

# Draft Infrastructure Strategy 2024-2054

## What is an Infrastructure Strategy?

Managing infrastructure is a substantial part of council's operation and a significant contributor to the wellbeing of our district. Our infrastructure ranges from district roads, bridges and footpaths, to water and wastewater reticulation systems and stormwater drainage systems. Many of these assets are used by our community on a daily basis and are critical to allow our community to function.

Councils are required to have an Infrastructure Strategy to outline how they will look after their assets and respond to challenges over the next 30 years. Our Infrastructure Strategy helps us communicate the plan for our assets to our community. We want the community to be confident that we will look after those assets so that they can function effectively now and for generations to come.

Our Infrastructure Strategy is unique to Whanganui and reflects the state of our assets, our environment, the needs of our community, our financial position, and our community's ability to afford rates increases to pay for infrastructure.

The Infrastructure Strategy:

- shows the assets that are needed to deliver on Whanganui's vision
- outlines the key issues affecting our infrastructure over the next 30 years
- identifies the options available to address these issues, including costs and risks

- outlines the preferred option for each issue and the reasons for this.

Our Infrastructure Strategy 2024-2054 covers the following assets:

- roading and footpaths
- water supply
- wastewater
- stormwater.

Council also owns numerous cultural and events facilities, parks and recreation facilities, properties and buildings, plus the sea port and airport. These assets sit outside of the scope of this Infrastructure Strategy 2024-2054. Asset management capability is in a developing phase in these areas and an improvement plan is in place. We expect to expand the Infrastructure Strategy to include these assets for the 2027-2037 Long-Term Plan.

## Our assets

### Roading and footpaths

Our Whanganui district roading and footpaths network includes:

- 592km of sealed roads
- 270km of unsealed roads
- 72 bridges
- 345km of footpaths and shared pathways
- 6400 street lights
- 14 sets of traffic signals.

### Water supply

We manage five water supply schemes throughout the district, the largest of which is the Whanganui urban water supply. The other water schemes are Fordell, Pākaraka, Mowhanau and Westmere rural water supplies.

Our water supply assets include:

- six bores
- five treatment plants, 17 pump stations, 29 reservoirs
- approximately 540 km of water supply pipelines
- 2,199 hydrants
- 860 backflow devices
- 1,051 meters.

### Wastewater

Wastewater reticulation systems are provided in the Whanganui urban area, Mowhanau and Marybank. The wastewater network includes:

- Two treatment plants

- 38 sewer pump stations
- Approximately 289km of pipeline
- Approximately 4,781 manholes
- An ocean outfall approximately 1.7 km off South Beach.

### Stormwater

Stormwater reticulation infrastructure is provided in the Whanganui urban area. Rural stormwater is managed mainly through land drainage with some minor infrastructure provided at Marybank and Mowhanau to safely dispose of stormwater run-off. The stormwater network includes:

- approximately 174km of pipeline
- Over 3,459 manholes
- 18km of open channel
- 11 retention and filtration basins to treat stormwater run-off and help prevent flooding.

## Partnerships with iwi

The council partners with Tangata Whenua, Hapū and Iwi to build community and promote wellbeing. This approach is especially important for projects or decisions in infrastructure planning, environmental management, and community development. The council's policy direction and planning processes supports effective engagement with Hapū and Iwi entities as well as marae and whānau. Hapū have indicated to the council that they wish to be specifically engaged in relation to activities within their rohe, rather than just through engagement with the Iwi or Rūnanga body at large. This will ensure the voice of Hapū is heard at the decision-making table and the values and impacts will be considered locally. Hapū hold their own mana motuhake within their rohe and legislated Iwi and Crown entities will not impede or interfere in this Hapū sovereign right.

The enactment of the Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 has provided legislative responsibilities for the council, including an appointment to the strategy group, Te Kōpuka. The council also attend regular hui of the Te Awa Tupua Technical Advisory Group (TAG) that contributes to the provision of support to Te Kōpuka. There is an ongoing commitment towards an organisational understanding of the Te Awa Tupua Act, the intrinsic values Tupua te Kawa through Te Pūwaha – Port Revitalisation Project, and the relationships being built with Iwi.

The formal partnership agreement between the council and Te Rūnanga o Tūpoho is guided by the relationship document Te Whakarauhitanga o te Tangata. This document is currently under review. Te Rūnanga o Tamaupoko relationship document framework guides the formal partnership agreement between the council and Te Rūnanga o Tamaupoko. This document is due for review in 2025. The council meets separately with both Rūnanga, with a focus on all levels – political, social, economic, environmental, and cultural – for the benefit of the whole district. Council also has a memorandum of partnership with Ngā Paerangi Iwi (NPI). NPI has maintained a consistent presence in the lower reaches of the Whanganui River for over a thousand years.

Giving effect to Te Mana o te Wai requires local authorities to actively involve Tangata Whenua (to the extent they wish to be involved) in freshwater management. Whanganui District Council gives effect by working with Hapū and Iwi with a focus on water supply and is working with Te Kaahu o Rauru as they are a major stakeholder for the existing water supply for Whanganui city. This has been achieved by the following:

- collaboration with Hapū and Iwi on a number of cultural tools and mechanisms.

- opportunities to be involved in collaborative work on the source water supply and underground aquifer within the Te Kaahui o Rauru rohe.
- relationship building with Hapū and Iwi which includes planting workshops, consents and visiting sites with existing assets within their rohe.
- continue to progress the global consent for water supply and any projects that evolve out of this work, i.e. mapping and modelling project with Te Kaahui o Rauru, rainwater tank redesign, Kai Iwi restoration planning, hīnaki workshops and access from Kai Iwi Marae to Kai Iwi Stream.

## Our vision – the four wellbeings

As per the Local Government Act 2002, the purpose of council is to promote the social, economic, environmental, and cultural wellbeing of communities in the present and for the future.

Work on a longer-term vision out to 2050 is still underway and we will be returning to the community for feedback on the vision later.

In the meantime, the four wellbeings are being utilised as the community outcome assessment framework for this Long-Term Plan 2024-34.

## Assumptions

The full suite of assumptions for our Long-Term Plan can be found in section 2 of our Long-Term Plan 2024-2034.

### Three waters reform

The recent change of government has resulted in the repeal of the Water Services Entities Act 2022 which aimed to reform three waters services

(water, wastewater and stormwater). Our Long-Term Plan 2024-2034 and this Infrastructure Strategy assume council continues to provide three water services to the community for the full period of the plan.

## Our key issues

We have identified five key issues that are impacting on our core infrastructure:

1. Changing legislative requirements and environmental standards
2. Sustainably looking after our assets
3. Managing increasing costs and affordability
4. Climate change and resilience
5. Growth, demographic and land use changes

## 1. Changing legislative requirements and environmental standards

Many of our infrastructure services have to meet standards that are set by external organisations, like drinking water standards set by Taumata Arowai or resource consent limits on discharges from our wastewater treatment plants set under consents issued by the regional council.

Many of the standards for our infrastructure-based services are increasing over time, generally to reduce risks to public or environmental health. Increasing standards sometimes mean that we have to sample or test more regularly (like drinking water testing), or that we have to invest in new assets to ensure compliance (like adding UV disinfection to our water supplies as an additional barrier of protection). Responding to increasing standards comes at a cost and brings affordability challenges for our community.

### Three waters (water supply, wastewater and stormwater)

Taumata Arowai was created by the Water Services Act 2021 and became the water services regulator from 15 November 2021, taking over from the Ministry of Health. Taumata Arowai sets standards and makes sure that drinking water suppliers like councils are meeting their obligations to provide safe drinking water. The introduction of the Water Services Act 2021 has resulted in a step change in what is required to operate a water supply safely. The Water Services Act 2021 also has a key objective and requirement to give effect to Te Mana o Te Wai, a concept focused on restoring and preserving the balance between water (wai), the wider environment (taiao) and people (tāngata), now and into the future.

So far, Taumata Arowai has put in place new drinking water standards outlining maximum acceptable values for contaminants, new drinking water quality assurance rules and new drinking water aesthetic values regarding taste and smell.

From 4 October 2023 Taumata Arowai are also responsible for monitoring and reporting on the environmental performance of wastewater and stormwater systems. It is expected that standards for wastewater and stormwater are also likely to increase into the future, as they have for drinking water.

Council's wastewater treatment plant ocean outfall discharge consent will expire in 2026. Generally speaking, resource consent renewals tend to result in higher discharge standards over time. There is uncertainty at this time regarding the future consent limits and what investment, if any, may be required to treat the wastewater to achieve those limits.

Stormwater discharges are currently either consented or a permitted activity under Horizons Regional Council's One Plan. It is possible that we will be required to treat stormwater before discharging in the future.

### Roading and footpaths

The One Network Framework (ONF) is a new national tool to classify roads and streets within the New Zealand transport network. The ONF evolves the One Network Road Classification (ONRC) to a two-dimensional classification framework focused on movement and place.

The ONF isn't designed to provide transport solutions, but it helps to establish the function of a road or street by providing a foundation for nationally consistent conversations within criteria called Street Families. When fully implemented in the 2024-27 funding block, the ONF will be used to benchmark performance and align performance measures and outcomes within available funding envelopes.

## 2. Sustainably looking after our assets

Managing \$1.5B of assets is a complex business. We are always striving to balance keeping our assets maintained and up to appropriate standards with affordability for our ratepayers.

### Roading and footpaths

#### *Service delivery model*

Council's road corridor maintenance contract is carried out by the Whanganui Roading Alliance, a collaborative partnership between Whanganui District Council and Downer.

Rigorous monitoring of costs and regular auditing demonstrate the cost effectiveness of this delivery model. The Roading Alliance mandate is to deliver value for money, exceptional customer service and sustainable stewardship of the road network through world class asset management using the latest technology (such as high-speed survey data conducted by laser sensors to model the network).

#### *Asset management approach*

The roading assets are managed in the RAMM (road assessment and maintenance management) database in accordance with the One Network Roading Criteria (ONRC) hierarchy currently evolving into the One Network Framework (ONF). Roading asset components are detailed in the database.

We are using improved network benchmarking metrics to identify and target opportunities for improvement. Our aim is to enhance the modelling of asset condition and the maintenance and renewal works required to meet service level targets for the lowest long-term cost. The

objective is to increase confidence that the current and planned work is sustainable.

It is critical that we have a clear understanding of the condition of our assets and how they are performing to support a data-driven, evidence based business case for investment. Condition data provides the basis for understanding of future spending patterns and helps us with management decisions regarding maintenance, replacement and renewals.

The development and continued use of condition assessment data will provide verifiable data to allow us to predict how particular asset types decay and allow us to predict remaining asset life.

The council undertakes robust condition surveys based on the risk of the asset (rate of change) to ensure the land transport assets are maintained, replaced or developed over the long term to meet required standards and predicted future demands.

Assets are renewed when it is more cost-effective in the long-term to replace rather than continue to maintain the asset. Longer-term asset renewal needs are identified through analysis of condition assessments.

Creating a renewals programme is a complex undertaking. Many processes are required to ensure a robust forward works programme of renewals is developed:

- data collection and preparation
- data analysis and scenario modelling
- field validation and model alignment
- economic justification
- outcome verification
- final programme formulation.

We use a set of strategy envelopes to help inform our treatment selection process. This helps create a first cut of possible treatment options based on the current and predicted condition of the asset.

#### *Data confidence and reliability*

We have a high level of confidence in our asset inventory, condition and demand data. Information is the foundation of our optimised activity management planning and advanced asset management planning and decision-making. We monitor the effectiveness of treatments and embed the practice of failure mode analysis into our daily work. Any knowledge gained is fed back into our treatment selection algorithms and asset performance modelling to inform and continuously improve future decision-making.

The recent upgrade to LED streetlighting has allowed us to update gaps in the minor asset database.

Five-yearly footpath condition ratings have also identified significant new information on their real-world condition.

#### **Three waters (water supply, wastewater and stormwater)**

##### *Service delivery model*

Management, compliance and technical supervision for the three waters networks is undertaken by a core team of in-house staff. Physical operations and maintenance of the networks are contracted out to specialist service providers, as is the construction of new assets.

##### *Asset management approach*

In 2018 we changed our asset management approach for our three waters assets, from an age-based asset renewal approach to a risk-based approach. The new approach is based on the fact that assets do not

necessarily fail at the end of their design life, but instead will be considered to have failed if their performance doesn't meet requirements.

Three waters assets were assessed to establish their 'level of criticality' (i.e. what the consequence of failure would be).

Data on age and other attributes were used to estimate the 'likelihood of failure'.

The product of these two variables is combined to form an 'asset priority attribute' (a risk rating). The priority attribute provides direction to assessments of asset condition and performance.

##### *Benefits*

This approach to asset management ensures:

- much flatter expenditure forecasts
- the ability to reduce risk without the need to increase budgets or create future expenditure "bubbles"
- planned preventative maintenance and renewal/improvement of critical assets
- reactive maintenance on non-critical assets
- renewal/improvement of assets strictly based on true performance
- proactive scheduling of renewal/improvement of assets which are underperforming
- improved understanding of the true levels of service provided by the assets
- a low risk profile to critical assets



- high confidence in data available on the condition and performance of critical assets
- the ability to implement increases/decreases to levels of service through targeted capital investment
- the ability to scale expenditure to suit the desired level of service and risk
- optimised capital investment.

### Risks

There is a risk that by using a risk-based approach we may inadvertently be running down our assets by not replacing them at the end of their design life. This could result in reduced asset performance.

### Data confidence and reliability

The ratings for data confidence and reliability for water supply, wastewater and stormwater are as follows:

|                      | Water Supply | Wastewater | Stormwater |
|----------------------|--------------|------------|------------|
| Asset register       | B            | B          | B          |
| Asset valuations     | A            | A          | A          |
| Asset condition      | C            | C          | C          |
| Asset criticality    | A            | A          | B          |
| Level of service     | A            | A          | A          |
| Performance measures | A            | A          | A          |
| Resource consents    | A            | A          | N/A        |
| Demand projections   | B            | B          | B          |
| Risk and resilience  | B            | B          | B          |

|                    |   |   |   |
|--------------------|---|---|---|
| Capex forecasts    | B | B | B |
| Opex forecasts     | B | B | B |
| Renewals forecasts | B | B | B |

| Grade | Label           | Description  | Accuracy     |
|-------|-----------------|--|--------------|
| A     | Highly reliable | Data based on sound records and recognised as the best method of assessment.   | +/- 5 – 10%  |
| B     | Reliable        | Large portion of data based on sound recordings but has minor shortcomings (e.g. old data, some missing documentation, reliance placed on unconfirmed reports and extrapolations). | +/- 10 – 15% |
| C     | Uncertain       | Significant data incomplete, unsupported or extrapolated from a limited sample.  | +/- 15 – 25% |
| D     | Very uncertain  | Data based on unconfirmed verbal reports, cursory inspection and judgement of experienced person.  | +/- 25 – 40% |

The overall data confidence rating for three waters is B (data based on sound record, procedures, investigations and analysis which is properly documented, but has minor shortcomings for example data is old, some documentation is missing and reliance is placed on unconfirmed reports).

Asset register and condition confidence ratings will increase as a project to capture parent/child assets in the water supply and wastewater activities commences in 2024. This will increase the reliability and confidence in the asset data.

The wastewater interceptor pipeline will undergo CCTV inspection over the next three-year period to clarify its condition.

Stormwater condition assessments are based on CCTV inspections, and these are prioritised based on criticality and the likelihood of asset failure. Since 2013 approximately 50 of priority 1, 2, 3 and 4 pipes have been inspected.

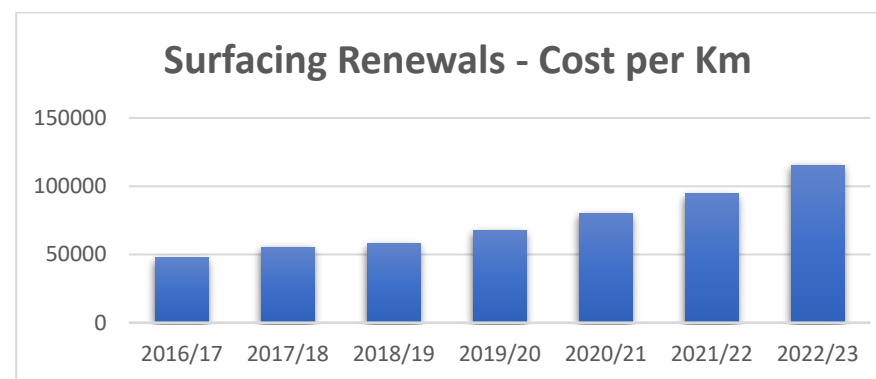
| Likelihood of Failure  | Criticality        |                   |                 |                 |                 |
|--|--------------------|-------------------|-----------------|-----------------|-----------------|
|  | Very Low           | Low               | Medium          | High            | Very High       |
| 1 (exceeds average age for material)                             | CCTV Non Priority* | CCTV Priority 3   | CCTV Priority 2 | CCTV Priority 1 | CCTV Priority 1 |
| 2 (within 10 years of average for material)                      | CCTV Non Priority  | CCTV Priority 4   | CCTV Priority 3 | CCTV Priority 2 | CCTV Priority 1 |
| 3 (within 30 years of average for material)                      | CCTV Non Priority  | CCTV Priority 5   | CCTV Priority 4 | CCTV Priority 3 | CCTV Priority 2 |
| 4 (More than 30 years from the end of average life for material) | CCTV Non Priority  | CCTV Non Priority | CCTV Priority 5 | CCTV Priority 4 | CCTV Priority 3 |

Stormwater and wastewater underground asset condition ratings will increase as further CCTV work is undertaken.

### 3. Managing increasing costs and affordability

In the years since the COVID-19 pandemic, inflation has increased substantially, pushing council’s costs for operating our services and constructing and replacing assets up significantly. Demand for contractors, services and goods like pipes and UV disinfection systems has increased substantially due to increased standards and large infrastructure programmes around the country. This has further driven costs up. We now get much less “bang for our buck” than we did a few years ago.

As an example, the cost per kilometres for renewing road surfaces has more than doubled over the past six years:



Keeping within our rates affordability limits while delivering to the required service standards is increasingly challenging across our core infrastructure activities.

Some of our strategies to address this situation are:

- seeking cost efficiencies wherever we can and looking at alternative solutions

- coordinating and phasing our work programmes where possible to ensure we get the best response to our procurement packages
- pursuing environmentally sustainable and cost-effective roading initiatives that foster our community resilience, health and safety, and encourage recycling of key materials (such as aggregate)
- leveraging our Whanganui Roading Alliance collaborative business relationship
- focusing on using single coat roading reseals where appropriate, while also lowering environmental impact through use of emulsion seals in preference to cutback bitumen
- prioritising preventative maintenance, targeting the early treatment of root causes of asset deterioration and failure (for example, targeting more drainage as a primary cause of pavement failure)
- using pipe relining as a renewal method for wastewater, as the cost is significantly less in comparison to conventional open trenching methods
- standardising equipment across sites in order to reduce the amount of spares required.

## 4. Climate change and resilience

The increased intensity and frequency of natural disasters and weather events means that we need to improve our planning for our critical assets to ensure that we are well prepared and risks to our critical assets and services are minimised.

The Whanganui district is vulnerable to weather-related events due to the river running through the city, our coastal location, and a district and catchment comprising steep hill country underlain by soft rock.

Climate change is impacting on the ability of our stormwater and wastewater networks to perform effectively. It is also having significant effects on our roading network.

There have been seven states of emergency declared over the past 33 years, meaning we average around one event every five years.

Our climate change projections are:

### Whanganui climate projections

Whanganui is already feeling the effects of climate change. Our climate is getting warmer and wetter, and we are facing more frequent extreme weather events and flooding. This is projected to continue and accelerate, though the worst effects can be mitigated by a rapid global reduction in greenhouse gas emissions.

#### Temperature



- » To rise by 0.8°C by 2031-2050
- » To rise by 1.8°C by 2081-2100



- » More hot days >25°C
- » Greatest warming in summer/autumn



- » Earlier spring melt
- » Fewer frost days

#### Rainfall



- » Wetter conditions with annual precipitation up 1% and winter rainfall up 6% by 2031-2050
- » Winter rainfall up 11% by 2081-2100



- » The frequency and magnitude of storm-related events will increase



- » Increased high country erosion
- » Increased flooding risks and river sedimentation

#### Planning for sea level rise



- » Increased coastal erosion and flooding



- » A rise of 0.3-1.0m by 2100
- » 0.2-0.5m by 2060

Regionally, the areas most at risk from a 1-in-100 year storm tide event and sea level rise are in Horowhenua and Whanganui.

## Where are we vulnerable?

### *Roading and footpaths*

- Roothing pavement performance is directly related to moisture content.
- Our rural papa country roading network struggles to absorb more regular and heavier inclement weather events.
- Disruptions due to flooding, landslides, fallen trees and power lines.
- Forestry harvesting causes increased impact on roads when they are wet and vulnerable.
- Our bridges are ageing and more vulnerable to weather events.

### *Water supply*

- Reduced security of water supply as climate change and droughts impact on our water sources.

### *Wastewater*

- Increased inflow and infiltration of stormwater into the wastewater network, leading to more frequent and higher volume overflow events.

### *Stormwater*

- Increased rainfall and sea levels will increase the frequency and volume of system flooding.
- In the future there is a great potential for saltwater intrusion in coastal zones, changing flood plains and a great likelihood of damage to infrastructure and properties.
- Levels of service provided by the stormwater system are likely to deteriorate over the long term. Parts of the key industrial area (Heads

Road/Gilberd Street) could lose their stormwater service if sea levels rise due to their proximity to the Whanganui estuary as stormwater would not drain from this area using conventional methods.

## How are we improving our resilience?

The Manawatu-Whanganui councils are collectively undertaking a climate change risk assessment, led by Horizons Regional Council. The risk assessment will give a comprehensive overview of the climate change risks facing the region within six community values: natural world, wellbeing, business, infrastructure, cultural and governance.

Climate change risk is considered in creating new or replacement assets, ensuring redundancy is built in. Some specific adaptation mechanisms for our core infrastructure are:

### *Roading and footpaths*

- Prioritising drainage – a road with adequate drainage lasts 30 percent longer compared to the same road without adequate drainage.

### *Water supply*

- We are proposing to investigate an alternative bore location to mitigate risk of reliance on one primary aquifer.

### *Wastewater*

- A wet weather performance capital improvement programme is proposed in this Long-Term Plan 2024-2034.

### *Stormwater*

- Since 2018 we have been undertaking a stormwater capital improvement programme focussing on at-risk areas to reduce the risk of flooding and inundation during an unusually large event.
- We are developing a community-led climate change adaptation plan with the Putiki community which has a high flood risk (in conjunction with Massey University researchers).

## 5. Growth, demographic and land use changes

### Population growth

The Whanganui district had an estimated population of **48,700** as of **2022**. Whanganui's tide turned in 2014 when the population began to grow after declining in all but two years since 1996. Annual population growth in the district averaged 1.1 percent or around 500 people per annum over the five years to 2022, not far behind the national average of 1.2 percent.

One of the factors that facilitated this growth was available housing stock, with Whanganui having only relatively recently (2018) surpassed its 1996 population level of 46,000. However this capacity is now fully utilised and we find ourselves in a housing shortage, like many areas around the country.

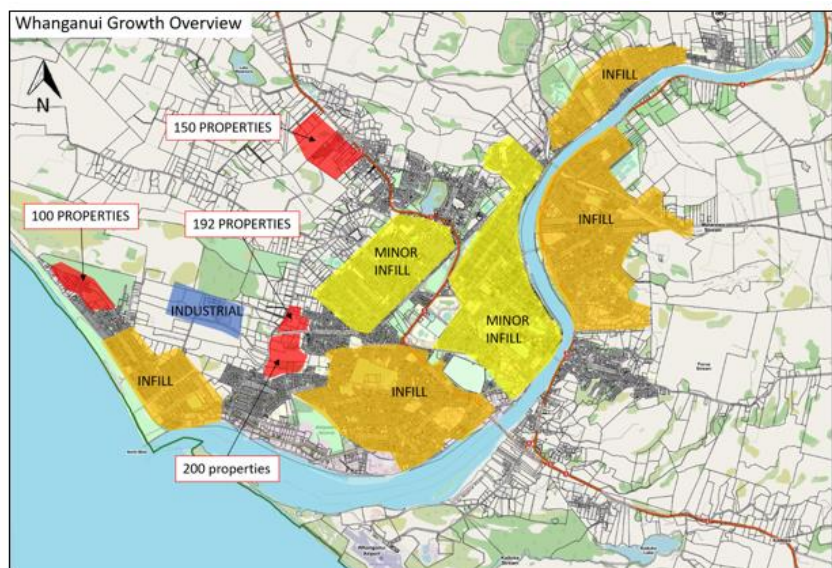
Infometrics estimates put Whanganui's forecast population growth at an average of 0.8 percent or around 370 people per year until 2034 under their high growth scenario. This would see the district grow to a population of **53,000 by 2034**. Population growth is expected to slow down beyond 2034 to around 180 people per annum over the following 20 years, based on Infometrics medium growth scenario for the 2034-54 period.

### Dwelling growth

Dwelling growth is expected to range between **100–130 dwellings per annum over the 2024-33 period**, reducing to around 40 dwellings per annum between 2034-54.

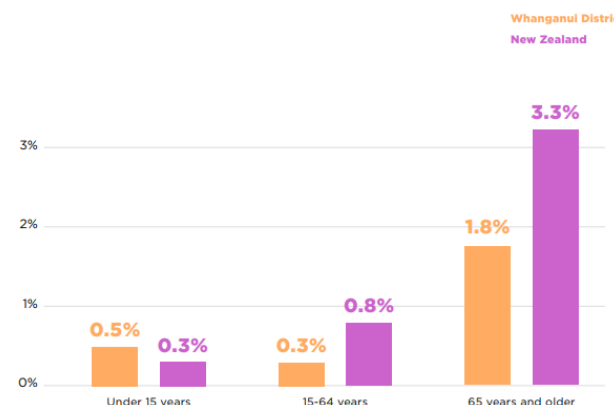
Growth is planned through the Springvale Structure Plan, the Mill Road Structure Plan and the Otamatea Structure Plan, along with infill across the city.

Managing growth is a challenge and also an opportunity. Growth adds vibrancy and attracts businesses, investment and events to the district. Investment in infrastructure is required to support growth.



### Population demographics

Whanganui's population is ageing, with the 65 and over age group expected to grow by 1.8 percent in the next ten years compared to under 15's growing by 0.5 percent and those 15 – 64 years growing the least at 0.3 percent.



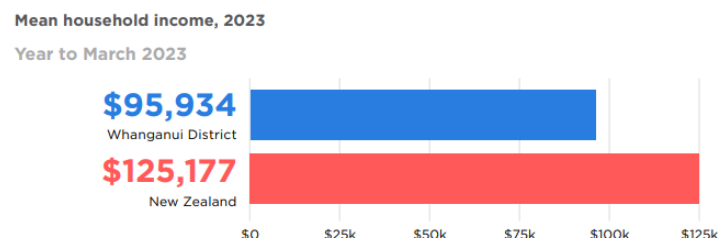
Whanganui has a lower percentage of its population in the working age group than the national average. The dependency ratio (the number of under 15 year olds and over 65 year olds as a proportion of the rest of the population) was 70.3 percent in the Whanganui district at June 2022, significantly higher than New Zealand's dependency ratio of 54.4 percent.

The community's ability to pay for services is affected by its current and future wealth and income and the number of people who can share the cost of council-provided services.

Household income is a fundamental measure of living standards and reflects the economic health of an area. Household income is derived from multiple sources including earnings from employment (wages and salaries), earnings from self-employment, allowances, benefits and superannuation.

The 2023 average household income for the Whanganui district is \$95,934 compared to the national mean household income of \$125,177. Of 66 territorial authorities, Whanganui ranks 45th for household income.





Further information on our community profile now and into the future can be found in our [Whanganui District Snapshot 2023](#)

### COVID-19

The Whanganui district was relatively fortunate to be less affected by COVID-19 than many other areas around the country.

The diversity of our industrial sector, our emphasis on agriculture, food production and processing, and our lack of reliance on tourism meant that our economy was largely unaffected by COVID-19.

COVID-19 has, however, had lasting impacts on the social wellbeing of our community.

### What does all of this mean?

Compared to national averages, Whanganui's population is less ethnically diverse, less well educated and less wealthy.

The non-working age proportion of our population (under 15s and over 65s) is much higher than national averages and forecast to grow at a higher rate than the working age population. This is one of the reasons that our average household incomes are significantly lower than national averages.

Rates affordability is a significant issue for our community, especially in the current cost of living crisis. This has been outlined further in our

Financial Strategy in this Long-Term Plan 2024-34 which sets the limits on annual rates increases and limits on levels of debt.

As a result we have to be creative and efficient to keep our assets up to standard with the least amount of ratepayer financial input.

### How we're moving forward

We have come up with a six-point plan to help us move forward:

#### 1. Encouraging population growth over the next 10 years

We have committed to stimulating population growth within our district by ensuring we can meet the needs of a growing community. If more families, individuals and businesses move to Whanganui, we'll be able to spread the rating costs across more people helping to keep rates lower.

#### 2. Increasing non-rates revenue

Although rates are our main source of income, we can also lean on other methods. For example, we are proposing to increase a number of user fees and charges including building and resource consent fees, trade and tankered waste fees, and swimming pool fees.

#### 3. Finding alternative funding sources

We will always seek external funding such as central government or grant funding where possible. We've set a target to ensure that some projects will only go ahead if a good portion of the project cost is funded from elsewhere, taking the strain off our ratepayers.

#### 4. Finding efficiency savings

We're focused on working smarter and finding efficiencies where possible. To name a few examples, we have undergone a management



restructure, postponed technology software projects and reduced the number of council vehicles.

#### **5. Reducing levels of service**

The council has carefully identified services that could be cut or closed to keep costs down. Through this Long-Term Plan 2024-2034 the community will have the opportunity to provide feedback on these proposals.

#### **6. Selling assets to repay debt**

The council owns many assets which could be sold to repay debt and reduce costs considerably, which would then offset rates. We're asking through this Long-Term Plan how comfortable the community are with our broad proposal to sell assets.

## Current state – Roading and footpaths

This activity ensures a safe, efficient and affordable transport network that helps with the movement of people, goods and services. This group includes roads, footpaths, cycleways, parking facilities and bridges; public transport infrastructure (such as bus shelters); and traffic control mechanisms (such as signage, lighting and road markings).

### Critical assets

The critical assets for the roading and footpaths group are:

- Whanganui city bridge
- Dublin Street bridge

### Asset condition

Data on road condition is collected through road roughness and condition rating surveys. Road condition is monitored throughout the year by council’s maintenance contractors via the Alliance roading contract.

The average condition rating for roading and footpaths assets is fair.

| Asset Group      | Asset Type                 | Average Condition |
|------------------|----------------------------|-------------------|
| Pavements        | Roads and pavements        | Fair              |
| Structures       | Bridges and large culverts | Fair              |
|                  | Retaining structures       | Fair              |
| Traffic services | Traffic facilities         | Good              |

|                               |                 |      |
|-------------------------------|-----------------|------|
| Drainage                      | Drainage        | Fair |
| Street lights                 | Street lighting | Good |
| Footpaths and cycleways       | Footpaths       | Fair |
| Other features and activities | Car parks       | Fair |

### Pavements

Under investment in road maintenance and renewals over the past decade has resulted in a significant deterioration of our network.

The 2021-24 level of road pavement resurfacing of 4.4 percent per annum is not adequate to preserve the condition of the network. Around 70 percent of sealed surfaces have poor or very poor surface defect condition ranges.

### Dublin Street bridge

Dublin Street bridge is located between the northern end of Dublin Street and Anzac Parade (State Highway 4) in Whanganui East. It spans 309m over the Whanganui River. The through truss bridge was constructed in 1914 and carries only one lane each direction for traffic, along with a separate cycleway and walkway both sides. The bridge is in poor condition. It is past its use by date as a vital asset and is extremely vulnerable, especially the piers, due to river deterioration.

The bridge forms a safe, effective and efficient link from the Whanganui East suburb via Anzac Parade, providing access to essential services, business and trade commute, and schools in the growing Whanganui city.

A structure of this type would normally have a useful material life of 100 years, meaning that it currently exceeds its expected life by 10 years and climbing.

The last detailed report on the bridge's condition and performance clearly states that it is reaching the end of its service life. It is not fit for purpose to carry modern vehicles, due to serviceable width and carrying capacity. The posted weight limit has been reduced from Class 1 (44 tonnes) to a mere 6 tonnes in response to the safety considerations. The strategic transport model developed by WSP has confirmed that the capacity of the Dublin Street bridge has been exceeded.

Logging cartage from the Kauarapaoa has a historic destination across the river to the East Town rail yard. This extensive logging, vital to New Zealand's gross domestic product, is having to cart past schools, to our central business district and out again to detour away from this bridge. This is in direct contrast to our "road to zero", "safer journeys around schools" and "climate change transport emissions reduction" mandates.

NZTA maintenance ideally requires this route as a lifelines contingency for flood recovery operations and a heavy traffic bypass lifeline detour when an emergency occurs along Anzac Parade. This is out of action currently apart from light vehicles, due to the weight restriction. Heavy commercial vehicle reliability is heavily restricted in the event of future emergencies.

Significant traffic growth in Whanganui over the last three years has exacerbated travel time delays and frustration, and the increase in users is magnifying deterioration of this bridge.

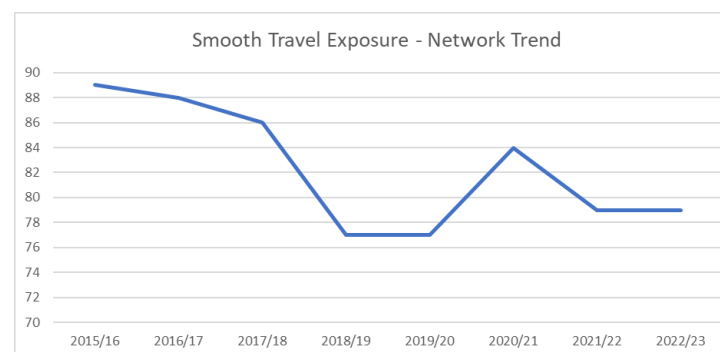
### *Whanganui city bridge*

The Whanganui city bridge's condition rating is good. The bridge is part of the regular principal bridge inspections. The last inspection was undertaken in 2022.

Traffic modelling undertaken in 2023 has confirmed the traffic efficiency capacity of the city bridge is likely to be exceeded around 2054. Failure to replace the Dublin Street bridge would see the city bridge's capacity exceeded before 2054.

### Asset performance

Smooth travel exposure is a combination of the above road roughness data and traffic loading. The graph below plots the percentage of vehicle kilometres travelled over smooth roads. Currently 79 percent of all road users (as of 2023) experience smooth travel within the Whanganui district. Whanganui has slipped in recent years and is now well below the national average of 88 percent. A full network survey is planned for March 2024.



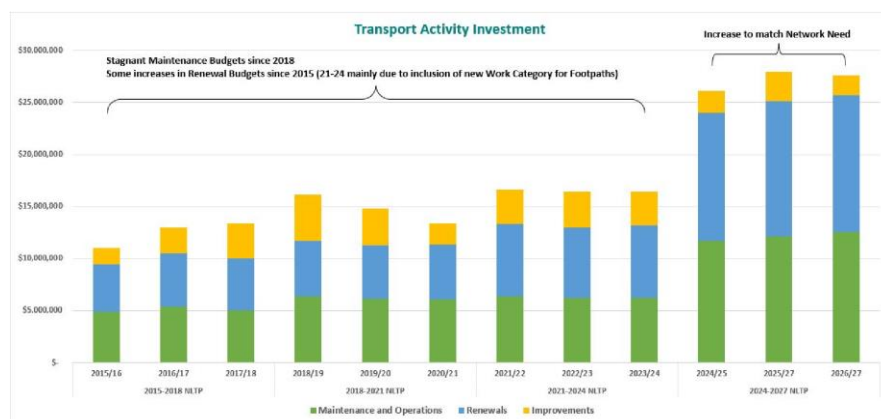
The condition of footpaths is improving due to increased investment over the past few years as a result of NZTA including a new subsidised work category for footpaths.

## Looking ahead - Roothing and footpaths

### Key roading and footpaths issues

*Requirement for a step change in the level of funding provided to operate and maintain our roading and footpath networks*

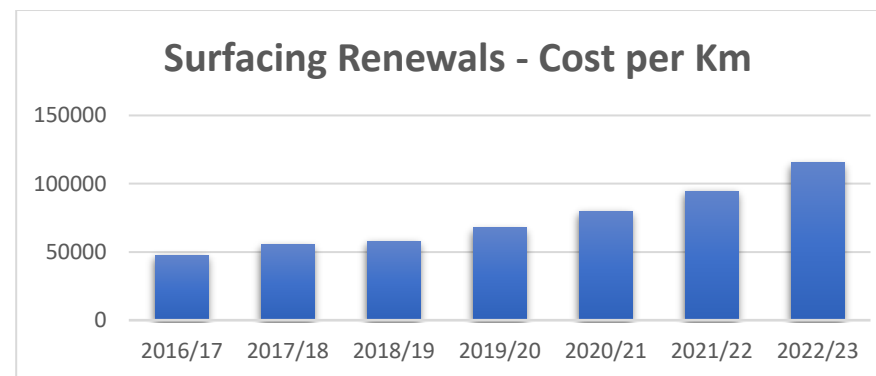
Funding for our roading network has been relatively flat lined for the last 10 years. The effect of this has been an overall deterioration in network condition, observed through Smooth Travel Exposure measures and customer views surveys.



With inflation pushing costs up substantially in the post-COVID environment, maintaining the current funding levels would see much less work being done on our roading and footpath networks. This would further affect their condition and the level of service we provide to users.

Funding levels for roading and footpaths currently sits at around \$16 million per annum. In order to fully maintain our network and reinstate service levels, funding of around \$27 million per annum would be required. This level of funding is very unlikely to be accepted for

subsidisation by NZTA as their funding envelope is significantly oversubscribed. We are also constrained by rates affordability. As a result, we need to make some trade-offs to balance levels of service and costs.



See "Significant decisions" section below for further information.

### *Drainage, climate change and resilience to natural hazards*

The roading network is impacted by challenging geology, topography and weather, resulting in increased resilience issues and high repair costs when unplanned events occur.

Steep terrain and erodible soils make the Whanganui district highly susceptible to the effects of heavy and prolonged rain events, affecting predominantly the rural transportation network. The district can expect to receive flooding to various degrees of intensity in any particular year. Climate change is increasing the vulnerability of the rural roading network.

Reinstatement works to restore road access and repair damaged infrastructure adds considerable pressure to available resources, both physically and financially. An amendment to NZTA's definition of

emergency works has had the effect of making funding for emergency events harder to obtain.

#### *Changing demands and needs*

The form and function of the road network are not meeting the changing demands and needs, resulting in decreasing levels of service and increasing reactive interventions.

The increased volume and size of trucks on Whanganui's road network is putting pressure on roading infrastructure and causing concerns for council. Government legislation is promoting heavier, longer, wider and higher vehicles to increase freight efficiencies within the constraints imposed by the local transportation network.

The changing needs (e.g. mobility) and expectations (e.g. active modes) of the community require investment to meet levels of service for all transport modes.

#### *Impacts of forestry on the roading network*

Significant volumes of harvestable timber are reaching maturity in the Whanganui district, and the transport of this timber is having a significant impact on roads across the district. Many of the roads where the forests are located are not designed to accommodate modern transporters, due to their sizes, lengths and axle weights and these vehicles are substantially impacting on road surfaces. Many of the affected roads have other local residential users sharing the roads with forestry related vehicles, resulting in safety challenges.

*See "Significant decisions" section below for further information.*

#### *Replacement of the Dublin Street bridge*

The Dublin Street bridge is a critical asset as it provides a key transport network connection to the suburbs on the east side of the Whanganui

River. The bridge was built in 1914, and at 110 years old it is approaching the end of its useful life. Planning for the bridge's replacement has begun - officers are currently working on the business case for the bridge's replacement for NZTA. A new bridge will be Class 1 rated and able to carry truck and trailer units, reducing the heavy transport travelling via the city bridge.

Funding for design and preparatory works is budgeted for 2024/25 to 2027/28 (\$2.6 million). Replacement of the bridge is planned for 2028/29 – 2029/30, at an estimated cost of \$66.3 million. The replacement of the bridge will rely on securing 62 percent investment from NZTA or other non-council funding sources.

*See "Significant decisions" section below for further information.*

#### **Proposed level of service changes**

The draft plan proposes increased investment in roading and footpaths to improve the quality of our roading pavements over a 10-year period. The draft plan also proposes replacement of the Dublin Street bridge which will improve levels of service by allowing heavy traffic to cross the Dublin Street bridge rather than having to travel via the City bridge.

## Significant decisions – Roading and footpaths

The key roading and footpaths decisions required are:

|   |  |
|---|--|
| <p><b>Requirement for a step change in the level of funding provided to operate and maintain our roading and footpaths networks</b></p> <p><i>Drivers:</i> Sustainably looking after our assets<br/>Managing increasing costs and affordability</p> <p><i>Decision required:</i> 2024 as part of the Long-Term Plan</p> <p>Funding for our roads and footpaths networks has been relatively flat lined for the last 10 years, and the condition of our pavements is deteriorating. With inflation pushing costs up substantially in the post-COVID environment, maintaining the current funding levels would see much less work being done on our roading and footpaths networks, which would further affect their condition and the level of service we provide to users.</p> <p>A decision on funding levels for roading and footpaths is required as part of this Long-Term Plan 2024-2034. The decision we make will also depend on how much NZTA is prepared to subsidise as our community cannot afford us to undertake the required works without NZTA’s financial support. We are unlikely to have confirmation of what NZTA will fund until after the Long-Term Plan is adopted.</p> |  |
| <p><b>Option 1:</b></p>   | <p><b>Increase funding to the required levels in a staged approach over the next three years 2024/25 to 2026/27 (\$3.6 million per year funding increase)</b></p> <p>This option would allow us to improve the condition of the roading network in a relatively short period of time. However, it would have substantial financial impact on ratepayers and mean that we would breach our financial strategy rates increase limit. It is unlikely that NZTA would support this level of increase in funding which would mean that council would have to 100 percent fund parts of the programme, pushing extra cost onto ratepayers.</p> |
| <p><b>Option 2:</b></p>   | <p><b>Increase funding to the required levels in a staged approach over the next eight years 2024/25 to 2031/32 (\$1.4 million per year funding increase)</b></p> <p>This option will allow us to gradually improve the condition of the roading network while mitigating the impact on ratepayers. The budgeted increases are more likely to be acceptable to NZTA and to secure subsidisation.</p>   |

|                                 |   |
|---------------------------------|---|
|                                 | <p>The roading team will work on stretching available funding as much as possible by focusing on essential maintenance and renewal requirements, using single cost seal where possible, and reverting smoother but more expensive asphaltic concrete road surfaces to cheaper chip seal.</p> <p>More road closures will be necessary to ensure planned roadworks can lessen traffic management costs. We will see small improvements over time in the Smooth Travel Exposure (roughness) measure. Levels of service around aesthetic maintenance (e.g. vegetation control, rubbish and litter clearing) will be compromised to focus on the small improvements in maintenance. Very careful management in the short to medium term, until improvements come to fruition, will be crucial to ensure safety levels are not unduly compromised to a point where excessive fatalities and serious injuries prevail.</p> |
| <p><b>Option 3:</b></p>         | <p><b>Do not increase funding for roading and footpaths (\$16.0 million)</b></p> <p>This option would alleviate any rates increase for roading and footpaths, but the network would continue to deteriorate to an increasing degree. Pavement deterioration occurs at an exponential rate once the pavements reach a certain level of disrepair.</p> <p>The smoothness of roads would deteriorate well below current levels (which are already substantially below New Zealand averages), with increased ruts on sealed roads and corrugations and loose gravel on unsealed roads. This would impact on vehicle maintenance costs. Road safety is likely to be impacted. Pavements would be likely to deteriorate to the point where expensive renewals would be required. Footpath condition would deteriorate, significantly impacting the health and safety of our ageing population.</p>                        |
| <p><b>Preferred option:</b></p> | <p>Our preferred approach is option 2; to increase funding to roading and footpaths in a staged approach over the next eight years. This will allow us to reduce the current level of pavement deterioration. However, we will still need to accept a delay in getting the network back up to appropriate condition in order to mitigate the effect on rates.</p>   |

|  |  |
|--|--|
| <p><b>Impacts of forestry on the roading network</b></p> |  |
| <p><i>Drivers:</i></p>                                   | <p>Sustainably looking after our assets<br/>         Managing increasing costs and affordability</p> |
| <p><i>Decision required:</i></p>                         | <p>2024 as part of the Long-Term Plan</p>  |

Significant volumes of harvestable timber are now reaching maturity in the Whanganui district and the transport of this timber is having a significant impact on roads across the district. Many of the roads where the forests are located are not designed to accommodate modern transporters due to their sizes, lengths and axle weights and these vehicles are substantially impacting on road surfaces.

The targeted rate on exotic forestry properties was put in place in 2018/19 and set to collect \$135,000 per year. The rate was set on the basis of forestry paying 60 percent of costs, with the remaining 40 percent assumed to be public good and paid by all ratepayers. The amount collected by the rate has remained unchanged since that time. We signalled an increase in the rate would be likely from 2024/25 due to the maturity profile of the forests. As forecast, with increasing impacts of forestry on roading network costs, it is now appropriate to review the level of the rate.

A decision on the appropriate level of funding from forestry exotic properties is required in 2024.

|                          |   |
|--------------------------|---|
| <b>Option 1:</b>         | <b>Retain the forestry exotic targeted rate at the current level of \$135,000 per annum</b><br><br>This would push the increase in forestry related roading costs entirely onto the general roads and footpaths rate paid by all ratepayers.  |
| <b>Option 2:</b>         | <b>Increase the forestry exotic targeted rate to \$287,000 per annum (60 percent forestry, 40 percent public good)</b><br><br>This option ensures that forestry exotic properties continue to pay 60 percent of forestry related roading costs, with 40 percent being funded by the general roads and footpaths rate. |
| <b>Option 3:</b>         | <b>Increase the forestry exotic targeted rate to \$480,000 per annum (100 percent forestry)</b><br><br>This option would see forestry exotic properties paying for all forestry related roading costs, with no public good contribution from the general roads and footpaths rate.                                    |
| <b>Preferred option:</b> | Our preferred approach is option 2 – we propose to increase the forestry exotic targeted rate from \$135,000 to \$287,000 from 2024/25 and to continue with the current 60 percent forestry, 40 percent public good approach going forward throughout the period of the plan.   |

### Replacement of the Dublin Street bridge

*Drivers:* Sustainably looking after our assets



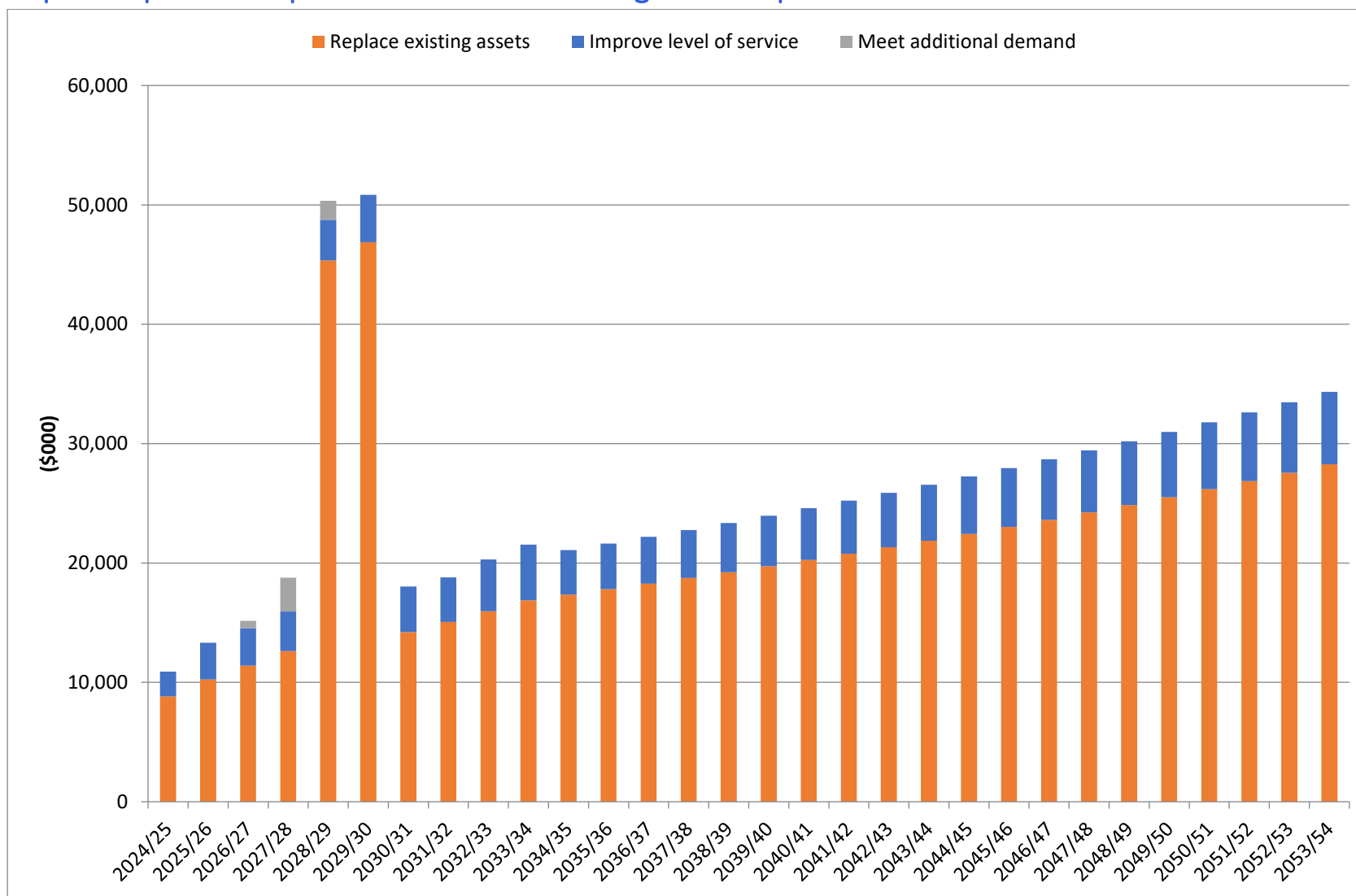
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|                         | <p>Managing increasing costs and affordability<br/>Climate change and resilience</p> <p><i>Decision required:</i> By 2027</p> <p>The Dublin Street bridge is a key transport network connection to the suburbs on the east side of the Whanganui River. The bridge was opened in 1914. It is now 110 years old and approaching the end of its useful life. Planning for the bridge’s replacement has already begun, with officers currently preparing a business case for NZTA. Replacement of the bridge is planned for 2028/29 to 2029/30 with planning, design and engagement in the years leading up to this. The full project is expected to cost \$66.3 million. A new bridge will be Class 1 rated and able to carry truck and trailer units, reducing the heavy transport travelling via the city bridge.</p> <p>The replacement of the Dublin Street bridge relies on securing 62 percent funding from NZTA or other non-council funding sources (e.g. other central government funds). Council’s share of the cost of the project (38 percent or \$25.2 million) will be funded via loans.</p> |
| <p><b>Option 1:</b></p> | <p><b>Replace the Dublin Street bridge at an estimated cost of \$66.3 million with 62 percent external funding (NZTA and/or other non-council funding). This leaves \$25.2 million to be funded by council via debt.</b></p> <p>This would retain the critical bridge connection to Whanganui East and State Highway 4. A new bridge will be Class 1 rated and able to carry truck and trailer units, reducing the heavy transport travelling via the Whanganui city bridge.</p>   |
| <p><b>Option 2:</b></p> | <p><b>Replace the Dublin Street bridge with less than 62 percent external funding. This will mean council needs to contribute more than \$25.2 million to the \$66.3 million project.</b></p> <p>This option achieves the replacement of the critical bridge, but at a higher cost to ratepayers. Every \$1 million extra that council has to borrow will add \$3.50 per year to average rates for the next 25 years.</p>  |
| <p><b>Option 3:</b></p> | <p><b>Undertake significant maintenance work to extend the life of the Dublin Street bridge by 20 years. The cost of this is expected to be \$29.2 million over the 20 year period.</b></p> <p>The option to extend the life of the bridge by 20 years would cost 44 percent of the cost of a new bridge. It is also likely that the bridge would need to be downgraded from a maximum weight of 6 tonnes (already reduced) to only 3.5 tonnes for the last five years. In addition, there is minimal resilience as a significant flood event could push heavy debris into the deteriorating piers, cutting short the bridge’s extended life expectancy.</p>   |

|                          |  |
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| <b>Option 4:</b>         | <b>Demolish and remove the Dublin Street bridge and reconfigure the roading network to manage the loss at a cost of \$10 million (rough order cost only dependent on Te Awa Tupua consultation on differing methodology options)</b><br><br>This would remove the more direct link to the suburbs on the east side of the Whanganui River and would add pressure to the Whanganui city bridge. The city bridge would be swamped very quickly with unreasonable pressure placed on the river frontage, State Highway 4 and Taupo Quay amenities, overwhelming the Victoria Avenue traffic lights and surrounding intersections to the central business district. This would cause significant disruption and unnecessary vehicle emissions. |
| <b>Preferred option:</b> | Our preferred option is option 1 – to replace the Dublin Street bridge with the assistance of NZTA and/or other central government funding.  |

## Key capital projects 2024-34 – Roading and footpaths

| <b>Capital expenditure to meet additional demand (\$000)</b>   | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Manuka St and Mill Rd upgrade                                  | -              | -              | 597            | 2,784          | 821            | -              | -              | -              | -              | -              |
| Fox Road Upgrade   | -              | -              | -              | 54             | 766            | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>-</b>       | <b>-</b>       | <b>597</b>     | <b>2,837</b>   | <b>1,587</b>   | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       |
| <b>Capital expenditure to improve level of service (\$000)</b> | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Shared pathway counters  | 80             | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Pākaitore Reserve paving and crossing                          | -              | -              | -              | 107            | 109            | 614            | -              | -              | -              | -              |
| Rapanui Rd trail   | -              | -              | -              | -              | -              | -              | 399            | 233            | 771            | 1,028          |
| Low cost/low risk projects                                     | 2,000          | 3,081          | 3,143          | 3,212          | 3,282          | 3,351          | 3,422          | 3,490          | 3,560          | 3,628          |
| <b>Total</b>   | <b>2,080</b>   | <b>3,081</b>   | <b>3,143</b>   | <b>3,319</b>   | <b>3,392</b>   | <b>3,966</b>   | <b>3,821</b>   | <b>3,723</b>   | <b>4,331</b>   | <b>4,655</b>   |
| <b>Capital expenditure to replace existing assets (\$000)</b>  | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Footpaths and berms replacements                               | 1,141          | 1,218          | 1,280          | 1,308          | 1,337          | 1,365          | 1,394          | 1,421          | 1,450          | 1,477          |
| Footpaths and berms replacements affordability reduction       | (616)          | (478)          | (331)          | (177)          | -              | -              | -              | -              | -              | -              |
| Dublin Street Bridge replacement                               | 250            | 514            | 786            | 1,071          | 32,824         | 33,513         | -              | -              | -              | -              |
| Unsealed road metalling  | 552            | 589            | 619            | 633            | 647            | 660            | 674            | 688            | 702            | 715            |
| Sealed road resurfacing  | 3,781          | 4,038          | 4,243          | 4,336          | 4,431          | 4,525          | 4,620          | 4,712          | 4,806          | 4,898          |
| Drainage renewals  | 1,964          | 2,098          | 2,204          | 2,253          | 2,302          | 2,351          | 2,400          | 2,448          | 2,497          | 2,544          |
| Pavement rehabilitation  | 3,469          | 3,600          | 3,782          | 3,865          | 3,950          | 4,033          | 4,118          | 4,200          | 4,284          | 4,366          |
| Structures and components replacements                         | 700            | 748            | 785            | 802            | 820            | 837            | 854            | 871            | 889            | 906            |
| Traffic services replacements                                  | 577            | 935            | 657            | 672            | 687            | 701            | 716            | 730            | 745            | 759            |
| Roading replacements affordability reduction                   | (2,994)        | (3,023)        | (2,619)        | (2,141)        | (1,641)        | (1,117)        | (570)          | -              | 593            | 1,209          |
| <b>Total</b>   | <b>8,825</b>   | <b>10,239</b>  | <b>11,406</b>  | <b>12,621</b>  | <b>45,357</b>  | <b>46,868</b>  | <b>14,205</b>  | <b>15,071</b>  | <b>15,966</b>  | <b>16,873</b>  |

## Capital expenditure profile 2024-54 – Roading and footpaths



## Current state – Water supply

Whanganui District Council provides five water systems across the district. Water systems play a vital role in ensuring the health and safety of communities, including through the provision of water for residents and businesses, and for firefighting purposes in the urban area.

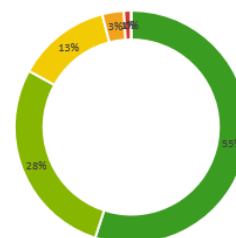
### Critical assets

The critical assets for water supply are:

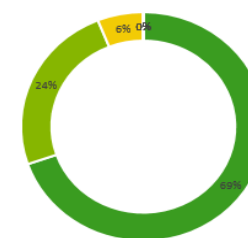
- Kai Iwi bores 1, 2 and 4
- Heloise, Pākaraka and Fordell bores
- Reservoirs No 1, 2 and 3
- Kai Iwi supply main and bridge crossings (Kai Iwi and Gilligan’s bridges)
- Castlecliff main
- Trunk mains
- Mains servicing critical users
- Bastia Hill tower

### Asset condition

WS Below Ground Asset Condition



WS Critical Asset Condition



■ Excellent ■ Good ■ Average ■ Poor ■ Very Poor ■ Not assessed ■ Excellent ■ Good ■ Average ■ Poor ■ Very Poor ■ Not assessed

The current condition of Whanganui District Council water supply assets is classified as being good to excellent, with over 80 percent of the underground and critical assets within this rating.

This overall condition rating will continue to increase with the continuation of the spiral welded pipe replacement capital project.

A project to capture and condition rate parent/child complex assets is being investigated and will commence in 2024. This will further increase the reliability and confidence in the water asset data.

### Asset performance

Whanganui’s water supply was 100 percent compliant with parts 4 and 5 of the Drinking Water Standards 2005 (revised 2018), meeting 100 percent bacterial and protozoal compliance through to December 2022.

From 1 January 2023 reporting has begun against the Drinking Water Quality Assurance Rules (DWQAR) introduced by Taumata Arowai. Under these rules, all active bores for the Whanganui supply are currently classified as Class 1 or Interim Class 1. We are continuing the sampling

regime to meet Class 1 status; however, retaining this status is precarious.

The bacterial standard for part 4 compliance under the new rules was not met for the period 1 January 2023 to 30 June 2023. There were also a small number of residual chlorine samples that did not meet minimum requirements. Where samples were non-compliant, we took prompt action and there was no risk to public health, as confirmed by Wai Comply in their independent assessment.

Kai Iwi bore number 3 has been isolated because in its current state it does not meet the requirements under the DWQAR, being a shallow bore with a potential effect on the Kai Iwi Stream.

## Looking ahead - Water supply

### Key water supply issues

#### *Compliance and increasing regulatory standards*

The introduction of the Water Services Act 2021 has resulted in a step change in what is required to operate a water supply safely. The new water regulator Taumata Arowai introduced the DWQAR on 1 January 2023 to ensure all communities have access to safe and reliable drinking water every day.

The Water Services Act 2021 calls for a multi-barrier approach to water safety. Chlorination provides an active barrier to kill or inactivate bacteria and viruses in the water and protect the water from recontamination in the reticulation. However, chlorine is not effective at killing or inactivating protozoa. For protozoa the supplies rely on preventing contamination from entering the source water (bore supplies).

All of our active bores have Class 1 or Interim Class 1 status under the new DWQAR. Retention of Class 1 or Interim Class 1 status such that no

protozoa barrier is required by the DWQAR is precarious, relying on the absence of any microbiological indicators such as total coliforms or *E.coli*. The total coliform test is very sensitive and as a result four of the six active Whanganui bores currently require daily sampling representing a significant workload and expense. There is also a two-year timeline for the drinking water supplier (in this case, council) to prove that the bore water is safe in this manner. As an example, if Kai Iwi bore 4 has another positive result before August 2024, then a protozoa barrier (UV treatment) will be required according to the DWQAR.

We have also identified a small number of consumers (approximately 30 connections) who are on a non-chlorinated water supply. This does not meet our obligations to provide safe drinking water under the new rules of the Water Services Act 2021.

The Act makes it compulsory for all water supplies to take all practicable steps to comply with the new Quality Assurance Rules 2023. Improvement works to improve water supplies to comply with latest standards will result in an increase in level of service to the community.

Central government via the Ministry of Health has indicated that fluoridation of water sources will be required across the country. At this stage there is not a firm timeframe for when Whanganui's water supply will need to be fluoridated.

*See "Significant decisions" section below for further information.*

#### *Source water availability*

With ageing bore infrastructure approaching end of life, this is an opportune time to investigate future source water supplies and consider broadening the location of those supplies so that we can increase redundancy, reduce risk and future proof the supply.

The majority of Whanganui's water is sourced from Kai Iwi, which means we have a level of risk if there are any natural events affecting the Kai Iwi area or other issues affecting the aquifer or the bore infrastructure.

Kai Iwi bore number 3 has been isolated because in its current state it does not meet the requirements under the DWQAR, being a shallow bore with a potential effect on the Kai Iwi Stream.

There has been collaboration on a number of cultural tools and mechanisms with Hapū and Iwi to help with concerns regarding the city's reliance on one area for the majority of the districts water supply. We are working with Hapū and Iwi with all cultural concerns to encompass the principles relating to Tangata Whenua in the management of freshwater.

To add to the resilience of Whanganui's source supply we are investigating opportunities south of the river.

*See "Significant decisions" section below for further information.*

#### *Back-up power supply at critical sites*

Generators are required at critical water supply sites to ensure that in the event of a power outage, particularly for an extended period, safe, secure and consistent supply can be maintained. This will provide resilience to our supply.

#### *Spiral welded pipe replacement*

We have a number of old spiral welded steel pipes in our water supply network that are beyond economic life and subject to leakage. They are now susceptible to damage from earthquakes and do not meet regulatory requirements. We have been progressively replacing these pipes with new PE or PVC pipes over many years and will continue to do so through

the period of this Long-Term Plan. We expected to have all of the spiral welded steel pipes replaced by 2028.

#### *Extension of the network to cater for marae*

We are planning on extending our water supply network to cater for marae located on the edges of the city. This will provide a secure and safe potable water supply for residential and agricultural use.

#### **Proposed level of service changes**

The draft plan proposes increased investment in water supply to meet the new standards set out in the Water Services Act 2021, like a multiple barrier approach to drinking water safety by adding UV disinfection to our supplies.

Extending the water supply networks to provide water to marae on the outskirts of the city will also improve levels of service.

Back-up power supplies and source water availability investigations will mitigate risks in our supplies.

## Significant decisions – Water supply

The key water supply decisions required are:

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|--|--|
| <p><b>UV disinfection and chlorination</b></p> <p><i>Drivers:</i> Changing legislative requirements and environmental standards<br/><i>Decision required:</i> 2024 as part of the Long-Term Plan</p> <p>The new DWQAR introduced from the regulator, Taumata Arowai, on 1 January 2023 means that a higher standard is now required to be met to provide safe drinking water. The rules apply to anyone supplying water for consumption.</p> <p>We have undertaken a risk assessment and identified a small number of consumers (approximately 30 connections) on an untreated water supply. This does not meet council’s obligations to provide safe drinking water under the new rules of the Water Services Act 2021.</p> <p>Additionally, there is increasing uncertainty around the ability to maintain the Interim Class 1 status of our bores. As a result, we may be required to install a protozoa barrier (UV disinfection). If our water testing sample results are positive at any stage, this could result in a regulatory requirement to provide a protozoa barrier. These factors, along with the ongoing resourcing and the substantial cost of Class 1 sampling and analysis indicate UV treatment is required.</p> |  |
| <b>Option 1:</b>   | <p><b>Implement new UV disinfection and chlorination plants at a cost of \$2 million in 2024/25 – 2025/26</b></p> <p>A UV disinfection plus chlorination process would provide safe drinking water to all consumers across our supplies and provide resilience in maintaining compliance with the DWQAR. The process meets both bacteriological and protozoal compliance criteria. It also provides a multiple barrier approach to water treatment as required by the Water Services Act 2021.</p> |
| <b>Option 2:</b>   | <p><b>Do not implement a new UV and chlorination plant and continue with the intensive sampling regime for Interim Class 1</b></p> <p>This option would have a two-year maximum timeframe, it requires intensive daily sampling, and if we have another water sample positive for bacteria or protozoa we will be required to put in place UV disinfection and chlorination across the board for all of our supplies.</p>  |



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| <b>Option 3:</b>         | <b>Put in place a boiled water notice</b><br><br>This would reduce the level of service we provide to our customers and would not meet the needs of some of our commercial customers. |
| <b>Preferred option:</b> | Our preferred option is option 1 – to proceed to implement a new UV and chlorination plant to ensure a multiple barrier approach and provide resilience.                              |

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| <b>Source water availability</b>   |  |
| <i>Drivers:</i> Climate change and resilience<br>Sustainably looking after our assets  |  |
| <i>Decision required:</i> By 2030  |  |
| During the Long-Term Plan period (2028/29 – 2029/30) we will investigate future water source supplies to provide resilience and redundancy and to replace ageing infrastructure that is coming to the end of its life. This will allow us to future proof the supply.  |  |
| The majority of the city’s water supply is sourced from Kai Iwi, which means we have a level of risk if there are any natural events affecting the Kai Iwi area or other issues affecting the aquifer or the bore infrastructure. Kai Iwi bore number 3 has a limited life and does not meet the requirements of the new DWQAR, being a shallow bore and considering the potential effect on the Kai Iwi Stream. |  |
| <b>Option 1:</b>   | <b>Begin investigations into a new water source at the southern end of the Whanganui district</b><br><br>A bore location in a different area of the district - e.g. on the southern side of the Whanganui River – would provide council with resilience and reduce risk, allowing us to future-proof the supply.                   |
| <b>Option 2:</b>   | <b>Utilise the council land and existing infrastructure we already have at Kai Iwi to sink another bore</b><br><br>Sinking another bore at Kai Iwi would be the cheapest option as there is infrastructure already in place at that location. However, this would not address resilience and risk, nor would it address Iwi views. |
| <b>Option 3:</b>   | <b>Create no new water sources</b>   |

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|                          | <p>This would reduce our water source options with Kai Iwi bore number 3 at the end of its service life. This option does not address our risk and resilience issues, nor does it future-proof the supply.</p>                       |
| <b>Preferred option:</b> | <p>Our preferred option at this stage is option 1 - to investigate finding a new water source at the southern end of the district. We will have source water investigations complete by 2030 for future council decision-making.</p> |

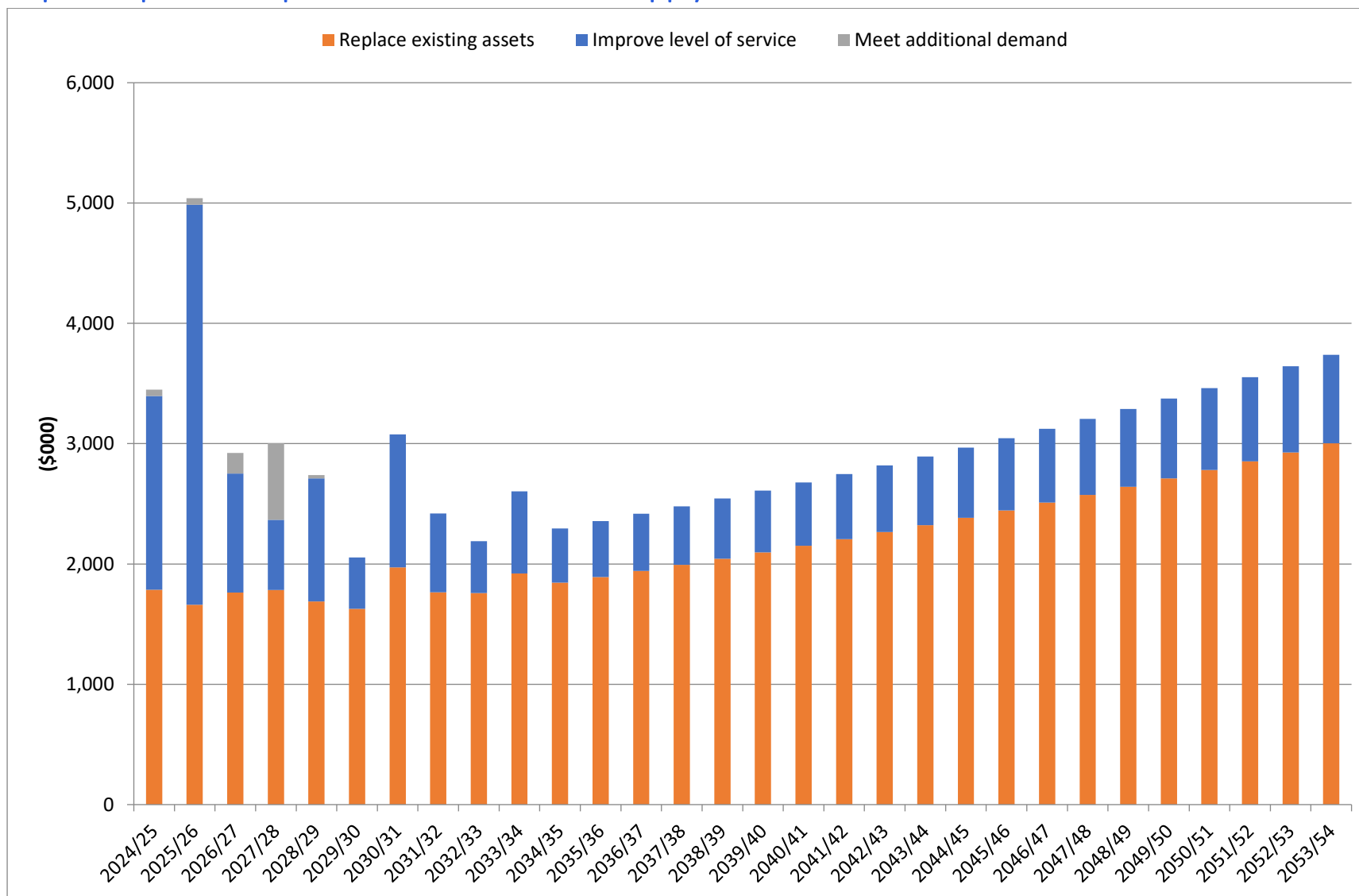
## Key capital projects 2024-34 – Water supply

| <b>Capital expenditure to meet additional demand (\$000)</b>   | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Urban reticulation (growth)                                    | -              | -              | -              | 535            | -              | -              | -              | -              | -              | -              |
| Zone metering for remote water management                      | 54             | 56             | -              | -              | -              | -              | -              | -              | -              | -              |
| Fox Road upgrade Sherwood Pl to Mosston Rd                     | -              | -              | 171            | -              | -              | -              | -              | -              | -              | -              |
| Mannington Rd pump station upgrade                             | -              | -              | -              | 100            | 26             | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>54</b>      | <b>56</b>      | <b>171</b>     | <b>635</b>     | <b>26</b>      | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       |
| <b>Capital expenditure to improve level of service (\$000)</b> | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Fordell booster pump and tank                                  | 250            | 257            | -              | -              | -              | -              | -              | -              | -              | -              |
| Central city water mains upgrade                               | 325            | 205            | -              | -              | 274            | -              | -              | 233            | -              | -              |
| Extension of network to cater for marae                        | 140            | 144            | -              | 214            | -              | -              | 228            | -              | -              | 242            |
| Mains  | 25             | 26             | 26             | 27             | 27             | 28             | 29             | 29             | 30             | 30             |
| Meters & backflows   | 100            | 103            | 105            | 107            | 109            | 112            | 114            | 116            | 119            | 121            |
| Connections  | 100            | 103            | 105            | 107            | 109            | 112            | 114            | 116            | 119            | 121            |
| City water pump stations                                       | 15             | 15             | 16             | 16             | 16             | 17             | 17             | 17             | 18             | 18             |
| Zone remote metering   | 50             | 51             | 52             | 54             | 55             | 56             | 57             | 58             | 59             | 60             |
| Urban easements  | 10             | 10             | 10             | 11             | 11             | 11             | 11             | 12             | 12             | 12             |
| Water source investigation                                     | -              | -              | -              | -              | 22             | 22             | -              | -              | -              | -              |
| UV disinfection and chlorination                               | 400            | 1,643          | -              | -              | -              | -              | -              | -              | -              | -              |
| Power generation for critical sites                            | -              | 411            | 419            | -              | -              | -              | -              | -              | -              | -              |
| Source water security (city)                                   | 150            | -              | 210            | -              | 328            | -              | -              | -              | -              | -              |
| Source water security (rural)                                  | -              | 308            | -              | -              | -              | -              | 456            | -              | -              | -              |
| Westmere Reservoir and 'Heloise' bore UV and chlorination      | 44             | 47             | 48             | 49             | 71             | 69             | 78             | 73             | 75             | 77             |
| <b>Total</b>   | <b>1,609</b>   | <b>3,323</b>   | <b>991</b>     | <b>585</b>     | <b>1,023</b>   | <b>427</b>     | <b>1,104</b>   | <b>655</b>     | <b>431</b>     | <b>682</b>     |
| <b>Capital expenditure to replace existing assets (\$000)</b>  | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Vehicle replacements   | 61             | 63             | 64             | 65             | 67             | 68             | 69             | 71             | 72             | 73             |
| Fordell rural scheme - replacements                            | 17             | 42             | 18             | 18             | 19             | 19             | 57             | 22             | 23             | 23             |
| Fordell rural scheme - timber tank replacement and repairs     | 152            | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Maxwell rural scheme - replacement                             | 4              | 4              | 4              | 4              | 4              | 5              | 5              | 5              | 5              | 5              |
| Westmere rural scheme - replacements                           | 13             | 11             | 74             | 12             | 63             | 19             | 89             | 53             | 59             | 66             |

Whanganui District Council  
Long Term Plan 2024-2034

|                                    | 2024/25      | 2025/26      | 2026/27      | 2027/28      | 2028/29      | 2029/30      | 2030/31      | 2031/32      | 2032/33      | 2033/34      |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Mains                              | 5            | 5            | 5            | 5            | 6            | 6            | 6            | 6            | 6            | 6            |
| Mains                              | 51           | 52           | 53           | 54           | 55           | 57           | 58           | 59           | 60           | 61           |
| Valves and hydrants                | 152          | 156          | 159          | 163          | 166          | 170          | 173          | 177          | 180          | 184          |
| Mains                              | 56           | 57           | 58           | 60           | 61           | 62           | 63           | 65           | 66           | 67           |
| Meters and backflows               | 56           | 57           | 58           | 60           | 61           | 62           | 63           | 65           | 66           | 67           |
| Valves and hydrants                | 56           | 57           | 58           | 60           | 61           | 62           | 63           | 65           | 66           | 67           |
| Connections                        | 507          | 521          | 531          | 542          | 555          | 567          | 577          | 590          | 601          | 612          |
| City water pump stations           | 10           | 10           | 11           | 11           | 11           | 11           | 12           | 12           | 12           | 12           |
| SCADA/communications systems       | 2            | 2            | 2            | 2            | 2            | 2            | 2            | 2            | 2            | 2            |
| Roading coordinated projects       | 164          | 169          | 172          | 176          | 180          | 184          | 187          | 191          | 195          | 198          |
| Spiral welded pipe replacement     | 164          | 169          | 172          | 176          | 180          | 184          | 187          | 191          | 195          | 198          |
| Aramoho bore water treatment plant | 44           | 34           | 12           | 221          | 51           | -            | 69           | 47           | -            | 125          |
| Variable speed drive 1,2,3         | 101          | 104          | -            | -            | -            | -            | -            | -            | -            | -            |
| Westmere reservoir pipework        | -            | -            | 159          | -            | -            | -            | -            | -            | -            | -            |
| Kai Iwi bores and pipework         | 172          | 146          | 149          | 152          | 144          | 147          | 289          | 141          | 144          | 147          |
| <b>Total</b>                       | <b>1,787</b> | <b>1,661</b> | <b>1,760</b> | <b>1,781</b> | <b>1,687</b> | <b>1,626</b> | <b>1,969</b> | <b>1,762</b> | <b>1,754</b> | <b>1,916</b> |

## Capital expenditure profile 2024-54 – Water supply



## Current state - Wastewater

We provide and manage two wastewater systems: the Whanganui urban wastewater system and the Mowhanau rural wastewater system. The systems comprise of service lines, pipe networks, pump stations, treatment plants and outfalls. The wastewater activity involves the safe management and disposal of human wastewater and industrial trade waste.

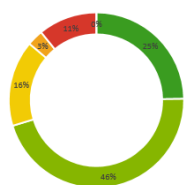
### Critical assets

The critical assets for the wastewater group are:

- interceptor pipeline
- Beach Road pump station
- treatment plants
- river crossing
- ocean outfall

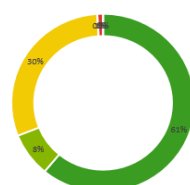
### Asset condition

WW Below Ground Asset Condition



■ Excellent ■ Good ■ Average ■ Poor ■ Very Poor ■ Not assessed

WW Critical Asset Condition



■ Excellent ■ Good ■ Average ■ Poor ■ Very Poor ■ Not assessed

Over 70 percent of the underground and critical wastewater assets are rated as being in good to excellent condition. 30 percent of the critical

assets are classified as being in average condition; this predominantly relates to the underground interceptor pipeline and is considered unreliable. The interceptor pipeline will undergo CCTV inspection over the next three-year period to clarify its condition.

### Asset performance

The wastewater network performs according to design standards during dry weather events, and this is sufficient for our needs as a community.

The network, however, performs at an unacceptable standard during wet weather events. This has a negative impact on the environment. This strategy provides direction on how best to mitigate this impact through targeted capital investment.

## Looking ahead – Wastewater

### Key wastewater issues

#### *Poor performance of the wastewater network during wet weather events*

The urban wastewater network does not perform adequately during wet weather events. This occurs due to groundwater infiltrating the wastewater network, the inadequacy of the stormwater network during significant events, leakage, network configuration and lack of storage capacity in the network. Hydraulic modelling has been undertaken and we are proposing to embark on a long-term improvement programme to reduce spillages from the wastewater network during significant wet weather events.

See “Significant decisions” section below for further information.

### *Mowhanau discharge consent renewal*

The discharge consent for the Mowhanau wastewater treatment system expired in 2021 and has yet to be renewed. The system is currently operating on existing use rights. Consensus has been unable to be reached from all parties to obtain a new consent. Further, the treatment system is reaching end of life, with variable discharge results and often no improvement pre-treatment to post-treatment. Through this Long-Term Plan we are proposing to make a decision on Mowhanau wastewater treatment going forward.

*See “Significant decisions” section below for further information.*

### *Ocean outfall consent renewal*

Our ocean outfall consents for discharging effluent from the city wastewater treatment plant to the Tasman Sea are due to expire in July 2026. The renewal of these types of consents involves a rigorous process with all stakeholders and significant environmental assessment. Over time, resource consent limits tend to become more stringent. We cannot foresee the outcome of the resource consent renewal process at this time, but there is a possibility that we may need to treat our wastewater to a higher standard which may require additional capital investment in the future.

### *Sludge disposal*

Dried sludge from the Whanganui wastewater treatment plant has been accumulating in the settling pond from the previous failed wastewater treatment plant since the new plant opened in 2017. The settling pond capacity is surveyed every three months and is currently expected to reach full capacity by September 2026. We need to find a long-term solution for disposal or reuse of the dried solids. The options available are influenced by the degree of heavy metal contamination in the sludge.

*See “Significant decisions” section below for further information.*

### *Cogeneration plant*

The anaerobic pond at the wastewater treatment plant generates methane gas as part of the effluent treatment process. The gas is currently flared off, wasting a valuable alternative energy source. We are considering harnessing the gas either as a supplementary energy source for the sludge drier, or to generate electricity to reduce the operating costs of the wastewater treatment plant. Investigations into the viability of this project are underway – the project depends on consistent quality of the methane gas produced by the pond.

### **Proposed level of service changes**

The proposed \$30 million plus long-term programme of wastewater network improvements is intended to improve the performance of the wastewater network during weather events. This will improve have positive impacts on the environment, including the Whanganui River, and on public health by reducing wastewater network spillages.

The proposal to connect Mowhanau to the Whanganui city wastewater treatment plant will not provide any noticeable improvements to customers but will have a beneficial environmental impact on the Mowhanau stream and surrounds and ensure that the wastewater is treated to standard.

The proposal to investigate options for sludge incineration and cogeneration will improve our environmental impact and sustainability.

## Significant decisions - Wastewater

The key wastewater decisions required are:

### Poor performance of the wastewater network during wet weather events

|                           |   |
|---------------------------|---|
| <i>Drivers:</i>           | Level of service improvements<br>Climate change and resilience<br>Sustainably looking after our assets<br>Managing increasing costs and affordability |
| <i>Decision required:</i> | 2024 as part of the Long-Term Plan  |

The urban wastewater network does not perform adequately during wet weather events. This occurs due to groundwater infiltrating the wastewater network, the inadequacy of the stormwater network during significant events, leakage, network configuration and lack of storage capacity in the network. It results in spillage from the wastewater network, impacting the environment, people and property.

Through this Long-Term Plan 2024-2034 we are considering options to address this issue based on hydraulic modelling we have undertaken.

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| <b>Option 1:</b> | <p><b>Embark on a \$30 million plus long-term programme of wastewater network improvements to address the wet weather performance of the wastewater system (\$200,000 in year 1, \$1 million in year 2 and then \$1.5 million per year thereafter) and upgrade the Jones Street pump station (\$13.4 million over the period 2028-2031)</b></p> <p>This will allow us to upgrade the wastewater network over time to address high-risk areas identified via hydraulic modelling.</p> <p>Wastewater from Whanganui East is currently routed across the Whanganui River via Dublin Street bridge to the western interceptor and then the Beach Road pump station before crossing the river a second time to the wastewater treatment plant on Airport Road. The Jones Street pump station upgrade will assist with wastewater wet weather performance as it will allow wastewater from the east side of the city to be pumped along Anzac Parade directly to the wastewater treatment plant. This avoids pumping the wastewater from Whanganui East across the river twice and will free up capacity on both sides of the river, improving levels of service and allowing for growth.</p> |
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|                          | This long-term upgrade programme will significantly reduce the risk of diluted wastewater entering the Whanganui River achieving the objectives of the Te Awa Tupua Act 2017.   |
| <b>Option 2:</b>         | <b>Do not address wet weather performance of the wastewater network</b><br><br>This option does not allow for any improvement in the wet weather performance and does not reduce the risks to people and the environment.                           |
| <b>Preferred option:</b> | Our preferred option is option 1 – this option allows us to address the wet weather performance of the wastewater network over time to reduce impacts on the environment and people, in a way that meets affordability requirements for ratepayers. |

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| <b>Mowhanau wastewater system alternative disposal</b>   |   |
| <i>Drivers:</i>  | Changing legislative requirements and environmental standards<br>Level of service improvements  |
| <i>Decision required:</i>  | 2024 as part of the Long-Term Plan  |
| <p>The discharge consent for the Mowhanau wastewater system expired in 2021 and the plant has been operating on existing use rights since that time. The existing onsite treatment and disposal approach is objected to by Iwi because of their relationship with the site and because of the impact on surrounding land and the nearby stream. Further, the current discharge arrangement (filter beds and a land disposal system) is unlikely to be considered acceptable from a modern consenting perspective. The treatment plant is not performing to required standards. We are seeing mixed discharge results, often with little improvement in effluent quality pre-treatment to post-treatment. Any new consent is likely to bring with it more stringent discharge limits which will likely mean that the existing treatment plant is unsuitable and needs to be replaced.</p> |   |
| <b>Option 1:</b>   | <b>Install a pipeline to connect Mowhanau to the city wastewater network and decommission the Mowhanau wastewater treatment system (capital cost of \$6.1 million with lower ongoing costs, 50-year net present value of \$8.2 million)</b><br><br>This is likely to be the best and most cost-effective long term solution for treating Mowhanau’s wastewater. It will remove the environmental impacts on the Mowhanau land and nearby stream and will avoid any potential upgrade of the existing filter bed and land disposal system to meet new consent requirements. The overall net present value for this option is |

|                                 |  |
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|                                 | <p>lower than for replacing the plant because the ongoing operating costs of conveying the effluent to the city are lower than the operating costs for treating the wastewater at Mowhanau. This option will also alleviate the need for us to renew the discharge consent now and into the future.</p>  |
| <p><b>Option 2:</b></p>         | <p><b>Replace the existing Mowhanau wastewater treatment system with a new plant which would treat the effluent to a higher standard (capital cost of \$6.1 million with higher ongoing costs, 50-year net present value of \$14.0 million)</b></p> <p>It is expected that this option may require significant investment to upgrade the current filter bed and land disposal system to a mechanical package plant. Location of the plant is uncertain and may require land acquisition. Mechanical plants require more intensive operator input, have higher energy consumption, and will increase truck movements through the village to transport chemicals and sludge. We would also need to renew the consent, now and on a regular basis into the future. This is a costly exercise and can trigger further investment if discharge limits tighten up, as they tend to do over time. Further, this option does not achieve lwi aspirations for the site.</p> |
| <p><b>Option 3:</b></p>         | <p><b>Status quo – continue to treat using the existing land disposal and filter bed system and discharge under existing use rights</b></p> <p>Council is likely to face prosecution when existing use rights are revoked. A prompt solution to this issue is required.</p>  |
| <p><b>Preferred option:</b></p> | <p>Our preferred option is option 1 - to construct a pipeline to convey wastewater from Mowhanau to the city wastewater network and wastewater treatment plant.</p>  |

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| <p><b>Long-term solution for dried sludge</b></p>  |  |
| <p><i>Drivers:</i></p>   | <p>Changing legislative requirements and environmental standards<br/>Managing increasing costs and affordability<br/>Level of service improvements</p> |
| <p><i>Decision required:</i></p>   | <p>2025</p>  |
| <p>Dried sludge from the Whanganui wastewater treatment plant has been accumulating in the old settling pond from the previous (failed) wastewater treatment plant since the new plant became operational in 2017. The settling pond capacity is surveyed every three months and is currently expected to reach full capacity by September 2026. We need to find a long-term solution for disposal of the dried sludge</p> |  |

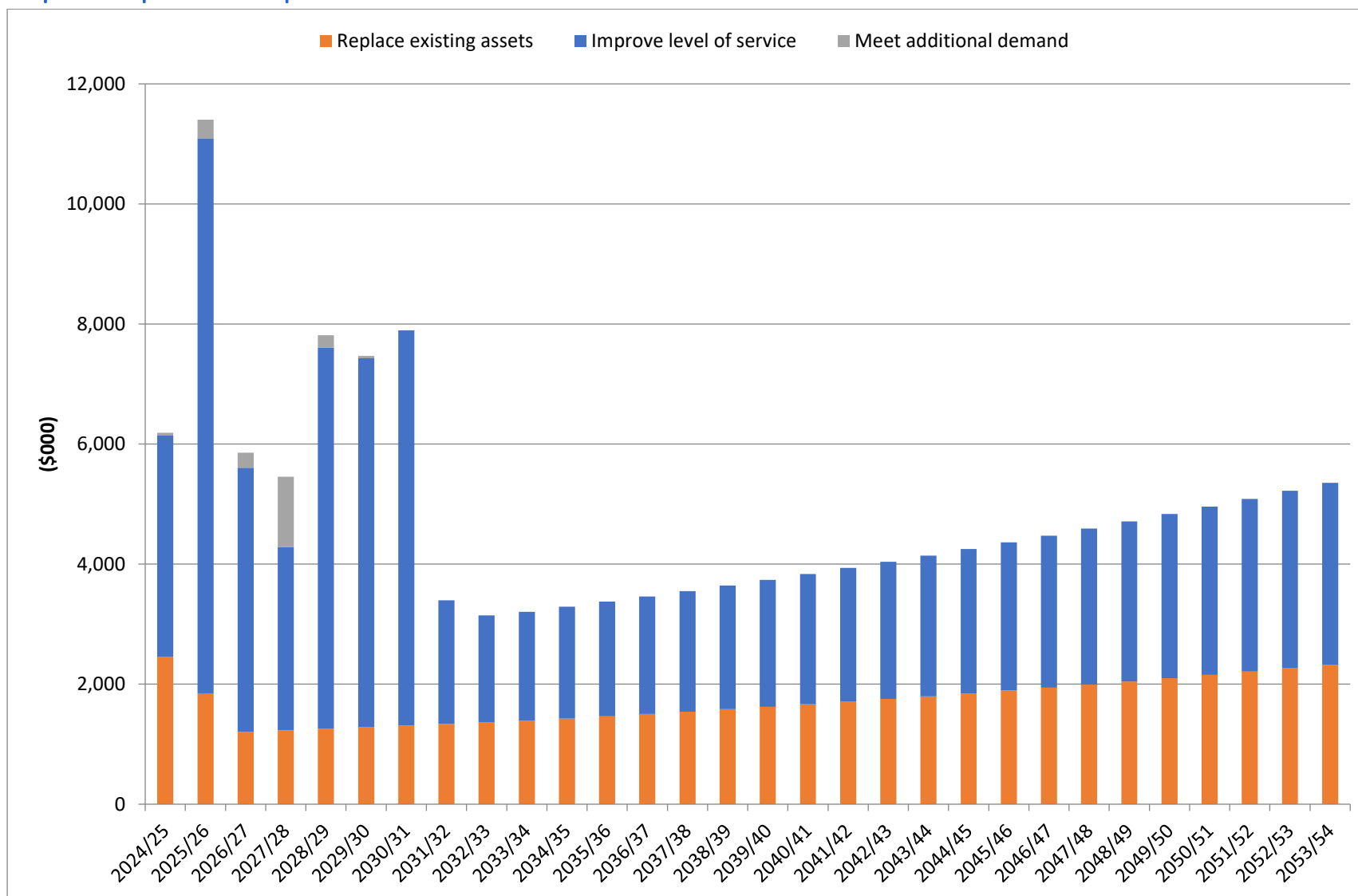
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| <p>from the wastewater treatment plant. The options for disposal or reuse of the solids are influenced by the degree of heavy metal content they contain. Current heavy metal concentrations mean that the only option for disposal once the settling pond is full is likely to be to transport the solids to Hampton Downs landfill in the Waikato at significant cost. We are working to reduce heavy metal concentrations in sludge going forward, and we are investigating alternative options for dried sludge reuse or disposal.</p> |  |
| <p><b>Option 1:</b></p>  | <p><b>Modify plant to incinerate dried sludge, creating a heat source to fuel the dryer and creating a high value waste stream (\$3.5 million)</b></p> <p>There is an opportunity to incinerate the dried sludge as a fuel to power the dryer. The dried sludge can be turned into ash through a special form of incineration, turning it into 80 percent dry matter and thereby reducing the quantity significantly. This option can deal with contaminated or uncontaminated sludge. The dried sludge has good calorific value and will burn in a similar fashion to peat. This option would reduce or eliminate the energy costs of the dryer, in conjunction with the cogeneration plant project. It would negate the need to transport the dried sludge to Hampton Downs as it could remain stored onsite. Tests are being conducted to see if the ash could be used in masonry or road pavement materials.</p> <p>Uncontaminated sludge run through the dryer and incinerator is being tested and is shown to be equivalent to potash, a highly valuable agricultural fertiliser. The capacity of the plant would allow for all onsite stored sludge to be incinerated as well as uncontaminated sludge from external sources, creating two value streams.</p> |
| <p><b>Option 2:</b></p>  | <p><b>Remove heavy metal contaminants from waste stream and do not modify plant</b></p> <p>This option relies on removing heavy metal contaminants upstream of the wastewater treatment plant by identifying points of entry to the wastewater system. If the heavy metal contaminant levels were to be dropped below the levels prescribed in the Guidelines for Safe Application to Land 2003, the option is then available for the sludge to be mixed and used for beneficial purposes. This option does not allow for reduction of the operating costs of the dryer.</p>   |
| <p><b>Option 3:</b></p>  | <p><b>Begin carting sludge to a facility that will accept contaminated and uncontaminated waste in two to three years' time when the settling pond is full, (likely to be Hampton Downs landfill in the Waikato) (estimated at \$2 million per annum)</b></p> <p>This option has a very high annual operating cost and will be subject to significant risk of further price fluctuation into the future, with the substantial transport distance and costs of sending waste to landfill increasing exponentially over time.</p>  |

|                          |   |
|--------------------------|---|
| <b>Preferred option:</b> | Our preferred option is option 1 – to add an incineration plant to the wastewater treatment plant to deal with both the historic contaminated sludge and any new uncontaminated sludge. This allows for reducing the operating cost of the dryer and avoids sending the sludge to landfill. It also provides for potential beneficial reuse of the ash when contaminants are removed. |
|--------------------------|---|

## Key capital projects 2024-34 – Wastewater

| <b>Capital expenditure to meet additional demand (\$000)</b>   | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Urban reticulation (growth)                                    | 50             | 125            | 251            | 343            | 208            | 39             | -              | -              | -              | -              |
| Fox Rd wastewater extension                                    | -              | 187            | -              | -              | -              | -              | -              | -              | -              | -              |
| Manuka St and Mill Rd upgrade                                  | -              | -              | -              | 830            | -              | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>50</b>      | <b>312</b>     | <b>251</b>     | <b>1,172</b>   | <b>208</b>     | <b>39</b>      | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       |
| <b>Capital expenditure to improve level of service (\$000)</b> | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Network improvements   | 200            | 1,027          | 1,571          | 1,606          | 1,641          | 1,676          | 1,711          | 1,745          | 1,780          | 1,814          |
| Jones St wastewater pump station                               | -              | -              | -              | -              | 4,377          | 4,468          | 4,562          | -              | -              | -              |
| Beach Road Pump Station capacity upgrade                       | 900            | -              | 2,095          | -              | -              | -              | -              | -              | -              | -              |
| Mowhanau wastewater connection to city                         | 1,369          | 4,756          | -              | -              | -              | -              | -              | -              | -              | -              |
| Ocean outfall  | 270            | 277            | -              | -              | -              | -              | 308            | 314            | -              | -              |
| Cogeneration plant   | 50             | 103            | 210            | 1,445          | 328            | -              | -              | -              | -              | -              |
| Sludge disposal solutions                                      | 400            | 2,568          | 524            | -              | -              | -              | -              | -              | -              | -              |
| Ocean outfall consent renewal                                  | 500            | 514            | -              | -              | -              | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>3,689</b>   | <b>9,244</b>   | <b>4,400</b>   | <b>3,051</b>   | <b>6,346</b>   | <b>6,144</b>   | <b>6,581</b>   | <b>2,059</b>   | <b>1,780</b>   | <b>1,814</b>   |
| <b>Capital expenditure to replace existing assets (\$000)</b>  | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Vehicle replacements   | 61             | 62             | 64             | 65             | 67             | 68             | 70             | 71             | 72             | 74             |
| Urban reticulation replacements                                | 819            | 844            | 867            | 885            | 904            | 923            | 942            | 960            | 979            | 998            |
| Inflow and infiltration investigations                         | 50             | 52             | 53             | 55             | 56             | 57             | 58             | 59             | 60             | 62             |
| Reactive replacement of non-critical assets                    | 164            | 169            | 173            | 177            | 181            | 184            | 188            | 192            | 196            | 199            |
| Pump station replacements                                      | 44             | 46             | 47             | 48             | 49             | 50             | 51             | 52             | 53             | 54             |
| Beach Road Pump Station electrical upgrade                     | 1,313          | 676            | -              | -              | -              | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>2,451</b>   | <b>1,849</b>   | <b>1,204</b>   | <b>1,230</b>   | <b>1,257</b>   | <b>1,283</b>   | <b>1,309</b>   | <b>1,335</b>   | <b>1,361</b>   | <b>1,386</b>   |

## Capital expenditure profile 2024-54 – Wastewater



## Current state - Stormwater

We manage and maintain an urban network of pipes, retention ponds, and basins to safely direct stormwater to the river.

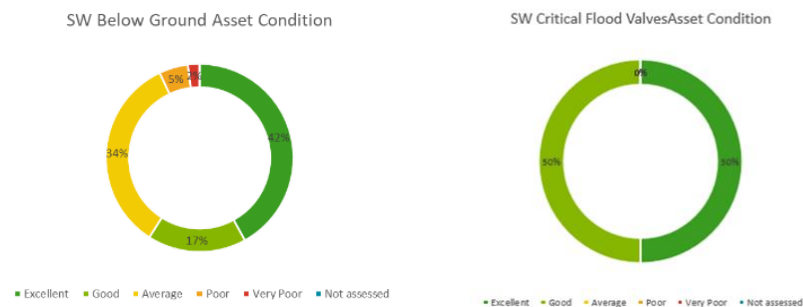
The management of our stormwater assets aims to ensure healthy waterways, resilient communities, and a thriving future for generations to come.

### Critical assets

The critical assets for this group are:

- flood valves

### Asset condition



Whanganui has undertaken a stormwater/wastewater separation project which resulted in new stormwater pipes being laid. As a result we have a high condition rating for our underground stormwater assets as they are of a relatively young age.

This also applies to the critical flood valves as they are rated as being in excellent or good condition.

### Asset performance

The stormwater network has historically been designed to achieve lower levels of service than normal standards. This was to enable investment in additional infrastructure to complete the separation project over the last few decades.

The network, therefore, performs below an acceptable standard for the long-term effectiveness of the service.

The stormwater network consists of a primary system (the piped stormwater network) and a secondary system (overland flow paths). Average Recurrence Interval (ARI) is the average time period between flood events.

The primary piped network has an ARI of less than one year, meaning that flood events occur on average on a more than annual basis. New developments are designed for a 10-year ARI event.

The overland flow of the secondary system is designed for a 50-year ARI event as per the Building Act. New developments or network improvements in the urban area are designed for a 200-year ARI event as per Horizons Regional Council's One Plan.

## Looking ahead – Stormwater

### Key stormwater issues

*Frequency and intensity of rain events as a result of climate change and impact on service levels*

More frequent and higher intensity rain events reduce the available level of service delivered by the stormwater infrastructure network. The primary urban stormwater network (the piped network) currently has an ARI of less than one year.

Council committed to a long-term attenuation programme to improve the service level provided by the stormwater network in the Long-Term Plan 2018-2028. We are proposing to amend the speed at which we roll out this improvement programme due to affordability in the early years of the Long-Term Plan 2024-2034.

*See “Significant decisions” section below for further information.*

### *Growth*

Expansion and intensification of the city has impacts on the stormwater network and levels of service. Growth is planned through the Springvale Structure Plan, the Mill Road Structure Plan and the Otamatea Structure Plan, along with infill across the city. Forecast growth is provided for in the long-term stormwater attenuation programme we embarked on in 2018, as well as specific growth projects over the period of this plan.

### *Sea level rise due to climate change*

Sea level rise is projected to be an estimated 80cm by 2090 which may present significant risk to the Heads Rd industrial area due to its proximity to the Whanganui estuary. This would compromise the ability for the area to drain stormwater by conventional methods.

*See “Significant decisions” section below for further information.*

### *Uncertain future regulatory standards and the potential requirement for treatment of stormwater in the future*

The recent addition of Taumata Arowai as the water services regulator means there is a level of uncertainty around future regulations for stormwater. Taumata Arowai is currently focusing on drinking water to ensure risks to public health are mitigated, but its remit now includes wastewater and stormwater, and focus on these networks will follow. The impact of the regulator on stormwater is currently unknown and will evolve over the years ahead. It is possible that local authorities may be

required to treat stormwater in the future to a regulatory standard before discharge.

### **Proposed level of service changes**

We will continue our long-term programme to improve the performance of our stormwater network. This work is intended to reduce the level of flooding in the service area during increasingly common wet weather events due to the effects of climate change.

We also propose to provide for the pumping of stormwater in the Heads Road industrial area in the future as climate change causes sea levels to rise. This will reduce flooding in this industrial area.



## Significant decisions - Stormwater

The key stormwater decisions required are:

|   |   |
|---|---|
| <p><b>Frequency and intensity of rain events as a result of climate change and impact on service levels</b></p> <p><i>Drivers:</i> Climate change and resilience<br/>Managing increasing costs and affordability</p> <p><i>Decision required:</i> 2024 as part of the Long-Term Plan</p> <p>More frequent and higher intensity rain events reduce the available level of service delivered by the stormwater infrastructure network. The primary urban stormwater network (the piped network) currently has an ARI of less than one year.</p> <p>Council committed to a long term stormwater network improvement programme in the Long-Term Plan 2018-2028. Through this we agreed to fund the programme at \$500,000 per year for the 10-year period through to 2027/28, increasing to \$1 million per year from 2028/29 onwards.</p> <p>With a number of competing challenges and in a high inflationary environment, we are proposing to amend the speed at which we roll out this improvement programme to manage affordability in the early years of the Long-Term Plan 2024-2034.</p> |   |
| <p><b>Option 1:</b></p>   | <p><b>Proceed with the stormwater network improvement programme as agreed through the Long-Term Plan 2018-2028 (\$500,000 in 2024/25 and 2025/26)</b></p> <p>This option would allow the programme to continue as planned to deliver improved service, but would add approximately \$23.20 to average rates in 2024/25 and \$11.60 to average rates in 2025/26.</p>             |
| <p><b>Option 2:</b></p>   | <p><b>Pull back on the stormwater network improvement programme for the years 2024/25 and 2025/26 (\$0 in 2024/25 and \$250,000 in 2025/26)</b></p> <p>This option is provided for in the proposed budgets for this Long-Term Plan 2024-2034. The reduced funding in 2024/25 and 2025/26 will extend the length of the programme to achieve the service level improvements.</p> |

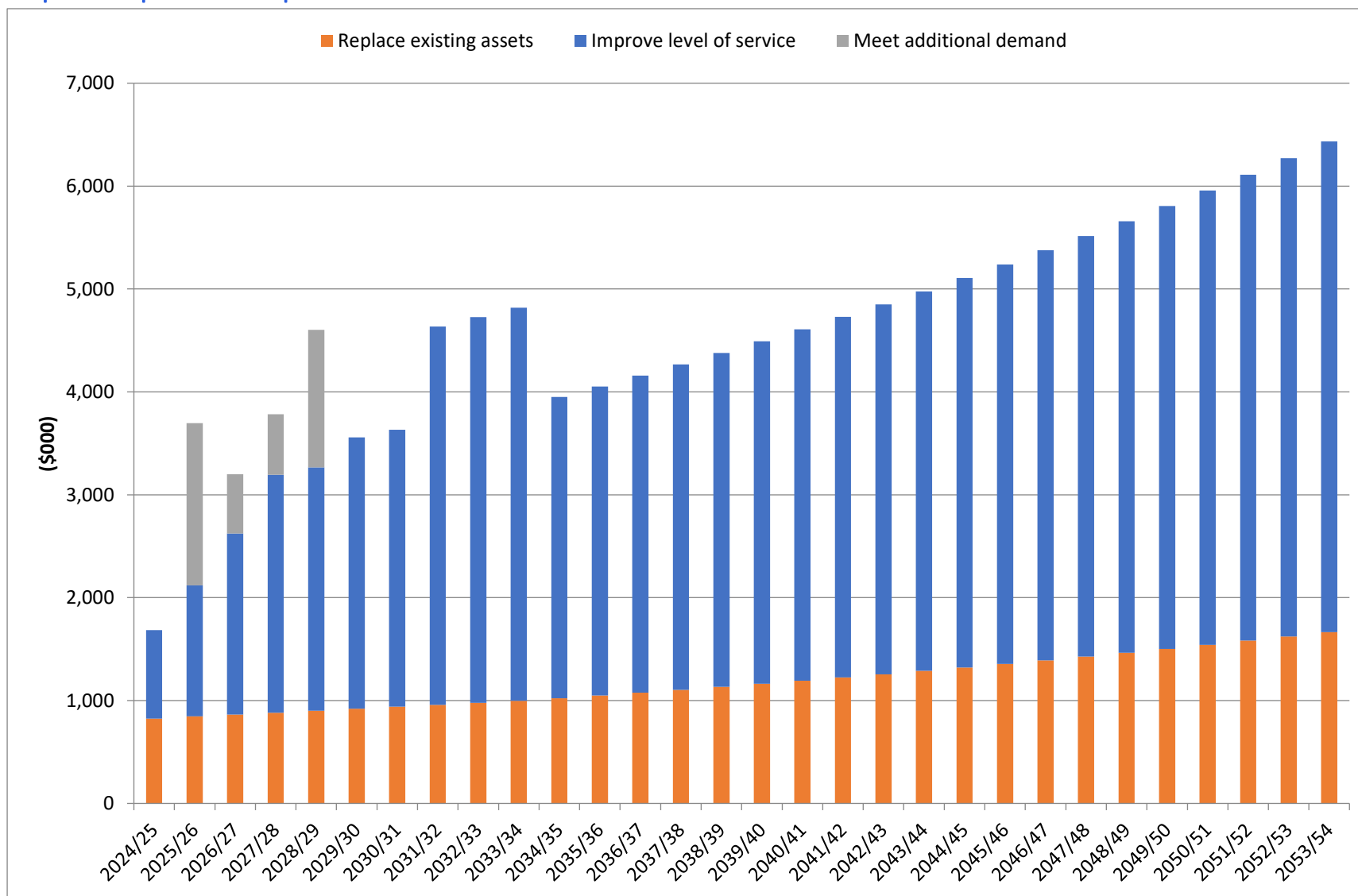
|                          |  |
|--------------------------|--|
| <b>Preferred option:</b> | Our preferred option is option 2 – to pull back on the stormwater network improvement programme for the years 2024/25 to 2026/27 to assist with rates affordability. |
|--------------------------|--|

|   |   |
|---|---|
| <b>Sea level rise and impacts on the Heads Road industrial area</b>   |   |
| <i>Drivers:</i>   | Climate change and resilience<br>Level of service improvements  |
| <i>Decision required:</i>   | 2032  |
| Sea level rise is projected to be an estimated 80cm by 2090 which may present significant risk to the Heads Road industrial area due to its proximity to the Whanganui estuary. This would compromise the ability for the area to drain stormwater by conventional methods. |   |
| <b>Option 1:</b>  | <b>Provide for pumping of stormwater in the Heads Road industrial area (\$2.8 million over the period 2031/32 to 2033/34)</b><br><br>This would reduce the risk of seasonal inundation increases driven by climate change in one of Whanganui’s key economic areas. |
| <b>Option 2:</b>  | <b>Do nothing and consider organised retreat from the Heads Road industrial area in the long term</b><br><br>This option would have a significant impact on Whanganui’s economy and employment.   |
| <b>Preferred option:</b>  | Our preferred option is option 1 – to provide for pumping of stormwater in the Heads Road industrial area   |

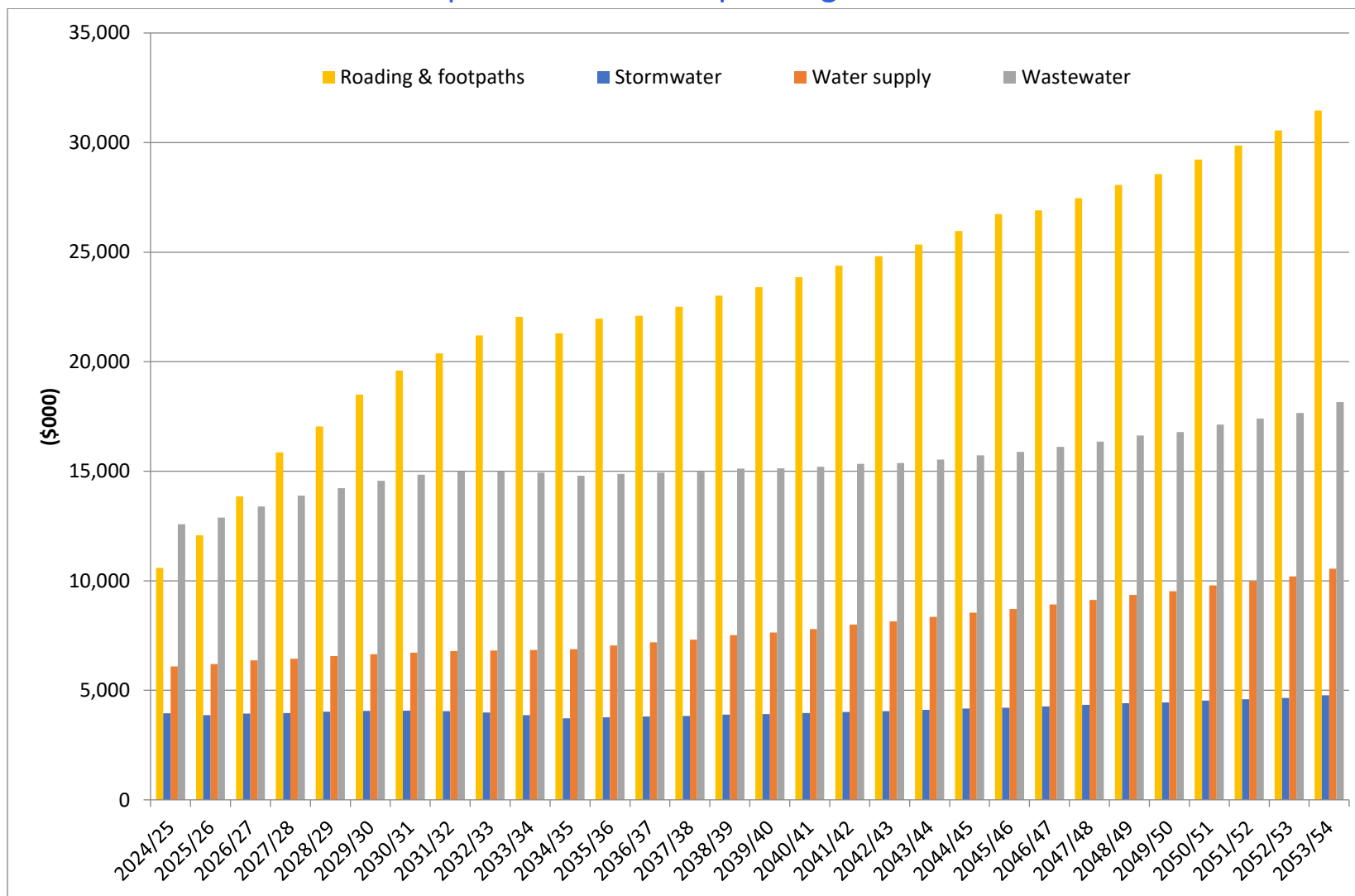
## Key capital projects 2024-34 – Stormwater

| <b>Capital expenditure to meet additional demand (\$000)</b>   | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Land acquisition   | -              | 205            | 210            | 214            | 66             | -              | -              | -              | -              | -              |
| Swale construction   | -              | 154            | 157            | 161            | 205            | -              | -              | -              | -              | -              |
| Wetland expansion  | -              | 205            | 210            | 214            | 219            | -              | -              | -              | -              | -              |
| Springvale 750mm stormwater main                               | -              | 127            | -              | -              | -              | -              | -              | -              | -              | -              |
| Stormwater downstream improvements                             | -              | 790            | -              | -              | -              | -              | -              | -              | -              | -              |
| North west land development                                    | -              | 69             | -              | -              | -              | -              | -              | -              | -              | -              |
| North west linking stormwater                                  | -              | 26             | -              | -              | -              | -              | -              | -              | -              | -              |
| Manuka Street and Mill Road upgrade                            | -              | -              | -              | -              | 848            | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>-</b>       | <b>1,576</b>   | <b>576</b>     | <b>589</b>     | <b>1,337</b>   | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       |
| <b>Capital expenditure to improve level of service (\$000)</b> | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Stormwater attenuation   | -              | 257            | 524            | 1,071          | 1,094          | 1,117          | 1,141          | 1,163          | 1,187          | 1,209          |
| Integrated catchment management infrastructure                 | 150            | 154            | 157            | 161            | 164            | 168            | 171            | 175            | 178            | 181            |
| City-wide stormwater hotspots                                  | 100            | 103            | 105            | 107            | 109            | 112            | 114            | 116            | 119            | 121            |
| Castlecliff pump stations                                      | -              | -              | -              | -              | -              | -              | -              | 931            | 949            | 967            |
| Separation completion  | 500            | 616            | 838            | 856            | 875            | 1,117          | 1,141          | 1,163          | 1,187          | 1,209          |
| Inflow and infiltration investigations                         | 100            | 103            | 105            | 107            | 109            | 112            | 114            | 116            | 119            | 121            |
| Watercourse condition assessment                               | 10             | 10             | 10             | 11             | 11             | 11             | 11             | 12             | 12             | 12             |
| Putiki climate adaptation                                      | -              | 31             | 21             | -              | -              | -              | -              | -              | -              | -              |
| <b>Total</b>   | <b>860</b>     | <b>1,273</b>   | <b>1,760</b>   | <b>2,312</b>   | <b>2,363</b>   | <b>2,636</b>   | <b>2,692</b>   | <b>3,676</b>   | <b>3,750</b>   | <b>3,821</b>   |
| <b>Capital expenditure to replace existing assets (\$000)</b>  | <b>2024/25</b> | <b>2025/26</b> | <b>2026/27</b> | <b>2027/28</b> | <b>2028/29</b> | <b>2029/30</b> | <b>2030/31</b> | <b>2031/32</b> | <b>2032/33</b> | <b>2033/34</b> |
| Network replacements   | 824            | 846            | 862            | 881            | 900            | 918            | 937            | 955            | 974            | 992            |
| <b>Total</b>   | <b>824</b>     | <b>846</b>     | <b>862</b>     | <b>881</b>     | <b>900</b>     | <b>918</b>     | <b>937</b>     | <b>955</b>     | <b>974</b>     | <b>992</b>     |

## Capital expenditure profile 2024-54 – Stormwater



## Overall infrastructure financial profile 2024-54 – operating costs



## Overall infrastructure financial profile 2024-54 – capital costs

