INFRASTRUCTURE STRATEGY

Te Awa Kairangi ki Tai Lower Hutt 2024 – 2034 Infrastructure Strategy

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MAYOR'S FOREWORD

Infrastructure underpins the quality of life we value. Our homes are connected to and protected by our water networks, and we make the most of the great recreation spaces in our city by using a connected network of roads, cycleways and footpaths. Infrastructure supports Te Awa Kairangi ki Tai Lower Hutt to be a liveable city and plays a vital role in protecting our health, property, and the environment.

Our city is growing, housing is intensifying, and we are experiencing more extreme weather events because of changes in the climate. This is challenging our infrastructure with a growing demand for water and increasing pressure on an ageing waste and storm water network.

Infrastructure is intergenerational. Built well, infrastructure assets can last for over a century. Investment in infrastructure requires substantial capital investment when it needs replacing or requires significant maintenance. Council has tripled its investment in renewing water pipes in the network, but there is much more to do.

Council funds infrastructure through a mix of revenue from rates and Council borrowing. Given the significant costs associated with building and maintaining infrastructure this Strategy sets out the key infrastructure projects that Council has prioritised and budgeted to undertake over the next three years.

These projects will help ensure that we have infrastructure that is fit for the future, connects and protects the taonga that is Te Awa Kairangi ki Tai Lower Hutt, for generations to come.

Campbell Barry

Koromatua Mayor

THE STRATEGY AT A GLANCE

Vision

Our infrastructure supports Te Awa Kairangi ki Tai Lower Hutt to be a liveable city where all our people thrive: the social, economic, and cultural wellbeing of our community is sustained, and the health and safety of people, property and the environment is protected.

Council owns and manages 1845km of water network pipes and some 486km of roads and footpaths. This Strategy sets out the investment Council will make in core water and roading infrastructure projects over the next 3 years.

What we have delivered since 2021:

- Tripled investment in water pipe renewals in 2022 and 2023 – compared to the previous 5 years
- Renewed 14.5 km of pipes in 2022-23 compared with 4kms in each year from 2017-2022
- Progressed the Tupua Horo Nuku (Eastern Bays Shared Path) and the Eastern Hutt road resilience projects.

Our infrastructure networks face real challenges:

- Greater demand as the city population grows from 113,00 now to 137,000 by 2043
- Growing pressure from housing intensification, particularly on the valley floor
- An ageing water infrastructure network resulting from historical under investment and constrained regional water storage capacity
- Increased risk of climate induced high rainfall events and sea level rise creating inundation risk
- A lack of sustainable transport choices and increasing traffic congestion.

To address these challenges Council will:

- Invest in building, maintaining or renewing critical core infrastructure
- Engage with the community, other councils, and key partners
- Focus on ensuring that environmental standards are met, including water quality
- Take a long term strategic approach to building, maintaining and operating infrastructure
- Make sure that infrastructure investment mitigates the effects of a changing climate
- Make prudent financial decisions that are sustainable into the future and across generations.

The key water infrastructure projects are:

- Pipe renewals
- Seaview Wastewater Treatment Plant
- Gracefield reservoir renewed
- Petone stormwater improvements
- Petone collecting sewer
- New Eastern Hills reservoir and outlet main
- Black Creek stormwater improvements
- Investment in universal smart water meters

The key transport infrastructure projects are:

- Cuba Street overbridge seismic strengthening
- Cross Valley connections
- Subdivision roading improvements
- Eastern Hutt Road resilience
- Connected cycle and pathway network
- Tupua Horo Nuku

INFRASTRUCTURE SUPPORTS TE AWA KAIRANGI KI TAI LOWER HUTT TO BE A LIVEABLE CITY

One of Council's core functions is to build and maintain infrastructure which ensures the health and wellbeing of our residents as well as protecting people and property from significant and critical infrastructure risks.

The Long-Term Plan gives life to Council's commitment to making Te Awa Kairangi ki Tai Lower Hutt a connected, resilient, and liveable city where all our residents can connect, thrive, and be part of vibrant neighbourhoods and communities. It supports this commitment by providing infrastructure that is fit for the future and protects the environment. Council achieves this by working closely with the community and other key partners, keeping our changing climate in mind, and operating in a financially sustainable way.

Infrastructure is intergenerational. Built well, infrastructure assets may last for over a century. Investment in infrastructure is lumpy, involving large up-front costs to develop and substantial capital investment when it needs replacing or requires significant maintenance. The long life of infrastructure means that significant cost peaks can be followed by troughs where relatively low expenditure is required.

Te Waihanga (the New Zealand Infrastructure Commission) has stated that New Zealand has under-invested in infrastructure in the past, resulting in lowered service quality, congested infrastructure services and insufficient capacity to support housing growth. Te Awa Kairangi ki Tai similarly faces significant infrastructure challenges, particularly in relation to an ageing water infrastructure network, increased pressure from population growth and the need to mitigate and adapt to our changing climate.

This Strategy articulates Council's stewardship approach to the management of the core infrastructure in Te Awa Kairangi ki Tai and to meeting the challenges our infrastructure faces.

Council funds infrastructure through a mix of revenue from rates and Council borrowing. Given the significant costs associated with building and maintaining

infrastructure, this Strategy sets out the investments in key infrastructure projects that Council has prioritised and budgeted to undertake. This aligns with the Long-Term Plan and Council's Financial Strategy. Figure 1 below provides a snapshot of the core infrastructure in Te Awa Kairangi ki Tai

Figure 1: Infrastructure category, total length and key components

Infrastructure Category	**Total Length**	**Key Components**
Water Supply	693 km (pipes)	- Reservoirs - Water main - Pump stations
Wastewater	666 km (pipes)	- Treatment plant - Sewage trunk mains - Pump stations - Storage tanks, and - Outfall pipeline
Stormwater	463 km (pipes)	- Stormwater mains - Pump stations
Local roads and footpaths	486 km (roads) and 683 km (footpaths)	- Roadways and bridges - Footpaths and walkways - Cycleways - Retaining walls and seawalls - Traffic services, and - Street lightning

WHY INFRASTRUCTURE MATTERS

It is hard to think of any event or activity in Te Awa Kairangi ki Tai that doesn't use infrastructure. Our homes are connected to, served, and protected by essential water networks, and we access the many facilities in our city by using a connected network of roads and footpaths. Infrastructure provides an important base for our activities; the foundation for our economy to prosper; our people to be healthy, and our city to be safe. In short, infrastructure is critical to sustaining Te Awa Kairangi ki Tai as a connected, resilient, and liveable city.

As the steward of infrastructure assets in Te Awa Kairangi ki Tai, Council wants to ensure that the city's residents have:

- Safe drinking water
- Wastewater collected from their homes and businesses, treated and safely discharged back into the environment
- Rainfall collected and taken away from their roads and properties to prevent flooding
- the ability to travel easily and safely throughout the city using alternative forms of transport
- Enjoyable public facilities in our community such as parks and reserves.

Infrastructure matters to residents

In responding to Council's 2023 early engagement on the Long-Term Plan Draft Priorities and Principles, 89% of respondents agreed or strongly agreed that 'providing infrastructure that is fit for the future' should be a key area of focus for Council.

There was strong consensus among respondents that infrastructure stands at the core of Council's duties, and that Council must invest in infrastructure that is not just sustainable but also future-ready, while also balancing the needs of the community and adhering to budgetary constraints.

"We need both the basic infrastructure that allows people to lead their every-day lives comfortably, but we ALSO need to be future-focused and think about what the Hutt needs in 5, 10, 20 years. It's actually not enough to just get the basics right - they're called basics for a reason. The Hutt needs to be ambitious and climate-focused when it comes to infrastructure." (resident feedback 2023)

Results of Council's Residents Satisfaction Survey (RSS 2023) shown in **Figure 2 and Figure 3** below, indicate a downward trend in resident satisfaction with council owned core infrastructure:

Figure 2: Resident satisfaction survey results for roads, footpaths & shared roads

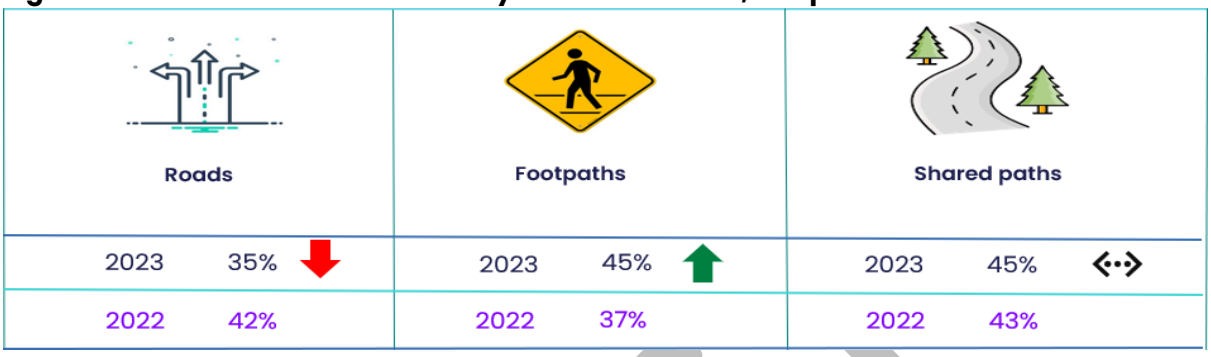
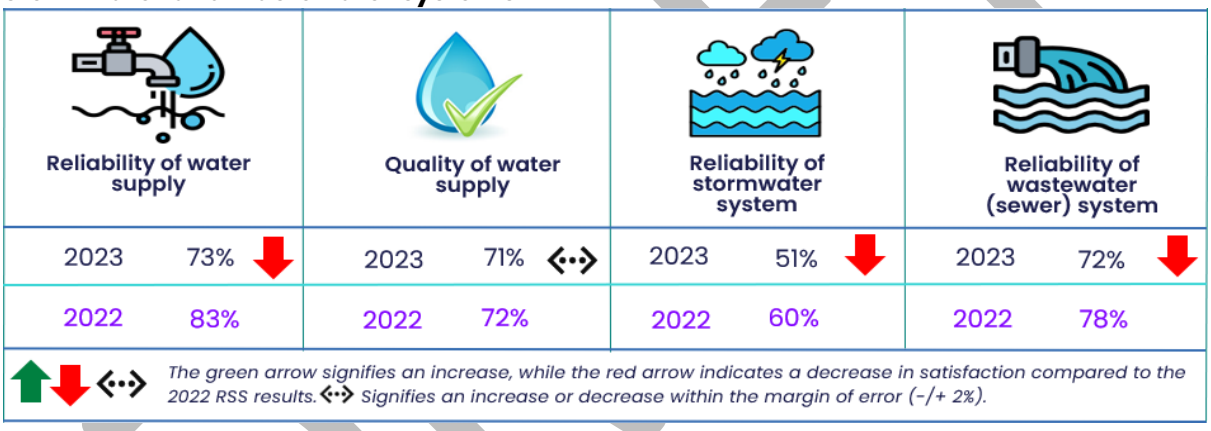


Figure 3: Resident satisfaction for reliability of water supply, quality of water, reliability of stormwater and wastewater systems



These results demonstrate that residents' experiences of living in Te Awa Kairangi ki Tai are being impacted by the current state of our infrastructure. With a population that is projected to reach 137,000 by 2043, residents' experiences are likely to be further negatively impacted unless there is substantial and ongoing investment in building and maintaining the infrastructure in Te Awa Kairangi ki Tai.

Here are some examples of the concerns about our infrastructure identified by residents who took part in the Resident Satisfaction Survey:

"The constant water issues in our area have significantly reduced quality of life. The harbour is frequently unclean to swim in and water pipes have regularly burst in the streets."

"Because of all the infill housing not required to have off street parks roads are being congested with residents' cars."

"Infrastructure is seriously underfunded. Water pipes in my neighbourhood burst monthly and leak huge amounts of water onto the roads for weeks or months after being reported before being repaired. The rivers are in a terrible state. Many places I used to swim for my entire childhood have notices up saying they are not safe for swimming or are visibly polluted or filled with massive amounts of sediment."

"Things like footpaths etc have been neglected and are often quite dangerous for older/disabled people. Too many water leaks are left running for long periods." (resident feedback 2023)

Infrastructure in the context of the changing climate

Infrastructure should protect and support people, property, and the environment. The changing climate, however, is increasingly creating challenges and issues for infrastructure networks throughout Aotearoa New Zealand. Te Awa Kairangi ki Tai is no exception to this. Located on a floodplain close to the inter-tidal zone, large parts of the city are vulnerable to natural hazards.

As the effects of our changing climate grow, intense storms and heavy rainfall increase the risk of surface flooding and slips. Rainfall that exceeds the capacity of the stormwater system may enter the wastewater system and create public health risks through human contact with potentially contaminated water. Conversely increased and prolonged dry periods may mean that the water supply is inadequate to meet demand.

Projected sea-level rise of between 50 cm and 80 cm by 2090 means that coastal properties and roads could be swamped or submerged, with an increased likelihood of storm surges damaging seawalls, roads, wharves, and properties. Sea-level rise may also pose a risk of ground salination, threatening the viability of using water from the underground aquifer.

Sea-level rise may also compromise the ability of the stormwater network to drain effectively and further exacerbate the impact of flooding, resulting in some

of the city's key infrastructure, particularly the Seaview Wastewater Treatment Plant, facing inundation.

> *"We can't keep kicking the climate can down the road like other councils and government groups have been doing for years. The time to take action is now. We will pay for it later on if we don't, so it's cheaper to invest now." (resident feedback 2023)*

STRATEGY OUTCOMES AND SCOPE

This Infrastructure Strategy builds on Council's 2018 and 2021 Infrastructure Strategies. It takes the 'next step' in a journey to improve Council's stewardship of the infrastructure assets in Te Awa Kairangi ki Tai and ensure they are fit for the future. The Strategy's vision supports the aim of Council's Long-Term Plan to make Te Awa Kairangi ki Tai a liveable city, while the outcomes articulate what the Council wants to deliver.

Outcomes

Council intends to deliver the following outcomes:

- Infrastructure supports the future growth of Te Awa Kairangi ki Tai as a safe, healthy, liveable, and vibrant city
- Improved reliability, resilience, sustainability, and long-term adaptability of our infrastructure
- Improved resident satisfaction with infrastructure that is designed and managed well to meet community needs and aspirations.

Scope

This Strategy addresses the mandatory categories of infrastructure required under the Local Government Act 2002 (LGA):

- Water supply
- Wastewater (sewage treatment and disposal)
- Stormwater drainage and flood protection
- Roads and footpaths.

Categories of infrastructure not covered by this Strategy include:

- Council owned and managed parks and reserves, playgrounds, swimming pools, community facilities such as libraries, halls and integrated hubs, landfill facilities
- Regionally owned and managed 'bulk' water supply infrastructure, flood protection, public transport, coastal management, and emergency management services
- Government owned and managed rail corridors, state highways and bridges, schools, hospitals, conservation land, social services, and emergency services
- Privately owned and managed utilities – electricity, gas, and telecommunications.

Council has plans and policies in place to ensure that its other assets are well managed. Council shares or co-manages some infrastructure with other councils in the region, with Upper Hutt City Council and with the New Zealand Transport Agency (Waka Kotahi). Council works closely with these organisations to ensure effective and efficient delivery of infrastructure.

OUR CORE INFRASTRUCTURE NETWORKS IN MORE DETAIL

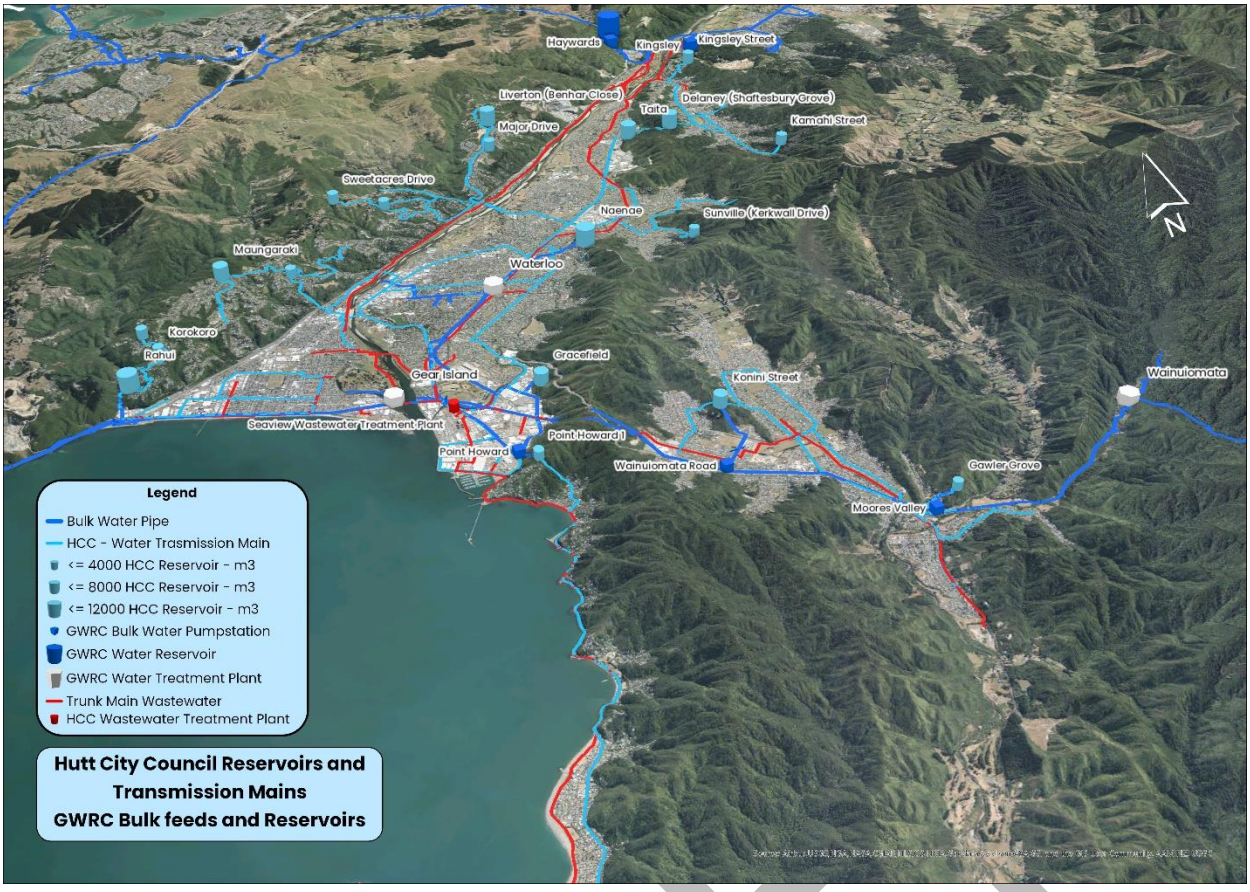
Water Supply

Council's water supply network receives treated water from the Greater Wellington Regional Council's bulk water network. The water is stored in local reservoirs and distributed via a pressurised pipe network to consumers at their boundary toby. The water supply network consists of reservoirs, water mains, pumping stations, area meters, and tobies. Critical water supply assets include large diameter pipes, together with all reservoirs and pumping stations.

Most areas of the city meet expected water quality standards for water storage and water pressure, and careful management of this water supply and distribution infrastructure contributes to making sure good health outcomes are maintained.

A view of Council's water network is provided in **Figure 4**

Figure 4: The water network at a glance



Wastewater

The wastewater system collects, treats, and disposes of wastewater from residential and business properties, including industrial liquid wastes. The wastewater system consists of a network of pipes connecting to each property, which in turn discharge into a system of larger-diameter trunk sewer pipes.

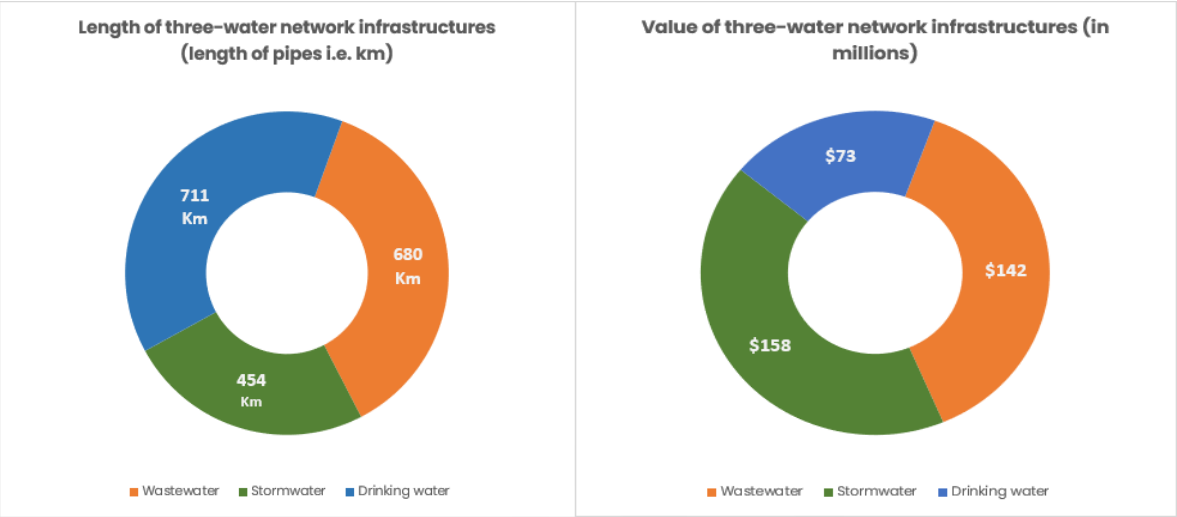
There are two main trunk sewer pipelines for the Hutt Valley. One follows the western Hutt River stop bank, and the second passes through the eastern suburbs of Taita and Naenae, before following the rail corridor through to Moera. The trunk sewers convey wastewater from Lower Hutt (including Wainuiomata) and Upper Hutt to the Seaview Wastewater Treatment Plant.

Treated liquid effluent from the Seaview plant is dispersed via an outfall at Pencarrow Head, while the treated solid effluent is disposed of at the Silverstream landfill. Resource consents are in place for the discharge of treated wastewater and for overflows in the case of high flows. Ongoing monitoring and environmental scanning ensures compliance with current and potential future resource consents.

Critical wastewater assets include large-diameter pipes, trunk pipes, the Seaview Wastewater Treatment Plant, and the Silverstream Storage Tank. Seven out of the 22 pumping stations in the city's wastewater network are identified as critical assets and these are closely monitored to ensure maintenance and renewals are undertaken when an unacceptable risk of failure is observed or predicted.

The extent of Council's three water network infrastructure is shown in **Figure 5**

Figure 5: Length of three water network infrastructure in kilometres and value of three water network infrastructure in millions.



Stormwater and Flood Protection

The stormwater system manages surface water run-off to minimise flooding and any adverse effects on the quality of the water it runs into. The primary stormwater system consists of pipes, open drains, retention dams and pumping stations. Stormwater is directed through streams, rivers, channels, and pipes to the harbour. 'Secondary flow-paths' are provided in some areas to accommodate floodwaters when the primary system is overloaded.

Flood protection is important for city planning and development based on management of risk. Components of a robust flood protection system include stop banks to prevent the occurrence of flooding, stormwater management to

drain water away effectively and efficiently, and land use controls to minimise exposure of property or infrastructure to flood risk.

To help manage storm events, resource consents are in place for when water levels cause discharges into rivers and streams, including intermittent discharges to the Waiwhetū Stream. This includes contaminants from the road such as oil and rubber. Ongoing monitoring and environmental scanning ensures compliance with current and potential future resource consents.

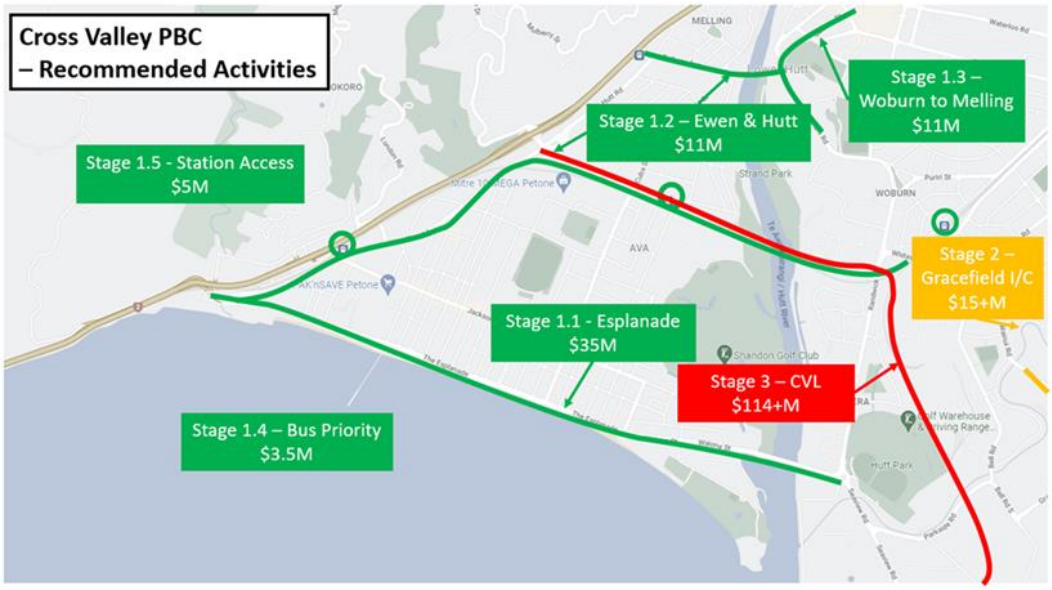
Roading and Footpaths

Council aims to ensure our roading network provides safe, convenient, and efficient transportation through the city. Well-designed road and footpath networks can enhance living environments for residents, and a well-functioning transport network recognises the needs of all road users, including pedestrians and cyclists.

The transport network in Te Awa Kairangi ki Tai comprises roads, footpaths, and roading assets including carparks, walkways, bridges, subways, street lighting, seawalls, and items such as parking meters. Roads and footpaths comprise approximately fifty percent of our total transport infrastructure value, bridges another twenty percent, with the remainder consisting of streetlights, parking meters, signage, and so on. Critical assets include key strategic or arterial routes and bridges.

The Cross Valley Connections Programme aims to improve the accessibility, safety, and resilience of the roading network in southern Lower Hutt. These are represented in **Figure 6**. This work will support urban growth as well as encouraging alternative modes of transport such as walking and cycling. This is important to address the increased traffic volumes and congestion generated by growth in Petone, Eastern Bays and Wainuiomata. Council's micro-mobility programme of shared paths and cycleways is designed to promote multi-modal transport, better health outcomes and reduce vehicle emissions.

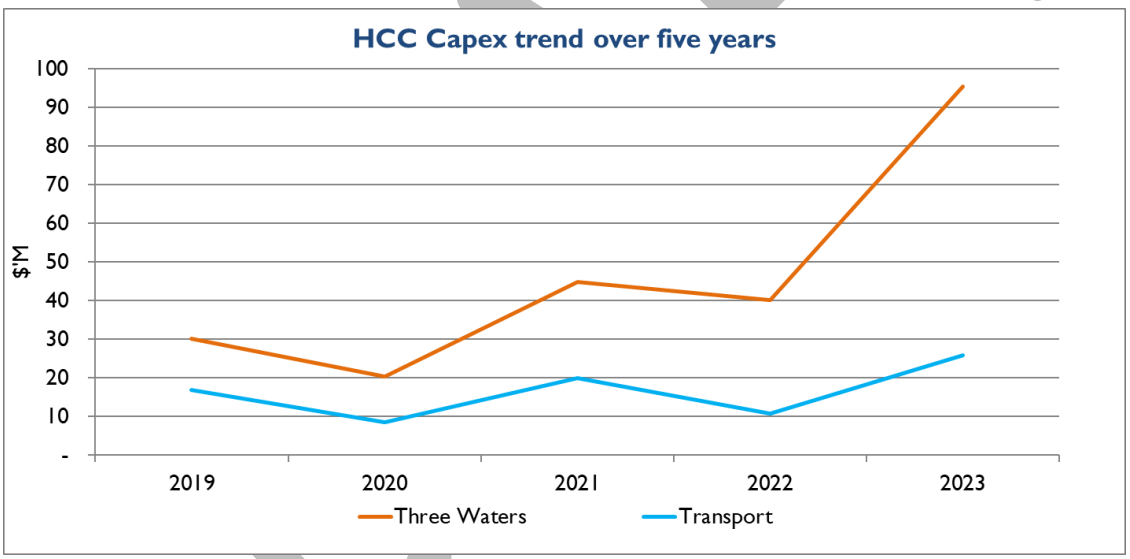
Figure 6: critical asset routes and cross-valley connections



What we have delivered since 2021

Council's investment in infrastructure has increased significantly since 2021. **Figure 6** below shows the increasing investment in water and transport infrastructure.

Figure 6: HCC capex trends over years 2019-2023



Good progress has been made on Tupua Horo Nuku (Eastern Bays Shared Path) and the Eastern Hutt Road resilience project. Additionally investment in the water network has tripled over the 5-year period and has delivered:

- 14.5 kms of three water pipe renewals in each of 2021-22 and 2022-23, with an estimated 15.3 to be completed in 2023-2024[1]
- A Growth Study to identify future water infrastructure needs
- Design for a new reservoir to meet needs of the valley floor
- Renewal of very high critical assets such as the Barber Grove to Seaview Main Collecting Sewer.

Water network renewals: a case study in building increased resilience

The Eastern Hills reservoir will be designed to meet the latest national seismic hazard assessment standards and will be built to Importance Level Four (IL4), which is a minimum requirement by Wellington Water Ltd for drinking water reservoirs. This will be accomplished by adopting a sliding base design, flexible pipe connections that can absorb significant earthquake movements, and auto shut off valves that will prevent the uncontrolled release of water from the reservoir if the downstream bulk main fails. Specified structural components will contain and minimise any leakage in the event of an earthquake with a greater than a 1 in 2500 year recurrence.

The Petone Collecting Sewer crosses the Wellington Faultline. To increase the resilience of the Collecting Sewer, designed breakpoints with isolating valves will be installed. This means that in a significant seismic event the pipeline can be isolated and repaired quickly. This project is using a cast iron pipeline that will be lined with new polyethylene pipe which has greater tolerance for movement than the existing asbestos cement pipeline. Polyethylene pipes were also used in the recent renewal of the Barber Grove to Seaview Main Collecting Sewer.

[1] This is an increase from an average of 4 kms in each year from 2017-2022. This represents 50% of what WWL recommends Council replaces annually to maintain our water network assets on a lifecycle basis.

THE CHANGING FACE OF TE AWA KAIRANGI KI TAI LOWER HUTT

Growth scenarios show Te Awa Kairangi ki Tai's population both rising and ageing over the next 30 years, with a corresponding increase in the need for housing and infrastructure services. Housing intensification is visibly evident throughout the city. This higher-density housing has significant implications for our infrastructure.

Council will need to assess whether the condition and capacity of current water services infrastructure can absorb this increasing demand, particularly in areas of high-density housing. Similarly, Council will need to consider whether our transport networks can meet the expectations of a growing population to move easily throughout Te Awa Kairangi ki Tai.

Population Growth

The current population of Te Awa Kairangi ki Tai is estimated to be 113,000. Population growth is likely to be high by historical standards with Council expecting this figure to reach 125,000 by 2033, and 137,000 in 2043. In the past five years, the population has grown through natural increase (more births than deaths) and internal and external migration.

In the year ending June 2023, Aotearoa New Zealand experienced net migration growth of 86,800; the largest number of new migrants since May 2020. External migration will continue to contribute to population growth in Te Awa Kairangi ki Tai, although the largest number of new residents will come from other parts of Aotearoa New Zealand.

Our city's population is ageing. Rates of projected population growth are highest at ages 50 and over, while the share of the population aged over 70 is expected to rise from 11% to 14% over the next 30 years. The fastest rates of expected growth are in the 80+ age group, while the lowest rates of population growth are expected for people in their 20s.

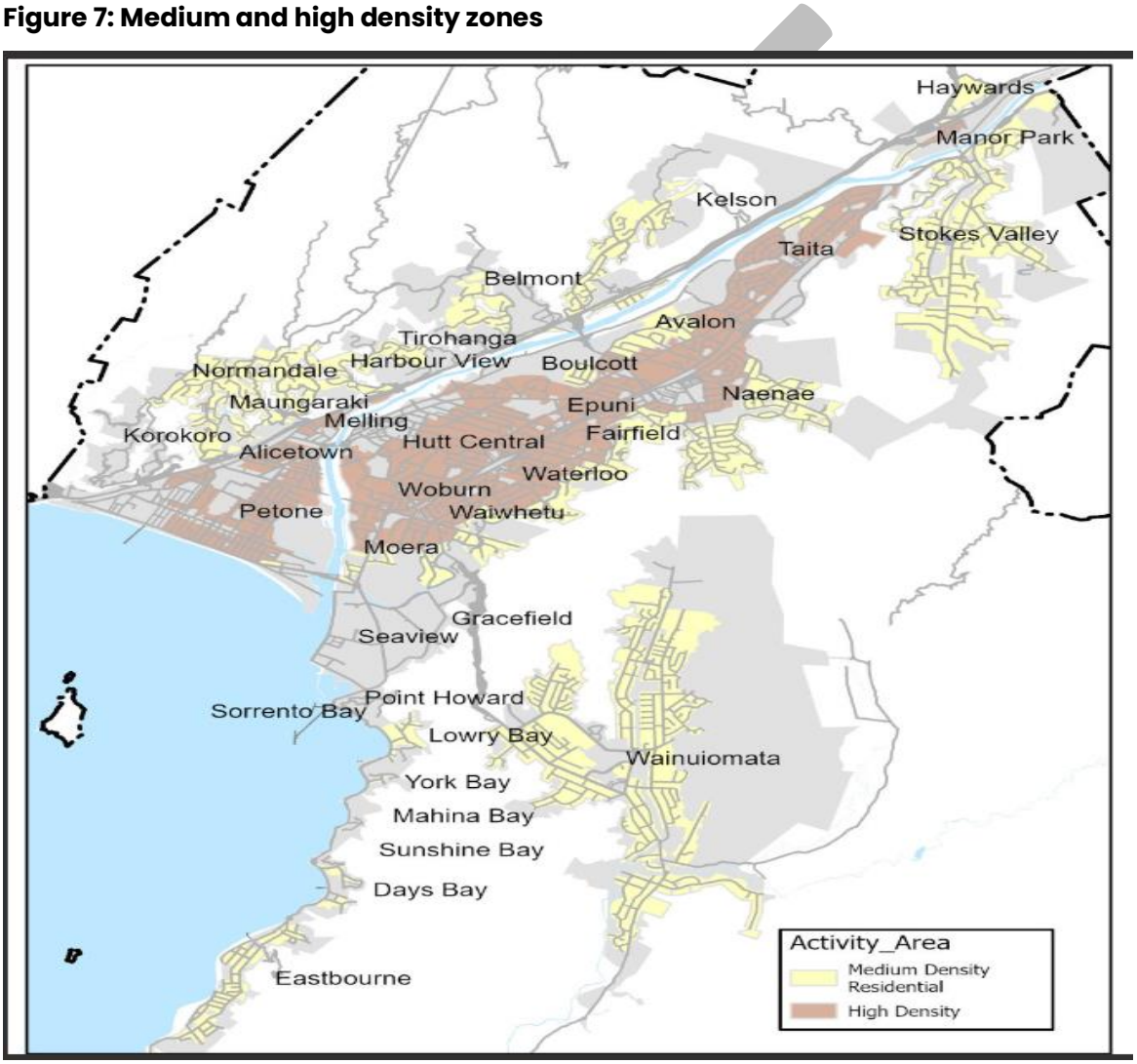
Housing is Intensifying

Te Awa Kairangi ki Tai is experiencing rapid housing intensification. With an increasing population this trend is likely to continue. In 2023, Council amended

the District Plan to enable a greater level development in the city (Plan Change 56). This includes permitting three-storey buildings and three units per site in most residential areas and enabling buildings of six-storeys or more in areas near the city centre, Petone commercial centre and train stations. Plan Change 56 also introduced new restrictions on intensification in some areas, including for the purpose of managing natural hazard risks.

Under Plan Change 56, developments of four residential units or more in residential zones require resource consent. This will allow the capacity of water and transport infrastructure to service the development to be considered on a case-by-case basis. **Figure 7** below shows the areas of Te Awa Kairangi ki Tai that will be designated as Medium Density Residential following the adoption of District Plan Change 56.

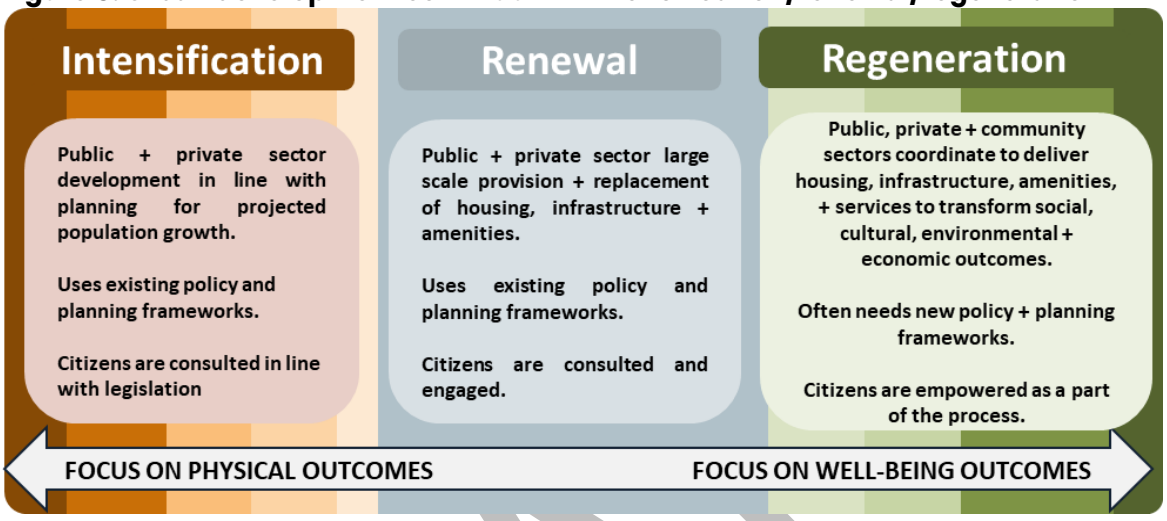
Figure 7: Medium and high density zones



Urban Renewal - Changing the Central City

Urban renewal is an approach to planning which engages the community and works in partnership with the private sector, to provide new or replace out-of-date amenities, housing, and infrastructure. Te Wai Takamori o Te Awa Kairangi (Riverlink) is an example of urban renewal. Urban renewal can be delivered quickly because it requires less capital expenditure and organisational restructuring than regeneration, which often requires new policy and planning frameworks (see **Figure 8** below.)

Figure 8: Urban development continuum – intensification/renewal/regeneration



Council is establishing an Urban Renewal Programme to oversee urban development in Te Awa Kairangi ki Tai and deliver a central city that is thriving, vibrant, and meets the needs of diverse businesses, residents, and visitors. This includes the central city, with investments being made in Te Wai Takamori o Te Awa Kairangi (RiverLink), and through the Infrastructure Acceleration Fund (IAF).

> *"Council has an obligation to its citizens to provide clean, user-friendly, healthy spaces for recreation, sport and cultural events so as to enhance the wellbeing of its citizens' mental wellbeing as well as physical wellbeing." (resident feedback 2023)*

Te Wai Takamori o Te Awa Kairangi (Riverlink) - A case study in how infrastructure investment supports urban renewal

Te Wai Takamori o Te Awa Kairangi is reinvigorating Hutt City, with a focus on attracting people to live, work and invest in the CBD. The key goals of Te Wai Takamori o Te Awa Kairangi are to reorient the city to face and connect with the Awa and respond to climate change. The project will:

- Deliver Improved flood protection for the Lower Hutt city centre and areas south of the city
- Facilitate city redevelopment
- Provide resilient transport choices allowing all people and businesses to move safely and reliably within the city centre.

Te Wai Takamori o Te Awa Kairangi will enable property development along the river front. This includes the integration of buildings within the stop banks to provide direct physical and visual connections to the Awa. An upgraded stormwater network and wastewater upgrade will support the additional CBD population, as will improvements to the local road network and streetscapes in the areas bounded by Melling Bridge, Ewen Bridge, Cornwall Street and the river.

Flood protection work will combine river channel improvements with soft and hard bank edge erosion protection, maximise the width of river berms, and upgrade stop banks to allow for better flood conveyance and flood security. A key aspect of the flood protection scope of works is improving water quality and biodiversity along the river corridor.

A pedestrian and cycling bridge will connect Margaret Street to Pharazyn Street and Melling Train station will be relocated. The Melling Transport Improvements package of work will increase rail patronage and reduce commuter traffic on State Highway 2 by improving rail services on the Hutt Valley and Wairarapa lines and enhancing park and ride opportunities at stations in Te Awa Kairangi Lower Hutt.

The Infrastructure Acceleration Fund

In 2021, the Government announced the Infrastructure Acceleration Fund (IAF) initiative as part of the Housing Acceleration Fund also announced in 2021. The IAF is designed to allocate funding to new or upgraded infrastructure including transport, three waters and flood management infrastructure. Council received $98.9m of government IAF funding during 2022 to contribute to upgrading and updating stormwater and wastewater networks in the central city and valley floor.

As part of the funding agreement, Council has committed to enabling 3,500 homes to be built in the areas impacted by the water network upgrades. The housing outcomes agreed to in the IAF include:

- A mixture of medium density townhouses and high-density apartments
- Dwellings within a walkable distance of train stations and bus stops
- Proximity to employment, education, recreation, and cultural amenities
- Support from and development opportunities available to mana whenua
- Construction of over 2950 lower cost dwellings and public housing dwellings.

The following projects are proposed:

- Melling Stormwater Pipeline - with associated pumpstations, discharging into the river via existing outfalls
- Woburn Stormwater Pipeline - with associated pumpstations, discharging into the river via existing outfalls
- Wastewater Pipeline - Sewer Rising Main, gravity diversions and pumpstations with an associated emergency storage tank. This project is required by the IAF agreement but is not funded by the IAF.

These projects are in the option development phase, with subsequent design to be completed before costs can be determined. The projects are partially IAF funded with Council expected to fund the remainder using development contributions and rates. They will be an integral component of Council's 2027-2037 Infrastructure Strategy.

THE NATIONAL AND REGIONAL CONTEXT FOR INFRASTRUCTURE

Councils own and manage infrastructure networks in a wider context of legislative settings and national policy frameworks, as well as significant regional and local initiatives. This section sets out key changes that have occurred in the wider context since 2021.

Government's Water Services Reform Programme

In 2023, the previous Government passed legislation establishing ten regional water services entities to operate, manage and maintain water infrastructure in Aotearoa New Zealand. In December, the new Minister of Local Government, Simeon Brown, announced that the Government will introduce and pass legislation to repeal the previous government's water services legislation in early 2024.

The repeal bill is the first part of the Government's new approach to water services delivery, Local Water Done Well, and was enacted in February 2024. The bill repealed former legislation regarding Three Water. Local Water Done Well has a fundamentally different approach to that of the previous Government. It does not require the establishment of and transition to new water services entities. Local Water Done Well recognises the importance of local decision making and flexibility for communities and councils to determine how their water services will be delivered in the future, while still retaining a strong emphasis on water quality and infrastructure investment.

The Minister Brown has indicated that transitional support options will provide flexibility for the needs and circumstances of different councils, and that the repeal bill will include provisions making temporary modifications to local government legislation for the transitional period affecting the 2024 long-term plans.

Te Mana o te Wai and the National Policy Statement for Freshwater Management

Te Mana o te Wai recognises the fundamental importance of water, and that protecting the health of water protects the health and well-being of the wider

environment. Te Mana o te Wai is defined in the National Policy Statement for Freshwater Management (2020) as:

- Mana whakahaere: the power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater
- Kaitiakitanga: the obligations of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations
- Manaakitanga: the process by which tangata whenua show respect, generosity, and care for freshwater and for others
- Governance: the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and well-being of freshwater now and into the future
- Stewardship: the obligations of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations.
- Care and respect: the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.

Council's stewardship approach to infrastructure, outlined in this Strategy, gives effect to Te Mana o te Wai.

Managing the demand for water

Objective 3b of the National Policy Statement for Freshwater Management is to 'improve and maximise the efficient allocation and efficient use of water'. Several major New Zealand cities, representing 60% of Aotearoa's population, have introduced water metering to manage the demand for water, including Auckland, Tauranga and Christchurch.

Councils throughout Aotearoa New Zealand face an increasing demand for water resulting from population growth as well as from water loss caused by the poor condition of water infrastructure. This combination of issues means that councils are having to invest heavily in building or renewing infrastructure, or reducing the demand for water, or both.

In its 2013 report to central government, the Local Government Infrastructure Efficiency Expert Advisory Group stated that the introduction of universal water metering has the potential to offset investment in additional water supply infrastructure. While the costs of water metering need to be carefully considered the experience of councils that have implemented water metering show that

charging for water can significantly delay the high capital costs associated with consenting new water sources and building new infrastructure, as well as removing or reducing the need for seasonal water restrictions. Universal water metering reduces water use by:

- Increasing customer's awareness of their water use and efficiency of use of water
- Identifying where water losses are occurring
- Developing a better understanding of the overall network balance which can enable councils to reduce water losses.

It is likely that advances in digital smart metering technology will see an increasing expansion of shared water metering programmes by councils, which will enable information to be sent directly to consumers; improve the identification and repair of leaks, and act to reduce the burden of significant infrastructure costs for councils and their ratepayers.

Transport

Effective transport networks that provide a range of low-emission transport options and reduce congestion are critical to sustainable urban and regional development focused on increasing housing supply, choice and affordability, and developing resilient and productive towns and cities.

Government has recently issued its draft Transport Policy Statement for 2024/25 – 2033/34 which outlines six strategic priorities:

- Maintain and operate the transport system efficiently to meet current and future needs
- Increase the resilience of the transport system to better cope with natural hazards
- Reduce emissions by transitioning to a lower carbon transport system
- Provide sustainably safer transport for all
- Ensure well-designed and operated transport networks provide reliable, resilient, multi-modal, and low-carbon connections to support productive economic activity
- Enabling people to readily access social, cultural, and economic opportunities through a variety of transport options.

The priority transport projects set out in this Strategy are consistent with and designed to give effect to these priorities.

The forecast growth in population and consequently dwellings is expected to place further demands on the Transport network. In light of the financial

pressures and prioritised investment in Three Waters, this is proposed to be managed through specific budget set aside to deal with transport network improvements related to subdivisions. This funding will be prioritised for critical infrastructure. In addition, the planned projects like RiverLink also provide for transport related growth infrastructure.

Regional and Local Spatial Planning

The Wellington Regional Growth Framework 2021 (The Growth Framework) is the main spatial strategy for the Wellington region and describes a long-term vision for how the region will grow, change, and respond to key urban development challenges and opportunities. The main spatial elements of The Growth Framework for Te Awa Kairangi ki Tai are Future Urban Development Areas in the central Hutt triangle (an area encompassed by the city centre, and Naenae and Woburn Stations), Taitā, Petone North, and Wainuiomata North, as a well as a possible new West-East Growth Corridor between Johnsonville and Wainuiomata.

The Growth Framework identifies a range of regional initiatives required to implement the strategy, including:

- incorporating green infrastructure in new development;
- improving the environmental outcomes from greenfield development; and
- adapting to the impacts of the changing climate.

Some of the planned initiatives that contribute to these outcomes are Tupua Horo Nuku, Food and Green Organics service implementation, and the Reserves investment strategy.

Under Government's National Policy Statement on Urban Development, councils in specified urban environments (the urban environment comprising Wellington City, Porirua City, Hutt City, Upper Hutt City and Kapiti District councils being one of them) are collectively required to prepare spatial plans known as *Future Development Strategies* (FDS). The purpose of a FDS is to promote long-term strategic planning. Councils do this by setting out how the local authorities intend to achieve well-functioning urban environments and provide sufficient development capacity over the next 30 years to meet expected demand.

A Future Development Strategy for the Wellington region and Horowhenua is being developed through collaboration between local authorities, central

government, and Mana Whenua, and will replace The Growth Framework. Infrastructure is a critical element in the development of the Future Development Strategy because the capacity constraints of existing infrastructure will impact future growth plans for the Wellington region. Council is also developing a spatial plan for Te Awa Kairangi ki Tai, including consideration of how to provide robust infrastructure networks that are resilient in the face of the impacts of natural hazards.

OUR INFRASTRUCTURE CHALLENGES AND RISKS

Ageing Water Infrastructure

Water infrastructure in Te Awa Kairangi ki Tai is ageing resulting in reduced network resilience, water loss, leakage of wastewater into the environment, and reduced ability to support population growth.

> "Our infrastructure is old and very tired, especially sewer and stormwater pipe work and drinking water pipe work, designed, and installed with limited future proofing for the expanding city we now live in. It needs major upgrading now." (resident feedback 2023)

Determining when assets need renewing is a complex task requiring good information. Some water infrastructure assets are visible, and their condition can be easily observed, while others are underground, making it difficult to forecast when they may fail. WWL uses closed circuit television cameras to check on the condition of the pipe network as well as smoke testing to check whether wastewater infrastructure is operating effectively.

The poor condition of our water infrastructure is evidenced by WWL estimates that throughout the wider region, over 40% of drinking water is being lost due to leaks resulting from ageing infrastructure, historic under-investment, and a backlog of renewals and repairs. They have received record numbers of service requests for leak repairs, with over 3,000 leaks awaiting repair across the Wellington region.

Stormwater Risks

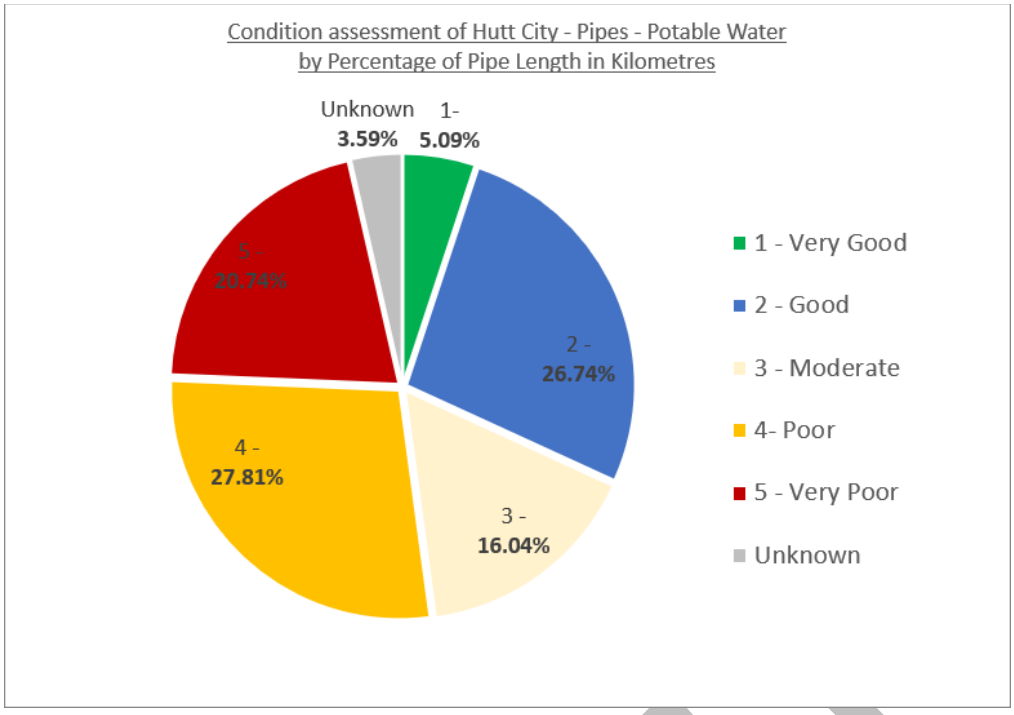
Most of the existing stormwater infrastructure was originally designed to accommodate a five-year "average recurrence interval" rainfall event. Much of this stormwater infrastructure can be overloaded when more severe rainfall is experienced. Service level expectations are now higher than when the system was designed, and general replacement or renewals are now built to a 10-year average recurrence interval standard.

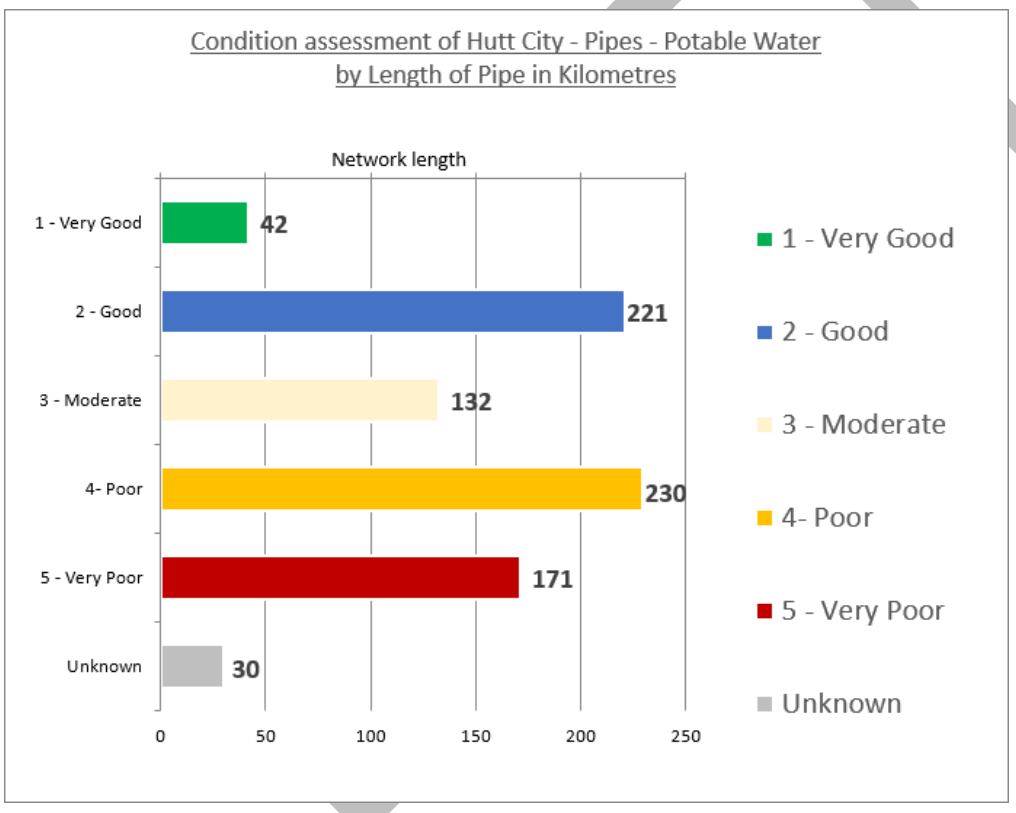
During wet weather both stormwater and groundwater can infiltrate the wastewater system, leading to possible overloading of the system and overflows which create health, water recreation and water quality issues. Infiltration reduction strategies include pipeline inspection and renewal programmes and are aimed at minimising the entry of stormwater or groundwater to the wastewater system.

We are now experiencing more intense rainfall events that put pressure on our stormwater networks. Planning for the effects of rainfall intensity because of the changing climate is being incorporated into design standards and stormwater mitigation solutions. It is not always practical, however, to build our way out of stormwater flooding issues, and case-by-case solutions such as plan changes or overland flow path options must be considered.

Figure 9 below show WWL's assessment of the condition of the water supply, storm water and wastewater infrastructure in Te Awa Kairangi ki Tai, including the length of pipe infrastructure in each condition category. Condition four (poor) means that the infrastructure has between 5% and 20% of its life remaining, while at Condition five (very poor) the infrastructure has less than 5% of its life remaining, which is around three years.

Figure 9: Assessment of Condition of Hutt City Water Infrastructure





The Pressure of Growth on Water Infrastructure

As the population of Te Awa Kairangi ki Tai grows more fresh water is needed per day, with a corresponding demand on the capacity of the wastewater network. WWL estimates that an additional 150,000 people (more than the population of Te Awa Kairangi ki Tai could be living in the wider Wellington region within the next 30 years. It warns that water use in the Wellington region is at an all-time high, primarily due to water loss, population growth and water usage patterns. As more houses are built there will be increased pressure on stormwater networks, including intensive housing creating more solid surface areas with reducing pathways for water to run off, although Council's draft district plan will require new-builds to incorporate rainwater and greywater capture and use systems.

Council's Three Waters Growth Study 2022 found that a significant programme of investigative, design and physical works was needed to meet the demands of future growth and bring existing networks up to target levels of service capacity. The study signalled that the possible costs of the interventions proposed in the study had an associated cost estimate of approximately $1.27 billion.

There is increasing pressure on the water storage capacity in the Wellington region as well as on the capacity of its water service networks. Water use restrictions have become a regular occurrence across the Wellington region. In Te Awa Kairangi ki Tai the demand for water will be exacerbated by proposed District Plan changes which will allow for greater housing intensification in parts of the city.

WWL provides the region's councils with advice on the interventions needed to address leaks and the increasing risk of water shortages. They provided the following recommendations at a regional water shortage summit in September 2023:

- Keep the water in the pipes – invest in finding and fixing leaks, managing water loss and replacing old infrastructure;
- Reduce water demand through water metering – invest in universal smart meters across the metropolitan Wellington region; and
- Add more supply – build another pair of storage lakes to increase supply and complete the existing project to optimise Te Marua capacity.

The challenge facing Te Awa Kairangi ki Tai is further illustrated by WWL's assessment that the length of water infrastructure pipe renewals achieved in 2022-2023, and similarly projected for 2023-2024, is about half of what is needed

on an annual basis to maintain our water network assets on a lifecycle basis. They note that even if substantive additional funding was made available for water infrastructure renewal, the rate of renewal would be severely limited by the current capacity of the skilled workforce needed to carry out this work.

In summary, despite the increasing investment Council has and will make in water network renewal, current water storage constraints as well as capacity constraints in the regional water infrastructure workforce will impact the level of increased system and network capacity that can be achieved in the short to medium term. In combination with the need for Council to operate with fiscal prudence, this means there are two potentially unavoidable future risks:

- the likelihood of ongoing and potentially increasing water shortages across the Wellington region
- that Council will be unable to provide infrastructure support in all areas of housing development or renew ageing water infrastructure on a lifecycle basis in Te Awa Kairangi ki Tai.

"We've had decades of underinvestment in infrastructure both through national and local government, we have a deficit to address before we even start planning for our rapid population growth in future." (resident feedback 2023)

"I am concerned about the housing intensification and the impact this will have on our stormwater and also wastewater. With the significant increase in hard surfaces, the water has nowhere to go but into the stormwater drains, which can't cope with a wee downpour at the best of times… add 40+ extra houses in the 200m radius around our home showering and flushing the loo on top of a climate crisis and we are going to have significant problems." (resident feedback 2023)

Key Transport Infrastructure Challenges

At a regional level, our transport network faces the following challenges:

- A lack of sustainable and attractive transport choices has resulted in an inefficient transport system

- The capacity of the public transport network has limited ability to accommodate future growth or achieve desired changes in people's transport choices
- The current transport infrastructure isn't designed to accommodate different forms of transport, leading to increasing conflicts between transport users.

These regional transport challenges are exacerbated in Te Awa Kairangi ki Tai by a fast-growing population and housing intensification, increasing congestion on key routes, and the threats of the changing climate. Te Awa Kairangi ki Tai's transport network is highly vulnerable to disruption. The city only has two main North-South corridors and limited East-West linkages.

Our transport network lacks resilience to extreme weather, king tides, and seismic events. Some of our largest communities only have a single accessway and any disruption to this accessway could have a significant impact on our communities. Specific transport challenges in Te Awa Kairangi ki Tai include:

- Gaps in the walking and cycling network
- Busy streets and constraints such as the Hutt River and the rail line make it harder to travel by foot or bicycle
- Bus services are not frequent enough, are indirect, and are poorly integrated with rail services
- Roads and footpaths need to be redesigned to accommodate walking and cycling.

Increasing demand for 'inner-city living' will put pressure on areas such as the CBD and Petone, lead to changing requirements for road alignment, and speed up the need to move away from car-centric road design. Council wants to make it easier for people to get around using public transport, cycling or on foot by making these options more convenient, integrated, affordable, and attractive. An increase in demand for public transport will need to be accommodated by increased bus services and appropriate infrastructure, such as the provision of space for bus stops and bus lanes.

> "Community amenities should be easily accessible to everyone. Relying less on cars and moving to more public transport hubs and walkable city centres/community areas will enable more people to move freely in these areas." (resident feedback 2023)

The Multiple Effects of a Changing Climate and Natural Hazards

Our changing climate is posing increasingly real challenges to communities across Aotearoa New Zealand and risks to the infrastructure which communities rely on. The significant challenges facing Te Awa Kairangi ki Tai's infrastructure as a result of more extreme climate events include sea-level rise and increased levels of rainfall.

Projected sea-level rise may compromise the ability of the stormwater network to drain effectively and exacerbate the impacts of flooding. Sea-level rise could also result in some of the city's key infrastructure, particularly the Seaview Wastewater Treatment Plant, facing inundation, as well as increasing the risk of salination, which could threaten the viability of water from the aquifer. Projected sea-level rise of between 50 cm and 80 cm by 2090 means that coastal properties and roads could be swamped and submerged by water, and an increased likelihood of storms and tsunamis surging inland, damaging seawalls, roads, wharves, and properties.

Increased levels of rainfall that exceed the capacity of the stormwater network may result in groundwater entering the wastewater system, while increasing and prolonged dry periods may result in the water supply not being able to adequately meet demand. Both scenarios create health risks for residents.

> "Climate change mitigation and adaptation is essential for survival. Strengthening the natural environment contributes to mitigation (sequestration) as well as promoting biodiversity. Increasing plantings and green spaces will support adaptation by providing shade, and converting areas prone to inundation to reserves will protect residents and businesses. Access to the natural environment supports health and wellbeing." (resident feedback 2023)

Earthquakes pose a major natural hazard risk for Te Awa Kairangi ki Tai. A rupture of Wellington's Hikurangi fault could cause extensive subsidence in Petone, liquefaction in floodplain areas, landslides and slope failure in the Western Hills, Eastern Bays and Wainuiomata Hill Road, and tsunami risk in Petone and Eastern Bays.

A significant seismic event could seriously disrupt critical single-access routes, particularly those connecting the Hutt Valley to Wellington, and to Wainuiomata. This loss of access may affect the transport of vital supplies. Any significant

damage to roads, underground pipes, stormwater networks, or subsequent overflowing, could affect the ability of roads to function, particularly if heavy rainfall follows a seismic event.

Council's planning for disaster events focuses on ensuring people have access to clean drinking water and sanitation. More generally the city's infrastructure needs to be able to withstand a significant earthquake, both regarding structural integrity and regarding maintaining or resuming the provision of services with minimal disruption to the public. This strategy's multi-asset approach recognises the close integration of transport and water infrastructure networks.

HOW COUNCIL AIMS TO MEET THESE CHALLENGES

Council is taking a stewardship approach to managing infrastructure in Te Awa Kairangi ki Tai. Put simply, stewardship is about making sure we look after our assets. Council has a responsibility to ensure its infrastructure protects the health and safety of people, property, and the environment. Council's stewardship approach aligns with the goals of the LTP to ensure Te Awa Kairangi ki Tai is a liveable and vibrant city by providing infrastructure that is fit for the future, and which supports and enhances the environment. Council will do this by engaging with the community, keeping the changing climate uppermost in mind, and making sure its infrastructure investments are financially sustainable. Dimensions of Council's stewardship approach are described below.

Working with the Community and Partners

Council understands the importance of engaging with the community and stakeholders in planning, funding, and delivering infrastructure to ensure that key projects and decisions reflect community values and ambitions. Council wants to create an ongoing dialogue with the community. Its Community Engagement Strategy outlines Council's commitment to engaging with the community, including in-depth consultation on major infrastructure projects. This Infrastructure Strategy is an integral part of the Long-Term Plan and the extensive consultation process that has helped shape it.

Close collaboration with key stakeholders such as Waka Kotahi and other Wellington Water Limited shareholder councils is critical to building and maintaining high quality infrastructure. Council wants to ensure that its goals are aligned with the objectives of these organisations to maintain a smooth working

relationship and clear focus on infrastructure. Waka Kotahi meets some of the cost of our roading and shared path projects (for example see Te Wai Takamori o Te Awa Kairangi case study). Council works closely with Waka Kotahi as a co-investor in our transport network on the policies and priorities which will impact their funding decisions for this infrastructure.

Supporting and Enhancing the Environment

Water is one of our most important natural resources. Council is focused on ensuring it delivers high quality water and minimising any potential contamination of the water supply. It aims to ensure an adequate supply of water, while balancing this against the environmental impact of water sourcing, through both supply and demand management. Council works closely with WWL to make sure relevant environmental standards are met or exceeded. Council also aims to minimise the unpredicted or accidental occurrence events that can result in stormwater and wastewater infrastructure networks carrying contaminants.

Infrastructure can have large practical and visual effects in determining the 'look' and 'liveability' of Te Awa Kairangi ki Tai, as well as having effects on natural habitats and ecosystems. Council makes every effort to ensure that the integration of infrastructure with the natural environment provides the opportunity to achieve better environmental outcomes and infrastructure amenities. This means ensuring that infrastructure is in place to best serve the community in which it is located, balanced against social and environmental considerations.

Spatial Planning for Future-Fit Infrastructure

Government's Infrastructure Efficiency Expert Advisory Group and the National Infrastructure Unit of Treasury advocate using a spatial planning approach to drive future investment in infrastructure. Infrastructure needs to take geographical and spatial factors into account. Roads need to be near the land use they serve, while other infrastructure, such as wastewater treatment facilities, is best located away from sensitive land uses.

Spatial planning informs long-term strategy development through the analysis of a wide range of spatial factors: development patterns, natural hazard risks, the natural environment, and infrastructure. Spatial planning aligns these components in a series of maps and diagrams, to illustrate Council's plans for an

area, including the possible types of development for the area and the infrastructure that would be necessary to support development.

Council works actively with the other councils of the Wellington region, central government, and Mana Whenua on spatial planning at a regional scale through the Wellington region's Future Development Strategy. Council is progressing the development of a city spatial plan to consider how to accommodate our population growth over the next 30 years. This will help inform the future provision of robust infrastructure networks, including infrastructure that is resilient to the impacts of natural hazards.

Mitigating and Adapting to a Changing Climate

The Ministry for the Environment recommends that councils plan for a sea-level rise of between 50cm and 80cm by the 2090s, and continuing rises beyond that. In a 2023 report on coastal inundation and sea level rise assessment for Hutt City District prepared for the Hutt City Council, the National Institute for Water and Atmospheric Research (NIWA) suggest that sea levels are expected to rise by 1.65m to 1.94m by 2130.

The way Council builds and manages infrastructure needs to take the changing climate and increasing climate-related hazards into account. Climate adaptation will be incorporated into the design of new infrastructure projects as well as focusing on making existing infrastructure networks more resilient.

Flood protection in urban areas takes place via stormwater management and is the responsibility of Council. Flood protection through managing significant waterways such as the Hutt River is primarily the responsibility of the Greater Wellington Regional Council. Council works closely with the Regional Council to develop and implement "catchment environmental strategies" (currently in place for the Hutt River) and Floodplain Management Plans (currently in place for the Hutt River and under development for the Waiwhetu Stream).

Greenhouse gases emitted by transport account for a significant proportion of Te Awa Kairangi ki Tai's total emissions and have a negative effect on our natural environment and public health. Council will pursue transport networks that enable motor vehicles to travel as efficiently as possible. It will also encourage alternative means of travel, such as walking or biking, and the use of public transport to reduce emissions.

Tupua Horo Nuku (Eastern Bays Shared Path) – a case study in climate adaptation

An example of how Council is managing and adapting to our changing climate is Tupua Horo Nuku – the Eastern Bays Shared Path, which is building a 4.4-kilometre walking and cycling path between Eastbourne and Ngā Matau. The design of Tupua Horo Nuku includes mitigating sea and storm surges which currently occur in the Eastern Bays. Tupua Horo Nuku demonstrates a future focused approach to planning, designing, and building infrastructure which protects people, property, and infrastructure.

Sustainable Investment in Infrastructure

Community feedback from the early engagement on the Long Term Plan emphasised financial sustainability as a pivotal concern. The overarching message from the survey underscored Council's duty as a steward of its financial resources, and to balance immediate needs with future challenges, including the changing climate. Respondents indicated a strong desire for long-term infrastructure investments, combined with strategic debt management and a clear focus on Council's intergenerational responsibilities.

> *"Future funding should always be properly planned with best, likely and worst outcomes projected including risks such as high inflation as it's very clear we never projected or resourced for such circumstances which have always been a risk in the past"*
>
> *"The Council can't do everything - we need to prioritise spending. Rates cannot keep rising" (resident feedback 2023)*

Council funds it's capital expenditure mainly from borrowing and then spreads the repayment of that borrowing over several years. This enables Council to better match funding with the period over which the benefits will be derived from assets and helps ensure intergenerational equity. Council tries to optimise projects which attract capital subsidies and grants from other government agencies such as Waka Kotahi, and contributions from Upper Hutt City Council, in

relation to wastewater activities. Infrastructure projects to accommodate growth may also be partly funded by developers.

Council's Financial Strategy sets debt to revenue limits and constraints on increasing rates, to ensure its capital expenditures are affordable in the long term. Council therefore prioritises funding the maintenance and renewal of existing core infrastructure assets and will review the timing and scope of large projects to ensure expenditure on assets is made at the most cost-effective time.

Ensuring Levels of Service

Council will comply with all appropriate legislation and standards and ensure that wherever possible our infrastructure meets the needs of today without compromising the needs of our future residents. Sound management of our assets is essential to improving the design, development, and management of our infrastructure. Council's Activity Management Plans require the levels of service provided by our infrastructure partners to be of a high standard in terms of quality, responsiveness, and timeliness. The following indicators are used to monitor the performance and service provided by city infrastructure:

- Performance measures: performance measures published in the Long Term Plan and reported on in Council's Annual Report' allow the community to judge the standard of the infrastructure service
- Customer standards: quality and service availability, target response times for addressing problems with service provision, and courtesy, e.g., keeping property owners informed of system maintenance or other works
- Activity standards: activity standards cover aspects of activity likely to be of concern to the community, such as service quality, customer focus, cost-effectiveness, environmental performance, and compliance with legal and industry standards
- Management indicators: indicators relating to the performance of assets (e.g., pump stations), and the performance of service contracts.

We do not want the condition of the city's infrastructure to impact negatively on our communities and have taken steps to solve this by significantly lifting our investment in infrastructure. For example, Council has committed $2.8 million more in operational funding to immediately fix the backlog of leaky pipes. There is also additional operating funding allocated to monitoring and investigations as well as reactive maintenance work to mitigate the risks associated with constrained capital investment over the next 10 years.

This Strategy has been prepared with the expectation that the levels of service will continue at 2023 levels. What the community will see as a result of the increased funding is that critical infrastructure, such as the Seaview Treatment Plant, Gracefield Reservoir and the multi-modal transport corridor connecting Gracefield and State Highway 2 (Cross Valley Connection) will be delivered to improve the capacity and resilience of the water and transport networks.

But there are tradeoffs with this approach. Because we are investing within the available funding envelope, we will not be able to address some known issues, such as the backlog of pipe renewals. As a result, people will still experience some loss of service if the infrastructure fails.

We need to remain mindful that even with this investment, we still might not be able to get on top of the work required to prevent asset failure. While the focus of this strategy is for 10 years, there are significant challenges beyond the period of this plan related to the deferred investment and how this will be funded.

Overall, Council is satisfied that this approach balances affordability and the investment needed to maintain acceptable levels of service for our communities.

Water Asset Levels of Service

Council is facing big issues with our water infrastructure. The reality is that our water infrastructure has suffered from enormous underinvestment, making it harder for us to meet the needs of our growing city. The largest part of our budget for this 10 Year Plan is being set aside for water infrastructure because we are facing a challenge of leaks in our ageing water infrastructure combined with population growth.

Council is faced with making decisions around increasing our spend on water services to give us all confidence in the quality of our drinking water, the ability of our wastewater systems to maintain a reliable service for our communities. We want Wellington Water Ltd to have the funds to be able to fix more leaks, replace pipes and other ageing infrastructure.

Wellington Water has proposed a significantly higher investment in our water services and the proposal we have indicated as preferred is to invest $1.5 billion over 10 years, but does not fully address all the improvements potentially required but considers the impact of a Rates rise to the rate payers in our community. The other option is to invest $2.6 billion over 10 years which would include a network upgrade and more pipe renewals but may be unaffordable to ratepayers.

Transport Asset Levels of Service

Council has undertaken market testing for delivering the required service levels in asset maintenance and renewals. Overall, there is good confidence for delivering the capital programme required to meet service levels for the immediate term. 35% ($94m) of the Maintenance, Operating and Renewals costs for the next three year has had a robust technical methodology applied for its creation (resealing and pavement rehabilitation). This work was re-tendered in mid-2023. A further 30% ($94m) was re-tendered in mid-2023 for maintenance costs in the street, street lighting maintenance contracts, with cleaning contract being extended for another year.

Validating maintenance performance helps avoid unexpected capital renewal costs and adds to the confidence of the immediate term costs.

The first three years of the capital spend accurately reflects planned service levels, available funding and current supplier costs. For years 4 to 10 in the Long-Term Plan, calculations are indexed against global planning assumptions of the Council's long-term plan process. There is not necessarily inclusion of new assets maintenance or renewal requirements or contingency costs for condition deterioration beyond economic life thresholds. For periods beyond the 10-year mark, currently maintenance and renewal assumptions are extrapolated from the Long-Term plan into the 30-year horizon. Renewals are generally forecast as incremental rather than with "lumpy" replacement milestones.

IMPLEMENTING THE STRATEGY

Prioritising Investment to Address our Infrastructure Challenges

Core infrastructure is expensive to build and the investment requirement to maintain it can be periodic but significant. Council would like to address all the infrastructure issues experienced by the community as quickly as possible, however there are real funding and other constraints that mean this cannot be the case. There is an obvious tension between the need for investment in infrastructure and the need to stay within the parameters of the Council's Financial Strategy.

Council's investment in infrastructure is designed to meet the real and significant challenges described earlier in this Strategy:

- Addressing our ageing infrastructure

- Supporting growth and meeting demand
- Building network resilience
- Adapting to the impacts of a changing climate

The prioritisation of the investments that Council will make in addressing its core infrastructure challenges have been guided by Council's Financial Strategy and align with the strategic priorities outlined in the Long-Term Plan. Additional factors which have informed this prioritisation include:

- Urgency – what is the urgency of the infrastructure issue?
- Affordability – what level of funding can Council put towards addressing this issue?
- Partnership optimisation – can Council optimise partnership funding for infrastructure?
- Capital achievability – the significant increase in the capital programme, particularly in water services, also carries a level of uncertainty and risk to achievability. Wellington Water and Council has been building capacity and capability over the last few years to improve delivery performance. Through the last 10 year plan 2021-31, we started making changes to address challenges around deliverability. This has included additional operating funding to support WWL to increase capacity and capability, improved planning processes with supply partners and engaging a range of project delivery resources to better manage and deliver projects. Council has also been reviewing its organisational structure and making incremental changes through increased project delivery staff and the functions that support them. It is important to us that there are no delays to the programme as that may result in not meeting planned levels of service or greater costs in the long term.

This Strategy sets out the priority investments in infrastructure that Council considers prudent, realistic, and achievable, and which optimise the funding available to Council to invest in infrastructure.

Investing in Water Infrastructure

Our greatest water infrastructure challenge is a rapidly ageing water network. Council's strategic approach to investing in water infrastructure is aligned to that of other councils in the wider region, namely:

- Keeping the water in the pipes by investing in finding and fixing leaks, managing water loss and replacing ageing infrastructure

- Minimising the future cost of water infrastructure by exploring ways of reducing the demand for water and influencing water use behaviour
- Adding more water supply by building additional water storage capacity.

Water Asset management lifecycle

The water asset management lifecycle and renewals are based on an age-based profile and the target renewal rate in partnership with Wellington Water. This does not take into account condition and is intended to ensure that at the end of 30 years, we will have removed the backlog of renewals and be able to reduce the rate of renewals to a long-term, sustainable level that aligns with the rate of deterioration.

Within this renewal profile we prioritise the assets with the worst condition to be renewed. Condition assessments were undertaken in 2022 and 2023 of critical assets, which included 140km of pipe, 25 water reservoirs, 25 pumping stations and the wastewater treatment plant assets. 1358 leaks have been fixed in Lower Hutt since 1 July 2023 (as of 12 December 2023). We renewed 14.5km of pipes in 2022/23. A significant increase from an average of 4km in previous years. Smart water meters do need to be installed and is estimated to cost $78 million over six years.

Tables 1-3 below sets out the key projects to address our ageing water infrastructure, meet the growing demand for water, and build the resilience of our water infrastructure. By far the largest investment will be directed to fixing leaks and renewing the pipe network.

Table 1: Addressing Ageing Infrastructure

Key project	Explanation	Cost	Funding source	Time period
Three waters Network Renewals	Parts of the water supply, wastewater and stormwater service are in very poor condition. This investment will focus on	$639M	30% funded by UHCC for shared assets only.	2024/25 to 2033/34

Key project	Explanation	Cost	Funding source	Time period
	fixing known leaks and increasing the number of kilometres of the water network which are renewed.		Remainder through debt and development contributions	
Seaview Wastewater Treatment Plant	The Seaview Wastewater Plant is nearing the end of its service life. This project will deliver a number of critical plant system renewals including the sludge dryer, odour control systems, and UV systems.	$195M	30% funded by UHCC (shared asset). Remainder through debt and development contributions	2024/25 to 2034/35
Gracefield Reservoir	The Gracefield reservoir is in poor condition and this project will deliver a replacement reservoir. This work will occur once the new Eastern Hills reservoir has been commissioned to ensure continuity of supply.	$34M	Debt	2030/31 to 2031/32

Key project	Explanation	Cost	Funding source	Time period
Petone Stormwater Improvements	This project will deliver upgrades to the Udy Street stormwater main.	$48M	Debt and development contributions	2028/29 to 2033/34
Petone Collecting Sewer	The main collecting sewer for Petone is at the end of its service life and has been assessed as being highly vulnerable. This project will deliver a replacement collecting sewer.	$83M	30% funded by UHCC (shared asset). Remainder through debt and development contributions	2024/25 to 2029/30

Table 2: Meeting Growing Demand

Key project	Explanation	Cost	Funding source	Time period
Eastern Hills Reservoir and Outlet Main	There is a water shortage in the Central Hutt water supply zone. This project will support growth on the valley floor and address the existing shortfall in water supply.	$84M	Debt and Development contributions	2026/27 to 2028/29

Key project	Explanation	Cost	Funding source	Time period
Implementing universal smart water meters	The increasing demand for water will outstrip future water supply capacity and create significant future water related infrastructure costs. Exploring options for managing the demand for water is a key component of regional council's strategy to reduce the future costs of water infrastructure.	$78M	Debt	2024/25 to 2029/30

Table 3: Building Network Resilience

Key project	Explanation	Cost	Funding source	Time period
Black Creek Stormwater Improvements	This project will address flooding risks and address future stormwater demand.	$54M	Debt and Development contributions	2024/25 to 2033/34

The graphs below show the relative proportions of Council's investment in water infrastructure, with the vast bulk of the investment being directed to addressing ageing infrastructure, and to network renewals in particular. This includes detecting and fixing water leaks.

Focussing on critical water assets

The key challenge that Council faces with its water assets is the prioritisation of available investment across an ageing network, due to a constrained borrowing capacity combined with ratepayer affordability in the current economic climate.

This strategy incorporates Council's decision to substantially increase investment in waters assets over the next 10 years to ensure renewal of all critical assets, such as the Seaview Wastewater Treatment Plant, along with investment in new assets to meet growth expectations on the valley floor. This is to ensure that major outages or disruptions to service are less likely to occur.

What has been excluded from the preferred option is significant investment in renewing local pipe networks. For waterpipes, around 50% of what is required to be renewed has been included and only 10% of wastewater pipes. These will continue to deteriorate with the likelihood of more local outages or disruption to services.

This means that Council has made a decision to defer investment to later years in some local network renewals which is likely to result in a continued level of local network outages and disruption to services.

All water projects in the draft plan, once adopted, will not require a further decision, unless circumstances change (such as new legislative requirements) that require a change. One project that is yet to be determined is the capital investment required to renew or refurbish the main Outfall pipe, but this is some years away from a decision and would likely fall into the 2027-2037 LTP and accompanying Infrastructure Strategy.

Further decisions will also be required in respect to renewing network discharge consents which are likely to impose level of service improvements. Network improvements required to meet the new Levels of Service will likely require significant investment which is currently not fully known or funded in this strategy

Investing in Water Infrastructure – What We Will See and Impacts on Service Levels

Council received advice on its water assets from WWL. As a result of this advice Council is proposing a significantly higher capital budget for the maintenance and renewal of these assets, although not at the level proposed by WWL due to constraints on debt and rates funding.

The constrained level of investment Council can make in water infrastructure, in combination with the need for WWL to build the necessary workforce capacity, will mean that the water network renewal programme of work will extend beyond the 30-year period of this Infrastructure Strategy. The budgeted spend is expected to result in improvements to the water network over the next 10 years, although the community will continue to experience a level of disruption caused by both the network renewal programme, and from a level of ongoing leaks occurring in the water network.

Council's investment in its water infrastructure will address both leaks and pipe network renewal ensuring that 18km of pipes are replaced in 2024/25, rising towards 30km per year from 2030 onwards. This includes the pipes leading to the Seaview Wastewater Treatment Plant and scoping work in relation to renewal of the pipe running from the plant to the outfall at Pencarrow. A recently completed comprehensive condition assessment of the Seaview Waste Water Treatment Plant indicated a need for urgent investment in renewing critical plant items over the next three years. $195M has been included in the first ten years of this Strategy to address this.

Partnership Funded Water Infrastructure

As outlined earlier, Government announced the Infrastructure Acceleration Fund (IAF) initiative in 2021. The IAF is designed to allocate government funding to new or upgraded infrastructure including transport, water and flood management infrastructure. Council secured $98.9million of government IAF funding in 2022 to contribute to upgrading and updating the stormwater networks in the central city and valley floor.

The following projects have been proposed:

- Melling Stormwater Pipeline – with associated pumpstations, discharging into the river via existing outfalls.
- Woburn Stormwater Pipeline – with associated pumpstations, discharging into the river via existing outfalls.
- Wastewater Pipeline – Sewer Rising Main, gravity diversions and pumpstations with an associated emergency storage tank. This project is required by the IAF agreement but is not funded by the IAF.

These projects are in the option development phase, with subsequent design to be completed before costs can be determined. The projects are partially IAF funded with Council expected to fund the remainder using development contributions and rates. They will be an integral component of Council's 2027-2037 Infrastructure Strategy.

Investing in Transport Infrastructure

Council's Transport Plan sets out an ongoing programme of work to maintain, operate and renew the roading network in Te Awa Kairangi Lower Hutt. This programme includes roading, cycle path, footpath and environmental maintenance. The aim of this programme of work is to ensure that the city has a resilient and sustainable transport system that provides the community with transport options that connect people easily, safely, and affordably to where they need to go, whether they go by bike, foot, public transport, or car.

In addition to this ongoing programme of work Council will be investing in key transport projects designed to address ageing roading infrastructure, meet the growing demand on the city's roading network, building the resilience of our roading network, and ensuring the roading network is adapting to the impacts of the changing climate. These key projects are set out in **Tables 4-7** below.

Transport Asset management lifecycle

The transport asset management lifecycle refers to Council's systematic approach to managing its transport assets (roads, footpaths, lighting and cycleways) efficiently throughout their lifespan. By managing assets throughout this lifecycle, Council can optimise asset use, minimise costs, and ensure the safety, reliability, and efficiency of transportation networks in Te Awa Kairangi ki Tai Lower Hutt.

The outcomes from a 2020 Investment Logic Mapping Problem Definition workshop were reviewed and updated for inclusion in the 2023 Asset Management Plan and 2024-2034 Long-Term Plan. There were three focus areas:

1. Network compliance (to address aging infrastructure)
2. Network resilience (resilience/ Environmental considerations)
3. Network future capacity

To provide greater funding certainty and confidence, work has begun at Council to undertake long-term condition assessments, by asset class including cyclical renewal profiles. When completed, these will be aligned with the forward plan of asset construction to inform longer-term maintenance and renewals plan (including costs) which are currently not available.

Detailed condition reports will commence by mid-2024. In parallel with this work, Council is improving the level of internal technical capability and asset management systems needed to support this activity. By working to understand capital renewal requirements beyond the first three years, we will be able to provide greater confidence around forecasting assumptions in the future. In light of the financial pressures due to funding constraints, investment in waters infrastructure has been prioritised, with funding in Transport being mainly focused on Maintenance, Operations and renewals (MOR) projects as well as those with significant partner funding.

Table 4: Addressing Ageing Infrastructure

Key project	**Explanation**	**Cost**	**Funding source**	**Time period**
Seismic strengthening of Cuba street overbridge	Seismic strengthening to improve the resilience of the bridge.	$1.3M	Debt	2023-25

Table 5: Meeting growing demand

Key project	Explanation	Cost	Funding source	Time period
Subdivision roading improvements	Improving access and road resilience to new developments	$39M	51% of programme subsidy funded, remainder debt and development contributions	2024-34

Table 6: Building Network Resilience

Key project	Explanation	Cost	Funding source	Time period
Eastern Hutt Road resilience	Improvements to the resilience of Eastern Hutt Road.	$45.87m	Largely debt with some grant funding	2022-31
Cross Valley connections	A new multi-modal transport corridor connecting Gracefield and State Highway 2.	$188.8m	51% of programme subsidy funded, remainder debt and development contributions	2022-32

Key project	Explanation	Cost	Funding source	Time period
Cycleway and micro-mobility programme	A programme of investment towards a connected cycle and pathway network across Hutt City.	$60.4m	51% of programme subsidy funded, remainder debt and development contributions	2022-31

Table 7: Adapting to the Changing Climate

Key project	Explanation	Cost	Funding source	Time period
Tupua Horo Nuku	Construction of a new shared path between Windy Point and Point Howard to provide safer walking and cycling and construction of a new sea wall to improve the resilience of the road.	$79.9M	Around 30% through debt and the rest of funding provided by Waka Kotahi/ NZTA and Crown Infrastructure Partners	2022 – 2026

Investing in Transport Infrastructure - what we will see and impacts on service levels

Council's Integrated transport strategy developed in 2022 identified some key challenges for our transport network. This strategy sets out a 10 year plan designed to ensure the roading network is well maintained to allow for vehicle movement with a high level of safety and a low level of delays, ensure footpaths are smooth and free of hazards, and provide cycle lanes which give separation from heavy traffic.

Council has prioritised the areas most in need of renewals through the conditioning rating survey and testing done by our consultants. Further work will be undertaken to create a 10-year renewals plan which will form the basis of the next Long-Term Plan.

To provide greater certainty over long-term renewals, work has begun to ensure that we have an evidence-based future work programme that stipulates the required maintenance and renewals requirements to maintain and renew transport assets. This draft Long-Term Plan has been set based on the existing levels of service as a 10-year programme is developed ahead of the next Long-Term Plan.

The Integrated Transport Strategy 2022 is expected to improve the overall condition of the transport network in Te Awa Kairangi ki Tai over the next 10 years. The key projects outlined above will make a significant contribution to the objectives of the Integrated Transport Strategy by improving the resilience of key transport corridors, investing in a cycle and pathway network and, critically, future proofing the transport network so that it is able to meet the needs of a growing population.

While funding constraints have played a role in deciding the transport investments set out in this Strategy, these projects are expected to improve the overall condition of the transport network over the next 10 years. Government's transport priorities are yet to be finalised and it is likely that further changes may be required in future plans to reflect these priorities.

Significant upcoming decisions for transport infrastructure

Key project	Significant decisions made	Significant decisions to be made
Seismic strengthening of Cuba street overbridge	All bridges are subject to contracted periodic assessments. A forward schedule is created based on the assessed criteria. The decision to undertake strengthening was made prior to 2021 and included in the relevant LTP documents.	The funding subsidy for this has been included in the 2021-24 NLTP and is subject to extension approval by NZTA.
Subdivision roading improvements	To provide for additional funding in the LTP 2024 and NLTP 2024-27 subsidy submission to address this project, This cost has also been factored into the Development Contribution work that will be consulted on in the draft Long-Term Plan.	If funding was not approved by NZTA, or cost estimates exceed LTP estimates, this could require further Council decisions.
Eastern Hutt Road resilience	To provide for additional funding in the LTP 2024 and NLTP 2024-27 subsidy submission to address this project,	If funding was not approved by NZTA, or cost estimates exceed LTP estimates, this this could require further Council decisions. The EHR business case included a cycleway which has been split out and included in the Cycleway and micro-mobility programme. If funding for one, but not the other, was approved by NZTA, this could require a decision by Council to fund 100% the project not subsidised by NZTA.
Cross Valley connections	The business case for this programme was approved by Council and NZTA in 2021. To provide additional funding in the LTP 2024 and NLTP 2024-27 subsidy submissionfor the next phases of work.	If funding is not approved by NZTA, or cost estimates exceed LTP estimates, this could require further Council decisions. If NZTA or Government transport funding priorities change, this may impact this programme and Council may face significant decisions.

Key project	Significant decisions made	Significant decisions to be made
Cycleway and micro-mobility programme	The business case for this programme was approved by Council and NZTA in 2021. To provide additional funding in the LTP 2024 and NLTP 2024-27 subsidy submissionfor the next phases of work..	If funding is not approved by NZTA, or cost estimates exceed LTP estimates, this could require further Council decisions. If NZTA or Government transport funding priorities change, this may impact this programme and Council may face significant decisions.

ASSUMPTIONS INFORMING THE STRATEGY

Life cycles of significant transport infrastructure assets

Lifecycle management of transport assets is set out in section 2.7.7 of the Tranpsort Asset Management Plan (AMP). This approach assumes that management through an asset's life cycle to maximise its usable life is coupled with, targeted interventions to optimise asset life, level of service, and funding requirements. A performance and gap analysis (AMP section 3.3) sets out the application of this targeting which informs forward works planning.

Growth or decline in the demand for relevant services

The current population of Te Awa Kairangi ki Tai Lower Hutt is about 113,000. We're expecting this figure to reach 125,000 by 2033. Population growth of this scale is putting huge pressure on our supply of houses and infrastructure like pipes and roads. Council's investment projections incorporate the policy position which requires developers of new houses to contribute to the cost of growth-related infrastructure such as the cost of the pipes and roads to help support our increasing population

Increases or decreases in relevant levels of service

Our planned investment in water and transport infrastructure in the 10 Year Plan is expected to maintain current levels of service for the duration of the plan. For example, we have committed $2.8 million more operational funding to immediately fix the backlog of leaky pipes. This will help maintain our current service levels.

Even with this investment, some uncertainty remains. The budgeted spend on water is expected to result in improvements to the water network over the next 10 years, although the community will continue to experience a level of disruption caused by both the network renewal programme, and from a level of ongoing leaks occurring in the water network. While we are satisfied that our approach balances affordability and the investment needed to maintain acceptable levels of service for our communities, we are also mindful that this will require us to make the assets last longer than what Wellington Water Limited has advised.

While funding constraints have played a role in deciding the transport investments set out in this Strategy, these projects are expected to maintain the overall condition of the transport network over the next 10 years. Government's transport priorities are yet to be finalised and it is likely that further changes may be required in future plans to reflect these priorities and subsequent impacts on levels of service.

Government's Water Services Reform Programme

The Government has advised that it will be repealing the legislation enacted by the previous government for water reform. The repeal bill is the first part of the Government's new approach to water services delivery, Water Done Well, which recognises the importance of local decision making and flexibility for communities and councils to determine how their water services will be delivered in the future, while still retaining a strong emphasis on water quality and infrastructure investment.

Council has prepared this Strategy on the assumption that it will remain responsible for water related infrastructure assets.

Funding and Financial Sustainability

Council's Financial Strategy focuses on the next 10 years. Council will fund the projects outlined in this Strategy through a mixture of general and targeted rates, as well as user subsidies, grants, fees, and charges and development contributions. Council manages borrowing and repayments within the framework specified in the Liability Management section of the Treasury Risk Management Policy. Council's Financial Strategy further sets debt to revenue limits and constraints on increasing rates in the long term. Council has therefore given priority funding to maintaining and renewing its existing assets and will review the timing and scope of large projects to ensure future expenditure on

assets is done at the most cost-effective time. Council will also optimise funding from other government agencies and development contributions.

There are funding challenges associated with the deferred programme of investment in years 11-30 which can potentially only be addressed through additional funding from Central government or reduction in service levels. There is a large degree of uncertainty as to how this will be managed.

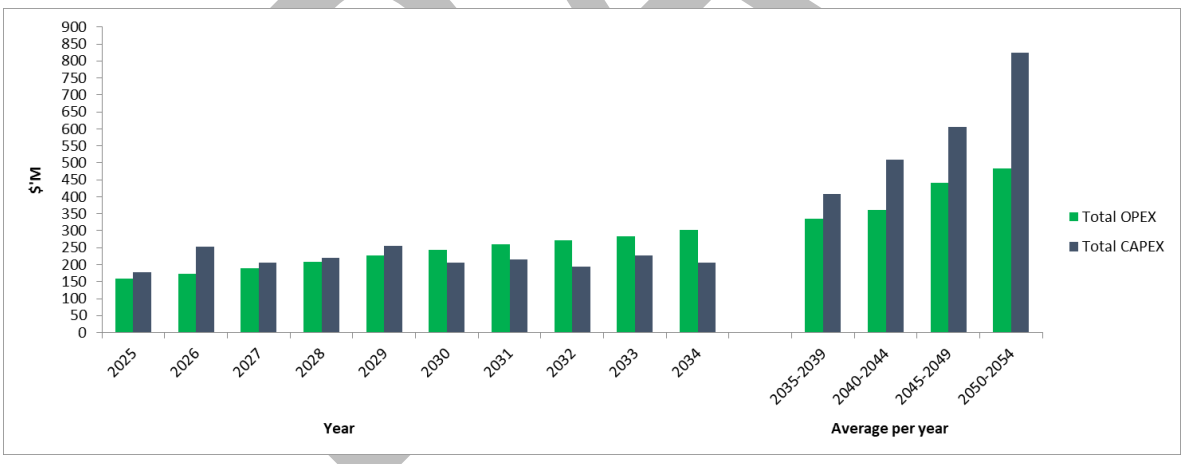
The Condition of Water Assets

Although the condition of Council's water network is expected to improve significantly over the period of this strategy, condition assessments for these assets may reveal that they have aged faster than our modelling anticipates. WWL has made assumptions regarding the average useful lives and remaining lives of the current asset groups, based on current local knowledge, experience, and historical trends. These need to be reviewed and accuracy improved based on physical inspections and assessments of deterioration.

FINANCIAL PROJECTIONS

The projections included below (**Figures 10-15**) relate to the proposed Three Waters and Transport capital investment included in the Draft Long-Term Plan 2024-34.

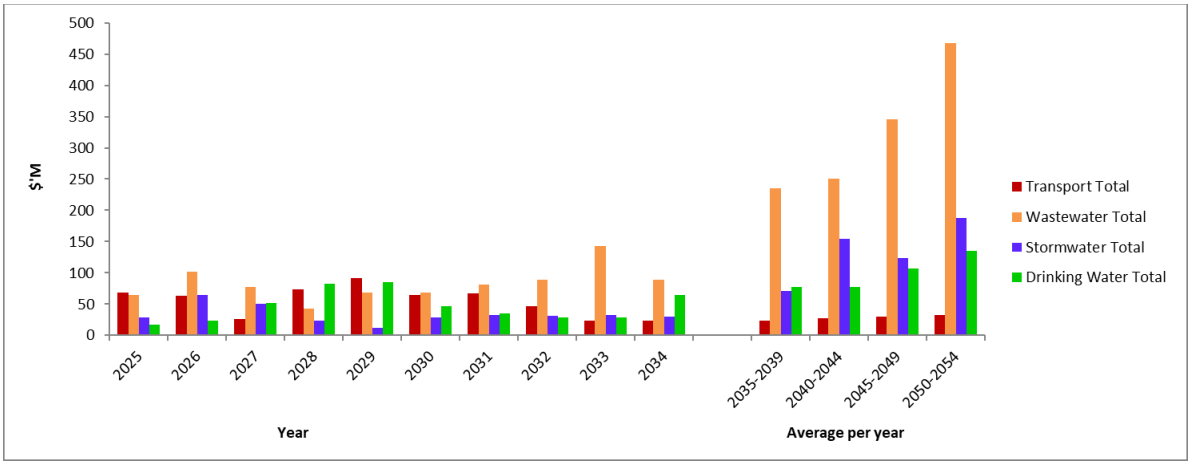
Figure 10: Total capital and operational expenditure



The step up in opex from year 11 onward is as a result of the unconstrained capital programme from this point which has direct associated operating costs such as depreciation. Additional opex has been built into years 1-10 to manage

monitoring, investigations, and maintenance activities to offset the capital funding at levels lower than recommended for Three Waters.

Figure 11: Total capital expenditure by group of activity



Year 11 onwards represents a capital programme unconstrained by funding limitations and is at the required levels to deal with renewals and backlog for Three Waters. There is significant uncertainty associated with how this will be funded in the future.

Figure 12: Transport capital expenditure

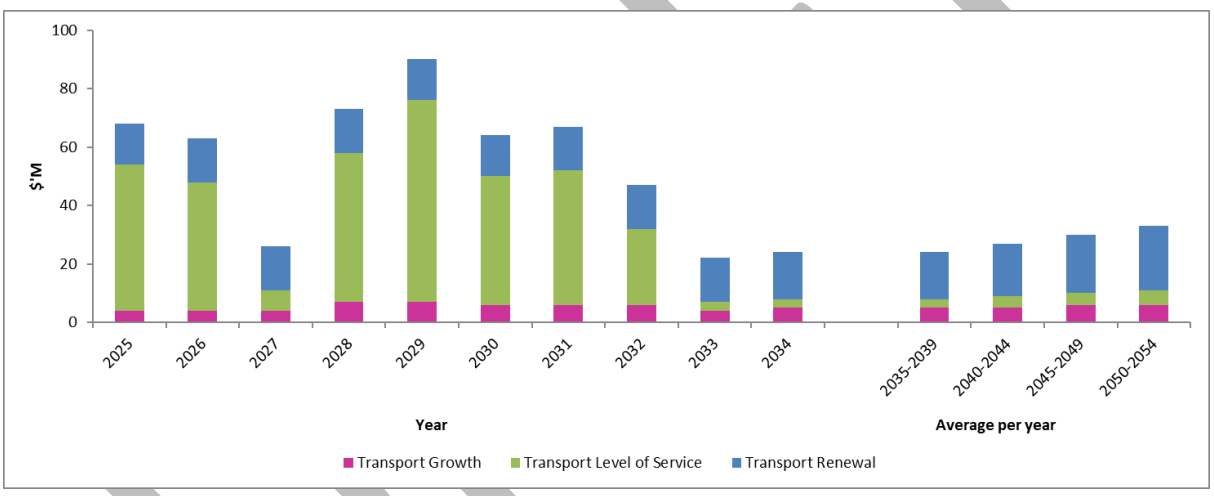


Figure 13: Drinking Water capital expenditure

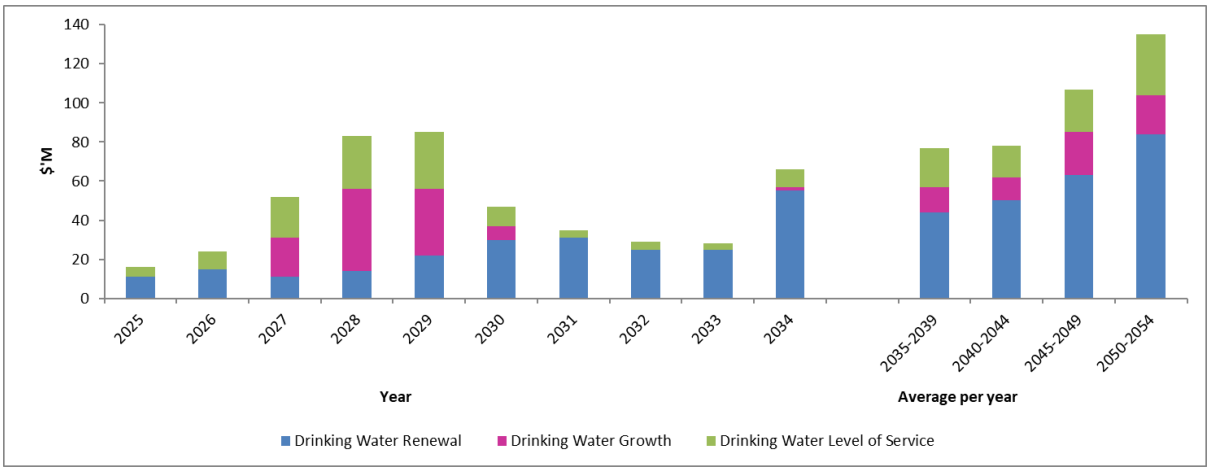


Figure 14: Wastewater capital expenditure

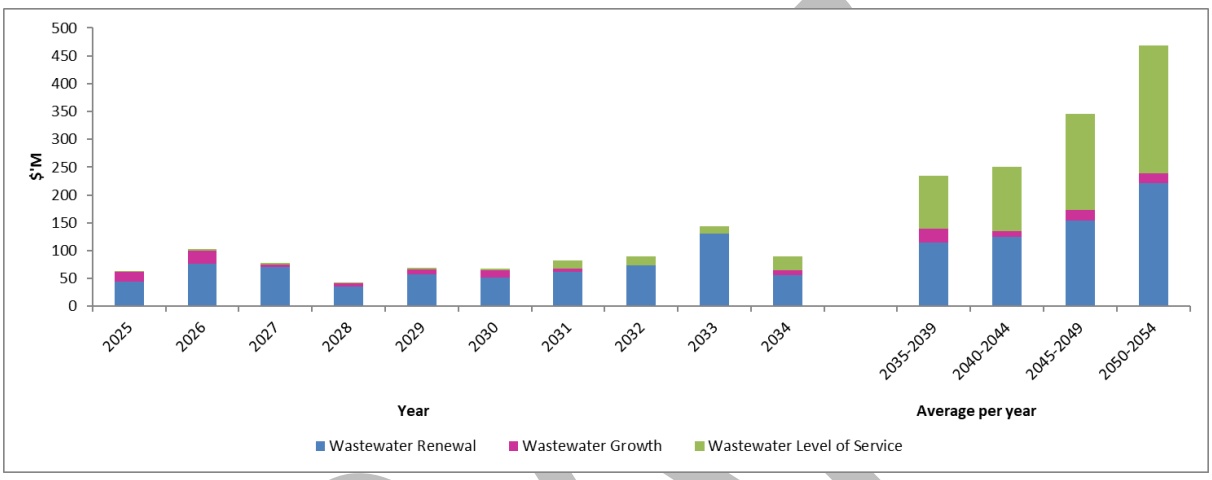
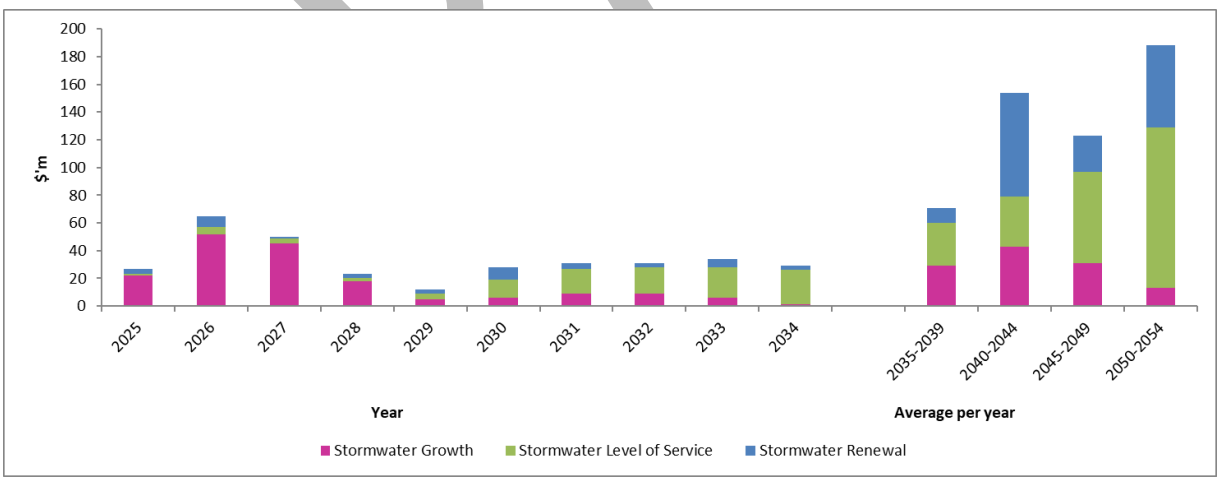


Figure 15: Stormwater capital expenditure



APPENDIX 1

Local Government Act requirements relating to Infrastructure Strategies

101B Infrastructure strategy

(1) A local authority must, as part of its long-term plan, prepare and adopt an infrastructure strategy for a period of at least 30 consecutive financial years.

(2) The purpose of the infrastructure strategy is to—

(a) identify significant infrastructure issues for the local authority over the period covered by the strategy; and
(b)identify the principal options for managing those issues and the implications of those options.

(3) The infrastructure strategy must outline how the local authority intends to manage its infrastructure assets, taking into account the need to—

(a) renew or replace existing assets; and
(b) respond to growth or decline in the demand for services reliant on those assets; and
(c) allow for planned increases or decreases in levels of service provided through those assets; and
(d) maintain or improve public health and environmental outcomes or mitigate adverse effects on them; and
(e) provide for the resilience of infrastructure assets by identifying and managing risks relating to natural hazards and by making appropriate financial provision for those risks.

(4) The infrastructure strategy must outline the most likely scenario for the management of the local authority's infrastructure assets over the period of the strategy and, in that context, must—

(a) show indicative estimates of the projected capital and operating expenditure associated with the management of those assets—
    (i) in each of the first 10 years covered by the strategy; and
    (ii) in each subsequent period of 5 years covered by the strategy; and
(b) identify—
    (i) the significant decisions about capital expenditure the local authority expects it will be required to make; and
    (ii) when the local authority expects those decisions will be required; and
    (iii) for each decision, the principal options the local authority expects to have to consider; and
    (iv) the approximate scale or extent of the costs associated with each decision; and
(c) include the following assumptions on which the scenario is based:
    (i) the assumptions of the local authority about the life cycle of significant infrastructure assets:
    (ii) the assumptions of the local authority about growth or decline in the demand for relevant services:
    (iii) the assumptions of the local authority about increases or decreases in relevant levels of service; and
(d) if assumptions referred to in paragraph (c) involve a high level of uncertainty,—
    (i) identify the nature of that uncertainty; and
    (ii) include an outline of the potential effects of that uncertainty.

(4a) A local authority must, for a long-term plan for or after 2027–2037, identify and explain, in the infrastructure strategy, any significant connections with, or interdependencies between,—

(a) the matters included in that infrastructure strategy; and
(b) the matters that are—
(i) included in an infrastructure strategy prepared and adopted by a water services entity under section 157 (and see also clause 16 of Schedule 1) of the Water Services Entities Act 2022; and
(ii) relevant to the local authority's district or region.

(5) A local authority may meet the requirements of section 101A and this section by adopting a single financial and infrastructure strategy document as part of its long-term plan.

(6) In this section, infrastructure assets include—

(a) existing or proposed assets to be used to provide services by or on behalf of the local authority in relation to the following groups of activities:
(i) water supply:
(ii) sewerage and the treatment and disposal of sewage:
(iii) stormwater drainage:
(iv) flood protection and control works:
(v) the provision of roads and footpaths; and

(b) any other assets that the local authority, in its discretion, wishes to include in the strategy.