



**2021/31 LTP
Early Investment
Signals-
Greater Wellington
Regional Council
Councillor Workshop**

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Our water, our future.

A scenic photograph of a coastal town. In the foreground, there is a wide, flat, light-colored area, possibly a beach or tidal flat, with some water reflecting the sky. The middle ground shows several houses and buildings built on a hillside, surrounded by lush green trees and vegetation. In the background, there are large, forested hills under a cloudy sky.

Healthy Water Healthy Community

We value our client councils, mana whenua partners,
and our customers in the way we work

Purpose

- To outline the indicative investment we anticipate proposing for your 2021/31 LTP
- To discuss how those investments will impact on the cities, and on your wider environmental objectives
- To agree on the investment principles and the indicative level of investment for your 2021/31 LTP

Enabling an extraordinary region



Our extraordinary region relies on Three Waters infrastructure to:

- enable sustainable economic and population growth
- support improved environmental outcomes

We are facing a range of challenges over the next 10-30 years that need to be addressed to enable the region to continue to thrive.

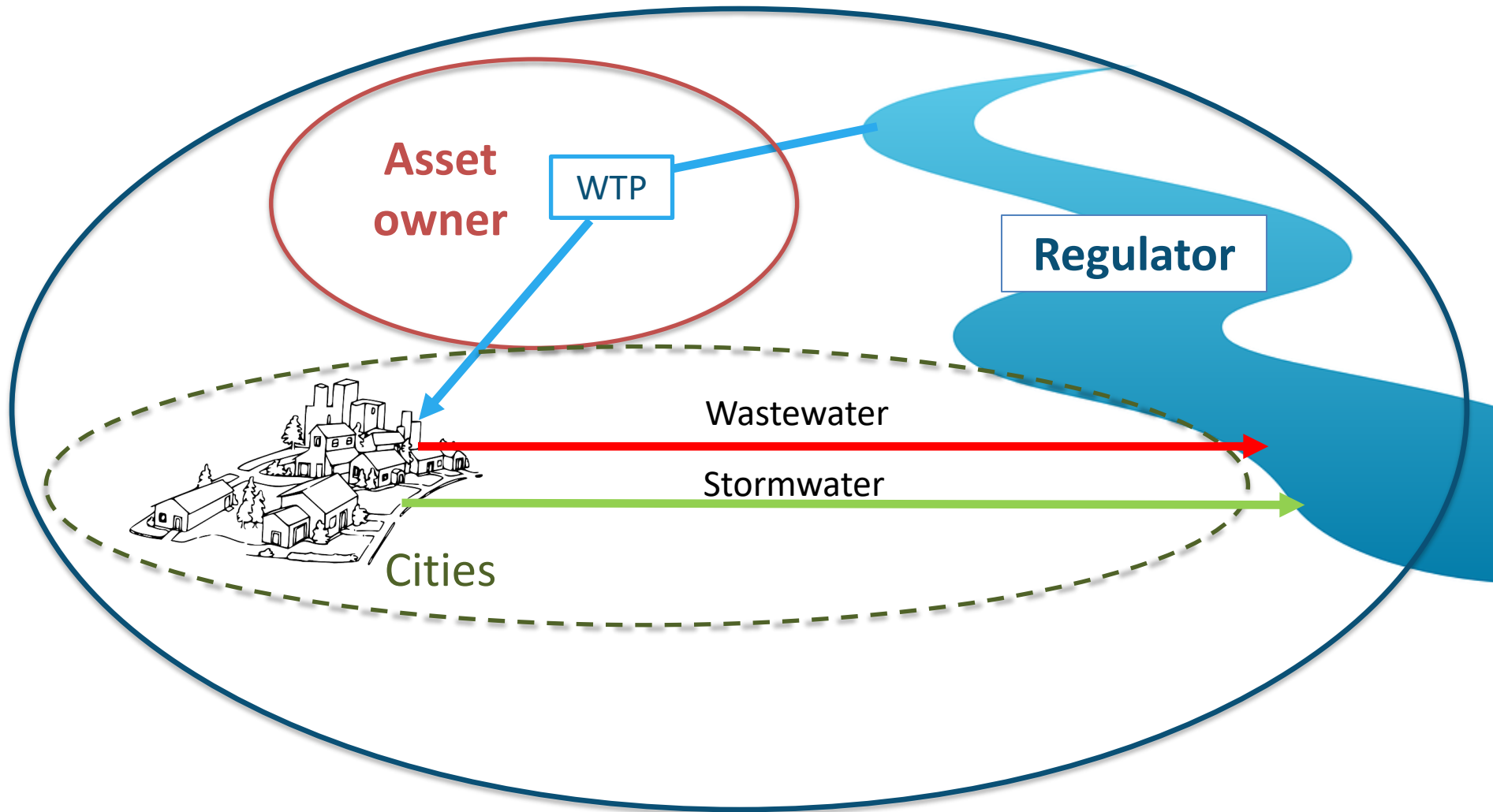
The Covid-19 pandemic is having a profound impact on our economy and this will undoubtedly affect the region's investment plans over the next 3-5 years.

This presentation sets out our Three Waters challenges and the scale of investment required across the region and by Greater Wellington as the bulk water asset owner.



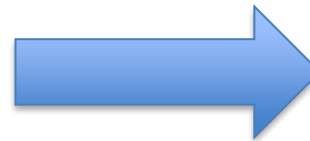
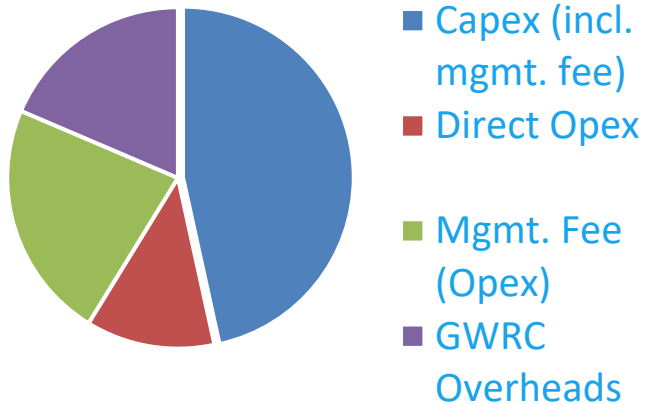
Our water, our future.

Greater Wellington's dual roles



All costs are paid by the 4 cities

Total costs to deliver Bulk Water services



GWRC's financial model & funding strategy determines the total levy. This is then allocated to the four cities based on their water usage

Bulk water levy

HCC Opex Cost

PCC Opex Cost

UHCC Opex Cost

WCC Opex Cost

We are in a critical 30 year period



Our water, our future.

5 key challenges and priorities

Te Mana o Te Wai

Looking after existing
infrastructure

*(renewals, operations, maintenance
and critical service level upgrades)*

Growth

Sustainable Water
Supply

Healthy Urban Waters

Climate Change

(mitigation and adaptation)

These 5 areas were identified as
priorities* for the region's 2021/31
LTPs.

Many are new activities or have
increasing service requirements.

Significant investment is needed over
the next 10-30 years.

*Seismic resilience and urban flooding
investment seen as lower priority

Key challenges and priorities



The following slides set out the regional challenges in more detail and summarise the increased investment required over the next 10 years.

Looking after existing infrastructure

- Most of the region's networks now have a nominal renewals backlog
- Around 50% of the networks will require renewal within the next 30 years
- 40-50% of the region's networks are considered to be fragile e.g. asbestos-cement pipes
- The condition of the wastewater network is having a negative impact on the environment due to leaky pipes
- There has been a ca. 40% increase in the reporting of water supply leaks in the metropolitan area
- We are signalling operational cost increases of up to 30% for LTP21/31 to maintain levels of service and respond to new standards e.g. water quality

Goal: We will understand the condition of current council assets and how this impacts performance. This information will inform renewals and maintenance programmes to prevent loss of operation



Impact for Greater Wellington:

- Leaking water pipes increase bulk water 'demand'
- Leaking wastewater pipes reduce freshwater quality

Growth challenge (and opportunity)



- Regional forecasts anticipate an increase of ca. 200,000 residents over the next 30 years
- Historically, infrastructure planning for growth has been *ad hoc*. This has resulted in the slow deterioration of service goal performance over time. We need to reverse this trend and ensure our infrastructure is sustainable and fit for purpose
- Our recent work in response to the NPS-UDC requirements has identified significant capacity issues in both the water and wastewater networks
- Modelling for the metropolitan region will be complete within the next 2 years. To date, this work has revealed significant areas of flooding risk to private and commercial property



Impact for Greater Wellington:

- Increasing bulk water demand
- Increasing pressure on water quality

Issues for Wellington City in 2020: red areas show under capacity.

Goal: No deterioration in customer service goals as a result of growth

Sustainable water supply

- **The bulk water system supplying the four cities is at nearly 90% of system capacity**
- Household consumption is more than 200 litres per person per day. This is significantly greater than some other NZ regions and international cities e.g. Australia and UK are ca. 150 litres per person per day
- **We have to take action within the next 5 years to reduce demand by at least 10%, and preferably 20%, to defer the need for an additional ca. \$300M storage or water source investment**
- Councils have indicated a preference for conservation over construction and some are considering household metering as a means to reduce demand.
- **A regional business case for metering has been funded by GWRC**



Goal: Year on year reduction in water supply demand



Healthy Urban Waters

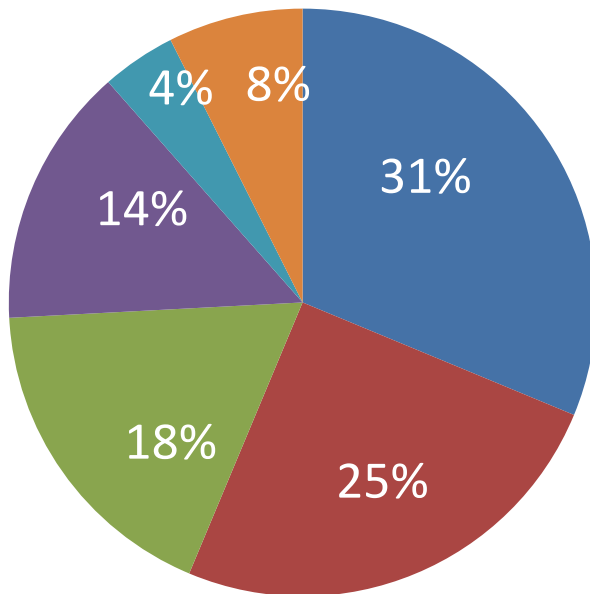
- Enhancing the quality of our urban waterways is one of our most complex issues
- New national and regional policies and plans, and community expectations, are requiring us to move towards much lower levels of contamination
- **The condition of both the private and public network has an impact on water quality outcomes in the environment**
- There are cross-connections in the network that are difficult to find and repair. They result in wastewater being deposited directly into the stormwater system, which then leads to our streams and waterways
- **The poor condition of the region's wastewater network is also having an impact on water quality in the environment**



Goal: The health (water quality) of our regions streams, rivers, beaches and coastlines is static or improving

Reducing carbon emissions

The delivery of Three Waters services consumes around 17,500 tonne of CO₂ equivalent per annum in the metropolitan region. 88% of emissions originate from 4 sources. This includes two sources related to bulk water operations. The Zero Carbon Act will require us to reduce emissions over time.



- Electricity Consumption*
- Fugitive Emissions (Sludge at Landfill)
- Water Treatment Chemicals*
- Gas Consumption (Seaview WWTP)

■ Mobile Fuel Combustion - Fleet Vehicles

■ Misc (10 categories)

Goal: Reduction in greenhouse gas emissions arising from three waters activities

Excludes SWDC

* Emissions related to bulk water operations

Increasing Capability and Capacity



Due to the scale of Three Waters challenges over the next 10-30 years, Wellington Water will need increased capability and capacity to respond to the changing environment. Some examples include:

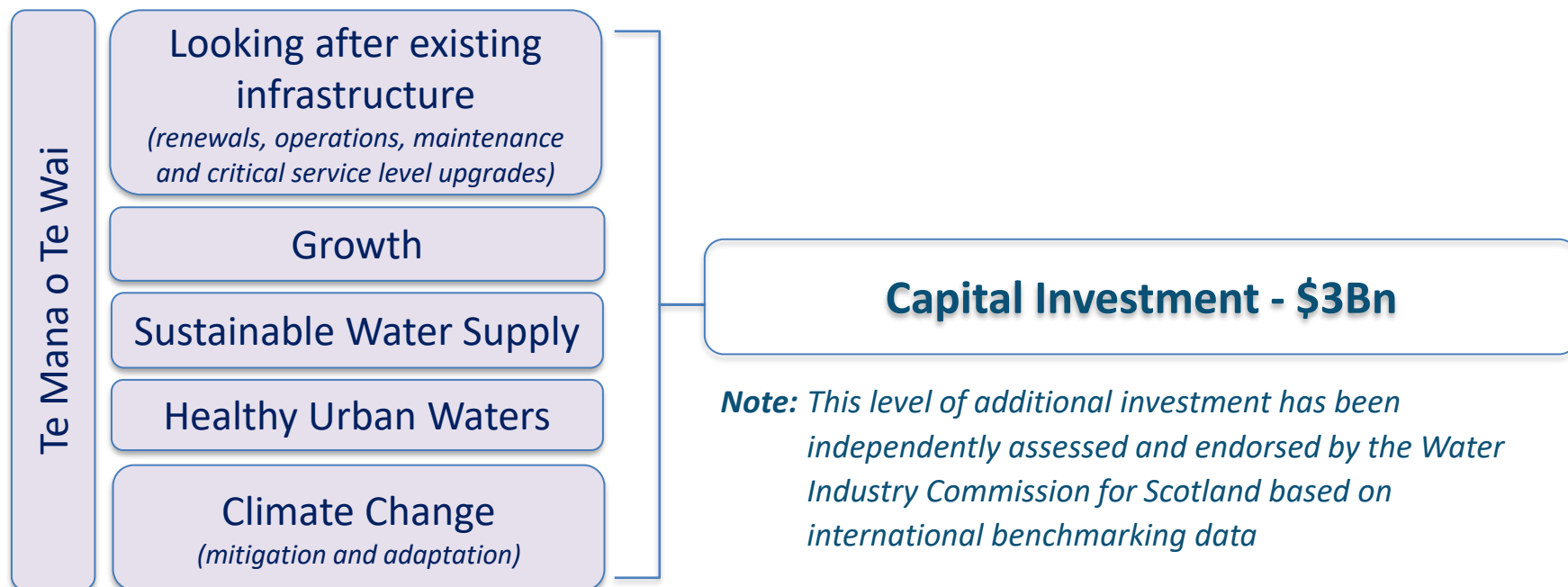
- Increased focus on long term planning and investigations
- Responding to new water regulation
- Technology and smart networks
- Closing gaps in base data
- Data management and analytics
- Building sector capacity & capability



A significant investment for the region



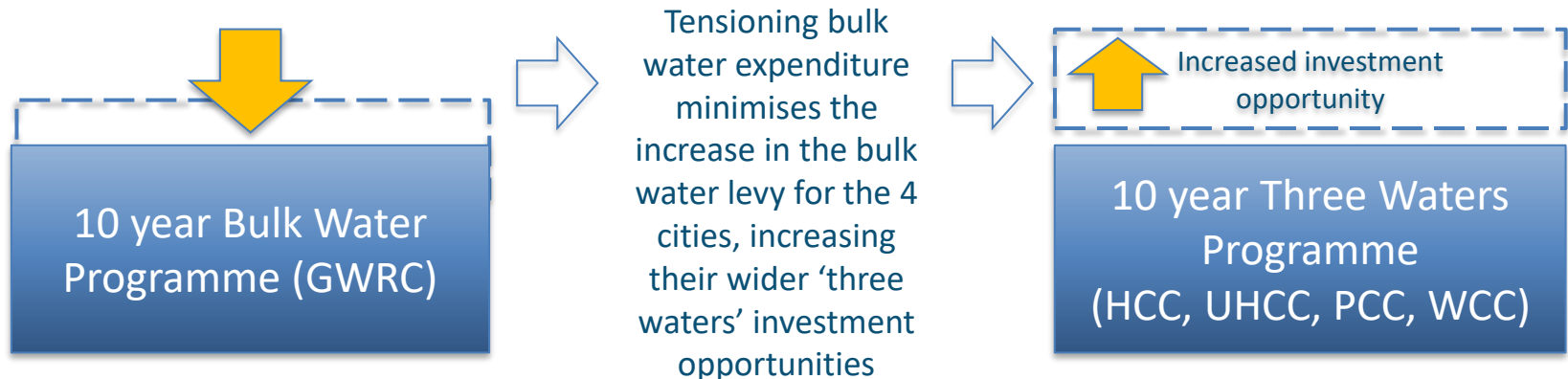
- Wellington Water has been engaging the region's councils in these 'Early Investment Signals' discussions in preparation for their 2021 LTPs. This work indicates there is a requirement for ca. **\$3Bn** of capital investment to respond to our councils' Three Waters challenges.
- This is \$2 billion over and above current 10 year plans**



What the regional priorities mean for GWRC

Balancing investment needs

- Our role as Trusted Advisor is to provide advice on Three Waters investment needs across the whole region
- In the context of the \$3Bn investment needed over the next 10 years and the economic impacts of the Covid-19 pandemic, investment trade-offs are inevitable
- Unlike other areas of the network, the bulk water system is achieving its most critical level of service - providing fully compliant safe and healthy water every day to the community
- Notwithstanding this, ongoing maintenance, renewals and key drought and seismic resilience upgrade improvements are required over the next 10 years
- **However, we are recommending that we ‘tension’ capital and operating expenditure in the bulk water network over the next 10 years to enable the four cities to address the priorities documented in this presentation. This will increase the ability of the cities to deliver on other outcomes of interest to GWRC, such as healthy urban waters.**





GWRC's indicative investment profile is not aligned to the regional priorities



Indicative 2021/31 LTP

Relative to 2018/28 LTP

Looking after existing infrastructure <i>(renewals, operations, maintenance and critical service level upgrades)</i>	\$60m opex (+18%) \$190m capex (+145%)		E.g. Bore renewals & Silverstream pipe bridge
Growth	\$12m capex (-)		E.g. Bulk mains to new growth areas
Sustainable Water Supply	\$15m capex (-)*		Te Marua WTP upgrade
Healthy Urban Waters	-		
Climate Change <i>(mitigation and adaptation)</i>	TBC (but modest)		
Seismic Resilience	\$185m capex (+73%)		Cross-Harbour Pipeline + landside 'north' + landside 'south'

Note: * if we are unsuccessful in reducing water demand across the region, significant additional investment will be required in later years if a new water source is required in the early 2030's

Our water, our future.

Progress against our resilience strategy

- Our long term goal is to provide **80%** of our customers, within **30** days of a reasonable seismic event, with at least **80%** of their water needs
- Three levels of service have been agreed:

0-8 days

Self-sufficiency



Less than half of households have resilient drinking water & wastewater plans

8-30 days

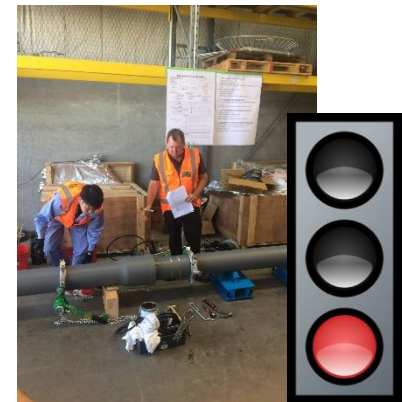
Survival & Stability



We have established an emergency water supply system that can provide up to 20 litres per person per day

30+ days

Restoration & Recovery



30+ years of investment in increased resilience of water treatment, bulk transport, storage and reticulation

The wastewater resilience strategy has yet to be confirmed, but the network is considered to generally be in worse condition and have lower resilience than the drinking water network

The right route?

- The cross-harbour pipeline is part of a resilience programme. It doesn't deliver resilience on its own.
- The full programme will take 30-50 years. What might change along the way?



Source: Solar Magazine

- Resilient
- Diversified sources
- Low-carbon
- Increases water supply
- Range of locations



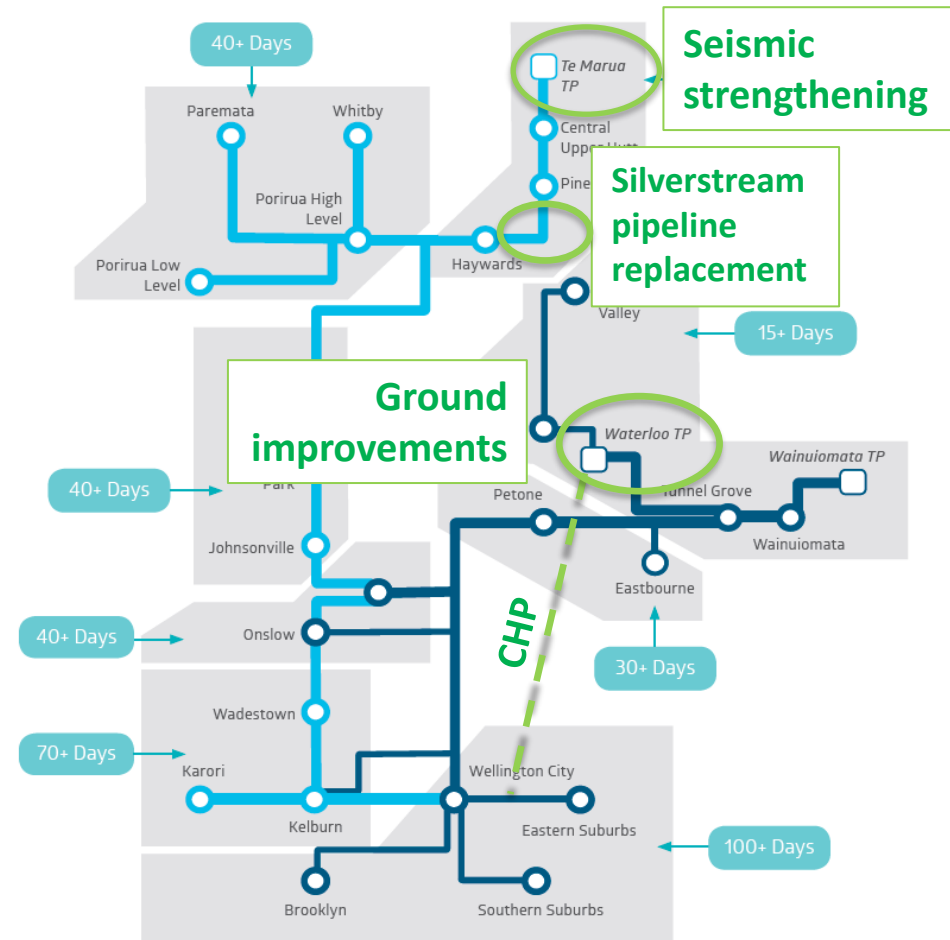
Ongoing resilience improvements

Investment is required from treatment plants to city reticulation

A mix of regional council and city investment

Delivered through:

- Renewals
- Growth upgrades
- Seismic strengthening
- New assets (i.e. CHP)



Source: Towards 80-30-80 (Water Supply Resilience Strategy)

Proposed investment principles



1. GWRC 'tensions' its investment in bulk water, increasing the opportunity for the cities to invest in other three waters priorities, including healthy urban waters, through minimising the bulk water levy
2. The priority for investment is to maintain the required levels of service, especially in relation to providing safe water, through continuing good asset stewardship
3. Other investments should support regional priorities. This would see the Cross Harbour Pipeline (and landside connections) deferred to outside the 2021/31 LTP.

What next?

Next Steps

- Confirm GWRC investment principles and indicative levels of investment
- Refine GWRC investment plan
- Incorporate GWRC investment and the bulk water levy into the scenarios discussed with the cities

A scenic landscape photograph showing a body of water in the foreground, a residential area with houses on a hillside in the middle ground, and forested mountains in the background under a cloudy sky.

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