

**Absolutely Positively  
Wellington City Council**

Me Heke Ki Pōneke

Wellington City Council

## Part 3: Asset Management Plan

For Release, Version 10, 27 February 2025



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## Context, purpose and assumptions

### Context

- This Asset Management Plan (AMP) provides the shareholder council with details on each of its 3 Waters physical assets including the scale and extent, condition and performance, financial forecasts and associated risks.
- This council-focused AMP is supported by three linked, higher tier AMPs, covering physical assets at a metropolitan scale by each of water supply, wastewater and stormwater.
- This AMP has been produced based on the most relevant data available at the time e.g., shareholder council adopted Long Term Plan (LTP 2024-2034); 30-Year capital programme forecast provided as part of council's infrastructure strategy development– see s8.1; LTP 10-Year budget – see s8.2, 8.3 and 8.4; and National Transition Unit (NTU) 30-year unconstrained capital forecasts (April 2023) – see s9.1 and s9.2.
- There are a relatively high proportion of assets still in service operating beyond their expected service life therefore renewals planning has forced a more reactive approach than is ideal under good asset management practice e.g., robust risk-based renewal prioritisation.

### Purpose

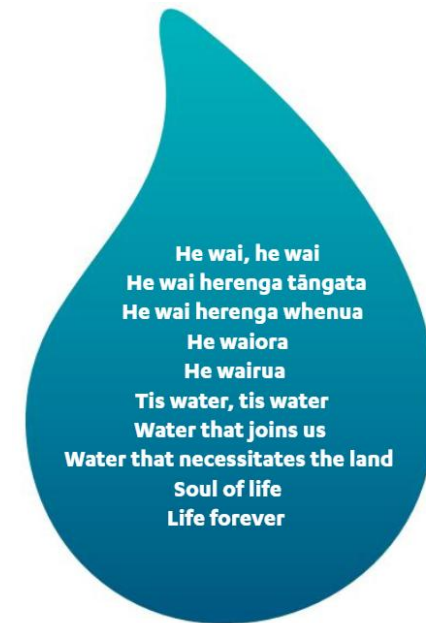
- This AMP is produced for the shareholder council so it can understand key aspects of the respective physical assets and be aware of uncertainties, confidence and risks.
- Elements of this AMP and the higher tier AMPs may be used to support production of Water Service Delivery Plans (WSDP). Material differences between data presented in the AMP and WSDP may arise e.g., through WSDP funding scenario modelling.

### Assumptions

The following key assumptions apply to this shareholder councils AMP:

1. LTP-related asset values are based on unit rates obtained from specific, representative capital projects identified by Wellington Water Limited (WWL) and has 'Level zero - 100% contingency' applied – see the WWL Cost Estimation Manual.
2. NTU projects and programmes reflect the upper limit value of all 3 Waters activities required to deliver all projected metropolitan scale renewals, levels of service, and growth requirements as assessed at that time. Due to financial constraints driven by council affordability levels some NTU projects are not accommodated in the LTP 10-Year plan.
3. WWL financial data has by necessity been drawn from several sources which reflects the focus/refocus from Water Service Entities to shareholder council requirements.
4. The scale (including cost), extent and timing of renewals across all physical assets has been estimated based on various methodologies including desktop, physical inspections, and inferred analysis (same materials, installation years etc).
5. The financial constraints of shareholder councils have not enabled WWL to fully adopt a best practise approach to critical and non-critical asset renewal based on criticality, condition (failure risk), and levels of service, as councils have been unable to fund the required level of asset renewals.

1. Introduction
2. Partnerships and stakeholders
3. Three Waters services and assets we manage
4. Three Waters current level of service and performance measures
5. Demand and planning for the future
6. Risk management and resilience
7. How we deliver the services (Lifecycle management plans)
8. 10-year Three Waters investment forecasts
9. 30-year Three Waters investment forecasts
10. Continual asset management improvement



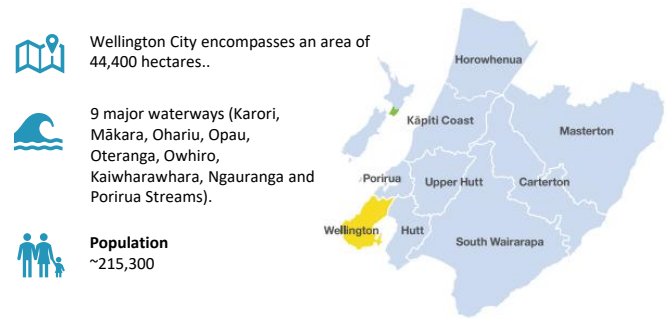
### Wellington Water's Purpose:

Wellington Water exists so that people in the Wellington Region have safe, reliable, compliant, and affordable drinking water, stormwater, and wastewater services.

1. Introduction

1.1 Council overview

Wellington is New Zealand’s center of government and the world’s southernmost capital city. It is also the country’s cultural capital and the third most populous urban area in New Zealand. Situated in Wellington Harbour, state embassies, government departments, finance and other sectors head offices are located here. The major regional hospital is also located in the City.



1.2 Community outcomes

WCC key priorities are described below:

**Community outcomes**

- Cultural Wellbeing**  
A welcoming, diverse and created city
- Social Wellbeing**  
A city of healthy and thriving sectors and communities
- Economic Wellbeing**  
An innovative business friendly city
- Urban Form**  
A liveable and accessible, compact city
- Environmental Wellbeing**  
A city restoring and protecting nature

Three Waters contribution to these key priorities are:

- **Safe and healthy water.** We provide water services to ensure safe drinking water and work to eliminate the public health risks from wastewater and stormwater over time.
- **Respectful of the environment.** When we provide water services, we seek to avoid harm to the natural and built environment and over time enhance it for the benefit of future generations.
- **Resilient networks** support our economy. We provide reliable day-to-day water services that can withstand shock and stresses and support a strong and growing regional economy.
- **Optimal performance.** We have a capable, adaptive, and collaborative workforce competent in applying asset management practices, using innovative practices and exchanges of knowledge to drive optimal performance.

Source: WCC LTP 24-34

1.3 Three Waters services objectives

**Water supply:** Provision of a safe, high quality, reliable and resilient water supply that aims to support the achievement of Council's goals by protecting the health and safety of the community and supporting economic growth and development.

**Wastewater:** Provision of a secure, efficient and resilient wastewater service that aims to support the achievement of Council's goals by protecting the health of the community and our waterways from the harmful effects of wastewater and supporting economic growth and development.

**Stormwater:** Provision of a stormwater service that aims to efficiently manage and control flows and support the achievement of Council's goals by protecting the public and property from the effects of flooding and minimising the impact of runoff on the environment.

1.4 Key facts and figures

WWL manages the following assets on behalf of WCC.

| Water Type   | Asset Type         | Quantity    | Completeness | Confidence |
|--------------|--------------------|-------------|--------------|------------|
| Water Supply | Reservoirs         | 67 Tanks    | A            | A          |
|              | Pipes              | 935.85 km   | B            | B          |
|              | Pump Station Sites | 35 Sites    | A            | A          |
| Wastewater   | Pipes              | 1,092.48 km | B            | B          |
|              | Pump Stations      | 69 Sites    | A            | A          |
| Stormwater   | Treatment Plants   | 2 Sites     | A            | A          |
|              | Pipes              | 831.71 km   | B            | B          |
|              | Pump Stations      | 5 Sites     | A            | A          |

Source: WWL DPS Asset Data Summary Report 2024

1.5 Regional Three Waters challenges and priorities

The WWL priorities below support WCC’s vision for its community:

**Priority 1. Looking after existing infrastructure**  
*(renewals, operations, maintenance and critical services)*

Looking after existing assets is foundational to a sound risk management approach – it reduces incidents that usually cost more and has less negative effects when work is planned.

**Priority 2. Supporting growth**

Growth is inevitable and must be managed to ensure it does not add to existing issues for the three waters network.

**Priority 3. Sustainable water supply and demand**

We are near capacity for water supply

**Priority 4. Improving env. water quality**

Community expects better water quality than we have now

**Priority 5. Net carbon zero 2050**

Carbon emissions are a key contributor to climate change

**Localised issues**

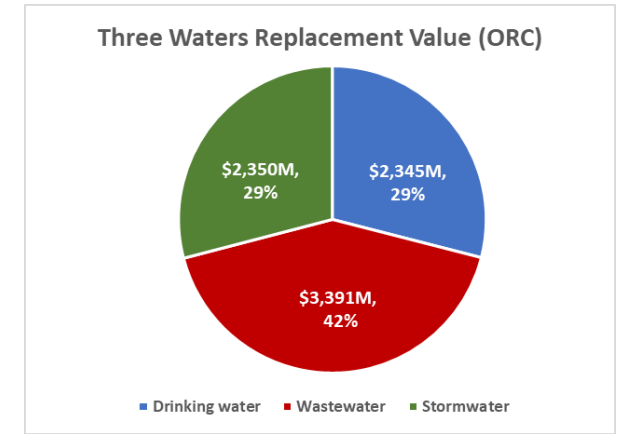
- Reducing flood risk
- Seismic resilience
- Firefighting water supply

Individual activities associated with localised risks will be progressed as funding allows

System-wide issues that need addressed over the next 30 years

1.6 Asset valuation data

WCC has \$1.8 B in Three Waters assets (optimised replacement cost) as of June 2024.



2. Partnerships and stakeholders

2.1 Mana Whenua partnership

Te Tākai Here  
Tākai Here Partnership

In April 2022, Te Kaunihera o Pōneke and mana whenua in the Wellington rohe adopted Tākai Here – a collective partnership agreement with Taranaki Whānui ki te Upoko o te Ika, Te Rūnanga o Toa Rangatira, and Te Rūnanganui o Te Ātiawa ki te Upoko o te Ika a Māui.

This collective agreement set the principles, values and priorities for our work together. The date of the signing was significant, in being the 182nd anniversary of the signing of the Treaty of Waitangi in Te Whanganui-a-Tara.

The partnership is expressed through the narrative and imagery of a waka. The role we all play is like that of a hoe (paddle) propelling the waka forward, creating a partnership that looks ahead and plans for the future of Wellington. It also refers to the binding, lashing, knotting and tying of the waka to ensure it is safe and fit for our shared purposes. This represents the way our shared values and tikanga ensure a strong relationship.

The Council is dedicated to strengthening our relationships with our Tākai Here partners as well as Māori communities. This includes providing opportunities for meaningful input, contribution and leadership roles in the decision-making process for our city.

Three Waters Iwi and community engagement

Iwi and community consultation is undertaken for abstraction/discharge consents and all significant projects.

2.2 Key customers and stakeholders

The Three Waters activities exist to meet the needs and requirements of customers, partners and key stakeholders. The table below identifies the areas of interests, expectations and involvements of these groups.

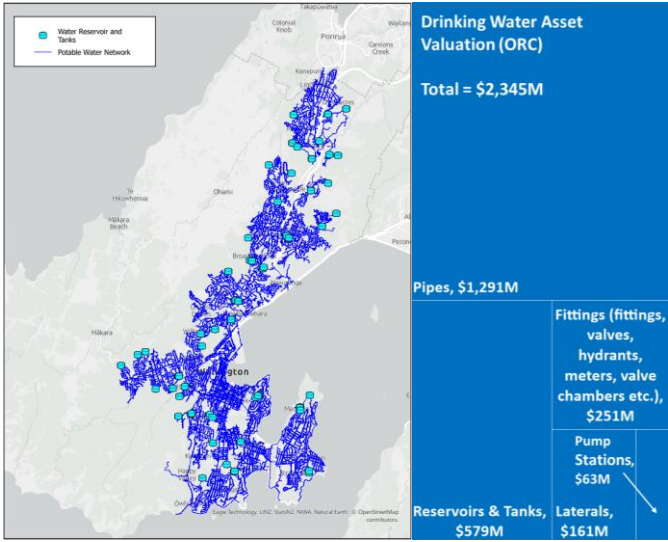
| Customers/Stakeholders                                                                                                              | Area of Interest                                          | Involvement/Expectations                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Homeowners, businesses, organisations, health and medical facilities, education facilities, community groups, tourists and visitors | Water, wastewater, stormwater usage                       | These customers realise the benefits provided by the water supply, wastewater and stormwater activities                                                                                                           |
| Iwi-Māori                                                                                                                           | Te Mana o te Wai<br><br>Iwi & Hapū cultural heritage      | All water to be respected and mauri of water to be protected and enhanced.<br>Mana whenua to be involved in management of water supply, wastewater and stormwater issues                                          |
| Greater Wellington Regional Council                                                                                                 | Development, usage and discharge plans                    | Asset owner - drinking water intakes, treatment and bulk conveyance. Administers and enforces effective resource management in the region. Applications are processed through Regional Council                    |
| Water Services Regulator Taumata Arowai & Ministry of Health                                                                        | Drinking water safety<br>Three Waters service performance | Compliance with drinking water standards and regulations                                                                                                                                                          |
| Audit New Zealand                                                                                                                   | Compliance and financial regulation                       | Carries out annual audits of Council on the Auditor-General’s behalf to give ratepayers assurance that Council is appropriately reporting on how they spend public money, and on the services, they have provided |
| Other Government agencies, Ratepayers Associations, Environmental groups, Fish and Game                                             | Development, usage and discharge plans                    | These groups liaise with Council in relation to three waters services. Affected parties to Council’s resource consents.                                                                                           |
| 3Waters utility providers                                                                                                           | Service delivery (Term Service Contracts)                 | Access to assets for operations and maintenance, including planned and reactive works. Payment for services provided within contract terms.                                                                       |
| Other utility providers                                                                                                             | Operations, performance and management of works           | New Zealand Utilities Advisory Group (NZUAG) requirements for co-ordinating networks                                                                                                                              |
| Emergency Management/Civil Defence                                                                                                  | Emergency Operations                                      | In the event of a Civil Defence emergency, they provide advice and work alongside emergency services, lifeline utilities and government departments                                                               |
| Elected Members, Committees, CEO, Management and Staff                                                                              | Performance and management of services                    | Key internal stakeholders responsible for the management and operation of the Three Waters system                                                                                                                 |

3. Three Waters services and assets we manage

3.1 Water supply

The water supply network receives treated water from Greater Wellington Regional Council’s bulk water network. This is stored in local reservoirs and distributed via a pressurised pipe network to consumers at their point of connection (boundary toby).

The figure below summarises the extent and value of water supply network assets.

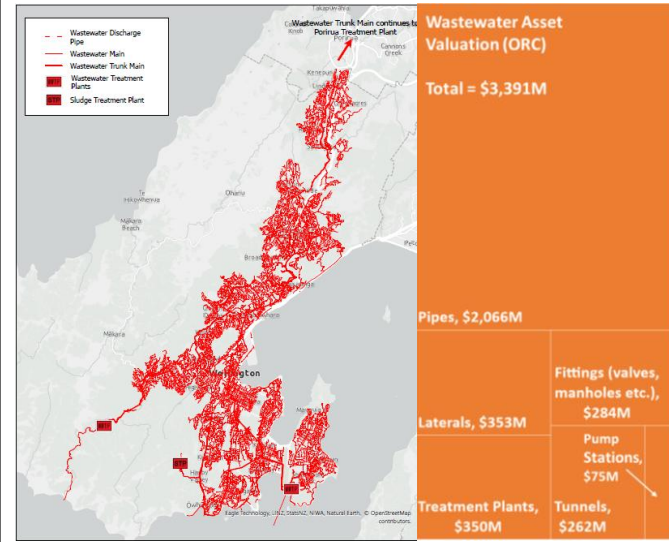


3.2 Wastewater

The wastewater network is made up of local collection sewers taking wastewater from properties ,through gravity pipelines, pump stations and pressurised (rising) mains.

Some wastewater within the WCC area is conveyed to and treated at the PCC Titahi Bay WWTP e.g., parts of Johnsonville, Churton Park and Tawa) while wastewater from Karori is conveyed to and treated at Western WWTP. Wastewater is treated and discharged via one of the two WWTP - Western and Moa Point (including Careys Gully).

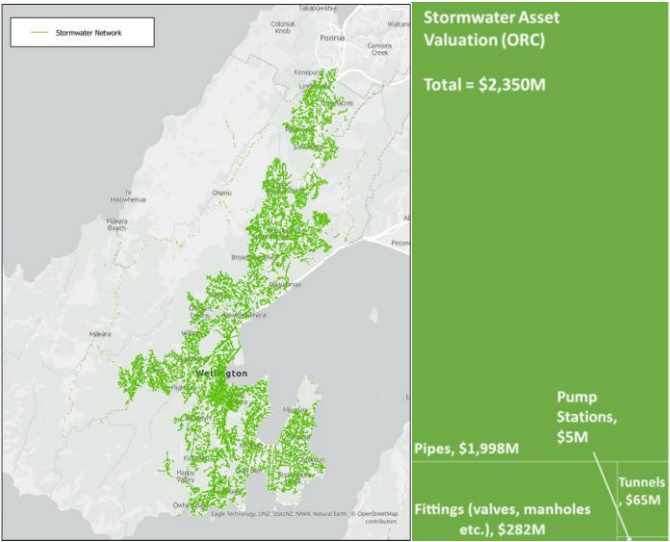
The figure below summarises the extent and value of WCC wastewater network assets.



3.3 Stormwater

The WCC stormwater network includes stream systems which are predominantly closed pipes with fixed capacities. Other conveyance methods include overland flow paths, with limited wetland treatment and storage. With exceptions e.g., Kaiwharawhara and Owhiro, these discharge directly into the coastal-marine environment.

The figure below summarises the extent and value of WCC stormwater network assets.



### 3.4 State of the assets

| 3.4.1 Asset Condition, Criticality and Reliability Definitions. Critical Assets.                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The tables below describe the asset condition, criticality and reliability definitions. An outline of this Councils critical asset groups is provided.</p> <p>To determine the condition and physical state of an asset, the asset's age is used to indicate replacement and timing, as well as the identification of maintenance or other interventions that may be required.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Definitions                                                                                                                                                                                                                                                                                                                                                                           | Asset Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data Reliability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Critical Assets                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                       | <p>Determined based on the performance of a physical, visual, desktop, or modelled condition assessment activity. Inspection techniques differ by asset class. See chart below:</p> <p><b>Very Good (1):</b> No observable defects or deterioration.</p> <p><b>Good (2):</b> No defects evident that if worsened would result in asset failure.</p> <p><b>Moderate (3):</b> Defects evident that if worsened could result in asset failure.</p> <p><b>Poor (4):</b> Significant defects and/or serious deterioration affecting an asset's structural integrity evident.</p> <p><b>Very Poor (5):</b> If the asset has not already failed, it could fail at any time.</p> | <p>Determined based on the type of inspection method and extent of that inspection method. The determination may differ between asset classes:</p> <p><b>(A) Highly Reliable:</b> Data based on sound records, procedures, investigations, and analysis which is properly documented and recognised as the best method of assessment.</p> <p><b>(B) Reliable:</b> Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings; for example, the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.</p> <p><b>(C) Uncertain:</b> Data based on sound records, procedures, investigations, and analysis which is incomplete or unsupported, or extrapolation from a limited sample for which grade A or B data is available.</p> <p><b>(D) Very Uncertain:</b> Data based on unconfirmed verbal reports and/or cursory inspection and analysis.</p> <p><b>(E) Unknown:</b> None or very little data held.</p> | <p>Determined based on an assessment of the asset(s) failing against Wellington Water's service goals and four criticality factors. See Asset Criticality Framework for details.</p> <p><b>VLCA (1):</b> Very Low Critical Asset</p> <p><b>LCA (2):</b> Low Critical Asset</p> <p><b>MCA (3):</b> Moderate Critical Asset</p> <p><b>HCA (4):</b> High Critical Asset</p> <p><b>VHCA (5):</b> Very High Critical Asset</p> |
| Actions                                                                                                                                                                                                                                                                                                                                                                               | <p>There is a programme in place to improve understanding of the condition of the assets we manage. Through the collection and analyses of condition data, we will be able to progress to a more condition-based remaining life approach.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>There is an ongoing programme in place to improve asset data reliability. This takes place through the analysis of asset data completeness and accuracy and through the update of asset data information, from field checks, audits and condition assessments. The aim is to move the asset data reliability rating up to reliable and very reliable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>An asset criticality framework exists and renewals and replacement priority is given to the 'Very High Critical Assets' (VHCA).</p>                                                                                                                                                                                                                                                                                    |

| Critical Assets |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                   |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Critical Assets | Critical Assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                   |
|                 | <p><b>Water Supply</b></p> <ul style="list-style-type: none"> <li>Pump stations and reservoirs and trunk mains with no redundancy/contingency</li> <li>Assets servicing a very large % of the connected/vulnerable population</li> <li>Location based watermains that intersect a state highway/buildings or a water course</li> <li>Water sources and treatment plants are owned and managed by GWRC</li> </ul>  | <p><b>Wastewater</b></p> <ul style="list-style-type: none"> <li>Wastewater treatment plants</li> <li>Pump stations and trunk mains with no redundancy/contingency</li> <li>Assets servicing a very large % of the connected/vulnerable population</li> <li>Location based Pipes that intersect state highways /buildings or are within 20 metres of a water course (includes pipe bridges)</li> </ul> | <p><b>STORMWATER</b></p> <ul style="list-style-type: none"> <li>Stormwater pump stations, detention ponds and soakage cells</li> <li>Pipes with diameter &gt;=225mm (pre 2000's) and &gt;=300mm (2000's onwards)</li> </ul>  |

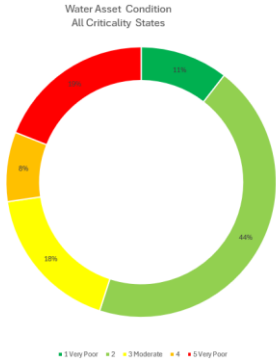
3.4 State of the assets (cont.)

3.4.2 Water supply

**Network Assets.** The WCC water supply network asset register details are provided below.

| Water Type   | Asset Type         | Quantity           | Completeness | Confidence |
|--------------|--------------------|--------------------|--------------|------------|
| Water Supply | Reservoirs         | 67 Tanks           | A            | A          |
|              |                    | 47 Emergency Tanks | A            | A          |
|              | Pipes              | 935.85 km          | B            | B          |
|              | Pump Station Sites | 35 Sites           | A            | A          |

**Network Condition.** The WCC water supply network asset condition is provided in the figure.



**Water Supply – Summary of Network Issues and Challenges.** There is a significant portion of the network that is overdue for replacement (Approx 16 % is past its expected life with an additional 7% reaching its end of life in the next 10 years) . The high renewal requirements are because of the amount of asbestos cement pipe that was installed post World War 2 and the amount of cast iron pipe laid prior to World War 2 that remains in service. These pipes are brittle, slowly corroding and vulnerable to failure immediately after an earthquake. Priority for renewal in current plans must be given to pipes with historic failures, service interruptions and high repair costs as well as the HCA or VHCA assets that have been validated as close to failure through condition assessment. If HCA or VHCA asset are not replaced until failure because of delays, lengthy and extensive service interruptions will occur.

**Reservoirs .** All reservoirs are regarded as VHCAs. If reservoirs are removed from service, widespread loss of water supply will result. All reservoirs have been visually assessed with emphasis on contamination and health and safety risks. There are known (list?) reservoirs where structural condition means that replacement is the only solution. In the interim all health and safety and contamination risks can be mitigated through minor works and good maintenance. Funding for minor works has been allocated, and work continues to prevent risks identified.

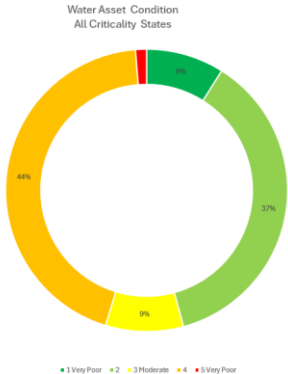
**Pump Stations (3 Waters).** Pumps stations (water supply, wastewater and stormwater) are critical facilities. Within these facilities are also critical mechanical and electrical assets that on failure would result in supply disruption health and safety risks in the immediate vicinity, flooding and environmental pollution. Condition assessment of pump station assets is ongoing and critical asset renewal dates have been identified. Deferral of renewal funding will simply heighten the likelihood of the consequences listed above.

3.4.3 Wastewater including treatment plants

**Network Assets.** The WCC wastewater network asset register details are provided below.

| Water Type | Asset Type       | Quantity    | Completeness | Confidence |
|------------|------------------|-------------|--------------|------------|
| Wastewater | Pipes            | 1,092.48 km | B            | B          |
|            | Pump Stations    | 69 Sites    | A            | A          |
|            | Treatment Plants | 2 Sites     | A            | A          |

**Network Condition.** The WCC wastewater Network asset condition is provided in the figure.



**Wastewater network – Summary of Network Issues and Challenges.** There is a significant portion of the network that is overdue for replacement (Approx 20 % is past its expected life with an additional 15% reaching its end of life in the next 10 years). Failure of HCA and VHCA wastewater pipes will result in structural collapse and lengthy overflows of untreated wastewater into the immediate receiving environments such as beaches, harbours or waterways. The high level of renewals likely to be needed in the next 10 years is primarily an outcome of materials selected and date of installation. Wastewater pipes made of concrete and earthenware are always vulnerable to corrosion and this has been evidenced through the condition assessment of the VHCAs. Priority for renewal in current plans must be given to pipes with historic failures, service interruptions and high repair costs as well as the HCA or VHCA assets that have been validated as close to failure through condition assessment. Recent history of critical asset failures such as the Dixon St adit and the Victoria St rising main are reminders of the consequences of failure of critical wastewater pipes.

**Wastewater Treatment Plants.** Wastewater treatment plants (Western and Moa Pt) are critical facilities. Within these facilities are also critical assets that on failure would result in supply disruption, health and safety risks in the immediate vicinity, flooding and environmental pollution. These plants were constructed as a DBO that ran its time in 2020 after 25 years of service. The nature of many of the mechanical and electrical assets means that a significant renewals burden has arisen post termination of these contracts. Failure of these assets heightens the risk of consent non-compliance and unplanned discharges to the environment.

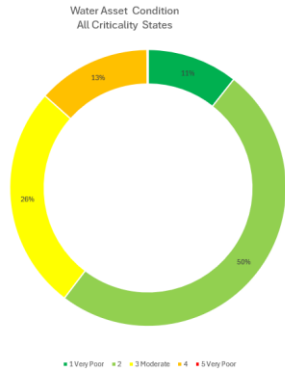
3.4 State of the assets (cont.)

3.4.4 Stormwater

**Network Assets.** The WCC stormwater network asset register details is provided below.

| Water Type | Asset Type         | Quantity | Completeness | Confidence |
|------------|--------------------|----------|--------------|------------|
| Stormwater | Pipes              | 831.71   | B            | B          |
|            | Pump Station Sites | 5        | A            | A          |

**Network Condition.** The WCC stormwater network asset condition is provided in the figure.



**Stormwater network – Summary of Network Issues and Challenges.** Generally, the condition of the stormwater network is in better condition than the drinking water and wastewater networks (8% past its expected life with an additional 9% in the next 10 years). Furthermore, the nature of the water carried is less corrosive than for wastewater pipes although materials used are similar. Structural failure of critical stormwater pipes is likely to be hazardous to public safety, roadways and buildings.

Planning for renewals must be integrated with capacity assessment to protect against floods and climate change. Nevertheless, condition assessment remains vital to adequately plan the renewal or upgrade of critical stormwater pipes. Renewal priority must be given to condition grade 4 and 5 assets combined with flood risk assessment.

4. Three Waters current levels of service and performance measures

4.1 Levels of Service defined

Levels of service define the type and extent of services delivered to the customer. They are written from a customer viewpoint such that Council can set targets against the levels of service to demonstrate outputs and performance against the community outcomes.

Levels of service are a link between Council’s strategic goals and key priorities, AM objectives, detailed operational objectives and performance measures. They are based on user expectations, statutory and national standard requirements.

Community/Customer Objectives

Corporate objectives

AM objectives

Levels of Services

Operational Objectives

The levels of service framework, outlined below includes service parameters, objectives, performance measures and targets.

While target levels of service for water reservoirs have been developed by WWL , these have not been agreed with WCC. Therefore, there are no agreed minimum Levels of Service e.g., seismic, emergency, firefighting capacity and demand

LEVELS OF SERVICE

Service Parameters

Levels of Service Objectives

Performance Measures

Performance Targets

Aspects of a service that reflects that the organisation delivers, e.g. service reliability, sustainability.

Describe the outputs a customer can expect to receive from the asset-related activity, e.g. provide safe housing.

The metric for measuring performance against the level of service objectives, e.g. number of safety incidents.

Provide a specific numeric target relating to the performance measure, e.g. <3 per year.

4.2 WCC key priorities

WCC key priorities identified in the LTP are summarised in the diagram.

Community outcomes

**Cultural Wellbeing**  
A welcoming, diverse and creative city

**Social Wellbeing**  
A city of healthy and thriving whānau and communities

**Economic Wellbeing**  
An innovative business friendly city

**Urban Form**  
A liveable and accessible, compact city

**Environmental Wellbeing**  
A city restoring and protecting nature

The WCC Three Waters levels of service contribute towards achieving these key priorities.

- Provision of Three Waters infrastructure to meet regulatory requirements, growth demand
- Compliance with resource consent requirements and undertaking operations and maintenance activities to ensure the environment is always protected
- Provision of Three Waters Infrastructure that underpins and supports the local economy
- Planning and delivery of financially sustainable Three Waters Services

4.3 Wellington Water customer outcomes and goals

As the WCC Three Waters service provider Wellington Water has developed customer outcomes and goals detailed in the table adjacent. These outcomes and goals guide Wellington Water’s service delivery and the achievement of the WCC’s Three Waters Levels of Service detailed in the next three sections (Sections 4.4-4.6).

WWL service goals and performance measures detailed in these sections do not directly align WCC’s LTP Three Waters levels of service and performance measures.

There are also technical performance measures included in operational plans and service contracts.

| Safe and healthy water                                                                     | Respectful of the environment                                                               | Resilient networks support our economy                                                                      |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| We provide safe and healthy drinking water                                                 | We manage the use of resources in a sustainable way                                         | We minimise the impact of flooding on people’s lives and proactively plan for the impacts of climate change |
| We operate and manage assets that are safe for our suppliers, people and customers         | We will enhance the health of our waterways and the ocean                                   | We provide three water networks that are resilient to shocks and stresses                                   |
| We provide an appropriate region-wide fire-fighting water supply to maintain public safety | We influence people’s behaviour so they are respectful of the environment                   | We plan to meet future growth and manage demand                                                             |
| We minimise public health risks associated with wastewater and stormwater                  | We ensure the impact of water services is for the good of the natural and built environment | We provide reliable services to customers                                                                   |

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Wellington City Council Three Waters Asset Management Plan, Part 3 Page 11

| 4.4.1 Water supply - safety of drinking water                                                                                                                                                                                                                                                      |        |                |                  |                  |                  |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|------------------|------------------|------------------|---------------|
| <b>Measure: The Council provides safe and reliable potable water for household and business use in urban areas</b>                                                                                                                                                                                 |        |                |                  |                  |                  |               |
| The table below shows that Council drinking water supplies have not fully complied with the following criteria for the last three years: (a) part 4 of the drinking-water standards (bacteria compliance criteria), and (b) part 5 of the drinking-water standards (protozoal compliance criteria) |        |                |                  |                  |                  |               |
| Performance Measure                                                                                                                                                                                                                                                                                | Target | 2023/24 Result | 2024/25 Forecast | 2025/26 Forecast | 2026/27 Forecast | 2027-34 Trend |
| The extent to which the local authority's drinking water supply complies with part 4 of the drinking-water standards (bacteria compliance criteria)                                                                                                                                                | 100%   | Compliant      | Compliant        | Compliant        | Compliant        | Compliant     |
| The extent to which the local authority's drinking water supply complies with part 5 of the drinking-water standards (protozoal compliance criteria)                                                                                                                                               | 100%   | Non- Compliant | Compliant        | Compliant        | Compliant        | Compliant     |
| <b>Outlook:</b> There are no compliance issues forecast for WCC.                                                                                                                                                                                                                                   |        |                |                  |                  |                  |               |

| 4.4.2 Water supply - fault response times                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                |                              |                                             |                             |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|------------------------------|---------------------------------------------|-----------------------------|-----------------------------|
| <b>Measure: The Council provides a responsive call-out service to attend to customers' issues with their water supply</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                |                              |                                             |                             |                             |
| The table below shows the median times to attend and resolve call-outs in response to a fault or unplanned interruption to the water supply system for Urgent and Non-urgent call-outs.                                                                                                                                                                                                                                                                                                                                                                        |           |                |                              |                                             |                             |                             |
| Performance Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Target    | 2023/24 Result | 2024/25 Forecast             | 2025/26 Forecast                            | 2026/27 Forecast            | 2027-34 Trend               |
| Median response time to attend urgent call-outs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <60 mins  | 151 minutes    | Status quo, not meeting LOS  | Status quo, not meeting LOS                 | Status quo, not meeting LOS | Status quo, not meeting LOS |
| Median response time to resolve urgent call-outs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <4 hours  | 13.6 hours     | Status quo, not meeting LOS  | Status quo, not meeting LOS                 | Status quo, not meeting LOS | Status quo, not meeting LOS |
| Median response time to attend non-urgent call-outs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <36 hours | 555 hours      | Improvement, not meeting LOS | Return to status quo (deterioration of LOS) | Continued deterioration     | Continued deterioration     |
| Median response time to resolve non-urgent call-outs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 5 days  | 45.1 days      | Improvement, not meeting LOS | Return to status quo (deterioration of LOS) | Continued deterioration     | Continued deterioration     |
| <b>Outlook:</b> With the indicative level of investment, an improvement in Year 1 of the LTP is expected, but will be followed by a decline in achievement of non-urgent response times from Year 2 due to a reduction in operational funding. Tasks considered as 'urgent', are always the priority and are generally not resource constrained. An increase in the number of more urgent faults is expected as a result of network deterioration, however WWL has stated that 'we do not expect to see a significant change in the level of service provided' |           |                |                              |                                             |                             |                             |

| 4.4.3 Water supply - demand management and water loss                                                                                                                                                                                                                                                                                                                                                            |        |                |                                          |                                          |                                          |                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|------------------------------------------|------------------------------------------|------------------------------------------|---------------------------------------------|
| <b>Measure: The Council promotes the efficient and sustainable use of water</b>                                                                                                                                                                                                                                                                                                                                  |        |                |                                          |                                          |                                          |                                             |
| The table below shows the average consumption of drinking water per day per resident and the percentage of real water loss from the Council's water networks.                                                                                                                                                                                                                                                    |        |                |                                          |                                          |                                          |                                             |
| Performance Measure                                                                                                                                                                                                                                                                                                                                                                                              | Target | 2023/24 Result | 2024/25 Forecast                         | 2025/26 Forecast                         | 2026/27 Forecast                         | 2027-34 Trend                               |
| The percentage of real water loss from the local authority's networked reticulation system                                                                                                                                                                                                                                                                                                                       | <20%   | 28%            | Increased losses                         | Increased losses                         | Increased losses                         | Increased losses                            |
| Average consumption of drinking water per day per resident                                                                                                                                                                                                                                                                                                                                                       | <365L  | 416L           | Increased consumption (including losses) | Increased consumption (including losses) | Increased consumption (including losses) | Improving after Water Meters implementation |
| <b>Outlook:</b> Over the 10-year period of this LTP, sufficient funding has not been allocated to control and reduce the increasing backlog of leaks. Evidence has shown that water meters will have a positive impact, resulting in consumer reducing consumption e.g., usage and private property leaks. This must be complimented with additional network interventions such as renewals and network repairs. |        |                |                                          |                                          |                                          |                                             |

| 4.4.4 Water supply - ustomer satisfaction                                                                                                                                                                                                                                                                                 |        |                |                     |                  |                  |                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|---------------------|------------------|------------------|-----------------------------------------|
| <b>Measure: The Council provides a responsive call-out service to attend to customers' issues with their water supply</b>                                                                                                                                                                                                 |        |                |                     |                  |                  |                                         |
| Performance Measure                                                                                                                                                                                                                                                                                                       | Target | 2023/24 Result | 2024/25 Forecast    | 2025/26 Forecast | 2026/27 Forecast | 2027-34 Trend                           |
| The total number of complaints received about drinking water taste, clarity, odour, water pressure or flow, continuity of supply or the response to any of these issues; expressed per 1000 connections                                                                                                                   | <20    | 23.2           | Static or improving | Deteriorating    | Deteriorating    | Deterioration and inability to meet LOS |
| <b>Outlook:</b> Complaints are tied strongly to investment in the network. We can expect to see the level of complaints continue to grow over the next 10 years based on indicative budgets. There may be a small improvement in Year 1 with additional funding to reduce the backlog, leading to less repeat complaints. |        |                |                     |                  |                  |                                         |
| 4.4.5 Water supply - volume of water abstracted                                                                                                                                                                                                                                                                           |        |                |                     |                  |                  |                                         |
| This performance measure is applicable to GWRC as the bulk water supplier.                                                                                                                                                                                                                                                |        |                |                     |                  |                  |                                         |

4.5 Wastewater Level of Service and performance

| 4.5.1 Wastewater - system and adequacy                                                                                                                                                                                                                  |        |                |                               |                               |                               |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| <i>Measure: Adequate wastewater services for household and business use will be provided in currently serviced urban communities</i>                                                                                                                    |        |                |                               |                               |                               |                               |
| Performance Measure                                                                                                                                                                                                                                     | Target | 2023/24 Result | 2024/25 Forecast              | 2025/26 Forecast              | 2026/27 Forecast              | 2027-34 Trend                 |
| The number of dry weather sewerage overflows from the territorial authority's sewerage system, expressed per 1000 connections                                                                                                                           | Zero   | 2.9            | Cannot reach level of service | Cannot reach level of service | Cannot reach level of service | Status quo, will not meet LOS |
| <b>Outlook:</b> It is difficult to draw strong conclusions, but the age and condition of the network and level of funding provided is expected to result in deteriorating performance. Note that reaching zero dry-weather overflows is not achievable. |        |                |                               |                               |                               |                               |

| 4.5.3 Wastewater - customer satisfaction                                                                                                                                                |        |                |                  |                  |                  |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|------------------|------------------|------------------|---------------|
| <i>Measure: Council will respond as required to faults and complaints received from its customers</i>                                                                                   |        |                |                  |                  |                  |               |
| Performance Measure                                                                                                                                                                     | Target | 2023/24 Result | 2024/25 Forecast | 2025/26 Forecast | 2026/27 Forecast | 2027-34 Trend |
| The total number of complaints received about sewerage odour, sewerage system faults, sewerage system blockages and the response to any of these issues; expressed per 1000 connections | <30    | 19.8           | Deteriorating    | Deteriorating    | Deteriorating    | Deteriorating |

| 4.5.2 Wastewater - fault response times                                                                           |            |                |                                      |                                      |                                      |                                      |
|-------------------------------------------------------------------------------------------------------------------|------------|----------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| <i>Measure: Council will respond as required to faults and complaints received from its customers</i>             |            |                |                                      |                                      |                                      |                                      |
| Performance Measure                                                                                               | Target     | 2023/24 Result | 2024/25 Forecast                     | 2025/26 Forecast                     | 2026/27 Forecast                     | 2027-34 Trend                        |
| Median response time to attend a sewage overflow resulting from a blockage or other fault in the sewerage system  | <= 60 mins | 80 minutes     | Status quo, likely will not meet LOS | Status quo, likely will not meet LOS | Status quo, likely will not meet LOS | Status quo, likely will not meet LOS |
| Median response time to resolve a sewage overflow resulting from a blockage or other fault in the sewerage system | <= 6 hours | 4.7 hours      | Status quo, likely will not meet LOS | Status quo, likely will not meet LOS | Status quo, likely will not meet LOS | Status quo, likely will not meet LOS |

| 4.5.4 Wastewater - discharge compliance                                                                                                                                                                                                                                                                                  |        |                |                                                       |                                                       |                                                       |                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|-----------------------|
| <i>The Council's wastewater services do not negatively impact on public health or the natural environment in line with legislative requirements</i>                                                                                                                                                                      |        |                |                                                       |                                                       |                                                       |                       |
| Performance Measure                                                                                                                                                                                                                                                                                                      | Target | 2023/24 Result | 2024/25 Forecast                                      | 2025/26 Forecast                                      | 2026/27 Forecast                                      | 2027-34 Trend         |
| Number of abatement notices received in relation to the resource consents for discharge from sewerage systems                                                                                                                                                                                                            | 0      | 1              | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Increasing compliance |
| Number of infringement notices received in relation to the resource consents for discharge from sewerage systems                                                                                                                                                                                                         | 0      | 3              | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Increasing compliance |
| Number of enforcement orders received in relation to the resource consents for discharge from sewerage systems                                                                                                                                                                                                           | 0      | 0              | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Increasing compliance |
| Number of successful prosecutions in relation to the resource consents for discharge from sewerage systems                                                                                                                                                                                                               | 0      | 0              | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Improvement at WWTP leading to less regulatory action | Increasing compliance |
| <b>Outlook:</b> Council investment in wastewater treatment plant improvements are scheduled to be completed towards the end of the 2024-34 LTP period, at which point regulatory compliance will improve. With lack of asset redundancy, there will be periods of non-compliance until the funded renewals are complete. |        |                |                                                       |                                                       |                                                       |                       |

4.6.1 Stormwater - performance measures

The Stormwater performance measures are detailed in the table below:

| Performance Measure                                                                                                                         | Target    | 2023/24 Result | 2024/25 Forecast                             | 2025/26 Forecast                             | 2026/27 Forecast                           | 2027-34 Trend                   |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|---------------------------------|
| The number of flooding events that occurred throughout the year                                                                             | <=2       | 0              | Weather dependant                            | Weather dependant                            | Weather dependant                          | Weather dependant               |
| For each flooding event, the number of habitable floors affected; expressed per 1000 connections                                            | <=0.13    | 0              | Weather dependant                            | Weather dependant                            | Weather dependant                          | Weather dependant               |
| Median response time to attend a flooding event                                                                                             | <=60 mins | 0              | Weather dependant                            | Weather dependant                            | Weather dependant                          | Weather dependant               |
| The number of complaints received by a territorial authority about the performance of its stormwater system, expressed per 1000 connections | <20       | 8.4            | Deterioration of network, likely to meet LOS | Deterioration of network, likely to meet LOS | Deterioration of network, may not meet LOS | May not meet LOS in outer years |

**Outlook:** Opex provided at the recommended levels is important to maintain and maximise existing stormwater network capacity. Assets are, however continuing to deteriorate while predicted flood probability and consequences increase - driven by climate change. Currently people, dwellings and infrastructure are already exposed to 50-year (return interval) flood events. To protect property will require more Capex investment (renewals , increased capacity etc) than is currently allocated.

4.6.2 Stormwater - discharge compliance

The Council minimises the environmental impact of protecting habitable areas from flooding

| Performance Measure                                                                                                | Target | 2023/24 Result | 2024/25 Forecast | 2025/26 Forecast | 2026/27 Forecast | 2027-34 Trend |
|--------------------------------------------------------------------------------------------------------------------|--------|----------------|------------------|------------------|------------------|---------------|
| Number of abatement notices received in relation to the resource consents for discharge from stormwater systems    | 0      | 0              | N/A              | N/A              | N/A              | N/A           |
| Number of infringement notices received in relation to the resource consents for discharge from stormwater systems | 0      | 0              | N/A              | N/A              | N/A              | N/A           |
| Number of enforcement orders received in relation to the resource consents for discharge from stormwater systems   | 0      | 0              | N/A              | N/A              | N/A              | N/A           |
| Number of successful prosecutions in relation to the resource consents for discharge from stormwater systems       | 0      | 0              | N/A              | N/A              | N/A              | N/A           |

5. Demand and planning for the future

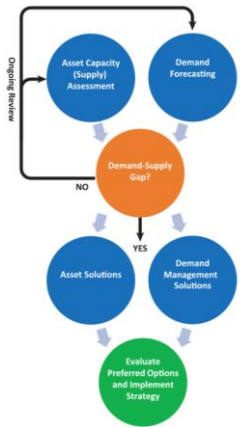
5.1 Understanding demand

Demand represents the quantity of products or services wanted by customers at a specified price and time. Demand forecasting helps provide an understanding of future service demand trends and helps with planning to meet changing demand over time. There is a level of inherent uncertainty and risk in the demand management process outlined in the diagram shown.

Demand management involves:

- Assessment of asset capacity
- Identifying demand drivers
- Forecasting future demand
- Assessing Demand-Supply gaps
- Identifying demand management solutions

Demand management planning is vital to ensure services are available at the required levels to meet customer requirements and expectations. It is also important to help effectively manage constraints and shortages of supply.



5.2 Key Three Waters demand drivers

Understanding and monitoring demand drivers helps plan for future service demand and the development of organisational growth and demand strategies, policies and plans.

| Demand drivers                |                                                 |
|-------------------------------|-------------------------------------------------|
| Demographics                  | Trends in population growth, age demographics   |
| Tourism                       | Seasonal peaks and tourism trends               |
| Economic development          | Economic climate and growth trends              |
| Legislation                   | Legislation and regulatory requirement changes  |
| Climate change                | Climate change impacts and trends               |
| Land use and land development | Land use and land development demand and trends |

5.3 Demand management and forecasting

**Wellington’s demand for water is increasing** Wellington Water currently supplies approximately 175 million litres of drinking water per day on average to residents and businesses within the metropolitan area. Demand for water has increased by around 30% over the last 10 years - close to 3 time the rate of population growth. This has been caused by a rapid increase in water loss in the city council reticulation networks.

**Challenges for future supply** Looking ahead there are significant challenges that will affect supply and demand, and impact Wellington Water’s ability to provide appropriate standard of water security. These include:

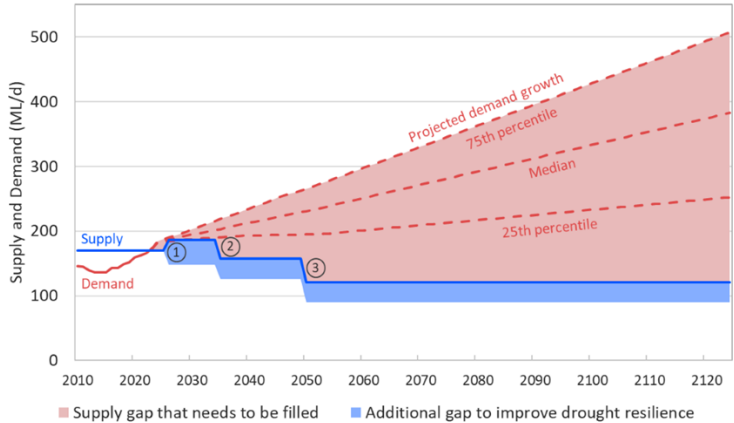
- Population growth – an additional 130,000 people over the next 30 years is expected to drive up the demand for water.
- Environmental enhancements – less water available during summer in response to recommendations from the Whaitua Te Whanganui-a-Tara Committee.
- Water loss – which has increased over recent years and is currently a substantial component of the overall demand for water. Water loss will also need to be reduced to meet water efficiency requirements in the Natural Resources Plan.
- Climate change and sea level rise –expected to impact demand, water availability and sustainable yield from the Waiwhetū aquifer.
- Water shortage level of service (LoS) – the current 1-in-50 year LoS is low by national and international standards. Pressure from public, political or regulatory sources could result in the LoS increasing to a 1-in-200 or 1-in-500 year standard.

There is uncertainty and variability in how and when these challenges might impact the supply / demand balance, because they largely depend on external factors outside of Wellington Water’s direct control. Instead of creating a single plan based on a single scenario, Wellington Water has developed an adaptive plan that responds to these challenges and their effects as they change over time.

**Baseline supply / demand balance** The baseline supply / demand balance for the Wellington metropolitan water supply is shown in the figure. This illustrates the supply gap that is predicted to occur with population growth if no action is taken to increase supply and/or reduce demand.

**Timing and sequencing of options** A Dynamic Adaptive Pathways approach was taken to testing different sequences, or pathways, of options to increase supply or reduce demand. The pathway that was found to be most robust was:

- Investment in water loss management (with investment increasing over time);
- Residential metering (with volumetric charging and demand management);
- Pākura Lake Stage 1 (lakes 1 and 2);
- Managed Aquifer Recharge;
- Wainuiomata Storage;
- Pākura Lake Stage 2 (lake 3 and WTP upgrade); and
- Purified Recycled Water or seawater desalination.



Source WWL Water Source Options Assessment 2023

Assessment of options using many combinations of future scenarios showed that the first three options are required in the 2024-34 period. This is referred to as the “Keep, Reduce, Add” sustainable water supply strategy, meaning:

- Keep water in the pipes by managing water loss and replacing old infrastructure.
- Reduce water demand through universal metering and demand management.
- Add more supply by completing the Te Marua WTP optimisation project and constructing the proposed Pākura Lake Stage 1 and 2.

The timing for interventions beyond the mid 2030’s will depend on how growth and other factors change over time and will be the subject of ongoing monitoring.

**Key Capital Investment-Storage Capacity Improvement.** For WCC, the new Omāroto Reservoir (35ML) will augment storage for the Wellington Low Level water supply zone. Whilst nominally a resilience project, the sizing has also been based on servicing the needs of future population growth in the zone over the next 50 years. Demand management alone is not likely to compensate for the growth forecast, therefore the additional storage is currently being built. Not doing so would practically constrain development in this high growth zone and/or lead to service shortfalls.

5.4 Managing demand

| 5.4.1 Water supply       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 5.4.2 Wastewater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.4.3 Stormwater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Meeting Existing Demands | <p>There are a range of demand management and mitigation measures to help manage the increasing water demand challenges, including:</p> <ul style="list-style-type: none"><li>• Water restrictions</li><li>• Education programmes</li><li>• Leak detection programmes</li><li>• Network efficiency programmes</li><li>• Effective demand forecasting to ensure that future demand for the service is understood</li><li>• Water hydraulic modelling programmes to assist with growth and demand analysis and forecasting</li><li>• Management of customer demand, to reduce demand for over-utilised assets, through pricing, regulation and education</li><li>• Capital investment planning</li></ul> | <ul style="list-style-type: none"><li>• Treatment plant optimisation strategies</li><li>• Review contingency plans and readiness</li><li>• Undertake wastewater hydraulic modelling to assist with growth and demand analysis and forecasting</li><li>• Effective demand forecasting to ensure that future demand for the service is understood</li><li>• Investigate disposal options and optimisation of liquids and solids</li><li>• Management of customer demand, to reduce demand for over-utilised assets, through pricing, regulation and education</li></ul>                                                                                                                               | <ul style="list-style-type: none"><li>• Undertake stormwater hydraulic modelling to assist with growth and demand analysis and forecasting</li><li>• Network upgrades</li><li>• Risk and hazard planning and management</li><li>• Effective demand forecasting to ensure that future demand for the service is understood</li><li>• Management of customer demand, to reduce demand for over-utilised assets, through pricing, regulation and education</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                          | <ul style="list-style-type: none"><li>• Participate in wider organisation future planning and strategy development</li><li>• Infrastructure planning and budget forecasting</li><li>• Adopt “right sizing” the infrastructure assets approach</li><li>• Capital project implementation</li><li>• Network efficiency and optimisation programme implementation</li><li>• Renewals projects with an element of upsizing due to growth capacity requirements have funding allocations split between renewals, levels of service and growth</li></ul>                                                                                                                                                      | <ul style="list-style-type: none"><li>• Participate in wider organisation future planning and strategy development</li><li>• Identify and prioritise growth projects based on planning discussions with the large developers</li><li>• Better growth forecasting by use of analysis of subdivision and building consent data and trends</li><li>• Funding timing and allocations are based on the outcomes of negotiations with developers and budget estimates are used in the development contributions model</li><li>• Renewals projects with an element of upsizing due to growth capacity requirements have funding allocations split between renewals, levels of service and growth</li></ul> | <ul style="list-style-type: none"><li>• Participate in wider organisation future planning and strategy development e.g., new properties required to have ‘hydraulic neutrality’</li><li>• Monitor, plan and implement appropriate responses to future climate change impacts</li><li>• Identify and prioritise growth projects based on planning discussions with the large developers</li><li>• Better growth forecasting by use of analysis of subdivision and building consent data and trends</li><li>• Funding timing and allocations are based on the outcomes of negotiations with developers and budget estimates are used in the development contributions model</li><li>• Renewals projects with an element of upsizing due to growth capacity requirements have sufficient funding allocations split between renewals, levels of service and growth. Note there is a significant cost escalation impact c3-4x diameter increase is equivalent to c5-10x cost increase at a 10% AEP LoS increase.</li></ul> |

## 6. Risk management and resilience

### 6.1 Risk management approach and key risks

Council has developed a Risk Management Policy and a corporate Risk Management Framework. The Risk Management Framework ensures that all key risks have been identified, assessed and mitigation measures developed and implemented wherever possible. Wellington Water also operates a risk management framework aimed to identify, mitigate and report on risks and hazards. Key risks (critical & high rated risks) for the Three Waters network are listed below.

### 6.2 Key risks and mitigation measures – Three Waters (Sources WWL 2021 AMP and 2023-24 LTP Final Information Pack, WIML, Scotts)

| Activity     | Risk Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Key Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b>Looking After Existing Infrastructure</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Three Waters | <p>Current 10-year LTP investment is well short of what is required to renew ageing parts of the network “there is no funding in the LTP to account for the system deterioration impact”. There is a consequential increase in Opex and potential loss of customer service may result as break volume increases</p> <p>Stormwater - current 10-year LTP investment does not start until FY31/32, therefore ageing network assets already passed their useful life may have failed e.g., increased blockages, localised flooding.</p> <p>Wastewater – there is a significant quantity of wastewater pipework requiring renewal as indicated through the theoretical aged based backlog. 10 Year LTP investment focusses on critical high-risk assets and condition assessments are ongoing to confirm condition and remaining life</p> <p>There is a decrease in planned maintenance activities (compared to best practice) due to insufficient allocated funding.</p> | <ul style="list-style-type: none"> <li>• Condition assessment of assets in the theoretical backlog, taking a criticality and risk approach to prioritising assessment work</li> <li>• Updating asset data based on assessment findings and reassessment of backlog</li> <li>• Planning and implementing risk-based priority renewals within funding limits. This may require a review of the balance of renewals funding between the three waters as new asset information comes to light</li> </ul> |
| Three Waters | Opex budgets are insufficient for planned maintenance needed and reactive maintenance increases. WWL responses focus on ‘responding to impact rather than reducing impact”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Review and develop risk-based O&amp;M works priorities</li> <li>• Develop an understanding of critical risks and hazards within the operational works areas, monitor and report and adapt programme to allocate resource to areas of highest priority</li> <li>• Work with other utility providers e.g., power, gas to renewal assets where they are undertaking work</li> </ul>                                                                            |
| Two Waters   | Control of discharges i.e., wastewater and stormwater overflows are unable to be guaranteed. As a result, mana whenua and community expectations are unable to be met. E.g. Murphy Street interceptor overflow point, Otari Wilton Bush                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Fund growth related capital and renewals projects and levels of service improvements which minimise reduced environmental water quality</li> </ul>                                                                                                                                                                                                                                                                                                          |
| Two Waters   | Achievement of global wastewater network and stormwater discharge consents is estimated at \$4.7B (2040 standards, unbudgeted) and there is no certainty investment will achieve WCC targets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• None identified at present</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                       |

6. Risk management and resilience (cont.)

6.3 Key risks and mitigation measures – Water supply (Sources WWL 2021 AMP and 2023-24 LTP Final Information Pack, WIML, Scotts)

| Activity     | Risk Item                                                                                                                                                                                                                                                                                                                                                                                           | Key Mitigation Measures (Waugh Added)                                                                                                                                                                                                                                                                                |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Looking After Existing Infrastructure                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                      |
| Water Supply | Water demand for WCC is outstripping supply due to water loss in the network and growth. This is contrary to the principles of Te Mana o te Wai. The key risks related to this (and identified in the WWL Risk register) are: <ul style="list-style-type: none"><li>• WWL will be unable to meet peak demand (acute); and</li><li>• WWL will be unable to meet future demand (strategic).</li></ul> | <ul style="list-style-type: none"><li>• Network optimisation programmes</li><li>• Water loss management programmes</li><li>• New water reservoir on Eastern Hills planned to meet growth and improve resilience</li><li>• Capital investment in the additional lakes/storages is a mitigation for item (b)</li></ul> |
| Water Supply | Water supply reliability over summer is at risk and a new water supply is needed                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Implement a water metering programme</li><li>• Invest in operational maintenance</li><li>• Minimising the future cost of water infrastructure by exploring ways of reducing the demand for water and influencing water use behaviour</li></ul>                               |
| Water Supply | Overall seismic resilience across all reservoirs is lower than WWL considers is required to maintain the necessary level required                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"><li>• Fund for reservoir capacity improvements</li></ul>                                                                                                                                                                                                                           |
| Water Supply | Reservoirs condition means that contamination can occur (non-conformance with safe drinking water). There is insufficient funding for renewals.                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"><li>• Funding of remediation work (agreed) followed by renewal or capital works</li><li>• Completion of water storage management plans which may recommend increased funding</li></ul>                                                                                             |
| Water Supply | There is insufficient existing reservoir storage (design, growth, fire demand). Additional water storage capacity to meet resilience and the current growth shortfall is needed.                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Immediate demand management plan implementation</li><li>• Storage upgrade planning, funding and mitigation</li></ul>                                                                                                                                                         |

6. Risk management and resilience (cont.)

6.4 Key Risks and Mitigation Measures - Stormwater (Sources WWL 2021 AMP and 2023-24 LTP Final Information Pack, WIML, Scotts)

| Activity   | Risk Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Key Mitigation Measures                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Stormwater | The rate of stormwater renewals have been deferred in the LTP. Very High Criticality stormwater assets are impacted Glenmore Road, Holloway Road, Rugby Street, Moorefield Road, Palm Grove, Glover Street and Tinakori Road are examples. Failed assets have the potential to disrupt critical regional infrastructure.                                                                                                                                                                                     | <ul style="list-style-type: none"><li>Fund network renewals and capacity upgrades on a criticality/priority basis</li></ul>          |
| Stormwater | There is limited funding for the existing LOS stormwater flooding issues in the growth areas to the level that is needed to support growth. (Tawa, Johnsonville and CBD).                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>Fund network capacity improvement works on a criticality/priority basis</li></ul>              |
|            | Climate Change and Zero Carbon                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                      |
| Stormwater | <p>WCC has some low-lying coastal areas that are susceptible to sea level rise. This includes the CBD and Kilbirnie where the network will not be able to drain without pumping in the future and already affects the Kilbirnie SW project completed 2018 (reduced capacity).</p> <p>Climate change will drive an increase in the frequency and extreme (impacts) of storm event. There is also expected to be a reduction in services to the public if outfalls fail (back up of stormwater on to land)</p> | <ul style="list-style-type: none"><li>Adaptive climate change modelling and planning</li><li>Long term stormwater planning</li></ul> |

## 6. Risk management and resilience (cont.)

### 6.5 Key risks and mitigation measures - Wastewater (Source WWL 2021 AMP, WIML, Scotts WSDP)

| Activity   | Risk Item                                                                                                                                                                                                                                                                      | Key Mitigation Measures                                                                                                                                                                                                                                                                                                                                                       |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <b>Looking After Existing Infrastructure</b>                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                               |
| Wastewater | Contamination events will increase, with mana whenua and community expectations not being met as renewals investment is not at the right level – also see Three Waters (above)                                                                                                 | <ul style="list-style-type: none"> <li>• Rapid response to notifications (onsite, stop overflows)</li> </ul>                                                                                                                                                                                                                                                                  |
| Wastewater | Wastewater pump station renewal funding is not keeping pace with asset deterioration leading to capacity constraints and potential surcharge risks (environment and property damage). Note – also see Three Waters above for network pipe renewals                             | <ul style="list-style-type: none"> <li>• Condition assessment of assets in the theoretical backlog group, applying a criticality and risk approach to prioritising assessment work</li> <li>• Updating asset data based on assessment findings and reassessment of backlog</li> <li>• Planning and implementing risk-based priority renewals within funding limits</li> </ul> |
| Wastewater | The condition of some VHCA pipes under Wellington Airport have been determined as very poor. There is a significant cost to remedial works e.g., disruption, complexity. Improvements works have been deferred from the FY 23/24 capital programme                             | <ul style="list-style-type: none"> <li>• Contingency planning</li> </ul>                                                                                                                                                                                                                                                                                                      |
| Wastewater | <p>Critical wastewater mains are in very poor condition and there is a potential for non-compliance:</p> <ul style="list-style-type: none"> <li>• BP Horokiwi (Newlands) \$720k to maintain services</li> <li>• Western WWTP outfall (step country)</li> </ul>                 | <ul style="list-style-type: none"> <li>• Increase maintenance</li> <li>• Fund renewals covering all assets</li> </ul>                                                                                                                                                                                                                                                         |
| Wastewater | Moa Point Sludge transfer facility (SMF) is not completed                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• Construct the sludge management facility (SMF)</li> </ul>                                                                                                                                                                                                                                                                            |
| Wastewater | Capacity of parts of the wastewater network are insufficient to meet growth projections with current I&I and will cause overflows and will also not meet anticipated consent requirements.                                                                                     | <ul style="list-style-type: none"> <li>• Network optimisation programmes</li> <li>• Hydraulic modelling and planning</li> <li>• Contingency planning and monitoring</li> <li>• Network upgrade design, funding and implementation</li> </ul>                                                                                                                                  |
| Wastewater | <p>Wastewater pump station renewals are not keeping pace with asset deterioration leading to capacity constraints and potential surcharge risks e.g., inlet pumpstation at Moa point (works underway).</p> <p>Note – also see Three Waters above for network pipe renewals</p> | <ul style="list-style-type: none"> <li>• Condition Assessment of assets in the theoretical backlog , taking a criticality and risk approach to prioritising assessment work</li> <li>• Updating asset data based on assessment findings and reassessment of backlog</li> <li>• Planning and implementing risk-based priority renewals within funding limits</li> </ul>        |
| Wastewater | Streams, rivers and harbours contain faecal coliforms (wastes)                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Wastewater network hydraulic modelling and optimisation</li> <li>• Network upgrade planning and funding</li> <li>• Contingency planning and work e.g., detention areas</li> <li>• Stormwater discharge treatment options, planning and implementation</li> </ul>                                                                     |

## 6. Risk management and resilience (cont.)

### 6.5 Key risks and mitigation measures - Wastewater (Source WWL 2021 AMP, WIML, Scotts WSDP)

| Activity   | Risk Item                                                                                                                                                                                                                                                         | Key Mitigation Measures                                                                                       |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
|            | <b>Looking After Existing Infrastructure</b>                                                                                                                                                                                                                      |                                                                                                               |
| Wastewater | The condition of the Moa Point WWTP assets means that there will be compliance issues. The condition of the Western WWTP assets mean non-compliance may occur. Both WWTP are operating at or near the end of their useful lives.                                  | <ul style="list-style-type: none"><li>Undertake renewals and capital works as soon as possible</li></ul>      |
| Wastewater | There is a complete reliance on the Southern Landfill to accept sludge from WWTP. I alternative sludge management options are not found or completed within the Wellington area e.g., Moa Point SMF, then sludge may need to be transported to the Waikato Region | <ul style="list-style-type: none"><li>Fund Sludge Management Facilities works in the Long Term Plan</li></ul> |
| Wastewater | The Houghton Bay closed landfill produced leachate, which discharges this into Houghton Bay during wet weather events. The consent for leachate discharge has expired.                                                                                            | <ul style="list-style-type: none"><li>Undertake landfill remediation</li></ul>                                |

### 6.6 Building Resilience

Resilience within Council is built on aspects such as response and recovery planning, financial capacity, crisis leadership organisational preparedness i.e. robust risk management, emergency response plans and business continuity plans developed and understood by staff. Infrastructure resilience includes the physical robustness of assets, the level of redundancy (contingencies and backups) and the management of the consequences of interdependencies between assets and organisations.

### 6.7 Three Waters Headline Challenges – 2024+

Sludge disposal has been entirely reliant on the ability to access the Southern landfill. This, along with the Moa Point sludge transfer facility are critical to handling and disposal within the Wellington Region.

Western and Moa Point wastewater treatment plants have ageing assets which are at or near the end of their useful life. The impact on consent compliance and the potential inability to continuously provide treatment requires a commitment to suitable levels of renewals and capital funding.

Effective stormwater conveyance and disposal are below agreed levels of service due to climate change (coastal structures exposure) and growth further reducing capacity.

There are many critical 3 Waters assets, a proportion of which are in poor/very poor condition which require renewal. For example, sections of wastewater and stormwater pipes under the Wellington International Airport require urgent renewal. This along with funding of the backlog will, until completed continue to impact on operations and maintenance budgets. At this time, operations and maintenance funding is generally targeted at reactive works, and this will continue to increase until renewals reach a sufficient level (quantity) that rebalances the reactive/planned work-load.

Source – 221. WCC stage 1 advice – pre-circulation material

6.8 Other localised issues and risks

6.8.1 Reducing flood risk

**Challenge:**  
Flooding is one of the costliest natural hazards and can be severe and long-lasting for many households and communities. Flooding risk in our cities is increasing due to changing land use, forms of building construction, climate change and growth. Minimising the impacts of flooding on people’s lives is an important focus for the region, as climate change is likely to aggravate the frequency and severity of flooding events.

**Benefit to addressing the challenge:**  
Level of flood risk to homes and businesses is known and managed.

**Investment advice:**  
Managing urban flood hazards involves an integrated combination of infrastructure, urban planning, community preparedness and emergency response.

To avoid costly damages in extreme rainfall, our cities have relied on overland flow paths and buildings with elevated floor levels, though buildings have been constructed in these flow paths.

To supplement this, WWL will continue to perform catchment modelling to understand the extent of flood risk and develop appropriate responses, such as flood water storage and the upgrade of pipes or pump stations to address known risks.

For WCC, we identified stormwater upgrades in Tawa to protect residents and businesses from repeated flooding through attenuation, up-sizing pipes and improving overland flow.

6.8.2 Seismic resilience

**Challenge:**  
Wellington Water networks cross several fault lines, including the Ohariu and Wellington faults, which makes them particularly vulnerable to seismic events. The bulk water supply pipeline from the Te Mārua Treatment Plant to Porirua and Wellington crosses the Wellington Fault at Te Mārua, Silverstream and Karori. The Waterloo bore field and treatment plant is also vulnerable to a seismic event, which would impact the supply of drinking water. Our wastewater pipelines also cross fault lines, with many pipelines sitting within landslide or liquefaction zones.

**Benefit to addressing the challenge:**  
Provide 80 percent of our customers, within 30 days of a reasonable seismic event, with at least 80 percent of their water supply needs (80-30-80 strategy). Aim to improve resilience of wastewater and stormwater services through personal (customer) resilience, operational readiness, and long-term infrastructure improvements.

**Investment advice:**  
Through asset assessments, Wellington Water will identify assets that require strengthening and sequence upgrades based on priority. For example, we identified construction of the new Omāroro Reservoir to provide resilient storage for the CBD and hospital water supply. This project is currently underway and anticipated to be complete within the next two years. The existing reservoir at Wrights Hill will be seismically strengthened however work at Grenada North has been cancelled due to funding constraints. Without this, the reservoirs ability to withstand a major Wellington Fault earthquake is significantly compromised.

Source : WWL WCC Part 3

6.8.3 Firefighting water supply

**Challenge:**  
The protection of people’s lives and property from fire is dependent on an adequate supply of water for fire protection and firefighting. The design of water supply networks must have adequate water pressure and flows for in-property fire protection systems and for use by Fire and Emergency NZ personnel. Sufficient water storage is also critical, should supply to networks become unavailable. Our water supply networks are generally adequate for firefighting purposes. However, there are localised areas where water pressure and available flows could be improved.

**Benefit to addressing the challenge:**  
Firefighting water supply is sufficient.

**Investment advice:**  
Firefighting is a critical service that must be available to all our communities within the region. Most firefighting upgrade funding has been deferred, instead being targeted at renewals. When funded, improvements will be based on improved knowledge of network performance and through dialogue with Fire and Emergency NZ. To support these efforts, Wellington Waters Zone Implementation Plans (ZMPs) provide the basis for understanding the extent of fire risk due to inadequate water supply and pressure and develop appropriate responses, such as water storage or the upgrade of pipes/pump stations to address known risks.

In relation to WCC, upgrades in Miramar and Seatoun to assist fire flows and improve security of the local water supply have been identified. Under consideration are fire flow requirements as a key design criterion for new reservoirs, such as Omāroro Reservoir.

7. How we deliver Three Waters services (Lifecycle Management Plans)

7.1 Strategic priorities

As the Three Waters Service Provider Wellington Water has developed strategic priorities that aim to look after existing assets, support growth and meet levels of service and customer expectations.

**Priority 1. Looking after existing infrastructure**  
*(renewals, operations, maintenance and critical services)*

Looking after existing assets is foundational to a sound risk management approach – it reduces incidents that usually cost more and has less negative effects when work is planned.

**Priority 2. Supporting growth**

Growth is inevitable and must be managed to ensure it does not add to existing issues for the three waters network.

**Priority 3. Sustainable water supply and demand**

We are near capacity for water supply

**Priority 4. Improving env. water quality**

Community expects better water quality than we have now

**Priority 5. Net carbon zero 2050**

Carbon emissions are a key contributor to climate change

**Localised issues**

- Reducing flood risk
- Seismic resilience
- Firefighting water supply

Individual activities associated with localised risks will be progressed as funding allows

System-wide issues that need addressed over the next 30 years

These strategic priorities and specific challenges and impacts are addressed through the following lifecycle management sections of the AMP.

7.2 Three Waters service delivery overview

The Three Waters service delivery arrangements are summarised in the table below:

| Task                       | Planning | Delivery        |
|----------------------------|----------|-----------------|
| Operations and Maintenance | WWL      | WWL-Contractors |
| Capital                    | WWL      | Contractor      |
| Renewals                   | WWL      | Contractor      |
| Compliance                 | WWL      | WWL             |

7.2.1 Strategic priority and service delivery linkages

| Task                                            | O&M | Renewal | Capital |
|-------------------------------------------------|-----|---------|---------|
| Priority 1: Looking after Infrastructure        | ⊙   | ⊙       |         |
| Priority 2: Supporting Growth                   |     |         | ⊙       |
| Priority 3: Sustainable Water Supply and demand | ⊙   |         | ⊙       |
| Priority 4: Improving Environ. Water quality    | ⊙   | ⊙       |         |
| Priority 5: Net Carbon Zero 2050                | ⊙   | ⊙       | ⊙       |

7.3 Overview of key lifecycle management issues

|                                         | Water                                                                                                                                         | Wastewater                                                                                                                     | Stormwater                                                                                                                                                             |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Compliance Issues</b>                | Meeting drinking water standards                                                                                                              | Meeting wastewater discharge standards                                                                                         | Meeting stormwater discharge quality standards                                                                                                                         |
| <b>Priority tasks and activities</b>    | <b>Operations:</b> Routine maintenance and monitoring performance and compliance<br><b>Capital:</b> Treatment upgrades and improvements       |                                                                                                                                |                                                                                                                                                                        |
| <b>Meeting Growth and Demand</b>        | Supplying sufficient volume and quality water                                                                                                 | Providing treatment and discharge capacity                                                                                     | Providing adequate stormwater drainage capacity                                                                                                                        |
| <b>Priority tasks and activities</b>    | <b>Operations:</b> Efficient network mgt., water loss mgt.<br><b>Capital:</b> Source augmentation, Storage improvement, network extensions    | <b>Operations:</b> Efficient treatment monitoring and mgt.<br><b>Capital:</b> WWTP upgrades and improvement network extensions | <b>Operations:</b> Efficient network mgt., Stormwater modelling, Discharge monitoring<br><b>Capital:</b> Network capacity upgrades and improvement, network extensions |
| <b>Renewal of Ageing Infrastructure</b> | Addressing renewal requirements to maintain LoS                                                                                               |                                                                                                                                |                                                                                                                                                                        |
| <b>Priority tasks and activities</b>    | <b>Operations:</b> Collection and review of faults data, Reactive maintenance<br><b>Capital:</b> Renewals prioritising, planning and delivery |                                                                                                                                |                                                                                                                                                                        |

7.4 Operations and maintenance plan

7.4.1 Operations and maintenance requirements

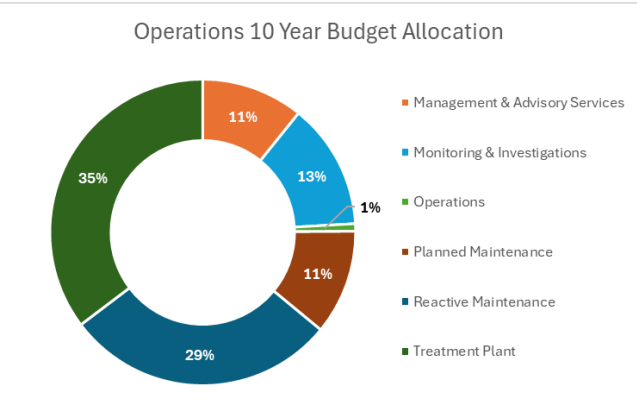
Operational and maintenance strategies address Strategic Priority 1 - Looking After Existing Infrastructure.

The operational and maintenance activities cover the practices for optimising operation and maintenance activities of the Three Waters facilities and infrastructure to ensure:

- Reliable supply of safe water
- Achieve the optimum use of the asset at the agreed service levels
- Keeps the Three Waters facilities suitable, accessible, safe and well maintained
- Minimise total maintenance costs
- Levels of service are achieved across Three Waters
- Compliance requirements are met

Council outsources the Three Waters service delivery to Wellington Water.

The diagram below outlines the broad Operations and maintenance planning processes:



Source: WWL Stage 4-Final LTP close-out advice - WCC

7.4.2 Operational processes and asset maintenance

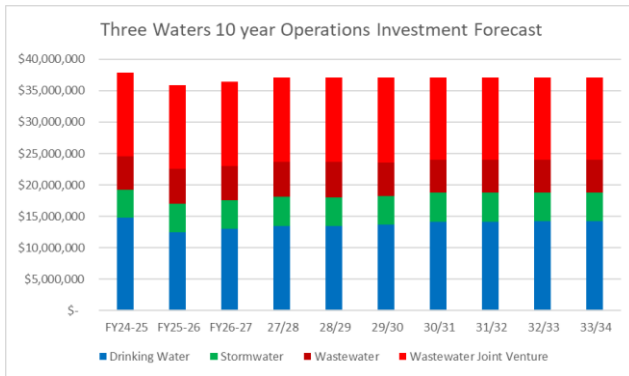
Operation and maintenance involves the two key types of activities:

- **Proactive maintenance** – proactive/scheduled inspections and maintenance works planned to prevent asset failure
- **Reactive maintenance** – reactive activities in response to unexpected asset malfunctions and failures, on an as-required basis (i.e. emergency repairs)

The optimal maintenance mix is a balance of planned and reactive maintenance activities. Maintenance also includes minor repairs that cannot be capitalised.

Operations and maintenance activities cover both the Three Waters networks (including pipelines and pump stations) and Plants and disposal facilities (including Water Treatment Plants, Wastewater Treatment Plants and outfalls).

Operational activities also include monitoring and reporting on resource consent conditions and drinking water quality assurance rules.



Total Three Waters Opex 10 Year Budget: \$370.0M  
Source: WWL Final Council OPEX LTP 2024-25

7.4.3 Operations and maintenance plan

The operation and maintenance activities of Three Waters infrastructure are categorised into the following key operational areas:

- **Reactive Response**
  - Unplanned operations
  - Leak detection
  - Response to blockages and flooding
- **Preventative Response**
  - Planned operations (day-to-day operations)
  - Peak period operations
  - SCADA operation and maintenance
  - Resource consents
  - Ongoing monitoring
  - Water meter reading
  - Backflow prevention
  - Water treatment plant/Filter Station audits
  - Pump Station/Reservoir audits
  - Valve/Hydrant audits
  - Condition Surveys
  - Trade waste monitoring
  - Wastewater treatment plant/disposal facilities audits
  - Manhole audits
  - Pre storm and seasonal readiness
  - Stormwater Pump Stations/Detention Ponds Audits
- **Emergency Response**
  - Emergency Response Planning
  - Business continuity
- **Compliance**
  - Monitoring and reporting
- **Contract Management**
- **H&S**
  - Systems and processes
  - Monitoring and reporting
- **SOPs**
  - Establishment
  - Training
  - Monitoring and update

7.5 Renewals plan

7.5.1 Renewals planning

Renewals Planning also falls within Strategic Priority 1: Asset renewal is the process of restoring the level of service delivered by an asset to its original design level, by upgrading or replacing the degraded components. The purpose of the renewal strategy is to maintain the levels of service by identifying the most cost-effective time to renew individual or groups of assets. Despite an uplift in renewals expenditure, the average age of the asset base continues to increase and there remains a significant amount of assets needing renewal over the short to medium term and there is a focus on undertaking asset condition assessments to confirm the extent and timing of asset renewal requirement.

7.5.2 Confirming the renewals extent

To improve network reliability, Wellington Water recommends renewing and upgrading the network based on **performance and criticality**, as well as improving service performance and capacity.

Capturing better data will improve the quality of decisions and enable more prioritised and targeted investment. We are proposing an investment strategy to improve performance by reducing the backlog (and risk) in renewals over the next 30 years. Specific renewals budgets are proposed aimed at achieving a sustainable asset base that is renewed at a pace that matches deterioration. These budgets have been built from:

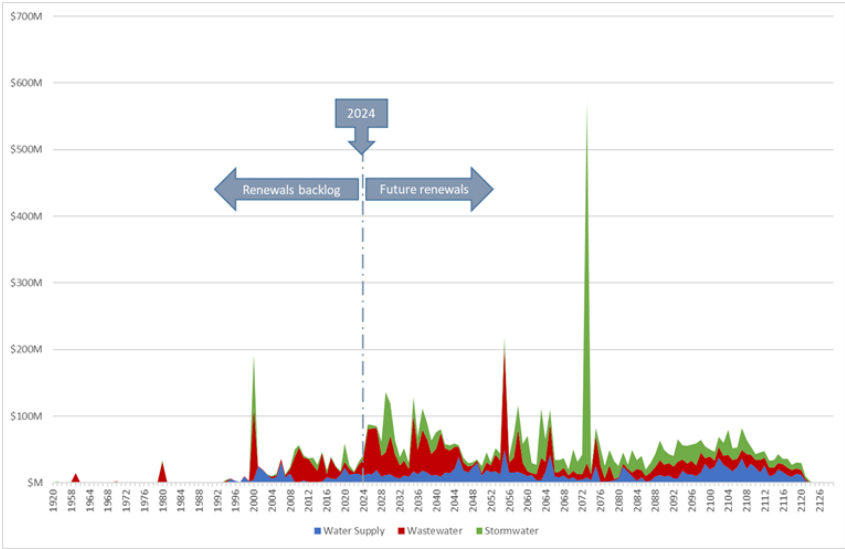
- Requirements for treatment plants, reservoirs and storage, pump stations and pipe networks
- Looking at forward requirements over the lifecycle of the asset base
- Retain a level of budget for reactive renewals (based on history) to ensure that failed items can be replaced immediately

To note:

- Renewals needs are heavily dominated by pipe networks
- The recommended programme has been prioritised to achieve a balance between critical and non-critical assets

Deferral of renewal projects is resulting in increased service failures. These are observed by the customers as interrupted water supply (no water), increasing pipe leakage and bursts, unplanned overflows from wastewater pipes. Across all failure modes, there is a resulting elevated health and safety risks e.g., contaminated water, collapsed roads, paths. Further there are consequential increases in unplanned (reactive) maintenance costs.

The extent of the WCC Three Waters pipe renewals challenge is provided in the figure below.



WWL renewals planning approach is criticality and risk based where highest criticality and risk rated assets have the highest renewals priority.

Ongoing condition assessments are used to confirm that actual work is required (condition evidence), rather than relying on theoretical aged based renewals alone.

Source : WWL Pipe Network Renewals Profiles 2024

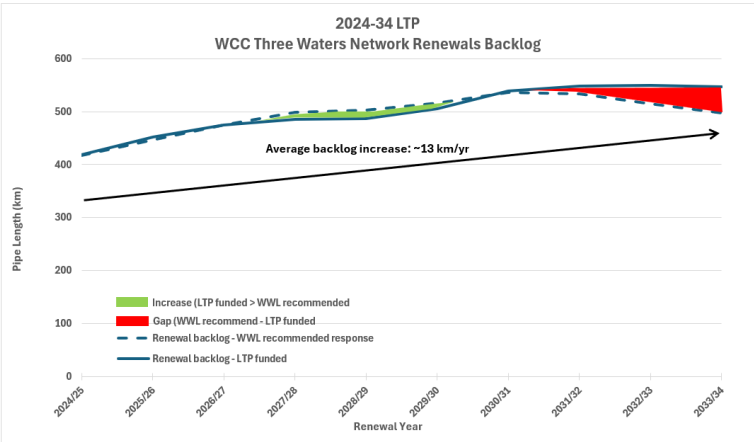
Renewal Approach

The 3Waters network backlog and funding (kilometres of network pipe) profile are provided in the adjacent figure.

There is a significant and increasing gap between funded and calculated network renewals.

The network renewal backlog, based on asset age and end of typical life values, provides a strong indication of the gap between assets which have reached the end of their typical life and those funded for renewal by WCC.

Network renewal is confirmed through techniques including visual inspection.



## 7.5 Renewals plan (cont.)

### 7.5.3 Renewals approach – long term stewardship

Wellington Water’s approach to asset renewal focuses on long-term stewardship of the asset, which means planning for renewals at a pace that meets asset deterioration over time, according to the lifecycle of the asset. Based on this key principle, a renewal profile was developed using the following approach:

- Determine expected life of an asset based on age and material for every pipe
- Identify current backlog of pipes past their expected life
- Provide consistent regional approach to estimating replacement costs based on valuation data (assuming like-for-like replacement)

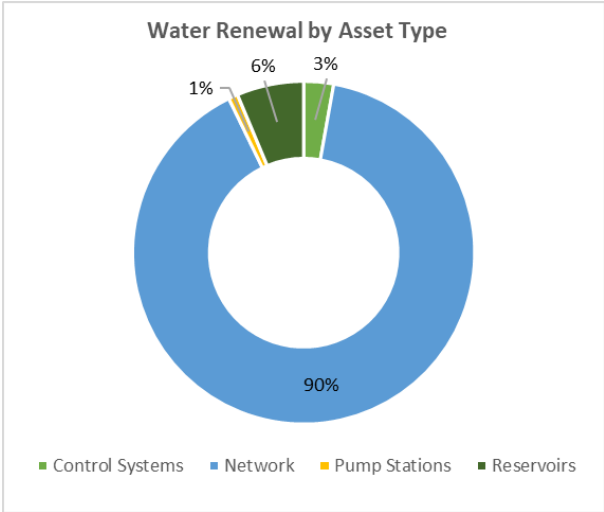
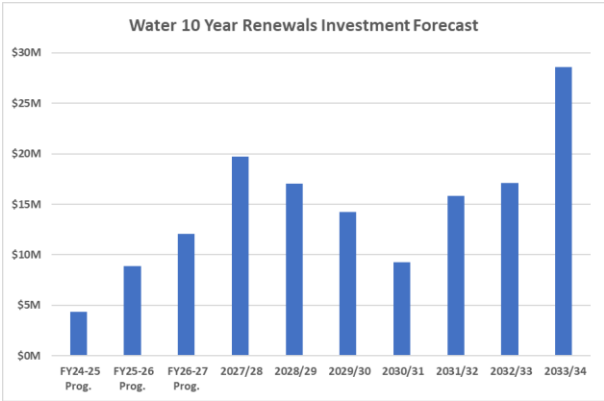
The asset renewal raw data produces a complex spend profile that is difficult for councils to manage and fully afford. To address this, the required spend was simplified using the following philosophy:

- A sustainable level of investment over 30 years; if extended, the backlog could not be addressed
- Year 1-2 spend (21/22 & 22/23) is at the same level as forecasted in the 2018 LTP, which focuses on “no regrets” capex projects
- From year 3, programme spend is increased over two LTP cycles to reach a steady state by year 7
- A renewed focus on condition assessments (increased opex spend the next 3-5 years) to provide better field data to determine the most critical projects going forward
- A reduction in reactive maintenance costs is not expected until years 8-10

There is a level of cost estimation risk (excludes contingency or risk uplift) concerning the renewal profile based on the latest valuation data, as actual costs could be different from those modelled.

Water supply

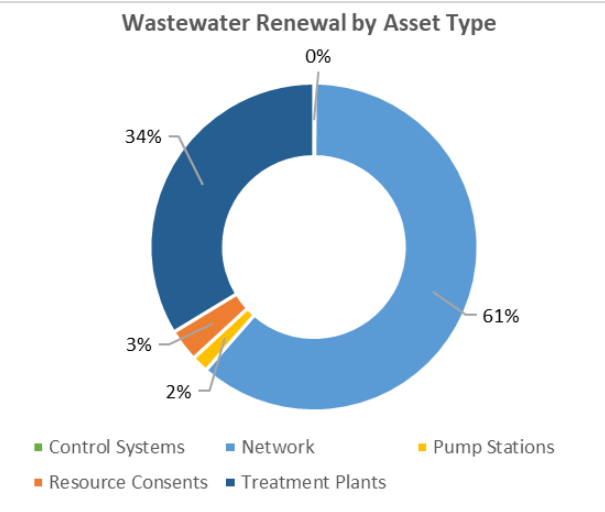
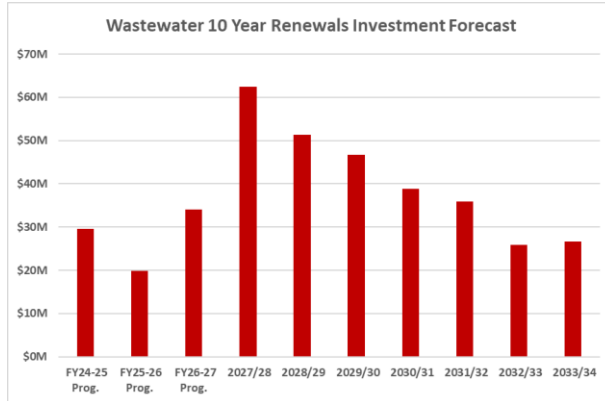
The charts below show the proposed 10 Year Water Supply renewals investment forecast:



The network renewals makes up the majority of the renewals programme followed by reservoir storage and then control systems and pump stations renewals.

Wastewater

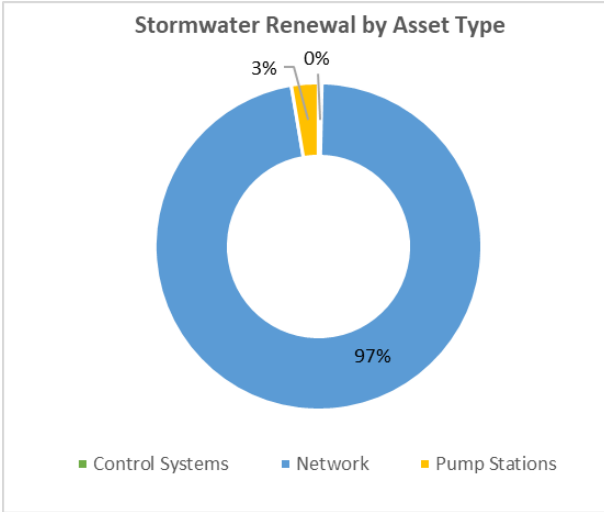
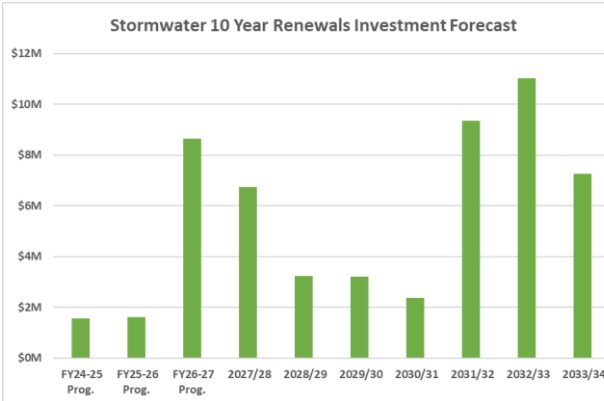
The charts below show the proposed 10 Year wastewater renewals investment forecast:



The network renewals makes up the majority of the renewals programme followed by treatment plants then resource consents, pump stations and control systems renewals.

Stormwater

The charts below show the proposed 10 Year stormwater renewals investment forecast:



The network renewals makes up the majority of the renewals programme.

7.6 Capital plan

| 7.6.1 Capital works drivers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 7.6.2 2024 LTP programme planning and outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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| <p>Asset creation is the process driven by consumer growth or levels of service and most importantly water safety drivers. New capital investment involves the design and construction of new assets that will increase the capacity and/or performance of the Three Waters networks.</p> <p><b>Key Asset Creation Drivers Are:</b></p> <ul style="list-style-type: none"><li>• To meet legislative compliance including DWSNZ where possible</li><li>• To meet the demands of growth by supplying water to Council’s customers through efficient utilisation of natural resources</li><li>• To meet the levels of service with respect to safe and effective supply of water, wastewater removal and disposal, protection of property from flooding</li></ul> <p>Capital planning priorities are highlighted below:</p> <p><b>Three Waters</b></p> <ul style="list-style-type: none"><li>• Asset condition assessments</li><li>• Asset data updated based on assessments</li><li>• Improvement of asset data quality and completeness</li><li>• Improvement and further development of renewals planning and programme development</li><li>• Review of Capital delivery framework</li><li>• Responding to legislative and compliance requirements</li></ul> <p><b>Water</b></p> <ul style="list-style-type: none"><li>• Resource consent review and improvement programme to ensure all consent conditions are met on time</li><li>• Ongoing Drinking Water Safety infrastructure upgrade programme implementation</li><li>• Drinking water standards compliance</li><li>• Investigate and develop additional water sources</li><li>• Investigations and master planning for water supply expansion in the district</li></ul> <p><b>Wastewater</b></p> <ul style="list-style-type: none"><li>• Resource consent review and improvement programme to ensure all consent conditions are met on time</li><li>• Treatment plant upgrade planning and budgeting in response to performance and emerging changes to discharge quality standards</li><li>• Investigations and master planning for wastewater expansion in the district</li></ul> <p><b>Stormwater</b></p> <ul style="list-style-type: none"><li>• Resource consent review and improvement programme to ensure all Regional Plan conditions are met in the required timeframes</li><li>• Stormwater scheme planning and upgrade in response to current and emerging issues particularly climate change impacts</li><li>• Ensure compliance with comprehensive stormwater discharge consent</li></ul> | <p>In developing Council’s 2024-34 LTP CAPEX programme, Wellington Water presented to Council a view of:</p> <ul style="list-style-type: none"><li>• a maximum deliverable level of investment that Wellington Water could make (noting this should be viewed as a share of an overall regional maximum deliverable level of investment. As such, there is flexibility to support investment above this level if other councils did not fund to their maximum deliverable level), and</li><li>• a baseline level of investment based on Council’s 2021-31 LTP budget level.</li></ul> <p>The following key projects are unfunded under the baseline budget:</p> <ul style="list-style-type: none"><li>• Universal Residential Smart Meters</li><li>• Airport Wastewater Triplicate Interceptor</li><li>• Eastern Trunk Main</li><li>• Bell Road Reservoir Inlet Outlet Mains, Bell Road Reservoir and Moe-i-te-Ra (Aro) Reservoir replacements</li></ul> <p>In addition to the above unfunded projects, some Moa Point and Western Wastewater Treatment Plant critical asset renewals have been deferred beyond a start date that Wellington Water recommends. Options to mitigate the risks of excluding the above projects outside the LTP and deferring works at the Moa Point and Western Wastewater Treatment Plants were presented to Council..</p> <p>Due to the constrained CAPEX budget, Council’s 10-year programme focuses investment on two of the five strategic priorities:</p> <ul style="list-style-type: none"><li>• Looking After Existing Infrastructure, and</li><li>• Improving Environmental Water Quality</li></ul> <p>Councils programme has been built to include the following activity:</p> <ul style="list-style-type: none"><li>• Committed projects c\$1.2M / year – all projects underway such as the Taranaki pipes, Victoria Street Rising Main Renewal and Wakefield East New Rising Main</li><li>• Compliance / consenting projects and programmes, for example for resource consent renewals and progressing the global stormwater and network overflow consents</li><li>• Control systems and modelling – programmes that are considered essential activity to manage assets and support other investment Reactive renewals for all asset types</li><li>• Planned renewals for all asset types but at reduced rates A small number of other level of service projects and growth projects, noting that some of these are deferred to start later than recommended by Wellington Water due to Council’s funding constraints.</li></ul> <p>This programme will carry some significant compliance and water supply security risks because of programmes not being funded or starting later than recommended, and network renewals being delivered at a rate below that recommended by Wellington Water. Deferring renewals activity increases operating costs and pushes the problems associated with ageing infrastructure down the track. Overall, this increases the size and cost of the renewals backlog problem.</p> <p>The risks and service level impacts related to the CAPEX budgets that are below that recommended by Wellington Water , will make it difficult to deliver on all service level targets and key performance indicators and deliver on all strategic priorities in a meaningful way.</p> |

7.6.3 Capital plan priorities

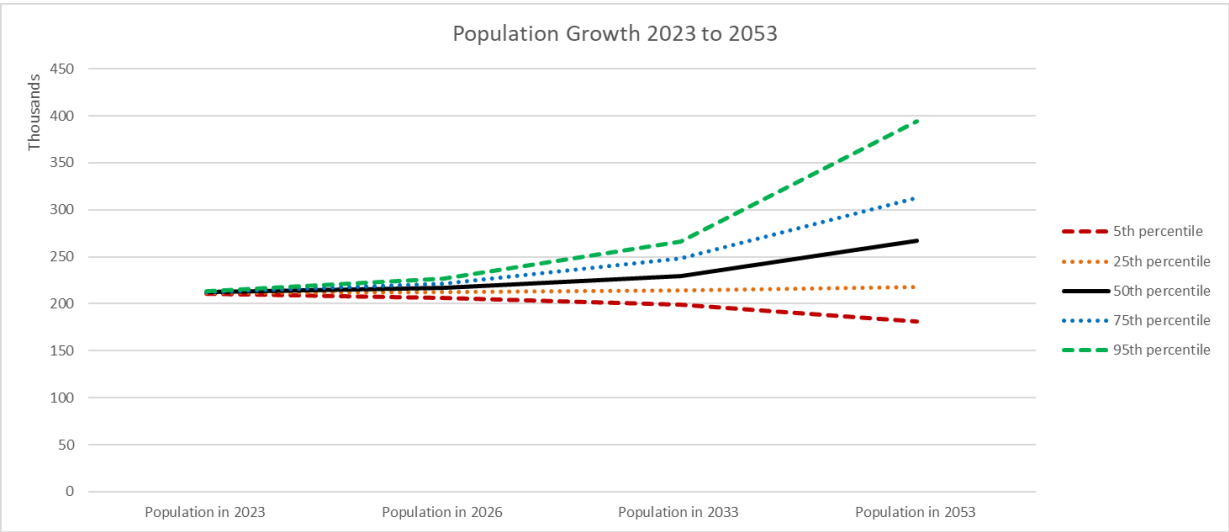
Strategic Priority 2 - Supporting Growth

**Challenge:** The region is experiencing and forecasting high growth, which impacts Wellington due to its capital city standing and city centre location for business and inner-city development. Wellington in particular is expecting significant growth in the short and medium term (see Figure 4 4), which puts extra pressure on Three Waters infrastructure. Some of this is already identified through the Wellington District Plan, and some will be identified in future revisions. Significant investment is needed, especially in the wastewater network to enable growth to occur. Current Wellington forecasts indicate 21 percent population growth over the next 30 years (50<sup>th</sup> percentile, 55,000 people, approximately 16,500 new homes).

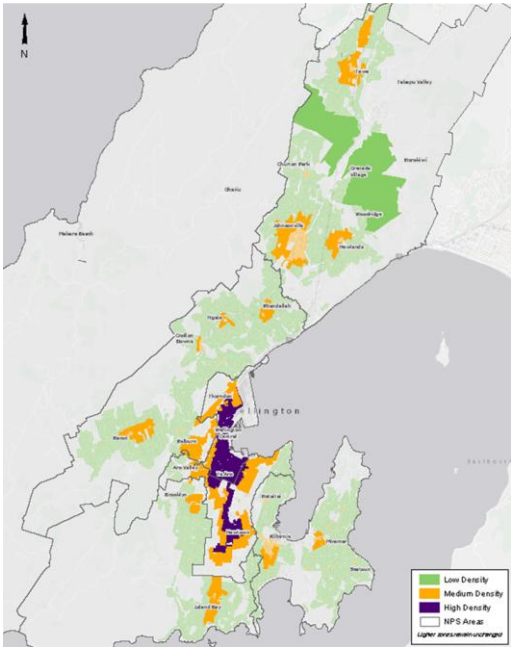
**Benefit to addressing the challenge:** As Wellington City continues to expand and grow, our three waters assets and systems grow to meet the demand.

**Investment advice:** WWL recently completed a series of growth catchment studies (to improve our understanding of where the Wellington networks are able to accommodate further growth and where they need to be upgraded (e.g., new pipes, pump stations and reservoirs). These studies provided direction on infrastructure needs that will be supported through tracking and documenting day-to-day maintenance. In some cases, developers will install this new infrastructure, in other cases they will make development contributions, and we will use this to build infrastructure that enables this growth. To accomplish this, WCC’s LTP must include provisions for infrastructure to support growth. This includes the need for funding reservoir upgrades e.g., Tawa, Johnsonville in advance of growth and to meet existing LoS deficit. Similarly further wastewater overflow control measures are required at Moa Point.

We will establish long term catchment plans and work with WCC to change regional and local policies and plans (such as ensuring floor levels of houses are built above flood levels), as well as ensure service levels do not deteriorate over time as population increases (3-30 years). For example, we have proposed a programme of wastewater pump station and rising main upgrades between pump stations 1 and 7, accounting for growth in the central city. Other proposed improvements include pump station and pipeline upgrades that will progressively roll out over the next 30 years to improve network capacity and reduce overflows to meet the growing population and address existing constraints.



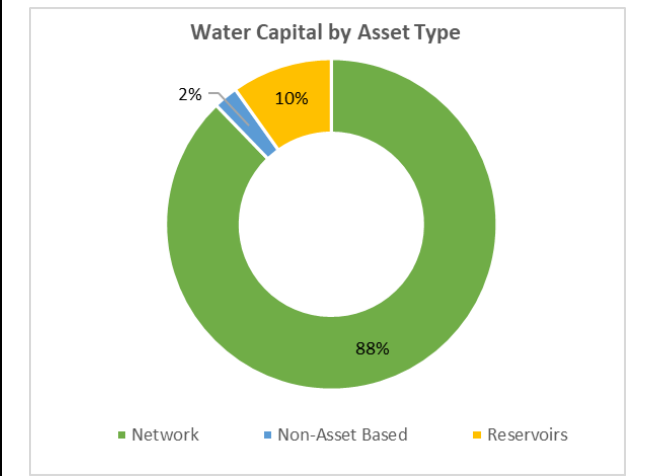
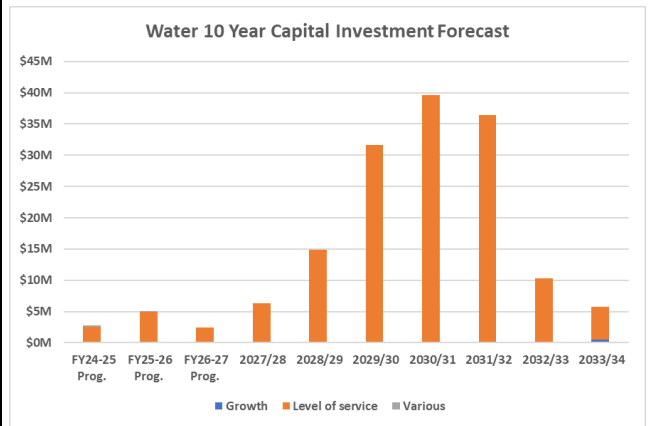
Source : WWL January 2025



7.6.3 Capital investment forecasting

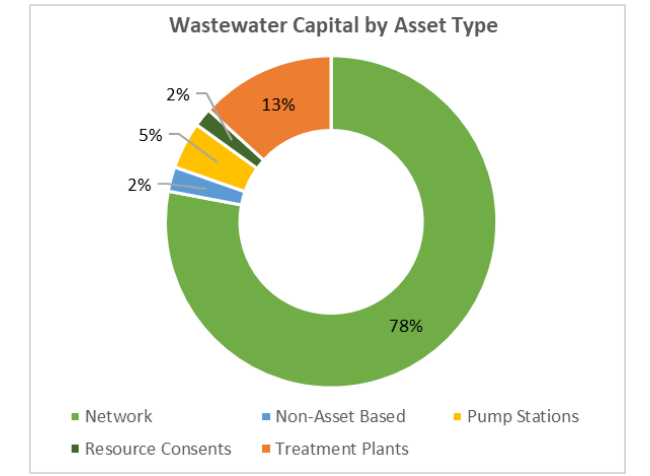
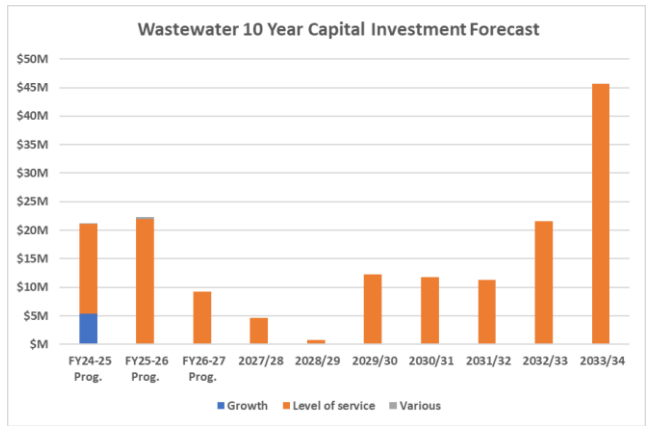
Water supply

The charts below show the proposed 10 Year water supply capital investment forecast:



Wastewater

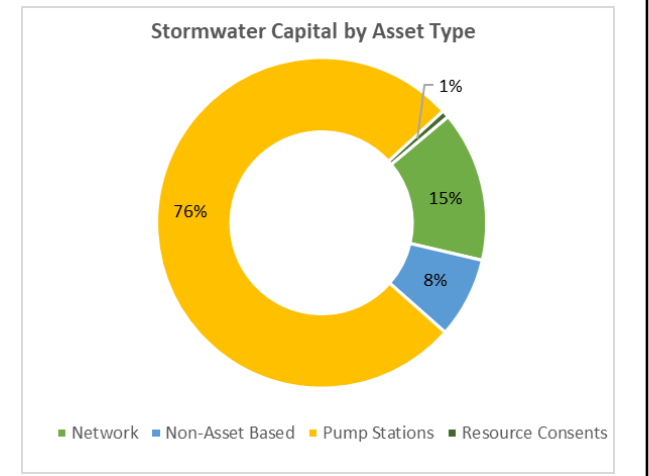
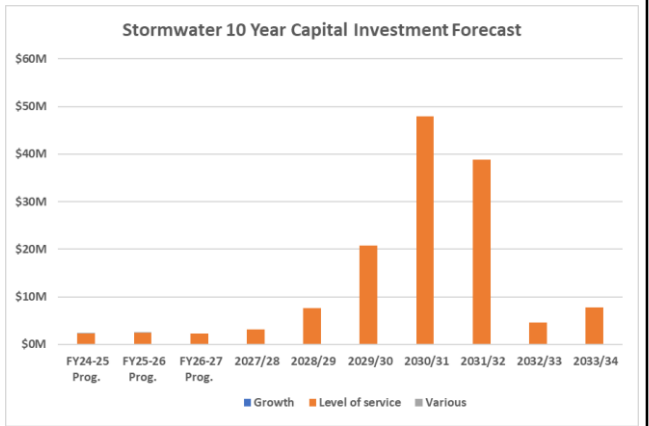
The charts below show the proposed 10 Year wastewater capital investment forecast:



Source : WWL 2024-34 LTP Regional Baseline Programmes - 2024.10.20

Stormwater

The charts below show the proposed 10 Year stormwater supply capital investment forecast:



# 7.7 Asset disposal plan

## 7.7.1 Asset disposals

Disposal is the retirement or sale of assets whether surplus or replaced by new or improved systems. Assets may need to be disposed of for a number of reasons, particularly if they fall under some criteria, including those identified below:

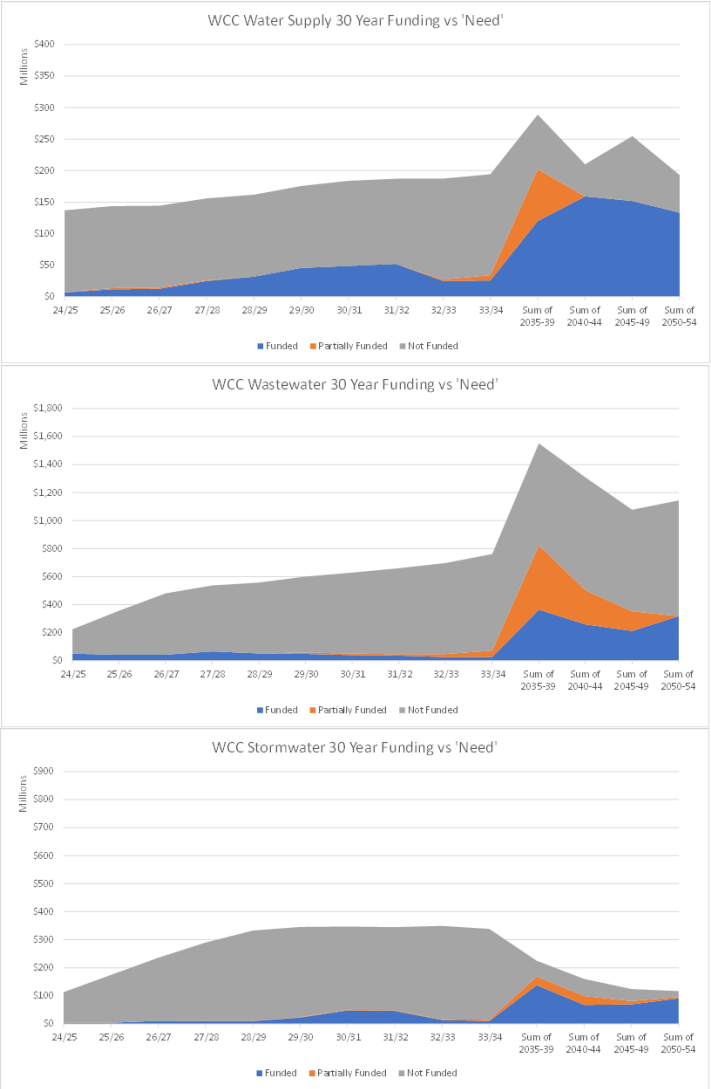
- Under utilisation
- Obsolescence
- Cost inefficiency
- Policy change
- Provision exceeds required Levels of Service
- Service provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social)

As part of the lifecycle asset management process, Council considers the costs of asset disposal in the long-term financial forecasts. These costs are generally incorporated in the capital cost of level of service increases or asset renewals. While there are assets that fit under one or more of the above criteria, the Local Government Act provides clear instances when assets can be disposed of.

Council has no plans to dispose of any Three Waters assets other than those that become obsolete because of renewal or upgrading works.

8.1 The funding challenge

There are several major capital investment drivers such as aging infrastructure, regulatory compliance and growth and demand. This creates tension between funding demand and funding ability, that is managed though careful assessment, prioritisation and risk management. This will continue to be closely managed.



Note: figures supplied by WWL

The water supply capital forecast (refer adjacent figure) covers all investment categories i.e., growth, levels of service, renewals.

**Investment Projections.** Funded and partially funded values [blue and orange bands] are taken directly from the Shareholder Councils adopted LTP 2024/2034. The ‘need’ funding profile [grey band], is based on the submission to the National Transition Unit (for Entity C) of June/July 2023 and covers all assets including networks, reservoirs, pumpstations and control systems.

**Risks to achieving Levels of Service.** The gap between funded and partially funded investment and the investment ‘need’ maybe observed by customers through increased water supply network leakage and possible water contamination events at reservoirs. Further risks are identified in the Risk section of this document.

The wastewater service capital forecast (refer adjacent figure) covers all investment categories i.e., growth, levels of service, renewals.

**Investment Projections.** Funded and partially funded values [blue and orange bands] are taken directly from the Shareholder Councils adopted LTP 2024/2034. The ‘need’ funding profile [grey band], is based on the submission to the National Transition Unit (for Entity C) of June/July 2023 and covers all assets including networks, pumpstations and control systems.

**Risks to achieving Levels of Service.** The gap between funded and partially funded investment and investment ‘need’ maybe observed by customers through increased wastewater network overflows into streets and waterways along with surface water contamination events. The impact on communities and the partnership with mana whenua may be negatively impacted. Further risks are identified in the Risk section of this document.

The stormwater service capital forecast (refer adjacent figure) covers all investment categories i.e., growth, levels of service, renewals.

**Investment Projections.** Funded and partially funded values [blue and orange bands] are taken directly from the Shareholder Councils adopted LTP 2024/2034. The ‘need’ funding profile [grey band], is based on the submission to the National Transition Unit (for Entity C) of June/July 2023 and covers all assets including networks, pumpstations and control systems.

**Risks to achieving Levels of Service.** The gap between funded and partially funded investment and the investment ‘need’ maybe observed by customers through increased extent of flooding (additional to current known flood prone areas). In specific locations this may exacerbate waterway and coastal contamination events where overflow into poorly performing (poor condition) wastewater network renewals results in overflows. Further risks are identified in the Risk section of this document.

8. 10-Year Three Waters investment forecast

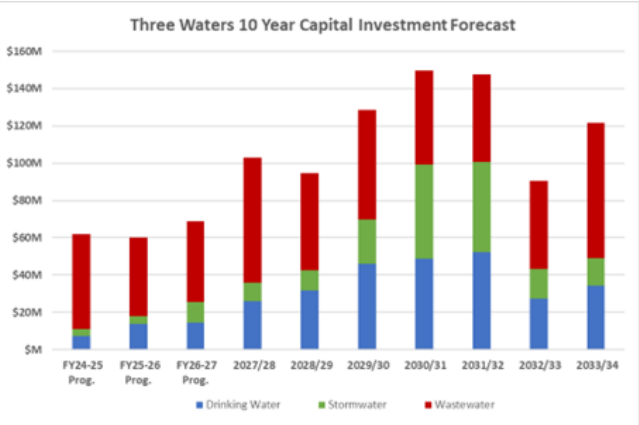
8.2 Total 10-Year capital investment

This section provides an overview of the final uninflated 2024 LTP Three Waters Capital Programme.

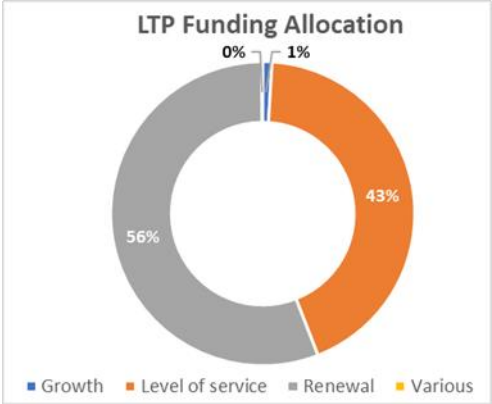
The Capital investment is spread across:

- Renewals - to replace existing assets at the end of design life
- Additional Capacity - to provide for growth
- Levels of Service - improvement to meet standards and regulations

The Three Waters Capital Programme - has been refined and prioritised though the 2024 LTP programme. There are a number of projects that have been deferred to the 11-20 year horizon due to funding constraints:



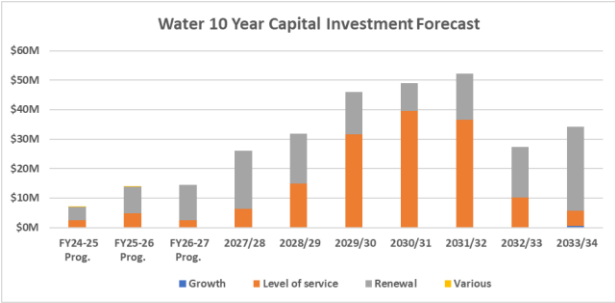
10 Year Capital Total (including renewals): \$1.03B -uninflated



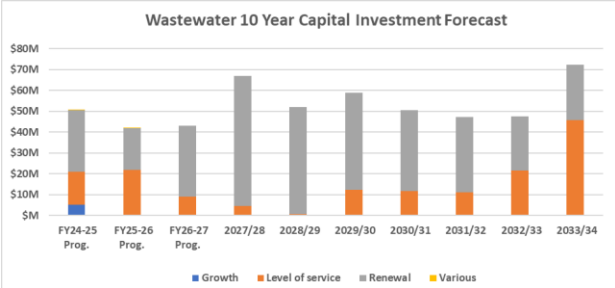
8.3 10-Year capital investment by water activity

The figures below estimate the Capital investment by water activity. The major projects include:

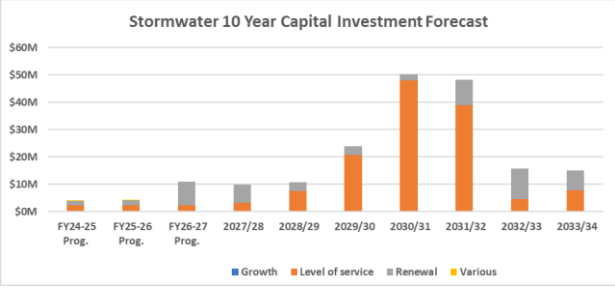
- Extending services to provide for growth and serviced areas
- Increasing capacity and treatment quality of wastewater treatment plants
- Renewing assets at the end of their service lives to maintain current performance



Total Water 10 Year Budget: \$302.3M



Total Wastewater 10 Year Budget: \$531.9M



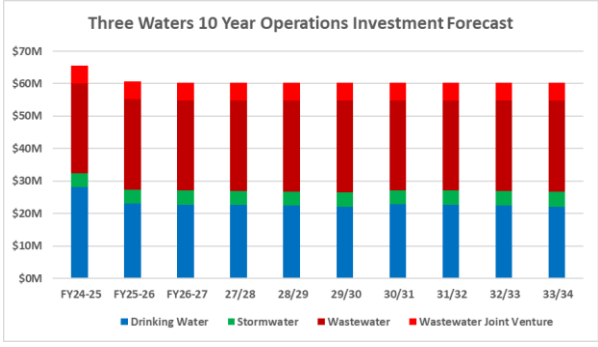
Total Stormwater 10 Year Budget: \$192.7M

8.4 Total 10-Year operational investment

The break-down of operational investment for the Three Waters activities is provided in the figure below. Future increases in Opex costs are anticipated due to increasing regulatory requirements and future maintenance contract costs.

The total Three Waters Opex 10 Year budget is \$608.7M

This is broken down to approximately \$231.0M (38%) on water supply, \$333.8M (55%) on wastewater and \$43.9M (7%) on stormwater.



Budget Source: WWL Final Council OPEX LTP 2024-25

8.5 10-Year Three Waters capital programme forecast

8.5.1 Water supply projects

The 10 Year LTP Water Supply capital works budget forecasts are detailed in the table below:

|                                                           | FY24-25 Prog.    | FY25-26 Prog.     | FY26-27 Prog.     | 2027/28           | 2028/29           | 2029/30           | 2030/31           | 2031/32           | 2032/33           | 2033/34           | TOTAL LTP          |
|-----------------------------------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| <div>☐ Growth</div>                                       | 153,525          | 155,250           | 155,250           | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 550,000           | 1,914,025          |
| Bell Road Reservoir Inlet Outlet Mains                    | -                | -                 | -                 |                   |                   |                   |                   |                   |                   | 400,000           | 400,000            |
| WCC Reactive Growth Development Projects - Drinking Water | 153,525          | 155,250           | 155,250           | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 1,514,025          |
| <div>☐ Level of service</div>                             | 2,392,641        | 4,770,391         | 2,334,515         | 6,226,865         | 14,681,614        | 31,486,872        | 39,497,870        | 36,300,551        | 10,131,317        | 5,171,339         | 152,993,976        |
| (SWS) WCC PW Pressure Management - Phase 3                | 200,000          | 3,600,000         | 400,000           | 1,500,000         | 1,500,000         | 1,500,000         | 1,500,000         |                   |                   |                   | 10,200,000         |
| Moe-i-te-Ra (Bell Rd) Reservoir                           | -                | -                 | -                 |                   |                   |                   |                   |                   | 1,600,000         | 4,800,000         | 6,400,000          |
| WCC Capital Carbon Modelling - Drinking Water             | 20,470           | 20,700            | 20,700            | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 201,870            |
| WCC Drinking Water Network Modelling                      |                  |                   |                   | 700,000           | 250,000           | 300,000           | 600,000           | 700,000           | 700,000           | 250,000           | 3,500,000          |
| WCC Reservoir Level of Service Improvements               | 93,417           | 94,691            | 94,691            | 88,813            | 64,614            | 79,872            | 99,870            | 99,551            | 100,317           | 101,339           | 917,176            |
| WCC Security Locks Reservoirs                             | 20,000           | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            |                   |                   |                   |                   | 120,000            |
| WCC Universal Residential Smart Metering                  | -                | -                 | -                 | 2,340,000         | 11,827,000        | 29,567,000        | 37,278,000        | 35,481,000        | 7,711,000         |                   | 124,204,000        |
| WCC VHCA Buried Reservoir Integrity Upgrades              | 153,525          | 1,035,000         | 1,799,124         | 1,558,052         | 1,000,000         |                   |                   |                   |                   |                   | 5,545,701          |
| Wrights Hill Reservoir Seismic Improvements               | 1,905,229        | -                 | -                 |                   |                   |                   |                   |                   |                   |                   | 1,905,229          |
| <div>☐ Renewal</div>                                      | 4,336,574        | 8,856,104         | 12,072,238        | 19,703,642        | 17,019,025        | 14,252,966        | 9,254,711         | 15,831,915        | 17,122,002        | 28,549,885        | 146,999,062        |
| Aro Street Ridermain Renewal - reactive repair            | 492,699          | 1,192,699         |                   |                   |                   |                   |                   |                   |                   |                   | 1,685,398          |
| Bell Road Reservoir                                       | -                | -                 | -                 |                   |                   |                   |                   |                   | 800,000           | 3,200,000         | 4,000,000          |
| Johnsonville Water Main Renewal [sp]                      | -                | 228,916           | 2,664,429         | 1,419,520         |                   |                   |                   |                   |                   |                   | 4,312,865          |
| Kilbirnie Crescent Water Renewal                          | -                | -                 | -                 | 3,105,000         |                   |                   |                   |                   |                   |                   | 3,105,000          |
| Main Road (68-Redwood Ave) Water Network Renewals         | -                | 142,623           | -                 |                   |                   |                   |                   |                   |                   |                   | 142,623            |
| Newlands Water Main Renewal [sp]                          | 175,000          | 1,742,785         | 3,543,905         |                   |                   |                   |                   |                   |                   |                   | 5,461,690          |
| Oriental Pde, Oriental Bay Water Main Renewal [sp]        | -                | -                 | 155,250           | 731,163           | 878,320           | 6,402,316         |                   |                   |                   |                   | 8,167,049          |
| Oxford Street (Main St- Surrey St) Watermain Renewal      | -                | -                 | -                 | 1,235,747         | 1,186,635         |                   |                   |                   |                   |                   | 2,422,382          |
| Tawa Street (Main Rd - Duncan St) Watermain Renewal       | -                | -                 | -                 | 2,303,748         |                   |                   |                   |                   |                   |                   | 2,303,748          |
| Wadestown Rd, Wadestown Water Main Renewal [sp]           | -                | -                 | -                 | 430,651           | -                 | 806,952           | 2,676,008         |                   |                   |                   | 3,913,612          |
| WCC Commercial Meter Renewal                              | 170,113          | 172,024           | 172,024           | 163,208           | 126,920           | 149,807           | 149,804           | 149,326           | 150,475           | 152,007           | 1,555,708          |
| WCC District Meter Area Renewals                          | 102,350          | 103,500           | 275,251           | 261,144           | 203,072           | 239,692           | 239,688           | 238,922           | 240,760           | 243,211           | 2,147,590          |
| WCC DW Control Systems Renewals                           | 40,940           | 41,400            | 41,400            | 60,000            | 40,000            | 40,000            | 40,000            | 40,000            | 60,000            | 40,000            | 443,740            |
| WCC Pipe Network Planned Renewals - Drinking Water        | 523,500          | 535,000           | 535,000           | 4,551,755         | 5,096,931         | 2,505,000         | 3,000,000         | 14,270,000        | 14,731,600        | 23,770,000        | 69,518,786         |
| WCC Pipe Network Reactive Renewals - Drinking Water       | 2,446,669        | 2,598,832         | 2,572,163         | 3,996,156         | 3,996,097         | 3,986,532         | 3,021,044         | 1,000,000         | 1,000,000         | 1,000,000         | 25,617,493         |
| WCC VHCA Reservoir Water Quality Renewals                 | 200,000          | 2,000,000         | 2,000,000         | 1,100,000         |                   |                   |                   |                   |                   |                   | 5,300,000          |
| WCC Water Pump Station Renewals                           | 185,303          | 98,325            | 112,815           | 111,667           | 117,167           | 122,667           | 128,167           | 133,667           | 139,167           | 144,667           | 1,293,612          |
| Wilton Rd, Wilton Water Main Renewal [sp]                 | -                | -                 | -                 | 233,884           | 5,373,883         |                   |                   |                   |                   |                   | 5,607,767          |
| <div>☐ Various</div>                                      | 294,429          | 84,870            |                   |                   |                   |                   |                   |                   |                   |                   | 379,299            |
| WCC Programme - Drinking Water Defects & Close out cost   | 294,429          | 84,870            |                   |                   |                   |                   |                   |                   |                   |                   | 379,299            |
| <b>Grand Total</b>                                        | <b>7,177,169</b> | <b>13,866,616</b> | <b>14,562,003</b> | <b>26,080,507</b> | <b>31,850,639</b> | <b>45,889,838</b> | <b>48,902,581</b> | <b>52,282,466</b> | <b>27,403,319</b> | <b>34,271,224</b> | <b>302,286,362</b> |

8.5 10-Year Three Waters capital programme forecast (cont.)

8.5.2 Wastewater projects

The 10 Year LTP Wastewater capital works budget forecasts are detailed in the table below:

|                                                                    | FY24-25 Prog. | FY25-26 Prog. | FY26-27 Prog. | 2027/28    | 2028/29    | 2029/30    | 2030/31    | 2031/32    | 2032/33    | 2033/34    | TOTAL LTP   |
|--------------------------------------------------------------------|---------------|---------------|---------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| [-] Growth                                                         | 5,321,023     | 155,250       | 155,250       | 150,000    | 150,000    | 150,000    | 150,000    | 150,000    | 150,000    | 150,000    | 6,681,523   |
| Taranaki St New WW Rising Main                                     | 5,167,498     | -             | -             |            |            |            |            |            |            |            | 5,167,498   |
| WCC Reactive Growth Development Projects - Wastewater              | 153,525       | 155,250       | 155,250       | 150,000    | 150,000    | 150,000    | 150,000    | 150,000    | 150,000    | 150,000    | 1,514,025   |
| [+] Level of service                                               | 15,807,872    | 21,785,599    | 9,021,455     | 4,493,770  | 620,000    | 12,100,000 | 11,580,000 | 11,130,000 | 21,460,000 | 45,566,211 | 153,564,907 |
| Airport WW Interceptor                                             | 2,177,000     | 3,308,100     | -             |            |            |            |            |            |            |            | 5,485,100   |
| Moa Point / Western / Careys Gully Electrical and control upgrades | 3,070,500     | 6,210,000     | 6,210,000     | 4,000,000  |            |            |            |            |            |            | 19,490,500  |
| Moa Point WWTP IPS Roof (for SMF)                                  | -             | -             | -             |            |            | 1,000,000  |            |            |            |            | 1,000,000   |
| Moa Point WWTP Treatment System Modification (consent required)    | -             | -             | -             |            |            |            |            |            |            | 200,000    | 200,000     |
| Murphy St WW Interceptor connection Overflow improvements          | 1,125,850     | 1,138,500     | -             | -          | -          | -          | -          |            |            |            | 2,264,350   |
| NDP: Resource consent for dry weather overflows                    | 307,050       | 310,500       | -             |            |            |            |            |            |            |            | 617,550     |
| NDP: Resource consent for wet weather overflows                    | 767,625       | 776,250       | 776,250       |            |            |            |            |            |            |            | 2,320,125   |
| NDP: ww overflows universal measures                               | 102,350       | 103,500       | 103,500       | 100,000    | 100,000    | 100,000    | 100,000    | 100,000    | 100,000    | 100,000    | 1,009,350   |
| NDP: WWNO subcatchment reduction plan - Lambton                    | -             | -             | -             |            |            |            | 130,000    | 130,000    | 130,000    | 10,430,000 | 10,820,000  |
| NDP: WWNO subcatchment reduction plan - Wellington A               | -             | -             | -             |            |            |            |            |            | 10,430,000 | 10,430,000 | 20,860,000  |
| NDP: WWNO subcatchment reduction plan - Wellington City pilot      | -             | -             | -             | 150,000    | 150,000    | 10,430,000 | 10,430,000 | 10,430,000 | 10,430,000 | 23,936,211 | 65,956,211  |
| Otari-Wilton Bush upgrade (Churchill Road)                         | 307,050       | 2,587,500     | -             |            |            |            |            |            |            |            | 2,894,550   |
| Pump Stations 1 - 7 Upgrades                                       | 2,566,393     | 2,861,875     | 1,911,005     | 23,770     |            |            |            |            |            |            | 7,363,043   |
| Wakefield St new Rising Main                                       | 5,363,584     | 4,468,674     | -             |            |            |            |            |            |            |            | 9,832,258   |
| WCC Capital Carbon Modelling - Wastewater                          | 20,470        | 20,700        | 20,700        | 20,000     | 20,000     | 20,000     | 20,000     | 20,000     | 20,000     | 20,000     | 201,870     |
| WCC Wastewater Network Modelling                                   | -             | -             | -             | 200,000    | 300,000    | 500,000    | 850,000    | 300,000    | 300,000    | 200,000    | 2,650,000   |
| Western WWTP Process Model Development                             | -             | -             | -             |            | 50,000     | 50,000     | 50,000     | 150,000    | 50,000     | 50,000     | 400,000     |
| Western WWTP Treatment System Modification (consent required)      | -             | -             | -             |            |            |            |            |            |            | 200,000    | 200,000     |
| [-] Various                                                        | 131,763       | 414,000       |               |            |            |            |            |            |            |            | 545,763     |
| WCC Programme - Wastewater Defects & Close out cost                | 131,763       | 414,000       |               |            |            |            |            |            |            |            | 545,763     |
| [+] Renewal                                                        | 29,540,136    | 19,850,740    | 33,997,294    | 62,443,828 | 51,366,804 | 46,641,303 | 38,836,427 | 35,913,786 | 25,849,075 | 26,663,787 | 371,103,181 |
| Grand Total                                                        | 50,800,794    | 42,205,589    | 43,173,999    | 67,087,598 | 52,136,804 | 58,891,303 | 50,566,427 | 47,193,786 | 47,459,075 | 72,379,998 | 531,895,373 |

See next page for detailed breakdown on renewal projects.

8.5 10-Year Three Waters capital programme forecast (cont.)

8.5.2 Wastewater projects (cont.)

The 10 Year LTP Wastewater capital works budget forecasts are detailed in the table below:

|                                                                                            | FY24-25 Prog. | FY25-26 Prog. | FY26-27 Prog. | 2027/28    | 2028/29    | 2029/30    | 2030/31    | 2031/32    | 2032/33    | 2033/34    | TOTAL LTP   |
|--------------------------------------------------------------------------------------------|---------------|---------------|---------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| Renewal                                                                                    | 29,540,136    | 19,850,740    | 33,997,294    | 62,443,828 | 51,366,804 | 46,641,303 | 38,836,427 | 35,913,786 | 25,849,075 | 26,663,787 | 371,103,181 |
| Aro Valley Wastewater Renewals (Adams, Aro, Holloway, Maarama, Fairlie, Landcross Streets) | 4,000,000     | -             | -             | -          | -          | -          | -          | -          | -          | -          | 4,000,000   |
| Cable St (6-21) Wastewater Pipe Renewal                                                    | -             | -             | 107,251       | 1,603,313  | -          | -          | -          | -          | -          | -          | 1,710,564   |
| Carey's Gully SDP Planned Renewals                                                         | 614,100       | 517,500       | 517,500       | -          | -          | -          | -          | -          | -          | -          | 1,649,100   |
| Consent renewal - Moa Point and IPS PS discharge to air (exp 2034 and 2033 respectively)   | -             | -             | -             | -          | -          | -          | 500,000    | 500,000    | 500,000    | -          | 1,500,000   |
| Consent renewal - Moa Point coastal discharge (exp 2034)                                   | -             | -             | -             | -          | -          | -          | 1,000,000  | 2,000,000  | 1,000,000  | -          | 4,000,000   |
| Consent renewal - Moa Point foreshare and seabed occupation (exp 2034)                     | -             | -             | -             | -          | -          | -          | 200,000    | 200,000    | 250,000    | -          | 650,000     |
| Consent renewal - Moa Point partially treated wastewater (exp 2034)                        | -             | -             | -             | -          | -          | -          | 200,000    | 200,000    | 250,000    | -          | 650,000     |
| Consent renewal - Western WWTP coastal discharge (exp 2035)                                | -             | -             | -             | -          | -          | -          | -          | 1,000,000  | 2,000,000  | 1,000,000  | 4,000,000   |
| Consent renewal - Western WWTP discharge to air (exp 2035)                                 | -             | -             | -             | -          | -          | -          | -          | 100,000    | 200,000    | 200,000    | 500,000     |
| Consent renewal - Western WWTP partially treated discharge to CMA (exp 2035)               | -             | -             | -             | -          | -          | -          | -          | 100,000    | 200,000    | 200,000    | 500,000     |
| Eastern trunk main WW Renewal - Stage 1 (Airport cargo area)                               | 1,306,200     | -             | -             | 18,000,000 | -          | -          | -          | -          | -          | -          | 19,306,200  |
| Golden Mile and Lambton Quay                                                               | 2,457,701     | 2,667,332     | 3,000,000     | 8,000,000  | 7,208,563  | -          | -          | -          | -          | -          | 23,333,596  |
| Karori Effluent Pipeline Remediation                                                       | 1,228,200     | -             | 20,287        | -          | -          | -          | -          | -          | -          | -          | 1,248,487   |
| Kemp St Wastewater Renewal                                                                 | -             | -             | 118,560       | 430,938    | -          | -          | -          | -          | -          | -          | 549,498     |
| Kent Tce and Oriental Pde Rising main renewal                                              | -             | -             | -             | 1,795,362  | 3,722,227  | 15,123,665 | 19,017,852 | 8,208,126  | -          | -          | 47,867,232  |
| Moa Point SMF Facility Maintenance                                                         | -             | -             | -             | -          | -          | -          | 500,000    | 2,240,000  | 2,240,000  | 2,240,000  | 7,220,000   |
| Moa Point WWTP Aeration System Renewal                                                     | -             | -             | 1,321,631     | 5,160,000  | 6,880,000  | 3,440,000  | -          | -          | -          | -          | 16,801,631  |
| Moa Point WWTP Clarifiers & Associated Equipment                                           | 1,110,270     | 352,864       | 351,264       | 1,000,000  | 1,000,000  | 1,000,000  | -          | -          | -          | -          | 4,814,398   |
| Moa Point WWTP Critical Spares                                                             | -             | -             | -             | -          | -          | -          | -          | 650,000    | -          | -          | 650,000     |
| Moa Point WWTP General Instrumentation                                                     | -             | -             | -             | -          | 350,000    | 250,000    | -          | -          | -          | -          | 600,000     |
| Moa Point WWTP IPS Renewal                                                                 | 1,760,420     | 1,780,200     | -             | -          | -          | -          | -          | -          | -          | -          | 3,540,620   |
| Moa Point WWTP Odour and Ventilation Renewal                                               | -             | -             | -             | 1,000,000  | 2,800,000  | 3,800,000  | -          | -          | -          | -          | 7,600,000   |
| Moa Point WWTP Planned Renewals                                                            | 1,535,250     | 1,552,500     | 1,552,500     | 6,000,000  | 7,000,000  | 6,513,468  | 1,500,000  | 1,500,000  | 1,500,000  | 2,486,532  | 31,140,250  |
| Moa Point WWTP Process Model Development                                                   | -             | -             | -             | -          | 150,000    | 50,000     | 50,000     | 50,000     | 50,000     | 150,000    | 500,000     |
| Moa Point WWTP Reactive Renewals                                                           | 1,146,320     | 1,159,200     | 1,159,200     | 1,120,000  | 1,000,000  | 1,000,000  | 500,000    | 500,000    | 500,000    | 500,000    | 8,584,720   |
| Moa Point WWTP Roof Replacement & Associated Works                                         | -             | -             | -             | 500,000    | 1,350,000  | 3,150,000  | 3,550,000  | -          | -          | -          | 8,550,000   |
| Moa Point WWTP Site Services & Buildings Refurbishment                                     | -             | -             | -             | -          | -          | -          | -          | -          | 1,000,000  | 2,000,000  | 3,000,000   |
| Moa Point WWTP UV Renewal                                                                  | 5,598,700     | 1,102,700     | -             | -          | -          | -          | -          | -          | -          | -          | 6,701,400   |
| Moa Point WWTP UV System Renewal                                                           | -             | -             | -             | 400,000    | -          | -          | 400,000    | -          | -          | 400,000    | 1,200,000   |
| Rolleston St (33 -55) Wastewater Renewals (sp)                                             | -             | -             | -             | 1,105,599  | 33,823     | -          | -          | -          | -          | -          | 1,139,422   |
| Seatoun North Wastewater Renewal                                                           | -             | -             | 327,883       | 3,774,269  | 6,260,970  | 50,000     | -          | -          | -          | -          | 10,413,122  |
| Stratford Way (5) - Wilton Road (89) Wastewater Renewal [sp]                               | -             | -             | 819,132       | 800,000    | -          | -          | -          | -          | -          | -          | 1,619,132   |
| Victoria Street Rising Main Renewal                                                        | 1,485,000     | 5,353,531     | 12,452,474    | 3,228,619  | -          | -          | -          | -          | -          | -          | 22,519,624  |
| WCC Pipe Network Planned Renewals - Wastewater                                             | -             | -             | -             | -          | -          | -          | -          | 7,660,559  | 7,026,515  | 12,164,855 | 26,851,929  |
| WCC Pipe Network Reactive Renewals - Wastewater                                            | 2,446,058     | 1,435,913     | 1,116,579     | 2,273,366  | 2,273,341  | 2,269,276  | 1,279,039  | 1,292,061  | 1,000,000  | 1,000,000  | 16,385,633  |
| WCC Wastewater Renewals - Newtown - Portion 1 [sp]                                         | -             | 80,000        | 5,095,000     | 50,000     | -          | 259        | -          | -          | -          | -          | 5,225,259   |
| WCC Wastewater Renewals - Newtown - Portion 2 [sp]                                         | -             | -             | 329,130       | 3,000,000  | 7,000,000  | 5,000,000  | -          | -          | -          | -          | 15,329,130  |
| WCC Wastewater Renewals - Newtown - Portion 3 [sp]                                         | -             | -             | -             | -          | -          | 323,955    | 3,103,000  | -          | -          | -          | 3,426,955   |
| WCC Western WWTP Planned Renewals                                                          | 511,750       | 517,500       | 517,500       | 500,000    | 500,000    | 300,000    | 300,000    | 300,000    | 300,000    | 300,000    | 4,046,750   |
| WCC WW Control Systems Renewals                                                            | 40,940        | 41,400        | 41,400        | 60,000     | 40,000     | 40,000     | 40,000     | 40,000     | 60,000     | 40,000     | 443,740     |
| WCC WW Drainage Investigations Water Quality Renewals                                      | 1,391,960     | 1,488,330     | 1,573,366     | 1,805,440  | 2,855,920  | 2,998,560  | 2,213,216  | 3,306,440  | 3,471,640  | 2,795,080  | 23,899,952  |
| WCC WW Pump Station Renewals                                                               | 503,480       | 533,894       | 560,804       | 568,880    | 596,960    | 627,120    | 658,320    | 691,600    | 725,920    | 762,320    | 6,229,299   |
| Western WWTP Critical Spares                                                               | -             | -             | -             | -          | -          | -          | -          | 200,000    | -          | -          | 200,000     |
| Western WWTP General Instrumentation                                                       | -             | -             | -             | -          | -          | -          | -          | 150,000    | 150,000    | -          | 300,000     |
| Western WWTP Mechanical Equipment Renewals                                                 | -             | -             | -             | -          | 120,000    | 480,000    | 3,600,000  | 4,800,000  | 3,000,000  | -          | 12,000,000  |
| Western WWTP Reactive Renewals                                                             | 230,288       | 232,875       | 232,875       | 225,000    | 225,000    | 225,000    | 225,000    | 225,000    | 225,000    | 225,000    | 2,271,038   |
| Western WWTP Site Services and Building Renewal                                            | -             | -             | -             | -          | -          | -          | -          | -          | 200,000    | 200,000    | 400,000     |
| Western WWTP UV Replacement                                                                | 1,150,000     | -             | -             | -          | -          | -          | -          | -          | -          | -          | 1,150,000   |
| Willeston and Harris Wastewater Renewal                                                    | -             | -             | 2,782,960     | 43,043     | -          | -          | -          | -          | -          | -          | 2,826,003   |
| WWTP Design Fund - Moa                                                                     | 1,023,500     | 1,035,000     | -             | -          | -          | -          | -          | -          | -          | -          | 2,058,500   |

## 8.5 10-Year Three Waters capital programme forecast (cont.)

### 8.5.3 Stormwater projects

The 10 Year LTP Stormwater capital works budget forecasts are detailed in the table below:

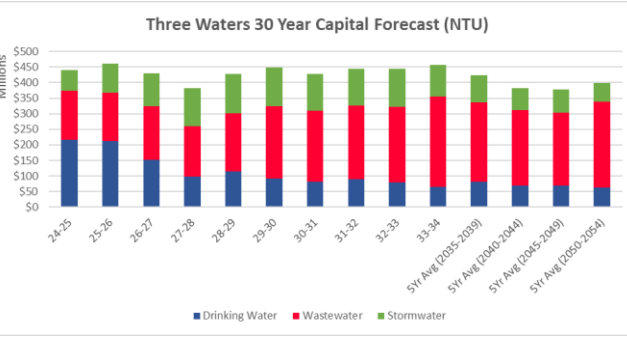
|                                                                    | FY24-25 Prog.    | FY25-26 Prog.    | FY26-27 Prog.     | 2027/28          | 2028/29           | 2029/30           | 2030/31           | 2031/32           | 2032/33           | 2033/34           | TOTAL LTP          |
|--------------------------------------------------------------------|------------------|------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| <b>Growth</b>                                                      | <b>153,525</b>   | <b>155,250</b>   | <b>155,250</b>    | <b>150,000</b>   | <b>150,000</b>    | <b>150,000</b>    | <b>150,000</b>    | <b>150,000</b>    | <b>150,000</b>    | <b>150,000</b>    | <b>1,514,025</b>   |
| WCC Reactive Growth Development Projects - Stormwater              | 153,525          | 155,250          | 155,250           | 150,000          | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 150,000           | 1,514,025          |
| <b>Level of service</b>                                            | <b>2,082,065</b> | <b>2,232,025</b> | <b>2,081,950</b>  | <b>3,010,000</b> | <b>7,433,300</b>  | <b>20,557,000</b> | <b>47,799,750</b> | <b>38,732,750</b> | <b>4,500,000</b>  | <b>7,570,000</b>  | <b>135,998,840</b> |
| CBD Stormwater Flooding Improvement Projects                       | 511,750          | 517,500          | 517,500           | 1,000,000        | 1,000,000         | 1,000,000         | 1,000,000         | 1,000,000         | 1,000,000         | 1,000,000         | 8,546,750          |
| Johnsonville Stormwater Flooding Improvement Projects              | 255,875          | 258,750          | 258,750           | 500,000          | 500,000           | 500,000           | 500,000           | 500,000           | 500,000           | 500,000           | 4,273,375          |
| Main Road (68-74) Tawa Stormwater Improvement                      |                  | 25,875           | -                 |                  |                   |                   |                   |                   |                   |                   | 25,875             |
| NDP: Resource consent for stormwater discharges                    | 307,050          | 310,500          | 310,500           |                  |                   |                   |                   |                   |                   |                   | 928,050            |
| NDP: SMS workstream 1 implementation for water quality (modelling) | 102,350          | 103,500          | 103,500           | 250,000          | 907,000           | 977,000           | 1,500,000         | 1,200,000         | 900,000           | 1,000,000         | 7,043,350          |
| NDP: SW Subcatchment Asset Management Plan - Lambton               | -                | -                | -                 |                  |                   |                   | 140,000           | 140,000           | 140,000           | 700,000           | 1,120,000          |
| NDP: SW Subcatchment Asset Management Plan - Wellington A          | -                | -                | -                 |                  |                   |                   |                   |                   | 140,000           | 140,000           | 280,000            |
| NDP: SW Subcatchment Asset Management Plan - Wellington City pilot | -                | -                | -                 | 140,000          | 140,000           | 700,000           | 700,000           | 700,000           | 700,000           | 3,110,000         | 6,190,000          |
| Shirley Street (37-39) to Hurman St (2) Stormwater Upgrade         |                  | 25,875           | -                 |                  |                   |                   |                   |                   |                   |                   | 25,875             |
| Tawa Stormwater - Bartlett Grv, Tawa                               | -                | -                | -                 |                  | 200,000           | 2,658,900         |                   |                   |                   |                   | 2,858,900          |
| Tawa Stormwater - Collins Ave, Tawa                                | -                | -                | -                 |                  | 1,114,600         | 5,658,400         | 17,832,450        | 17,832,450        |                   |                   | 42,437,900         |
| Tawa Stormwater - Lincoln Ave, Tawa                                | -                | -                | -                 |                  | 845,400           | 1,941,400         | 8,767,000         |                   |                   |                   | 11,553,800         |
| Tawa Stormwater - Lyndhurst Road, Tawa                             | -                | -                | -                 |                  | 684,200           | 2,556,200         | 6,917,300         | 6,917,300         |                   |                   | 17,075,000         |
| Tawa Stormwater - Park Ave, Tawa                                   | -                | -                | -                 |                  | 922,100           | 3,445,100         | 9,323,000         | 9,323,000         |                   |                   | 23,013,200         |
| Tawa stormwater flooding improvement projects                      | 255,875          | 258,750          | 258,750           | 500,000          | 500,000           | 500,000           | 500,000           | 500,000           | 500,000           | 500,000           | 4,273,375          |
| WCC Capital Carbon Modelling - Stormwater                          | 20,470           | 20,700           | 20,700            | 20,000           | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 201,870            |
| WCC Climate Resilience Model                                       |                  | 77,625           |                   |                  |                   |                   |                   |                   |                   |                   | 77,625             |
| WCC Global consent for operations and maintenance works in streams | 20,470           | 20,700           | -                 |                  |                   |                   |                   |                   |                   |                   | 41,170             |
| WCC Stormwater Network Modelling                                   | 358,225          | 362,250          | 362,250           | 350,000          | 350,000           | 350,000           | 350,000           | 350,000           | 350,000           | 350,000           | 3,532,725          |
| WCC SW Drainage Improvement Projects                               | 250,000          | 250,000          | 250,000           | 250,000          | 250,000           | 250,000           | 250,000           | 250,000           | 250,000           | 250,000           | 2,500,000          |
| <b>Renewal</b>                                                     | <b>1,576,308</b> | <b>1,623,931</b> | <b>8,663,412</b>  | <b>6,737,897</b> | <b>3,224,179</b>  | <b>3,200,360</b>  | <b>2,377,038</b>  | <b>9,362,541</b>  | <b>11,026,000</b> | <b>7,266,740</b>  | <b>55,058,406</b>  |
| Agra Crescent Stormwater Renewal                                   | -                | -                | 6,567,851         | 2,303,558        |                   |                   |                   |                   |                   |                   | 8,871,409          |
| Allington Road Culvert Replacement                                 |                  |                  |                   |                  |                   |                   |                   | 2,750,000         |                   |                   | 2,750,000          |
| Stirling Street (10-14) Adelaide Road (493) Stormwater Renewal     | -                | -                | 414,000           | 43,408           |                   |                   |                   |                   |                   |                   | 457,408            |
| VHC SW Culverts - Moorefield Rd                                    | -                | -                | 259,499           | 1,309,373        | 50,000            |                   |                   |                   |                   |                   | 1,618,872          |
| WCC Pipe Network Planned Renewals - Stormwater                     | -                | -                | -                 | -                | -                 | -                 | -                 | 4,286,820         | 8,649,400         | 4,822,820         | 17,759,040         |
| WCC Pipe Network Reactive Renewals - Stormwater                    | 622,406          | 608,699          | 358,248           | 1,998,718        | 1,998,699         | 1,995,510         | 1,003,168         | 1,013,381         | 1,000,000         | 1,000,000         | 11,598,828         |
| WCC SW Control Systems Renewals                                    | 14,329           | 17,595           | 16,560            | 20,000           | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 20,000            | 188,484            |
| WCC SW Drainage Investigations Water Quality Renewals              | 835,176          | 886,788          | 931,127           | 944,520          | 991,440           | 1,041,420         | 1,093,440         | 1,148,520         | 1,205,640         | 1,265,820         | 10,343,891         |
| WCC SW Pump Station Renewals                                       | 104,397          | 110,849          | 116,127           | 118,320          | 164,040           | 143,430           | 260,430           | 143,820           | 150,960           | 158,100           | 1,470,473          |
| <b>Various</b>                                                     | <b>12,282</b>    | <b>84,715</b>    |                   |                  |                   |                   |                   |                   |                   |                   | <b>96,997</b>      |
| WCC Programme - Stormwater Defects & Close out cost                | 12,282           | 84,715           |                   |                  |                   |                   |                   |                   |                   |                   | 96,997             |
| <b>Grand Total</b>                                                 | <b>3,824,180</b> | <b>4,095,921</b> | <b>10,900,612</b> | <b>9,897,897</b> | <b>10,807,479</b> | <b>23,907,360</b> | <b>50,326,788</b> | <b>48,245,291</b> | <b>15,676,000</b> | <b>14,986,740</b> | <b>192,668,268</b> |

9. 30 Year Three Waters investment forecasts

9.1 Total 30-Year capital investment forecast (NTU)

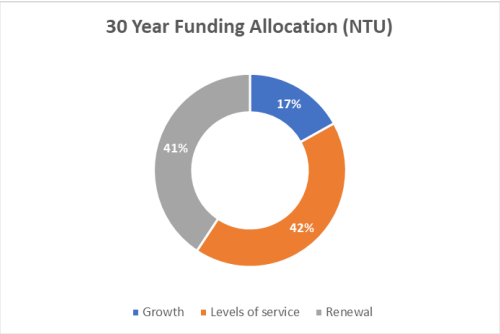
This section provides an overview of the uninflated 30-Year capital investment forecast. It is based on the data submitted to the National Transition Unit (NTU Entity C) in June/July 2023 as part of 30-year capital investment requirements. Taking an unconstrained funding approach, it covers all assets including networks, reservoirs, pumpstations and control systems.

The NTU Three Waters Capital Programme is summarised in the chart below:



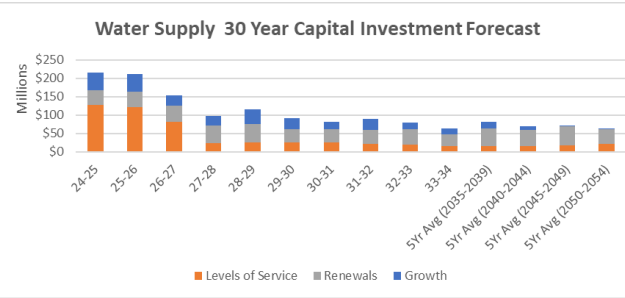
- The NTU’s 30 Year total capital investment (including renewals) is projected to be \$5.95 Billion.
- Capital investment is spread across:
- Renewals - to replace existing assets at the end of design life
  - Additional Capacity - to provide for growth
  - Levels of Service - improvement to meet standards and regulations

The distribution is provided in the figure below.

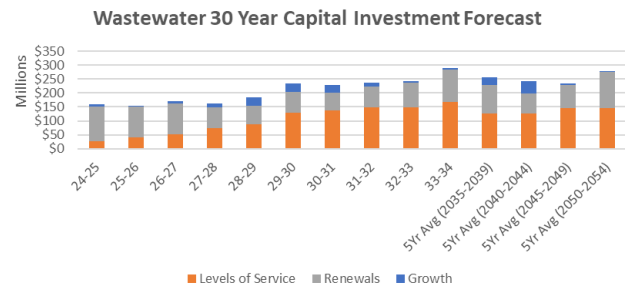


9.2 30-Year capital investment by water activity forecast

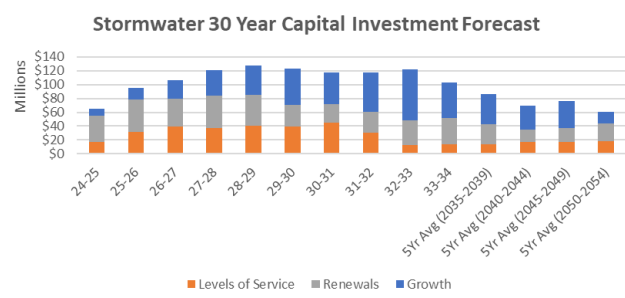
The water supply 30 Year capital forecast (total) is: \$1.48 B – see figure below.



The wastewater 30 Year capital forecast (total) is: \$3.07 B – see figure below.

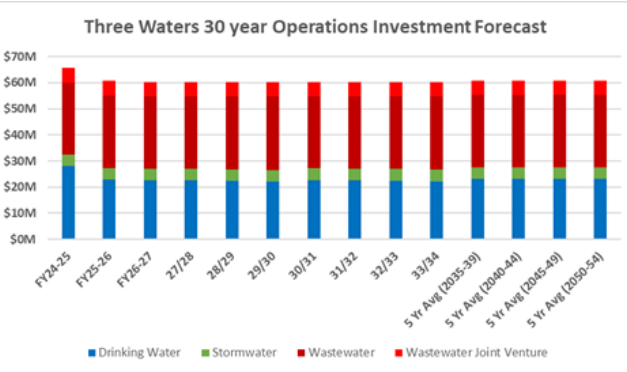


The stormwater 30 Year capital forecast (total) is: \$1.39 B – see figure below.



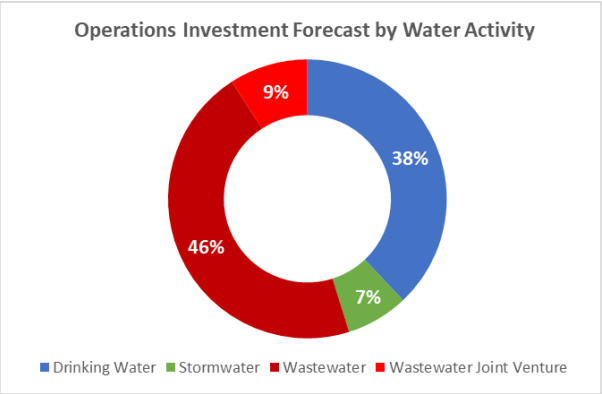
9.3 Total 30 year operational investment

The Draft Three Waters 30 year operational budget forecast is summarised in the chart below:



Total Three Waters Opex 30 Year Budget: \$1.83B

Note: Year 11 to 30 budgets are extrapolated from the average 10 Year budgets and have not been inflated.



The operational needs expenditure is broken down to approximately \$693.0M (38%) on water supply, \$1.00B (55%) on wastewater and \$131.6M (7%) on stormwater.

Budget Source: WWL Final Council OPEX LTP 2024-25

# 10. Continual asset management improvement

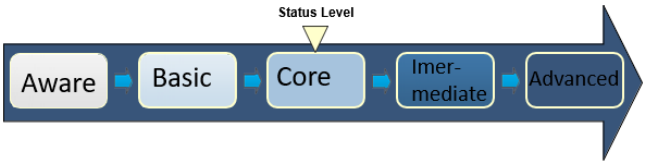
## 10.1 Asset Management Maturity

WWL is committed to continually improve asset management practices, processes, and tools. This is essential to ensure the asset system and services are effectively managed and delivered over the long term.

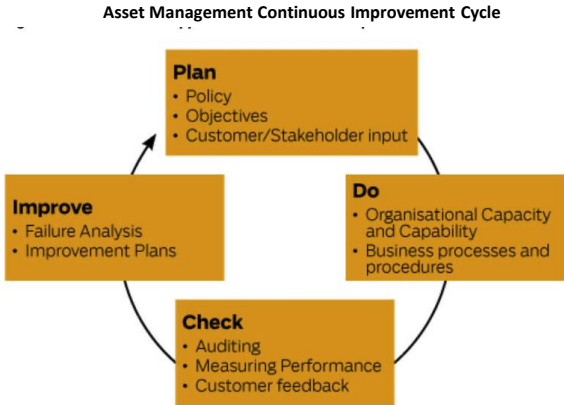
Asset Management practice is being developed in keeping with the NAMS guidelines as presented in their suite of asset management publications including the 2015 IIMM. Council is committed to delivering the most appropriate levels of service balanced with affordability and good industry practice.

### Core and Advanced Asset Management

The Asset Management Policy states that Council is committed to meeting at least core asset management status for all activities. This is the most appropriate status for the scale, value and risk appetite of Council. The appropriate asset management status level will be reviewed periodically.



The last Three Waters asset management maturity assessment was conducted in 2021. The diagram below summarises the findings:



## 10.2 Asset Management Improvement Plan

The key improvement actions items include:

- Continue to respond and adapt to the ongoing Three Waters reform programme ‘Local Water Done Well’
- Continue to review and improve asset management systems and processes
- Continue to build core asset management capability
- Carry out asset data cleansing and verify asset condition information
- Continue to improve the confidence and accuracy in locational asset data
- Continue to assess the asset condition of below ground assets
- Carry out asset criticality assessment and ratings
- Continue to develop and implement condition-based reticulation renewals strategy
- Continue capital investment in water assets to ensure consent compliance and operational efficiencies

The following key improvement items have been identified in the recently completed Water Services viability assessment:

- Further assessment of the adequacy, planning and programming of the Three Waters Renewals Programme
- Further assessment of the future Three Waters resource consenting requirements and related planning and budgeting for this area of work
- Further assessment of the resources and procedures required to ensure the delivery of the proposed up scaled capital works programme
- Further assessment and Opex budget provision for the increasing regulatory requirements (proposed in the Water Reform programme), and possible increases in future maintenance contact costs

## 10.3 Asset Management Improvement Monitoring Procedures

The Improvement Plan activities and priorities will be regularly reviewed, and progress reported on to ensure that a programme of continuous asset management improvement is achieved.