council has stormwater assets valued at over \$98 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:

- Operational expenditure, including the costs of labour, depreciation, materials and maintenance accounts for the majority of expenditure.
- There will be no new or growth related stormwater infrastructure funded directly by Council.
- Expenditure on levels of service improvements will largely be focused on reducing the risk of flooding near the Kopu industrial precinct. In Kopu we intend to construct stormwater detention ponds and make a number of improvements over the next ten years, at an estimated cost of around \$4.93 million. Over the last ten years of this Strategy (2028/29 to 2047/48) we have made provision for expenditure (of around \$4.21 million) to reduce the risk of the impact of climate change and rising sea levels on our stormwater infrastructure.
- We will continue to focus on improving our asset information. This will assist us to plan and prioritise which parts of our stormwater networks most need to be renewed. We have set aside a district renewals budget which will be used to fund prioritised renewals.



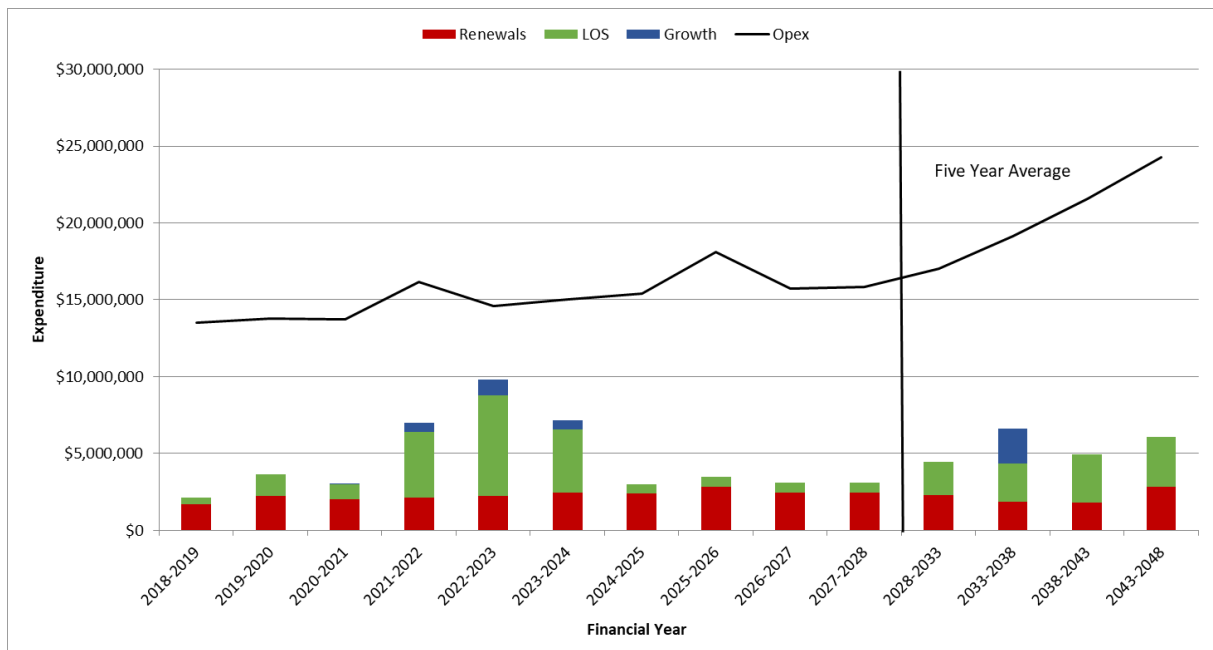


Wastewater Infrastructure Expenditure

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 over \$155 million; including ten treatment plants 392 kilometres of network pipes and 131 wastewater pump stations.

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.
- Based on future growth estimates we are planning to expand the Whitianga wastewater treatment plant, spending around \$11.30 million on a third reactor in 2033/24.
- Expenditure on levels of service improvements in the first ten years will largely be focused on an upgrade the Matarangi wastewater treatment plant, over the period 2020/21 to 2022/23 at a cost of around \$11.32 million. In 2040/41 we intend to undertake improvements to the Matarangi, Coromandel and Thames wastewater treatment plants to reduce the potential impacts of climate change and rising sea levels, at an estimated cost of \$0.49 million for each plant.
- We will continue to focus 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.



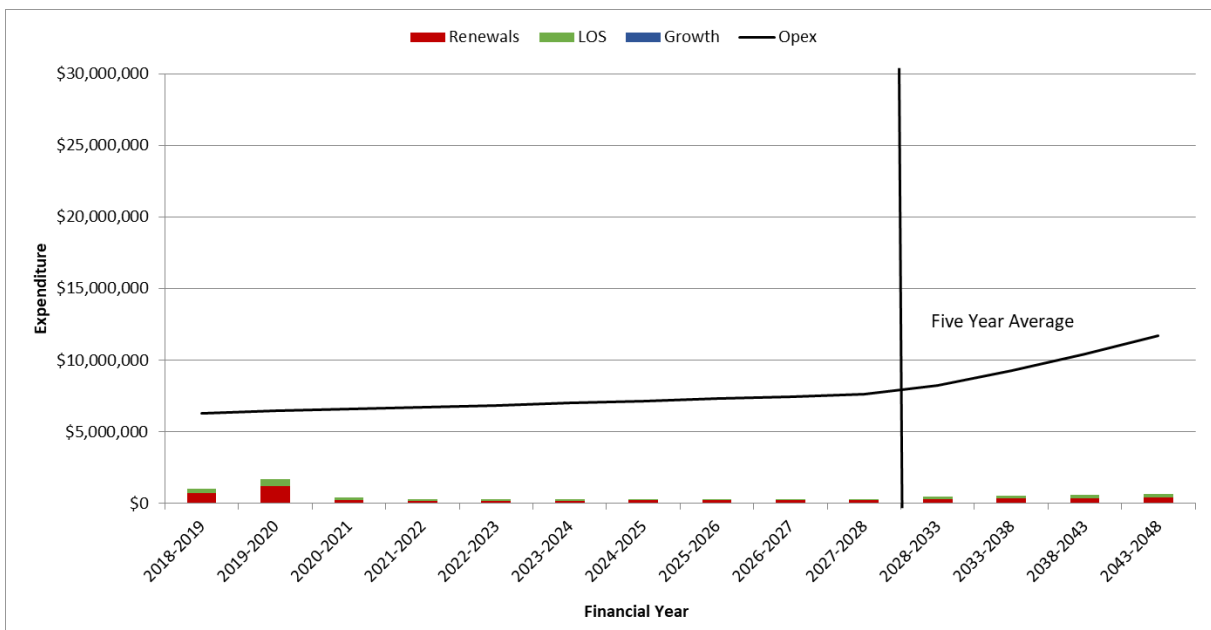


Solid Waste Infrastructure Expenditure

Thames-Coromandel District Council has solid waste assets valued at \$4.3 million; including 7 refuse transfer stations and associated assets, weighbridges, moloks, transporter bins and cranes. Council provides litter collection in public areas, kerbside refuse and recycling services including the transport of general waste to landfill outside the District, transfer stations where waste and recycling can be disposed of, reused or recycled and manages a number of closed landfill sites within the District.

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.
- There will be no new or growth related solid waste infrastructure funded by Council.
- Expenditure on levels of service improvements will largely be focused on a programme of improvement works at our Refuse Transfer Stations, at an estimated cost of \$1.2 million.
- Expenditure on renewals relates to the replacement of older assets, including the redevelopment of the Whitianga Refuse Transfer Station in 2018/19 and 2019/20, at an estimated cost of \$1.95 million.





Community Facilities and Coastal Infrastructure Expenditure

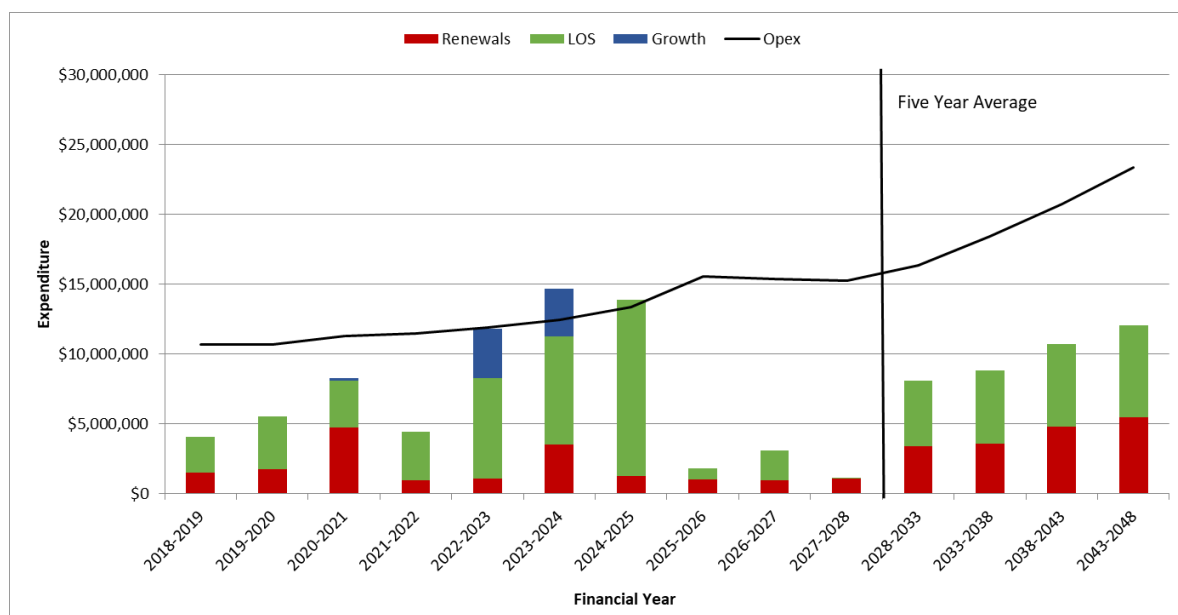
Thames-Coromandel District Council provides a wide range of community facilities and coastal assets across the District. Although infrastructure issues for community facilities and coastal assets are presented separately in this Strategy, operational and capital expenditure is not currently separately available. Therefore, this section sets out expenditure for both community facilities and coastal assets.

Our community facilities are valued at over \$30 million; including three District libraries and a number of community libraries, the Thames Centennial Pool, airfields in Pauanui and Thames, seven cemeteries and a range of parks and reserves, playgrounds, sports parks, skate parks and walkways and over 90 public conveniences across the District. Council provides community spaces and facilities to provide for the vibrancy and wellbeing of local communities.

Our coastal assets are valued at around \$6.8 million (excluding buildings) and include boat ramps, boat trailer parking, wharves, pontoons, seawalls, rock protection and soft assets such as native planting and access routes. Council provides harbour facilities to support recreation, tourism-related activities, commercial fishing and aquaculture. Council also undertakes dune replenishment and beach nourishment to manage the effects of coastal hazards on existing development and infrastructure. Council, along with the Waikato Regional Council, plays a role in planning for and managing the effects of coastal hazards.

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 in most years.
- Only a small number of new or growth related projects are planned over the next 30 years. Growth expenditure planned in 2021/22, 2023/24 to 2024/25 relates to the development of the new Whitianga boat ramp reclamation at an estimated cost of \$7.38 million.
- Increased expenditure on levels of service in the years 2022/23 to 2023/24 relates to the planned development of a sub-regional aquatics facility, at an estimated cost of \$21.10 million, to replace the current Thames Centennial Pool in a new location.
- Expenditure on renewals is variable and relates to the replacement of older assets, including in 2019/20 and 2020/21 the Thames Wharf (\$1.5 million), and an upgrade of Rhodes Park (\$2.8 million) and in 2023/24 the Coromandel Wharf (\$2.6 million).





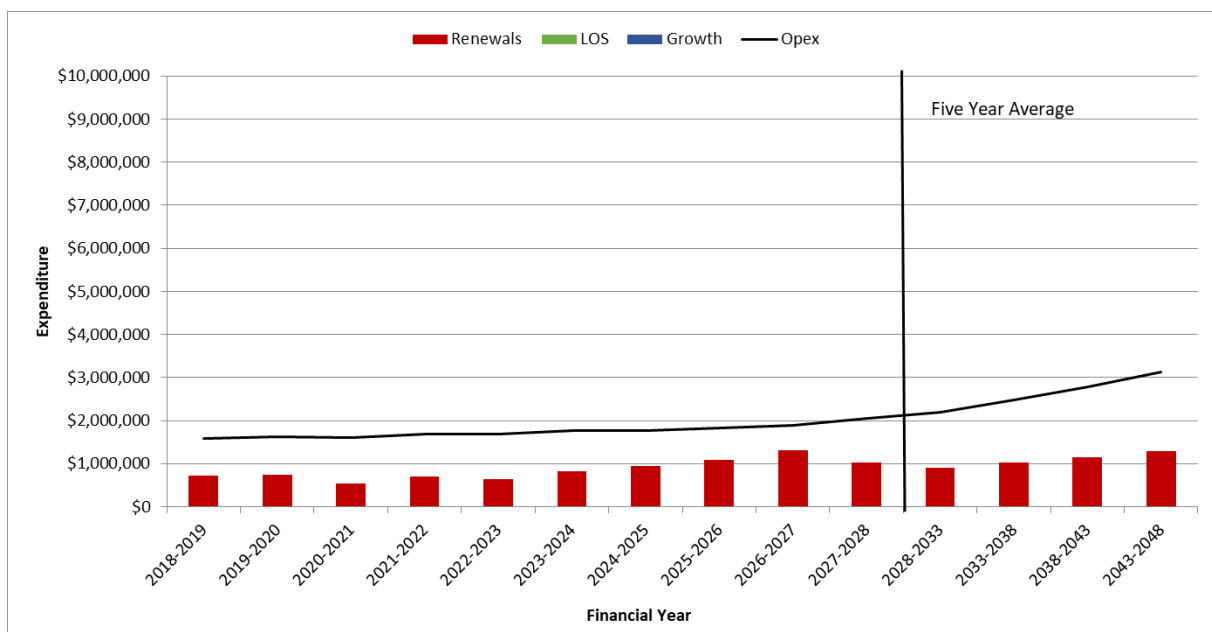
Corporate and Commercial Buildings Infrastructure Expenditure

Thames-Coromandel District Council owns a range of administrative and commercial buildings valued at over \$5.8 million. Our corporate buildings include service centres and administrative buildings in Thames, Coromandel, Whitianga and Whangamata. These buildings accommodate council staff and provide the public with access to council services.

Council also owns a number of commercial buildings which are leased to external parties for a range of uses. Some of these buildings are leased on a commercial basis to generate income for Council while others provide premises for the use of community groups and clubs.

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.
- There will be no new or growth related infrastructure funded by Council.
- Our focus in the first few years of this Strategy, will be on improving our asset information. This will assist us to plan and prioritise which administrative and commercial buildings need to be renewed and when. We have set aside a renewals budget which will be used to fund prioritised renewals.
- No expenditure on levels of service improvements are planned.



Appendix One: Assumptions

Description	Assumption	Level of certainty and potential impact on infrastructure
Growth	<p>Our growth assumptions are based on a medium growth scenario.</p> <p>Population growth</p> <p>Our resident population is expected to increase gradually between 2018 and 2028; followed by a slow gradual decline in our resident population between 2028 and 2048. Overall, our resident population is expected to decrease slightly between 2018 and 2048 (-0.1% on average per year).</p> <p>Over the next 30 years only the population of the Mercury Bay ward is expected to grow (by around 0.5% per year), the populations of Tairua-Pauanui, Coromandel-Colville, Thames and Whangamata are expected to remain largely unchanged</p> <p>Dwelling growth</p> <p>An increase in dwellings is projected in all main settlements.</p> <p>Tairua and Whitianga are projected to experience relatively strong dwelling growth, (1.2%) and (0.8%) each year respectively. Other settlements show an increase in dwellings, however the growth rate is relatively low, between 0.4% and 0.6% per year.</p> <p>The District's proportion of unoccupied dwellings is projected to increase from 48% of total dwellings in 2018 to 53% in 2048.</p> <p>Rating Unit growth</p> <p>The number of rating units is mainly dependent on dwelling growth. This means that given expected dwelling growth, the number of rating units in the District is expected to increase by around 0.5% per year.</p>	<p>Level of uncertainty: low</p> <p>Potential impact: If we have under-estimated the level of location of growth some of our infrastructure may have insufficient capacity to meet demand or cope with peak population over the holiday periods. This would place pressure on our assets and may impact on levels of service.</p> <p>If we overestimate the level or location of growth we will have an oversupply of capacity and the cost of servicing our infrastructure may become unsustainable given our smaller than expected rating base.</p>
Peak demand	<p>Our District attracts a summer peak population; which means that over summer, during long weekends and when popular events are on, our population can increase to around five times the number of our normally resident population. Our peak population is typically at its highest in the period between December 22 and January 5, placing pressure on our infrastructure and services.</p> <p>Our peak population is expected to grow; driven by an increase in dwellings over the next 30 years.</p>	<p>Level of uncertainty: low</p> <p>Potential impact: Council needs to balance year round population infrastructure and facility requirements with that required to serve peak demand.</p> <p>If peak demand increases at a rate greater than expected it will place pressure on our infrastructure and facilities and this may impact on our ability to maintain levels of service.</p>

Description	Assumption	Level of certainty and potential impact on infrastructure
Aging population	<p>The Thames-Coromandel District has an elderly population and our population is ageing.</p> <p>In 2013 the proportion of people aged 65 and over made up around 27% of the total population. This is nearly twice the national average. By 2048 the elderly will have an even larger representation with 45% of the population being over 65.</p>	<p>Level of uncertainty: low</p> <p>Potential impact: Preferences, need and demand for services differs for different demographic groups. Any significant variation to the assumed aging population profile may result in some demographic groups in the community experiencing lower than expected levels of service.</p>
Tourism and visitor growth	<p>The number of tourists and visitors, to our District, is expected to continue to increase by around 4.4% each year; based on data from the Commercial Accommodation Data monitor as at March 2017.</p>	<p>Level of uncertainty: low</p> <p>Potential impact: if visitor numbers are higher than predicted it could place pressure on infrastructure, resulting in asset failure and impacting on service levels.</p> <p>If the number of visitors falls or does not continue to increase at the predicted rate, it could undermine the economy and reduce revenue.</p>
Inflation	<p>All costs have been adjusted to include inflation in accordance with the Society of Local Government Managers; set out in the BERL <i>Forecasts of Price Level Change Adjustors</i></p>	<p>Level of uncertainty: low</p> <p>Potential impact: Variation will impact on expected operational and capital costs and on rating requirements.</p>
Climate change	<p>Climate change will affect the District over the medium to long term in line with predicted national changes.</p> <p>Council will assume the minimum transitional New Zealand-wide sea-level rise allowances and scenarios as provided in the Coastal Hazards and Climate Change Guidance for Local Government 2017 in its future planning and will undertake an adaptive pathway planning approach as part of the coastal hazard/climate change work programme in the Thames-Coromandel District Council Coastal Management Strategy.</p> <p>Predicted sea level rise will affect low-lying areas and estuaries, including threats to Council and community infrastructure. Sea level rise will also affect aquifers - with sea level rise resulting in saline intrusion into existing water supply bores.</p> <p>The frequency and intensity of storm events are predicted to increase as a result of projected climate change. This is expected to worsen coastal erosion and flooding hazards.⁹</p>	<p>Level of uncertainty: medium</p> <p>Potential impact: Over the medium to long term as climate changes become more prevalent Council will need to consider impacts and implications as part of planning for infrastructure resilience. The location of new assets will need to take into account projected sea level rise and relocation of assets may need to be considered if they are at risk.</p> <p>Where aquifers are at risk of being affected by salt water intrusion, alternative water supply methods will need to be considered.</p> <p>Council will continue to respond to any climactic changes or trends through its asset planning.</p>

⁹ <https://waikatoregion.govt.nz/Environment/Environmental-information/Environmental-indicators/Coasts/coastal-developments-at-risk-report/>

Description	Assumption	Level of certainty and potential impact on infrastructure
Vested assets	Vested assets are assumed to be received by Council in proportion to the growth of the District.	Level of uncertainty: low Potential impact: A higher level of vested assets than expected would impact on capital and operational costs and on rating requirements.
Development contributions	Any contributions have been included based on estimated growth forecasts. This funding is used to provide growth related asset development.	Level of uncertainty: medium Potential impact: If growth does not occur or occurs at a slower rate than expected this will have an impact on Councils debt levels.
Legislation	The Strategy has been developed based on the current legislative framework and provisions.	Level of uncertainty: medium Potential impact: The potential impact of legislative change will depend on the nature of the change.
Resource consent standards	Resource consent standards for water sources and for stormwater and wastewater discharges from Council infrastructure will steadily increase over time, but resource consents will be obtained without appeal and consent compliance will be achievable.	Level of uncertainty: medium Potential impact: Imposing higher treatment standards will lead to higher operating and maintenance costs.
Useful lives of infrastructure assets	Useful asset life reflects the best estimate available as at forecast date and is based on current asset information held. The useful life of each group of assets is outlined in the Long-Term Plan: Statement of Accounting Policies for Prospective Financial Statements - Depreciation.	Level of uncertainty: medium Potential impact: There is no certainty that the components of an asset will last their design lives to the extent predicted. Asset replacement is budgeted for to expected end of useful life, and so earlier replacement results in a loss on disposal of any residual value. Earlier replacement may result in the deferral of other discretionary capital projects in order to remain within self-imposed debt limits as set out in Council's Financial Strategy.
Service levels	Infrastructure provision over the next 30 years will be at current levels of service, as set out in the 2018/2028 Long-Term Plan.	Level of uncertainty: low Potential impact: Infrastructure demand during 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 on the respective asset management plans and Council continuing to fund at the levels stated in the 2018/2028 Long-Term Plan	Level of uncertainty: medium Potential impact: Incomplete or outdated asset and financial information may have implications on forecast asset funding and budgets.

Description	Assumption	Level of certainty and potential impact on infrastructure
Financial forecasts	Replacement cost, annual depreciation, depreciated replacement cost are based on assumptions related to asset quantities, construction date, expected life, condition and unit cost contained in the respective asset management plans.	<p>Level of uncertainty: medium</p> <p>Potential impact: Incomplete / outdated asset information may have implications for the forecast asset funding and budgets</p>

Appendix Two: Key terms

Asset life – A measure of the expected or anticipated life of an asset or the component of an asset.

Capital expenditure - Creates new assets or replaces existing deteriorated assets or components of assets to restore their remaining life and service potential. There are three kinds of capital expenditure:

- Renewals – defined as capital expenditure that increases the life of an existing asset with no increase in service level. It replaces existing deteriorated assets or components of assets to restore their remaining life and service potential.
- Level of Service (LOS) – defined as capital expenditure that increases the service level delivered by the asset.
- Growth or Additional Capacity – defined as capital expenditure that is required to provide additional capacity in whole or part under Council's Development Contributions Policy necessary to accommodate growth. It is the capitalised works that add new or enlarged existing assets to increase capacity to cater for further growth in demand.

Demand management – is defined as the management of demand for infrastructure assets in order to best match current and future resources to service requirements and ensure service delivery in a best value for money way. Demand management may be intended to limit or reduce demand for an asset, to increase or maintain demand, or to smooth the level of demand over a time period¹⁰.

Level of service – level of service statements describes the amount or quality that council intends to deliver to customers. Our levels of service are set out in our Long-Term Plan.

Maintenance - Actions necessary to retain an asset as near as practicable to its original condition. Maintenance does not increase the service potential of the asset or keep it in its original condition, it slows down deterioration and delays when refurbishment or replacement is necessary.

Operating expenditure – Relates to the day to day running or operating costs and includes costs such as staff, materials, fuel, chemicals, electricity, gas, mowing lawns, trimming trees, planting.

¹⁰ <http://www.infrastructure.govt.nz/plan/2011implementation/demandmanagement/niu-demand-management-discussion-jun14.pdf>