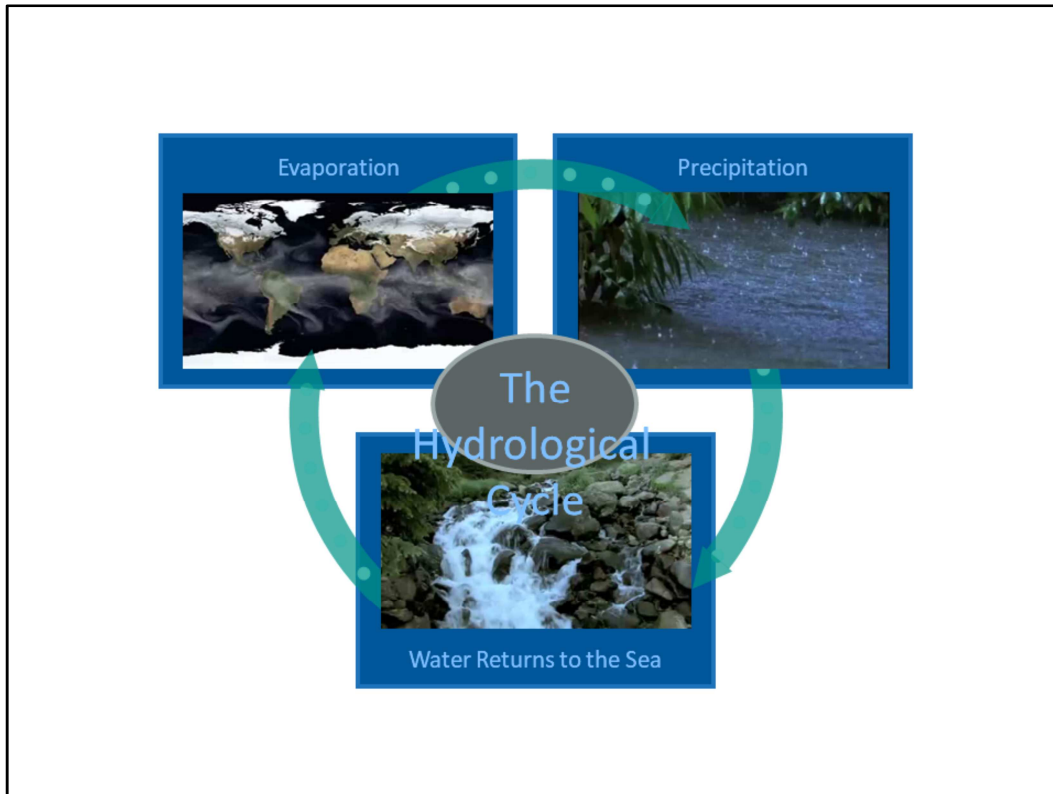


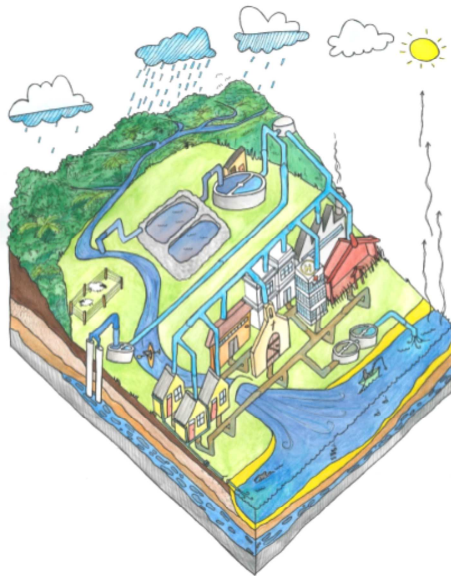
Introduce myself – role and experience. Describe purpose of presentation – supported by report already provided

This photo, taken from an Apollo mission is a very good reminder about how the world's land, oceans and water resources (that come from the clouds) are so interconnected. It is also a reminder that we are not an isolated community when it comes to managing water resources



I am sure you have seen this represented in many ways before. Of course we are a disruptor to the natural water cycle when we use or pollute this water

Disrupting the Water Cycle



Our water, our future.

My presentation discusses our approach to integration of planning our 3 waters services whilst acknowledging, and hopefully minimising the disruption to this cycle. This is an artistic representation of how we disrupt this cycle in Wellington. It shows the functions of all 3 services – water supply, wastewater, and stormwater

Overview



- Asset overview
 - Water supply
 - Waste water
 - Stormwater
- Approach to investment
- Current investment priorities
- Investment challenges
- Current prioritisation approach

Our water, our future.

In the asset overview part of the report I give a brief summary of the extent and value of the hard infrastructure we manage. I won't dwell on this today but hopefully it provides you with useful background material.

I will spend a bit more time discussing the remaining 4 bullet points

Asset overview



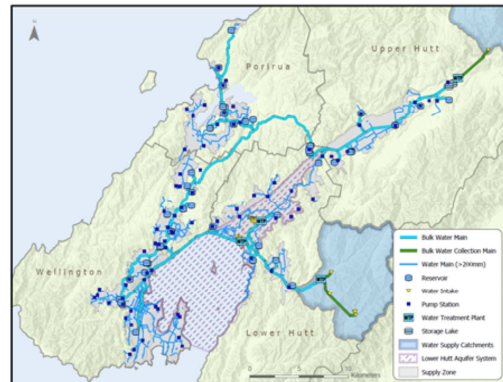
The provision of water supply and drainage services started in the late 1870s for Wellington. The original water supply for Wellington was the Karori reservoir – now used by Zealandia. It was built in a hurry because of the known risk disease and the lack of adequate sanitation of Wastewater and stormwater was a combined network

Of course all three services are Essential for public health and safety

Value of approximately \$5.8 billion with costs of approximately \$170 million per year

Below information covers all our areas, not just Te Whanganui-a-Tara

Water supply



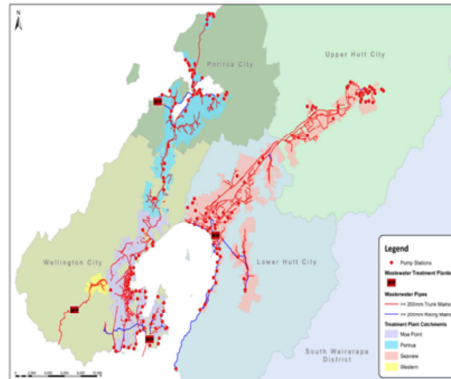
Purpose

Run of river water intakes, such that in summer up to 70% comes from the aquifer (Photo is Kaitoke intake)

Water treatment -4 modern water treatment plants that meet modern and hopefully emerging standards. Our water quality will always be under threat – the value of the protected catchments cannot be underestimated

Water distribution is made up of nearly 2400km of piped networks ranging from small (<50mm) to large (1400mm) and 130 reservoirs. Once water is treated the management of the network is critical in order to ensure reliability and prevent recontamination

Wastewater



Purpose

Inputs are domestic and trade waste

Outputs – treated water that is discharged to a receiving environment and sludge that goes to landfill. (Photos show dewatered sludge at Careys Gully prior to landfilling and the location of the outfall for the Porirua wwtp)

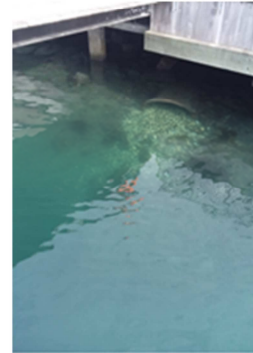
A network of similar length to the water network of varying sizes and materials.

Treatment plants (4) use treatment processes where discharge quality is driven by consent condition targets

Our challenge is to prevent blockages and dry weather overflows as well as wet weather overflows

Pressure on landfills and a need to reduce carbon emissions is driving us to find a better regional solution for the disposal of biosolids

Stormwater



Purpose of stormwater system is to protect property and transport routes from flooding. Management is of course catchment based using combinations of streams, open drains and piped networks. Discharge of stormwater










Is finally into streams and rivers or a coastal environment.

With stormwater comes contamination that has come from runoff over land or from unpermitted discharges into a stormwater system. Historically stormwater discharges have not been treated.

We are finding our network under increasing pressure from higher rainfall intensities , sea level rise and the ever increasing level of impermeable surfaces. (Photos show the unfortunate consequences of contaminants entering our stormwater network)

WWL Service Goals

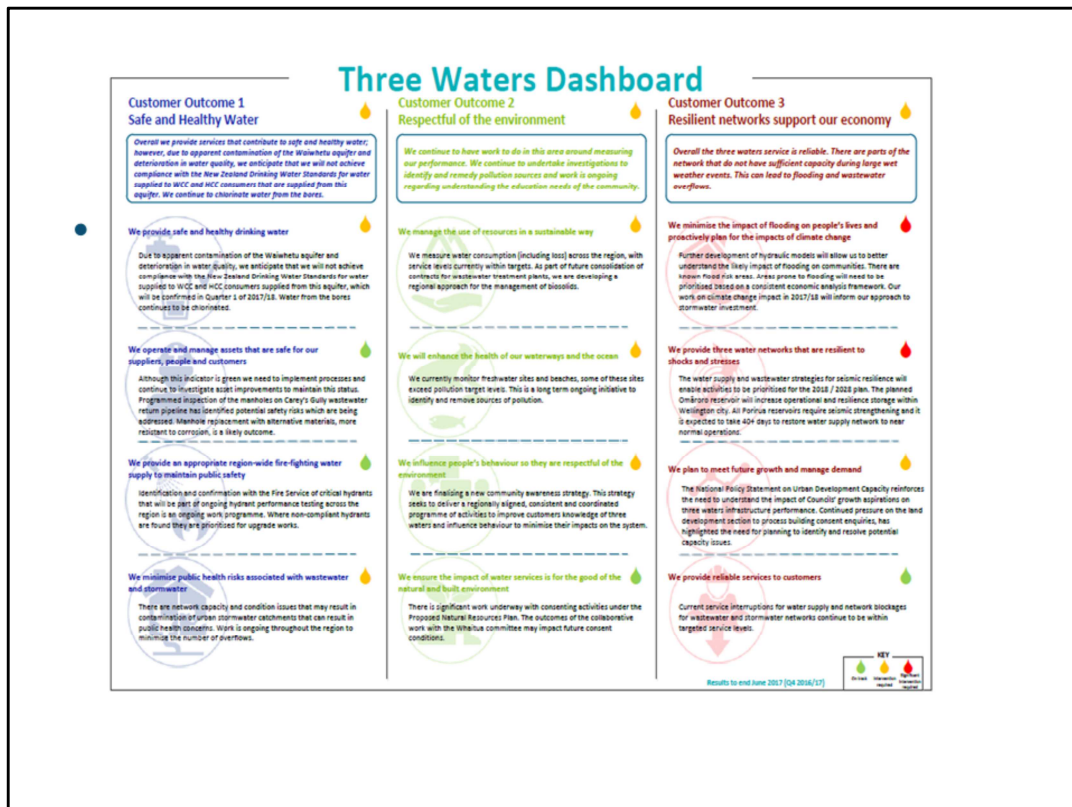


Safe and healthy water	Respectful of the environment	Resilient networks support our economy
 <p>We provide safe and healthy drinking water</p>	 <p>We manage the use of resources in a sustainable way</p>	 <p>We minimise the impact of flooding on people's lives and proactively plan for the impacts of climate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

Our water, our future.

Any of the activities we do to provide three waters services is linked back twelve service goals and so to our long term customer outcomes. The activities required to achieve these goals are not necessarily linked to any one water service. For example, to achieve 'we maintain or enhance the natural and built environment' can be done through activities associated with all three waters – water supply, wastewater and stormwater services.

WWL has developed a set of customer focused objectives for each service goal as well as measures designed to measure the effectiveness of investment in a specific service goal. More detail can be found on this in our Statement of Intent available on line.



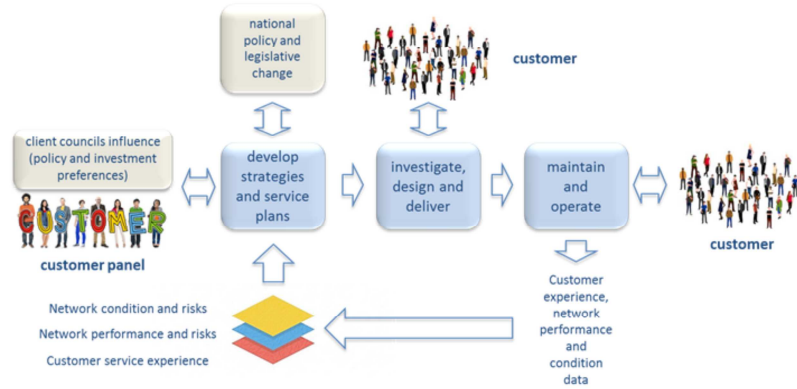
Councils are provided a performance report on a quarterly basis that reports the health status of these service goals in traffic light form, and discusses key issues that have arisen in the intervening periods. An example of the performance report is inserted below.

The “health status” of these goals are used as a basis for discussion with Councils about the appropriate level of investment for forward investment plans, in advance of their Long Term Planning processes. Services goals denoted “red” could be expected to attract attention for increased levels of investment.

It is worth noting that each Council has its own priorities for the three waters and these are reflected in the way it invests through the Long Term Plan. Accordingly, Wellington Water may spend more on flood management with one Council and more on improving water quality in another, even though the issues may be of a similar intensity in both areas. Wellington Water will influence the funding signals it receives, but ultimately it is the Council that specifies the priorities.

The general thrust for prioritisation is to identify projects that close the biggest gap in service goal performance

Approach to Investment

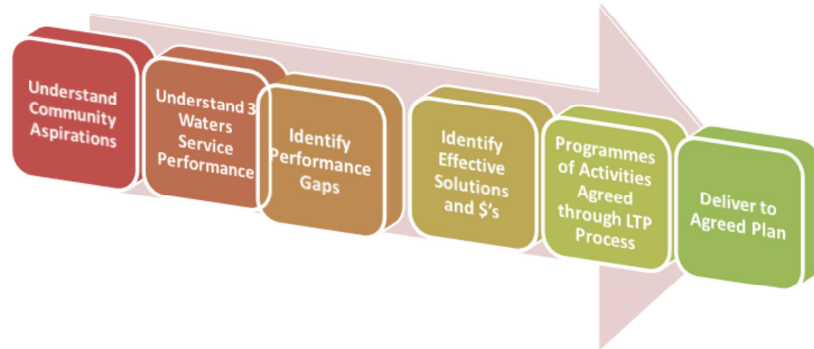


Our water, our future.

This diagram tries to show how we use our strategy our customers input and our knowledge of service performance to derive optimal solutions for investment whether capex or opex.

It is important to also recognise solutions that are best undertaken by others to avoid unnecessary expenditure by ratepayers. We call this a totex approach to investment – an approach that is increasingly being adopted internationally

Line of Sight for Investment

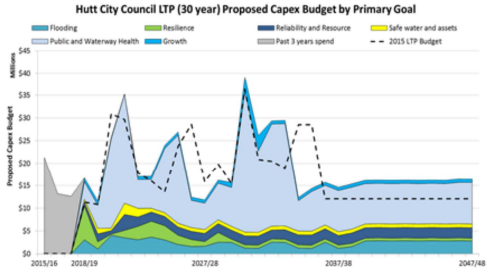
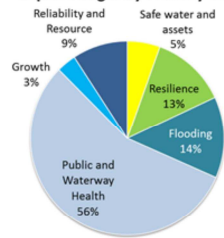


Our water, our future.

Explain the line of sight approach to planning . It is a further representation of a line of sight between community aspirations, knowledge of performance and a decision to spend

Current investment priorities - Hutt

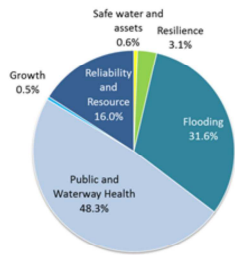
Hutt City Council LTP (10 year) Proposed Capex Budget by Primary Goal



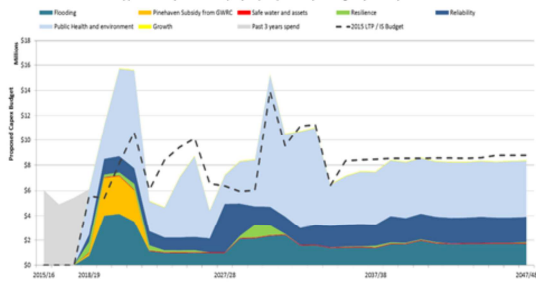
The high “health component” is a reflection of the investment allocated to wastewater renewals and stormwater catchment upgrades

Current investment priorities – Upper Hutt

Upper Hutt City Council LTP (10 year) Proposed Capex Budget by Primary Goal



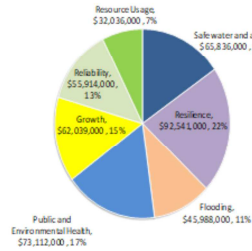
Upper Hutt City Council LTP (30 year) Proposed Capex Budget by Primary Goal



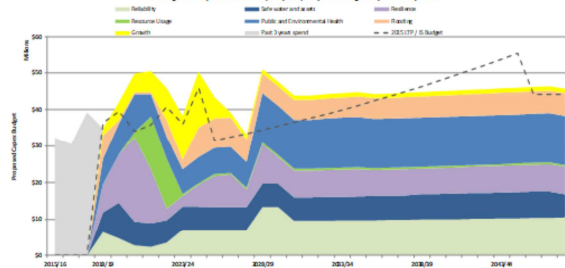
Like Hutt City the high health component comes from commitment to wastewater renewals

Current Investment Priorities – Wellington City

Wellington City Council LTP (10 year) Capex Budget by Primary Goal



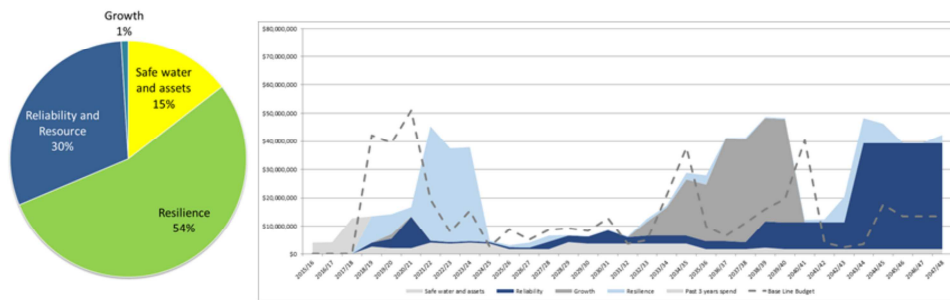
Wellington City Council LTP (30 year) Capex Budget by Primary Goal



There is a greater spread within WCCCon the allocation to goals Investment in public health is dominated by wastewater renewals, reliability, by water supply renewals, safety by firefighting upgrades, resource usage by demand management, resilience by Omaroro Reservoir and seismic upgrades

Current Investment Priorities - GW

Greater Wellington Regional Council LTP (10 year)
Proposed Capex Budget by Primary Goal



Greater Wellington budgets are for water supply only. They reflect renewals in treatment plants and bulk water mains. A large item in the resilience area is provision for the cross harbour pipeline

Investment Challenges



- Growth
- Future water supply
- Receiving environment water quality
- Sludge management
- Flooding
- Climate change
- Maintenance and operations
- Renewals

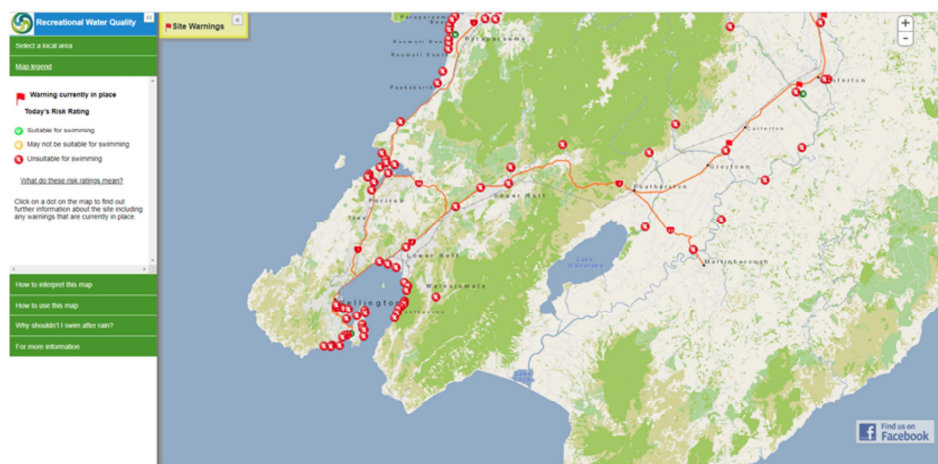
Our water, our future.

These are our biggest challenges. Each of them is significant on their own and the report briefly discusses why.

We have to be careful to balance our efforts in investment. From my experience when you take your eye off the ball, the issue that give least attention too surfaces at the least opportune time

Will talk about receiving environment water quality and renewals as examples

Receiving Environment Quality

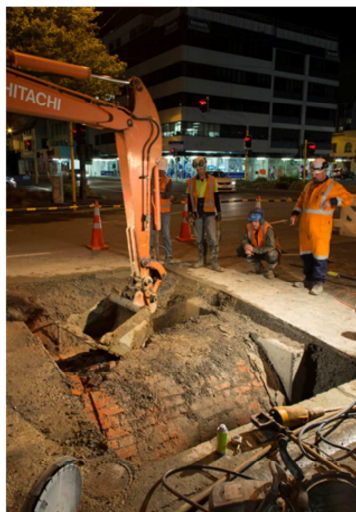


Our water, our future.

We know that beach and waterway health can become unacceptable – The big question is why and what level of investment in the stormwater and wastewater networks would make a noticeable difference. Furthermore where are our priorities to spend money that is limited?. We are starting to know the impact of infiltration of stormwater on our wastewater capacity and the condition of our wastewater network that if left unreplaced will certainly be a source of pollution of waterways. Steve Hutchison our wastewater chief advisor will be discussing these in more detail at later sessions.

We also know that water quality is not suitable for swimming for 48 hours after rain around urban areas

Renewals



Our water, our future.

All assets deteriorate with time – some quicker than others because of their operating conditions. We face a potential bulge in renewal needs – simply as a function of when they were installed and what they are made of.

Renewals in theory maintain basic levels of service (i.e. water supply or wastewater removal). However it is clear that a renewal of an asset that has deteriorated over its life can improve other service outcomes e.g. renewal of aged wastewater pipes that are leaking into stormwater systems or watercourses will inevitably improve receiving water quality. Improved knowledge of asset condition will provide greater confidence about asset lives in order to optimise renewal planning.