Hutt City Three-Waters Growth Study (2022)

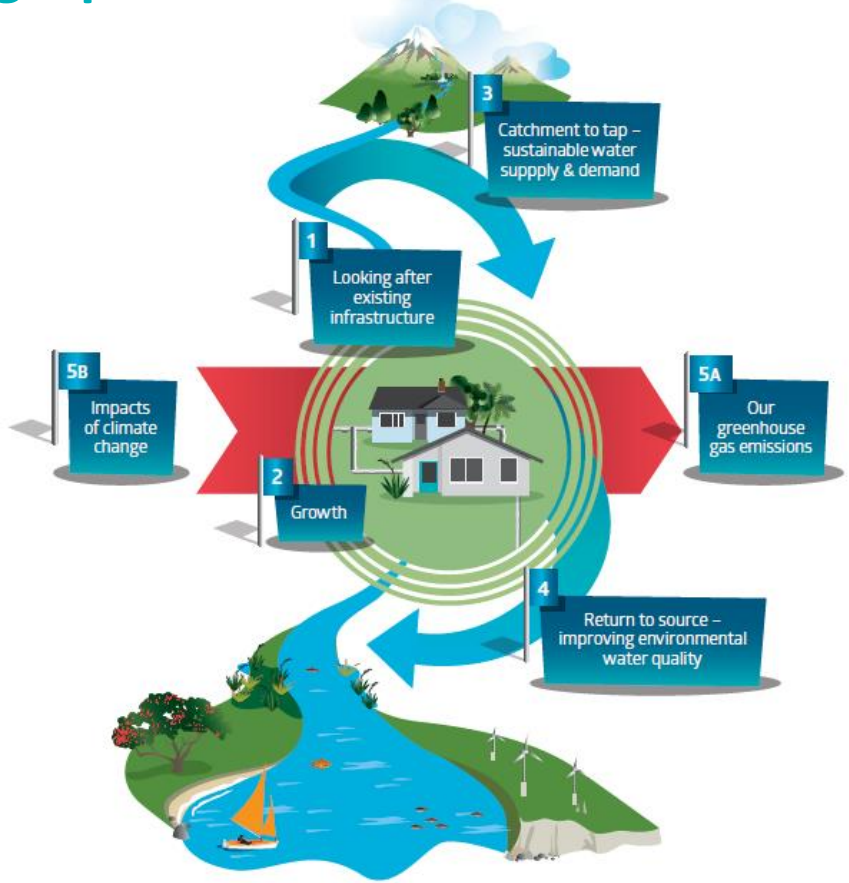
Presentation and Feedback with HCC

31 August 2022

Wellington Water

Our water, our future.

Regional strategic priorities for three waters



Our water, our future.

Looking after your existing ratepayers - renewal of aged infrastructure

Around 30% of pipes have reached their nominal useful life and many are in poor condition

- Decreases service reliability and performance
- Increases operating expenditure

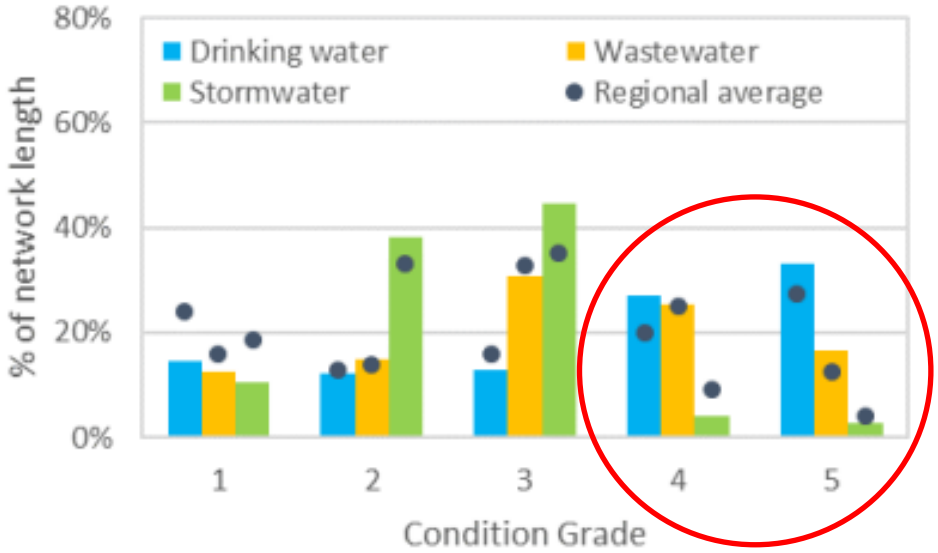
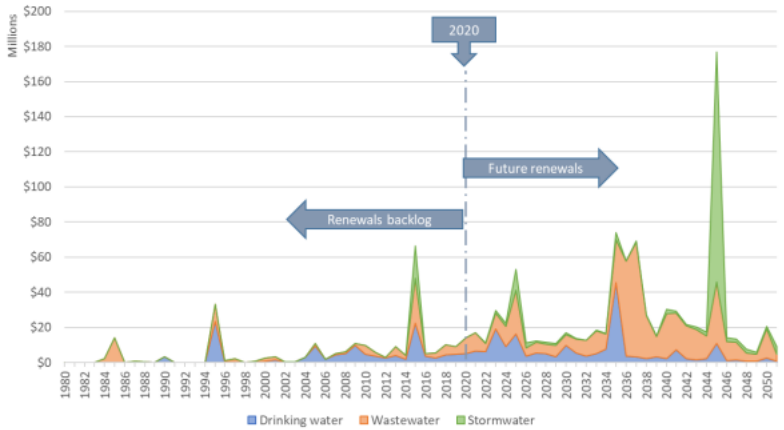


Figure 2-5 of Regional Service Plan Part 3 for Hutt City Council

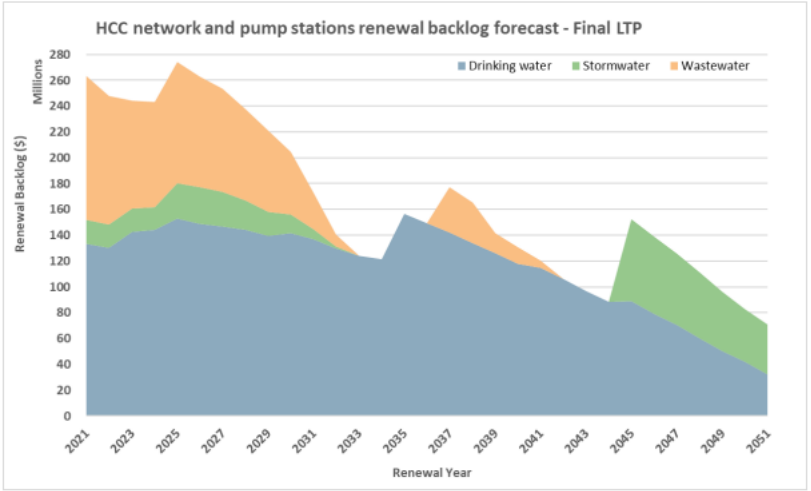
Your increased investment in renewals addresses this risk over time



Aggregate renewals profile

(with step-change increase for current LTP)

Figure 4-2 of Regional Service Plan Part 3 for Hutt City Council



Change in renewals backlog over time

(at LTP investment level)

Figure 5-2 of Regional Service Plan Part 3 for Hutt City Council

Purpose

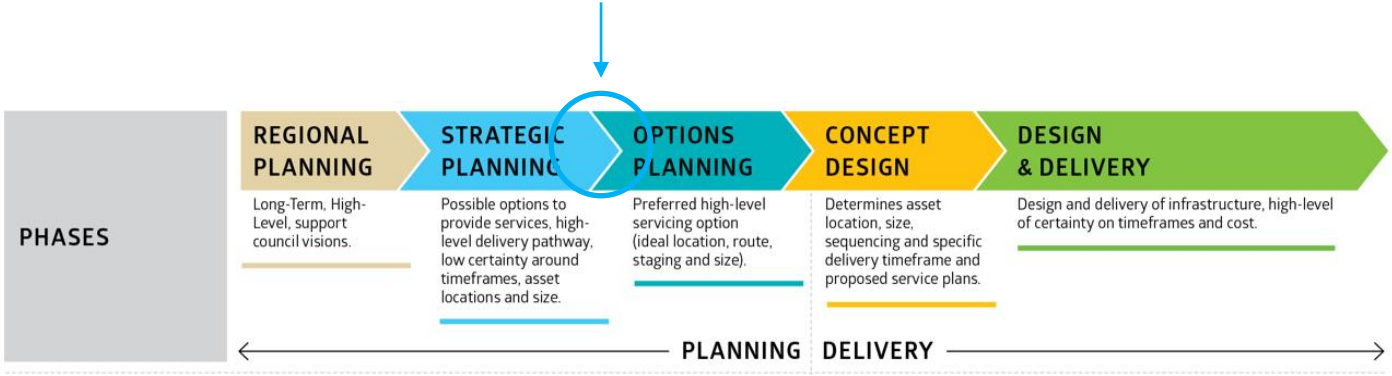
The purpose of the Hutt City Growth Study is to assess the anticipated forecast growth in the Hutt City territorial area, and identify three-water infrastructure improvements to accommodate predicted population growth over the next 30-years (2020-2050).

Scope

The scope of the study includes:

- Assessing the three-waters upgrades required to support growth within Hutt City Council boundaries.
- Support growth associated with Hutt City Council's Plan Change 43 with agreed population information provided by HCC in 2020 and agreed in March 2021.
- Propose infrastructure servicing for **city-level** network infrastructure for drinking water, wastewater and stormwater.
- Propose improvements to address both Level of Service (LOS) and Growth.

Growth Planning Framework



The focus of the Hutt City Growth study is between the **Strategic Planning and Options Planning**. Although options are used for the purposes of costing, these are only considered indicative at this stage as changes are expected when more detail and further information becomes available, which is addressed at the Concept Design stage.

Growth Study Areas and Population

Table 1: Hutt City Population Forecast (PC43, Forecast ID + Riverlink Dwellings) (HCC, March 2020)

Study Areas	2020	2050	2020-2050
Western Hills	13,310	15,208	1,898
Petone-Alicetown	12,109	13,565	1,456
Eastbourne	4,830	4,733	-97
Wainuiomata	18,510	24,494	5,983
Gracefield - Seaview – Waiwhetu	4,404	4,624	220
Central Hutt	21,945	34,038	12,093
Avalon-Naenae-Taita	19,988	21,694	1,706
Stokes Valley-Manor Park	10,151	11,966	1,815
Total	**105,247**	**130,323**	**25,075**

Growth Assumptions

- Growth forecasts have changed (and will continue to) (see Table 2)
- We use the best available information at the time of undertaking modelling, planning, and design activities.
- We are building new tools (e.g. strategic ww trunk model) which make it easier to assess growth scenarios.

Table 2: Population forecast comparisons

Population forecast source Lower Hutt Territorial Area	Current population (year)	Projected population (year)	Difference	% increase
Final HCC population numbers – March 2020 – based on PC43 using ForecastID	105,247 (2020)	130,323 (2050)	25,076	23.8%
Sense Partners (developed for the HBA 2022) – 50th percentile – as at July 2021	113,905 (2021)	162,811 (2051)	48,906	42.9%
Sense Partners – 50th percentile – as at March 2022	112,013 (2021)	153,192 (2051)	41,179	36.8%

Target Levels of Service

Water Supply Level of Service

Water Supply levels of service are applied based on the Regional Standard for Water Services for:

- Minimum and maximum pressure
- Reservoir storage
- Reservoir replenishment (i.e. time to fill)

Wastewater Level of Service

The target levels of service for this study are:

- Uncontrolled overflows to not exceed a one spill per year wet weather overflow frequency
- Overflows at constructed locations to not exceed an average of two spills per year wet weather overflow frequency.

These levels of service may change in future as further work is completed to understand the community-environmental objectives, and cost-benefit of various scenarios through the consent process.

Stormwater Level of Service

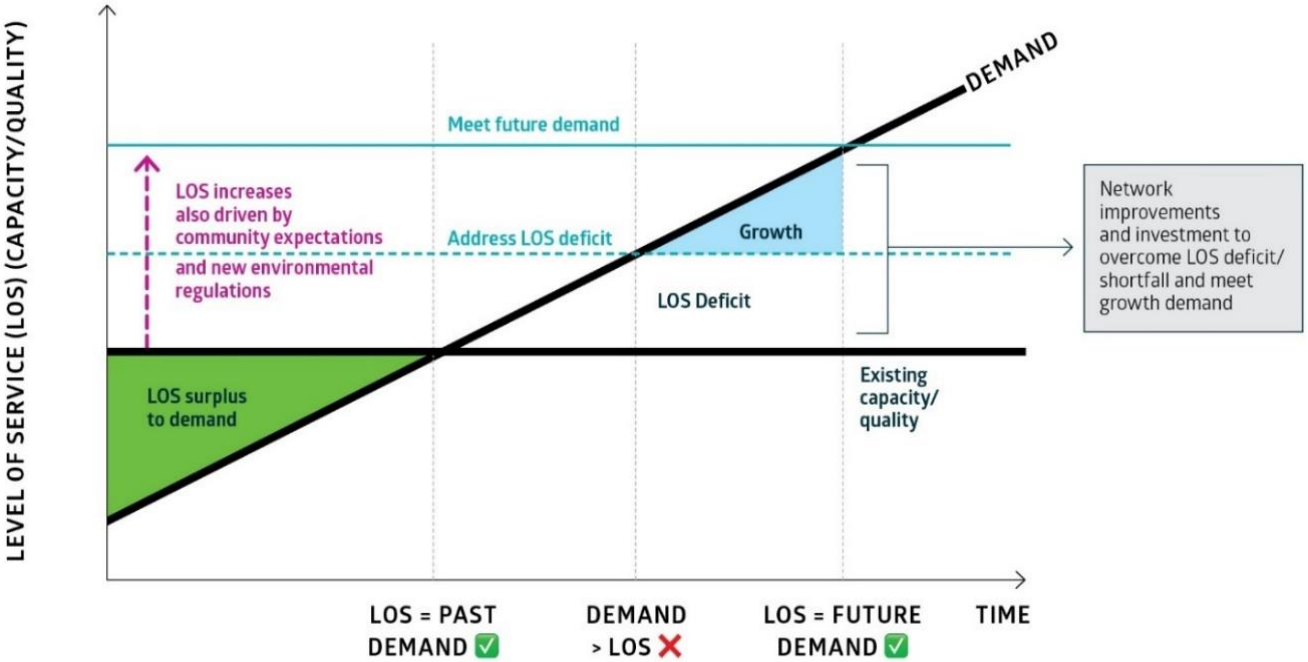
The stormwater level of service used for growth planning are as follows:

- Safe access to and protection from flooding of habitable floors in the 100-year flood event that includes the predicted impact of climate change (20% increase in rainfall intensity).
- Safe access to and protection from flooding for Commercial/Businesses in the 10-year flood event.

Levels of Service and Growth

Wellington Water

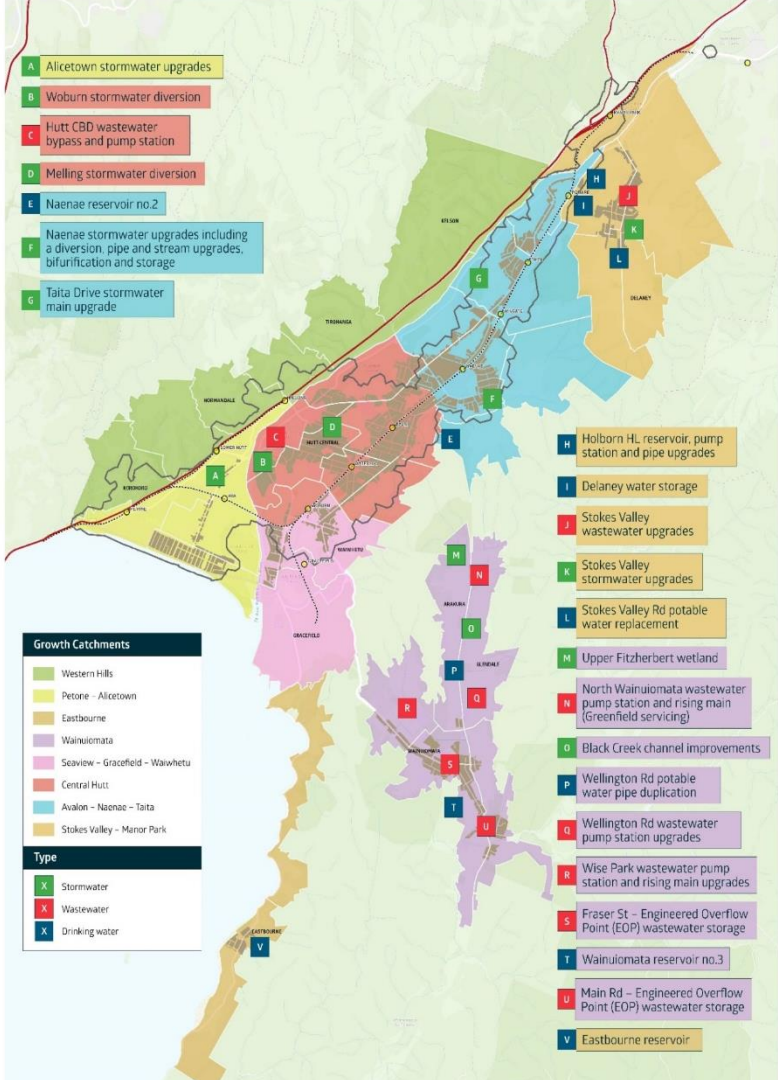
Infrastructure Investment (Level of Service and Growth)

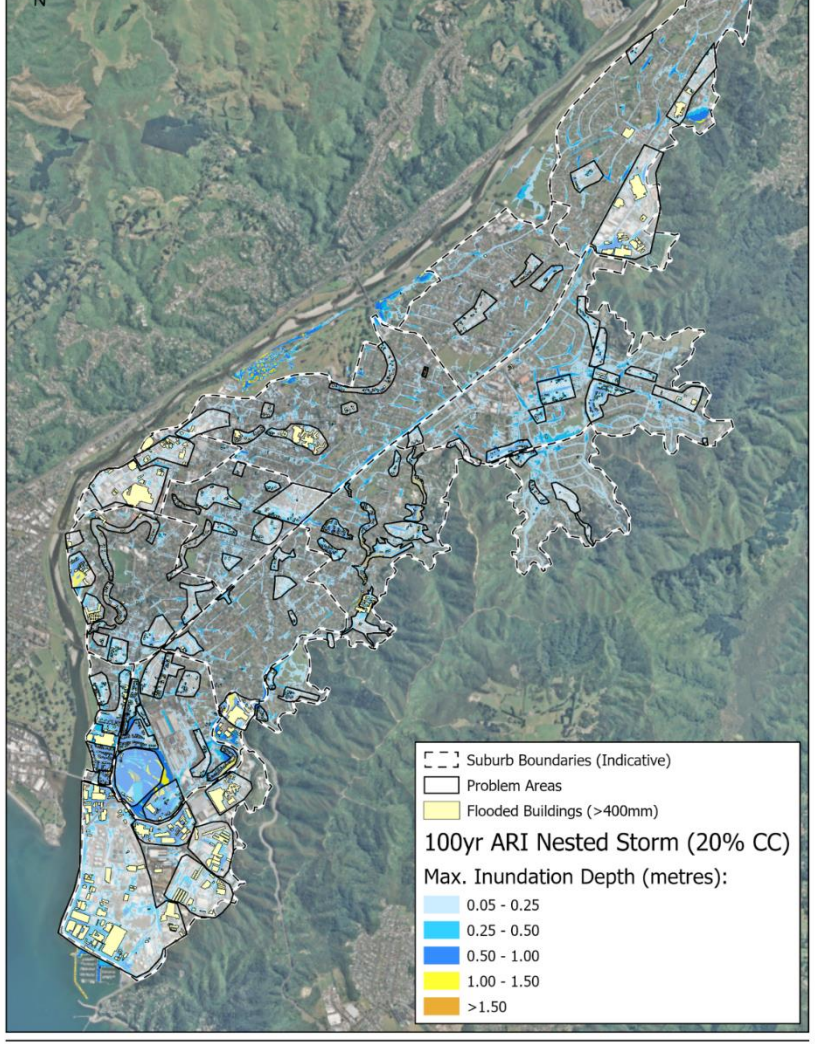


- Level of Service (LoS) is measured in terms of services to meet customer and regulatory expectations. These can be in terms of quality or capacity.
- Over time as demand, regulations or community expectations increase, a gap forms between existing service provided and that expected. This is known as level of service deficit.
- Network improvements need to address existing LOS deficits as well as address future demands. Long term investment planning is essential where significant improvements or investment is required.

Our water, our future.

Proposed 3-W improvements





Overview of Problem Areas Identified

Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system. 0 0.5 1 2

Stantec

Waiwhetu

91 issue areas identified to go into more location specific detail.

Drawn to cover:

- Areas with multiple buildings under 400mm of water (modelled flood depths)
- Reported flooding issues (WWL observed flooding map)

Stormwater & Growth

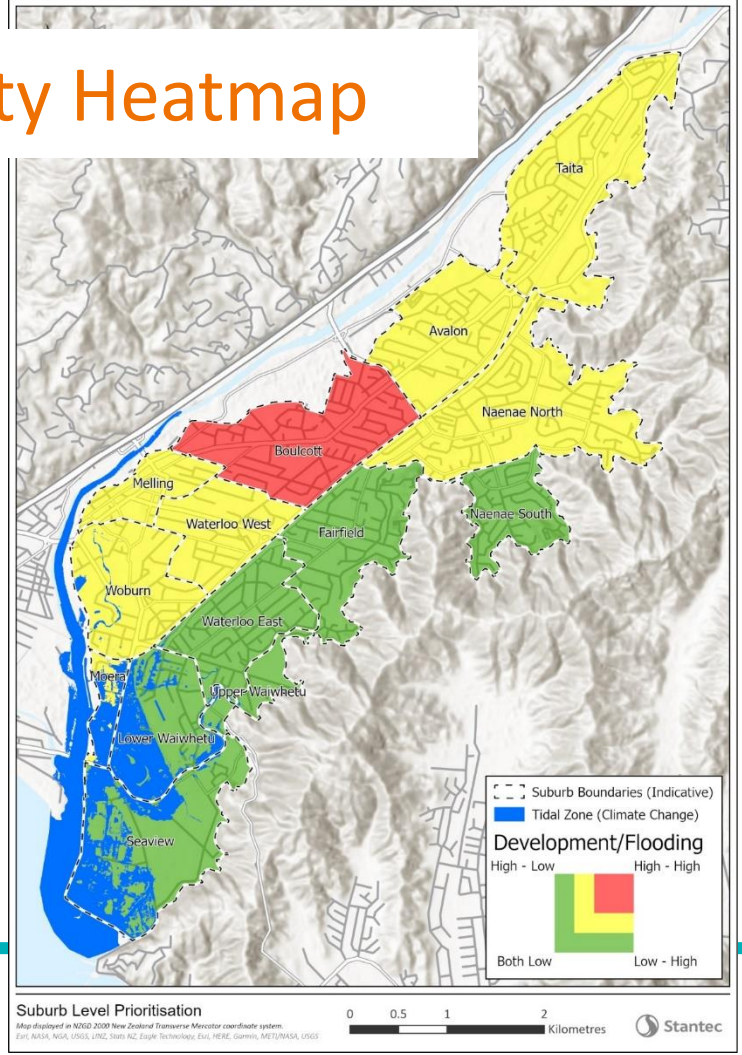
Priority Heatmap

Development:

- Proportion in medium density
- Proportion in growth area
- Proportion 1km from railway station

Flooding:

- Proportion of conduits at capacity or surcharging (10yr)
- Proportion of buildings intersected by flooding with a depth >= 400mm (100yrCC)
- Buildings below 45m2 removed



Recommended Capacity Improvements

The proposed capacity upgrades for city-level network infrastructure are:

a) Drinking water reservoir storage in Delaney (new), Holborn/Shaftesbury (new), Naenae (new), Wainuiomata (new) and Eastbourne (new).

b) Wastewater pump station and rising mains in Hutt CBD (new); Boulcott (new), North Wainuiomata (new); Wellington St & Wise Park, Wainuiomata (upgrades).

c) Wastewater storage at Engineered Overflow Points (EOPs) at Fraser and Main Road in Wainuiomata (new).

d) Wastewater improvements including regrading/upgrading pipes, increasing pump station capacity, and providing storage to address existing network constraints including in Stokes Valley, Alicetown, Manguraki, Seaview, Waterloo and Waiwhetu.

e) Stormwater network capacity improvements and/or flood management in Stokes Valley, Alicetown, Taita, Naenae, Melling, Woburn and Wainuiomata.

f) Stormwater management improvements for Black Creek channel and Parkway Drive; and a proposed wetland in Upper Fitzherbert in Wainuiomata.

Exclusions:

- Bulk water source, treatment and distribution
- Wastewater Joint Venture Trunk Network and Seaview WWTP
- Water quality improvements (covered by SMS/SMPs consent)
- Local upgrades to facilitate development

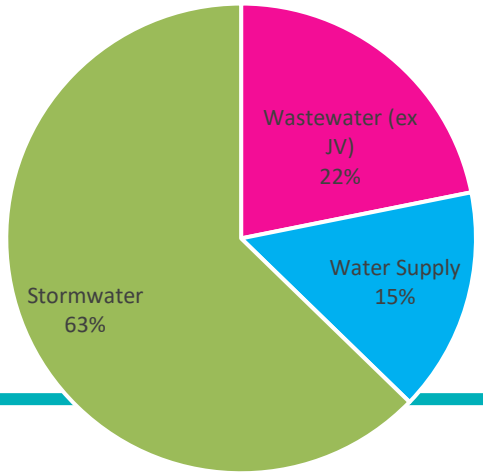
Three Waters Capacity Investment

Wellington Water

Three waters costs by category (refer to Note 1, following slide for exclusions)

Category	Total cost $M	Currently funded in 2021 LTP $M	Shortfall $M
Water Supply (exc. bulk)	191.26	149.10	42.16
Wastewater (excl. JV)	271.13	24.50	246.63
Stormwater	778.27	60.0	718.27
TOTAL	**1240.67**	**233.60**	**1007.06**

Total Cost (Level 1 estimate) exc. WWL fee



IAF projects include

- Woburn (SW) - $77.0M
- Melling (SW) - $36.57M
- Hutt CBD Bypass (WW) - $33.1M

[1] 2021 LTP advice used findings of technical reports at the time (e.g. Wainuiomata growth study and HCC valley floor ZMP) and used 2019 base rates.
[2] Cost estimates are Level 1 (95th percentile excluding 8% management fee), and use 2020 (revision 11) rates.

Exclusions

Note 1:

There are several exclusions from the total cost represented in the study, these include:

- 3-waters renewals
- Water supply – seismic strengthening of reservoirs, Manor Park reservoir, and fire upgrades as well as GWRC assets including new source and bulk water system upgrades.
- Stormwater – water quality requirements which will be covered in stormwater network discharges consent requiring the development of Stormwater Management Strategy and Management Plans.
- Wastewater – upgrades required for local networks caused by discrete developments; joint-venture assets; as well as any infrastructure required to meet more stringent containment standards. Containment standards are being developed as part of the wastewater overflows consents collaborative committee.

Three-Waters Upgrades Costs by Study Area and Population Forecast

Study area	Total Cost ($ million) (Level 1 exc. WWL fee)	Total Population 2050 (HCC, 2020)	Total Cost/Total Population 2050
Avalon - Naenae - Taita	$181.24	21,694	$8,354
Central Hutt	$274.42	34,038	$8,062
Petone-Alicetown	$59.14	13,565	$4,360
Seaview-Gracefield - Waiwhetu	$24.60	4,624	$5,320
Hutt Valley Floor Sub-Total	$539.40	73,922	$7,297
Western Hills**	$11.65	15,208	$766
Eastbourne	$21.72	4,733	$4,590
Wainuiomata	$311.16	24,494	$12,704
Stokes Valley - Manor Park	$356.74	11,966	$29,812
TOTAL	$1,240.67	130,323	$18,880

Notes:

These costs include for all existing and new dwellings, and serve as a **comparison only for scale of investment based on the projects and growth assumed in this study.*

***note Belmont Park has been excluded from Western Hills due to uncertainty over greenfield servicing.*

Recommendations

Key recommendations resulting from this study for HCC to consider include:

1. Review and prioritise investment to support growth for 2024 investment plan/strategy – HCC recommendations to Council late 2022
2. Identify opportunities to streamline projects with external infrastructure providers (e.g. Waka Kotahi, Kainga Ora) – Riverlink and IAF projects
3. Support option development, community engagement and investment cases for stormwater flood management – Level of Service, RMA reform, and water quality
4. Support WWL to undertake an integrated wastewater plan for Seaview WWTP and joint-venture network to support growth.
5. Develop adaptive and responsive strategies to manage uncertainty of growth, including improved data sharing & funding upgrades as growth progresses.
6. Progress further policy/guidance work (see next slide).

HCC approach

HCC has further considered the following items to support 3-W investment and planning:

In general terms, the City is clustered into three groupings with priority on (highest to lowest):

1.Central City area and those areas that can be serviced through the IAF Riverlink Project
2. The wider Valley floor not covered in 1 above.
3. Outlying areas, including Wainuiomata, Eastbourne, Stokes Valley, Western Hills, Manor Park.

The purpose of the above groupings is to consider shaping the Annual Plan 2023/24 and LTP advice in late 2022.

Other related key matters:

- Need to further consider carbon impacts as a priority along with Council's other strategic outcomes.
- Opportunity to update Developer Contribution's policy to reflect higher growth-related investment

Further Work

No.	Further Work	Responsibility
1.0	**Policy**	
1.1	Identify preferred areas and **staging of growth** within Lower Hutt to better **enable prioritisation** of spend on three waters infrastructure. At present there is minimal identification of where growth would be preferred and timing which makes it harder to prioritise which three waters infrastructure should be invested in first.	Hutt City Council
1.2	Support Finance & Policy position on local-stormwater flood controls, and target level of service with stakeholders to inform investment. The proposed upgrades are based on the regional water services standard, which have identified significant investment required. Without clear positions on criteria to make an investment decision it is difficult to prioritise these projects.	Hutt City Council
1.3	Policy position required on the use of alternative sewer options, including pressure sewers in Wainuiomata.	Hutt City Council
1.4	Prepare foundation design guide for building near Waiwhetu aquifer.	Wellington Water
1.5	Prepare building on flood plains policy/guidelines. For example, when to have piled foundations and when no filling of flood plains can occur and any minimum width requirements especially along main streams/ flowpaths.	Hutt City Council / Wellington Water
2.0	**Business Case/Investment Planning**	
2.1	Undertake a programme level business case process for the Seaview wastewater system including trunk and Seaview WWTP and outfall given the increase in population forecasts for both Lower Hutt and Upper Hutt; and potential vulnerability to sea level rise and increasing environmental standards.	Wellington Water
2.2	Fund and undertake a business case process for stormwater flooding upgrades required in Lower Hutt, including cost-benefit analysis, willingness to pay for level of service upgrades, and insurance obligations etc.	Wellington Water

Questions