WHAKATĀNE
District Council
Kia Whakatāne au i ahau

INFRASTRUCTURE STRATEGY

Rautaki Pakiaka

Supporting the Long Term Plan 2015-25
Consultation Document

2015-45

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 which rely on infrastructure assets. It is critical that those assets are managed well. 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) 2015-25.

An infrastructure strategy is a new 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.

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 2015-25.

While the Council delivers services utilising a range of different infrastructure services, this Infrastructure Strategy focuses on the following four core infrastructure services:

1. Water supply
2. Sewage treatment and disposal
3. Stormwater drainage
4. 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:

- **Asset Management Plans** - provide an outline of the asset management works required to prudently manage infrastructure and deliver essential services to the community.
- **Financial Strategy** - outlines the financial context in which the Council is operating and the financial implications of the projects proposed through this Strategy.

- **LTP 2015-25**. While this strategy has a 30-year planning horizon, the projects proposed for the first ten years are included in the Council's LTP 2015-25.
- **Proposed Whakatāne District Plan (PWDP)** - identifies a number of residential growth areas for the District over the next 10 years. The decisions on the PWDP are expected in mid-2015
- **Whakatāne and Plains Water Supply Strategy** – May 2014 by Alan Bickers – a report commissioned by the Council on these two water schemes
- **Draft Plains 50 Year Strategy Study** – September 2014 by Opus International Consultants Ltd – this is a draft Strategy only and has not been adopted by the Council.
- **Eastern Bay of Plenty Spatial Plan** – being developed in conjunction with neighbouring Councils and the Bay of Plenty Regional Council, the spatial plan will predict and coordinate the future development changes in the region, and the impact these changes will have on various resources, including infrastructure requirements over the next 30 – 50 years.

Copies of the Council's Financial Strategy and LTP Consultation Document can be found on the Council's website: www.whakatane.govt.nz

Key principles underlying this Strategy

The Council has identified four key principles for the development of the LTP 2015-25. 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 with the community to prioritise core services and prudent infrastructure management which will meet their needs
Sustainable	We will undertake good stewardship of our assets and services, managing these in a way that does not compromise our ability to provide quality, affordable services to the community in the future
Affordable	We will be responsive and sensitive to the issue of rates affordability across the District, in particular when making decisions about infrastructure investments and funding mechanisms
Enabling	We will provide the infrastructure required to support and enable growth and prosperity in our district and work with others towards this goal

Core outcomes for the LTP 2015-25

The Council has identified four key outcomes for the development of the LTP 2015-25. 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 2015-25 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) **Delivering quality core services**
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) **Encouraging communities and businesses to thrive**
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) **Working together to meet the community's needs**
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) **Rates affordability**
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 six 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:

1. Much of the Council's core infrastructure is ageing and the Council has a large number of renewals proposed over the next 30 years;
2. New legislation leading to stricter environmental controls, which the Council must adhere to, while also endeavouring to improve community health and safety;
3. Our District is prone to natural hazards, requiring works to mitigate the risk to our community;
4. Increases required to some of the levels of service we provide to ensure a reliable service;
5. Growth in certain areas of the District will put increased pressure on some of our infrastructure;
6. Overall, the District is predicted to experience a fairly static, ageing population, which may have an impact our ability to provide added value services.

Planning assumptions

A broad range of factors influencing Council's long-term planning are discussed in the LTP. The high level assumptions that are particularly relevant to this Infrastructure Strategy are categorised below and include:

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.
Service Delivery
When renewing resource consents, the majority of consent conditions will remain the same, except where outlined in this Strategy.
Infrastructure needed for growth-related development will be paid for by development contributions or financial contributions.
We will continue to deliver our services to the community in the same way.
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 Polices found in the 'Our Costs in Detail' document available on our website: www.whakatane.govt.nz.
Population
Population growth across our District is expected to reflect the population projections provided by the National Institute of Demographic and Economic Analysis (NIDEA), University of Waikato.
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 of the District will not decline so rapidly over the coming 30 years that significant alternative planning solutions will be required.

Land use
Demand for additional residential properties will be mainly focused around Whakatāne and Ōhope.
Assumptions about residentially-zoned land are based on the Proposed 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.
Demand for industrial land will be consistent with the Proposed Whakatāne District Plan.
Economic Environment
Economic growth in the Whakatāne District is expected to follow the medium 'Reality Check' projections, as outlined by BERL Economics in "Bay of Plenty Economic Scenarios: Exploring alternative futures" (November 2013). This predicts the generation of around 2,500 jobs in the District by 2022 with an increase in levels of employment, personal wealth and, potentially, population growth.
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 that, following their national review of Funding Assistance Rates, the Financially Assisted Roading (FAR) Rate for Whakatāne District Council local roads shall change from the current 53%, up to 64%, rising at a rate of 1% per year from 2016/17. NZTA have also advised that the district's Special Purpose roads, which currently receive 100% NZTA funding, will eventually receive the same 53% base rate as the Council's other local roads. NZTA have also advised that the current 100% FAR will remain in place for the years 2015-18, after which it will reduce by 5% each year until 2024/25, when it reaches the base FAR of 64%.

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/MZ 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. It is however assumed that moderate sea level rise will have a limited impact on most of our infrastructure assets.

The Council is also proposing to undertake a number of works through this Infrastructure Strategy that address or respond to the risk posed to our assets by natural disasters. For example, work is being undertaken across a range of our core infrastructure to assess and respond to the risk posed from an earthquake. Additionally the work proposed to increase the stormwater protection that the Council offers, will help to reduce the risk to the Council's infrastructure from severe flooding events.

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 and which need to be protected. With regard to Water Supply, Sewage 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.

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:

1. water;
2. sewage treatment and disposal;
3. stormwater; and
4. roading and footpaths.

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

a) delivering quality core services;

b) Encouraging communities and businesses to thrive;

c) working together to meet the community's needs; and

d) rates affordability.

Delivering quality core services

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 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. 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. Through the LTP 2015-25, the Council's Financial Strategy is proposing to extend the period over which renewals are funded from a 25-year average, to a 30-year average. This timeframe will be consistent with the 30-year timeframe in this strategy.

96.4% 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 $211.6M (20.4%). 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 sewerage networks

More than 70% of the Council's water supply pipes are over 50 years old and are becoming prone to pipe breaks, causing supply issues and increased maintenance costs over the next 10 to 40 years. Some of the Council's sewerage pipes need replacement within the next 50 years to minimise the risk of service disruption and sewage overflows. As a result, the Council is proposing to implement an ongoing pipe replacement programme for water and sewerage pipes, at an approximate cost of $94 million over the next 30 years.

The Edgecumbe community has experienced issues with its sewerage system since the 1987 earthquake, as a result of damage to the pipe network. This has resulted in groundwater infiltrating the network, including private laterals. The Council is proposing to gradually replace the whole network with a low pressure grinding pump system from 2026 to 2028, at an approximate cost of $16 million over this period.

The Council is proposing to install a sewerage scheme in Matatā, utilising a low pressure, on-site grinder pump system. The grinder pumps and some electrical components theoretically will need replacement after 20

years. The Council is proposing to replace grinder pump and other components on as-needs basis, at an approximate cost of $0.8 million from 2026 to 2028.

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 $96 million. This includes 22 bridges that will reach the theoretical end of their 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. A number of Council activities can have negative environmental impacts. To ensure that we appropriately mitigate environmental impacts, we seek resource consents to operate and deliver environmentally sensitive services. For example, the discharge of treated sewage is closely monitored to ensure it is not detrimentally affecting the environment. A number of such consents are due to expire over the next 30 years and consent renewals may require changes in the way we operate and deliver services. Existing consents are based on the current legislative environment and Regional Policy Statements. Over time, the conditions applying to some consents may become more restrictive. This may require upgrades to Council infrastructure, or new ways of operating and delivering some services. Similarly, the Drinking Water Standards outline specific requirements for the Council's water supplies. These standards can increase over time and the result for the Council can be costly to keep up with.

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 to treat and discharge treated sewage into various waterways and sea from the Whakatāne, Ōhope, Edgecumbe, Tāneatua and Murupara sewerage systems will all expire over the next 12 years. It is anticipated that new consents may require upgrades to the current water and sewage treatment systems to achieve higher levels of treatment quality. In some instances, this may require new treatment technology or methods of disposal. Currently, the Council assumes the most likely option for all schemes will be to upgrade the current system to improve discharge quality. Over the next 12 years, approximately $21.7 million will need to be spent to upgrade sewage treatment systems. The works required will depend on the requirements of the new resource consents and the specific works will not be undertaken until greater certainty exists around the new consent requirements. If the Council does not undertake the required works, this could have an impact on our ability to continue providing these core services.

Improving our service delivery to reduce the impact on the environment

The Council is committed to installing a new sewerage scheme in Matatā in 2016-2019, at an approximate cost of $12 million. The project will involve the installation of a low pressure sewer system and treatment and disposal facilities (currently the subject of an appeal to the Environment Court). Once completed, this project will help to alleviate the environmental impact associated with the septic tank sewage disposal systems currently used throughout Matatā.

The Edgecumbe, Tāneatua and Murupara water schemes have a very high level of water usage per capita (over 400l/day/person) due to water wastage and leaks in private properties. If water wastage is not controlled, this

may result in the exceedance of water abstraction limits under the existing resource consents. All these water schemes are unmetered and there is no incentive to conserve water. The Council is proposing to implement a water conservation strategy and public education to encourage reduced water usage. If public education and implementing the water conservation strategy are not successful in reducing water consumption, approximately $1.1 million will be required to install meters on water connections in these schemes. This project is not currently included in the Council's LTP 2015-25, for reasons of affordability, but will be considered for inclusion through the 2018-28 LTP.

Providing an alternative source of water

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). The Council has been planning to address this issue through the supply of water from an alternative bore in Paul Road, supplying water to Edgecumbe, Awakeri, Thornton and Onepū areas. These works are proposed through the draft 50-year water strategy for the Plains. Apart from the supply of water to Edgecumbe, which received MOH funding, the works have not been scheduled through the Council's LTP 2015-25, as the financial viability and economic benefits of the Strategy have yet to be assessed. The regulatory environment is also currently very uncertain, with the National Policy Statement on Freshwater response to be formulated by the Bay of Plenty Regional Council in the next year. If the projects proposed in the draft 50 year Strategy do not proceed, the current level of service will be maintained on the Plains. Refer to Issue 3 for the discussion on the current and projected future demand on the Plains water scheme.

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 in the future, climate change may affect abstraction of water from the Whakatāne River. To address this issue in a more permanent manner, the Council has two potential options. One of the options is to supply water from a new bore in the Poroporo area. However, the water quality at this bore is poor, and the Council has not been able to locate any other, feasible groundwater source near to the Whakatāne treatment plant. The other, preferred option is to establish an alternative water source, supplying emergency water from the Paul Road aquifer at a cost of approximately $6.8 million. This option assumes that the Awakeri area will be supplied from the Paul Road aquifer in the future, as proposed through the draft 50 Year Water Strategy for the Plains area. Interconnection between the two schemes will provide increased security and flexibility of water supply management in the future. However, the Council has not yet adopted the draft 50 Year Water Strategy for the Plains area and therefore, these works are not currently scheduled in the LTP 2015-25. The Council has adopted a timetable to consider the future of the Plains Water scheme in conjunction with the Plains Water Supply Advisory Board, major stakeholders such as Federated Farmers, Fonterra, the Rangitāiki River Forum, the Bay of Plenty Regional Council and the community. This project will be reconsidered through the LTP 2018-28.

Not completing the work to provide an alternative water source for Whakatāne from Paul Road will result in increased risk to supply security for the Whakatāne and Ōhope water supplies in the long term. The Council will continue to utilise the long-term temporary emergency intake and consumption reduction measures when required, until a decision is made on this project.

Other water sources in the District also require minor works to maintain water supply quality. In Murupara, the installation of a chlorination plant at a cost of approximately $0.2 million would help to alleviate the potential health risk from this currently un-chlorinated source. However, this project will only be completed if the community agrees and the Council is able to secure funding from the Ministry of Health. This project is currently included in the Council's LTP 2015-25 for 2020/21.

Reduce energy consumption through installation of efficient street lighting technology

Street lighting accounts for a considerable percentage of the Council's annual electricity consumption. LED street lighting technology is developing rapidly and can provide energy savings up to 50%, compared to existing lighting systems. LED lights are also expected to last at least 2-3 times longer than current technology. The Council is proposing to replace existing (high pressure sodium and metal-halide) streetlights with LED

lighting. The cost budgeted for this upgrade is in the order of $2 million and will be subject to a full business case being produced. This project is scheduled to be carried out during 2016-18.

Minimising the risk posed on our roads

The Council has a roading network of more than 900kms, 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) sections of Thornton Road and Wainui Road requiring realignment have been identified in the Coastal Arterial Route Study and improvements have been scheduled in the 2015-25 LTP. Further investigation needs to be undertaken to identify the safety deficiencies on the District's southern route. The estimated cost of curve improvement works on the Coastal Arterial Route is $1.5 million, funded from 2024-30. Seal widening works on Thornton and Wainui Road have an estimated cost of $2.6 million, funded from 2018-30.

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 $74M 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 – Risk posed by natural hazards

As set out in the Bay of Plenty Proposed Regional Policy Statement, a wide range of natural occurrences in the Bay of Plenty have the potential to be natural hazards. Flooding, volcanic eruption, large earthquakes, tsunami and extreme weather events are all classified as 'higher priority' natural hazards. These are all relevant to the Whakatāne District and can have a significant impact on infrastructure assets, management and the delivery of service. Damage to assets can affect the ability of the Council to provide a continuous service to the community, for example earthquakes can affect the structural integrity of Council assets, and the Whakatāne District is located in an area prone to earthquake activity. Alongside the infrastructure responses that the Council is proposing the carry out, we are also looking at developing financial tools to help us respond in the case of an emergency, without significant costs being borne by the ratepayer at the time. More about these funding policies can be found in the Council's Financial Strategy.

Over the past decade the Whakatāne District has been subjected to numerous heavy rain events resulting in widespread surface and river flooding. Major events in recent years have included the Whakatāne River overtopping the stop bank at Awatapu in 2004, heavy rain causing the Matatā debris flows in 2005 and widespread surface flooding of district roads, slips and damage to infrastructure and homes throughout the district between 2010 to 2012. The area has also suffered from a number of intense rainfall events that have resulted in widespread flash flooding within the Whakatāne Township and Ōhope. These include the event of June 2010, where more than 75mm of rain fell in a single hour, and more recently the event on Good Friday 2014, where more than 60mm of rain fell in less than 45 minutes. In both events a number of properties in Whakatāne and Ōhope were damaged as a result and required extensive repair.

Conclusive evidence both nationally and internationally shows that the climate is changing, resulting in rising sea levels, increases in weather extremes, such as "Weather Bombs" (increased frequency of El Nino conditions) – more storms, intense rainfall, flooding and drought, all of which impact on river and sea water and suggests that the District will experience increased frequency of severe weather events. This is backed by amendments to the RMA 1991 which require Councils to consider the effects of climate change. Climate change and its related impacts must be factored in when determining infrastructure requirements. Climate change could result in serious economic, social and environmental impacts affecting the Whakatāne District. The Council will monitor trends in climate change and review the engineering standards and guidelines for climate change related events.

Council's significant decisions to address the issue:

Increasing the capacity of our stormwater systems

The Council aims to provide protection for the community against flooding at least from a 1 in 50 year Annual Exceedance Probability Event. However, some areas of the District do not currently have this level of protection, and the Council is proposing a series of works over the next 30 years to help move towards that level of protection.

The discharge of stormwater in the Whakatāne catchment mainly relies on pumping water into the Whakatāne River. The North-west quadrant of Edgecumbe experiences flooding during heavy stormwater events due to under capacity pipes, lack of overland flow paths and boundary conditions in adjoining rural drainage schemes where stormwater is discharged to. Most of the pump stations and some pipes in Whakatāne, Ōhope and Edgecumbe are under capacity causing flooding in several low lying areas. The Council is proposing a number of works to try and address the flooding risk in Whakatāne, Ōhope and Edgecumbe at a cost of approximately $40 million over the next 30 years. This includes a project to control the stormwater in the upper Wainui Te Whara catchment. If these works are not undertaken, then the community will continue to be at the same level of risk from flooding as currently experienced. The frequency and impact of flooding is dependent on the specific weather conditions experienced, which cannot be predicted. However research shows that the District is likely to experience more extreme weather patterns as a result of climate change, the community may experience increased incidence and impacts of flooding in the future.

Assessing the earthquake risk to our infrastructure

Under the Building Act, the Council is required to undertake assessments of our infrastructure to assess the risk of damage resulting from an earthquake. The Council is currently embarking on a project to identify, assess and prioritise the Council's earthquake prone assets including the Council's bridges and major structures in the District. A response to address this identified risk will be considered through the development of the Council's LTP 2018-28, following further investigations. At that stage the Council will consider the options associated with this project.

However, a number of the Council's water supply assets in Ōhope and Waimana have been identified as being vulnerable to the effects of earthquakes. A series of works are proposed to address this vulnerability, including; replacing the existing timber reservoirs in Ōhope with a 1,200m^3 water reservoir in 2027/28 at an approximate cost of $1.2 million, and replacing the existing timber water tanks in Waimana with a 150m^3 steel tank in 2019/20 at an approximate cost of $0.30 million. The alternative option to undertaking these works would be for the Council to continue monitoring and maintain the current level of risk and respond reactively in case of a natural event that affects one of these water sources.

Issue 4 – 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 storage to reduce service disruptions

For the water activities, the ability to continue providing a service in adverse conditions can often be influenced by the level of water storage available. In the Whakatāne-Ōhope water supply, there is insufficient water storage capacity (less than 48 hours of usage stored) and the current number two, concrete reservoir is

structurally vulnerable. The Council is proposing to replace it with a new concrete reservoir of 4,500m^3 capacity at a cost of approximately $3.3 million in 2018-20. If reservoir capacity is not increased, risk to the continuation of supply during treatment plant or rising main failures or water source issues would be high.

For sewage treatment and disposal activities the emergency storage in the Whakatāne Town and Ōhope sewerage pump stations is also inadequate, causing increased risk of pump station overflows caused by faults or electrical failures. The installation of emergency storage tanks in critical pump stations is required to reduce the risk of sewage overflows. This will cost approximately $4.7 million over the next 30 years. If the Council does not carry out the increased storage projects proposed, the current level of risk will continue.

Increasing the level of infrastructure network capacity

The Council is proposing to increase the capacity of the stormwater systems in Whakatāne, Ōhope and Edgecumbe. These works are in response to a strong community demand for an increased level of protection from severe flooding events. The increased 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.

The Plains water supply currently provides water to the Awakeri, Edgecumbe, Thornton and Onepū areas. There are some issues with this water source not being able to meet current or projected future demand, in particular in the Awakeri area and other areas outside the original Braemar water supply scheme boundary. The Council has investigated supplying water from the Paul Road water source to the Awakeri, Thornton and as an emergency supply to the Whakatāne-Ōhope water supply areas. This project would provide an equal level of water entitlement to all those users connected to the scheme. These works are proposed to be carried out in six phases under the draft 50 Year Water Strategy for the Plains area. This project is dependent on further investigations and analysis and the Council has not yet committed to undertaking the projects proposed through the draft 50 year Plains Water Strategy. If the projects do not go ahead, the community will continue to see a similar level of service to that currently delivered. Before the Council commits to undertaking this project, further consultation will occur with stakeholders and the community. The project will then be considered for inclusion in the Council's LTP 2018-28 and Infrastructure Strategy 2018-48.

Encouraging communities and businesses to thrive

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

Through the LTP the Council is proposing to make the development of a thriving economy and vibrant communities a key priority. This will involve undertaking initiatives throughout our District and working with key partners to enhance the wellbeing of our community. As part of this focus, the Council recognises that working with iwi to support and encourage the aspirational economic goals of Māori will enhance the vitality of our District.

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 latest 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 37.3% between the 2001 and 2006 Census periods. 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 Council-owned land at Piripai/Opihi, Coastlands. 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 Proposed Whakatāne District Plan 2013 identifies a number of residential growth areas for the District over the next 10 years, concentrated mainly in the coastal areas of Coastlands and Ōhope. 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 Proposed District Plan 2013, growth is anticipated in the following areas:

a) Shaw/Huna Roads , Coastlands

b) Piripai/Opihi, Coastlands

c) Port Ōhope, Ohope

d) Maraetōtara, Ohope

e) Kopeopeo

Decisions on the Proposed District Plan, including the proposed re-zoning of these areas where applicable, are expected in mid-2015.

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 through the District Plan development, 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. This may particularly be the case with forestry to dairy conversions. To mitigate this risk the Council will continue to monitor development and demand within the District and neighbouring Districts, to ensure we are responsive to increased demand. This includes working with other Eastern Bay Councils to develop a Spatial Plan that predicts future land use changes across the sub-region. 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 proposed Development Contributions Policy assumes development (increase in the number of Household Equivalent Units) in the areas of Whakatane township, Ohope, Coastlands/Piripai/Opihi, Mill Road, Shaw/Huna Roads and Matatā. 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.

On top of the recent sale of Council-owned land at Port Ohope, which is already under development, the Council is also working with a developer to try and progress a residential development incorporating a

retirement village at Piripai/Opihi. When this project advances, it will present 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, requiring upgrades to the Whakatāne water treatment plant in 2030 at a cost of $1.8 million. Council is also required to undertake upgrades/expansion to the reticulation network supplying Piripai/Opihi, Shaw/Huna Roads (subject to the outcome of hearings on the Proposed District Plan) and Ōhope. These works are scheduled between 2015-26, at a cost of approximately $0.8 million. All of these works will help meet future demand and firefighting requirements. If development proceeds in the Shaw/Huna Roads area, further works are planned to upgrade the sewerage and stormwater infrastructure during 2015-17, at a cost of $2.3 million. The majority of these projects are likely to have a component of Development Contributions for their funding. However, for the stormwater works, the preferred option will involve an upgrade to an existing pump station on the Kopeopeo canal at an estimated value of $912,000. The asset is owned by the Bay of Plenty Regional Council. The cost of this infrastructure would then be met by those developing the land, and a development agreement will be needed to determine how the cost will be equitably shared. In the case that not all the land area is developed at once, the Council is likely to meet the value of the upgrade needed for the balance of the land, until such time as that land is developed..

There is increased demand for light industrial growth, in particular in the Mill Road area. The area is zoned for this purpose, but there is currently insufficient infrastructure available. To address this, the Council is proposing to install new sewerage reticulation and a new pump station at Mill Road. These proposed works will cost approximately $0.8 million in 2015/16.

The Council is already experiencing pressure from demand on the Council's Plains Water Supply. This situation will intensify as demand increases and consequently, the Council has been investigating utilising an alternative source to supply the Plains area. Works to address this issue are covered in the draft Plains 50 year Strategy, discussed earlier in this document, but are not currently included in the LTP 2015-25.

If the Council does not implement any of these expansions to cater for growth, development in the District may be impeded.

Increasing peak hour congestion is being experienced at some of the town'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 also expected to increase these congestion levels further. The Council is monitoring traffic flow levels and will programme improvements as traffic flow capacity approaches intervention levels. The Council is proposing to undertake capacity improvements at the Landing Road Bridge roundabout to ensure acceptable traffic flow service levels are provided. The proposed intersection improvements at the Landing Road Bridge roundabout are estimated to cost $735,000 in 2018/19. This cost is subject to further investigations, including understanding the bridge improvements required by NZTA as part of this project. If further increases in traffic are experienced without this project being undertaken, this will begin to have a more significant negative economic and social impact on the Whakatāne/Coastlands /Ōhope urban areas.

Working together to meet the community's needs

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 a decline in population and an ageing population, 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 Council is proposing, through this Strategy, to look at the earthquake risk of its bridges. Without support from NZTA, such a project would be unaffordable for the community. The Council also works closely with the Ministry of Health (MoH), 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 MoH, including a chlorination plant in Murupara and a new water bore in Matatā. The MoH is also substantially funding the development of the sewerage scheme in Matatā, a project which would not have been financially viable had it not been for the subsidy support. The Matatā Sewerage Scheme is also funded by the Bay of Plenty Regional Council through the Regional Infrastructure Fund. This extra funding will enable us to deliver new infrastructure to the Matatā community that will have positive impacts for the township and the environment, at an affordable level.

Increased demand for Seal Extensions

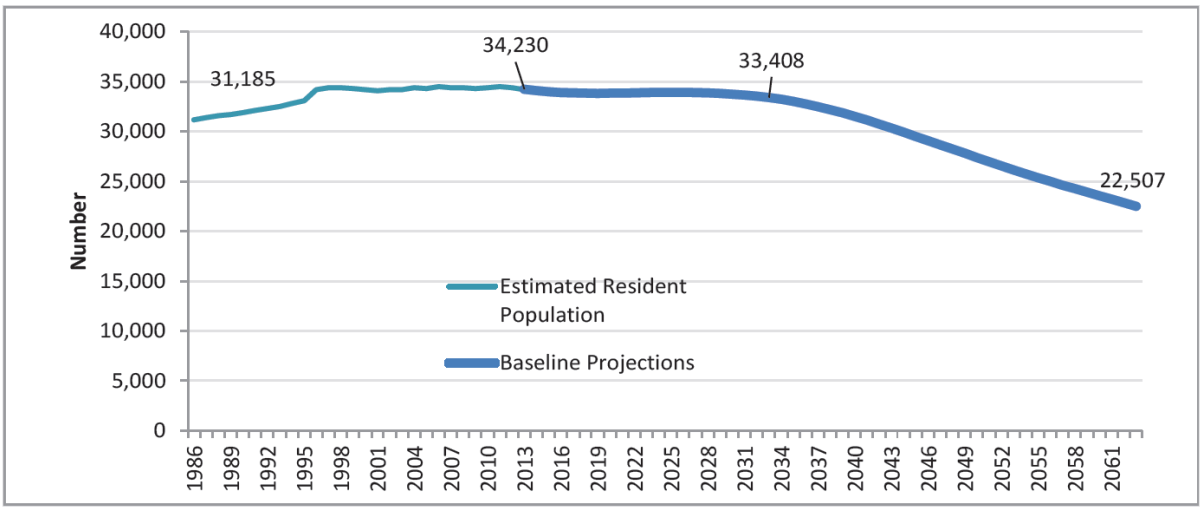
There are 200km of unsealed road remaining in the district and there is an ongoing demand from the rural community who reside on these roads to have them sealed. The Council has since 2009 decided not to fund further seal extensions, unless a clear economic benefit is proven. However, there may be some 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. This Strategy does not currently include funding for seal extensions, 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.

Rates Affordability

Issue – balancing the community's desire for increased services with the ability to pay, given a diminishing population

While growth is expected in Whakatāne and Ōhope, the District as a whole is predicted to experience slight population decline and structural change, which may make the maintenance, upgrading and renewal of existing infrastructure less affordable. At the 2013 Census, Whakatāne District's resident population was 32,691 a decrease of 606 or 1.8% on the 2006 Census figure of 33,297. The population of the Whakatāne District is projected to remain approximately stable until around 2033, experiencing both minor growth and decline until 2029 and falling to approximately 33,408 in 2033 and below 30,000 by 2045 (refer Figure 2). The decline reflects both an accelerated shift from natural increase to natural decline, beginning around 2036, and net migration across the entire period (Jackson, Cameron and Cochrane, 2014).

Figure 2: Estimated Resident Population and Projected Baseline population, Whakatāne District[1]

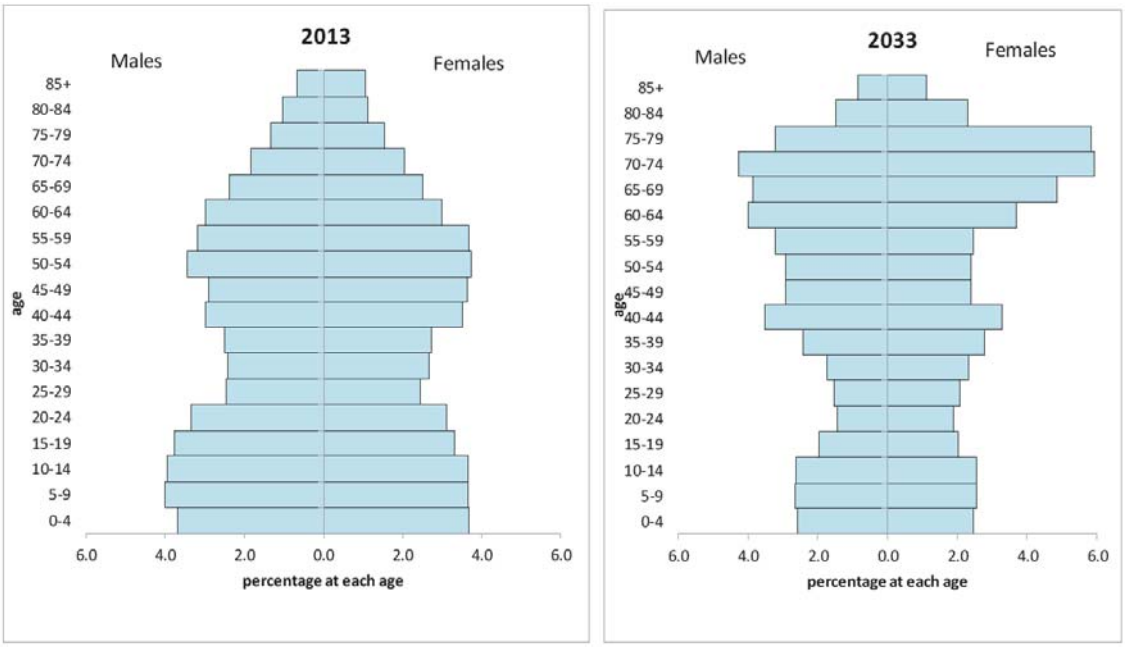


The small rural communities of Te Teko (22%), Orini (11.5%), Murupara (9.8%), Matahina-Minginui (8.8%), Rotomā (7.4%) and Waimana (6.3%) recorded noticeable population declines in the 2013 Census. Similarly, Matahina-Minginui, Waimana and Murupara also experienced population decline between the 2001 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. As a response, the Council is looking at ways we can reduce or reverse the predicted decline, by enhancing the vibrancy and economy of our smaller rural communities. For example, the Council is looking to work with iwi to support their development intentions, particularly in the post treaty settlement environment to attract their members back to their traditional homes. 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.

[1] **Source**: Jackson N., Cameron, M. and Cochrane, B (2014): 2014 Review of Demographic and Labour Force Projections for the Bay of Plenty Region for the Period 2013-2063. University of Waikato, Hamilton, p 41.

Whakatāne's population is also predicted to age faster than most other areas in the Bay of Plenty. As shown in Figure 3, over one-third of Whakatāne's population will be aged 65+ years by 2033 (up from 15.5% in 2013) and by 2063, that proportion is projected to reach 45.4 percent. 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 led 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: Age-Sex Structure (Percentage At Each Age) 2013 and 2033, Whakatane District[2]



The predicted 30 year static/declining population at a District level and an ageing population with reduced disposable income means that there are challenges in increasing the rating base of the District. 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 2015-25 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 2015-25, affordability drives a lot 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 where 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 2015-25. This is often for affordability reasons, or due to the need to undertake further investigation. Where possible, the Council will consider

[2] ***Source***: Jackson N., Cameron, M. and Cochrane, B (2014): *2014 Review of Demographic and Labour Force Projections for the Bay of Plenty Region for the Period 2013-2063. University of Waikato, Hamilton, p 43.*

alternative opportunities for funding these projects, including utilising central government funding wherever possible. The following projects, which have all been discussed within this Strategy, have not currently been included in the LTP 2015-25, but will be reconsidered through the development of the LTP 2018-28:

a) Plains Water Supply 50 year Strategy

b) Edgecumbe Water meters

c) Murupara Water Supply Chlorination Plant

d) New Matatā Water Bore

e) Seal extensions (unless an economic benefit exists)

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, 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 $575 million on new or replacement infrastructure between 2015 and 2045. Over the same period, $1,036 million is expected to be spent on operating costs, labour, depreciation, interest, materials and maintenance. 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 $
Sewage Treatment & Disposal	80,473,074	242,941,294
Water Supply	69,541,988	284,844,668
Stormwater Drainage	43,094,298	148,512,481
Roading and Footpaths	368,856,000	268,680,000
TOTAL	**559,107,560**	**981,954,034**

Operational and Capital Expenditure Highlights

Figures 4 and 5 show the expected expenditure year-on-year up to 2045, 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 2016-2045.

Figure 4: Whakatāne District Infrastructure Expenditure Projections 2015-2045

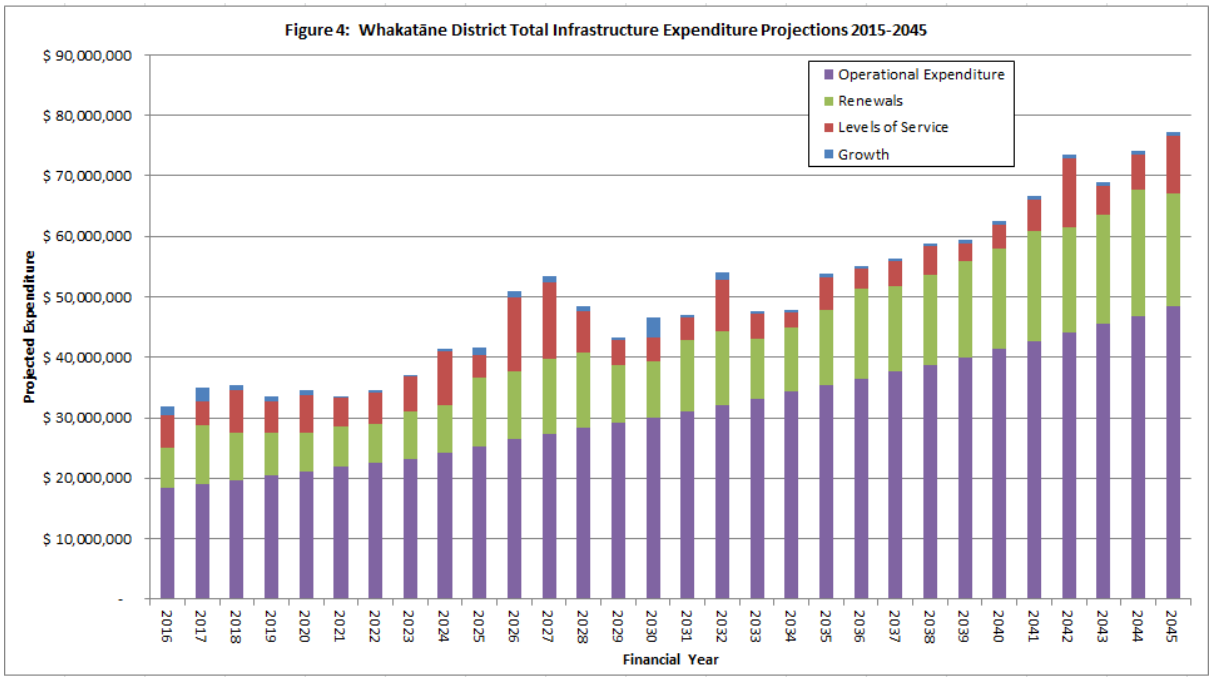


Figure 5: Projected Infrastructure Expenditure 2015-2045 (By Infrastructure Activity Area Classification)

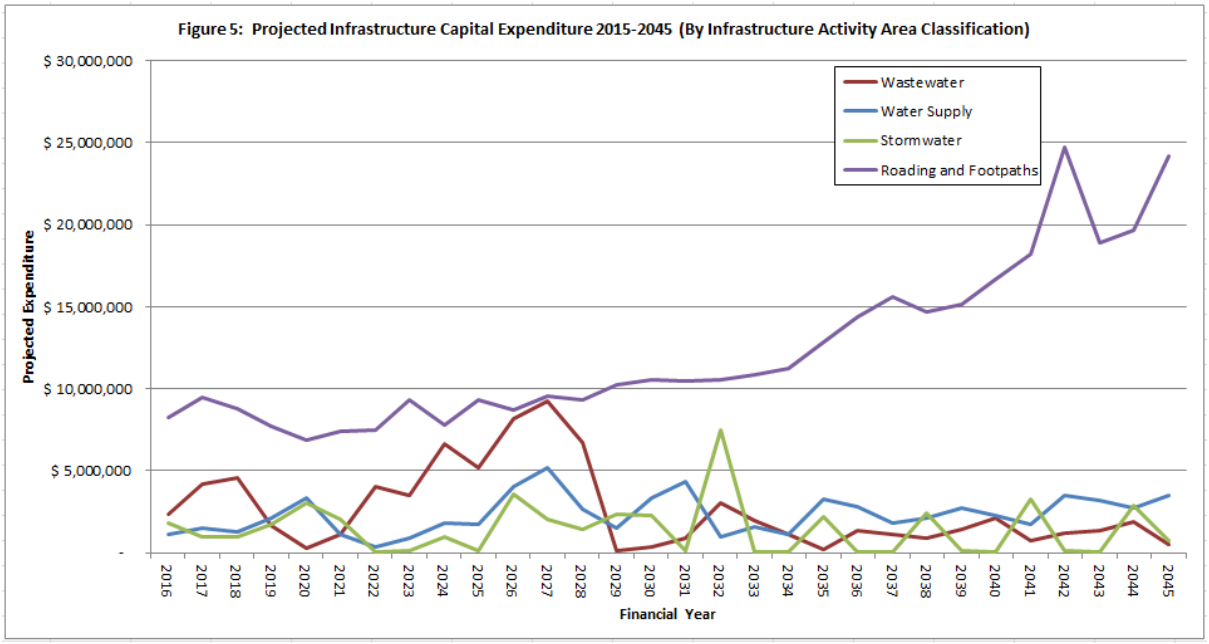
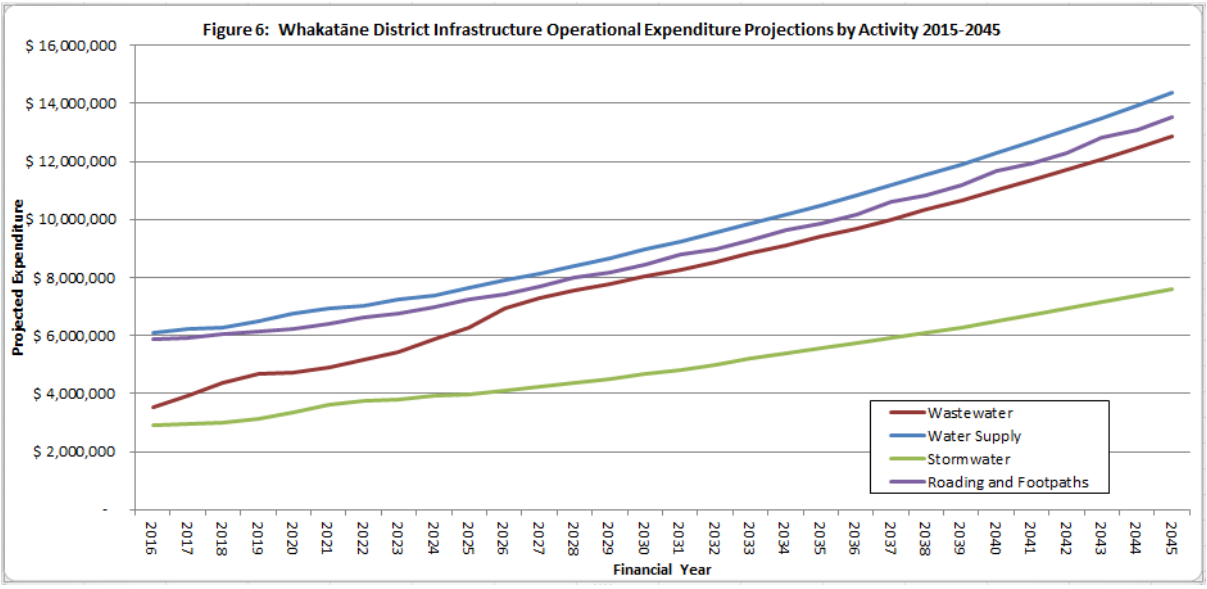


Figure 6: Whakatāne District Infrastructure Operational Expenditure Projections by Activity 2015-2045



This proposed expenditure is consistent with historical trends. Further information of previous operational and capital expenditure can be found in the Council's Annual Reports on the Council's website www.whakatane.govt.nz.

Council Asset Base

The Council manages a significant asset portfolio. The table below outlines the value of these assets for Roading, Water, Stormwater and Sewerage, as at 30 June 2014.

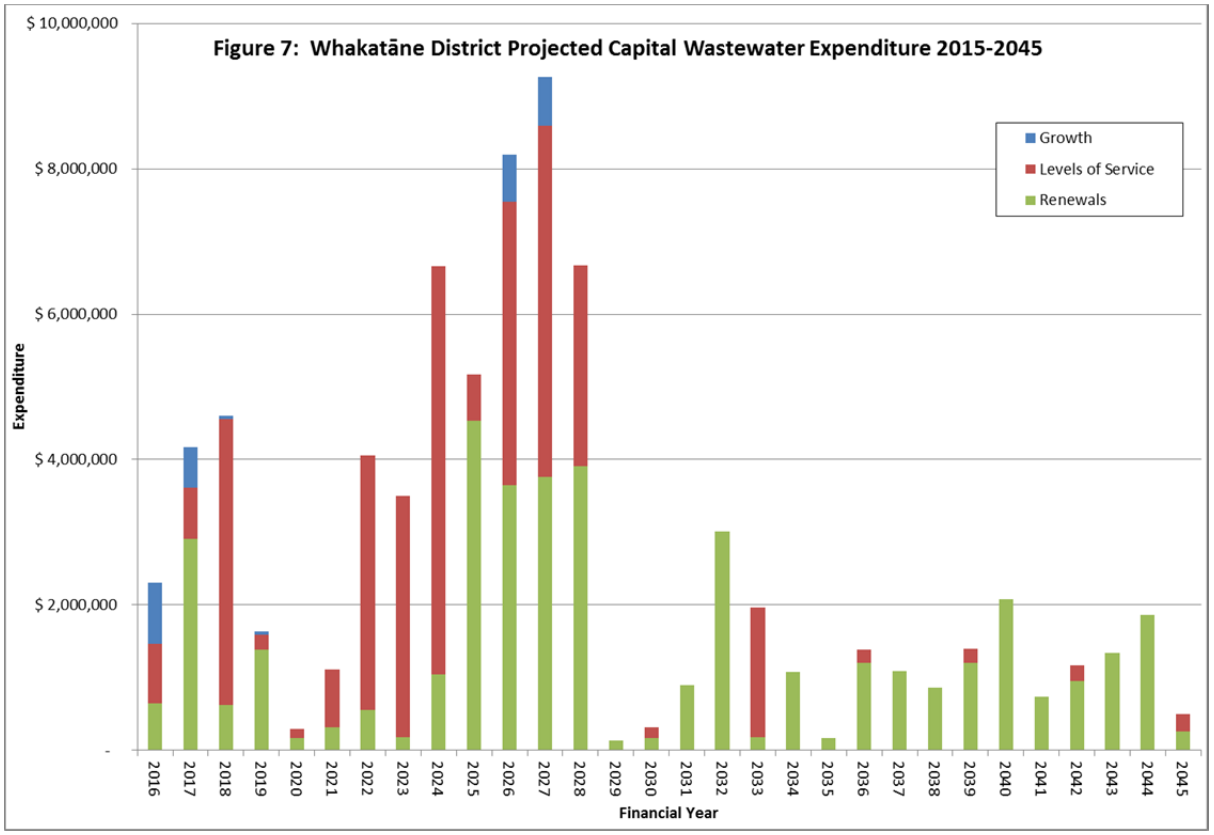
Infrastructural Assets	Net Book Value
Land Roading	$91,363, 000
Roading	$232,583,000
Water – Treatment Plant and Facilities	$2,475,000
Water - Other	$63,739,000
Sewerage – Treatment Plants and Facilities	$5,071,000
Sewerage - Other	$40,715,000
Stormwater	$43,877,000

Further details about our activities and assets can be found in 'Our Work in Detail' available on the Council website www.whakatane.govt.nz.

Major Sewerage Capital Works Programme Summary

Figure 7 below illustrates the projected capital expenditure associated with the management of Whakatāne District sewerage infrastructure assets until 2045.

Figure 7: Whakatāne District Projected Capital Sewerage Expenditure 2015-2045



Major sewerage infrastructure projects that are expected to be undertaken in the 2015-2045 period are shown in the table below.

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
Mill Road Upgrades	0.8 million	2015/16	That this project will be funded from Development Contributions	Do not undertake works, risk impeding growth and development
Shaw/Huna Road expansion	0.55 million	2015/16	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	3.0million	2023/25	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	1.9	2023/24	At least 8 hr storage	Do nothing – accept

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
station emergency storage	million		capacity is required in emergency situations	risk of low capacity
Upgrading of Whakatāne sewage treatment plant	9.6 million	2021-27	New resource consent may require upgrades	Do nothing – upgrades not required for new consent
Replacement of rising main from pump station no.5 in Ohope	3 million	2015-2017	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
Upgrading of Ōhope sewage treatment plant	0.93 million	2016-19	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 Edgecumbe	16.1 million	2025-29	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.
Upgrading of sewage treatment plant in Edgecumbe to comply with the Tarawera River Catchment Management Plan	4.2 million	2015-18	Regional Council will enforce new effluent quality standards, requiring upgrades prior to consent expiration in 2026	Undertake upgrade in 2023-25 prior to consent expiring
Upgrading of sewage treatment plant in Tāneatua	3million	2019-23	New resource consent may require upgrades	Do nothing – upgrades not required for new consent
Upgrading of sewage treatment plant in Murupara	3.9 million	2019- 23	New resource consent may require upgrades	Do nothing – upgrades not required for new consent
Installation of a new sewerage scheme in Matata	0.75 million	2015-2017	Environmental Court decision will be in favour of a new sewerage scheme in Matatā. If this project goes ahead, more funds required in years 2016 and 2017	Do nothing - Matatā will come under Regional Council's maintenance zone for on-site effluent disposal regional plan

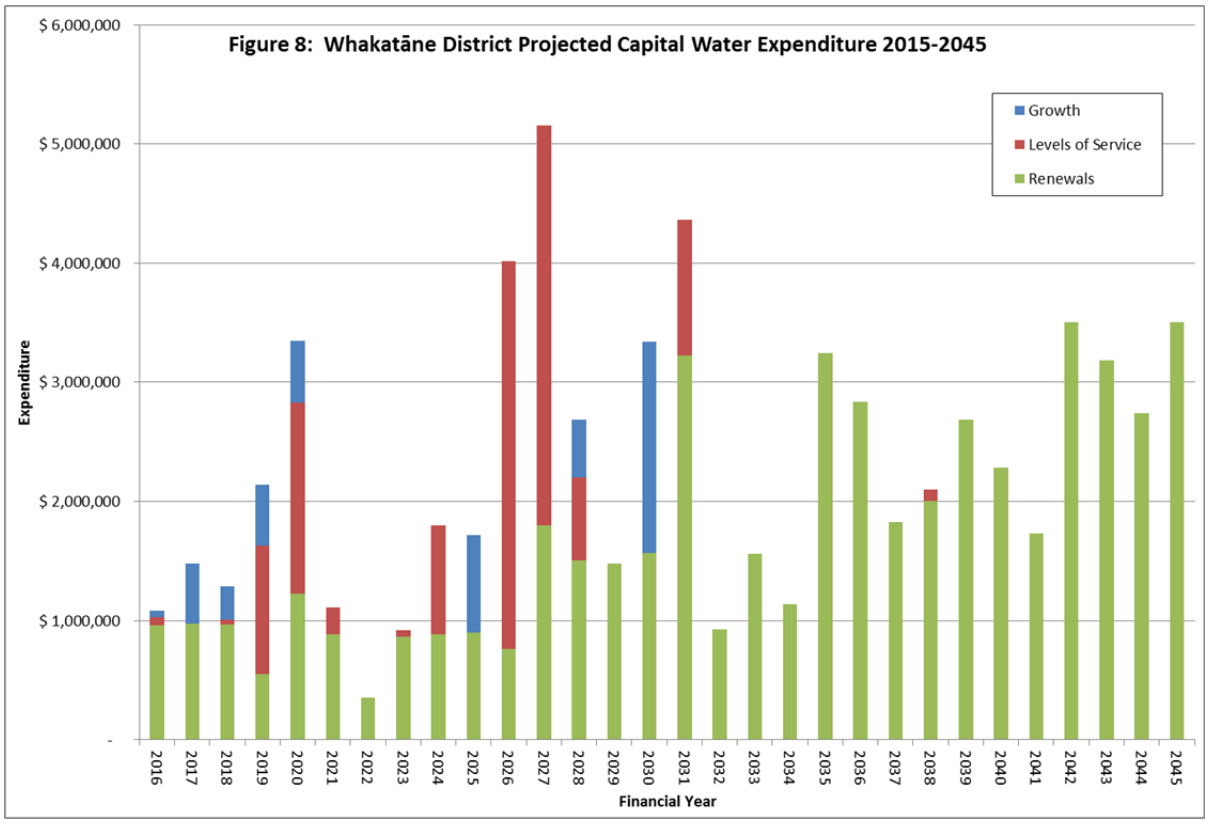
Implications of uncertainty

The key uncertainty for our Sewage Treatment and Disposal infrastructure is around resource consent-driven changes. If the level of treatment required differs dramatically from the assumptions made, then the level of investment required to gain future resource consents may alter significantly. This could range from a continuation of current levels of treatment and disposal to a requirement to build a completely new facility, including a new disposal method. The financial implications of this uncertainty could be significant.

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 2045.

Figure 8: Whakatāne District Projected Capital Water Expenditure 2015-2045



Major water supply infrastructure projects expected to be undertaken in the 2015-2045 period are shown in the table below.

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
Shaw/Huna Road development expansion	0.1 million	2015-18	That this project will be funded from Development Contributions	Do not undertake works, risk impeding growth and development
Install Murupara Chlorination	0.23 million	2020/21	That the community agree to having Chlorine added to the	Do nothing – accept current water quality

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
unit			water supply.	
Increase storage capacity in Whakatane	3.4 million	2017-20	At least 24 hr storage required in emergency situations	Do nothing – accept risk of low capacity
Arawa Rd main replacement	2million	2030-31	Condition assessment indicates that these mains will start failing by this time.	Replacement carried out in later or earlier years due to a different rate of deterioration.
Sludge treatment in Whakatane	1 million	2022-24	New resource consent may require sludge treatment	Do nothing – upgrades not required for new consent
Upgrading of Whakatāne treatment plant	1.8 million	2030/31	Assuming medium growth in Whakatāne and Ōhope	Complete the project at a different time, depending on actual population change
Coastlands ring main	0.5 million	2016-18	Assuming medium growth in Whakatāne and Ōhope. Assuming Development Contributions funding	Complete the project at a different time, depending on actual population change
Reservoir replacement in Ōhope	1.2 million	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.
Replacement of supply main to Ngāti Awa farm reservoir	0.9 million	2016-18	Condition assessment indicates that economic life of the pipe may expire by this time	Replacement carried out in later or earlier years due to a different rate of deterioration.
Upgrading Harbour Rd main Ōhope	0.82 million	2024/25	Assuming medium growth in Ōhope	Complete the project at a different time, depending on actual population change

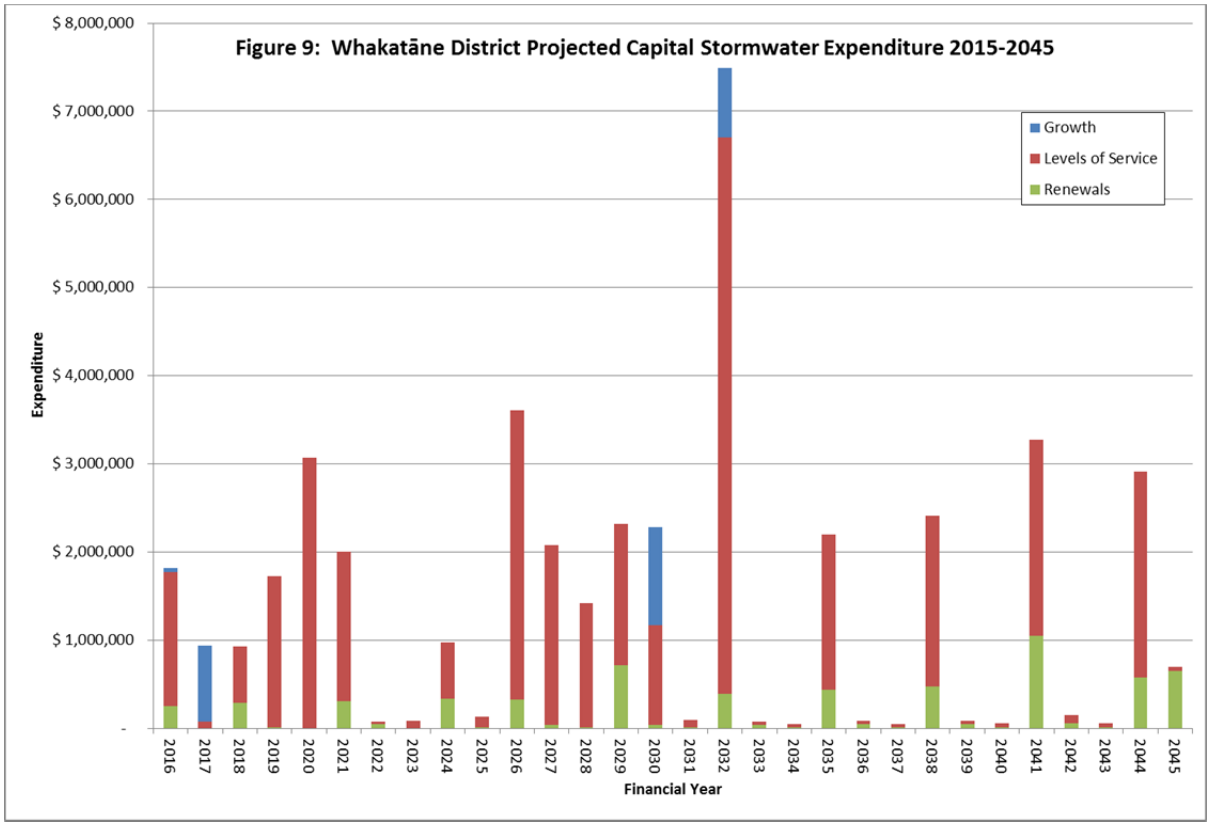
Implications of uncertainty

Projects are based on assumptions around population growth and asset deterioration. If either of these progresses at a rate or in a manner different to those assumptions, the timeframe and scale of works required may vary. It is not expected that any change would be significant, and therefore 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

The chart below illustrates the projected capital expenditure associated with the management of Whakatāne District stormwater infrastructure assets through to 2045.

Figure 9: Whakatāne District Projected Capital Stormwater Expenditure 2015-2045



Major stormwater infrastructure projects expected to be undertaken in the 2015-2045 period are shown in the table below.

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
Upgrade McAlister Street pump station	5.5 million	2031/32	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Shaw/Huna Road development expansion	0.90 million	2015-17	That this project will be funded from Development Contributions	Do not undertake works, risk impeding growth and development
Upgrading of St Joseph pump station	1.15 million	2018-21	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 $	Timing	Key assumptions	Alternative option
New pump station in Hinemoa Catchment	3.9million	2017-21	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Upgrading of Riverside Drive pump station	2.2 million	2029-30	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Complete Wainui Te Whara stormwater solution	1.1 million	2015/16	Combination of upper catchment and lower catchment solution will be implemented	This project is already underway and an alternative solution is not being considered.
Pipe upgrades to increase the conveyance capacity in Whakatāne and Ōhope	12.6million	Over 30 years	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale
Stormwater new pump station and pipe works in Edgecumbe	5.4 million	2024-28	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	0.87 million	2018-20	Community demand for protection against a 1-in-50 Annual Exceedance Probability Event	Carry out upgrade within a different timeframe or scale

Implications of uncertainty

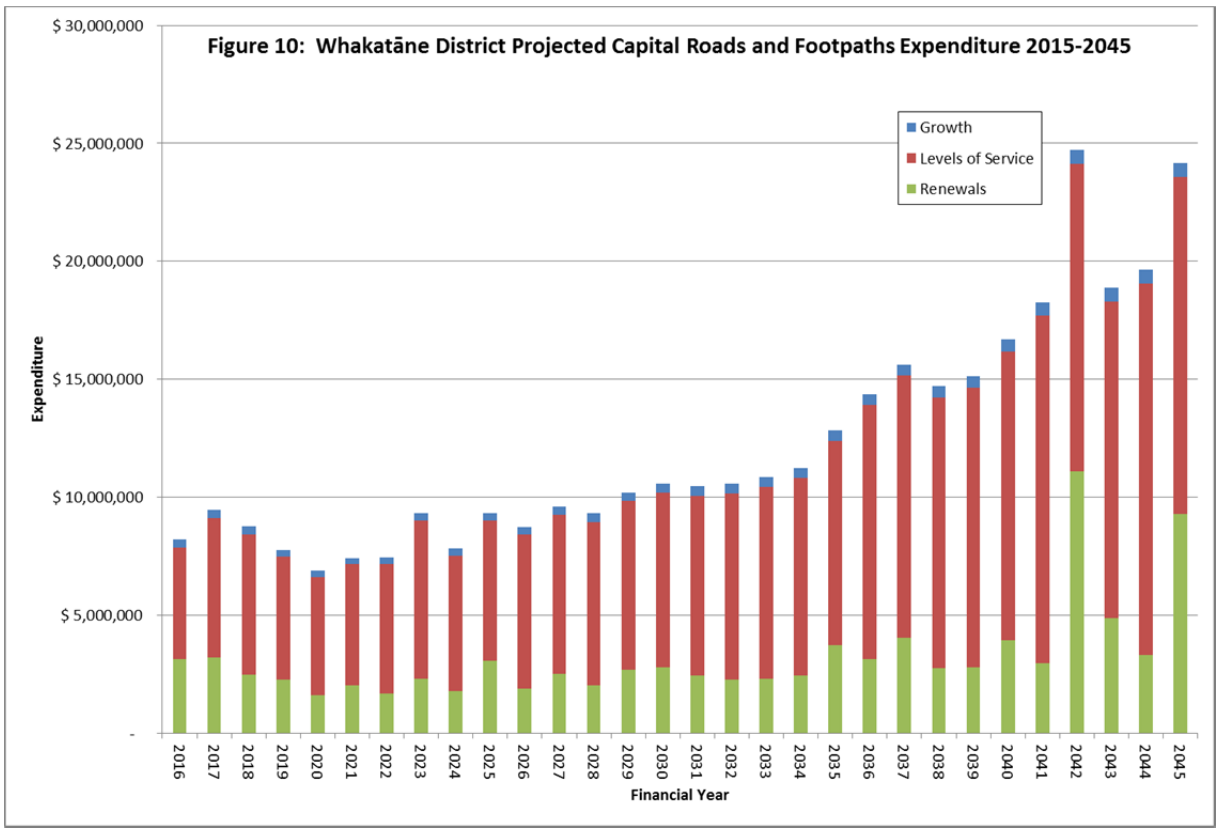
The stormwater projects proposed are the result of a clear demand from the community for an increased level of stormwater protection. While the Council considers that it will never be economically feasible to provide complete protection from extreme weather events, the Council has developed a programme 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 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 2045.

Figure 10: Whakatāne District Projected Capital Roads and Footpaths Expenditure 2015-2045



Major new roading and footpath infrastructure projects expected to be undertaken in the 2015-2045 period are shown in the table below.

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
Sealed Road Resurfacing	$99M	2015-2045	No significant changes to traffic mix and volume. Average seal life of 15 years achieved for years 1 to 20. Average seal life reduces to 12 years from year 21 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

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
				pavement failure. Network performance / condition monitoring and benchmarking against other networks indicates current settings are close to optimal.
Sealed Pavement Rehabilitation	$65M	2015-2045	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: • On-going maintenance • Maintenance + reseal • Pavement Rehabilitation Evaluations are undertaken in accordance with NZTA procedures.
Unsealed Road Metalling	$34M	2015-2045	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.
Minor Improvements (all improvement works < $300,000)	$74M	2015-2045	Programme targets delivering on NZTA investment outcomes, primarily: • Reduced deaths and serious injuries • Secure and resilient network Efficient freight supply chains	All activities in this category are assessed through the WDC 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.
Drainage Renewals	$26M	2015-2045	Existing renewal rates remain appropriate.	Options include: • Replace like for like. • Replace with improved facility. • Don't replace. 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

Proposal (most likely scenario)	Cost $	Timing	Key assumptions	Alternative option
				extensive damage or deterioration to the road and other structures negatively impacting reactive maintenance costs, resilience, accessibility, safety and amenity of the roading asset.
Bridge Replacements (>$300,000)	$16M	2023, 2035, 2036, 2037, 2040, 2042, 2043, 2044	Bridge replacement dates are based on established average achieved lives and engineering assessment/judgement.	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: -Replace bridge with bridge. -Replace bridge with low cost ford. -Repair existing bridge and post weight limit

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.