

# Infrastructure Strategy 2024-54

Tā mātou rautaki anga

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# 1. Introduction

This Infrastructure Strategy sets out the Council's approach to managing the district's core infrastructure over the next 30 years.

The Strategy is a required element of the Long-term Plan and has been developed in accordance with s101B of the Local Government Act 2002 (LGA). The Infrastructure Strategy must identify:

- significant infrastructure issues facing the local authority for at least 30 years;
- the principal options for managing those issues; and
- the implications of the proposed options.

For this Strategy, core infrastructure includes access and transport (roads and footpaths), drinking water, wastewater, stormwater, and coastal protection. Underpinning the Strategy are asset management plans detailing the level and timing of investment needed to operate, replace, renew, and upgrade existing assets and to build new infrastructure.

No changes to levels of service are planned for in this Strategy. While asset upgrades make up a portion of the Council's capital works programme, these enable the Council to meet and maintain its existing levels of service and improve asset resilience and performance, rather than lift the levels of service for residents.

This Strategy acknowledges a substantial level of projected population and dwelling growth, ongoing climate change implications, growing affordability concerns, and evolving government reform.

The Council is also required by the LGA to adopt a Financial Strategy that sets out the rates, debt, and capital expenditure limits of the Council, providing decision-making guidance relating to the district's infrastructure.

The Strategy aligns with the assumptions of the Long-term Plan 2024-34, particularly regarding population and climate change projections. Significant forecasting assumptions can be found in the Long-term Plan.

## 1.1. Strategic context

As of 2023, the estimated resident population of the Kāpiti Coast District is 58,400<sup>1</sup> people. The district has a significant proportion of older residents, many of whom are retired and not in the workforce. These demographics suggest that a considerable portion of the population may have limited financial flexibility, as they rely on fixed incomes such as pensions or savings. The district also continues to attract young families due to the lifestyle and proximity to the Wellington labour market, with those who commute into Wellington for work earning considerably higher incomes than the district average.

The district includes approximately 40 km of coastline from Paekākāriki to north of Ōtaki, and spans from the western Tararua Ranges to the Tasman Sea. Most residents live in coastal townships, with the largest centres in Paraparaumu and Waikanae.

These variations across the district mean that the Council must plan infrastructure to serve a range of needs and expectations across a wide geographic area, while also being mindful of affordability, not only regarding the services offered, but also in relation to rates, and fees and charges.

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<sup>1</sup> Estimated Resident Population for Territorial Authority Areas, annually to 30 June (25 October 2023 – Statistics New Zealand)

The district has multiple areas of high deprivation and, according to the 2018 Census, the median income was the 2nd lowest in the Wellington region (\$29,700 compared to \$36,100 for the entire region).

The Kāpiti Coast District is not homogenous however, and there are mixed statistics around key social indicators such as housing, with very high home ownership (fifth highest in the country) and one of the worst levels of rental affordability in the country.

In Waikanae Beach and Ōtaki Beach there is a relatively high proportion of unoccupied private dwellings<sup>2</sup> (approximately 30%) compared with the nationwide average (10.2%). These generally serve as holiday homes or vacation rentals.

## 1.2. Growth and development

The Kāpiti Coast District continues to grow, primarily from new residents relocating to the district from other parts of the Wellington Region. Between 2013 and 2018, the district's population grew at an annual average of 1.8% compared to the 0.8% forecast for the same period. For 2019 and 2020, this level of growth was estimated to continue at 1.4% and 1.8% based on Statistics New Zealand's residential population estimates as referenced in the last Long-term plan. These estimates have been subsequently revised up to 1.6% and 2% with population growth of 0.9%, 0.2% and 1% estimated for 2021, 2022 and 2023.

Since 2021, Kāpiti Coast District Council has used Sense Partners' Population and Dwelling Forecasts which provide a shared set of forecasts to councils across the region to support regional and district planning and investment processes.

The Sense Partners 2023 forecast for the Kāpiti Coast District suggests that the district population will increase at an annual average rate of 1.0% to reach a total population of 80,924 by 2054 based on the 50<sup>th</sup> percentile. This equates to an increase of 22,180 additional people or 38%.

Sense Partners 2023 Population Forecast from 2024–54 by percentile:

Percentile	2024	2030	2040	2050	2054	Change from 2024-54
5th percentile	58,197	60,236	62,008	61,107	60,210	2,013
25th percentile	58,489	62,074	66,496	68,289	68,876	10,387
<b>50th percentile</b>	<b>58,744</b>	<b>63,552</b>	<b>71,140</b>	<b>78,538</b>	<b>80,924</b>	<b>22,180</b>
75th percentile	58,976	65,308	76,726	87,732	92,020	33,044
95th percentile	59,239	67,039	83,236	102,171	110,175	50,936

The 2023 Sense Partners forecast also reflects the impacts of Covid-19 on projected growth for the district, resulting in a lower level of growth forecast over the next 30 years (when compared to the 2021 pre Covid-19 forecast). However, since the 2023 forecast was made, there has been a significant increase in immigration nationwide. If Kāpiti experiences a comparable increase at the district level, then it could see a level of growth higher than forecast. The Census 2023 data (expected to be available from mid-2024) will be important to help verify the level of growth that occurred over the 2018-23 period, calibrate future forecasts and revise forecast growth assumptions.

<sup>2</sup> Census 2018

A significant aspect of this growth and development relates to the district's position within the wider Wellington Region. Although Kāpiti makes up only 11% of the regional population<sup>3</sup>, it is closely linked to the Wellington Region via transport networks, labour and employment markets, and the wider regional economy (to the north and south).

Accessibility to the district has increased further since the opening of Transmission Gully in March 2022. The Wellington Regional Growth Framework spatial plan and Council's response to the National Policy Statement on Urban Development, including the updated District Growth Strategy *Te Tupu Pai – Growing Well*, and the adoption of Plan Change 2 (Intensification) to the Operative District Plan has enabled residential intensification and development capacity in certain zones across the district which are anticipated to enable further growth in the Kāpiti Coast.

### 1.3. Climate change

In May 2019, Kāpiti Coast District Council declared a climate emergency and in 2021 developed a Climate Emergency Action Framework.

The framework will be incorporated into a new Climate and Resilience Strategy that is scheduled to be adopted later in 2024. This will outline Council's focus areas, direction, and highlight required actions under four key focus areas:

- mitigation - reducing carbon emissions;
- adaptation - preparing ahead of change;
- transition - moving communities to an equitable, low carbon way of living; and
- resilience - strengthening communities ahead of significant weather events.

Of relevance to the infrastructure portfolio are the actions to reduce the district's emissions, improve resilience of our networks, and the next steps for the community to consider for adaptation.

#### Regional context

The Council is part of the Wellington Regional Leadership Committee which provides governance for regional projects. Each council provides representative officers for working groups.

The Committee will adopt a Future Development Strategy in 2024, followed by a Regional Emissions Reduction Plan, Regional Climate Change Impacts Assessment, and Regional Food System Strategy.

This work will then inform a new regional Adaptation Plan to influence future development. This programme of work enables all councils within the region to benefit from shared knowledge and resourcing, create a regional plan of action, and bring a strong regional voice to engage with central government.

#### Predictions and hazards for Kāpiti

Natural hazards pose risks to infrastructure assets and climate change is exacerbating the frequency and intensity of natural hazard events.

The Council uses the climate change projections provided by Greater Wellington Regional Council for the Kāpiti Coast District which predict increases in mean temperature, annual rainfall, wind intensity and the number of windy days, increases in mean sea level, and significant increases in the frequency and intensity of storm surge events causing extensive surface water flooding and impacting the district's groundwater levels.

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<sup>3</sup> Census 2018

While the district is also expected to experience increasing numbers of growing days which will promote crop growth, it may also experience drought-like conditions at certain times of year with limited water to maintain that growth. There is some uncertainty about the nature and significance of these impacts, including how soon they may be felt, so the Council must incorporate these projections into all planning processes.

The predicted changes will put the district at increased risk from natural hazard events such as floods, landslides, widespread tree damage, storm damage, and coastal erosion and inundation. Without proper management plans, these changes could contribute to biodiversity losses, environmental harm, infrastructure damage and threats to social, cultural, and economic wellbeing, often within communities that are already at risk.

The increased risk from natural hazards also requires the Council to consider the resilience of its asset networks. When planning and designing asset renewals and upgrades, the Council uses the latest climate projections and flood modelling to ensure that its infrastructure, particularly its most critical assets, will perform as intended under future climate scenarios.

The Council's current approach to adaptation is to maintain and protect essential public assets. For some assets there are clear legislative obligations to do this (e.g. essential infrastructure and utility services). For other assets, while there might not be a legislative obligation, there may be instances where it could be deemed unreasonable not to protect the asset.

Adaptation planning necessitates working with local communities. As a first step, the Takutai Kāpiti Coastal Adaptation Project has established a community advisory panel that will evaluate and recommend a range of feasible options for adaptation along the coast. Further discussions with communities will be undertaken following this project's delivery to assess how to support community adaptation to coastal and other climate change impacts. The outcomes of this work may impact decisions on infrastructure in vulnerable areas.

Earthquakes also pose a major risk to infrastructure assets, with the Wellington region having a history of significant quakes in its past and recent modelling showing increasing probability. Adaptation planning can also acknowledge the risk of sudden catastrophic damage to infrastructure assets, and planning could provide opportunities for rebuilding of assets in lower risk sites.

### Carbon Emissions Reduction

The Council carries out an annual emissions inventory under the current Toitu Envirocare's *carbonreduce* scheme. For the 2022/23 financial year, the Council operations emitted gross 3,937 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e), a 12% reduction on the previous year.

In 2023, the Council set an aspirational target of corporate carbon neutrality by 2040; with a commitment to reduce emissions by a further 15.5 percent by 2032. To contribute to this target the Council has included five emissions reduction projects as part of Long-term Plan 2024. These are:

- installation of a solar hub on the Council's civic buildings in Paraparaumu;
- introduction of an electric refuse truck for public litter bin collections;
- continued decarbonisation of the Council's vehicle fleet;
- conversion of Ōtaki swimming pool from gas to heatpump; and
- conversion of Waikanae swimming pool from gas to heatpump.

The Council includes category 3-6 emissions in its emissions profile. These are the emissions from the production of goods and services that the Council uses, including contractor fuel and energy use and materials used for capital projects (embodied carbon). The Council must set a target for these emissions by 2025, and in preparation the Council is collaborating in regional / subnational groups

to agree how this will be progressed. Once a baseline is established, a target can be set, and the work programme identified to determine how to meet the target.

On a district scale, the Council participates in regular regional emissions reduction reporting that also includes the emissions profile for the Kāpiti Coast District. The latest report was finalised in early 2023 and estimated the total gross annual emissions in Kāpiti to be 296,695 tCO<sub>2</sub>e with transport being the largest source of emissions (53% of total districtwide emissions). The Climate and Resilience Strategy will determine districtwide options and actions for emissions reductions.

### **Climate Emergency Action Reporting**

Updates on how the Council activities are delivering on climate change are provided through regular Climate Action Reports (published on the council website).

<https://www.Kapiticoast.govt.nz/our-district/our-environment/climate-change/what-were-doing/>

### **1.4. Supplier market**

Cost escalations throughout the lifecycle of assets are common for councils. Factors such as inflation, maintenance requirements, unexpected repairs, and changes in regulation, can all contribute to these escalations. The recent sharp increases in the cost of materials and labour have led to a significant step change in the overall cost of delivering council assets and services.

In the recent past cost escalations due to the pandemic lockdowns, European conflict, and the 2023 North Island weather events impacted the costs and delivery timelines for major infrastructure projects. Although cost impacts are expected to level off, procuring the materials and skills the country needs to deliver the ever-expanding national infrastructure pipeline remains a risk to the on-time and on-budget delivery of our capital projects. To mitigate this risk the Council will analyse the supplier market before tendering, consider bundling work where there is benefit to this, and other alternative procurement approaches, to reduce the likelihood of supply-related delays to projects.

### **1.5. Legislative and regulatory context**

As we began developing this Infrastructure Strategy, the previous government had enacted several pieces of reform legislation that would have had a significant impact on local authorities. The new government has now repealed the legislation relating to the reform programme, including Affordable Water and Resource Management provisions. Replacement legislation is likely to be introduced later in 2024 to allow councils to determine how their water services will be delivered and the Council will monitor the potential impacts of this.

### **Delivery of water services**

Until late 2023, the Council's assumption was that by 2026 our three waters assets would be transferred to a separate entity, and the Council would no longer set and collect rates directly for the costs associated with owning and operating three waters infrastructure. We were also expecting central government to repay debt relating to our three waters assets.

Now that the legislation has been repealed, we must return to long-range planning for investment in three waters assets – including continuing the renewal of two significant resource consents (Ōtaki bore water take and Paraparaumu wastewater discharge) and an expensive programme of renewals and upgrades to maintain levels of service and build capacity for growth.

This comes with challenges. The high cost for labour and materials and the rise in standards means we're facing significant costs in the future, and while the local government sector expects the government's Local Water Done Well programme to introduce further change, there is no guarantee financial assistance will be offered. To align with the government's programme the Council has signed a memorandum of understanding with other councils in the Wellington Region and

Horowhenua to discuss a regional approach to managing water services. The outcome of these discussions is expected to be known in the first year of the LTP.

### Resource Management Act

The government has also repealed the Natural and Built Environment Act 2023 and the Spatial Planning Act 2023 and reinstated the previous Resource Management Act 1991 with some amendments to allow for continued fast-track consenting. It has also expressed its intention to review and potentially replace the National Policy Statement for Freshwater Management.

More change to resource management legislation may be coming which will impact the management and operation of our infrastructure assets, so we will need to be ready to respond to any change in national policy or legislation that the government might make.

## 2. Infrastructure Assumptions

The Council has used the following assumptions when preparing this Infrastructure Strategy:

Assumption	Level of uncertainty	Potential effects of uncertainty
Three waters activities will remain under Council ownership and governance.	Medium	Government policy is likely to change or become clearer during the current triennium. Council is currently investigating options with other councils in the Wellington region, including Horowhenua. Options are likely to include the transfer of water assets to a separate regional entity.
Asset lifecycle forecasts are accurate.	Low to medium	Certain assets may need to be replaced earlier than estimated (using Council's unplanned renewals budget), or if asset condition and performance exceed expectations, then Council will gain additional life from an asset and may defer renewing it. The level of uncertainty is greater for some underground assets such as water bores and the wastewater pipe network.
Growth in the demand for infrastructure services will remain similar to current levels.	Medium	Sudden shifts in demand for infrastructure, although unlikely, may require acceleration of some projects to respond to increased intensity of urban development facilitated by Plan Change 2, and in response to future greenfield developments which could occur at the edge of network areas and are not factored into the growth estimates this LTP is based on.
Levels of Service will not change significantly across asset groups.	Low	The Council strategic priorities may change through community pressure which could require changes to levels of investment. This could be managed through subsequent annual planning processes.
The Council has the capacity (internally and through its supplier market) and adequate funding to deliver its proposed capital programme	Low	If required, the Council will have the flexibility to reprioritise the capital programme during the year or through an annual plan process.
Future legislative and regulatory changes (other than three waters) will not significantly impact the	Low	Standards and regulations are expected to change incrementally rather than require a significant investment to implement. The Council will continue to monitor Government policy and



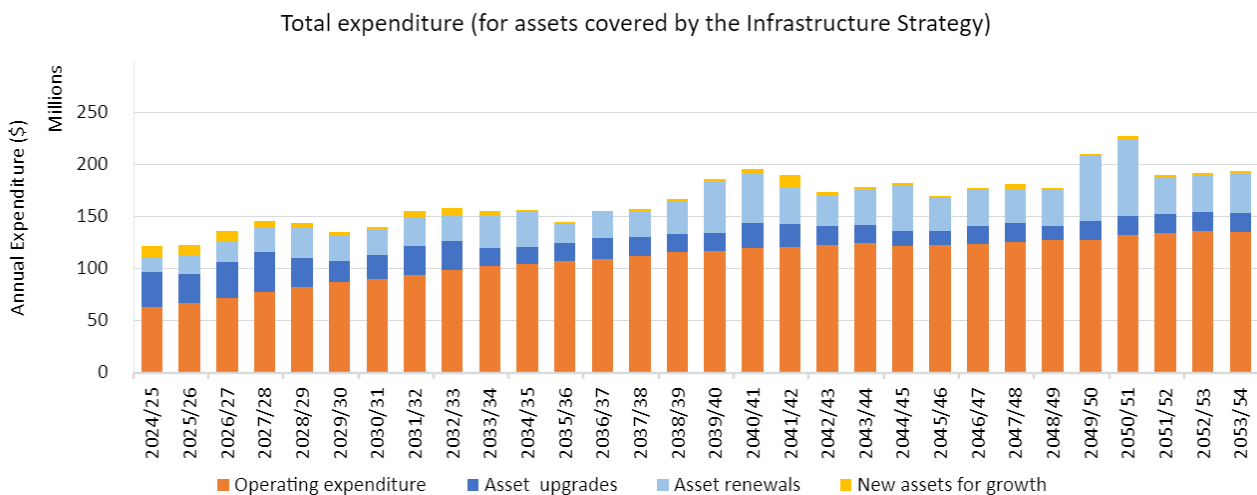
Assumption	Level of uncertainty	Potential effects of uncertainty
Council's infrastructure delivery.		industry standards to determine potential impacts and improvement measures.
Climate related hazards will continue to increase in frequency and severity as per the projections in the Long-Term Plan.	Low	Changes to climate projections are likely to be spread over a long time period and any significant change should be able to be incorporated in subsequent Long-Term Plans.

### 3. Financial Strategy

The Financial Strategy is fundamental to the success of the Infrastructure Strategy. While the Infrastructure Strategy provides details about the level and timing of investment needed to operate, replace, renew, and upgrade assets, the Financial Strategy ensures that the investment is within prudent financial limits.

The Council's financial strategy manages three levers; Rates, Capital Expenditure, and Debt.

The graph below shows the total forecast expenditure for all assets covered by this Infrastructure Strategy.



### 4. Key issues and Options

This section discusses the most significant challenges the Council faces in the long-term management of its assets, including:

1. maintaining existing assets;
2. supporting growth and development;
3. natural hazards, many of which are predicted to increase in frequency and intensity;
4. the changing legislative and regulatory context; and
5. deliverability of the planned capital work programme.

For each challenge we have identified the principal options for addressing them and the implications of each. Not all asset groups face the same issues over the period of this Strategy, nor will the issues affect each asset group equally.

#### 4.1. Significant issue 1: Maintaining existing assets

The affordability of maintaining and renewing our existing assets is an ongoing challenge. Increases to material and labour costs over the past few years have been higher than councils have seen in a long time, and although economic conditions are expected to ease into a more restrained inflationary pattern soon, balancing rates increases, debt levels, and capital expenditure to ensure prudent and sustainable long-term decision-making is now more important than ever.

Options	Implications
<p><b>Preferred Option</b></p> <p><b>1:</b> Targeted renewals based on asset condition and criticality, assessing the optimum time for renewal versus the increasing probability of failure.</p>	<p>The Council plans to continue to meet the required level of service. The Council will fund the replacement or renewal of assets when the condition, criticality, and risk of failure dictates – this means that assets critical to public health will be proactively renewed, and for assets with a low criticality we will take a more reactive approach.</p> <p>For this strategy to be effective, condition data must be current and reliable. This option carries some risk of asset failure where condition is not known or when unexpected events occur – for instance some underground assets such as water bores and parts of our wastewater network. It isn't feasible to inspect all areas of underground networks for a detailed condition assessment, so a combination of option 1 and 2 is preferred.</p>
<p><b>Secondary Option</b></p> <p><b>2:</b> Renew based on the year that infrastructure was constructed, material type, failure history</p>	<p>This option carries some risk because assumed condition could be incorrect and cause unexpected or unnecessary expenditure. Conversely, some assets may degrade faster than expected and need renewal earlier than assumed.</p> <p>The Long-Term Plan includes annual budgets for unplanned renewals across its water and wastewater activities to mitigate this risk.</p>
<p><b>3:</b> Run assets until they fail - fixing or replacing infrastructure when it breaks.</p>	<p>Allowing assets to reach failure before renewal may increase the cost and Council work programmes and financial resources may become severely constrained by multiple failures. Critical lifeline assets may be compromised by this approach and levels of service may reduce. This option is not recommended.</p>

#### 4.2. Significant issue 2: Growth and development

While growth may bring many opportunities to the district, it can also pose challenges. Population growth places additional demand on Council's existing assets and services and, when growth is unplanned and unchecked, it can harm the health of waterways and threaten indigenous biodiversity. More greenhouse gas emissions through, for example, transportation and energy use, may increase the district's contribution to adverse climactic conditions, and housing pressures could increase demand to develop land that are at risk to natural hazards and the effects of weather events such as flooding, earthquakes, and land instability.

The Council completed a Housing and Business Assessment (HBA) in late 2023 to determine the district's development capacity. This assessment concluded that recent changes to increase

intensification of residential and mixed-use areas provide sufficient housing capacity to meet the district's projected growth across the short, medium, and long term.

### **Growth Strategy and District Plan change**

In February 2022, Kāpiti Coast District Council adopted a new District Growth Strategy, *Te Tupu Pai: Growing Well*. The Strategy provides an outline for managing how and where the district grows over the next 30 years and details how Kāpiti Coast sees itself growing to meet the requirements of the National Policy Statement on Urban Development (NPS-UD) and as part of regional growth under the Wellington Regional Growth Framework (WRGF).

The approach for managing land-use and development is set out under the District Plan. The overall approach to development within the District Plan is to maintain a consolidated urban form within existing urban areas and a limited number of growth areas which can be efficiently serviced and integrated with existing townships. This reinforces an overall hierarchy of centres and the effective and efficient use of infrastructure.

Residential use is provided for across the General Residential Zone and within the Metropolitan, Town and Local Centre Zones and Mixed-Use Zones. The District Plan also includes a number of rural residential areas providing for smaller rural and lifestyle opportunities. Several areas of future growth and expansion are identified as Future Urban Zone and Ngārara and Waikanae North development areas.

Plan Change 2 (Intensification) was completed and became operative as part of the District Plan in 2023. The Plan Change was a response to future growth needs and requirements under the NPS-UD and the Medium Density Residential Standards. The change increased heights and density for residential and mixed-use development, incorporating the Medium Density Residential Standards across its urban residential areas, and enabling greater building heights in and around urban centres and rapid transit stops.

The 2023 HBA assessed future growth against the notified version of Plan Change 2 and concluded that the changes to intensification provided sufficient development capacity to meet short, medium and long-term growth needs.

Infrastructure capacity was also assessed as part of the HBA which identified that while Council's local infrastructure networks have several on-going challenges, these were being managed through ongoing planning and investment. The HBA determined that previous infrastructure planning and investment meant capacity was generally available to meet short- and medium-term growth needs, and longer-term needs for most networks, but that further work was needed to help identify the specific nature of longer-term works required.

The assessment also recognised the significant shift that Plan Change 2 (Intensification) would have on planning and investment processes across residential and urban centres. This includes the need to look at how our centres and their needs might grow or evolve in light of these changes, especially given the potential for intensification to occur more broadly across existing residential areas, where it was previously expected, and where it was not. This work will help inform future HBAs as well as ongoing planning and investment processes.

## Population forecasts

While even the best population forecasts only represent a snapshot in time, some will remain true and reliable for longer periods than others. Because the Kāpiti Coast District is currently experiencing rapid change<sup>4</sup>, the population forecasts require frequent updates.

Population forecasts are important for asset planning because they indicate where infrastructure is likely to be required and the level of customer demand for those services. A population forecast that is too low could mean that infrastructure services will be insufficient to meet demand or that the Development Contribution Policy will not require enough contributions from developers. On the other hand, a forecast that is too high could mean that the Council has spent money on infrastructure services that were not required or collected greater contributions from developers than were required.

Options	Implications
<p><b>Preferred Option</b></p> <p><b>1:</b> Rely on existing mechanisms to direct and manage growth impacts, including previous investment in network modelling, through:</p> <ul style="list-style-type: none"> <li>• direction from the Growth Strategy,</li> <li>• management of growth through the District Plan and Plan Change 2,</li> <li>• the use of Development Contributions to fund the infrastructure needed to provide growth capacity, and</li> <li>• taking a strategic asset management approach.</li> </ul>	<p>The Growth Strategy and strategic asset management approach are fundamental to successful infrastructure delivery. If actual growth is greater than projected, infrastructure might not have sufficient capacity to meet demand.</p> <p>Alternatively, if actual growth is lower than projected, this might result in over- investment in infrastructure.</p> <p>To a degree, the opening up of the urban area to intensification through Plan Change 2 has increased uncertainty as to where and how quickly growth within the existing urban footprint may occur.</p> <p>Through its obligations under the National Policy Statement on Urban Development (NPS-UD), Council ensures that sufficient development capacity is able to be serviced by its infrastructure, over the short, medium and long term to meet growth demand.</p>
<p><b>2:</b> Increase investment in the LTP to provide for additional network modelling.</p>	<p>Council enhanced its network modelling capacity in the previous LTP to better understand growth impacts and infrastructure requirements. Council does not believe that further investment is likely to provide significant further benefits.</p>

### 4.3. Significant issue 3: Climate change and natural hazards

Climate assumptions derived from the Intergovernmental Panel on Climate Change provide different projections that are dependent on achievements of global emissions reduction. Activity managers with critical infrastructure assets have applied conservative projections.

<sup>4</sup> As stated in the strategic context section, between 2013 and 2018, the district's population grew at an annual average of 1.8% compared to the 0.8% forecast for the same period. Since 2020, Covid-19 and border restrictions have impacted levels of forecast growth, but more recently, immigration, a key driver of growth, has bounced back to pre-Covid levels creating a level of uncertainty.

Adaptation measures from one asset group may have implications for other groups and an infrastructure adaptation action plan across all activities is being investigated. The across council lens may also provide opportunities for more effective delivery with additional co-benefits.

Earthquakes are also considered when planning for natural hazards. Increased resources are being built into Council staffing for the emergency response and the recovery roles. Having a planned recovery will, where able, reduce the incidence of replacing assets in high-risk areas.

Council is managing multiple climate-related issues:

<b>Risk of damage to assets by storm events that are increasing in severity and frequency.</b>	
<b>Options</b>	<b>Implications</b>
<p><b>Preferred Option</b></p> <p><b>1:</b> Do not automatically reinstate assets that are subject to ongoing climate change effects, review based on asset criticality.</p>	<p>This approach may limit access to some properties and reserves (in the case of roading assets).</p>
<p><b>2:</b> Always reinstate existing assets in their current locations</p>	<p>Ongoing high costs for the reinstatement of assets.</p>

<b>Risk of water shortage from increased dry periods and higher temperatures.</b>	
<b>Options</b>	<b>Implications</b>
<p><b>Preferred Option</b></p> <p><b>1:</b> Increase potable water storage and network infrastructure alongside the Council's sustainable growth strategy <i>Te Tupu Pai – Growing Well</i>.</p>	<p>High cost of initial installation and enables Council to achieve its target level of service. Funding through the government's Infrastructure Acceleration Fund has enabled an additional reservoir in Ōtaki to be brought forward.</p>
<p><b>2:</b> Manage bore water and river water intake from approved resource consent supply.</p>	<p>Ongoing high costs (rates and debt increases) for the reinstatement of assets with uncertain levels of service.</p>

<b>Recovery from natural hazard events.</b>	
<b>Options</b>	<b>Implications</b>
<p><b>Preferred Option</b></p> <p><b>1:</b> Ensure Civil Defence Emergency Plans are in place and routinely updated, and mock events practiced, to ensure lifeline infrastructure is up and running as quickly as possible following an earthquake.</p>	<p>Structural strengthening to withstand all damage from rare, high magnitude earthquakes is not practical or possible, so it is essential to have recovery plans in place.</p>
<p><b>2:</b> Always reinstate existing assets in their current locations</p>	<p>Ongoing high costs for the reinstatement of assets – likely to increase Council's debt.</p>
<p><b>3:</b> Carry insurance to assist with recovery costs.</p>	<p>The cost of insurance premiums is growing by an estimated 20% per annum and would mean an increased rates requirement.</p>

Recovery from natural hazard events.	
Options	Implications
<p><b>4:</b> Increase the resilience of the ongoing provision of water and wastewater services.</p>	<p>This involves:</p> <ul style="list-style-type: none"> <li>requiring new urban properties to install rainwater tanks</li> <li>a recovery plan to truck drinking water from a different water treatment plant if a plant is damaged</li> <li>Back-up generators to power the pump stations in the event of the electricity supply being interrupted.</li> </ul>
<p><b>5:</b> Identify and assess network risks and strengthen existing assets to withstand moderate earthquakes with minimal damage.</p>	<p>This would mean an increased level of service and required significant staff time and resources as well as increase our debt and rates requirement. As such, this option is likely to be unaffordable.</p>

#### 4.4. Significant issue 4: Deliverability of the Capital Works Programme

In the 2021-41 Long-Term Plan, the Council increased its pipeline of work significantly compared to previous years. This challenged the Council’s capacity to deliver its capital works programme and although we have delivered significantly more than in previous years (\$61.5m in 2022/23, compared with \$32.9m in 2020/21 and \$45.5m in 2021/22), we still do not typically deliver all of the budgeted capital programme in a given year. The reasons for this are largely technical and are different depending on the project - delays with consenting processes, issues encountered during design phase, and changing priorities can all impact the timeframes for project delivery.

We aim to continue increasing our capacity to complete our planned capital works programme. This will require the Council to better understand its supplier markets and explore alternative delivery and procurement models, including use of longer-term contracts, bundling packages of work, as well as more collaborative ways of working such as joining with neighbouring councils.

Evolving the Council's project management office function will also improve our capacity to deliver our capital programme. Since the last LTP our project management office has expanded to manage larger projects that individual business units cannot fully resource themselves and will continue to mature its resource management and the Council’s project governance framework.

Options	Implications
<p><b>Preferred option</b> Limit capital expenditure to a level similar to Council's annual spend in recent previous years.</p>	<p>Certain projects may proceed without delays and may require funding to be transferred from another capital budget to be completed in a timely manner. Such decisions would be made by the appropriate delegated authority and a resetting of budgets would be required through the annual planning process.</p>
<p><b>Preferred option</b></p> <ul style="list-style-type: none"> <li>Continue to evolve Project Management Office function</li> <li>Agile/strategic procurement</li> <li>Outsource resources as required.</li> </ul>	<p>No significant impact on debt, rates or levels of service. Some level of technical risk and supplier market constraints would remain.</p>

Options	Implications
Reprioritise the capital programme now to deliver critical projects only.	<p>Delaying renewals of existing assets will increase the risk of failure and reduce level of service.</p> <p>Deferring new projects may risk increasing the total project cost and create a backlog for future years.</p>

## 5. Significant decisions required

The Council expects to make several significant decisions during the term of this Infrastructure Strategy.

Decision	Timing	Principal options and approximate costs
Improve the road connection between Paraparaumu Beach and town centre	2024/25	Build a link road between Ihakara St and Kāpiti Rd (\$23.5m)
Ensure that Ringawhata Rd, Ōtaki remains accessible	2026/27	Extend Ringawhata Rd bridge (\$1.8m)
Replace Kāpiti Rd culvert at Paraparaumu Beach	2025/26	Principal options and construction methodology are being investigated. The scale of the cost is yet to be determined but it is likely to be a significant value given the complexity of the location.
Replace Matatua Rd culvert	2039/40	Renew culvert (2017 estimate \$4.8m) Replace part of the culvert with open stream (cost TBC)
Ownership and management of Three Waters assets	Assume 2024-27.	Any decision is likely to be driven by government policy and agreements made with neighbouring councils. Principal options may include continuing to operate and fund delivery of services as we currently do <b>or</b> transitioning to an alternative model such as a council-controlled organisation. Details and financial impacts are yet to be determined.

## 6. Significant projects

Figure 1. Major infrastructure projects planned

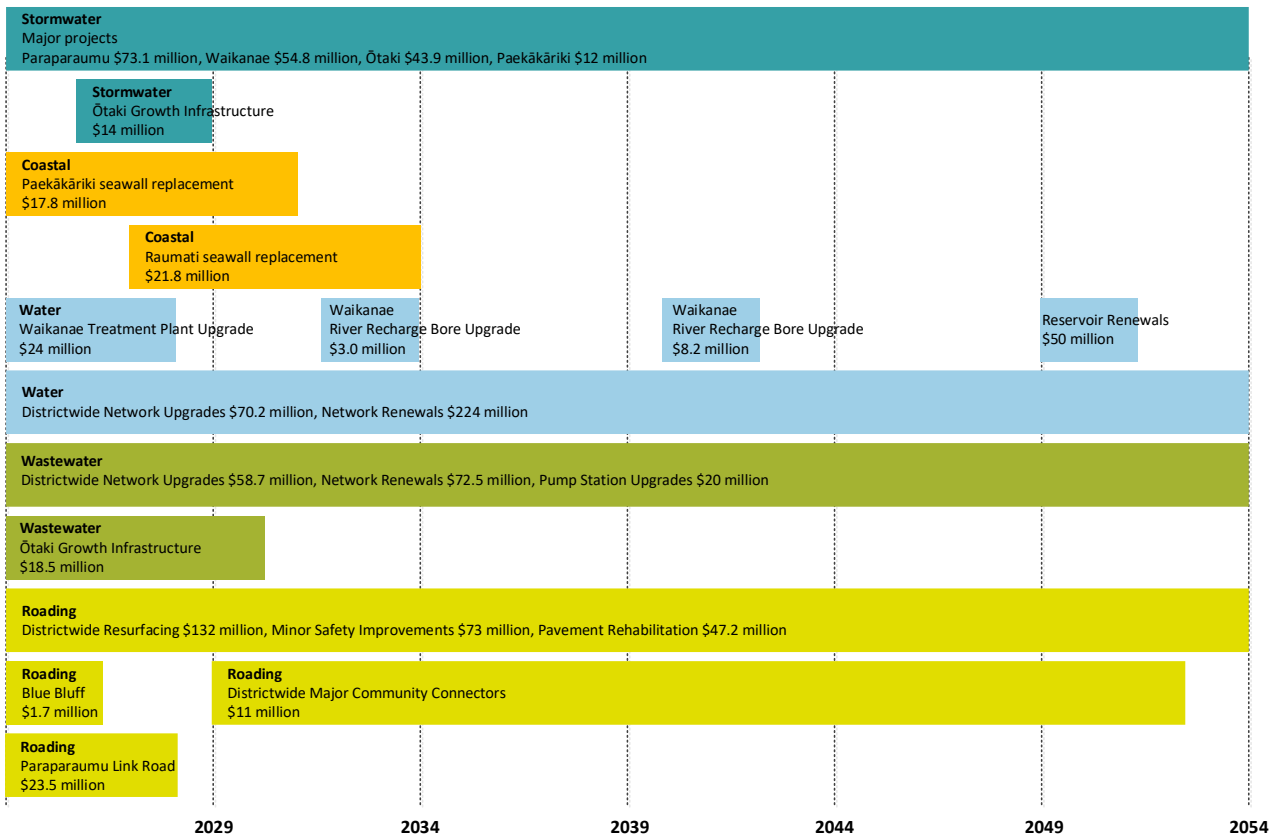


Figure 1 - Major infrastructure projects planned for the next 30 years.



## 7. Our assets

### 7.1. Access and Transport

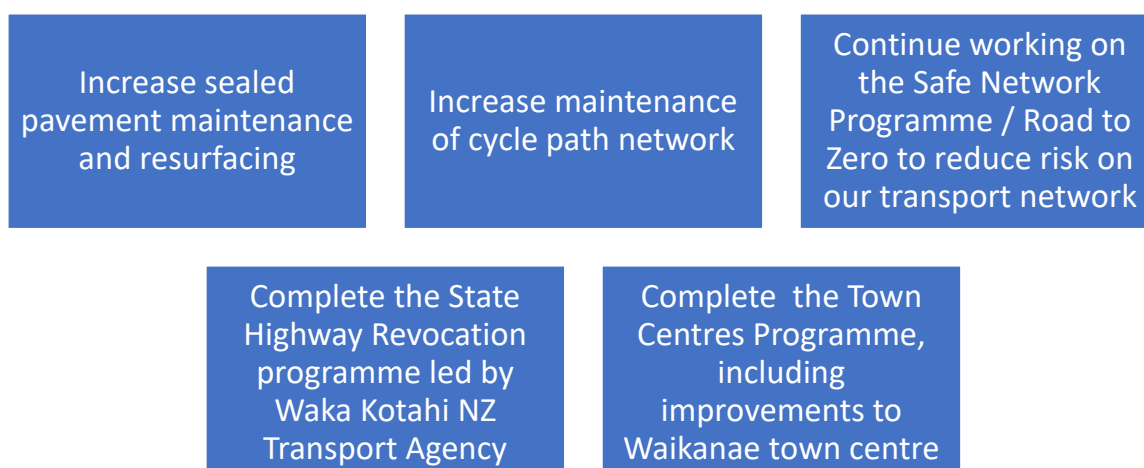
The goal of the Access and Transport activity is to:

- Build and maintain a comprehensive transport network that is resilient, reliable, efficient, and safe.
- Enable people to use an effective and reliable transport mode of their choice.
- Improve access to key social infrastructure and local businesses.
- Make prudent investment decisions that help remedy or mitigate the effects of the activity on the environment.
- Accessible and affordable travel for the community and visitors.
- Ensure that new development contributes to solutions rather than add to existing pressures.

#### Key Issues and Challenges

- **Ensuring a fit-for-purpose transport network:** How people use the transport network is constantly changing, with increasing demand for multi-modal options. Strategic investment is needed to support users and different modes of travel now and in the future. In developing the LTP we have worked with feedback provided by Waka Kotahi NZ Transport Agency to adjust our overall work programme, reducing it to ensure it is achievable and sustainable from a funding perspective but still ensuring a network that meets people needs.
- **Funding:** Waka Kotahi NZ Transport Agency funding levels are uncertain, particularly as the new government is yet to release its policy statement on land transport. If a lower level of government subsidy is approved Council will need to consider the implications of this through the Annual Plan process as it relates to years two and three of the LTP.
- **Resilience and Climate Change:** Increasing occurrence of severe weather-related events have caused damage to assets, and coastal erosion is affecting some structures and challenging network resilience. Extraordinary events are becoming more common; this affects user experience and further constrains budgets.
- **Demographic Change:** With easier access between Wellington and the Kāpiti Coast the demographics of the district are changing, with increased demand from younger and older age groups for more options and a higher level of service.
- **Connectivity:** The Wellington Northern Corridor improvements will continue to change travel patterns, and this is evident in congestion, some poor connectivity, and service provider workload. In the short-term the Northern Corridor project continues to affect the availability of suppliers and competition for work.
- **Resource consenting:** The process for consenting new development is a risk that can often add time to delivery of projects. This can be mitigated by early engagement with Greater Wellington Regional Council and ensuring projects are planned with adequate allowance for consenting time.

## Key Focus Areas



## Asset condition

Access and Transport assets include sealed and unsealed roads, drainage assets, and footpaths, along with streetlights, and traffic services, and minor assets. The availability of condition information varies across the asset types.

Data confidence levels for our road network ranges across asset types:

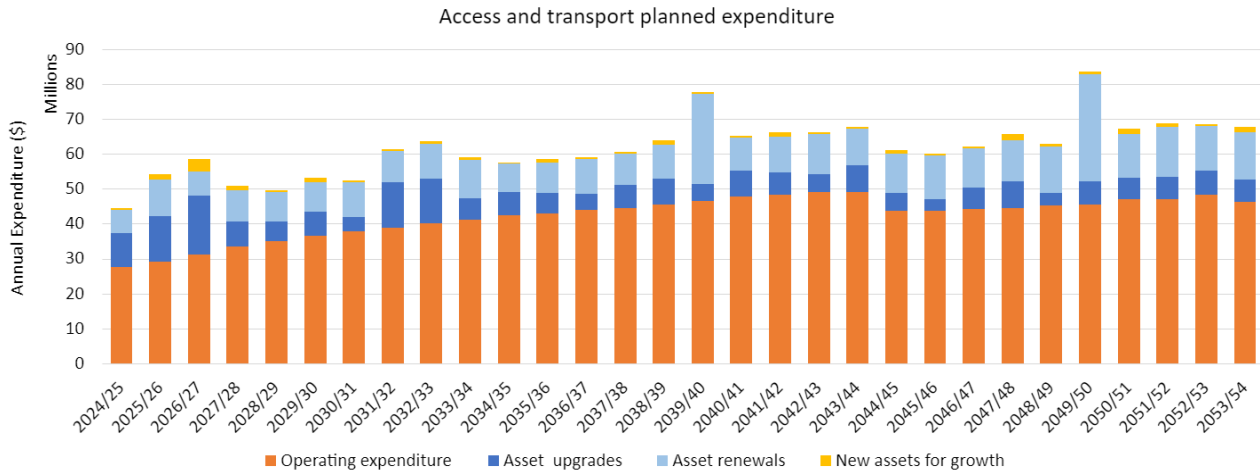
Asset type	Reliability of condition information
Road pavement	Highly reliable to reliable
Bridges	Highly reliable
SH1 vested assets	Assumed high (collected to NZTA highways standards)
Footpaths	Reliable
Drainage, retaining walls, railings, signals, signs, markings, and streetlights	Reliable
Parking facilities	Average

Sealed roads are assessed using a range of methods including road roughness and condition index, and these show that our roads are in good condition overall.

Nearly all of the Council's drainage assets (for example, kerb and channel, and sumps) are less than 40 years old and are in satisfactory condition overall. A need for replacement is established following inspections or complaints. The bridge network is in generally good condition due to regular inspections and maintenance. Reactive bridge inspections are also undertaken following earthquake and flooding events.

## Planned expenditure

The following chart shows total planned expenditure for the Access and Transport activity for the next 30 years:



## 7.2. Coastal Management

The goal of the coastal management activity is to protect public roads, water, and drainage infrastructure by maintaining Council-owned seawalls and facilitating beach protection projects with the community.

Our work aims to manage the risks of increased erosion pragmatically and prudently, sea levels and storm intensity on the Kāpiti Coast – mitigating the impacts of increased flooding, putting lives and property at risk. We also need to balance the protection of the environment, anticipated growth, and the management of our assets against community expectations, increasing risks and political and financial challenges.

Along with maintaining coastal assets such as seawalls, the Council carries out dune replenishment and beach renourishment to help manage the effects of coastal hazards on existing development and infrastructure. Dune reshaping and planting helps restore damaged ecosystems to a more natural state, as well as protecting the boundary between coastal and terrestrial land from coastal erosion.

As the coastline is essential to the identity of the Kāpiti Coast, and the health of the coastal environment is critical to the community’s wellbeing, the Council also carries out sustainable management of the coastal environment by providing accessible beach and coastal areas and enhancing ecological and amenity values.

A core element of our work is understanding the needs and concerns of our communities, while providing information about coastal hazards and risks. We acknowledge that our coastal assets may not provide protection against all threats. Additional adaptation measures will include land-use planning restrictions on land at risk of coastal threats, and are also likely to include soft engineering projects, such as dune enhancement. In the long-term, and when no other options are feasible, managed retreat may be an adaptation response that will need to be worked through carefully.

The climate crisis presents both the easiest and the hardest decisions we have ever faced. The easiest because protecting assets and property from rising seas and flooding rivers makes sense, and the hardest because balancing the benefits of protecting people and property with the cost of building and maintaining critical assets requires decisions that mitigate long-term risks and ensure intergenerational equity.

## Key Issues and Challenges

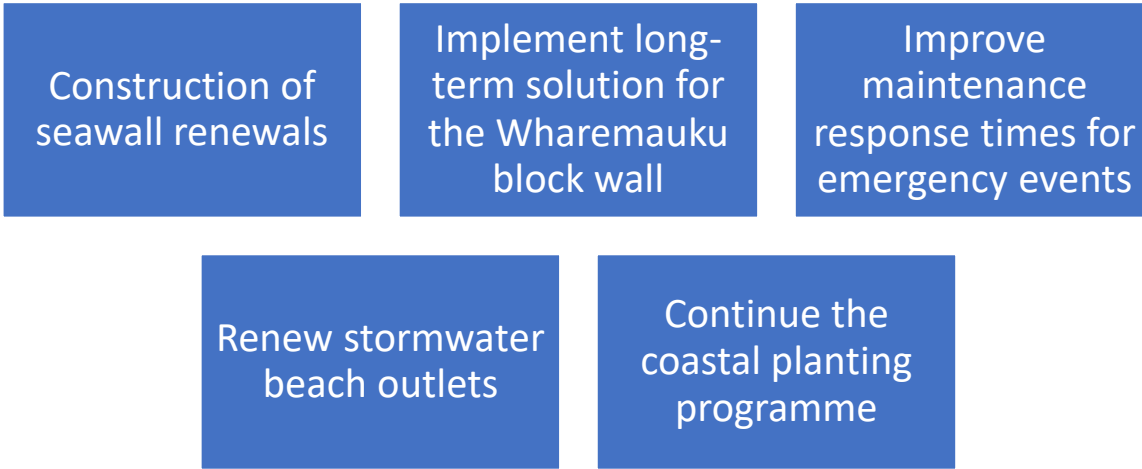
- **Climate Change:** Increasing occurrence of severe weather events raises the potential to cause damage to assets, and coastal erosion is affecting some areas. Finding affordable solutions for this reality is a significant challenge.
- **Resilience:** There is a cumulative effect of coastal erosion, sea-level rise and tectonic land movements on our coastline. While there is still some uncertainty about how significant these impacts will be, and how quickly they will happen, there is a need for us to start planning for our future and appropriate response is to be developed.
- **Asset condition:** most of the hard defence structures built on public land are in poor condition and have limited useful life left. Replacing these assets to the required standards requires a significant investment.
- **Public infrastructure risk:** other critical infrastructure assets along the coastline such as water and wastewater pipelines, and roads and walkways are currently protected by seawalls. Failure of seawalls may compromise these strategically important infrastructure assets.

## Asset condition

The following table summarises the condition of coastal assets based on the results of an assessment undertaken in 2021.

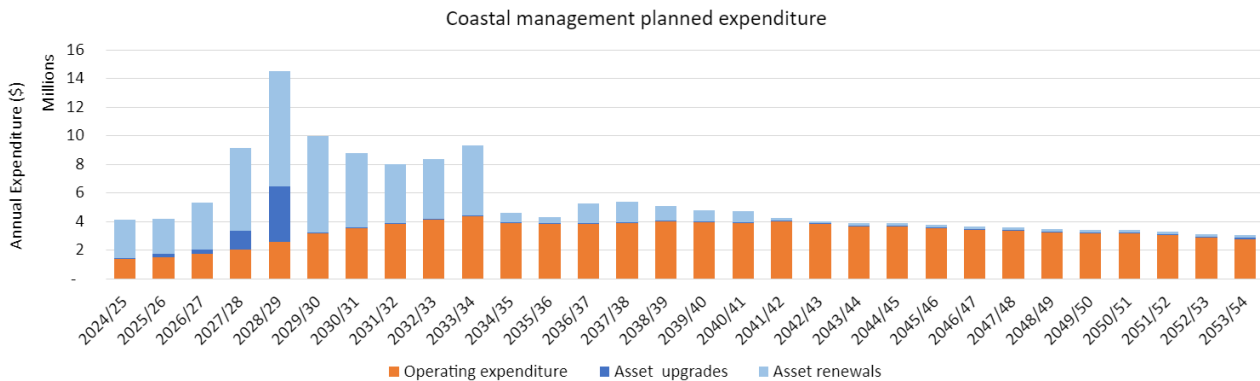
Asset type	Condition assessment
Beach outlets	Of the 69 beach outlets 15 are in extremely poor condition and the remaining are in moderate condition Out of the 15 outlets, 11 have been renewed/replaced.
Paekākāriki Seawall	Of the 960 metres of the wall, 140 metres are in poor condition, 480 metres are in moderate condition, and the remaining 340 metres is at low risk of failure in the immediate future. Since 2016, few failures have occurred, and repairs were completed. Proactive maintenance was carried out in 2022/23 and 2023/24 to extend the life of the asset while the replacement project progresses.
Raumati Seawall – Phase 1 (From 3 Garden Road to 203 Rosetta Road)	This 987 metres section has no rock protection and is in poor condition. Proactive maintenance was carried out in 2022/23 and 2023/24 to extend the life of the asset while the replacement project progresses.
Raumati Seawall – Phase 2 (From 203 Rosetta Road to 52 The Esplanade)	This 1602 metre section has rock protection at the toe and is in moderate condition. It has a residual life of 5-10 years.
Raumati Seawall – Phase 3 (From 52 to 108 The Esplanade)	This 513-metre section is built with rock and timber and is in moderate condition except for the first 20 metres which is in poor condition.
Wharemauku Block wall (From 71 Wharemauku to 7 Raebern Lane)	This 170m long block wall was built in 2016, strengthened in 2018, but a long-term solution needs to be underway by year 2025, as the design life of the wall is limited to 7 years.
Seawalls in various other locations	Six seawalls (those of shorter lengths) are in poor condition. The remainder are in moderate condition.

## Key Focus Areas



## Planned expenditure

The following chart shows total planned expenditure for the Coastal Management activity for the next 30 years:



### 7.3. Stormwater Management

The Council maintains and operates stormwater systems to manage surface water runoff at Paraparaumu, Waikanae, Ōtaki, and Paekākāriki.

The goal of the Stormwater Management activity is to improve stormwater collection, treatment and disposal across urban catchments while protecting the receiving environments, ensuring water quality, and reducing risk to human health and property from flooding.

Our work programme is holistic, integrating the planning and management of catchments, land use and receiving environments, and the health and well-being of a water body, embracing Te Mana o te Wai to comply with the regulatory and environmental compliance framework.

We plan to use more sustainable, blue-green network<sup>5</sup> strategies in the delivery of the stormwater service, including planning controls (e.g. setbacks, minimum floor levels, onsite detention, water-sensitive urban design) on development and design principles to hold water in the landscape. We will work collaboratively, and in partnership with tāngata whenua, the community and our stakeholders on projects that consider the social dimensions of water, water cycle perspectives and help target investments to risk.

The network has both environmental and recreational values. These can be managed together through a combination of infrastructure, ecological restoration, and urban design to connect people and nature.

#### Key Issues and Challenges

- **Resilience and Climate Change:** Increasing occurrence of greater intensity and frequency of events are predicted and becoming more common, overwhelming assets and challenging network resilience.
- **Delivery of Capital Work Programme:** to achieve levels of service, meet regulatory compliance and support growth, whilst addressing a historic underspend in stormwater.
- **Growth:** The district is growing, and new developments increase stormwater runoff and require increased downstream capacity. Property owners have increasing expectations to protection, and developers have expectations that Council will eliminating the flood hazards to make more developable land available.
- **Te Mana o te Wai - and wider regulatory compliance:** Requirements for managing all waters in a way that prioritises the health and wellbeing of the water (quantity, quality and ecology).
- **Flood Risk:** over 600 flooding complaints each year, 30% of urban properties designated at risk in a 1 :100-year event, nearly 50% of the stormwater infrastructure is under capacity for a 1 :10-year event. Upgrading the infrastructure to the required standard requires a significant investment.
- **Stream and watercourse maintenance:** A discretionary activity, requiring resource consent. Consenting is an expensive, time- consuming task, demanding assessments of environmental effects including cultural and ecological impacts.

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<sup>5</sup> Blue- green networks are a holistic way of planning based around waterways (blue) and planting parks and tracks(green). The network has both environmental and recreational values. These can be managed together through a combination of infrastructure, ecological restoration and urban design to connect people and nature.

## Key focus areas

Upgrade the network capacity

Extend the area of the network to some greenfield developments

Manage future demand through the Whaitua Committee

## Asset condition

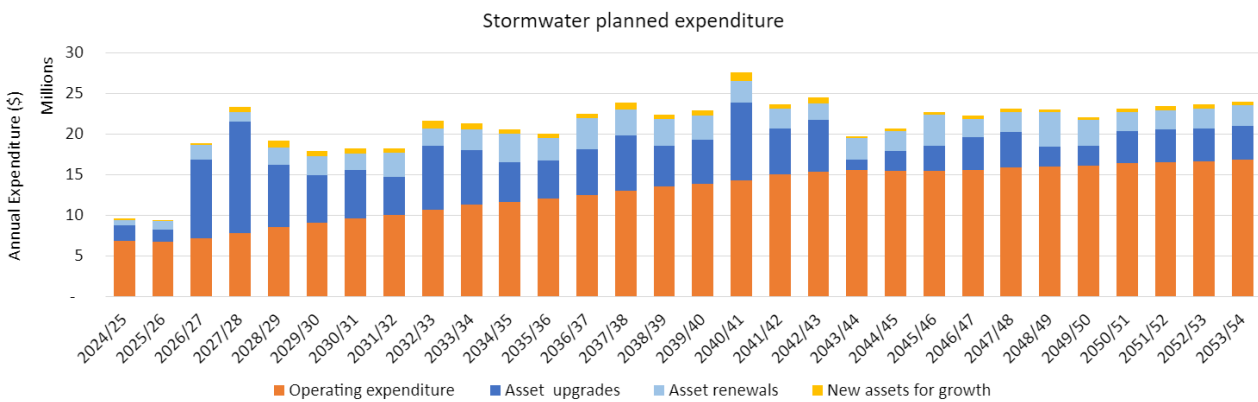
Due to the relatively young age of the piped network (the median age is less than 40 years), and the financial constraints in completing detailed assessments, condition monitoring is largely based on visual inspection of assets by service crews when undertaking maintenance.

A more detailed asset inspection regime to inspect piped assets that are over 40 years of age commenced in 2017/18. Pipe condition assessments are now completed in almost half of the catchments and will continue to inform the asset renewal programme as appropriate.

A comprehensive open waterway condition assessment was completed in 2016/17. This provided valuable information in the development of an appropriate stream/drain cleaning programme.

## Planned expenditure

The following chart shows total planned expenditure for the Stormwater Management activity for the next 30 years:



## 7.4. Water Supply

The Water Supply activity operates four water supply schemes at Ōtaki, Te Horo/ Hautere, Waikanae/ Paraparaumu/ Raumati, and Paekākāriki.

The Council's priority is a robust water supply system to ensure sufficient drinking-water is available now and into the future. The water supply network must also be able to cope with emergencies and the long-term impacts of climate change.

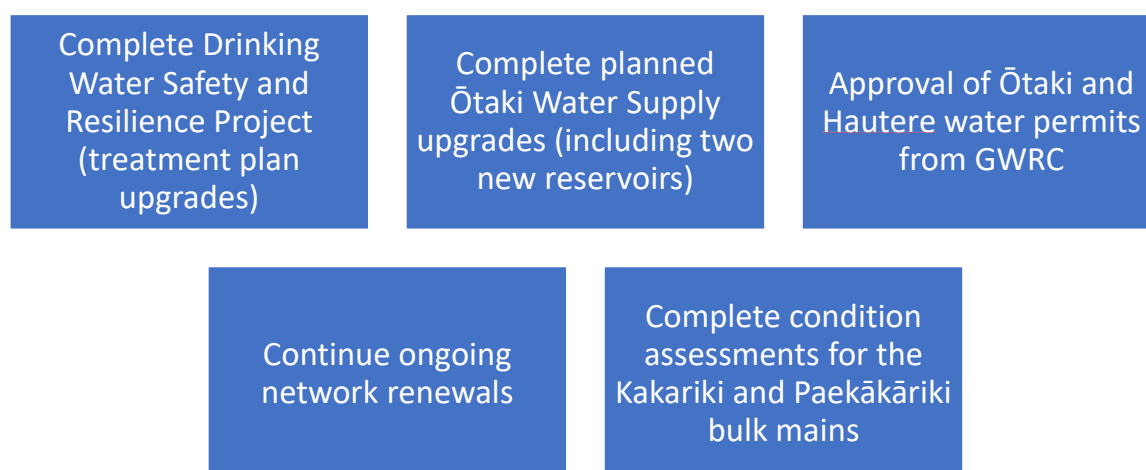
Risk-prioritised investment balances future renewals and upgrade programmes, giving the Council confidence in its investment decision-making while also increasing the system's resilience and sustainability.

### Key Issues and Challenges

- **Te Mana o te Wai:** This is an umbrella concept over regulatory and environmental compliance; security and safety compliance of drinking water supplies with the establishment of Taumata Arowai, including compulsory training and mandatory treatment, The National Policy Statement on Freshwater Management, National Environmental Standards, the Natural Resources Plan along with the Kāpiti Whaitua chapter include policy on water allocation and ecological minimum flows. Realising Te Mana o te Wai and ensuring regulatory compliance may require additional/earlier investment. The new Government that it may rebalance Te Mana o te Wai to widen its scope, so the Council will continue to monitor any potential changes and manage their impacts.
- **Climate change planning:** The Council attempts to reduce emissions associated with drinking water collection, treatment, and distribution, and responds to severe events [drought, more intense rainfall], and potential saltwater intrusion on groundwater, and damage to structures, particularly in coastal areas.
- **Resilient Supplies, Systems and Processes:** Issues related to drinking water resilience that the Council needs to address are:
  - continuous supply of compliant and safe drinking water regardless of conditions;
  - improve treated water storage for times where source water quality deteriorates;
  - renewing aging infrastructure as needed; and
  - providing redundancy within water treatment plants to improve operational flexibility.
- **Delivery of capital works.** The delivery of a significant capital work programme to maintain levels of service and support growth is critical to the ongoing resilience and sustainability of the district's water networks. Significant investment is required to provide strategic trunk mains to service growth areas in Waikanae and ultimately service storage for the Ōtaki networks.
- **Cost effectiveness.** The cost of provision is rising, and the Council acknowledges that providing services must be affordable. While the government's Local Water Done Well programme seeks to assist local authorities in this respect, the programme is in its very early days with no clear options yet apparent. In the meantime, the Council plans to continue prudent and strategic investment in the water supply infrastructure within its financial constraints and plans to maintain levels of service. Making evidence-based decisions will be necessary to balance the risks, benefits, and timing of projects.



## Key focus areas



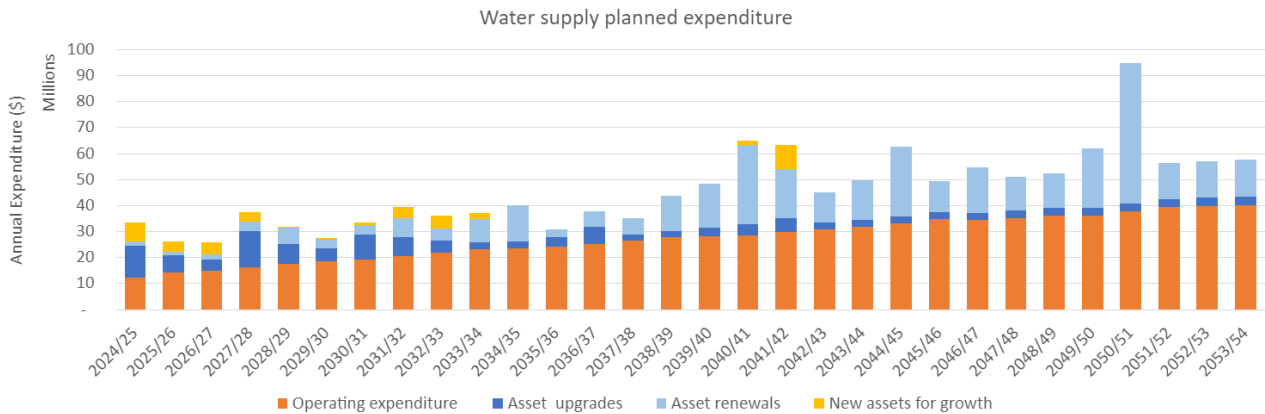
## Asset condition

The Council operates four water treatment plants with the average age of approximately 25 years.

Asset type	Condition assessment
Ōtaki and Hautere/Te Horo treatment plants	Unknown condition
Waikanae-Paraparaumu-Raumati treatment plants	Range from good to poor condition
Pump stations (10)	Unknown condition with an average current age of 24 years
Water storage reservoir (12)s	The average age is 36 years. Condition ranges from very good to average, with eight of the 12 being in good condition
Paekākāriki and Waitohu Valley reservoirs	Average rating. The reservoirs are aged 59 and 62 respectively
Pipe assets	The average age of pipes in the network is 36 years, with a significant proportion in poor condition. This may become an issue in 10 to 20 years
Water supply bores at Ōtaki and Hautere/Te Horo	Poor condition
Waikanae-Paraparaumu-Raumati bores	Unknown condition
Water supply pipes`	6% of the pipes in the network are in excellent condition. 50% are in average condition, 42% in good condition, and 3% are rated poor or very poor. This assessment is based on expected base life knowledge, and the results of pipe sampling and risk profiling.

## Planned expenditure

The following chart shows total planned expenditure for the water supply activity for the next 30 years:



## 7.5. Wastewater Management

The Council is responsible for the provision and management of two wastewater treatment schemes: one serving Waikanae, Paraparaumu and Raumati, and the other serving Ōtaki. Paekākāriki and most rural areas of the district have no public wastewater infrastructure.

The Council's goal is to manage an effective and efficient wastewater service now and into the future, which balances ongoing performance, risk, and resilience. Lifecycle investment for ongoing performance, to allow future projected growth and ensuring the mauri of our environment is maintained within Te mana o Te Wai.

### Key Issues and Challenges

- **Legislative and Regulatory Compliance:** The establishment of Taumata Arowai, the introduction of Te Mana o Te Wai, and meeting the National Policy Statement for Freshwater Management is a challenge. Strategic rather than reactive management is needed to continue to meet existing levels of service.
- **Climate Change Planning:** Changes to treatment processes and the capability to reduce emissions and adapt to climate change is becoming more critical.
- **Resilient Supplies, Systems and Processes:** The Council is challenged by:
  - continuous containment, reticulation, treatment and sustainable discharge of treated wastewater is increasing in importance;
  - the rise of the water table is hastening the degradation of pipes in the network;
  - increased levels of redundancy within wastewater treatment plants is needed to improve operational flexibility; and
  - ageing assets with substantial renewal expenditure required in future years.
- **Capital works programme delivery:** The delivery of a significant capital work programme to maintain levels of service and support growth is critical to the ongoing resilience and sustainability of the district's wastewater networks.

## Key focus areas

Complete the upgrade of the Paraparaumu Wastewater Treatment Plant

Complete the Waikanae Duplicate Rising Main

Continue network renewals and pump station upgrades

## Asset condition

The condition of wastewater assets, where known, is generally good. Treatment Plants are in good to moderate condition with some age-based renewals and upgrades planned. A significant number of pump stations are approaching the end of their useful life and will need to be renewed.

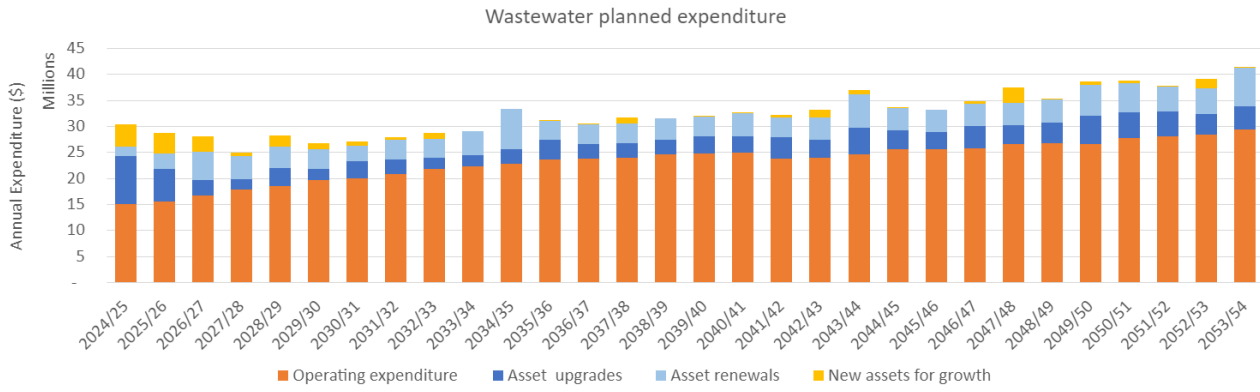
The piped network is through just under half of its expected useful life, so only minor renewals are expected over the next 10 years. No formal assessment of the network has been completed; however, a capacity assessment is underway.

Further investigation of the network and pump stations are planned in the next three years. The following table summarises the Paraparaumu-Waikanae wastewater scheme asset conditions.

Asset type	Condition assessment
Pipe network	Unknown condition (capacity assessment in progress)
Pump Stations (122)	Good/unknown condition. 24 of the pump stations have been inspected. In general, the condition of the pump stations inspected is good.
Wastewater treatment plants	Good condition. In general, the plant is in moderate condition. Various age-based replacements and capacity upgrades have been recommended.
Consents	Existing. Consents are in the process of being renewed.

## Planned expenditure

The following chart shows total planned expenditure for the Wastewater Management for the next 30 years:



## 8. Appendix 1 - Asset Management Approach

This section of the Infrastructure Strategy provides a general overview on the Council's approach to asset management, describes the Council's current infrastructure services.

### Asset management planning

The Council has a well-established approach to asset management planning, based on the ISO 55000 Asset Management Standards.

A key aspect of this approach is the Asset Lifecycle Model, which aims to optimize cost, risk, and performance across the asset lifecycle. The four phases of the asset lifecycle are plan and design, build or acquire, operate and maintain, and replace or dispose.

The Council maintains its assets until they reach the end of their useful lives, after which they will then be renewed, upgraded, or replaced to maintain the required levels of service.

Whereas each asset management plan includes more information on the asset management processes underpinning each plan's development, this section provides a general overview on the Council's approach to the collection and management of asset information.

### Asset management improvement plan

A recent assessment found that we have a well-established approach to asset management planning, progressively developed over the past fifteen years or so. As is typical within local authorities, practices have been developed in many aspects ahead of organisational policy or strategy to guide these practices. As such, although practices are largely pragmatic and target the areas of most need, they are not always consistently applied across the Council, and may not be integrated well with other processes. This assessment has identified that the establishment of an asset management policy and strategic asset management plan (or SAMP) will be the two key improvement activities which will bring KCDC's asset management practices towards the ISO 55001 requirements.

The Council plans to continuously improve the following areas of its asset management:

- **Policy and strategy development:** Developing and adopting AM Policy and AM Strategy (SAMP) consistent with the requirements of ISO 55001. Incorporating outputs from the Strategic Growth Strategy into asset management plans. Developing resourcing, information and systems strategies.
- **Data and systems:** Develop and Implement the information and knowledge management strategy.
- **Levels of service and performance monitoring:** Review levels of service measures for appropriateness, completeness and measurability, develop performance monitoring and reporting framework. Review performance benchmarking measures against other utilities and monitor water production and demand and compare to projections.
- **Risk management:** Review organisation-wide risk approach for alignment, consistency, and linkage to the objectives.
- **Decision frameworks:** Review existing decision-making frameworks and strengthen to optimise maintenance, renewals and development across the network. Review activity and asset risk registers in-line with reviewed framework. Develop asset vulnerability

framework and incorporate in risk profiling of assets. Update the Water and Sanitary Services Assessment and Implement backflow protection standards derived from policy.

- **O&M planning:** Review O&M manuals to ensure they are current and in place for all significant asset categories or components and incorporate outage and emergency response procedures.
- **Asset condition and life:** Sampling programmes for pipe condition assessment by materials developed and implemented. Condition assessment programmes for specialist techniques is formalised.
- **Valuation:** Review valuation process, base lives and process lives.
- **System review and audit:** Develop an AM system review, monitoring and auditing framework.

### Asset knowledge, criticality, and maturity

Levels of service (LOS) refer to the nature of the services that Council delivers to the community. LOS are generally defined and measured via performance targets for factors like quality and capacity, reliability, safety, cost, and legislative compliance.

Desired or expected LOS are based on community needs, community expectations, and Council's strategic goals. Changes in the district (e.g. population growth, demographic changes, natural hazard events) can lead to changes in community needs and expectations and/or changes in Council's ability to deliver previously agreed LOS.

Comparisons between desired and actual LOS influence asset management planning, particularly in relation to the timing and quality of maintenance renewals and upgrade works. As these decisions can have significant financial implications, an asset's useful life is reviewed regularly in accordance with:

- Its age and condition profile
- The criticality of the asset
- Degree of risk
- Ongoing maintenance requests
- Desired versus current LOS
- The differing economic lives of individual assets.

To establish actual LOS and manage assets using the lifecycle approach, knowledge and information about the assets is crucial as such knowledge underpins each asset management plan and thereby enabling evidence-based decision making. Asset knowledge covers age, condition, performance, and value.

Another important aspect is the criticality of the assets. Critical assets are defined as those that have a higher consequence of failure in terms of the impact a failure would have on the community, the environment, the organisation's objectives, and the asset plans.

A criticality framework is used to identify and manage risks across the infrastructure services.

This framework provides a consistent approach to assessing the potential impacts on people and the environment if an asset were to fail. Because this framework allows for comparisons

across services, it can be used to prioritise inspections and investigations, refine maintenance and renewal strategies, identify high risk information gaps, and increase confidence in the timing and scale of capital expenditure.

The level of maturity expected for asset management is a strategic decision for Council. Levels of maturity beyond a core or basic approach are determined according to a variety of criteria, such as the costs and benefits derived from more advanced planning: legislative requirements: the size, condition, criticality, and complexity of the assets: and customer expectations.

Asset conditions, data confidence, criticality, and asset management maturity are all based on 1 - 5 rating scales.

**Table 1:** Rating scales for asset condition, data confidence level, criticality, and asset management maturity.

Scale	Asset Condition	Data Confidence	Criticality	Maturity
1	Excellent.	Systematic and fully optimised data programme.	Significant, region wide, long-term disruption and significant cost to restore service.	Advanced. Programmes are driven by optimised decision-making, risk management, and service level /cost trade-offs. Improvement programmes focus on maintaining ongoing practice.
2	Some minor maintenance work required.	Reliable data in information system with analysis and reporting.	Major- disruption over an extended period.	Intermediate. AMP includes strategic context, analysis of condition and performance assessments, customer engagement in levels of service, and QOM/risk management is applied to projects.
3	Maintenance is required to return to the expected level of service.	Sufficient information to support basic analysis.	Moderate, with serious localised impacts and cost.	Core. AMP covers approach to risk, condition and performance assessments, demand forecasts, 10- year financial plans and an improvement plan.
4	Requires a significant upgrade.	Basic or incomplete information based on assumptions.	Minor service disruption.	Basic. AMP contains basic information assets, service levels, planned works, and financial forecasts.

Scale	Asset Condition	Data Confidence	Criticality	Maturity
5	The asset is unserviceable.	No asset register.	Negligible social or economic impact.	Aware there are intentions to develop AMPs.

Note: Condition, confidence in data completeness and accuracy, and asset management maturity definitions are based on the International Infrastructure Management Manual framework. The criticality codes are based on the Global Criticality Rating and subsequently developed by the New Zealand Treasury - National Infrastructure Unit and published in the New Zealand Asset Metadata Standard - Potable Water Release Version 1.0.

### Current infrastructure services

The core infrastructure services included in this Strategy are:

- access and transport.
- coastal assets, and
- stormwater,
- water supply,
- wastewater.

More information on each asset group is provided in Part Five. Table 2 provides basic information on each asset group.

**Table 2:** Replacement value and rating scales for existing infrastructure

Asset group	Optimised depreciated replacement value (million)*	Asset condition	Data confidence	Criticality	Maturity
Access & Transport	\$485	3: Satisfactory	A: High to B: Reliable	1: Lifeline	Intermediate
Coastal Management	\$8.6	4: Poor	B: Reliable	3: Key	Basic
Stormwater	\$85	2: Good	B: Reliable	**	Intermediate
Water Supply	\$147	2: Good	B: Reliable	1: Lifeline	Intermediate
Wastewater	\$172	2: Good	B: reliable	1: Lifeline	Intermediate

\* Valuation at 30 June 2023.

\*\*No formal criticality assessment has been undertaken for- the stormwater activity and assets.