

SOUTH TARANAKI

THE MOST

LIVEABLE

DISTRICT



Te Kaunihera o Taranaki ki Te Tonga

South Taranaki
District Council

**Rautaki Hanganga-ā-roto
Infrastructure Strategy**

www.southtaranaki.com/longtermplan

Rautaki Hanganga-ā-roto

Infrastructure Strategy

What is infrastructure?

Infrastructure is the term for the pipes, treatment plants, roads and other assets that are essential for sustaining public health, getting around and doing business. Infrastructure is recognised as an enabler of economic growth in the regional economic development strategy.

Section 101B of the Local Government Act 2002 (LGA02) requires us to have an infrastructure strategy that includes:

- Water supply
- Wastewater
- Stormwater
- Flood protection and control works
- Roads and footpaths

South Taranaki has no flood protection works as most of the coastline is well above sea level and rivers drain quickly from Mount Taranaki. However, the Council owns and maintains the moles (breakwaters) at the mouth of the Pātea River, which have a significant replacement value. For this reason coastal structures have been included

in this Strategy along with:

- Solid waste
- Parks and reserves
- Community facilities

The LGA02 requires us to have a significance policy that identifies the assets we consider are strategic. The LGA02 defines strategic assets as those we have identified to achieve or promote any outcome that we consider is important for the current or future well-being of the community. Our strategic groups of assets are:

- Water – all assets except buildings;
- Wastewater – all assets except buildings;
- Stormwater – all assets except buildings;
- Roading – all assets;
- Solid waste – all assets except buildings;
- Coastal structures; and
- Housing for older people – all units.

We have ten potable water supplies, eight wastewater schemes, an extensive roading network of 1,634km and a good range of parks, reserves,

and community facilities. The assets used in the delivery of services to our communities are currently valued at \$1.068 billion.

About the Strategy

This Strategy states how the Council intends to manage its infrastructure assets over the next 30 years. It outlines:

- The key infrastructure challenges we face;
- The main options for dealing with these issues;
- The cost and service delivery implications of those options; and
- The preferred scenario for infrastructure provision.

The Strategy allows us to develop a long-term view of the sustainability of our infrastructure. We have identified five themes for the development of the 2021-2031 Long Term Plan (LTP):

- Encouraging sustainable growth;
- Managing our resources effectively;
- Keeping rates affordable;
- Effective management of debt; and

- Ensuring environmental sustainability.

These themes underlie the priorities and projects we propose to carry out over the next 30 years and form the basis of both the 2021-2031 LTP and our Financial Strategy. They reflect the balance between focusing on the basics and providing value-added services for our community at an affordable cost. The projects outlined in this Strategy have been planned to help achieve these key outcomes.

This Strategy has been developed in the context of a number of other documents and projects, including:

- 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 operates and the financial implications of the projects planned through this Strategy.
- 2021-31 LTP – while this Strategy has a 30-year planning horizon, the

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projects planned for the first ten years are included in other sections of the LTP.

- The South Taranaki District Plan – identifies areas where new or upgraded infrastructure will be required to cater for growth in the District over the next ten years.
- The Taranaki regional economic development strategy (Tapuae Roa: Make Way for Taranaki) and Taranaki 2050 Roadmap highlight economic development issues and opportunities for the Taranaki region and sets out Taranaki's transition plan to a low-emissions economy.
- Hāwera Town Centre Strategy and Ōpunakē, Manaia, Eltham, Pātea and Waverley town centre plans – highlight actions for the redevelopment of our town centres.

Many of our infrastructure assets have a very long life. For example, water pipes have an expected life of 60-100 years, which means there is a long planning horizon for initial provision and renewal, and both can present

cost peaks that need to be planned for well in advance. This Strategy provides the long term perspective required to assess whether there are hidden investment gaps or affordability issues beyond the ten-year planning horizon provided in the 2021-31 LTP.

We need to provide the services and facilities our communities expect while keeping rates at an affordable level, from a relatively small base of ratepayers spread across a large geographic area. Spending on infrastructure accounts for around 63% of our operating budget and 84% of capital expenditure.

While we are mindful of anticipated changes to legislation and the need to upgrade infrastructure to meet new requirements, our biggest challenge is to build and deliver what we have said we will do – in the current climate of scarce resources there is strong nationwide demand for skilled people, equipment and materials. Failure to deliver on key projects and programmes is identified as a strategic risk for the organisation and has been

a focus for improvement.

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

Our Themes for the 2021-31 Long Term Plan

Encouraging Sustainable Growth

Infrastructure provision is influenced by a number of factors that are not constant across networks or activities. For example, our roading network has substantial capacity and is unlikely to be significantly affected by an increase or decrease in population, or new businesses being established. However, the water supply and wastewater

activities can be significantly affected by increasing population, new or expanded industries or growth in the agricultural sector.

We have received enquiries from businesses looking to establish commercial and industrial activities and we want to help facilitate development. Additional water and wastewater capacity has been incorporated into recent infrastructure upgrades in Hāwera. A mixed use area has been identified on Waihi Road, Hāwera (South Taranaki Business Park) to support commercial and industrial growth. In September 2020, \$3m was approved for detailed design and installation of infrastructure, including water supply, wastewater, roading and initial stormwater services to this area.

Two urban growth areas to the north and west of Hāwera have been identified in the proposed District Plan. These are known as the Hāwera West Structure Plan and the South Taranaki Business Park Structure Plan.

The area encompassed by the Hāwera West Structure Plan has received a

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detailed engineering analysis, with recommendations as to the anticipated capacity of the area and the layout of serving infrastructure.

After a long period of no or negative growth we expected the modest growth of 0.7% per year experienced over the last three years to continue. Infometrics Limited (an economics consultancy) predicted in January 2020 a 0% to 0.3% increase every year from 2021 (28, 837) to 2051 (29,471), for an overall increase of 2.2%. Infometrics have advised that the Covid-19 pandemic in 2020 is likely to result in less migration to Taranaki and growth may be less than predicted for at least the first two years after the pandemic.

Anecdotally, the picture may be more positive but there are no statistics to support that. Based on recent trends, most of our rural areas are likely to experience small decreases in population during the ten-year planning period while some growth in our towns is predicted. Hāwera and its environs is the most likely area for growth, and we have planned for

a potential increase in demand for water and wastewater services for the remainder of the 30-year term of this strategy. As New Plymouth continues to grow, we expect some residual growth into South Taranaki.

We have a much improved and reliable water network. Along with this, we have made progress with the Hāwera Town Centre redevelopment, South Taranaki Business Park, town centre master plans for Ōpunakē, Manaia, Eltham, Pātea and Waverley.

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Significant Projects



TABLE 1: Key Projects Encouraging Sustainable Growth

Project	\$\$	Years
South Taranaki Business Park water supply Mains, stormwater, wastewater, roading	\$12.1m	Y1 – Y6
Waverley Town Centre Master Plan	\$2m	Y1 – Y9
Pātea Town Centre Master Plan	\$2.3m	Y2 – Y10
Eltham Town Centre Master Plan	\$2.3m	Y1 – Y10
Ōpunakē Town Centre Master Plan	\$2.2m	Y2 – Y10
Manaia Town Centre Master Plan	\$1.8m	Y1 – Y10
Hāwera Town Centre Additional Projects	\$4.6m	Y3 – Y10

Managing Our Resources Effectively

The majority of the works planned in this Strategy involves renewing existing infrastructure, maintaining current assets and core services, and improving wastewater infrastructure. Our priorities are reducing water loss (leakage) within our water networks and reducing water entering our wastewater networks (sewers), which will reduce the demand on our treatment plants and delay the need for further investment. Along with this we are also focused on data quality improvement across our asset base.

Managing our Assets

Managing and maintaining our infrastructure assets to ensure consistent and reliable service delivery to the community requires good asset management practices and a clear strategy. The maintenance, renewal, and capital expenditure programme for our core assets is based on the information in our asset management plans and asset databases. This is the best information available to us about

the assets. For some (for example, underground pipes) the information around age, type, and quantity is very reliable. However, information around condition has limitations and will be updated as new information becomes available. This could change the costs or timing of planned expenditure.

We need to improve the condition data of our assets so we can optimise our whole-of-asset-life decision-making and planning. This involves testing physical samples of water pipes (planned and following a pipe failure) and CCTV inspections of wastewater and stormwater pipes as well as visual inspections.

Capital works programme

The COVID-19 pandemic in 2020 halted our capital works programme for two months and this had a flow-on effect into our forward programme. As a result, we have reviewed and adjusted our capital works programme.

The Government’s funding of “shovel ready projects” has already begun to put pressure on contractor availability and is likely to have an impact on

supplies of materials such as aggregate for roading and building, and timber. The construction of Te Ramanui o Ruapūtahanga and the extension and upgrading of Nukumarū Station Road have been approved as “shovel ready” projects. We expect contractors will continue to be available to undertake our asset maintenance, but competition for contractors could affect our levels of service and/or increase our maintenance costs.

Capital works delivery plan

Experience shows we have been capable of delivering no more than \$20 million-worth of work per year. With a capital works programme of around \$39 million per year for years 1-3 of the LTP, we have taken a number of steps to ensure that we can deliver the capital works programme that has been set.

Our ability to complete our works programmes is affected by a number of external factors that are largely beyond our control. This includes the availability of contractors and materials, delays due to legal

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proceedings, stakeholder engagement resulting in a change in project, and of course COVID-19 lockdowns etc.

While we are mindful of anticipated changes to legislation and the need to upgrade infrastructure to meet new requirements, our biggest challenge is to build and deliver what we have said we will do. Failure to deliver on key projects and programmes is identified as a strategic risk for the organisation and has been a focus for improvement. We have reviewed our asset and project management processes over the last two years and have taken a number of steps to ensure that we can deliver the capital works programme set:

- Our Projects team is made up of a Manager, a Senior Projects Engineer, three Project Engineers and a Projects Officer. This team has been increased in the last two years (3 additional fulltime Project Engineers and 1 Engineering Cadet).
- During the COVID lockdowns our Projects Manager anticipated difficulty in resource availability

and purchased approximately \$1million of pipe. We now have that pipe available to deliver water reticulation renewals projects in years one and two of the LTP.

- This team is not solely responsible for the delivery of the entire capital works programme; they largely focus on Three Waters and Roothing projects. Other projects are mostly delivered within their own teams, ensuring the Projects team can focus on the core infrastructure projects.
 - ◇ Implementation of the Town Centre Master Plans will be managed through the Community Development team (which has had one FTE added to the team in anticipation of this work beginning).
 - ◇ We are working with a consultant for the design and planning for delivery of our Digital Transformation Strategy as well as employing an IT Service Delivery Lead to manage the cross organisational aspects of rolling out the new technology.

- ◇ In year one of the LTP construction of Te Ramanui o Ruapūtahanga will commence (total project cost is over \$8m). Plans and design work has been completed and this construction project is being managed by external project managers.
- Given the significance of the South Taranaki Business Park project, we are in the process of engaging a consultant to oversee this which includes Three Waters and Roothing infrastructure. This will allow the Projects team to focus on continuing to design and tender for other infrastructure replacement and renewal projects.

We have placed a strong focus on preparing designs for infrastructure projects ahead of the budget for construction in this LTP. Several projects are currently being designed or have already been designed and are ready to go as soon as the LTP is adopted, including watermain replacements and stormwater renewals

Risk

Non-delivery of key projects and our capital works programmes is considered a strategic risk along with the failure to manage critical and strategic assets within the District. Inability to complete our capital works programmes could expose our communities to the following risks:

Water Supply

- Watermain breaks causing service interruptions and increasing the amount of water we must take to make up for the water loss, which may exceed our water take consents.
- Continued levels of unaccounted for water that mean we must take more water to make up for these losses, which increases our treatment costs.
- Lack of resilience – insufficient storage in emergencies such as natural disasters and during flooding events when the source water is too dirty to treat.

Wastewater

- Continued levels of inflow and

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infiltration that overload our treatment plants and reduce the effectiveness of the treatment processes, so that partially treated effluent is discharged to the environment, which contravenes our consents in terms of quality and quantity.

- Overloading of the reticulation during heavy rain events, causing overflows at our pump stations and contamination of the surrounding areas.
- Loss of electricity supply to our pump stations, resulting in wastewater overflows and contamination of the surrounding areas.
- Failure to improve our networks and treatment systems to meet more stringent consent requirements.

Stormwater

- Flooding of properties and roads.
- Increased inflow to our wastewater systems, causing overloading of the wastewater reticulation and treatment plants.

Roading

- Loss of access to properties and services, reduced level of service.
- Increased number and severity of crashes.

Financial risks are explained in detail in the Financial Strategy.

Levels of Service

The service provided by each infrastructure area is defined by the levels of service that are described and measured for each activity and these are set out in the Long Term Plan.

Levels of service have a direct impact on rates and user fees and charges. They are directly related to performance measures that provide a balanced picture of the important aspects of the levels of service as well as the purpose of the activity. We are required to use a standard set of performance measures for the three waters and the roading and footpaths activities when reporting to the community. In addition to the mandatory measures, we have performance measures that show how satisfied residents are with the services

and facilities we provide. The annual residents' satisfaction survey gathers feedback about how well people think our services are being provided, whether directly by the Council or via its contractors.

Through the Long Term Plan process, we communicate with the community about the current levels of service. At times we have proposed reductions in some levels of service or discontinuing some services. In each case, the public soundly rejected the proposals, preferring to keep the model the same and therefore paying for the services they receive.

This Strategy is based on the assumption that our current levels of service will be maintained for the next 30 years, although we are aware that the three waters reforms may bring change. In order to maintain existing levels of service, infrastructure assets will need to be maintained in a condition that will support these levels. This means we will focus on the renewal of assets rather than major new projects, apart from those

projects outlined in Table 1.

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Table 2 below shows the key levels of service for our core infrastructure areas.

TABLE 2: Key Levels of Service

Category	Level of Service
Water Supply	Our water supply is managed sustainably. Consumers are satisfied with our water supply service.
Wastewater	We manage wastewater without risk to public health. Wastewater does not affect the quality of the environment. Residents are satisfied with our wastewater services overall.
Stormwater	We provide a reliable stormwater system that prevents houses from flooding. Our stormwater system is managed sustainably. We will respond promptly to reports of flooding and customer requests. Residents are satisfied with the stormwater system.
Solid Waste	We provide a reliable weekly kerbside recycling and rubbish collection service. We provide a reliable, well managed user pays fortnightly kerbside greenwaste collection service. Our transfer stations are safe and well maintained. We encourage recycling and reducing waste sent to landfill.
Roads and Footpaths	We provide roads that are safe and comfortable to drive on. Our roading network is maintained in good condition. Our footpaths are maintained in good condition and are fit for purpose. We will respond promptly to customer service requests for roads and footpaths.
Coastal Structures	We comply with the Taranaki Regional Council resource consent conditions for our coastal structures.

Three Waters Reform

New legislation, Taumata Arowai – The Water Services Regulator Act 2020 established a new Crown entity, Taumata Arowai – the Water Services Regulator from 1 July 2021. The new entity will be responsible for administering and enforcing a new drinking water regulatory system and the Act also establishes a Māori Advisory Group.

The Water Services Bill currently before Parliament will introduce major changes in service delivery. Should the Bill proceed as expected, our three waters (drinking water, wastewater, and stormwater) assets and operations will pass to a new regional or multi-regional organisation that will be responsible for managing these services.

This Strategy has been prepared on the basis that we will still own and operate our three waters services at least until the end of the three-year planning period. We remain engaged with the Government on the reform process

and continue to gather information to help us make an informed decision at some point in the future.

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Water Supply



Water is recognised as essential for the health and well-being of our population and is required

in large volumes to sustain our domestic, agricultural and industrial customers. Our community expects to be able to receive good quality drinking water and that additional water is accessible to facilitate economic development. Reducing water wastage and making sure we manage our water resource in an environmentally sustainable way is also important.

Our goals for water supply are:

- Ensuring reservoir security of supply during flooding events (dirty water).
- Compliance with our water safety plans.
- Improved water demand management.
- Security of supply for water sources.
- Ongoing asset renewals.

Our assets include water treatment facilities, reservoirs, water mains and

Water Supply

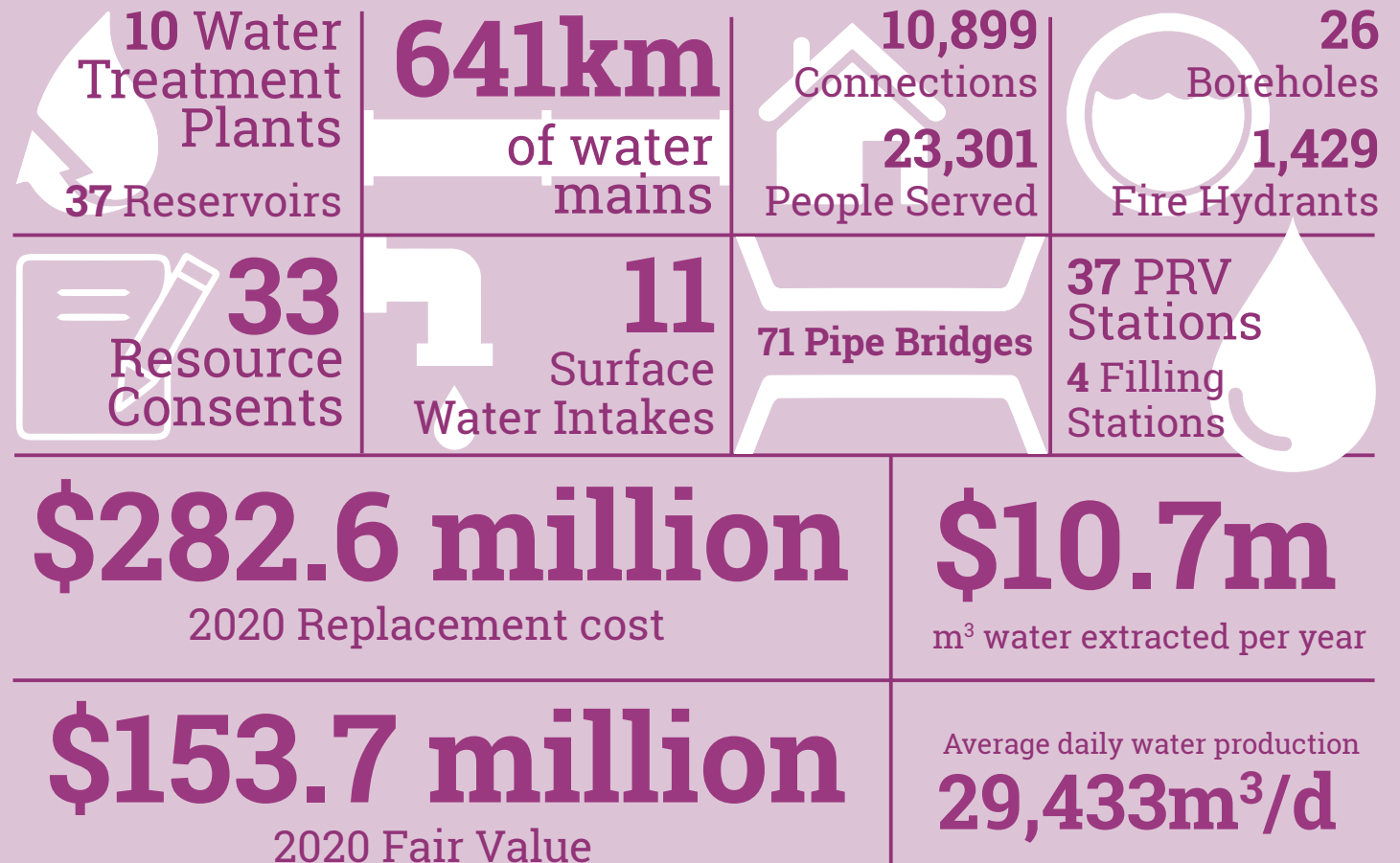


Figure 1: Water Supply Assets

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service connections. Water sources are streams and bores and the supplied water meets the Drinking Water Standards of New Zealand. We also own the Nukumarū Water Supply assets, but this non-potable supply is managed by the farmers it serves.

Challenges

We are working to identify additional water sources to meet an increasing demand for water and our area of highest priority is the interconnected supply area of Waimate West, Inaha and Kāpuni. Stage one has been completed to form a link between the Kāpuni and Inaha water schemes. Investigations for additional resources are underway, with a view to commissioning in 2021/22.

Pātea has a vulnerable supply due to its full reliance on bore water and the unsuitability of the nearby river water. High residential water demand and low rates of aquifer recharge during dry summers can potentially hinder the continued supply of the bore water. These issues may result in an increase in water restrictions and/or metering for new residential connections.

We have set challenging targets for leakage and loss (unaccounted for water), which are high in some parts of the network. For example, losses are 6.1% in the Waimate West scheme and almost 33% in the Eltham supply. This will be addressed through pipe renewal projects.

The installation of remote monitoring has given us greater visibility and faster response around failure rates of meters for large users. We will improve our meter replacement programme to better reflect the established lifecycle of meters. Likewise, our meter-backflow project has demonstrated a number of users who were taking excessive amounts of water from our network and we plan to continue auditing demand for extraordinary users to ensure that they are being fairly charged for water.

In the short term, water losses are likely to affect the consents for Eltham, Kāpuni and Inaha and will drive improvements in plant efficiency and stronger demand management strategies.

Table 3: Key Water Issues and Challenges

Key Issues/ challenges	What we will do
Taste and odour issues at Eltham and Waverley and discoloured water at Ōpunakē.	<ul style="list-style-type: none"> • Ōpunakē – clean mains and pipes and consider pre-treatment processes to resolve discolouration. • Waverley clean mains and pipes. • Eltham improve treatment process.
Reducing unaccounted-for water through improved demand management to ensure there is enough water to go around.	<ul style="list-style-type: none"> • Quantifying leakage and loss in all water supply schemes and actively managing water demand. • Water conservation initiatives, leak detection and repair. • Complete metering and monitoring of extra-ordinary users. • Improvements to monitoring of treatment plant performance. • Publicity campaigns.
Building more resilience into our water supplies.	<ul style="list-style-type: none"> • Ensuring design consideration includes climate change and mitigates the effects of natural disasters. • Increasing reservoir capacity up to a minimum of one day's peak demand volume. • Improving linkage among schemes.
New growth areas, for example the South Taranaki Business Park in Hāwera and housing developments	<ul style="list-style-type: none"> • Infrastructure development structure plans. • Hāwera to Normanby water supply resilience.
Resolving water demand issues around Turuturu Road, Hāwera.	<ul style="list-style-type: none"> • Supply resilience enhancements.
Asbestos cement pipes in Waimate West and Inaha that are deteriorating faster than initially expected.	<ul style="list-style-type: none"> • Monitor condition and continue the renewal programme.

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Key Issues/ challenges	What we will do
Deferral of renewals during the 2010s, resulting in increasing frequency of pipe failures.	<ul style="list-style-type: none"> Monitor condition and continue the renewal programme.
Renewal of water extraction consents is becoming more difficult, creating issues with security of supply during dry summer months.	<ul style="list-style-type: none"> Increased demand and loss management. Increase publicity. Investigate feasibility of rainwater tanks for domestic irrigation. Water supply agreements for major users. Restrictions as required.
Improving asset performance monitoring, condition assessment and maintenance system	<ul style="list-style-type: none"> Developing systems to improve asset data quality. Ensure we better understand how our assets are performing and their condition.
Maintenance and renewal of site services assets, for example buildings, electrical and instrumentation, communication	<ul style="list-style-type: none"> Asset data needs improvement. Condition assessment and maintenance strategy to be deployed.
Developing more accurate predictions for water main renewal	<ul style="list-style-type: none"> Improved methods of pipe condition assessment.
Full compliance with the Drinking Water Standards for New Zealand (DWSNZ).	<ul style="list-style-type: none"> Upgrade potable water treatment plants to meet the drinking water standards.

Key Issues/ challenges	What we will do
New regulator, potential future increases in the Standards.	<ul style="list-style-type: none"> Include future changes in design consideration.

Renewals

We consider condition assessment data, together with performance metrics such as records of water main failures to generate the renewals programme and have developed a rolling programme of pipe renewals.

We have focussed on condition assessment of asbestos cement (AC) water mains as they deteriorate much faster than anticipated and we have revised our renewals programme for AC pipe. These premature renewals are affecting our Financial Strategy as a substantial number of water mains which will require renewal in the short term.

Figure 2 shows the detail of the reticulation and treatment plant renewals programme based on the assessment of our water assets (blue bar). The database renewals show a spike in years 2023, 2025, 2034, 2039,

2040 and 2050. In order to manage the work required to replace these assets the programmed budgets for achieving this work has been smoothed out over 30 years (green bar).

The risk of not completing our renewals programme can result in watermain breaks, exceeding our water take consents, continued levels of unaccounted for water, insufficient storage in emergencies and/or natural disasters.

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Water 30 Year Renewal Plan

Figure 2: Forecast Water Supply Renewals

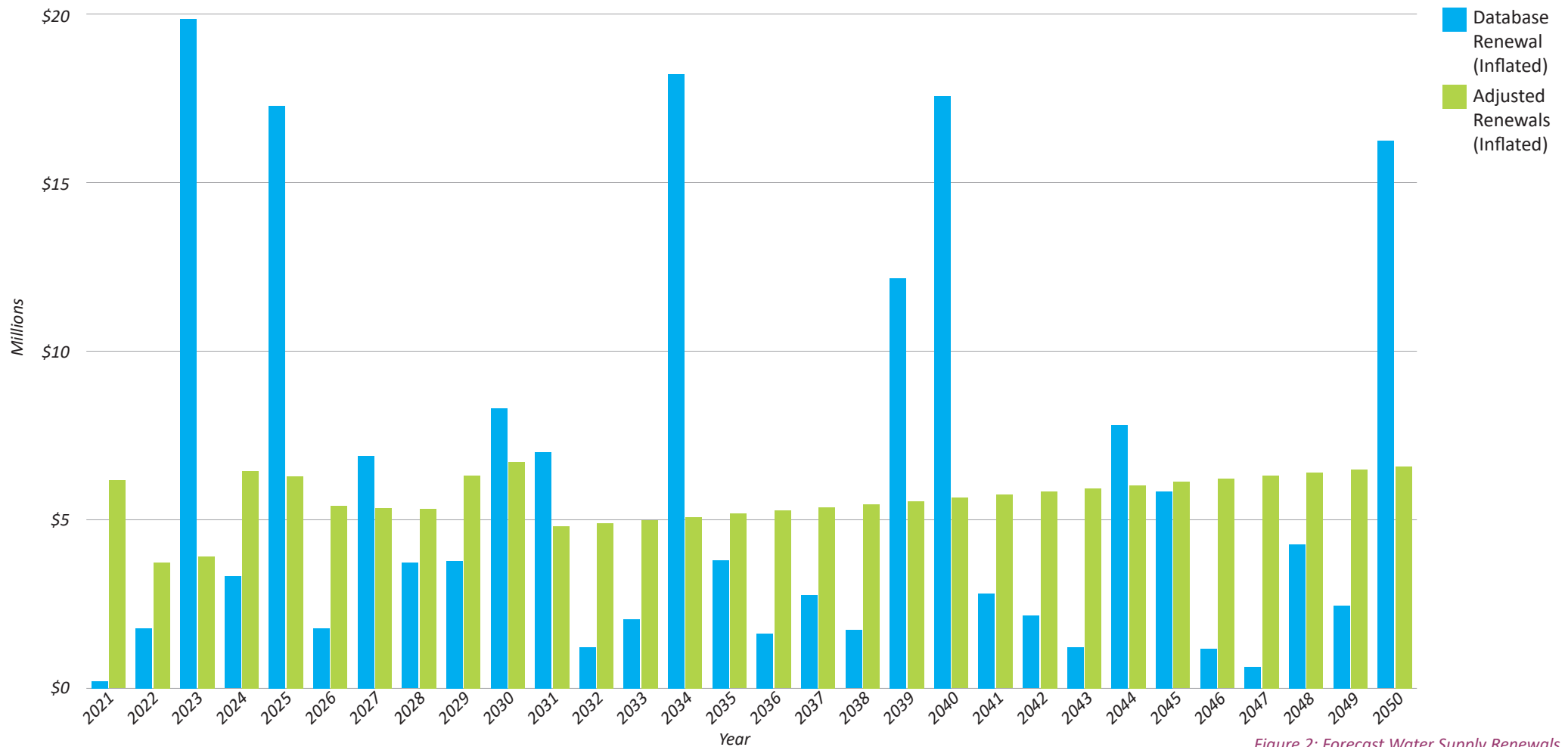


Figure 2: Forecast Water Supply Renewals

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Wastewater

Protecting public health by taking domestic, commercial, and industrial wastewater and treating it before discharge is an important issue for our community. We have eight urban wastewater schemes where wastewater is transferred to treatment plants before it is safely disposed of.

The discharges are monitored and regulated by the Taranaki Regional Council (TRC), which grants resource consents that include conditions that must be met. All but the new Waiinu Beach treatment plant consist of oxidation ponds and the treated effluent is discharged in line with the consents.

Like most wastewater networks around New Zealand, our reticulation suffers from rainwater getting into the pipes, either from the direct connection of roofs or paved areas or from ground water infiltrating into buried pipes through defects such as cracks. The impact is that the

reticulation system may exceed its capacity and overflow during high rainfall events. Ongoing management of these issues is a high priority, both to protect the health of the community and the environment and to ensure we can demonstrate our environmental compliance.

Disapproval of uncontrolled emergency discharges of untreated wastewater to the environment is increasing. As consents are renewed it is likely that increased treatment of wastewater will be required, along with identifying and implementing alternative ways of discharging from the plants.

Our goals for the wastewater activity are mostly associated with:

- Continuity of electrical power supply for pumps and treatment plants.
- Improving resilience, performance, and monitoring of wastewater pump stations.
- Reduction of infiltration and inflow of water into the sewer networks.
- Discharge quality improvements

Wastewater

188km
of wastewater
mains

2,486
Manholes

8 Wastewater
Treatment
Plants
35 Pump Stations

7,524
Connections
12,500
People served

\$4.6m
m³ wastewater treated
per year

17 Resource
Consents

Average daily
wastewater treated
12,600m³

\$119.8m 2020
Replacement cost
\$65.0m 2020 Fair Value

Figure 3: Wastewater Assets

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- resulting from consent renewals.
- Compliance with our regulatory requirements.
- CCTV condition assessments and pipe renewals.
- Improved management of trade waste.
- Ongoing asset renewals.

Assets

The majority of wastewater collection and treatment systems have sufficient capacity for the next ten years.

Future challenges include managing wastewater pond sludge and reducing the levels of inflow and infiltration into our pipe network, especially with the likely removal of consented emergency overflows in the coming years.

Table 4: Key Wastewater issues and challenges

Key Issues/ challenges	What we will do
Stormwater inflow and infiltration into the wastewater network	<ul style="list-style-type: none"> • Inflow and Infiltration reduction by repairing pipes and manholes. • Pump station monitoring. • Stormwater modelling. • Private property inspections and as necessary repair enforcement.
High discharge from wastewater treatment plants caused by high volume of trade waste loading	<ul style="list-style-type: none"> • Replacement and/or upgrade of wastewater infrastructure to meet consent compliance. • Monitor compliance of industry discharges.
Resource consent compliance	<ul style="list-style-type: none"> • Replace/upgrade wastewater infrastructure to meet consent compliance.
Expiring resource consents. Renewal is expected to result in expensive tertiary treatment of wastewater prior to discharge.	<ul style="list-style-type: none"> • Planning for tertiary treatment.
Ensuring discharge consents are not exceeded	<ul style="list-style-type: none"> • Manage and reduce inflow and infiltration.
Poor asset condition data for wastewater pipes, pump stations and manholes	<ul style="list-style-type: none"> • Undertake CCTV inspections, condition assessment and evaluation for all wastewater pipes, pump stations and manholes.

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Key Issues/ challenges	What we will do
Demand management to ensure we can cope with the wastewater demand of today	<ul style="list-style-type: none"> Invest in more treatment and flow capacity within the network and wastewater treatment plants.
Building more resilience into our wastewater network	<ul style="list-style-type: none"> Ensuring design consideration includes climate change and mitigates the effects of natural disasters.
Poor asset data for pump stations and wastewater treatment plant equipment, leading to under-investment.	<ul style="list-style-type: none"> As-building and data integrity tools. Asset data collection.
Deferral of inspections and condition assessments for manholes, laterals, and pipelines, leading to under-investment.	<ul style="list-style-type: none"> Developing systems to ensure we better understand how our assets are performing and their condition.
Developing more accurate predictions for wastewater main renewals	<ul style="list-style-type: none"> Improve methods of pipe condition assessment.

Renewals

We have established a programme of sewer CCTV, network smoke testing and private property inspections to assess the condition of sewers and

develop a prioritised schedule of pipes to be repaired, replaced, or relined, and to remove illegal stormwater diversion into the sewer system. We have engaged specialist contractors to

assist us with inspecting and evaluating the condition of our pipes.

Low levels of potentially harmful organisms (norovirus) in shellfish were periodically found after monitoring near the marine outfall in Hāwera between 2017 and 2020. This can be infectious to humans, resulting in sickness. We are working with Iwi and the Taranaki Regional Council on possible long-term solutions, including additional treatment at the ponds, an increased monitoring regime and an intensified public warning system. We have highlighted that there will be an additional cost to minimise re-occurrences of the norovirus reappearing in the medium term. Renewal of our discharge resource consents may require works to improve the treatment of wastewater to comply with new consent conditions. This is a key driver for the treatment plant upgrades.

Figure 4 shows some spikes in the renewals required (blue bar), according to renewal dates derived from the asset database, based wholly on the

installation year. As with water, in order to manage the work required to replace these assets the programmed budgets for achieving this work have been smoothed out over 30 years (orange bar).

If renewals for wastewater are unable to be completed, there is a risk that we will continue to:

- experience inflow and infiltration that overload our treatment plants;
- discharge partially treated effluent to the environment;
- experience overflows at pump stations and contamination of surrounding areas as a result of heavy rainfall events; and
- breach our consent requirements.

While the wastewater asset data accurately reflects the assets we own, improvement of metadata across all asset classes will remain a focus. The ultimate goal is to drive all asset renewals and maintenance from the asset database.

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Wastewater 30 Year Renewal Plan

Figure 4: Forecast Overall Wastewater Renewals

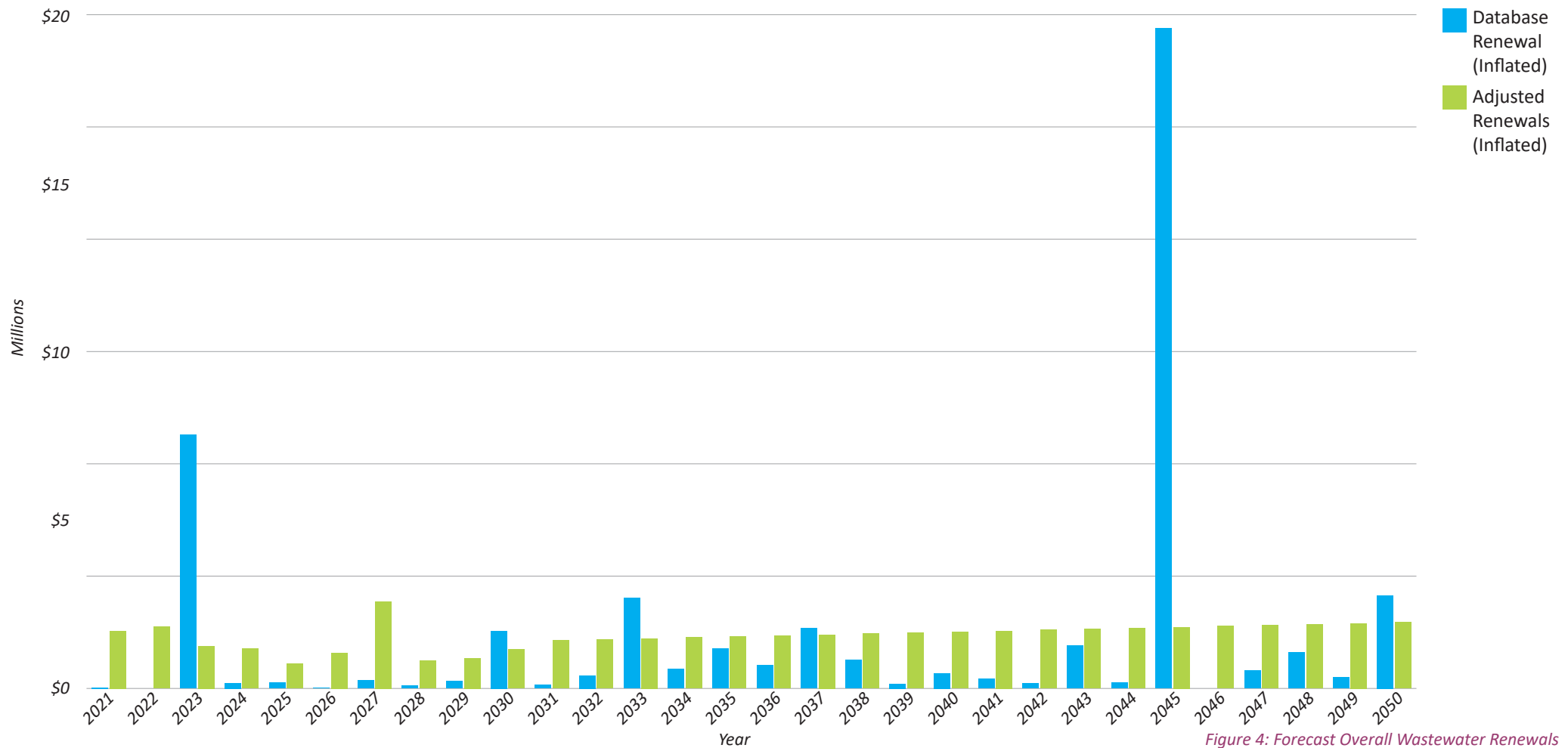


Figure 4: Forecast Overall Wastewater Renewals

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Stormwater



The community expects our stormwater reticulation to protect homes and core infrastructure such as roads

and wastewater systems and prevent these from flooding. To respond to this, we build and operate stormwater infrastructure in urban areas to help prevent the flooding of properties and reduce or eliminate water ponding on roads that could create safety hazards. In extreme rainfall events, however when the pipe network is overloaded, stormwater will take overland flow paths, often along roads.

We manage and maintain stormwater assets made up of culverts, water channels, water collectors, stormwater ponds, outfalls, and pipe reticulation networks. Stormwater from residential properties is normally disposed of on-site via soakage, not through the stormwater system.

Surface flooding of roads by stormwater is a common complaint and this can be due to blocked sumps or blocked downstream pipework.

Flooding such as that in Ōpunakē during August 2015 occurred because of the significant contribution of overland flow from farmland in the uphill catchment. The Taranaki Regional Council has responsibility for stormwater control outside urban areas, so we need to work closely with the TRC to ensure that appropriate solutions are found to flooding issues in our communities.

Stormwater infrastructure is not fully developed throughout the District. In response to climate change and expected increases in rainfall intensity, we will need to focus on developing stormwater infrastructure in at-risk areas throughout the District. We are developing stormwater network models for urban areas and the focus for our stormwater networks performance is to minimise the occurrence of flooding of houses (excluding garages and sheds). However, prevention of flooding to all properties in all circumstances is not feasible or affordable.

Our focus over this LTP will be to improve stormwater network data.

Stormwater

96km

of Pipes

1,009

Manholes

23km

lined and unlined channels
(excluding road drains)

2,086 Inlet structures

Outlet structures **322**

\$60.1 million

2020 Replacement cost

\$31.9 million

2020 Fair Value

Figure 5: Stormwater Assets

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Table 5: Key Stormwater issues and challenges

Key Issues/ challenges	What we will do
Flooding	Areas of frequent flood events identified and included in long term planning.
Lack of stormwater network	Investigate feasibility of developing town stormwater reticulation networks for Waverley and Manaia.
South Taranaki Business Park, Hāwera	Structure plan for the area and surrounding vicinity has been completed. Initial rain on grid modelling completed.
Renewal of discharge consents is expected to result in treatment prior to discharge.	Plan for possible treatment of stormwater discharges to waterways, due to upcoming freshwater reforms.
Deferral of inspections and condition assessments for manholes, laterals, and pipelines, leading to underinvestment.	Inspections programme to improve asset data quality.
Improving asset performance monitoring, condition assessment and maintenance system	Developing systems to ensure we better understand how our assets are performing and their condition and forward work planning.

Renewals

Our stormwater infrastructure is not developed to the same extent as our water and wastewater networks and we are unable to properly plan developments until we have the detailed catchment information that highly accurate LiDAR (Light Detection and Ranging) data will give us. Taranaki is the last Region in New Zealand to be LiDAR surveyed and once the data is available we will be able to plan our stormwater networks development and renewals, even though some of our infrastructure is due for renewal now. However, flooding problems are obvious in some of our urban areas and we need to proceed with upgrades and/or renewals without the required catchment data.

The data we currently have available shows a spike in renewals in 2023 and 2050. The programmed budgets have been smoothed out over 30 years, however, this will continue to be reviewed as more accurate data becomes available. The risk of not completing our stormwater renewals

includes flooding of properties and roads; and increased inflow to our wastewater systems, causing overloading of the wastewater reticulation and treatment plants.

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Stormwater 30 Year Renewal Plan

Figure 6: Most Probable Forecast Stormwater Renewals

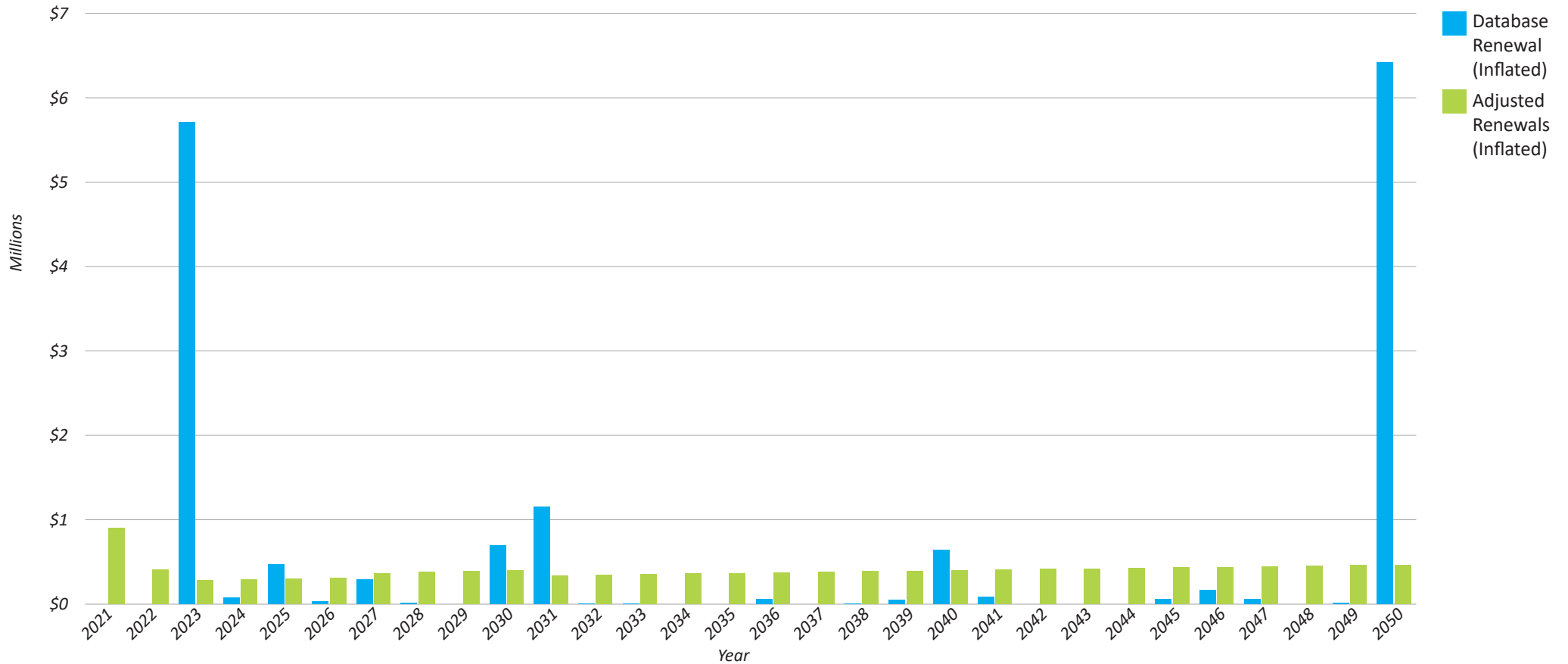


Figure 6: Most Probable Forecast Stormwater Renewals

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Roading & Footpaths

1,634km of roads that we construct and maintain
(84% sealed - 257km unsealed)



163km of footpaths

6,983
Traffic Signs

2,252
Streetlights
875 Streetlight Poles

\$596.7m
2020 Replacement cost

83 Major Culverts
299 Bridges
5,769 Minor Culverts

26
Retaining Walls

\$395.9m
2020 Fair Value

Figure 7: Roading Assets

Roads and Footpaths



We maintain and develop a substantial roading network to meet the needs of residents and road users within the District including road carriageways, footpaths, pathways, streetlights, signs, road markings, retaining walls, bridges and culverts. Safe, reliable, and accessible roading infrastructure provides access to health and social services and an efficient distribution network for residents and businesses. Roading infrastructure is essential for both the community and economic development of the District.

The historic level of investment has seen our roading network maintained in generally good condition and investment will continue at a similar level.

In addition to these key assets there are about 1,007 km of “paper” or unformed legal roads that we do not maintain. Waka Kotahi (New Zealand Transport Authority) operates and maintains the state highway network, which interfaces with our local road network. Waka Kotahi is also our co-investment partner for funding of the local road network. Our Financial Assistance Rate (FAR) received from Waka Kotahi is 58% and we have been advised that it will increase to 63%.

Roading pavement standards, and to some degree expenditure, are moderated by Waka Kotahi at a national level. Road seals are widened for safety improvements and in response to some community requests. Seal extension on low traffic volume roads is occasionally requested by the community but is currently considered to be unaffordable.

Rautaki Hanganga-ā-roto

Infrastructure Strategy

District Pathways Programme

In 2015 we adopted a programme to build several new pathways (walkways/cycleways) and upgrade some existing ones. The programme was strongly supported in public submissions and was a key project designed to enhance lifestyle and recreational opportunities across the District. Four of the original pathway projects have been completed. We will continue with the programme and potentially see some of our pathways integrated with others in the Region.

The pathways programme is funded from Waka Kotahi subsidies, loans, and rates.

Challenges

Rural roads servicing forestry blocks can suffer a huge increase in the numbers and weights of vehicle movements when the forests are harvested, which can effectively destroy a road's structure and require significant unplanned renewal expenditure. Additional expenditure of \$0.5 million a year for road renewal (pavement rehabilitation) is anticipated

in 2025 and 2027. This is unlikely to be met by additional funding and existing budgets.

We are developing a comprehensive renewal and replacement programme for our bridges and major culverts. Of these bridges, 27 are posted for weight limits or the maximum 50 tonnes loading ("50 Max") is not permitted, and many bridges on lowly trafficked rural roads are nearing the ends of their serviceable lives, so they will need to be replaced within the next 30 years. We are investigating high risk bridges to determine whether some can be strengthened rather than replaced, to extend their life. A recent change in Waka Kotahi criteria under the low-cost, low-risk work category will allow us to replace more bridges.

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Renewal Inflated vs 30 Years Predicted Forecast

Figure 8: Roading Renewals

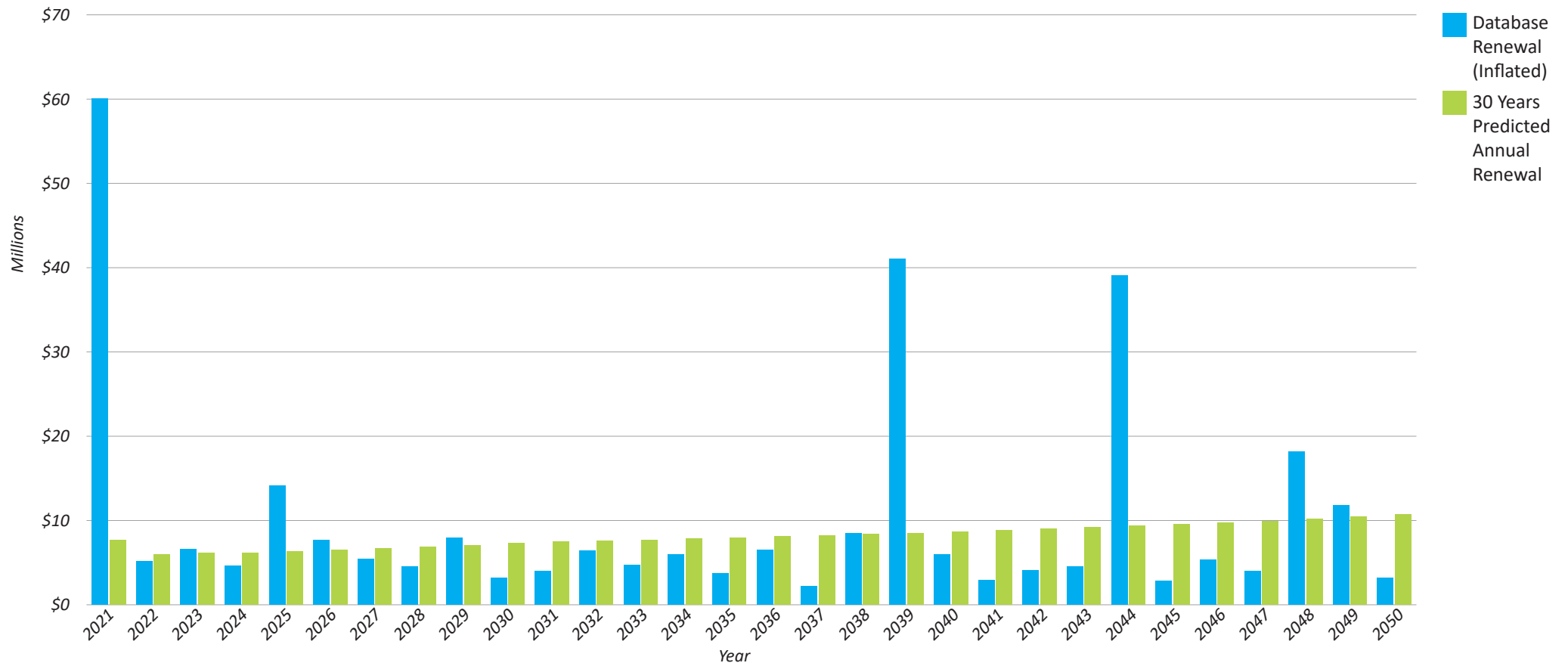


Figure 8: Roading Network Performance

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Table 6: Key Rooding issues and challenges

Key Issues/ challenges	What we will do
Customer expectations – misalignment between the Council and community about the appropriate level of service, increasing customer complaints and investment demands. Rooding consistently ranks the lowest in our annual resident satisfaction surveys.	<ul style="list-style-type: none"> • Education, including targeting key audiences with messages through various media and developing relationships with key groups to build trust and credibility. • Increase programme and funding. • Timely response to complaints.
Increasing demand for the skills and resources we need resulting in the likelihood of increasing costs, time delays and quality issues	<ul style="list-style-type: none"> • Change work programme to avoid materials shortages. • Order scarce materials early to give suppliers long lead times. • Partner with other organisations to access complementary skills.
Increasing HCV movements, especially on 'low volume roads', causing damage to assets and increasing financial burden for our ratepayers	<ul style="list-style-type: none"> • Increase road renewal and bridge strengthening. • Change levels of service and pass bylaws. • Reduce demand by posting/restricting use. • Increase funding to counter damage. • Develop relationship with trucking companies to manage situation.

Key Issues/ challenges	What we will do
Increasing death and serious Injury crashes and poor driver behaviour causing increased harm and disproportionately affecting vulnerable users	<ul style="list-style-type: none"> • Increase work programme. • Develop policy for speed and demand management. • Lower the safety risk. • Increase funding. • Communications – safety messages.
Of our 229 bridges, more than 60% are older than 50 years. We expect a surge in renewals over the next 30 years. The current renewal rate of one per year is insufficient to renew the bridges within a 100-year cycle.	<ul style="list-style-type: none"> • Monitor the condition of bridges and plan upgrades as required.
Major weather and environmental events increasing in severity and frequency resulting in increased costs to withstand and recover from these events	<ul style="list-style-type: none"> • Increase the work programme and funding to improve resilience. • Increased preventative maintenance.

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Solid Waste



We operate transfer stations at Eltham, Ōpunakē, Hāwera, Manaia, Pātea, Waverley and

Waitōtara. We also hold consents for the discharge of leachate and stormwater from seven closed landfills and legacy sites. These are at Kaponga, Manaia, Pātea, Ōpunakē, Hāwera, Otakeho and Eltham.

The collection and disposal of solid waste is conducted regionally, through a shared arrangement between the New Plymouth, Stratford, and South Taranaki District Councils. Household waste is collected from kerbsides by contractors and only the green waste collection bins are owned by the customer; the contractor owns the general waste and recycle bins including the glass crates. The refuse from the collections and transfer stations was transported to the Colson Road Landfill in New Plymouth, which closed in 2018. The three district councils began to develop a landfill site south of Eltham but this has

been land-banked due to favourable economic factors for using the Bonny Glen Landfill in the Rangitikei District for waste disposal.



Figure 9: Solid Waste Assets

Table 7: Key Solid Waste issues and challenges

Key Issues/ challenges	What we will do
Expected increase in waste minimisation levies resulting in higher costs of providing the service.	<ul style="list-style-type: none"> Waste reduction will be key along with behaviour change.
We are becoming aware of un-consented landfills in the District, including at least two on the coast.	<ul style="list-style-type: none"> Monitor.

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Coastal Structures



There are numerous coastal structures along the South Taranaki coast, including the Pātea moles

(breakwaters) that direct river water through the sand bar. The moles were originally built for the shipping industry and now serve recreational and emergency craft, while most other coastal assets are minor, such as seawalls and accessways, paths and steps to the sea and a number of boat ramps to allow recreational craft to access water bodies.

Assets

Figure 10: Coastal Structures

We aim to manage our coastal structures to provide reliable and continuous:

- Access to beaches for pedestrians;
- Access to rivers, lakes, and the sea for boat users; and
- Protection of erosion-prone sections of coast in the vicinity of existing infrastructure and cultural sites.

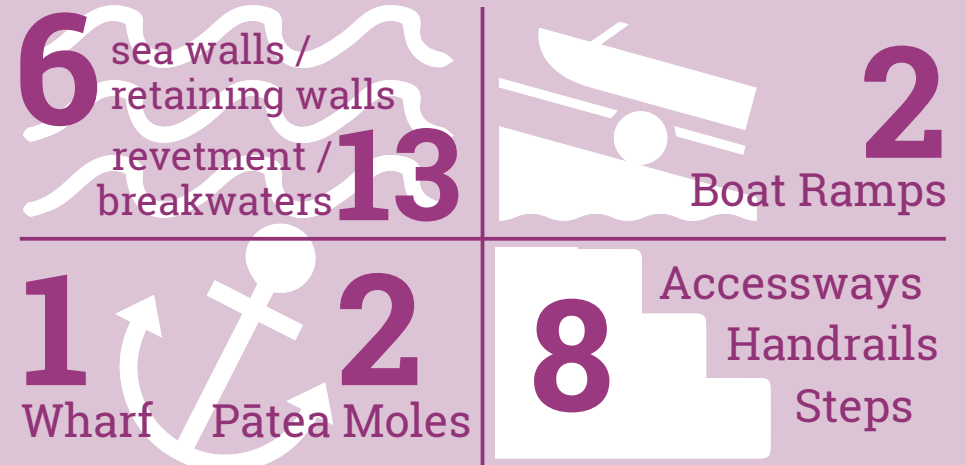
Challenge

The main challenge in managing our coastal structures is the on-going degradation of assets due to the harsh marine environment. We monitor their condition and programme works as required.

Coastal Structures Renewals

Proposed capital expenditure over the next ten years amounts to \$1.1 million. This amount includes \$520k for the Pātea moles in 2024/25.

Coastal Structures



\$25.1 million
2020 Replacement cost

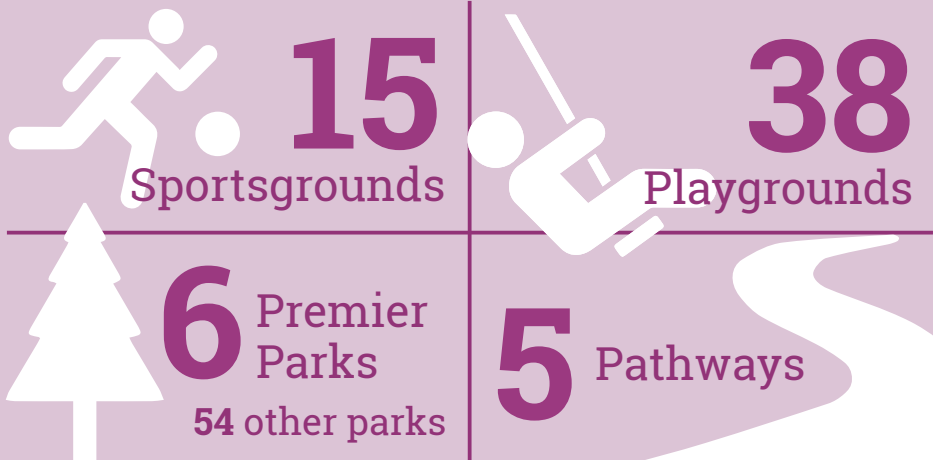
\$11.7 million
2020 Fair Value

Figure 10: Coastal Structures Assets

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Parks and Reserves



\$13.7 million
2020 Replacement cost

\$4.9 million
2020 Fair Value

Parks and Reserves



We own and maintain parks and reserves across the

District, varying in type and size from neighbourhood ‘pocket parks’ and playgrounds and main street gardens to sports fields, premier parks and the 240ha Rotokare Scenic Reserve east of Eltham.

As a result of community feedback the operational budget for parks and reserves has increased from year 2 for a resource to co-ordinate, train and support volunteers and volunteer groups (\$100,000 pa). In Year 4 the parks and gardens budget will increase by a further \$224,000 pa to support the originally proposed increase in the level of service provided for the maintenance of parks and gardens across the District.

Challenges

- Changes in recreation needs as our population ages. We continue to monitor usage.
- Declining participation in structured sports and increasing demand for informal recreation facilities, particularly pathways for walking and cycling. We have a pathways development programme to address this demand.

Parks and reserves renewals
Renewals for our parks and reserves includes Hāwera’s King Edward Park gates; horticultural renewals (plants, shrubs, and trees); and Eltham’s Bridger Park bridge renewal.

Figure 11: Parks and Reserves Assets

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Community Facilities



Our community facilities include halls, cemeteries, public toilets,

information centre, museum, campgrounds, TSB Hub function and multi-sports complex and swimming pools.

Challenges

- Competition from other community facilities.
- Earthquake-prone building legislation.
- Changing social patterns – less interest in organised meetings and other gatherings.
- A need to make our pools more environmentally sustainable.
- Possible increases in standards for swimming pool water and lifeguard accreditation.

Community facilities renewals

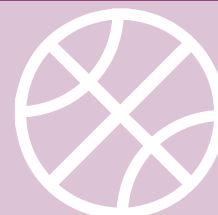
Planned renewals for community facilities include cemetery mats, Kaponga cemetery entrance, Hāwera Holiday Park furniture and chattels, Hāwera Aquatic Centre plant, rural pools plant and TSB Hub equipment and chattels.

Community Facilities

South Taranaki
i-SITE
Visitor Centre



7
Swimming Pools



TSB
Hub

9
Halls



36
Public Toilets



Hāwera
Cinemas

10
Cemeteries



7
Campgrounds



Figure 12: Community Facility Assets

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Environmental Sustainability

One of our community outcomes is Sustainable Taranaki – A District that appreciates its natural environment and its physical and human resources in planning, delivery, and protection.



SUSTAINABLE
SOUTH TARANAKI

This aligns with environmental well-being, one of the four well-beings that the Government re-introduced to the LGA02, and has the following elements.

We worked with the community to develop ten community priorities and one of those is that “Our environment and most valued landscape features are protected”.

- There is sustainable use, development and protection of resources. South Taranaki’s land and soil, water, air and coast, it’s biodiversity and it’s natural features and landscapes are understood, valued, maintained and enhanced for future generations.
- South Taranaki’s historic heritage is identified, recognised and protected.
- Built environments and environmental amenities are of a high standard and contribute significantly to the well-being of people and communities.
- People are valued and their contribution to the meconomic, social, cultural and environmental well-being of the District is recognised and supported.

Freshwater reforms and a National Policy Statement on Indigenous Biodiversity are just two examples of changes that will introduce more stringent standards for activities such as taking and discharging water, with an associated need to reduce water wastage. Accounting for water consumption accurately and how much is wasted can only be achieved by universal water metering, which we anticipate will become a legislative requirement in the next ten years.

Wastewater discharges into rivers or the sea can contain bacteria and viruses and we expect we will be required by legislation to disinfect our wastewater discharges. This is already being seen in the stance of affected parties when discharge resource consents are renewed, and we have several major consents to be renewed in the next decade. It is also possible that we will be required to treat stormwater discharges to ensure that contaminants from properties and roads are not released into the environment.

Climate Change

The Ministry for the Environment predicts that, compared to 1995, the impacts of climate change on the Taranaki Region are likely to be:

- Temperatures 0.7° C to 1.1° C warmer by 2040 and 0.7° C to 3.1° C warmer by 2090.
- Seasonal changes in rainfall but little annual change and little change in the frequency of extreme rainy days.
- Small change in the frequency of storms, some increase in storm intensity, local wind extremes and thunderstorms.
- Sea level rise of 0.2m to 0.4m above the 1995 level by 2060 and 0.3m to 1.0m by 2100.

Figure 13: Sustainable South Taranaki (Water AMP)

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Infrastructure Strategy

Environmental Expectations

Numerous environmental legislation reforms are under way at present and these are likely to affect many of our activities. These reforms aim to address key issues that are increasingly becoming areas of national and international concern:

- reducing environmental degradation and pollution;
- improving the environmental sustainability of development;
- waste minimisation – towards a ZeroWaste future;
- mitigation and adaptation for climate change impacts – towards a low emissions future, and;
- the protection and enhancement of biodiversity and natural ecosystems.

We need to factor these legislative changes into our budgeting and work programmes, given the potential significant costs and implementation implications.

Resilience to natural disasters

It is essential that communities continue to receive infrastructure services following a natural disaster,

and assets are managed according to their criticality. It is not practicable to build infrastructure systems that can withstand all possible scenarios, but resilience is built in where practicable and affordable. In the event of a disaster potential financial losses are mitigated by a combination of insurance and placing assets in the Local Authority Protection Programme (LAPP), which is specifically designed to cover losses following a major event.

Earthquake and volcanic eruption

Earthquakes pose risks to buried infrastructure networks and older masonry buildings particularly. Reticulation networks contain some pipes made of materials prone to failure during an earthquake. For example, the 450mm diameter pipe from the Kāpuni Water Treatment Plant is a critical asset made of asbestos cement. We plan to complete the duplication of this pipe with a material that has better resilience in an earthquake. Pipes considered to be earthquake risks will be progressively replaced with more resilient materials.

Volcanic eruption and ash fall are likely to contaminate surface water supplies from streams. Borehole water is not affected by ash fall, so ground water resources are being developed where feasible to increase resilience.

Lahars are possible in a volcanic event, with the potential to destroy bridges and water pipes carried by them. We mitigate these risks by maintaining critical bridges to a higher standard and improving pipe capacities and interconnections so that, where possible, a network is not totally reliant on a single pipe on a vulnerable bridge. Immediate replacement of pipes, some with substantial remaining lives, would be unaffordable. Therefore, reticulation upgrades are planned as pipes reach the ends of their lives and are scheduled for renewal.

Keeping Our Rates Affordable

The 2015-2045 Infrastructure Strategy focussed on upgrading and improving our water supply infrastructure. The upgrades were funded by borrowing

and our intention is to reduce our overall debt levels while keeping rates at an affordable level. We decided to fund our core infrastructure assets in a way that did not unfairly impact on existing ratepayers, so the capital work was funded primarily from borrowing. Using debt to fund key infrastructural projects means the costs are spread over the lifetime of that asset and future generations who will use and benefit from the asset also contribute their fair share of the loan repayments.

The ability of our ratepayers to continue funding services and the maintenance and renewal of the assets needed to provide sustainable infrastructure is an on-going issue. We will mostly concentrate on maintaining and replacing existing assets rather than creating new ones that will increase operational costs. Exceptions to that principle are:

- New assets as part of the Town Centre Master Plans;
- New assets to support the South Taranaki Business Park;
- Additional pathways (partly

Rautaki Hanganga-ā-roto

Infrastructure Strategy

externally funded and low operating costs);

- Te Ramanui o Ruapūtahanga, the new library, arts, and cultural centre under construction in the Hāwera town centre; and
- Nukumarū Station Road upgrading and extension to provide secure access to Waiinu Beach.

The latter two are mostly Government funded as post-COVID-19 pandemic 'shovel-ready' projects and the TSB Community Trust provided a grant of \$2.8 million to Te Ramanui o Ruapūtahanga.

Working towards our vision for South Taranaki to be the most liveable District includes being an affordable place to live and do business. Our plans for the District, to retain our population, maintain our current levels of service, consolidate, and reduce debt must be balanced with the need to keep rates affordable for our community. This means we need to respond to our community's needs in a manner that is sensitive to economic factors, keep costs down by focusing

on the basics, deferring, or deleting projects where appropriate and utilising various funding mechanisms and rating systems without raising our rates above 4.75%.

In the short term we will continue to deliver the three waters activities; however, given the Government's focus on three waters reform it is possible that local authorities will no longer be responsible for these activities. If the three waters activities are removed from local authorities it is possible that other Council functions and activities may require additional funding.

Effective Management of Debt

We recognise that the infrastructure we build, maintain, and operate serves the community over many generations. We use debt to fund new infrastructure, reflecting the intergenerational value of our roads, water, wastewater, and community facilities. Gross debt levels are high and are capped at \$168m in this LTP.

Managing our debt effectively and paying down debt over the term of this Plan is a priority and we are using funds from the LTIF's fluctuation reserve to pay for some key projects.

In addition to loans we use other mechanisms to fund our operational and capital expenditure. The full list is in our Revenue and Financing Policy.

Operational Expenditure

Operational expenditure is funded per activity through targeted rates, general rates, grants and subsidies, capital contributions or a mix of these.

Capital Expenditure

Capital expenditure projects are categorised as renewals, extending level of service or growth related.

Renewal projects

Renewal projects restore or replace components of an asset or the entire asset to return it to its original level of service (size, condition, or capacity). These projects will be funded from capital reserves built up from funded depreciation. If the reserve is not sufficient to meet the programmed

renewals, loans will be utilised and repaid from a contribution from the reserve that best fits intergenerational equity and/or the operational funding sources for the particular activity as per the Revenue and Financing Policy.

Extending level of service projects

These projects involve the creation of a new asset or alterations to an existing asset to deliver a higher level of service. They will be funded by loans and repaid from operational funding sources.

Growth related projects

Additional assets required to serve growth in demand for existing services due to new areas being serviced. These projects will be funded from developer's financial contributions, and a contribution from the Economic Development Fund towards the asset creation will be considered on a case-by-case basis after considering specific criteria.

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Infrastructure Strategy

Our Plan for the Future – the Most Likely Scenario

This Strategy provides an overview of the most likely scenario for managing our infrastructure. In general, we plan to maintain our current levels of service while focusing on the five themes listed at the start of this Strategy – sustainable growth, managing resources, operating in ways that are environmentally sustainable, keeping our rates affordable and managing debt.

We have included our preferred options for significant capital expenditure in our Long Term Plan budgets. The forecasts for the first three years are the most detailed, while those in years four to ten are a reasonable outline of the most likely scenario. The forecasts beyond year ten are indicative estimates and will be developed further as more information becomes available.

Lifecycle management

The management of the lifecycle of assets is the key to delivering cost

effective services. Table 8 shows the approach taken to lifecycle management for the various asset categories.

Rautaki Hanganga-ā-roto

Infrastructure Strategy

Table 8: Lifecycle Management Approach

Asset Categories	Main Issues	Maintenance Strategy	Lifecycle Approach
Water Treatment	Water treatment plant upgrades have been completed over recent years. Treatment of all groundwater per Havelock North Inquiry recommendations is planned. Improved planned maintenance system is needed to ensure optimal asset performance is achieved.	Maintenance is undertaken based on plant performance, criticality and known plant issues. Improvements are needed to meet the equipment manufacturer's maintenance recommendations.	Use AssetFinda to record maintenance regimes and asset performance. Use information gathered to refine and optimise the maintenance programme, renewal strategies and plant optimisation.
Water Reticulation	Unaccounted for water needs reducing to better demonstrate good resource stewardship. Detailed three-year renewals programme from improved asset condition assessments. Review assets within ten years of renewal.	Proactive management of the minimum night flows (MNF). Ongoing pipe flushing, valve and hydrant exercising, backflow preventer testing. Periodic town-by-town reticulation cleaning to be introduced.	Improve data set and test physical samples (planned and following a water main burst) to better establish remaining lives. Verify based on actual asset performance before committing to renewal. Extend remaining life if asset is still serviceable.
Wastewater Treatment	No major issues where there is no trade waste as treatment ponds allow time to rectify issues before compliance is compromised. Additional aeration capacity, sludge management and trade waste management is needed where trade waste loads are high, to mitigate risk.	Scheduled maintenance carried out, electrical annually and mechanical six-monthly. Better capturing of maintenance and performance data will improve decision making.	Utilise better performance and condition data capture to improve whole of life decision making.
Wastewater Reticulation	Inflow and infiltration (I&I) of water into the pipe network reduces hydraulic performance and may result in the failure to meet volumetric resource consents.	Routine CCTV inspection of the sewer network to identify faults and target rehabilitation efforts. Flush problematic sewer lines and inspect manholes. House inspections and smoke testing to identify wrongly connected stormwater.	Manage levels of I&I by rectifying defects to ensure network overflows don't occur from hydraulic overloading. Repair or renewal selected based on number and types of defects. Consider independent stormwater systems.
Stormwater Reticulation	Lack of information about condition of pipe assets.	Sump and open channel clearing and manhole inspections.	Gather CCTV condition data to refine the renewals programme.

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Infrastructure Strategy

Asset Categories	Main Issues	Maintenance Strategy	Lifecycle Approach
Roading Pavements	No significant issues, generally performance indicators show good condition with slight declining trend predicted due to increasing heavy vehicle usage.	Maintenance treatment chosen based on condition rating and required level of service of the pavement. Methods employed are patching, reseal or rehabilitation. Reduce volume of reactive maintenance in preference for preventative maintenance.	RAMM roading asset information system is used to select appropriate treatment based on Waka Kotahi criteria.
Roading Bridges	There is an upcoming peak of renewals over the next 30 years. Some bridges may not qualify for Waka Kotahi funding under current criteria unless the replacement cost is less than \$2 million.	Visual inspection every two years with detailed examination every six years on some critical structures to prioritise maintenance and renewal. Raise individual business cases for bridge replacements >\$2m.	Manage renewals to give smoothed cash flow to ensure funding from Waka Kotahi is available.

Capital expenditure decisions

Our decisions on how much to spend on infrastructure have three main drivers:

1. When should existing infrastructure be replaced?
2. When should we invest to improve the existing service?
3. What investment is needed to cater for growth and development?

Some capital development is determined by regulation:

- Ministry of Health standards for drinking water quality.
- Regional Council consent conditions that determine the amount of fresh

water that can be taken from a river or the ground and the quantity and quality of discharges back to rivers from water and wastewater treatment plants and stormwater runoff.

Community expectations in these areas tend to align with the regulators' requirements.

Substantial expenditure will be required in the first three years of the Long Term Plan to install infrastructure for the South Taranaki Business Park at Hāwera.

Replacing infrastructure

An asset needs to be replaced when it

can no longer provide a level of service and there are several reasons why an asset could be renewed. For example, a water main may be renewed if it is bursting too frequently, has too much water leaking from it, or its internal condition causes dirty water.

Our renewal programmes are based on established criteria for the lives of assets. This information is recorded in asset management systems and details are provided in our Asset Management Plans (AMPs). Most wastewater plants and nearly all water supply treatment facilities have been upgraded over the last nine years to meet the required standards, which means there are few

imminent high value asset renewals in these areas. The pipe assets for water supply, wastewater and stormwater would typically be expected to last between 80 to 100 years and many have reached that age range.

These networks have a value in excess of \$135 million and a significant quantity of renewals is scheduled over the next 30 years.

The accuracy of our reticulation renewal programmes improves as we improve the quality of the information we have about the assets and their condition. Condition assessments will continue to be a priority, to improve

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Infrastructure Strategy

our knowledge across our reticulation networks. The focus for condition assessments will be those assets with the shortest theoretical remaining lives and those that serve the highest numbers of customers.

Our financial projections for renewals assume that technology will not advance substantially, so the cost of renewal will not reduce with time. Where appropriate we use the range of 'no-dig' and relining technologies available for rehabilitating sewers, as these are less expensive than replacing the pipes with new ones.

Improving the existing service

We may increase the level of service we provide for a number of reasons and that usually increases the cost of the service. Examples are:

- An increase in legislative requirements.
- Higher environmental expectations.
- Climate change impacts.
- Providing improved resilience to earthquake and volcanic eruption.

Given the extent of our borrowing

(debt), it is important that we prioritise our capital investment, which we have done against the four criteria above.

Legislative changes

We improve parts of our infrastructure when there is a legislative requirement to do so, including upgrades to our water treatment plants to comply with the New Zealand Drinking Water Standards 2005. The Havelock North water supply enquiry made numerous sweeping recommendations in relation to ground water sources, many of which we had already decided to implement. These will see all ground-sourced drinking water supplies fully treated to meet the bacteriological standards.

Through consenting, the Taranaki Regional Council determines the amount of fresh water that can be taken from a river or the ground and the quantities and quality of discharges back to rivers from water treatment plants, wastewater treatment plants or stormwater runoff.

We expect water treatment standards will increase and an allowance has

been made for this.

Demand management

Minimal predicted population growth means that maintaining our infrastructure to meet levels of service will be the primary strategy, particularly for the water supply and wastewater activities, where reducing water loss and water entering sewers can significantly delay the need for further investment. These areas are the key strategic focuses over the next five years, as they yield other benefits too.

Rather than growth planning, a managed retreat may be required in some areas, where capacities might be reduced when assets are renewed.

The likely impacts of growth on our core infrastructure are summarised in Table 9 below.

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Infrastructure Strategy

Table 9: Growth Impact

Category	Impact	Management Strategy
Water Supply	Population changes and increases for demand in water are anticipated in Hāwera's new residential area (Hāwera Western Structure Plan). A small and continuing increase in demand is expected from dairy farming. Demand for commercial and industrial sections is expected to be focused around the Hāwera and Normanby areas.	The primary response to growth has been the Hāwera Western Structure Plan to encourage growth where demand for water can be managed affordably. We are consulting on Stages Two and Three of the South Taranaki Business Park in relation to further development. Capital budgets have been proposed for additional water, wastewater, and stormwater infrastructure for the South Taranaki Business Park. We are also ensuring water leaks are repaired and process losses at treatment plants are minimised.
Wastewater	Population changes will have a small impact on wastewater systems. New industries will be considered as trade waste customers with possible on site treatment if existing Council facilities have insufficient treatment capacity.	Maintain the existing wastewater treatment plants. Inflow and infiltration of water into the wastewater network is a key strategic issue and will be managed to ensure unconsented overflows don't occur. The primary response to growth has been the Hāwera Western Structure Plan to encourage growth where infrastructure can be provided and accessed affordably. We are consulting on Stages Two and Three of the South Taranaki Business Park in relation to further development. Capital budgets have been proposed for additional water, wastewater, and stormwater infrastructure for the South Taranaki Business Park.
Stormwater	Predicted growth is not expected to have a significant impact on stormwater infrastructure.	Continue to monitor system performance. The primary response to growth has been the Hāwera Western Structure Plan to encourage growth where demand for stormwater management can be achieved affordably.
Roads and Footpaths	Population or business growth is not predicted to have a significant impact on roading infrastructure.	The emphasis is on maintaining the existing network. No significant upgrades are anticipated as a result of growth with the exception of the proposed budgets for the South Taranaki Business Park.

When will it happen?

The timeline in Figure 14 shows the most likely scenario for our infrastructure investment. This provides a view about our planned expenditure over the next 30 years.

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Most likely scenario - major projects timeline

2021/22	Te Ramanui o Ruapūtanga \$0.92m	South Taranaki Business Park \$12.2m	Tertiary treatment of wastewater discharges \$36.9m																			
2022/23	Pātea public art \$0.13m																					
2023/24	Pātea Moles renewals \$0.5m																					
2024/25	Opunakē beach connection Havelock St \$0.51m																					
2025/26	Pātea main street safety and amenity \$0.43m																					
2026/27	Normanby resilience \$2.7m																					
2027/28	De-sludge Hāwera WWTP lagoon \$1.9m																					
2028/29	Replace Rāhotu treatment building \$0.52m																					
2029/30	Hāwera town centre development \$1.54m																					
2030/31	Pātea main street safety and amenity \$0.06m																					
2031/32																						
2032/33																						
2033/34	District Wastewater network renewals \$4.5m																					
2034/35																						
2035/36																						
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #cccccc; padding: 5px;">Roading Renewals \$277m over 30 years</div> <div style="background-color: #00a0e3; padding: 5px;">Water Supply Renewals \$134m over 30 years</div> <div style="background-color: #92d050; padding: 5px;">Wastewater Renewals \$57m over 30 years</div> <div style="background-color: #4caf50; padding: 5px;">Stormwater Renewals \$111m over 30 years</div> </div>																						

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Infrastructure Strategy

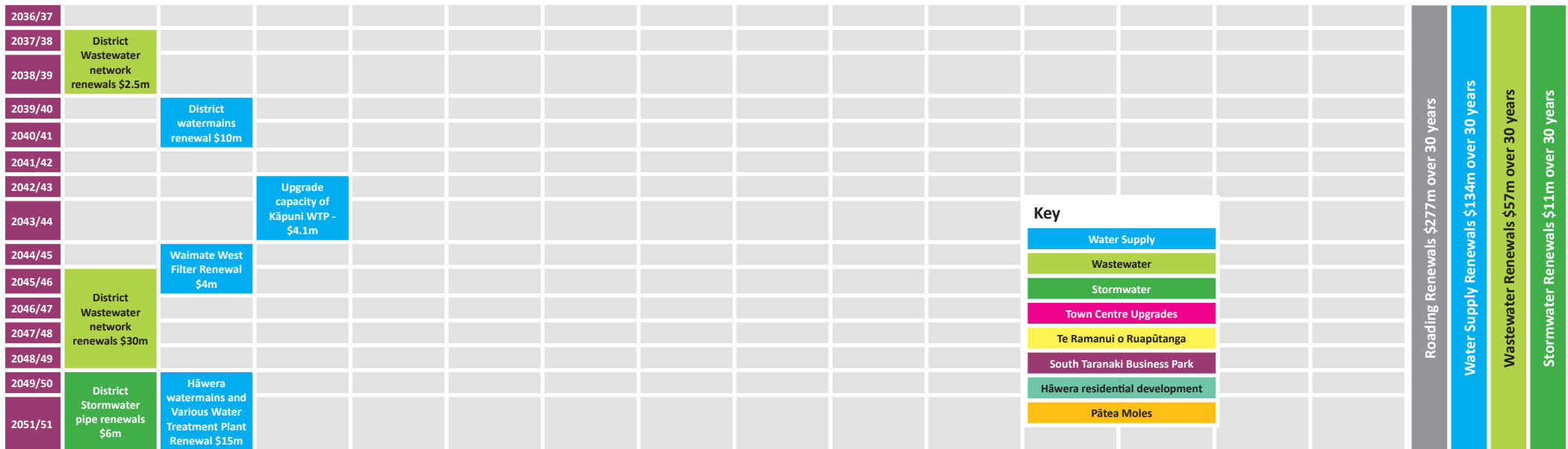
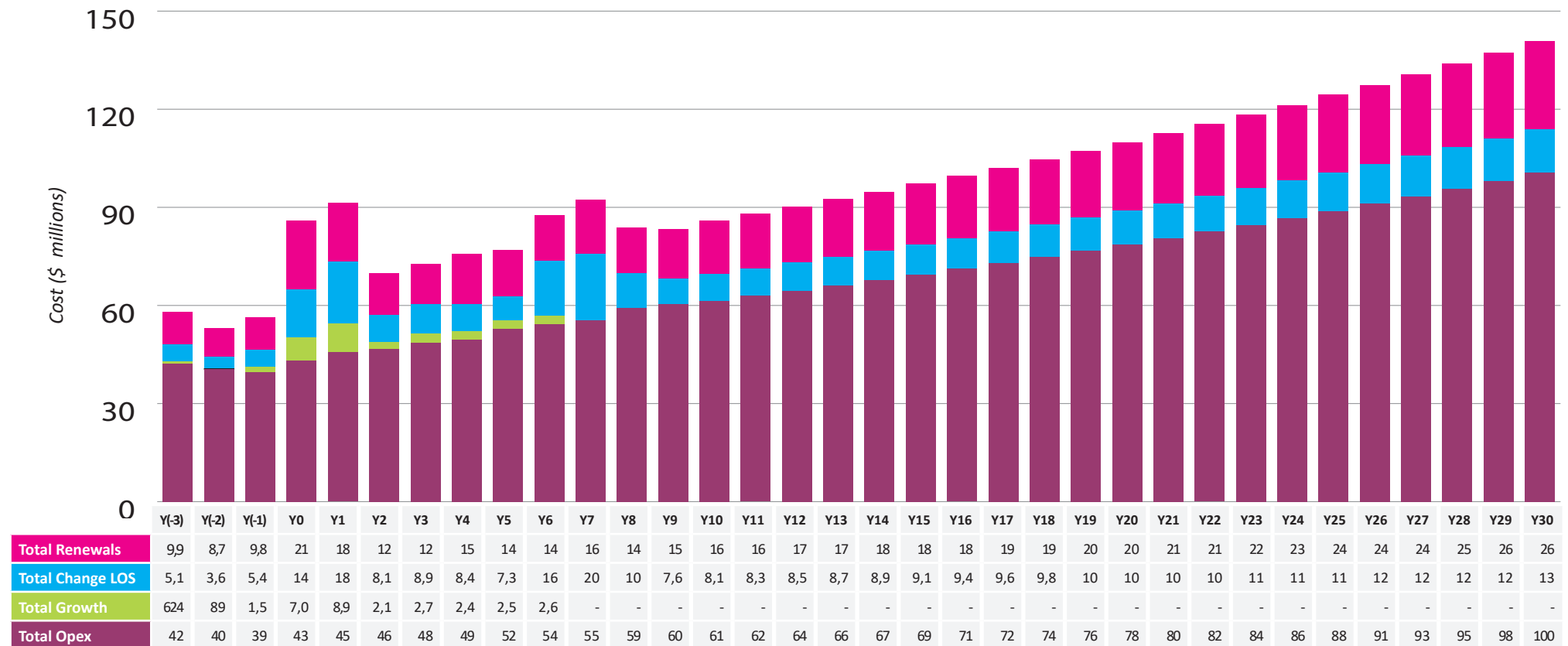


Figure 14

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Infrastructure Strategy

Financial Forecast by Cost Type



The above financial forecasts by activity is based on various assumptions (for example, condition of assets, inflation, interest rates etc). The funding of the operational expenditure and capital expenditure is based on the Revenue and Financing Policy.

Figure 15

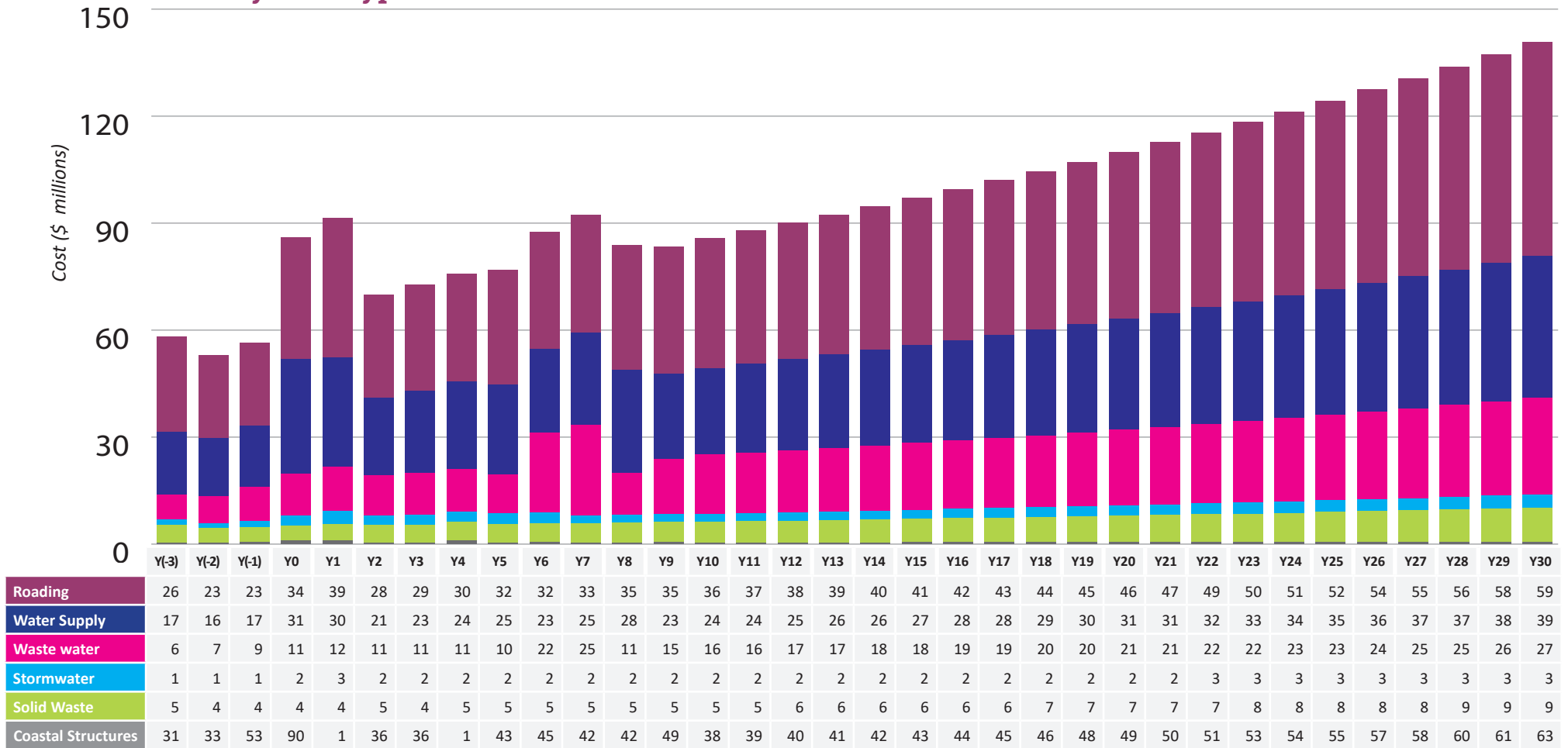
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What will it cost

The following graphs show the annual capital and operating costs of the most likely scenario. These are split by activity and funding sources.

Financial Forecast by Cost Type



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The forecasts are based on the assumptions listed in the Risk analysis section and elsewhere in the LTP. The funding of operational expenditure and capital expenditure is set out in the Revenue and Financing Policy.

Our Financial Strategy gives an overall direction in terms of debt, investments, benchmarks and rates cap. We have an obligation to meet various ratios within the Financial Strategy. The rates cap of 4.75% pa is based on the Local Government Cost Index plus 2% for increases in levels of service and growth in demand. The rating impacts of the above forecasts are within the rates cap. The Financial Strategy explains in detail how these projections affect various ratios and what impact they will have on the

overall District. The financial risks recognised in this Strategy are also explained in detail in the Financial Strategy.

Additional detail on the most likely scenario and costs implications is given in Appendix 1.

Risk analysis

Our planning requires us to make certain assumptions about what is likely to happen in the future, and many of these assumptions relate to infrastructure. The risk around the principal assumptions is shown in Table 10 below with risk graded on a scale of 1 to 3, 1 being the highest risk.

Assumption	Uncertainty	Risk Management
Depreciation	2 If depreciation calculations are significantly different from the amount budgeted, rates will need to be increased.	While information around condition has some limitations, we are continually working to improve what we know about our assets, including their condition, how well they're performing and their expected remaining life.

Assumption	Uncertainty	Risk Management
Major capital projects "do ability"	1 Given the additional funding provided through the Provincial Growth Fund and funding for three waters, we are already experiencing some issues with contractor and resource availability. We anticipate that major capital projects may be delayed as a result of contractor and resource availability.	We have taken a number of steps to ensure that we can deliver our capital works programme including; increasing the capacity of the Projects Team; pre-purchasing materials; engaged external project managers for larger projects; placed a strong focus on preparing designs ahead of budgets.
Life-cycle of significant assets	3 Our significant assets have been assessed against the IIMM framework, however there is a risk that the assessment may not match the actual condition of our strategic assets. Failure of strategic infrastructure would result in the need to undertake unbudgeted replacement or maintenance.	For most assets the information around age, type, and quantity is reliable. While information around condition has some limitations, we are continuously working to improve what we know about our assets, including their condition, how well they're performing and their expected remaining life. We have less confidence in the information we have available about our stormwater pipes. However our ongoing stormwater inspection and condition assessment programmes will continue to improve our knowledge.

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Infrastructure Strategy

Assumption		Uncertainty	Risk Management
Funding replacement of significant assets	3	If we decide to change our Revenue and Financing Policy on how to fund assets, it will have an impact on rates.	It is unlikely that we would make this decision without a thorough review of the full Revenue and Financing Policy and the impacts on our rate payers and residents.
Revaluation of non-current (fixed) assets	3	If there is a large difference between how much we forecast the assets to be worth and the actual value of the assets there will be an impact on our budgets and rates.	While information around condition has some limitations, we are continually working to improve what we know about our assets, including their condition, how well they're performing and their expected remaining life.
Three waters reform	1	With the Government's focus on the three waters reform it is possible in the long term that local authorities will no longer be responsible for the three waters. If this happens other Council activities may become unaffordable.	This Long Term Plan continues to focus on projects and maintenance for three waters and in the short term we will continue to deliver these activities.
Population growth for South Taranaki is predicted to be 0.3% pa across the District	2	There is evidence of growth in residential areas, based on the number of building and planning consent applications we have received. Therefore there is a risk that the population will increase more than projected.	Small increases or decreases in population have a relatively small impact on established infrastructure. An increase in population and growth will require growth-related projects and work programmes to be reviewed or brought forward.

Assumption		Uncertainty	Risk Management
Waka Kotahi funding will continue at current levels over 30 years	3	Government reduces the funding assistance rate (FAR).	This seems unlikely given the historical national approach to funding to maintain roads across the country. Reduced funding would result in either a reduced level of service or increase in the general rate.
Environmental standards will increase as predicted	1	Standards don't increase as predicted.	This would result in the deferral of the projects that are scheduled to proceed following a change in standards.
Water quality standards will increase as predicted	1	Standards don't increase as predicted.	This would result in the deferral of these projects that are scheduled to proceed following a change in standards.
Demand management practices will manage water demand as predicted	3	Demand grows more quickly than predicted, requiring investment to increase supply.	Leak detection and mains renewal will reduce losses. If increasing the capacity of water supplies is necessary, it would have an impact on targeted water rates.
Expenditure to reduce I&I will maintain sewer flows to the required levels	3	Level of expenditure is insufficient.	Current performance indicates that the level of expenditure is sufficient. Should further reduction in I&I be needed there would be a financial impact on the wastewater rate.
Renewals forecasts don't meet the predictions	2	The smoothing of renewals as predicted is unachievable.	This would result in some peaks of expenditure as shown in Figures 2, 4 and 6.

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Project	Issue	Most Likely Scenario	Principal Alternatives	Probable year	Low Cost	Likely Cost	High Cost
Growth							
South Taranaki Business Park	A feasibility study confirmed the strategic need for developing additional suitable land for industrial purposes in the District.	Continue with the development (Stages 2 and 3) of the South Taranaki Business Park.	Not completing the project is likely to deter potential commercial and industrial businesses from establishing in South Taranaki.	2021-2027		\$12.2m	
Town centre masterplans	Implementation of masterplans for five of our town centres: Ōpunakē, Manaia, Pātea, Waverley and Eltham.	The masterplans have been designed in consultation with the community and will be consulted on again as part of this Plan.	Doing nothing would see these town centres continue to lack vibrancy and not attract residents and visitors.	2021-2031	\$5m	\$10.6m	\$21m
Town Centre Strategy Hāwera – additional projects	We have initiated a Hāwera town centre strategy to restore the town centre to a vibrant and successful place for business and people. A key project, Te Ramanui o Ruapūtahanga, our new civic centre, is underway and will be funded from a mixture of sources, including the Government's 'shovel ready' projects. Additional projects have been planned to continue to improve the District's main town centre.	Continue with revitalising Hāwera's town centre.	Doing nothing would slow down the progress of restoring the town centre to a vibrant and successful place and disappoint residents who anticipate continued progress.	2023/24 to 20230/31		\$4.6m	
Water Supply							
Eltham Water Taste and Odour	Historical complaints throughout Eltham in relation to the taste and odour of the drinking water.	Undertake investigations for water source (bore) in 2021/22 and commission in 2022/23. Further flushing enhancements if required in 2025/26.	Continue with current programme by providing residents with water filter jugs.	2021/22, 2022/23, 2025/26	\$30k pa	\$1.8m	\$2.65m

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Infrastructure Strategy

Project	Issue	Most Likely Scenario	Principal Alternatives	Probable year	Low Cost	Likely Cost	High Cost
Pātea low water pressure	Water pressure in the elevated parts of Pātea is low, at approximately 200 kPa.	Pressure zoning in the Pātea water supply.	Continue monitoring pressure and managing complaints.	2021/22 2022/23	\$400k	\$540k	\$650k
Ōpunakē water discolouration	Historical complaints throughout Ōpunakē about discoloured (brown) water. It is suspected to be caused by high levels of iron and manganese in the water source.	Continue with planned de-ionisation plant in 2027/28.	Continue with flushing regimes and managing complaints.	2027/28	\$500k	\$760k	\$1m
Urban firefighting improvements - Normanby second supply line	Modelling has shown locations where water supplies don't meet the New Zealand Fire Service Fire-fighting Water Supplies Code of Practice (COP). This non-mandatory standard represents best practice. Hundreds of improvements have been identified. The Fire and Emergency New Zealand (FENZ) Act 2017 requires a new COP to be produced, consulted on, and published, but no timeframe has been set.	Making network improvements to meet the current COP for schools, hospitals, and places of assembly. Other improvements will be made when pipes are renewed. Improve the water supply to Normanby, which also has benefits of serving the South Taranaki Business Park.	Doing nothing exposes the Council and the community to risk; however, due to the lack of funding available we plan to review the capacity of the reticulation networks again when FENZ publishes the new mandatory COP. A revised programme of work will then be developed.	2027/28, 2028/29	\$1.7m	\$2.7m	\$2.7m
Turuturu Road water supply demand management	Growth and demand for water in and around the Turuturu Road area has led to a shortage of water supply and low pressure.	Investigating potential solutions and finalising best practicable option in 2021/22 with construction to be undertaken in 2022/23 and 2023/2024.	Doing nothing would not address the water shortages that residents in this area are currently experiencing.	2021/22, 2022/23, 2023/24	\$732K	\$732k	\$1.3m

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Project	Issue	Most Likely Scenario	Principal Alternatives	Probable year	Low Cost	Likely Cost	High Cost
Pātea Water Treatment Plant enhancement	Pātea has a vulnerable supply due to its full reliance on bore water. To ensure the Pātea water supply complies with the Drinking Water Standards the treatment plant requires enhancement.	Installation of a full water treatment plant.	Continue with the current water treatment plant and risk breaching the Drinking Water Standards.	2021/22, 2022/23	\$2m	\$2.6m	\$3m
Waimate West trunk main duplication	The Waimate West supply is a vital network, particularly to the large numbers of agricultural operations that rely on this source. An additional trunk main will enhance resilience.	Construction of an additional trunk main running parallel to the current Waimate West trunk main.	If we continue to rely on the single trunk main, we run the risk of not being able to deliver water to the entire network. This would put significant pressure on the agricultural operations and health and well-being of people and livestock.	2024/25, 2025/26	\$1.5m	\$2.4m	\$2.4m
Waimate West replace reservoir 1	Waimate West's reservoir 1 holds 9 million litres of water and is coming to the end of its life.	Replace Waimate West reservoir 1.	Continue to rely on Waimate West reservoir 1 to deliver water to the network.	2026/27, 2027/28, 2028/29	\$9m	\$9m	\$12m
Kāpuni demand management	The demand for water continues to rise slowly. In 2016 we constructed a borehole at Waimate West that did not provide the anticipated resource. Further water resource is needed to manage our risk of failure to supply and enhance our emergency response capability.	Constructing an additional borehole within the area of the three water supplies.	If additional water could be taken from the Kāpuni stream, that is likely to be a lower cost option. However, given the proposed legislation changes it is likely that consents to take water from the Kāpuni stream will become more stringent. Doing nothing would require significant gains from demand management.	2023/24, 2024/25		\$2.4m	

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Project	Issue	Most Likely Scenario	Principal Alternatives	Probable year	Low Cost	Likely Cost	High Cost
Waverley replacement bore	A replacement bore is required in the Waverley township to ensure enough future supply.	Investigate water source and commission replacement bore.	We can continue with the current bore, however, it will begin to decline and we will struggle to supply water to the Waverley township.	2025/26		\$1.4m	
Kāpuni Water Treatment Plant capacity upgrade	Increase capacity of the Kāpuni Water Treatment Plant - treatment upgrade from 13 mega litres per day to 19 mega litres per day.	With some growth predicted in Hāwera and Normanby there will be a need to increase the capacity of the Kāpuni treatment plant at some time in the next 25 years. Managing demand for water might see this project delayed or higher than expected growth may bring it forward.	The likely changes to the Drinking Water Standards will see all water requiring treatment, including any new bore source. If we were to do nothing and the increasing demand for water was not met the result would be an adverse impact on all customers and an inability to meet our levels of service.	2043/44		\$2.2m	
Enhanced water treatment for viruses	We expect the Drinking Water Standards will be enhanced by requiring a greater level of water treatment that destroys viruses.	UV treatment would need to be added to all surface water plants to kill viruses. Secure ground water will not require further treatment.	There are no alternatives as it is anticipated that this would be enacted through legislation.	2034/35		\$2.5m	
Demand Management and Efficiency Enhancement	As a result of the freshwater reform local authorities must account for water consumption accurately. Monitoring how much is lost can be achieved by universal water metering, which we anticipate will become a legislative requirement in the next ten years.	Introduce universal water metering, unless other technologies are developed before legislation changes are enforced.	It is anticipated that this would be enacted through legislation. At this stage universal water metering would be the most efficient method of monitoring water losses and leakages.	2032 – 2034		\$6m	

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Project	Issue	Most Likely Scenario	Principal Alternatives	Probable year	Low Cost	Likely Cost	High Cost
Wastewater							
Inflow and infiltration (I&I)	The amount of water entering the wastewater networks in a number of our towns causes problems with treatment and compliance with resource consents. This comes from direct connection of stormwater to the system (Inflow) and ground water entering the pipes through cracks and other defects (Infiltration).	A five-year programme of defect identification, inspections and remedial works should manage the performance of the pipe networks to the required level.	Doing nothing or doing insufficient work will result in failure to perform at the standards defined in our resource consents.	2022 - 2028	\$1.05m pa	\$1.08m (approx) pa	\$2m pa
Disinfection of wastewater discharges – tertiary treatment	As water quality standards for watercourses increase, based on the National Policy Statement for Freshwater Management and other environmental pressures, disinfection of wastewater treatment discharges will be required.	This could be resolved by installing an additional treatment process stage such as ultraviolet light disinfection of the discharge from wastewater treatment plants.	There are no alternatives as it is anticipated that this will be enacted through legislation.	2025 - 2031	\$36.9m	\$36.9m	\$50.5m
Desludging Hāwera Anaerobic Lagoon	Hāwera’s anaerobic lagoon was installed in 1985. Due to the industrial waste that has been diverted into the lagoon since then it is now reaching its capacity. To ensure efficiency and continued capacity of the lagoon it requires desludging.	A portion of Hāwera’s anaerobic lagoon has been desludged and we will continue with this programme.	As the anaerobic lagoon reaches its capacity, effluent transferred to the stabilisation ponds damages the chemistry and the capacity of the ponds.	2022/23, 2027/28		\$2.7m	

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Project	Issue	Most Likely Scenario	Principal Alternatives	Probable year	Low Cost	Likely Cost	High Cost
Stormwater							
Network developments	Develop and improve stormwater networks across South Taranaki including Hāwera, Normanby and Eltham.	Stormwater modelling will need to be undertaken initially followed by design and construction.	Continue to rely on the current stormwater network, which will increase the risk of damage and flooding to properties.	2021 - 2031		\$9.8m	
Roads and Footpaths							
Roading renewals	Continue to maintain and renew roading assets as identified.	The programmed works for this Plan include: <ul style="list-style-type: none"> • Road resurfacing - \$27m • Drainage renewals - \$7.6m • Road renewals (pavement rehabilitation) - \$28m • Minor improvements - \$22m 	The inability to, or decision not to, deliver this programme of works will result in the deterioration of our roading assets.	2021-45		\$100m	