

**BEFORE THE INDEPENDENT HEARINGS PANEL FOR HUTT CITY
COUNCIL**

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the Hutt City Council Proposed
District Plan

REPLY STATEMENT OF MATTHEW AITCHISON

ON BEHALF OF HUTT CITY COUNCIL

Hearing 3 – Residential and Rural

27 July 2026

1.0 INTRODUCTION

- 1.1 My full name is Matthew Aitchison. I am a senior civil engineer and project manager at Envelope Engineering Limited. I have been engaged by Hutt City Council (HCC) as a Consultant Development Engineer. I have been working for HCC as a Consultant Development Engineer on a part-time basis for six years.
- 1.2 This responds to matters raised during Hearing 3 in relation to the rezoning of 320 Eastern Hutt Road.

2.0 QUALIFICATIONS AND EXPERIENCE

- 2.1 I have thirty five years' experience in civil engineering, land development, three waters infrastructure, stormwater management, flood assessment, infrastructure servicing and subdivision / land development engineering.
- 2.2 I am a Senior Engineer at Envelope Engineering Ltd (Envelope), an engineering consultancy practice, with offices in Wellington, Tauranga, Christchurch, and Auckland. Prior to joining Envelope, I was a Senior Development Engineer at Wellington Water, and a Asset Manager at Kapiti Coast District Council
- 2.3 I have the following academic qualifications: I hold a NZ Certificate in Engineering (Civil).
- 2.4 I am a Member of Engineering New Zealand.

3.0 CODE OF CONDUCT

- 3.1 While this is a Council level hearing process, I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023. I have complied with that Code when preparing this statement.

- 3.2 My qualifications as an expert are set out above. I confirm that the issues addressed in this statement are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

4.0 RESPONSE TO MATTERS RAISED AT THE HEARING

4.1 Evidence of supply restrictions

I have appended a memo from Wellington Water dated 12th May 2026 stating that Wellington Water (Now Tiaki Wai) does not have confirmed network capacity at Kingsley Reservoir and a 2022 Hutt City Council Three Waters Growth Study identifying a shortfall in storage in the Stokes Valley WSA.

- 4.2 Previous correspondence with Wellington Water has been based on relatively small number of lots which would not necessarily raise storage and supply concerns with the members of the Land Development team.

- 4.3 Plan change applications where there is potential for large numbers of new lots need an assessment of the development effects on the wider network and are addressed by more senior staff who consult with the network managers and initiate detailed assessments and modelling.

- 4.4 The submitter's Planner confirmed at the hearing that 20 Hectares of Medium Density type development is likely "fanciful" but acknowledged no actual area has been identified.

- 4.5 The Regional bulk water main that terminates at Kingsley Street feeds into HCC "transmission" mains that supply the other Stokes Vally Reservoirs as well as the Taita Reservoir.

- 4.6 The size of the Kingsley Street Reservoir is 1.9 megalitres and not 19 megalitres as stated at the hearing by the submitters team.

- 4.7 There was some commentary in the hearing around the difference between the Plan Change 58 process and the rezoning of this site. I

was not involved in the Plan Change 58 process but I understand the water supply upgrade requirements for the Plan Change 58 area are well understood and have also been identified in the attached Three Waters Growth Study. The potential upgrade requirements have not been identified for this site

5.0 Further information required

That the submitter supply a realistic maximum number of lots, after allowing for site constraints, that would be enabled by the requested rezoning. This would allow for informed advice to be sort from Tiaki Wai either confirming that no additional infrastructure is required or identifying what infrastructure upgrades would be required. A secondary exercise may be required to assess the feasibility and timeframe required to construct those potential upgrades.

Date: 27/07/2026



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Matthew Aitchison – Senior Civil Engineer

Hearing 3 – Residential and Rural
(on behalf of Hutt City Council)

6.0 Appendices

To:	Kate Pascall, Boffa Miskell Kathleen Haylock, Hutt City Council
Date:	12 th May 2026
From:	Caroline Horrox, Wellington Water Planning Contractor

Proposed rezoning: Large Lot Residential to Medium Density Residential Zone at 320 Eastern Hutt Road / 3 Reynolds Bach Drive, Stokes Valley

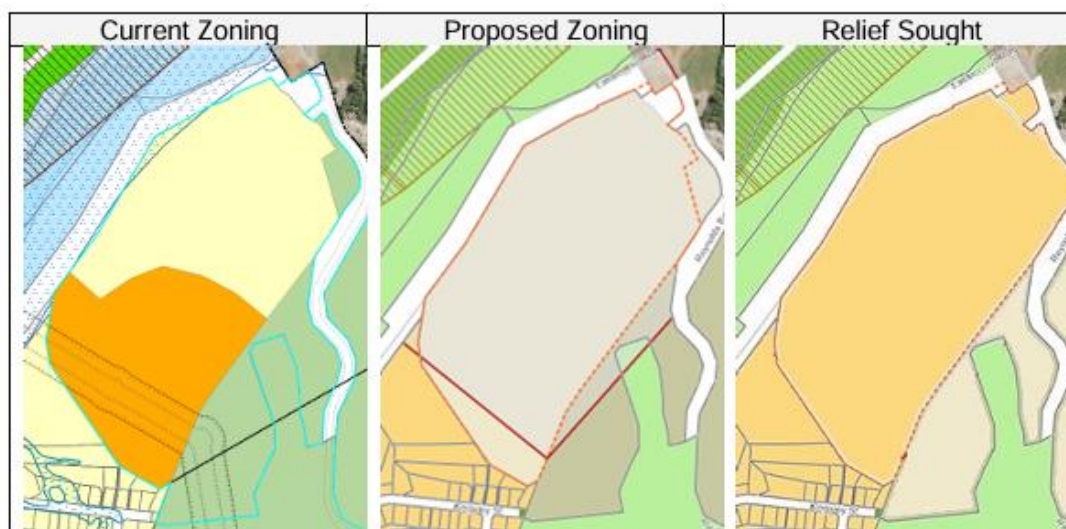
Purpose

Hutt City Council have requested Wellington Water's feedback on the possible rezoning of land at 320 Eastern Hutt Road / 3 Reynolds Bach Drive, Stokes Valley. This feedback will be considered in the preparation of the s42A report for the residential zones in the Proposed Lower Hutt District Plan (PDP).

I note that the information provided by Cuttriss Consultants seemed to be largely based on a withdrawn resource consent application for a specific subdivision layout (12 lots) and includes detailed, site-specific servicing solutions. While this material is useful at a resource consent stage, it does not address whether the site can be readily serviced in principle to support Medium Density Residential zoning outcomes.

Site and proposal overview

The proposed rezoning is shown below.



Three waters summary

Stormwater

The Cuttriss report proposes:

- No public stormwater network; discharge to gullies
- Hydraulic neutrality, on-lot detention, WSUD, and GWRC Plan Change 1 compliance
- Treatment and reuse proposed

Wellington Water acknowledges that stormwater effects can potentially be managed at consent stage through bespoke WSUD measures, private detention systems and alternative discharge solutions. However:

- There is no public stormwater infrastructure servicing the site.
- The site contains natural watercourses, limiting developable area.
- MDRZ zoning would materially increase impervious coverage expectations across the site.

Stormwater servicing would rely on private systems and require site-specific design for each development iteration. Stormwater constraints do not preclude development, but rezoning to a higher density zone requires mitigation of stormwater impacts on the streams, overland flowpaths and future buildings and assets.

Flooding and minimum floor levels

The Cuttriss report states that *“WWL have indicated flooding is not present within the development site... Floor levels can be set in accordance with NZ Building Code.”*

This statement does not reflect Wellington Water’s ‘pre app’ advice to Cuttriss from 29th February 2024 in which Wellington Water confirmed that no Wellington Water flood model exists for this site and a site-specific flood assessment is required to determine flood hazard and minimum floor levels.

Wastewater

Wellington Water’s wastewater modelling confirms:

- Limited or nil spare capacity in parts of the downstream local and trunk networks.
- An engineered overflow downstream, discharging to Te Awa Kairangi / Hutt River.

Wastewater servicing to support additional development at this location is possible, subject to appropriate mitigation and network investment. Servicing options likely require:

- Developer-provided local network upgrades and onsite systems such as pumps and off-peak discharge controls; and
- Developer contributions via Development Contributions (DCs) towards strategic network solutions, including additional trunk storage capacity.

In this regard, the Silverstream Wastewater Storage Joint Venture project, which provides additional detention storage to support growth, is identified in the Development Contributions Policy as a growth related infrastructure response.

Water supply

There is no public reticulated water supply available for direct connection adjacent to the site. Existing water servicing for the Silverstream Retreat relies on private infrastructure, including on-site reservoirs supplied via an existing smaller main which has not been confirmed as suitable for intensified residential development.

Cuttriss have proposed:

- Servicing assumed from the Kingsley Reservoir subject to pressure and flow testing
- Booster pumps may be required
- New internal fire mains and hydrants proposed

Wellington Water has not confirmed network capacity to service medium-density development at this location. Pressure and flow testing, booster pumps, and internal fire mains are engineering solutions, not indicators of existing network adequacy. At a rezoning level, reliance on private booster pumps, private rider mains and site-specific fire-fighting solutions indicates that servicing is not straightforward and would potentially require non-standard infrastructure responses. If serviced from the Kingsley reservoir significant extension of the existing of the public network is anticipated to service the proposed rezoning area.

Overall Commentary

From a three waters infrastructure perspective, the site at 320 Eastern Hutt Road / 3 Reynolds Bach Drive can be serviced, however doing so would require a combination of public infrastructure upgrades, network extensions and developer-led mitigation measures.

Stormwater management would rely on site-specific design responses given the absence of public networks and the presence of onsite streams, with impacts needing to be mitigated through detailed consenting and design. Wastewater and water supply servicing are feasible, but would require developer-delivered local network upgrades, Development Contributions towards strategic infrastructure, and confirmation of capacity through further technical assessment.

While these requirements do not preclude Medium Density Residential development, rezoning would increase reliance on:

- Site-specific servicing solutions
- Public network extensions and upgrades; and
- Ongoing coordination between developers and infrastructure providers to ensure cumulative effects are appropriately managed

Hutt City Council Three Waters Growth Study 2022



6. Key Findings – Constraints and Solutions

This section of the report identifies the constraints on the current three waters networks and possible solutions available and costs to resolve these constraints, and provide for growth. For an understanding of solutions by study area refer to Appendix E. Figure 11 summarises the proposed options required to address existing constraints and provide for growth.

Lower Hutt Growth Study – Proposed 3-W Servicing Improvements

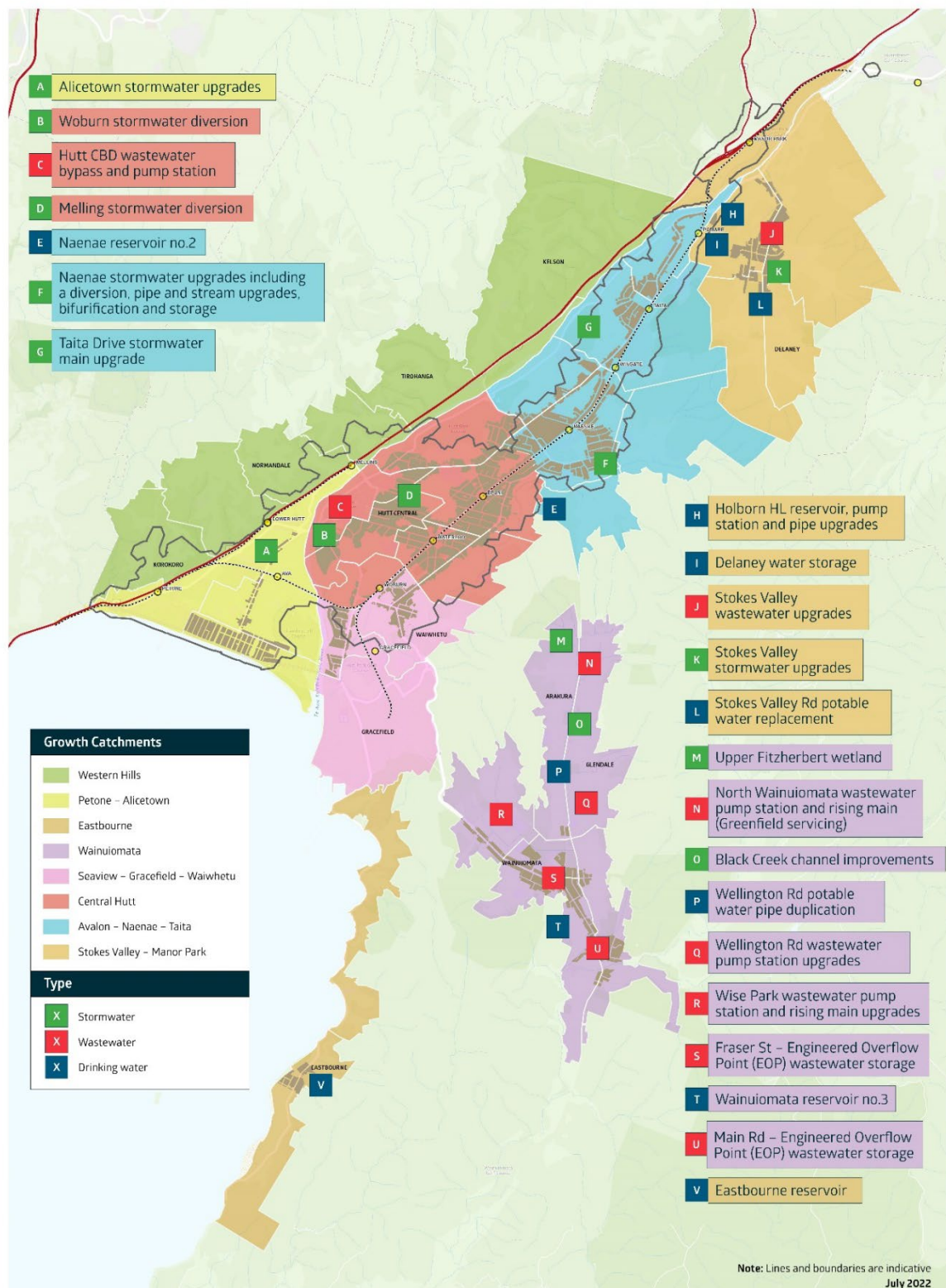


Figure 11: Hutt City Growth Study – Proposed key 3-W servicing improvements

6.1 Scale of infrastructure investment

6.1.1 Three waters costs by category

This study has sought to compile as far as possible a comprehensive list of drinking water, wastewater and stormwater options to support capacity upgrades needed to provide a defined level of service to existing communities and for growth in Lower Hutt over 30-years. At a strategic level, the solutions offered provide a basis to support long-term infrastructure investment planning, and funding discussions with council, agencies, communities and developers.

The overall cost of the three waters solutions presented in this study are summarised Table 4 and Figure 12 and detailed in Appendix D. These cost estimates, represent three-waters infrastructure to address existing level of service deficits, and provide for growth. Noting there may be some renewal components in upgrade infrastructure, but this is expected to be limited given the age of most parts of the network. These estimates exclude condition/age based renewals, compliance drivers (e.g. water quality), Joint-Venture wastewater assets and regional council owned bulk water network.

It is likely further costs will be incurred for local level infrastructure upgrades, e.g. smaller local pipes that may need upgrading or relocating as development progresses.

Table 4: Three waters costs by category

Category	Total cost \$M (note 1)	Currently funded in 2021 LTP \$M ⁵	Shortfall \$M
Water Supply (exc. bulk)	191.26	149.1	42.16
Wastewater (excl. JV)	271.13	24.5	246.63
Stormwater (excl. WQ)	810.2	60.0	750.2
TOTAL⁶	1272.59	233.60	1038.99

Note 1: There are a number of exclusions from the total cost, 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.

⁵ 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.

⁶ Cost estimates are Level 1 (95th percentile excluding 8% management fee), and use 2020 (revision 11) rates.

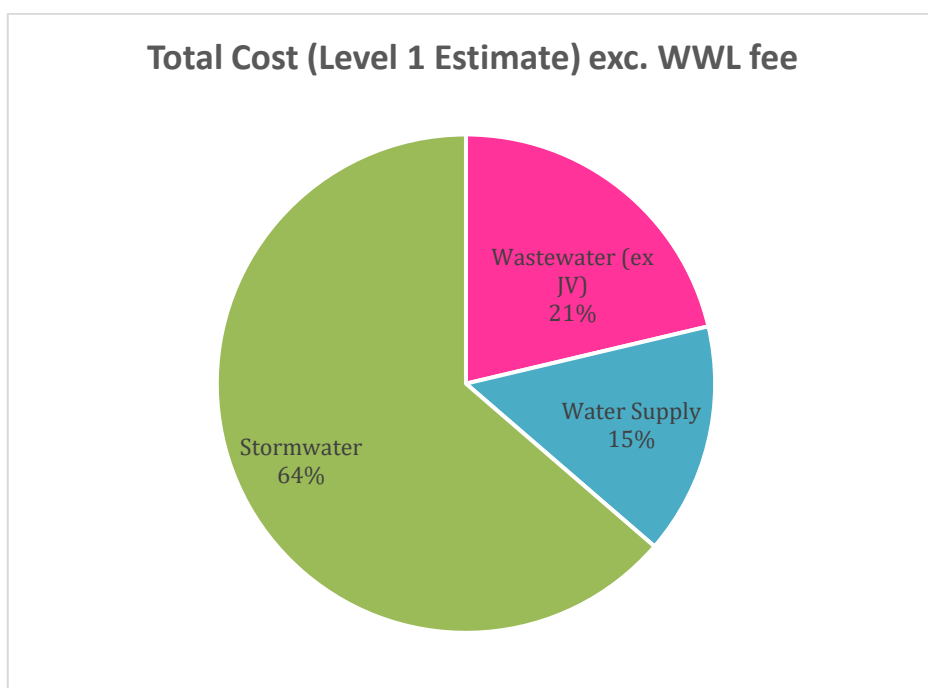


Figure 12: Proportion of costs by category

6.1.2 Cost-Allocation

Understanding renewal, level of service and growth components of projects is best completed at a project by project level and at the time of finalising investment plans, growth models and development contributions policies. Wellington Water have developed a Cost-Allocation process to be completed during investment planning to supporting funding categories (e.g. Renewal, LOS, Growth). This process uses two methods, average cost of capacity and beneficiary split. Average cost of capacity is useful where capacity information (such as volume of storage can be directly correlated to dwellings), otherwise a beneficiary split approach is recommended (in simple terms this splits cost based on growth over the capacity life provided). At a general level the portion of growth expected, e.g. 23.8% by HCC Plan Change 43 (March 2020) or 42.9% Sense Partners (June, 2021) (refer to Table 5) can give a sense of the level of cost recovery that can be expected across the network over time using a beneficiary approach. Where upgrades involve replacement of assets, depending on asset age, a portion may also be attributed to renewals.

6.1.3 Three-Waters Costs by Study Area

Table 5 shows a comparison of the growth study areas, with total cost (excluding WWL fees), and forecast population in 2050. This comparison shows that Stokes Valley-Manor Park and Wainuiomata result in the highest total cost/total population 2050.

This measure should be used for comparison purposes only, due the number of assumptions that have been used to distribute costs for each study area, as these may not fully reflect the contribution each project has towards renewals, levels of service, and growth which should be assessed individually.

Table 5: Three-Waters Upgrades Costs by Study Area and Population Forecast

Study area	Total Cost (Level 1 exc. WWL fee) (\$M)	Total Population 2050 (HCC, 2020)	Total Cost/Total Population 2050
Avalon - Naenae - Taita	\$181.2	21,694	\$8,354
Central Hutt	\$274.4	34,038	\$8,062
Petone-Alicetown	\$91.1	13,565	\$6,714
Seaview-Gracefield - Waiwhetu	\$24.6	4,624	\$5,320
Hutt Valley Floor Sub-Total	\$571.3	73,922	\$7,729
Western Hills**	\$11.6	15,208	\$766
Eastbourne	\$21.7	4,733	\$4,590
Wainuiomata	\$311.2	24,494	\$12,704
Stokes Valley - Manor Park	\$356.7	11,966	\$29,812
TOTAL	\$1,272.6	130,323	\$9,765

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.

***These results are only based on the assumptions used in this report, a range of factors may result in new infrastructure being required, and therefore changing the servicing costs.

6.2 Water supply constraints and solutions

Summary

The water infrastructure requirements are most affected by the higher than projected population growth figures. Table 6 shows the comparison of total system demand on a peak day between the two population forecasts for Lower Hutt.

Table 6: Comparison of total system demand on a peak day under two population forecasts

Source	2018	2033	2048
HCC Zone Management Plan (2020)	43,436	47,183	49,961
Sense Partners 50 th Percentile (2021)	47,271	56,026	63,190

Water Supply Constraint No 1 - Water storage

The water storage capacity for the whole city currently consists of 72.25 ML of storage with the main storage facilities being:

- Naenae, Gracefield and Taita reservoirs which have a combined capacity of 22.6 ML.
- Wainuiomata which has a storage capacity of 9.0 ML.

There is already a shortfall in the water storage in Hutt City that is impacting on existing levels of service, and this will be further impacted by growth. In particular and of most significance, there is not enough water storage volume in the Naenae and Gracefield reservoirs to meet Wellington Water's guidelines and meet modelled growth levels and there is a shortfall in Wainuiomata and Stokes Valley required to meet growth forecasts.

The amount of water storage required both for current storage and going forward is determined by the increase in the population of the city – the faster the population increases, the more demand on current storage and the sooner new storage capacity might be needed.

This projected shortfall as identified by Stantec (2021) is 25.7 ML or approximately 36% of the current water shortage in water storage. Unless a number of water storage solutions are implemented this will be a constraint to growth and continue to impact levels of service.

Figure 13 shows storage shortfall for the city as a whole in three ways - the current shortfall, the shortfall with expected growth levels and no solutions implemented and the shortfall with expected growth with solutions added. It is broken down into Water Storage Areas (WSA).

Points with regards to key⁷ water storage constraints in the city are:

- Lower Hutt Central - the shortfall related to modelled levels of growth if calculated by strictly following the guidelines and the WSA extent is very large - around 30 ML. Given the proximity of the reservoir to the water treatment plant and source the required volume to service Lower Hutt Central has been reduced, with a new proposed 15ML reservoir.
- Wainuiomata - there is a predicted shortfall of 8.0 ML of storage volume with growth, to meet the seismic and operational (peak daily demand) levels of service. This will mean almost doubling the current storage volume in this area. Approximately half of this storage volume is needed just to meet current population and demand levels and the other half relates to predicted growth in existing areas and new greenfield.
- Stokes Valley – there is a forecast a shortfall of in Stokes Valley, as a result two new reservoirs are required in Stokes Valley – a 1.5 ML reservoir in Holborn to service greenfield growth in the short term and a 1.2 ML in Delaney in the long term. Both reservoirs address storage issues in Stokes Valley due to growth. Further analysis using Sense Partners (2021) increased population forecasts for the area may increase the longer term shortfall from 1.2ML to 4.2 ML. The size and storage configuration requirement needs to be investigated further.
- Eastbourne - the supply to Eastbourne can easily be interrupted through an operational outage or in a seismic event as the bulk supply crosses liquefaction-prone ground through Seaview. Whilst not a storage size issue, it could impact on supply. The size of this reservoir may need to be increased from the initial estimate of 1.3 ML to 2.2 ML due to increased populations forecasts (Sense Partners 2021) for this study area. A suitable location to place a new reservoir has proven challenging due to the terrain.
- Western Hills - The ZMP (2020) recommended no major investment was required as the shortfall in this study area was small and options available for construction of a new reservoir are limited. The ZMP recommended greenfield developments of in total of 370 lots, be fed by the existing Liverton Reservoir.

⁷ Note there are other minor works recommended but these are of a smaller scale and therefore not included in this report. The full information can be found in the Stantec report “Hutt City Water Supply Zone Management Plan (Hutt Valley excluding Wainuiomata) – November 2020”.

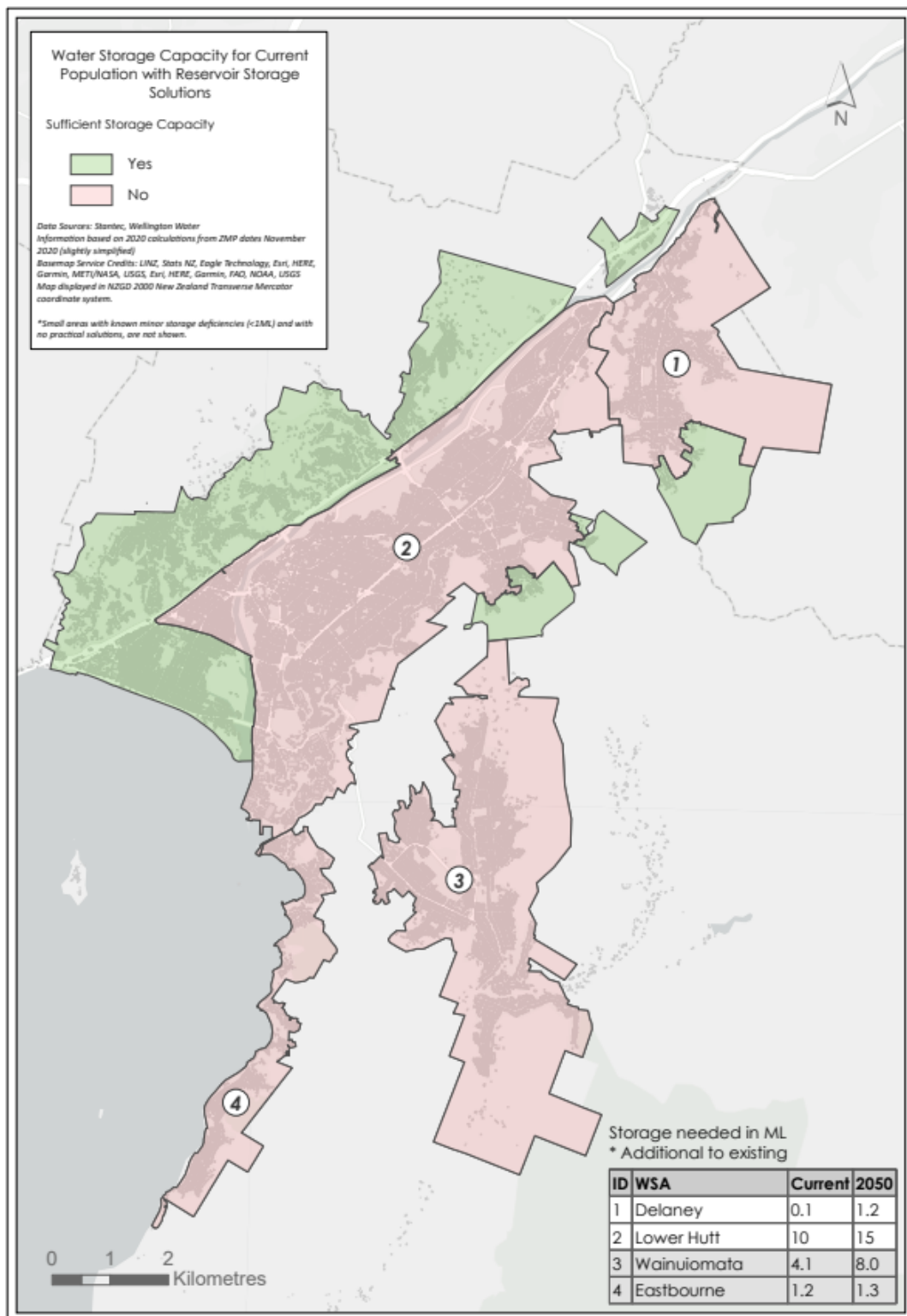


Figure 13: Water storage capacity for current population with reservoir storage solutions based on ZMPs.

Preferred water storage solutions

The preferred solutions to address the calculated storage shortfall in Lower Hutt are:

1. Central Hutt - a new 15 ML Naenae reservoir No.2⁸ be constructed beside the existing Naenae Reservoir No.1. This is assumed to be online within the next 5 years. As discussed, 15 ML is less than the shortfall calculated strictly following Wellington Water's storage guidelines due to unique factors associated with the proximity of the reservoir to the WTP resulting in a reduction in the criteria relating to seismic storage. The new reservoir is also contingent on the installation of control valves to enable Operations to manage the transfer of water from the hills in an emergency.
2. Wainuiomata - a new 8.0 ML storage reservoir with the preferred location being adjacent to Fraser Street. This includes creating a new low-level pressure zone. The timing of the reservoir should be reviewed alongside changes in population growth.
3. Stokes Valley – There are two solutions here:
 - a. To meet the current storage shortfall a number of options were examined and for the purpose of this study, the assumption is that land would be secured for additional future storage adjacent to the proposed Holborn High Level reservoir needed for greenfield growth.
 - b. To meet the total number of new dwellings in the Holborn and Shaftesbury development sites the construction of Holborn High Level reservoir (approximately 1.5 ML) will be required.
4. Western Hills - with the 2021 Sense Partners forecasts, showing increased growth for the entire Western Hills study area, it is now noted that there may potentially be a need for a new reservoir for Normandale and Tirohanga. Both Normandale and Tirohanga are unlikely to contain a site suitable for a new reservoir, but it is recommended that this is confirmed.

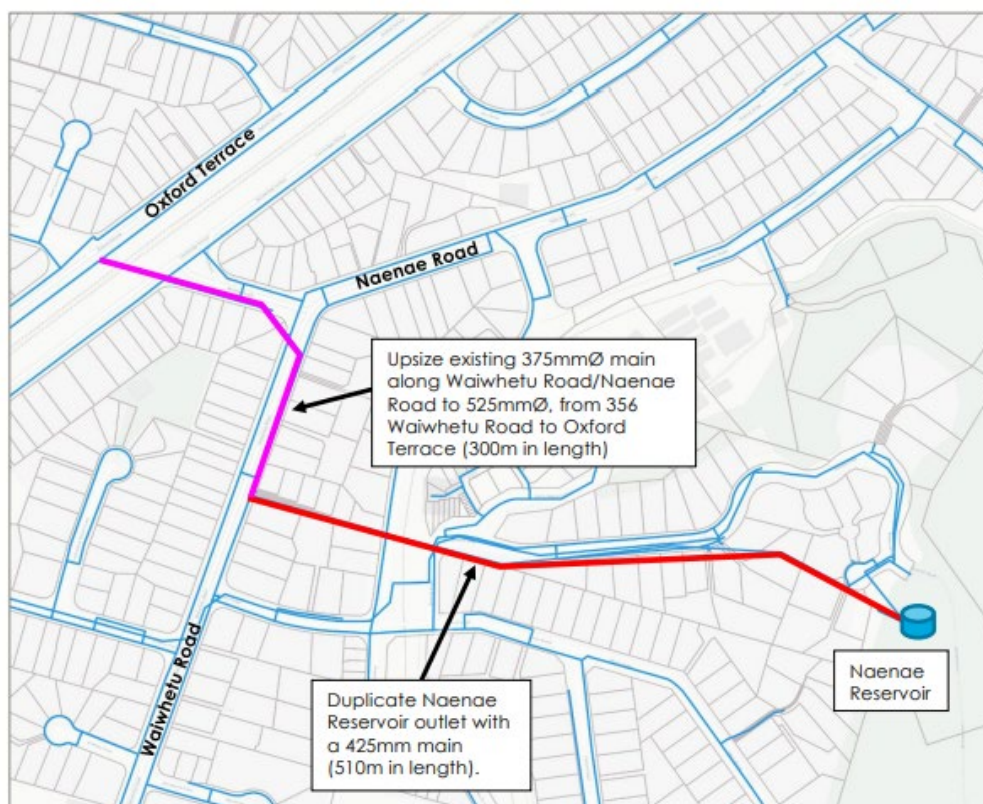


Figure 14: Upgrades to accommodate increased flow through Naenae reservoir outlet main

⁸ The size of a reservoir is determined by a number of factors including population growth, seismic resilience, fireflow and water usage levels per person per day

Water Supply Constraint No 2 - Bulk water network connection to the distribution network

A key current feature of the Valley Floor network that needs attention is that the bulk network is connected to the distribution network via three un-metered cross-connections located near the Waterloo WTP.

The key drivers for keeping these cross-connections open, historically, was to maintain sufficient pressure upstream of the Pharazyn Pump Station (this has now been upgraded) and the cross connections also remain open to maintain sufficient pressure to some high-elevation properties.

Maintaining the cross connections open is problematic as it:

- Leads to pressure increase during peak demand.
- Causes undesirable effects on the water quality and safety with lime additive used in the Waterloo WTP tending to precipitate and deposit in the network.
- Causes a reduction in effective pipe diameter and water quality issues.
- Means that the Naenae and Gracefield reservoirs which would normally provide buffers against a possible source water contamination are essentially by-passed – meaning a contamination event not eliminated by the WTP can reach customers directly.

It is essential to close the bulk network cross-connections for water quality and safety reasons. However, closing the cross-connections causes substandard pressures in the Eastern Hills, specifically on the higher elevation properties adjacent to the Rata and Sunville DMAs. Solutions for improving the pressure in these areas are therefore required hand in hand with closing the cross connections and these are covered below in to address water pressure.

Water Supply Constraint No 3 - Water pressure

The current network does not have capacity to maintain sufficient pressure if the water demand increases following the projected population growth. In particular:

1. Stokes Valley - there are two greenfield development sites in Stokes Valley – Holborn (186 lots) and Shaftesbury Grove (120 lots). Both development sites are located at the end of Shaftesbury Grove, a high elevation area within the Kingsley Reservoir pressure zone (~165 m HGL) which is currently experiencing pressure and firefighting deficiencies.
2. Wainuiomata – the pressure across the Wainuiomata network is generally high (up to 100 m), particularly along the valley floor. According to the hydraulic model, the pressure in the network remains above 45m under current demand conditions. In some areas, the pressure is above 90 m, which is outside the target level of service. The proposed developments at the northern end of Wainuiomata will generate a significant water demand. The existing water distribution network has insufficient capacity for proposed developments and upgrades will be required to meet the target level of service for pressure.

Preferred water pressure and bulk water cross connection solutions

1. To enable bulk water cross connections to be closed - numerous network upgrades are required, including 3 km of old AC pipe renewal, 350 m of new pipe, two new PRVs. In the long term (before 2033), it will also be necessary to increase the capacity of the Naenae Reservoir outlet main.
2. Stokes Valley - to address pressure and firefighting deficiencies as well as enable the network to supply to the development sites, it is proposed to construct and install the new Holborn High Level reservoir, install a new pump station adjacent to the Delaney Reservoir, construct a number of dedicated outlet mains (over 2 km in length in total), rezone the existing Holborn DMA into the new Holborn HL DMA and renew the existing AC pipes in the new Holborn PMA (approximately 1.4 km in total length). This upgrade also addresses firefighting deficiencies in Whitechapel Grove and Shaftesbury Grove.

Water Supply Constraint No 4 - Fire flow deficiencies

The current network does not have sufficient capacity to meet the Fire Code requirements in certain areas. This is an existing issue and not directly associated with growth.

Preferred fire flow solutions

1. No upgrade is recommended in some instances e.g., where fire flow is not achieved due to high elevation of properties and most properties not connected to reticulation and have private tanks.
2. A number of fire flow upgrades are suggested, and these can be seen in Table 13.1 on pages 82-86 of the Hutt Valley Water Supply Zone Management Plan (Hutt Valley excluding Wainuiomata) – November 2020.
3. These fire flow upgrades will need to be reviewed and prioritised for funding.

6.3 Wastewater constraints and solutions

Summary

Problem areas were identified throughout the Lower Hutt network, these problem or issue areas range in scale and complexity. In some instances they represent local network constraints and in other cases represented significant constraints or problems. Figure 15 and Figure 16 provide a view of all identified problem areas and Figure 17 and Figure 18 provide a view of the network solutions.

The timing of wastewater upgrades will need to be integrated with the resource consent process for wastewater network overflows.

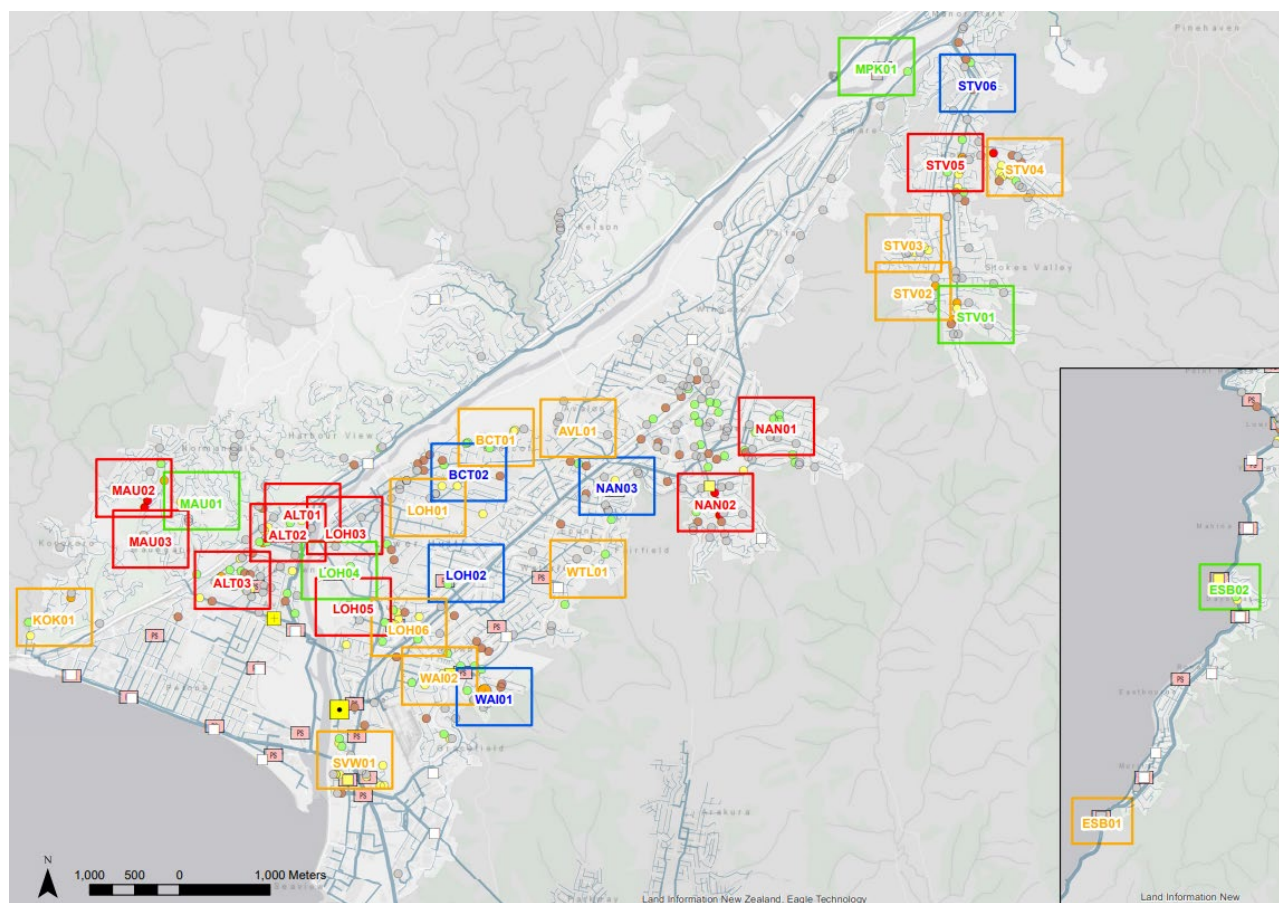


Figure 15: Identified wastewater problem areas (Hutt City Valley Floor excluding Wainuiomata)