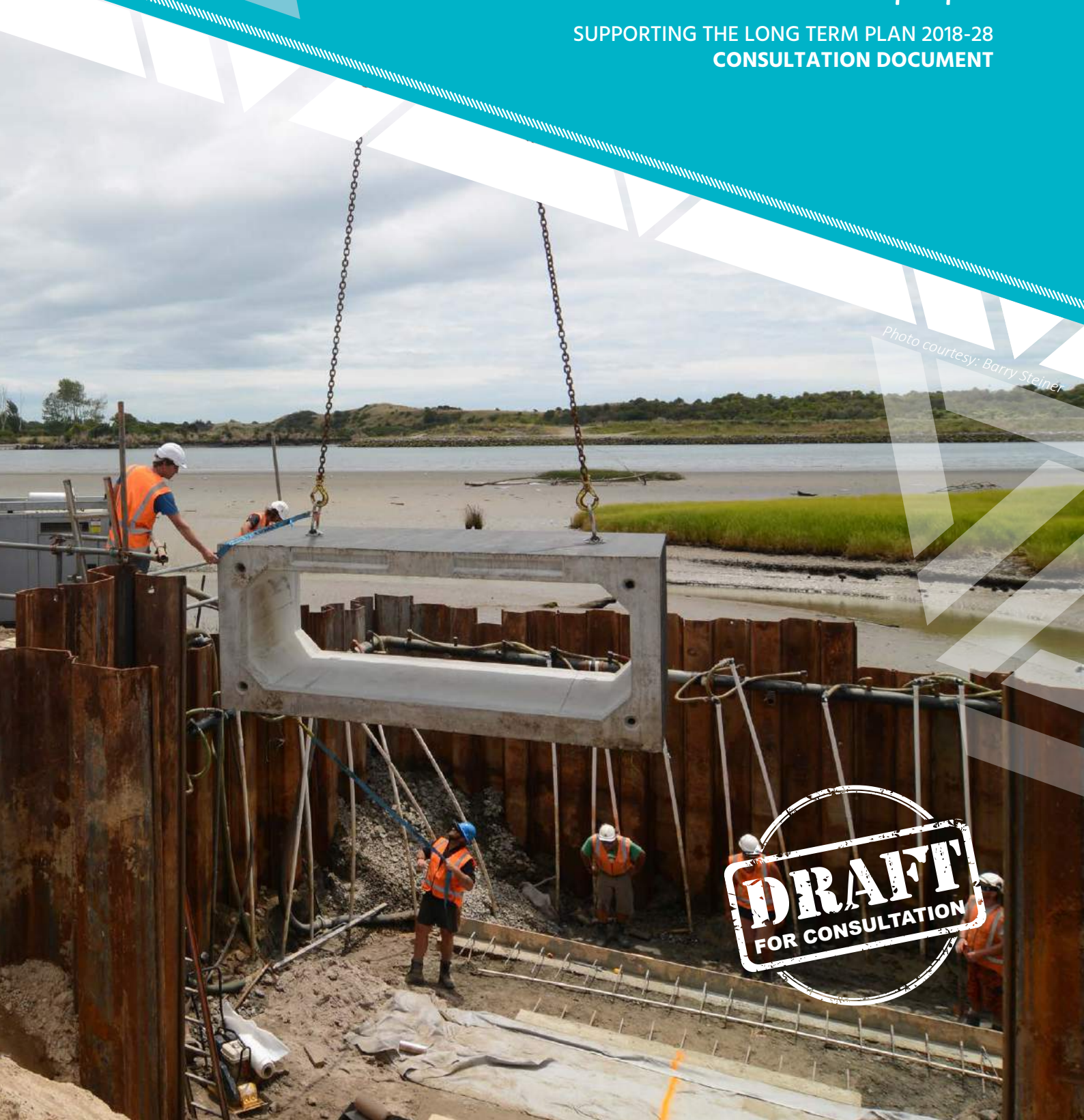


Infrastructure Strategy

Te Rautaki Tuāpapa

SUPPORTING THE LONG TERM PLAN 2018-28
CONSULTATION DOCUMENT

Photo courtesy: Barry Steiner



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FOR CONSULTATION

Note: The information in this strategy has been drafted to support the proposed content of the Long Term Plan 2018-28. It will continue to be refined to reflect feedback into - and decisions resulting from - the formal consultation process.

Executive Summary

The Whakatāne District faces a number of infrastructure challenges over the coming years. These include managing the effects of natural hazards and climate change, maintaining a safe and secure water supply network, and replacing and upgrading our infrastructure to ensure it is efficient, effective and fulfils all of our legislative requirements. Addressing all of these challenges such that the risks presented by them are eliminated is simply unaffordable for the community. Taking into account all of the high priority projects that we wanted to deliver, the first round of budgets we developed saw an average rates increase for 2018/19 of over 30%. We considered that 30% was not an acceptable rates increase, and so we have worked hard to try to deliver a proposal for the community to comment on that includes essential Council activities and contributes toward enhancing our District, but within a budget that represents great values to our community. The projects proposed in this Infrastructure Strategy reflect Whakatāne District Council's response to our infrastructure challenges. Delivering on our core service delivery in a responsible and sustainable way, but also enhancing our district within a budget that is affordable to ratepayers with an average rates increase for year one (2018/19) of 3.99%.

The April storms served as a reminder of the District's vulnerability to natural hazards. The effects of climate change will exaggerate this vulnerability, not diminish it. Council will continue to monitor these effects and develop our infrastructure projects to enhance our District's resilience to them. For example, saline intrusion periodically causes problems for Whakatāne's water supply and this will occur more frequently as the sea level rises and we experience more long dry periods. To improve the resilience of the water supply Council is proposing to construct a water filtration gallery further upstream to provide a back up to the existing supply.

The public health effects of the contamination of the Havelock North drinking water supply with campylobacteriosis has reiterated the importance of maintaining a safe drinking water supply. In light of this event, Council has reviewed the Water Safety Plans for each of the water supplies we operate. Council has proposed specific projects within this Infrastructure Strategy as a result of this review.

Within the next 10 years, most of the resource consents authorising Council's water take and treated wastewater discharge consents expire. Council will also be obtaining Comprehensive Stormwater Consents for our District's urban stormwater networks. Council will need to upgrade its infrastructure to comply with the new resource consents. We anticipate that the biggest challenge this presents will be the required wastewater treatment upgrades for Murupara, Tāneatua, Edgumbe and Whakatāne. Council has set aside \$51 million in capital upgrade costs for the wastewater treatment infrastructure upgrades alone.

To ensure Council's infrastructure spending is affordable, we have shifted projects to keep year-by-year spending as consistent as practicable to minimise variability and consequential rating impacts. Council has also chosen not to proceed with some projects for the time being, to ensure we continue to operate within our financial limits. Therefore, the projects proposed in this Infrastructure Strategy are those that Council considers are essential, while acknowledging that maintaining affordability means some residual risk remains.

Purpose

The purpose of this Infrastructure Strategy is to outline how the Whakatāne District Council intends to manage its infrastructure assets over the next 30 years.

The Council supplies a wide range of community services that rely on infrastructure assets. It is critical that those assets are well managed. This Strategy looks across the spectrum of water supply; sewage treatment and disposal; stormwater drainage; and the provision of roads and footpaths.

The Infrastructure Strategy has been developed to scope and prioritise key, long-term infrastructure issues, and outline how the Council proposes to address those issues. That information also informs the Council's Long Term Plan (LTP) 2018-28.

An infrastructure strategy is a legislative requirement (under section 101B and Clause 9, Schedule 10 of the Local Government Act 2002). The Act states that a "local authority must prepare, as part of its long term plan, an infrastructure strategy for a period of at least 30 consecutive financial years".

NOTE: All financial figures in this document take into account expected inflation.

The Whakatāne District context

Demographic context

The Whakatāne District has a resident population of 34,600 and ranks 31 out of 67 District in terms of population size. Māori make up 43.5% of the population. This is the 13th largest Māori population of the 67 districts in New Zealand, home to 2.2% of all New Zealand Māori.

Like many other parts of the country, the District's ageing population is increasing. Currently, 16% of the District's population is over 65. This is expected to increase to 30% (just under a third of the District's population) by 2043.

The current average age of District residents is approximately 39, slightly higher than the New Zealand average of 38.

Physical context

The Whakatāne District comprises of a total land area of 433,000ha or 4,442km². Sandy beaches are predominant along the 54 kilometres of coastline that stretches from Otamarakau in the west to Ohiwa in the east. Central areas include fertile lowlands and farming areas on the Rangitaiki Plains through to Murupara. Te Urewera in the south makes up 41% of the District.

Given its coastal location, river scheme, low lying land and proximity to Whakaari White Island, the District faces significant natural hazard risks. These include flooding, earthquake, volcanic eruption, and tsunami.

Our climate is changing. It is anticipated that this will result in changes to temperature, rainfall, frost occurrence and sea level. This will place changing pressures on Council infrastructure. Council will need to anticipate and respond appropriately, ensuring infrastructure is in place to handle these changing pressures.

Note: An overview of Whakatāne District Council's infrastructure assets is included in the Asset Base sections of this strategy.

Planning for the long-term – the next 30 years

Many of Council's infrastructure assets have a very long life. For example, water pipes have an expected life of 60-100 years. There is therefore a long planning horizon for initial provision and renewal, both of which can present cost peaks that are best planned for well in advance. This Infrastructure Strategy provides the long-term perspective required to assess whether there are hidden investment gaps, or affordability issues, beyond the 10-year planning horizon provided in the LTP 2018-28.

This Infrastructure Strategy focuses on the following four core infrastructure services:

- a) Water supply
- b) Sewage treatment and disposal
- c) Stormwater drainage
- d) Roads and footpaths

Infrastructure assets cannot be planned for in isolation, because issues that shape our community can also influence the management of our infrastructure. Significant issues may include: demographic changes which affect the ability of the community to pay for infrastructure; growth or decline in population in particular areas within the District; natural hazards and climate change.

Information supporting the development of this Strategy

This Infrastructure Strategy has been developed in the context of a number of other documents and projects. In reading this Strategy you may wish to reference these supporting documents for more information. These include:

- a) **Asset Management Plans** - provide an outline of the asset management works required to prudently manage infrastructure and deliver essential services to the community.
- b) **Financial Strategy** - outlines the financial context in which the Council is operating and the financial implications of the projects proposed through this Strategy.
- c) **LTP 2018-28**. While this strategy has a 30-year planning horizon, the projects proposed for the first ten years are included in the Council's LTP 2018-28.
- d) **Whakatāne District Plan (WDP)** - identifies a number of residential growth areas for the District over the next 10 years.
- e) **Three Waters Strategy** – individual roadmaps were completed for water supply, stormwater and wastewater by AECOM in August 2017. The roadmaps address each of the three waters in a holistic and comprehensive manner to guide the Council through the implementation of this Strategy.
- f) **Eastern Bay Spatial Plan** – a development plan that provides a vision for the Eastern Bay for the next 30-50 years.

Key Principles underlying this Strategy

The Council has identified four key principles for the development of the LTP 2018-28. These principles balance the various needs of the community and flow through the LTP, Financial Strategy and the projects outlined in this Infrastructure Strategy.

Responsible	We will work together with the community to prioritise essential core services and manage our assets in a financially prudent way.
Sustainable	We will manage our assets and activities in a way that does not compromise the environmental, social, cultural, or economic wellbeing of the community, now and into the future.
Affordable	We will be responsive and sensitive to the issue of rates affordability across the District
Enabling	We will take opportunities to encourage and support activities which will grow the vibrancy, vitality and prosperity of our District.

Project Affordability

During 2017 the Council undertook a strategic review of its waters infrastructure. This arose from Council awareness of various issues, both within the district and nationally. A number of risks were identified in this review. Projects were proposed to address these, but to ensure that the affordability principle was met a number of these projects have not been included in the LTP 2018-28 and the Infrastructure Strategy. By not including these projects Council acknowledges that some risks have not been addressed, however this has been balanced against the requirement to limit rates increases. Additionally, for the projects that have been proposed, Council has sought to ensure capital expenditure is evenly distributed to ensure affordability. In some instances, projects have been deferred while others, such as the Murupara Wastewater Treatment Upgrade, have been brought forward.

Projects that have been described in this Strategy but are not currently included in the LTP 2018-28 are listed on page 18 of this document.

Core Outcomes for the LTP 2018-28

The Council has identified four key outcomes for the development of the LTP 2018-28. These outcomes underlie the priorities and projects the Council is proposing to carry out over the next 30 years and form the basis of both the LTP 2018-28 and Council's Financial Strategy. They reflect the balance the Council must endeavour to achieve between focusing on the basics and providing value-added services for our community, at an affordable cost. The projects outlined through this Infrastructure Strategy have been proposed in order to help achieve these key outcomes. The Council's primary proposed responses to these outcomes are as follows:

a) Resilient People and Places.

This Infrastructure Strategy's key driver is getting the basics right and maintaining our existing assets to continue delivering quality core services. The majority of the works proposed in this Strategy involve renewing existing infrastructure, reflecting the Council's primary focus on maintaining core infrastructure services.

b) Thriving Economy.

Where the Council predicts growth will occur within the District, or where it is foreseen that infrastructure will help drive growth, the Council is proposing to carry out a number of projects which will enable and stimulate development.

c) Vibrant Community.

The Council will continue to work with our key partners and seek opportunities for further partnerships, which will add value to the community through enhanced and affordable services.

d) Responsible Money Management.

The Council intends to respond to the community's needs in a manner that is sensitive to economic factors, keeping costs down by focusing on the basics, deferring or deleting projects where appropriate and utilising various funding mechanisms and rating systems.

Key Issues identified through this Strategy

This Infrastructure Strategy identifies five key issues that the Council proposes to address through a range of actions and projects. This Strategy outlines the Council's significant decisions, including principle options for addressing the identified issues, and defines the implications of undertaking or not undertaking these actions. The key issues determined through this strategy are:

- a) Much of the Council's core infrastructure is ageing and the Council has a large number of renewals proposed over the next 30 years;
- b) The demand for changes to levels of service in certain areas of the District;
- c) The District is susceptible to a number of natural hazards, which can have a detrimental effect on our infrastructure and our community;
- d) New legislation leading to stricter environmental controls, which the Council must adhere to, while also endeavouring to improve community health and safety;
- e) The District is predicted to experience a fairly static population, with growth in some areas balanced by decline in others. The population is also ageing, which may have an impact on the financial sustainability of Council's infrastructure.

Planning assumptions

A broad range of factors influencing Council's long-term planning are discussed in the LTP and can be found in the 'Trends, Influences and Assumptions' document available on our website: whakatane.govt.nz/ltp-2018. The high-level assumptions that are particularly relevant to this Infrastructure Strategy include:

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Natural Environment

- Our District is at risk of a range of natural hazards, such as earthquakes, flooding, tsunami, debris flows, slips and volcanic activity.
- Our District is susceptible to many environmental processes, such as soil erosion, sediment build up, beach formation/erosion.
- Climate change is likely to increase the occurrence of severe weather patterns and impact on various Council activities.
- Predicted sea level rise might with time also affect some parts of our infrastructure.

Land use

- Demand for additional residential properties will be mainly focused around Whakatāne and Ōhope.
- Assumptions about residentially- and industrially-zoned land are based on the District Plan.
- Capacity for residential land will be sufficient for the next 30 years.
- Land-use elsewhere in the District is assumed to maintain the status quo.

Population

- Population growth across our District is expected to reflect the population projections provided by the Statistics NZ 'medium' scenario plus local adjustments for expected development.
- An ageing population will put added pressures on specific services.
- The socio-economic structure of our District will not change significantly.
- The number of properties from which we receive rates income is expected to increase by approximately 0.5% annually.
- The population in any one area will not decline so rapidly that significant alternative planning solutions will be required.

Economic Environment

- Toi-EDA has identified approximately \$2.2 billion will be invested in new industry developments in the Eastern Bay of Plenty over the next 2-10 years. This will create an estimated 3,500 jobs of direct employment with a potentially significant multiplier effect for the sub-regional economy and population.
- It is assumed that economic development in Kawerau and Ōpōtiki are likely to have a positive impact on Whakatāne's economy.
- We partner with the NZ Transport Agency for the operation and upkeep of our local road network. An assumption is made on the level of financial assistance NZTA provides for that activity. NZTA has confirmed the Financially Assisted Roading (FAR) Rate for Local Roads of 57% for the 2018/19, 59% for 2019/20 and 61% for 2020/21. For special purpose roads the FAR has been included at 100% for 2018-21.

Service Delivery

- There will be ongoing legislative change, particularly in terms of water management, but Council delivery of the infrastructure in this strategy is assumed to continue unchanged.
- Replacement resource consents will generally require infrastructure upgrades.
- Infrastructure needed for growth-related development will be paid for by development contributions.
- It is unlikely that changes to our service delivery will be externally imposed, although we could see greater collaboration and joint service delivery with iwi and/or other parties.
- In the event of a disaster, we will be able to continue delivering essential services to the community.
- Life-cycle assumptions for our significant infrastructure are defined through the Significant Accounting Policies found in the 'Our Costs in Detail' document available on our website: whakatane.govt.nz/ltp-2018.

Risk

In the course of planning for the next 30 years, the Council has had to make a series of assumptions that may not eventuate exactly as predicted. In some instances, the risk associated with assumptions not being realised is more significant. To address this, the Council will be reviewing this Strategy every three years, and will reconsider the accuracy of all assumptions and the likely impact on our infrastructure. Many assumptions around infrastructure renewals and upgrades are based on asset life cycles and population projections. The Council will continue to make asset condition inspections and monitor population changes to ensure that we are able to respond to changes in an appropriate manner. We also manage risk, utilising the processes defined in our Risk Management Policy. These processes are consistent with Australian/New Zealand Standard AS/NZS 4360, which defines best practice risk assessment and management.

The Council is mindful that change in rainfall patterns as a result of climate change can adversely affect people and property in the District. The Council recognises in the District Plan that sea level rise poses a threat to subdivision, use, and development of land within the District. The Coastal Erosion Risk Zones Areas for 2060 and the 2100 have all been established in response to future climate changes and the increased threat of coastal erosion and inundation.

The Council will continue to monitor and take into account the impact of climate change and sea level rise on the Council's key infrastructure assets. The effects of climate change will be further investigated as Council develops a Climate Change Action Plan and the effects will be considered through Council's future infrastructure planning and project delivery.

The Council is cognisant of the need to maintain its critical assets. These are the assets that are essential to public health and safety and act as lifelines. For roading, State Highways act as the key lifelines for the community, however the Council owns a number of key roads, bridges and culverts that act as secondary routes which need to be protected. With regard to water supply, sewerage treatment and disposal and stormwater drainage, all pump stations and associated rising mains, treatment plants, reservoirs and bulk mains are considered critical assets. The risk of failure of any of these assets would cause anything from severe inconvenience to posing a substantial health risk to our communities. Our work plans and infrastructure strategy have taken this into account and works associated with critical assets are prioritised.

In relation to natural hazard risks, Council will initially attempt to meet any costs from within existing budgets and, where available, from insurances and external subsidies. The Council has two reserve funds to assist with this, the Road Storm Damage Reserve and the Disaster Recovery Reserve. The Draft Financial Strategy provides further detail regarding the financial provisions made to manage natural hazard risks.

How the Council is proposing to address the significant infrastructure issues facing the Whakatāne District

The following pages summarise the significant infrastructure issues facing the Whakatāne District Council, the proposed response to those issues, and the implications of taking or not taking the response action proposed. In many instances, the same principal response option is capable of addressing several infrastructure issues.

Four core infrastructure services are outlined through this strategy:

- a) Water Supply
- b) Sewage Treatment and Disposal
- c) Stormwater Drainage
- d) Roading and Footpaths.

The issues outlined in this Strategy are also categorised into issues relating to the Council's core outcome objectives of:

- a) Resilient People and Places
- b) Thriving Economy
- c) Vibrant Communities
- d) Responsible Money Management.

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Resilient People and Places

Issue 1 – Council’s infrastructure is ageing

The Council provides core services that are essential for the health, safety and wellbeing of the community. If those services cease for any reason, the impact can be significant. Providing services that are reliable and not prone to breakage or outages is therefore essential. The Council carefully manages its core infrastructure to extend the life of our assets and gain the greatest value from our investment. We also maintain our assets appropriately and plan to replace them before they start to fail, minimising service disruption. A large number of the Council’s core infrastructure assets will be coming to the theoretical end of their useful life within the 30-year period of this Strategy. The Council is currently implementing continuous monitoring programme of sampling its underground assets in order to ensure that their actual condition and needs and priorities for its renewal are well understood. Nevertheless this means the Council will have to undertake significant renewal works to maintain its current infrastructure networks. In renewing this infrastructure, Council will consider innovative and creative approaches to redesign the network and incorporate these where practicable. The Council funds renewals over a period of time, to help build up renewal reserve funds. This helps to spread the cost of renewals over the wider population that will benefit from the assets involved.

88.2% of the works proposed through this Infrastructure Strategy are to maintain and renew the assets that the Council already owns and operates. Very few projects are proposed to improve or expand the level of service the Council currently delivers. The total value of the renewals required over the next 30 years equates to \$387 million. If the Council does not undertake these works, major disruptions could occur as the networks begin to deteriorate. Increased repairs required by ageing infrastructure would mean that the cost of not undertaking renewals would be far greater than the proactive renewals programme proposed.

Council’s significant decisions to address the issue:

Renewing our ageing water and wastewater networks

Council’s water supply pipes are ageing and this increases maintenance costs and reactive repairs. Likewise, Council’s wastewater pipe network is ageing and requires an ongoing renewal and replacement programme to minimise the risk of service disruption and overflows. The costs of the ongoing water and wastewater network replacement programmes is approximately \$102 million over the next 30 years.

The Edgecumbe community has experienced issues with its wastewater system since the 1987 earthquake and subsequent events including further earthquake swarms. These events has caused damage to the pipe network, resulting in groundwater infiltration. Council is proposing to replace the wastewater network, the currently preferred option involves the installation of a low pressure grinding pump system, with works commencing from 2027 at an approximate cost of \$24.8 million.

Significant expenditure required for renewals to our roading network

The Council is required to undertake significant renewals to the roading network over the next 30 years, at a total cost of approximately \$287 million. This includes 29 bridges renewals where the structure will reach the end of its theoretical useful life during that period, road pavements that have varied lifespans and deteriorate over time and drainage systems that are critical to ensuring the road network remains in good condition. The Council will review the condition of its assets on an ongoing basis to ensure that renewals are carried out as required. Not undertaking this renewals programme would lead to a significant deterioration of Council assets.

Issue 2 – Ensuring the health and safety of the environment and the community

The Council delivers services which help to meet the health and safety of residents and maintain the health of the environment. However some of these services can still have adverse environmental effects and require resource consents to operate. These include consents relating to the supply of potable water or the treatment and discharge of wastewater. A number of these consents expire over the next 30 years and will need to be replaced. The replacement consents will reflect current (or future) legislative environment and Regional Policy Statement and are expected to require changes in the way we operate and deliver services, particularly through more stringent environmental standards.

The Council endeavours to deliver services in a manner which protects the health and safety of the community. Where utilisation of a service does involve some risk - our roading network, for example - the Council implements measures to reduce the risk to the community wherever practicable and affordable.

Council's significant decisions to address the issue:

Upgrades to Council's plants to comply with new resource consent conditions

The resource consents authorising the discharge of treated wastewater into various waterways from the Whakatāne, Edgecumbe, Tāneatua and Murupara wastewater treatment plants all expire on 1 October 2026. The Whakatāne Water Treatment Plant discharge consent will also expire within the next 10 years. It is anticipated that the new consents may require upgrades to the current water and wastewater treatment systems to achieve higher levels of treatment quality. Robust assessments of the treatment and discharge options will be required. It is anticipated that these will include consideration of discharges to various land, marine and freshwater environments, the integration of wastewater schemes, as well as various treatment options to achieve the appropriate discharge standards.

In addition, the consents for water supply takes for Tahuna Road, Rūātoki, Te Mahoe, Braemar Spring, Murupara, Matatā, Waimana, Tāneatua and Whakatāne all expire within next 10 years and replacement water take consents will be required.

With regards to Council's stormwater systems, Comprehensive Stormwater Consents are required for all stormwater catchments with accompanying Catchment Management Plans developed to manage these systems.

Within the 30 year strategy, and in particular over the next 18 years, it is anticipated that approximately \$65 million will need to be spent to obtain replacement consents and to upgrade wastewater treatment systems, approximately \$2.5 million to obtain new water take consents and approximately \$2.4 million on new stormwater consents and catchment management plans. Each of the new consents will also require additional monitoring and other operational funding.

The works required will be determined by the requirements of the replacement resource consents. If the Council does not undertake the required works, this will have an impact on our ability to continue providing these core services.

Improving our service delivery to reduce adverse effects on the environment

The Council was committed to installing a new wastewater scheme in Matatā in years 2015-2017 but the resource consent application was declined by the Environment Court. An alternative of an integrated wastewater management approach for this part of the district is now being proposed.

The Council has a compelling business case for an Integrated Wastewater Scheme and is seeking funding from central and/or regional government. This Infrastructure Strategy does not currently include budget for an Integrated Scheme, however, subject to external funding, the project will be included in Council's future planning documents.

Providing an alternative source of water

A number of the Council's water supplies have, or are vulnerable to, conditions that do not meet the Ministry of Health (MOH) guidelines for water quality. The quality of water supplied on the Plains has been an area of concern for the Council for many years, with no protozoa treatment and with levels of naturally occurring arsenic in the source water from Braemar Spring and the Johnson Road bores exceeding the Drinking Water Standards New Zealand 2005 (revised 2008). Council has proceeded with the installation of the Otumahi Supply Scheme which delivers water from the Paul Road bore to Edgumbe and Te Teko. With these works completed the Plains water scheme will become primarily an agricultural scheme, whereby the naturally occurring arsenic can be addressed via a water safety plan.

The Whakatāne and Ōhope water source is vulnerable to saline water intrusion during periods of low river flow, contamination with cyanobacteria, and high turbidity during extreme rainfall events. In recent years, the Council has managed the reduced supply capability caused by salt water intrusion by imposing water restrictions, and installing a temporary emergency intake upstream from the permanent intake. However climate change will exacerbate those problems so Council is investigating other water supply options. One option is to supply water from a new bore in the Paroa Road area, although preliminary tests have found the water quality at this bore to be of poor quality. A second option is to expand abstraction from the Otumahi water supply and construct a pipeline to the Whakatāne Water Treatment Plant. This would cost approximately \$6.8 million plus additional resource consent costs and is not currently being progressed. Instead a third option is currently underway with exploration bores further upstream of the existing water treatment plant. If successful an infiltration bore will be established in this location, likely lessening the effects of climate change on the resilience of the Whakatāne and Ōhope water supply. Another option may be to develop a large water storage site within the Awakeri/Paul road area which will be supplied from the Otumahi system. Connecting it to the Whakatāne and Ōhope water supply will provide resilience, increased security and flexibility of water supply into the future.

Council will investigate a long term solution for water security, taking into account climate change considerations and resilience for the Whakatāne water supply and in the meantime Council will continue to utilise the temporary emergency intake arrangement and work towards consumption reduction measures until a decision is made on this project.

Since the last 30 year strategy was presented there has been a water quality incident with the Havelock North water supply. This has caught the attention of all water supply authorities and as a matter of due diligence Whakatāne District Council has undertaken a review of Water Safety Plans. This review has highlighted anomalies and gaps within our water supply systems which may potentially increase risk of problems. Council will be working closely with the Toi Te Ora Public Health Drinking Water Assessor to implement any required changes in making our water supplies safe. This will cost approximately \$1.03 million throughout the life of the LTP.

Improving the Safety of Our Transport Networks

The Council has a roading network of more than 900 kilometres spanning the whole District. Some of Council's main arterial roads suffer from alignment issues, out of context curves, and widths that are no-longer appropriate for the increased traffic carried. Together with poor driver behaviour, these factors have resulted in an increase in the predicted and actual crash risk. Key affected roads are Thornton Road and Wainui Road (part of our Coastal Arterial Route). Improvements to these roads identified in the Coastal Arterial Route Study have been scheduled in the 2018-28 LTP. These works have an estimated cost of \$8.1 million, funded from 2021-28.

In addition, regular road safety inspections are undertaken on all the District's roads, with all identified safety deficiencies assessed, costed and prioritised. The Council has budgeted \$75 million over 30 years, to address minor resilience and safety improvements. Progression of these projects,

together with continued road safety education and programmes and working with other agencies such as New Zealand Transport Agency, the Police and ACC, will contribute to the reduction of the District's collective crash risk over time and will ensure we continue to act consistently with 'Safer Journeys', central government's road safety strategy to 2020.

Issue 3 – Increasing the level of service to ensure a reliable supply

The current capacity of some of Council's core infrastructure is not sufficient to meet the needs of the community. As the community's expectations around levels of service and the protection provided against unforeseen events increases, the Council will need to consider increasing its service capabilities to ensure reliable supply.

Council's significant decisions to address the issue:

Increasing water storage to reduce service disruptions

The ability to continue providing a water supply service in adverse conditions can often be influenced by the level of water storage available. Council is undertaking options studies that aim to identify the risk and security of supply for all water schemes. This will build on the previous investigation of the Whakatāne-Ōhope water storage capacity issue, along with investigating other water storage options. To make Council's water supply scheme more resilient it is expected that these works would cost approximately \$9.5 million over the next 10 years. If reservoir water storage capacities are not increased there is substantial risk to maintaining continuation of water supply during supply or network failures.

Emergency storage in the Whakatāne and Ōhope wastewater pump stations is inadequate. This increases the frequency of overflows during faults and/or electrical failures. The installation of emergency storage tanks at critical pump stations will reduce the frequency of overflows. In addition, the installation of a generator plugin point at individual pumping stations will greatly enhance operational resilience during emergency outages, reducing the likelihood of wastewater overflows. It is expected that the approximate cost to of these works will be \$7.1 million over the next 30 years. If Council does not undertake these proposed projects then the current level of risk will remain.

Increasing the level of infrastructure network capacity

Council is proposing to increase the capacity of the stormwater systems in Whakatāne, Ōhope and Edgumbe. These works are in response to a strong community demand for an increased level of protection from severe flooding events. The stormwater projects proposed through this Infrastructure Strategy are outlined under the section on natural hazards, as these works respond to more than one Council infrastructure issue.

In order to confirm infrastructure network capacity, Council is undertaking various computer modelling scenarios for water supply, wastewater and stormwater schemes. These models will be developed over the next 10 years and be field verified as well as calibrated. Once adopted, Council will have the in-house tools to identify underutilised infrastructure as well as infrastructure at capacity and can then develop capital works programmes to rectify the situation and plan for growth within the District.

Thriving Economy

Issue - Growth in certain areas adds pressure to the Council's infrastructure

Population change is a key driver of demand for infrastructure. Change includes numerical population growth and decline, as well as changes to population structure, such as the number of persons in each age group and change in the number of households (Housing Equivalent Units) and rateable units. The parts of the district that recorded the highest rates of population gain over the last Census period were Poroporo (8.9%), Coastlands (8.6%), Urewera (5.5%) and Otakiri (4.7%). Coastlands has been an area of growth for some time, experiencing a population gain of 59% since 2001. It is expected that the population in the main settlements in the Whakatāne District, particularly around the coast, such as Whakatāne township, Ōhope and Coastlands, will remain reasonably static with pockets of growth. The biggest area of undeveloped, residential-zoned land in the District is at Piripai/Coastlands and Ōhope. This represents an opportunity for future residential development, in particular development that caters for the changing needs of our District. This area is likely to experience the greatest residential development over the next 30-year period.

The Whakatāne District Plan identifies a number of residential growth areas for the District over the next 10 years, concentrated mainly in the coastal areas of Coastlands. These identified growth areas are a mixture of greenfield sites and higher density residential areas involving newly-zoned residential land, existing residential-zoned areas where new development is anticipated and areas of residential intensification. Based on the Whakatāne District Plan, growth is anticipated in the following areas:

- a) Shaw/Huna Roads , Coastlands
- b) Piripai/Opihi, Coastlands
- c) Port Ōhope, Ōhope
- d) Maraetōtara, Ōhope
- e) Kopeopeo

In most areas of the District, the Council's current infrastructure is sufficient to cater for changes in demand due to anticipated growth in residential dwellings and population. However, the concentrated areas of development anticipated in the District Plan, particularly around coastal residential areas, as well as expansion into areas where there is no network provided, will put increased pressure on the current systems.

There is still a risk that demand for certain property types or locations may outstrip the available land and therefore act as a limitation on growth. There is also a risk that some changes in land-use elsewhere may place an unforeseen burden on Council infrastructure. In addition, infrastructure may be positioned for residential growth that does not materialise. Again the Council will monitor the progress of development and only proceed with infrastructure development when clear development plans are underway.

Council's significant decisions to address the issue:

Upgrade Council's infrastructure to cater for growth in particular areas.

The Council's Development Contributions Policy assumes development (increase in the number of Household Equivalent Units) in the areas of Whakatāne township, Ōhope, Coastlands/Piripai/Opihi and Shaw/Huna Roads. This growth is anticipated over the next 30-plus years. The Development Contributions Policy identifies the works required to cater for this growth and how it should be funded, including an element of developer pays, where it is clear the development has necessitated the need for new infrastructure.

The Council is also working with a developer to progress a residential development incorporating a lifestyle retirement village at Piripai/Opihi. This presents a great opportunity for the development of desirable residential real estate close to the Whakatane township.

Anticipated growth in coastal residential areas will put pressure on the Council's water supply system which may also requiring upgrades to the Whakatāne water treatment plant. Council is also required to undertake upgrades/expansion to the reticulation network supplying Coastlands, Shaw/Huna Roads and at Ōhope. All new works will assist in meeting future demand and residential firefighting requirements.

Increasing peak hour congestion is being experienced at some of Whakatāne township's major intersections, particularly the Landing Road Bridge roundabout, Landing/Eivers Road roundabout, and the Domain Road/McAlister Street roundabout. Residential development on the western side of the Whakatāne River is expected to increase these congestion levels further. The Council is progressing with a business case, '*Whakatāne Urban Arterial Access*', to identify the issues and develop a balanced plan of interventions to respond to the issues. Interventions are likely to encompass planning responses, enhancements to network operating efficiency, and new infrastructure. The strategic case phase has been completed which identifies the issues and presents the rationale for investing in solutions. The program business case will be developed through 2018/19 and this will identify a range of options to address the issues, the preferred option, and likely timing for implementation. Through 2018 to 2021 a total of \$2.6 million has been allowed to complete this work; \$200K to complete the program business case, and \$2.4 million for the design and implementation of interventions identified that will enhance the network operating efficiency. New infrastructure identified through the program business case will be put forward through the 2021-31 LTP.

Vibrant Community

Issue – Value-adding projects may be unaffordable for our static population

While some areas of growth have been identified, overall the District is predicted to experience an ageing population and a decline in population towards the end of the period covered by this Strategy, as outlined under the affordability outcome on the following pages. These factors, coupled with the other issues highlighted in this Infrastructure Strategy (for example ageing assets requiring renewals), mean that Council needs to work hard to ensure the sustainability of the assets. Over time, the needs of our community change as a result of changing demographics, social expectations and new technology. The changes can impact on the services that the community demands. The Council needs to respond to these changes in order to maintain a thriving and vibrant community. If the Council does not keep pace with changing expectations and requirements, the issue of population decline and affordability will be exacerbated.

While the Council is solely responsible for the majority of its core infrastructure assets, we do not do this in isolation. We will actively pursue partnerships with central government and other agencies to ensure that our community benefits from extra services and facilities, which may otherwise be unaffordable if they were totally ratepayer-funded.

Council's significant decisions to address the issue:

Develop and maintain key partnerships to enhance community services

The Council works with several key partners to deliver our core services. NZTA is a critical investment partner, providing investment for a large portion of our roading works. Thanks to this partnership, the Council is able to maintain an effective roading network across the District, and add to the network with new facilities such as cycle paths. The NZTA will be partnering Council through the Whakatāne Urban Arterial Access business case process as the main entry to town is the SH30 bridge that joins Landing Rd.

Council also works closely with the Toi Te Ora Public Health, which enables us to deliver new or improved services to our smaller communities. A number of projects included in this Strategy are reliant on funding from Toi Te Ora Public Health, including treatment of the Murupara water supply if either the community chooses or central government requires it, and a new water bore in Matatā.

Seal Extensions

Te Urewera Route Improvements

There may be economic, social, cultural and environmental benefits from improving the resilience and sealing this route, which is a Special Purpose Road. Council is in the process of developing a business case to provide support for an NZTA funding application to look at options for improving the route. \$4.6 million has been included in the LTP from 2018 to 2021 for construction. The business case is being developed in partnership with Te Uru Taumatua, Te Urewera Board, Wairoa District Council and NZTA and will address the future management and relationship with Te Urewera. Part of this is looking at the form and function of the road from an environmental sustainability and Tūhoe world view perspective. The outcomes from this process will guide the final form of any improvements to the route.

Pokairoa Rd and Ngamotu Road Seal Extension

This route is classified as a primary collector and provides the quickest and shortest route to the central

North Island and points south for both cars and commercial vehicles, saving 20 minutes in time and 16 kilometres in distance. The unsealed portions of this route are by far the most expensive unsealed roads to maintain owing to the large volume of logging trucks and other commercial operators. A program business case will be completed during the 2018 to 2021 period to support a future funding application to NZTA for seal extension. The cost expectation for this project is \$8.2 million from 2021 to 2026 for construction, however this project is not yet included in the LTP, and will be considered during development of the 2021-31 LTP once the program business case is completed.

Local Road Seal Extensions

Excluding the roads above there are another 160 kilometres of unsealed road remaining in the district and there is an ongoing demand from the rural community who reside on these roads to have them sealed. There are health benefits to the community to be gained from sealing some of these roads. The maintenance costs for low volume unsealed rural roads is similar to low volume sealed roads. The main hurdle to seal extension is the capital cost involved. The Council has since 2009 decided not to fund further seal extensions. However, there may be some instances where property owners who live on an unsealed road wish to fund the cost of a seal extension. Where this is the case, the Council has signalled that it will work with property owners to facilitate a mutually agreeable solution. The current LTP does not include funding for seal extensions generally, but the Council may consider at some point in the future that there is merit in sealing a limited number of unsealed roads for strategic, safety and route efficiency reasons.

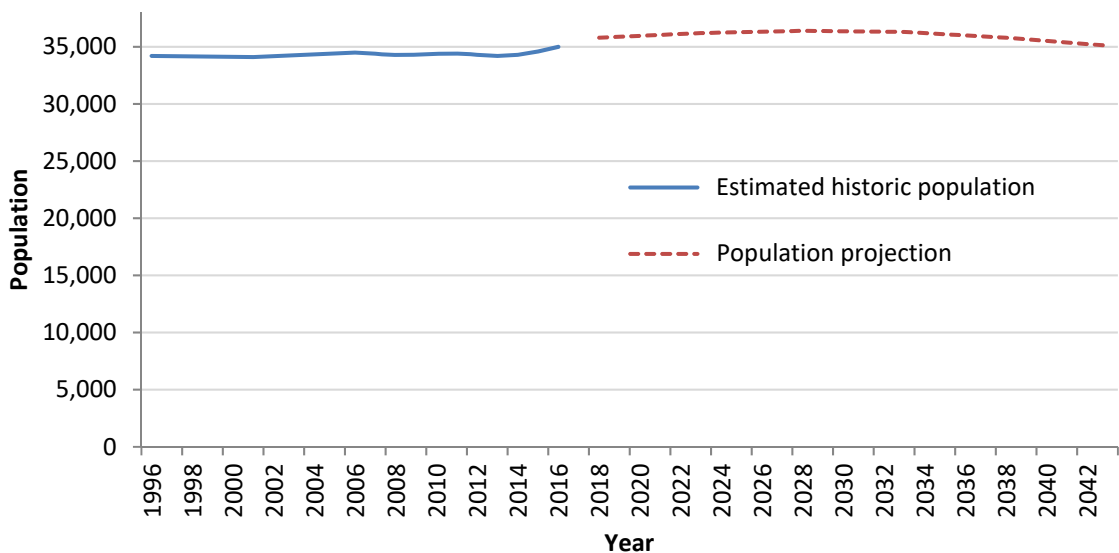
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Responsible Money Management

Issue – Balancing the community’s desire for increased services with the ability to pay, given a stable population

While growth is expected in Whakatāne and Ōhope, the District as a whole is predicted to experience a structural change and slight population decline over 30 years, which may make the maintenance, upgrading and renewal of existing infrastructure less affordable. At the 2013 Census, the Whakatāne District’s resident population was 32,691, a decrease of 606 or 1.8 percent on the 2006 Census figure of 33,297. The population of the Whakatāne District is projected to remain relatively stable over the next 30 years, with minor growth until 2028, followed by a slight but steady decline.

Figure 2: Estimated Resident Population and Projected Baseline population, Whakatāne District



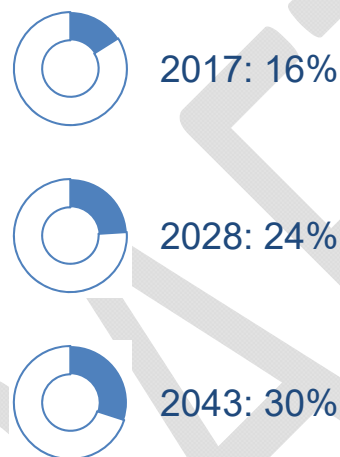
The small rural communities of Te Teko (22%), Orini (11.5%), Murupara (9.8%), Matahina-Minginui (8.8%), Rotomā (7.4%) and Waimana (6.3%) recorded noticeable population declines in the 2013 Census. Similarly, Matahina-Minginui, Waimana and Murupara also experienced population decline between the 2001 and 2006 Census periods. It is expected that these small rural communities will continue to decline over time as the ageing population retires and children move away to seek employment or further education opportunities. Population decline in some locations may mean that there will be fewer ratepayers to support the cost of infrastructure. While the decline is not currently predicted to reach a point where drastic changes in infrastructure planning are required, the Council will continue to monitor this to ensure that we are positioned to respond if required. The Council and other partners such as Iwi and business are also looking at ways we can reduce or reverse the predicted decline, by enhancing the vibrancy and economy of our smaller rural communities. The Council is also using funding mechanisms to ensure that development in rural communities is not cost-prohibitive. This includes equalising the cost of key services across the District, and funding renewals on the basis of a 30-year average, reducing the potential for significant cost peaks in future years.

Whakatāne’s population is also predicted to age faster than most other areas in the Bay of Plenty. As

shown in Figure 3, nearly one-quarter of Whakatāne’s population will be aged 65+ years by 2028 (up from 16 percent in 2017), while the proportion is projected to reach 30 percent by 2043. This is driven primarily by the net migration loss of reproductive age adults and also initial gains at older ages. One of the implications of an ageing population is that more elderly people will be on fixed incomes and therefore will be less able to afford rates increases related to maintaining or building infrastructure. The change in the age profile of the community is also expected to lead to a larger demand for smaller households, more suited to the needs of the elderly population. This has contributed to the increase in households that the Council’s Development Contributions Policy is assuming will occur over the next 30 years. A larger number of smaller houses with fewer occupants per house increases the relevant requirement on Council infrastructure per resident.

Figure 3: Existing and forecast changes in relative population aged over 65, Whakatāne District

Population aged 65+



The predicted 30 year static/declining population at a District level and an ageing population with reduced disposable income means that our opportunities to increase the rating base of the District are reduced. Alongside the issues of ageing infrastructure and increasing community expectations already discussed in this Strategy, the Council is under increased pressure to focus on affordability. As part of the development of the 2018-28 LTP, the Council has developed a Financial Strategy that provides the framework for its debt profile and rates income, alongside other key financial considerations. As a core focus for the LTP 2018-28, affordability drives many of the decisions around the Council’s work plan and levels of service provision. The Council has identified a series of projects that it would like to undertake to address the issues raised. However, if all of these projects were to be completed within the next ten years, the rates increases required would be unaffordable for the community and debt levels would increase to an unacceptable level.

Council's significant decisions to address the issue:

Prioritising projects, undertaking further investigations and seeking external funding

There are a number of projects outlined in this Strategy that the Council may wish to complete during the next ten years, but which are not currently scheduled through the LTP 2018-28. This is often for affordability reasons, or due to the need to undertake further investigation. Where possible, the Council will consider alternative opportunities for funding these projects, including utilising central government funding wherever possible. The following projects have not currently been included in the LTP 2018-28, but may be reconsidered in the future:

- a) Integrated wastewater scheme
- b) New Matatā water Bore
- c) New Otumahi water storage reservoir
- d) Fluoridation of water supplies
- e) Seal extensions (unless an economic benefit exists or funding is agreed with landowners)
- f) Second Whakatāne River bridge to Whakatāne urban area

Non-Infrastructure related works to address affordability

The Council is proposing to carry out a wide range of projects and works to address the ongoing sustainability and affordability of its operations. A major focus is addressing the predicted population decline by enhancing the attractiveness of the District as a lifestyle, business and tourism destination. This includes creating development opportunities that address demographic trends. The Council is also looking to encourage communities to collaboratively enhance the vitality of the District. This includes working with iwi, following settlement of their Treaty claims, to understand their visions and aspirations and establish ways that the Council can assist the realisation of their aspirations.

The Financial Strategy looks at ways in which, through prudent financial management, the Council can enhance its future sustainability and affordability. This includes funding mechanisms, prudent investment and equitable income streams.

Infrastructure Investment Programme - Total Expenditure

In addressing the issues identified in the previous section of this Strategy, the Whakatāne District Council expects to spend \$628 million on new or replacement infrastructure between 2018 and 2048. Over the same period, \$1,409 million is expected to be spent on operating costs; labour, depreciation, interest, materials, maintenance and overheads. For the 30-year period involved, these figures are anticipated to apply across the four infrastructure asset activity areas as follows:

Infrastructure Activity	Capital Expenditure \$	Operational Expenditure \$
Wastewater Treatment & Disposal	129,225,682	220,213,069
Water Supply	63,602,843	297,181,040
Stormwater Drainage	43,175,393	171,545,239
Roading and Footpaths	392,045,475	720,955,759
TOTAL	628,049,393	1,409,895,107

Operational and Capital Expenditure Highlights

Figures 4 and 5 show the expected expenditure year-on-year up to 2048, by driver (growth, asset renewal or level of service change) and by infrastructure activity area classification. Figure 6 shows the expected operational expenditure projections by activity for the period 2018-2048.

Figure 4: Whakatāne District Infrastructure Expenditure Projections 2018-2048

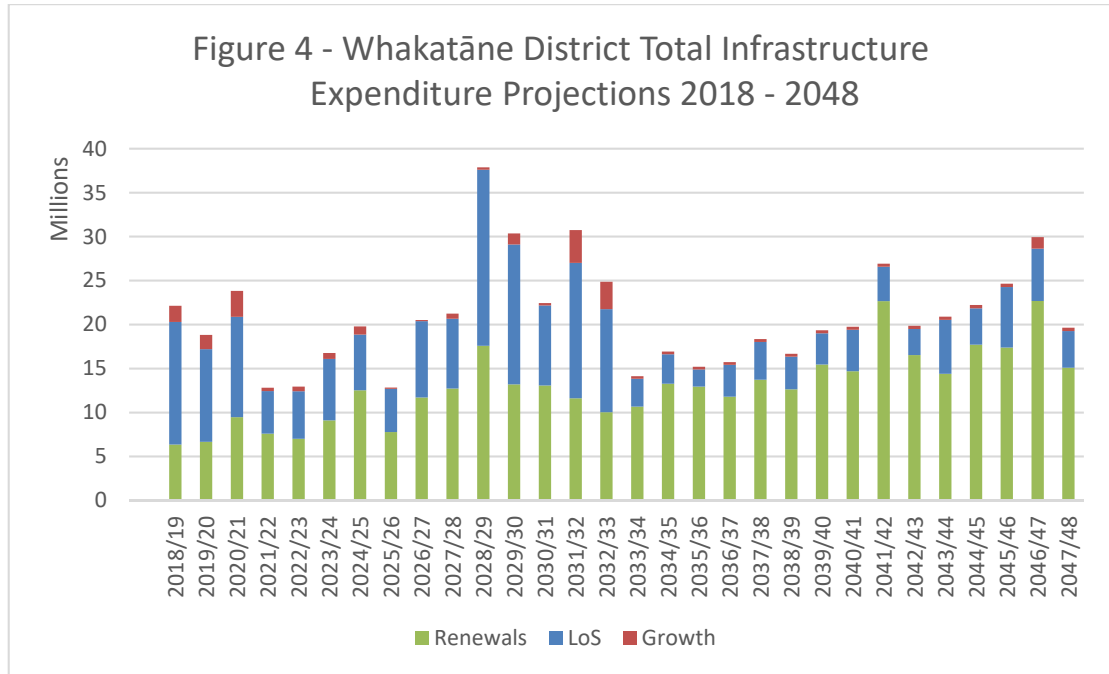


Figure 5: Projected Infrastructure Expenditure 2018-2048 - by Infrastructure Activity Area

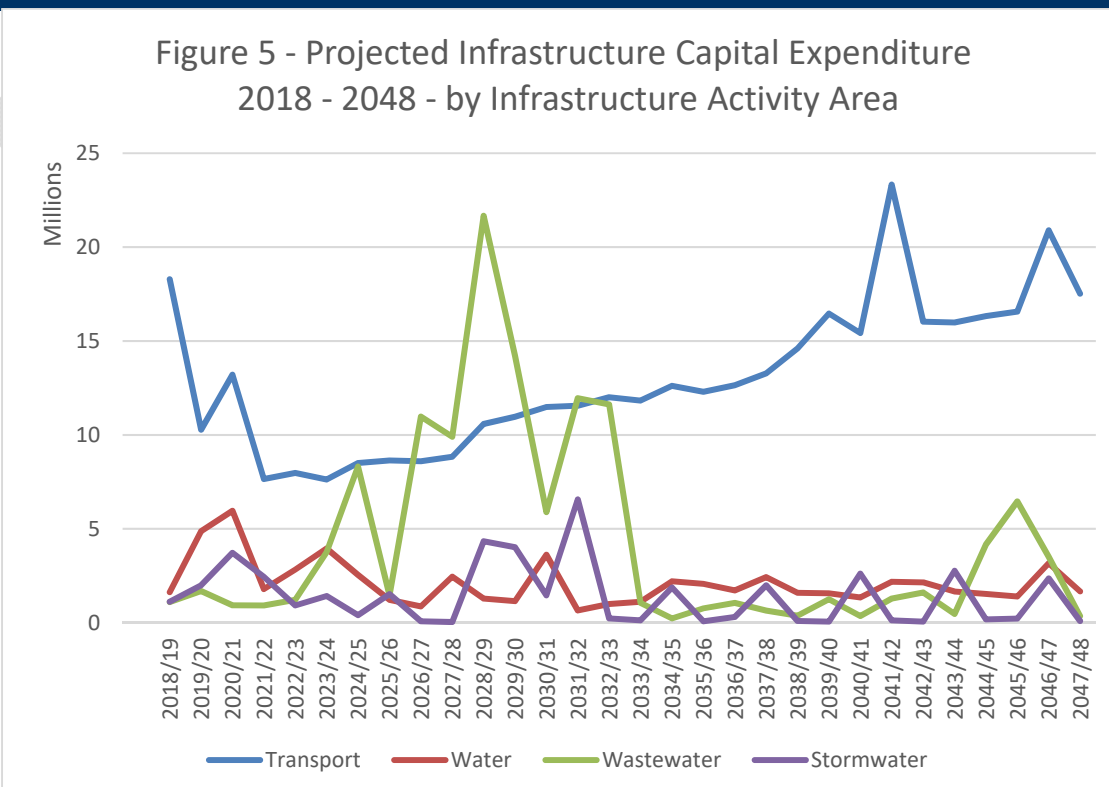
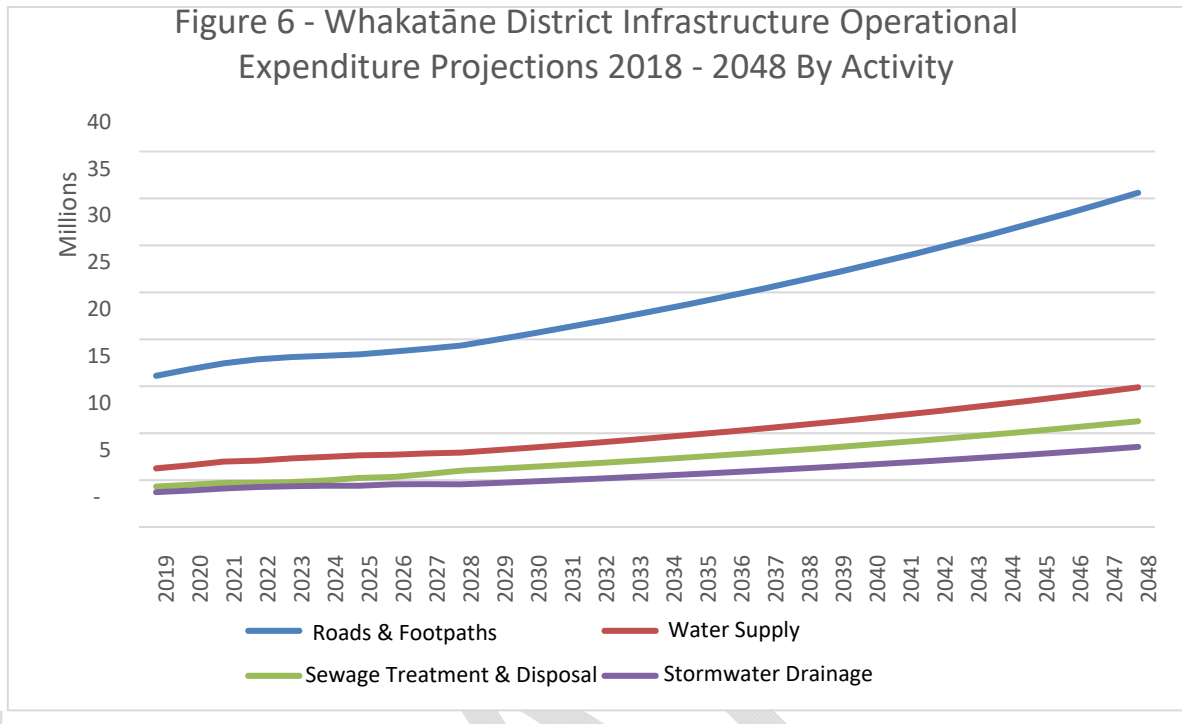


Figure 6: Whakatāne District Infrastructure Operational Expenditure Projections 2018-48 - by Activity



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Three Waters Asset Base

Asset Life Cycle Assumptions

The Council Three Waters assets are detailed in the table below. This information is current as of the 2017 valuation.

WASTEWATER ASSETS		WATER ASSETS		STORMWATER ASSETS	
Asset	Quantities	Asset Type	Quantities	Asset Type	Quantities
Service Line (each)	9,215	Reservoirs (each)	42	Pipes (m)	114,468
Gravity Main (km)	188.6	Pipes (m)	543,847	Open Channel (m)	28,250
Rising Main (m)	9,453	Service Line (m)	13,229	Storage/Retention Pond (each)	10
Outfall (m)	5,204	Pump Station (each)	17	Pump Station (each)	20
Pump Stations	48	Resource Consent (each)	11	Resource Consent (each)	2
Treatment Plant	6	Treatment Plant (each)	9	Manhole (each)	1,700
Manholes	2,880				
Resource Consent	17				
TOTAL ASSET VALUATIONS AS AT 30 JUNE 2017					
ORC: \$98,462,777 ODRC: \$46,814,052 AD: \$1,405,175		ORC: \$118,946,518 ODRC: \$63,558,927 AD: \$1,745,165		ORC: \$85,922,131 ODRC: \$50,642,986 AD: \$1,112,372	

NOTE: ORC = Optimised Replacement Cost, ODRC = Optimised Depreciation Replacement Cost, AD = Annual Depreciation

Three Waters data confidence

Wastewater, Water and Stormwater data was given a combined rating of B – C which is a confidence level ($\pm 25\%$). The asset confidence rating is current as of the 2017 valuation. However, it is noted that in some instances the 2014 valuation data had to be utilised due to missing data.

The B – C rating clearly shows Council's data within the current database (Hansen) has anomalies and requires further attention. To address this Council is moving towards a new asset data management system for Three Waters.

Asset Life Cycle Assumptions

Asset information is as complete as possible at 30 June 2017. This is based on the GIS and historical Hansen asset data. Only assets managed by Three Waters have been included in this valuation. Assets such as cesspits and public soakholes form part of, and were valued under, the transportation asset group.

All projected expenditure is stated in 2017-18 dollar values, with no allowance made for inflation. Operation costs are largely based on historical expenditure.

Maintenance and operations allocation are based on maintaining current service levels.

No backlogs in maintenance or renewals are currently identified. However, it is expected that as Council transitions to new asset data management system backlogs will be identified. This assumption is based off the amount of reactive renewals that are being completed on an ad hoc basis.

The asset condition data is currently under review. The 2015 condition rating is summarised below:

- Wastewater: 60% good, 35% fair, 5% poor
- Water: 60% good, 35% fair, 5% poor
- Stormwater: 80% good, 20% poor

Levels of Service (LoS) Assumptions

LoS are key business drivers and influence all asset management decisions. Council’s Wastewater, Water and Stormwater activities contribute to the following community outcomes:

- Reliable and Affordable Infrastructure
- Community Needs
- Valuing Our Environment

The table below details the key individual LoS provision statements for the Three Waters.

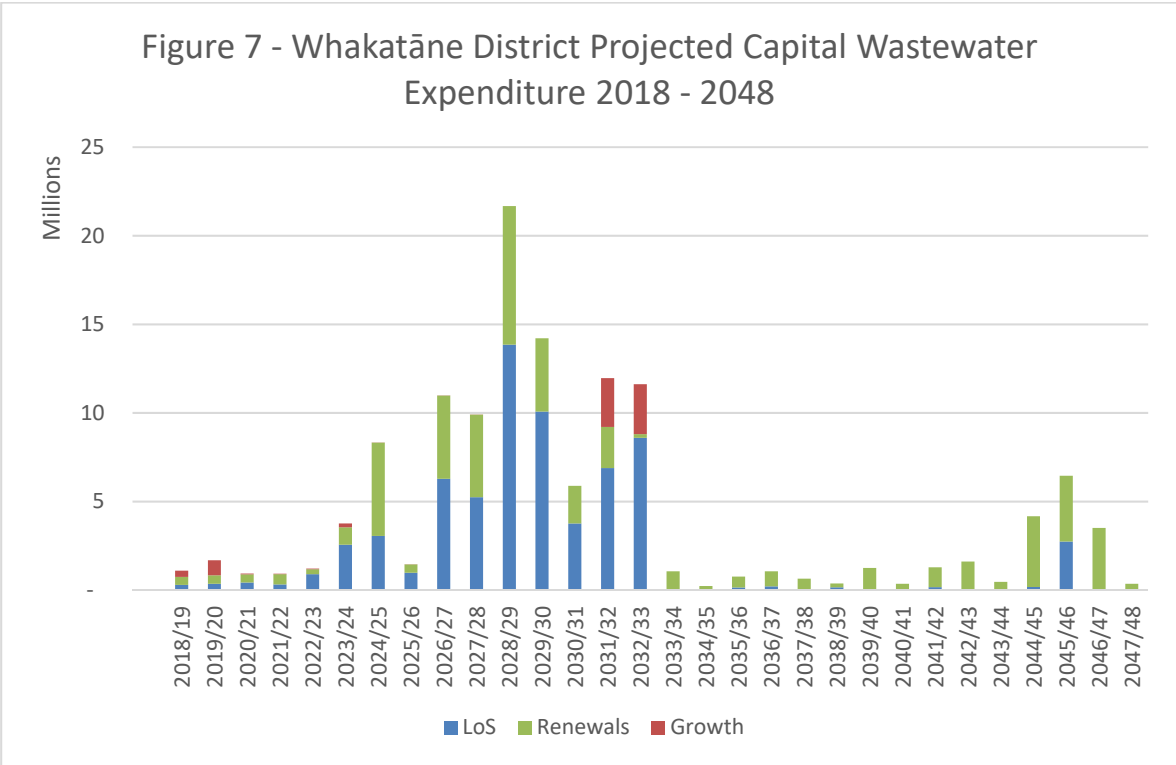
WASTEWATER LoS	WATER LoS	STORMWATER LoS
<ul style="list-style-type: none"> • To provide high quality, efficient and reliable wastewater systems that are affordable needs of the urban and commercial areas. • Minimise any possible health hazards from the collection or management of wastewater • Facilities provided are safe with no danger of accident injury to users • Protection of the environment by mitigating the quantity of contaminants discharged into receiving waters 	<ul style="list-style-type: none"> • Provide a quality continuous, safe, uninterrupted, cost effective and adequate urban water supply system accessible throughout the District’s urban and commercial areas that complies with the Drinking Water Standards • Customers are provided with adequate safe drinking water with reasonable pressure and flow • Managing the effects of development upon the existing network and provide sustainable solutions for future generations and educating communities about water consecration and water contamination issues for both public and private supplies 	<ul style="list-style-type: none"> • Provide a quality continuous, safe, uninterrupted, cost effective and adequate urban stormwater system accessible throughout the District’s urban and commercial areas • Protection of public health and property by the collection, transportation, appropriate treatment and disposal of stormwater run-off • Protection of the environment by mitigating the quantity of contaminants discharged into receiving waters

Further detail on any of the areas covered in the Three Waters Asset Base section see the individual Wastewater, Water and Stormwater Asset Management Plans on our website.

Major Wastewater Capital Works Programme Summary

Figure 7 below illustrates the projected capital expenditure associated with the management of Whakatāne District wastewater infrastructure assets until 2048.

Figure 7: Whakatāne District Projected Capital Wastewater Expenditure 2018-2048



Major wastewater infrastructure projects that are expected to be undertaken in the 2018-2048 period are shown in the table below:

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Shaw/Huna Road expansion	0.88	2019-20	That this project will be funded from Development Contributions	Do not undertake works, risk impeding growth and development
Replacement of McAlister Pump Station rising main	4.0	2024/25	Condition assessment indicates that the pipe will start failing by this time	Replacement carried out in later or earlier years due to a different rate of deterioration
McAlister Pump Station emergency storage	1.6	2024	At least 8 hours storage capacity is required in emergency situations	Do nothing – accept risk of low capacity
Upgrading of Whakatāne wastewater treatment system	23.3	2019-33	New resource consent may require upgrades	Do nothing – upgrades not required for new consent
Replacement of the existing reticulation with a new low pressure grinding pump system in Edgumbe	24.8	2027-47	The existing reticulation system will have deteriorated by this time, causing significant reduction of LoS and very high operations and maintenance costs	Replacement carried out in later or earlier years due to a different rate of deterioration and/or community's ability to pay and demand for improvement.
Obtaining replacement resource consents for wastewater treatment plants	4.0	2022-26	Existing Resource Consents Expire 2026	Do nothing - Council in breach of consent
Upgrading of Tāneatua wastewater treatment system	9.7	2027-30	Regional Council will enforce new discharge quality standards, requiring upgrades	Do nothing - Council in breach of consent
Upgrading of Edgumbe wastewater treatment system	9.8	2027-30	Regional Council will enforce new effluent quality standards, requiring upgrades	Do nothing - Council in breach of consent

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Upgrading of Murupara wastewater treatment system	14.0	2024-29	Regional Council will enforce new effluent quality standards, requiring upgrades	Do nothing - Council in breach of consent

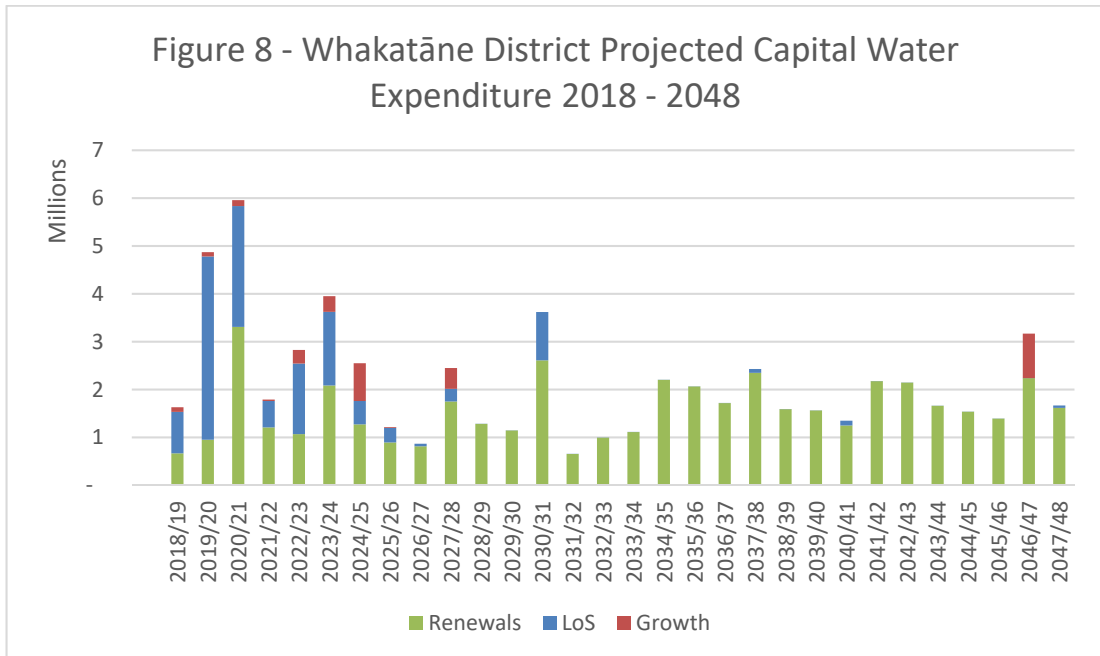
Implications of uncertainty

The key uncertainty for our wastewater treatment and disposal infrastructure is around resource consent-driven changes. It is anticipated that the level of treatment required will dramatically differ from our current levels of treatment and the level of investment required to gain future resource consents will alter significantly. This may require significantly modifying the existing treatment process and incorporating new technologies for treatment and disposal of wastewater.

Major Water Capital Works Programme Summary

Figure 8 below illustrates the projected capital expenditure associated with the management of Whakatāne District water infrastructure assets through to 2048.

Figure 8: Whakatāne District Projected Capital Water Expenditure 2018-48



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Major water supply infrastructure projects expected to be undertaken in the 2018-2048 period are shown in the table below:

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Shaw/Huna Road development expansion	0.2	2019-20	That this project will be funded from Development Contributions	Do not undertake works, risk impeding growth and development
Install treatment at Murupara	0.3	2020/21	That the community agree to having water treatment or central government require it as a result of the Havelock North drinking water inquiry.	Do nothing – accept current water quality
Seismic and storage capacity improvements for Water Supply Systems	12.1	2019-26	Meet seismic requirements and increase storage for emergency situations	Do nothing – accept risk of failure during earthquake events and low capacity
Sludge treatment in Whakatāne	0.9	2023-24	New resource consent may require sludge treatment	Do nothing – If upgrades not required for new consent
Investigate and construct water filtration gallery upstream of Whakatāne WTP	2.3	2019/20	Water supply resilience and increase security of supply	Do nothing – issues with saline water during adverse dry (drought) conditions
Obtain replacement water take consents	1.5	2018/26	Water take consents expiring	Do nothing - Council in breach of Resource Management Act
Water meter installation programme	0.75	2019-47	Assist with obtaining new water take consents, improved demand management and knowledge of systems	Do nothing – Council not in line with best practice
Coastlands ring main	0.5	2023-24	Medium growth in Whakatāne and Ohope. Funded from Development Contributions	Complete the project at a different time, depending on actual population change

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Upgrading Harbour Road main in Ōhope	0.75	2024/25	Assuming medium growth in Ōhope	Complete the project at a different time, depending on actual population change
Reservoir replacement in Ōhope	1.6	2027/28	Economic life of the reservoirs may expire by this time	Replacement carried out in later or earlier years due to a different rate of deterioration.

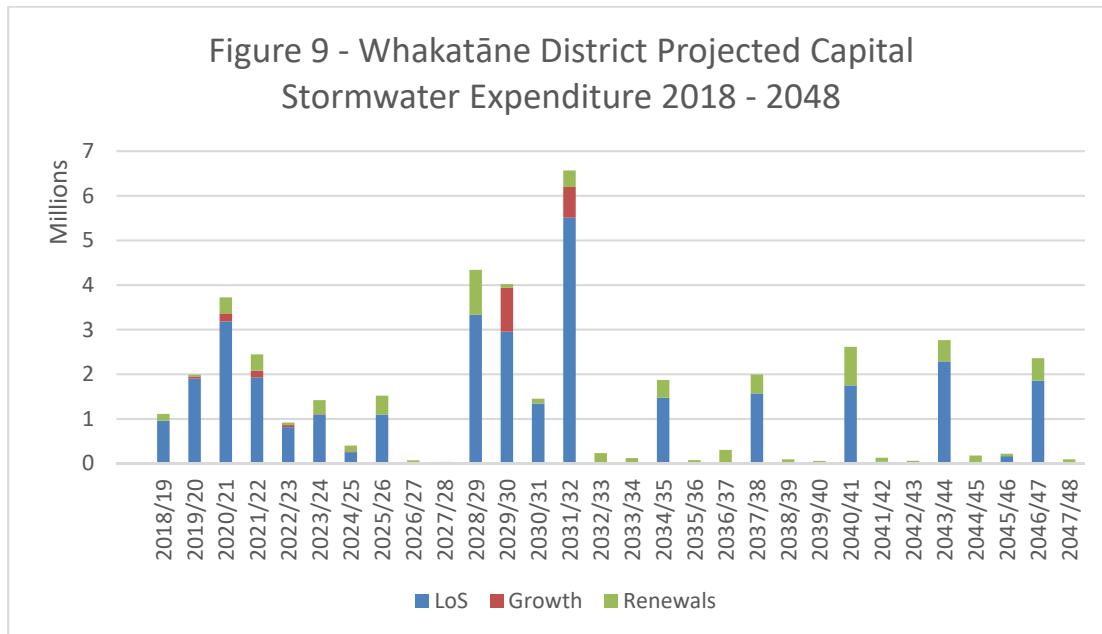
Implications of uncertainty

Projects are based on assumptions around water supply resilience, population growth and asset deterioration. If the population growth and/or asset deterioration progress at rates different to assumptions, then the timeframe and scale of works required may vary. It is not expected that any change would be significant and therefore would not have a significant cost implication. However, the Council will continue to monitor asset condition and population change on a regular basis.

Major Stormwater Capital Works Programme Summary

Figure 9 below illustrates the projected capital expenditure associated with the management of Whakatāne District stormwater infrastructure assets through to 2048.

Figure 9: Whakatāne District Projected Capital Stormwater Expenditure 2018-48



Major stormwater infrastructure projects expected to be undertaken in the 2018-2048 period are shown in the table below.

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
New pump stations in Apanui Catchment	4.8	2032	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Upgrading of St Joseph pump station	1.1	2019-21	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
New pump station in Hinemoa Catchment	3.7	2020-21	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Upgrading of Riverside Drive pump station	2.0	2029/30	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Henderson Street improvements	0.8	2019-20	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Pipe upgrades to increase the conveyance capacity in Whakatāne and Ōhope	17.0	2020-2047	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Undertake Comprehensive Stormwater Consents	1.0	2018-23	Consents required by Regional Council	Do nothing - Council in breach of consent
Undertake Stormwater modelling for each system	1.5	2019-46	Used for better understanding of system and for resource consentsProbability Event	Not fully understanding systems

Implications of uncertainty

The stormwater projects proposed are the result of a clear demand from the community for an increased level of stormwater protection. While the Council considers that it will never be economically feasible to provide complete protection from extreme weather events, the Council has developed a programme of works to enhance the level of protection provided, within the limits proposed through the Council's Financial Strategy.

If the community requests a different level of protection from that proposed, or if the timeframes proposed for the upgrades are not deemed acceptable, the Council may need to alter the improvement programme. This could have a significant financial impact on the Council's programme of works, depending on the scale of the changes involved. Until the specified works are progressed, the current level of stormwater risk will remain.

Major Roads and Footpaths Asset Base

Asset Life Cycle Assumptions

The Council Roads and Footpath assets are detailed in the table below.

Asset	Quantities
Local road network	900 km <ul style="list-style-type: none">• Approximately 700 km sealed• Approximately 200 km unsealed
Footpaths	196 km
Off road cycle path	10 km
Streetlights	3,454
Signs	7,261
Bridges	253
Drainage assets	310 km

Major Road and Footpaths asset valuation as of 1 July 2016:

- Optimised Replacement Cost: \$372, 503, 938
- Optimised Depreciated Replacement Cost: \$234,111,496
- Annual Depreciation: 46,420,855

The overall asset age is relatively young. Many longer life assets have not yet reached the age of renewal. This statement does not include the 26 bridges that are reaching the theoretical end of their useful life which require significant renewal expenditure.

The majority of asset performance is rated as average or above average. Areas performing below average relate to accessibility and unsealed road average three year costs.

Life cycle assumptions are drawn from stringent inspection regimes and management processes.

The life cycle of roading and footpath assets are categorised into five principal areas:

- Sustaining the existing assets
- Replacing the existing assets
- Growing the asset base through enhancing service delivery or service demand
- Vested assets from developers
- Disposing of assets when they reach the end of their useful life or fail to deliver the level of service

Roads and Footpaths data confidence

Whakatāne District Council relies on high quality asset data managed through the RAMM Database. Asset data is regularly kept up to date through day to day operations, as well as yearly validation programs carried out on one third of the asset database. The Roding Efficiency Group (REG) has been producing RCA Data Quality Reports for the councils since 2014/15. This information has been used to drive data improvement and has resulted in an improving trend over time.

Given the effectiveness and robustness of the RAMM data management system, there are no major maintenance or renewal backlogs for Major Roding and Footpath assets.

Level of Service (LoS) Assumptions

LoS are key business drivers and influence all asset management decisions. The overarching performance measure goal is to provide safe and reliable local transport networks to enable efficient and affordable transportation of people and goods.

Council's Roads and Footpaths LoS are based on the One Network Road Classification prescribed LoS, and encompasses the areas summarised below:

- Safety
- Amenity
- Accessibility
- Travel Time Reliability (TTR)
- Cost Efficiency

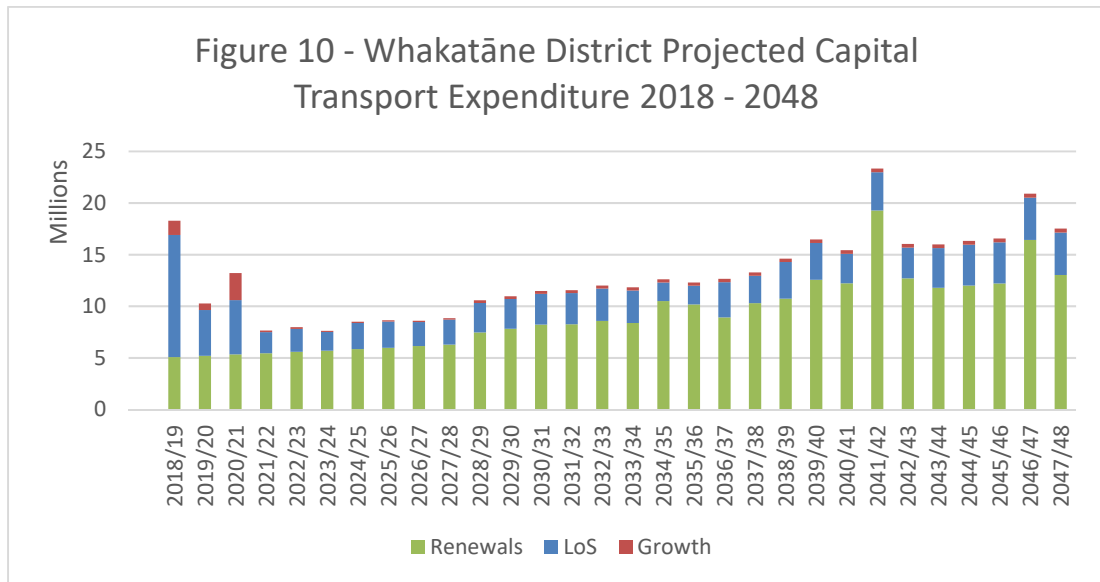
Further detail on any of the areas covered in the Major Roads and Footpaths Asset Base section see the individual Transport Asset Management Plan on our website.

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Major Roads and Footpaths Capital Works Programme Summary

Figure 10 illustrates the projected capital expenditure associated with the management of Whakatāne District Roads and Footpaths infrastructure assets through to 2048.

Figure 10: Whakatāne District Projected Capital Roads and Footpaths Expenditure 2018-2048



Major new roading and footpath infrastructure projects expected to be undertaken in the 2018-2048 period are shown in the table below. Notes have not been subject to escalation.

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Sealed Road Resurfacing	87	2018-2048	No significant changes to traffic mix and volume. Average seal life of 15 years achieved for years 1 to 17. Average seal life reduces to 12 years from year 17 to 30 due to accumulation of seal layers.	Extend average seal life. This will reduce annual resurfacing cost but result in increased reactive maintenance costs, reduced level of service and increased risk of pavement failure. Reduce average seal life. This will increase annual resurfacing costs but result in marginally decreased reactive maintenance costs and marginally decreased risk of pavement failure. Network performance / condition monitoring and benchmarking against other networks indicates current settings are close to optimal

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Sealed Pavement Rehabilitation	69	2018-2048	No significant changes to traffic mix and volume. Rehabilitation is the least whole of life cost option. Rehabilitation requirement increases from 0.5% of the network per annum in year 1 to 1.2% of the network per annum in year 30 as the pavement age profile matures.	Rehabs do not proceed unless they are the least whole of life cost option. Each evaluation includes at least three options including: <ul style="list-style-type: none"> • On-going maintenance • Maintenance + reseal • Pavement Rehabilitation Evaluations are undertaken in accordance with NZTA procedures.
Unsealed Road Metalling	26	2018-2048	No significant changes to traffic mix and volume. No seal extensions. Average metalling cycle of 5 years	Reduce re-metalling rate. This will result in sharply increased reactive maintenance (grading) costs, and a significant increase in risk that the road will not be fit for purpose for significant lengths of time.
Low Cost Low Risk Improvements - LCLR (all improvement works < \$1M)	75	2018-2048	Programme targets delivering on NZTA investment outcomes, primarily: <ul style="list-style-type: none"> • Reduced deaths and serious injuries • Secure and resilient network Efficient freight supply chains	All activities in this category are assessed through the Council Minor Improvements Policy. This policy includes a process for assessing the best value option from a range of alternatives for each site, and prioritising each site for inclusion in the programme.

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Drainage Renewals	23	2018 2048	Existing renewal rates remain appropriate.	<p>Options include:</p> <ul style="list-style-type: none"> • Replace like for like. • Replace with improved facility. • Don't replace. <p>The range of feasible options is site specific and is assessed on a whole of life cost and affordability basis. Non-replacement of drainage structures generally significantly increases risk of extensive damage or deterioration to the road and other structures negatively impacting reactive maintenance costs, resilience, accessibility, safety and amenity of the roading asset.</p>
Bridge Replacements (>\$1M) <i>Note: bridge replacements <\$1M are included in LCLR costs</i>	7.5	2042 2047	Bridge replacement dates are based on established average achieved lives and engineering assessment/judgment.	<p>The range of feasible options is site specific and is assessed on a whole of life cost and affordability basis in accordance with NZTA procedures. Assessed options include:</p> <ul style="list-style-type: none"> • Replace bridge with bridge. • Replace bridge with low cost ford. • Repair existing bridge and postweight limit

Proposal (most likely scenario)	Cost (\$ millions)	Timing	Key assumptions	Alternative option
Seal Extension <i>Note: for partnership projects only, not general seal extensions</i>	Up to 28.5	2018 - 2048	<p>Agreement is reached with Te Urewera for seal extension or equivalent surface improvements using other mediums for 15km of Ruatahuna Road (\$4.6M)</p> <p>Business case and Council supports an outcome for sealing the southern route of Pokairoa and Ngamotu Roads (\$8.2M)</p> <p>Council supports the resumption of the seal extension programmes for local roads (\$12.5M)</p>	Do nothing

Implications of uncertainty

Much of the transportation programme planned over the next 30 years is heavily reliant on NZTA funding investment. If the level of investment changes significantly, this could have a significant impact on the programme Council delivers. This could affect the level of service provided.