BEFORE THE INDEPENDENT HEARINGS PANELS APPOINTED TO HEAR AND MAKE RECOMMENDATIONS ON SUBMISSIONS AND FURTHER SUBMISSIONS ON PROPOSED PLAN CHANGE 1 TO THE NATURAL RESOURCES PLAN FOR THE WELLINGTON REGION

UNDER	the Resource Management Act 1991 (the Act)
AND	
IN THE MATTER	of Hearing of Submissions and Further Submissions on Proposed Plan Change 1 to the Natural Resources Plan for the Wellington Region under Schedule 1 of the Act

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STATEMENT OF REBUTTAL EVIDENCE OF DAVID ADRIAN WALKER

ON BEHALF OF GREATER WELLINGTON REGIONAL COUNCIL

HEARING STREAM 2 – OBJECTIVES

28 MARCH 2025

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INTRODUCTION

1 My name is David Adrian Walker. I am employed by GHD as Business Advisory Market Leader New Zealand and Pacific.

2 I have read the evidence and statements of:

2.1 Porirua City Council (PCC) - Ms Vanessa Rodgers

2.2 Porirua City Council (PCC) - Mr Michael Mendonça

2.3 Wellington Water Limited (WWL) - Mr Liam Foster

2.4 Hutt City Council (HCC) – Mr Torrey McDonnell

2.5 Wellington City Council (WCC) – Mr Joe Jeffries

2.6 Wellington City Council – Mr Gerard O'Neill

2.7 Friends of Waiwhetū Stream - Mr Michael Ellis

S42A QUALIFICATIONS, EXPERIENCE AND CODE OF CONDUCT

3 My qualifications and experience are set out in paragraphs 5 to 9 of my Statement of Primary Evidence, dated 28 February 2025. I repeat the confirmation given in that report that I have read and agree to comply with the Code of Conduct for Expert Witnesses.

3.1 My economic modelling experience was supplemented through my colleague Logan Peck, Advisor – Infrastructure Investment and Economics.

SCOPE OF EVIDENCE

4 My evidence first addresses evidence and statements that have commented on affordability or achievability of the s42A recommended targets and timeframes. It then sets out rebuttal evidence that proposes a timeframe for implementing the s42A Report recommended targets that balances progress in improving water quality outcomes with achievability and affordability; the definitions of which are laid out in my statement of primary evidence, paragraphs 47 and 31 respectively.

RESPONSES TO SUBMITTER EVIDENCE AND STATEMENTS

5 Ms Vanessa Rodgers on behalf of PCC suggests that the proposed targets and timeframes proposed in Ms O'Callahan's s42A Report, while below the notified Target Attribute States

(TAS), are still ambitious. My rebuttal evidence set out below takes into account Ms Rodgers' evidence recommending a timeframe that is more affordable and achievable.

6 Mr Michael Mendonça, also on behalf of PCC, suggests that some of the costings used in my evidence may be lower than the costs that eventuate. He further suggests that the costs of the proposed TAS in the s42A Report are likely to be unaffordable in the context of other cost pressures the city faces. In my view:

6.1 The costs in my statement of primary evidence are intended to be indicative, as detailed costings have not been able to be done. That said, my analysis relied on a number of previous assessments of wetland and rain garden costs, for example, and incorporated real case studies of pipe replacement costs from WWL.

6.2 Nevertheless, I have considered Mr Mendonça's evidence in my recommended timeframes in my rebuttal evidence below.

7 Mr Liam Foster, on behalf of Wellington Water Limited, provides his own estimates of the costs to achieve the stormwater TAS by 2040. I would note the following:

7.1 I and others at GHD worked closely with WWL to determine whether they were able to provide estimates of the cost of wetlands, rain gardens or swales. WWL staff were of the view that they were unable to provide these estimates, so we had to rely on other sources although we cross-checked values, particularly for rain gardens and swales, with WWL staff.

7.2 Consequently, it is interesting to note that Mr Foster has produced estimates for costs for a combination of swales, bioretention and wetlands to deal with contaminants, that were not available when we worked with WWL over a 10-week period or longer to identify costs. I cannot comment on the robustness of those estimates.

7.3 The figures presented in my rebuttal evidence below are based on the more modest stormwater targets, wastewater targets, and adjustments to implementation timeframes recommended in the S42a Report.

8 Mr Torrey McDonnell on behalf of HCC notes the costs estimated in my statement of primary evidence and the fact that those figures exclude some costs such as the additional cost to private land owners to remediate cross-connections. Citing my statement of

primary evidence and the s42A Report, Mr McDonnell supports a longer timeframe to improve affordability. I consider Mr McDonnell's position in my recommended timeframe adjustments in the rebuttal evidence that follows.

9 Mr Joe Jeffries on behalf of WCC is concerned that the s42A Report and recommendations did not demonstrate the achievability of the proposed targets by 2040, as it focused on the minimum required improvements (**MRI**) and TAS. My rebuttal evidence below demonstrates affordability and achievability of the recommended s42A Report targets across a timeframe I believe to be more affordable and achievable. Mr Jeffries points out that some relaxation of timeframes is required for an achievable and affordable solution. I concur and recommend some part Freshwater Management Units (**pFMU**) timeframes be relaxed in my rebuttal evidence that follows.

10 Mr Jeffries further comments that he believes the 2040 timeframe, the notified and s42A Report recommended TAS haven not been justified in terms of benefits and costs. The main purpose of my engagement was to evaluate the affordability and achievability of the proposed targets, rather than a comprehensive cost benefit analysis. Nevertheless, we do provide a brief assessment of a community's willingness to pay for reduced risk of sickness due to lower levels of *E. coli* in the rebuttal evidence below.

11 Mr Gerard O'Neill on behalf of WCC states that it will be a challenge to achieve the targets by 2060 (although it is unclear if he means TAS or MRI or the s42A Report recommended targets) let alone 2040. A longer timeframe for some pFMUs is proposed in my rebuttal evidence below, which will assist in affordability and achievability.

12 Mr Michael Ellis on behalf of Friends of Waiwhetū expresses concern about a longer timeframe than 2040. Mr Ellis states that he believes mitigating E. coli in the Waiwhetū does not need costly or complex solutions. I would concur that the solutions may not necessarily be complex, but would disagree that they are not costly:

12.1 The cost of a programme just to identify cross-connections in the Waiwhetū pFMU is estimated at over $1 million.

12.2 However, that pales in comparison to the likely cost to private home owners of remediating those cross connections (noting that these are not captured in my analysis, which focuses on direct costs to ratepayers through council rates and fees).

12.3 Even those costs likely pale in comparison to the cost of replacing leaking pipes and undersized pipes where more capacity is needed. Together, these costs are potentially over $200 million for the Waiwhetū pFMU alone using the s42A Report recommended TAS.

12.4 Further, Mr Ellis's submission deals only with *E. coli*. The cost of reducing metal contaminants in the same pFMU could also be greater than $200 million.

12.5 If these costs were to be borne just by Waiwhetū pFMU residents, the implied rates increase for the community would be high.

PROPOSED IMPLEMENTATION TIMEFRAMES

13 My statement of primary evidence, containing high-level estimates, demonstrated that the notified TAS are unaffordable and unachievable over even longer timeframes beyond 2040. It also demonstrated that even achieving the MRI by 2040 would require a step-change in workforce capacity of up to 69% immediately and would raise rates by up to 30% in some council jurisdictions.

14 Informed by the economic evaluation I have undertaken since the s42A Report was written, and incorporating feedback from submitters referenced above who commented on the affordability and achievability of the targets by the 2040 timeframe, I recommend the timeframes shown in Figure 1 for achieving the TAS set out in the s42A Report. I set out my rationale below based around iteratively adjusting timeframes for individual pFMUs.

Figure 1 Extended (mixed) implementation timeframes by pFMU for E. coli and metals.

PFMU	E. COLI	METALS
Taupō	2060	
Pouewe	2040	
Wai-o-hata	2040	2040
Takapū	2040	
Te Rio o Porirua and Rangituhi	2050	
Ōrongorongo, Te Awa Kairangi and Wainuiomata small forested and Te Awa Kairangi forested mainstems		
Te Awa Kairangi lower mainstem	2040	
Te Awa Kairangi rural streams and rural mainstems	2040	
Te Awa Kairangi urban streams	2060	2040
Waiwhetū Stream	2060	2060
Wainuiomata urban streams	2050	
Wainuiomata rural streams	2040	
Parangārehu catchment streams and South-west coast rural streams		
Korokoro Stream		
Kaiwharawhara Stream	2040	2040
Wellington urban	2060	2040

15 Figure 1 demonstrates a longer timeframe (to 2050 in one case and 2060 in 3 cases for E. coli (wastewater) and 1 for metals (stormwater)) for some pFMUs.

16 The s42A Report recommended levels of wastewater and stormwater improvement imply a cost of between $2.4 billion and $3.4 billion; as much as $2.9 billion less than the high estimate of the cost to achieve TAS (For details on what constitutes high- and low-estimates, see my primary evidence statement, attachment 1 – explanation, page 3). Still, the cost to achieve the s42A Report recommendations is a large dollar figure that would need to be spent on improving water quality in the context of several years of large rates increases at local government level, with many other infrastructure categories requiring significant investment at local government level, and high inflation overall for households.

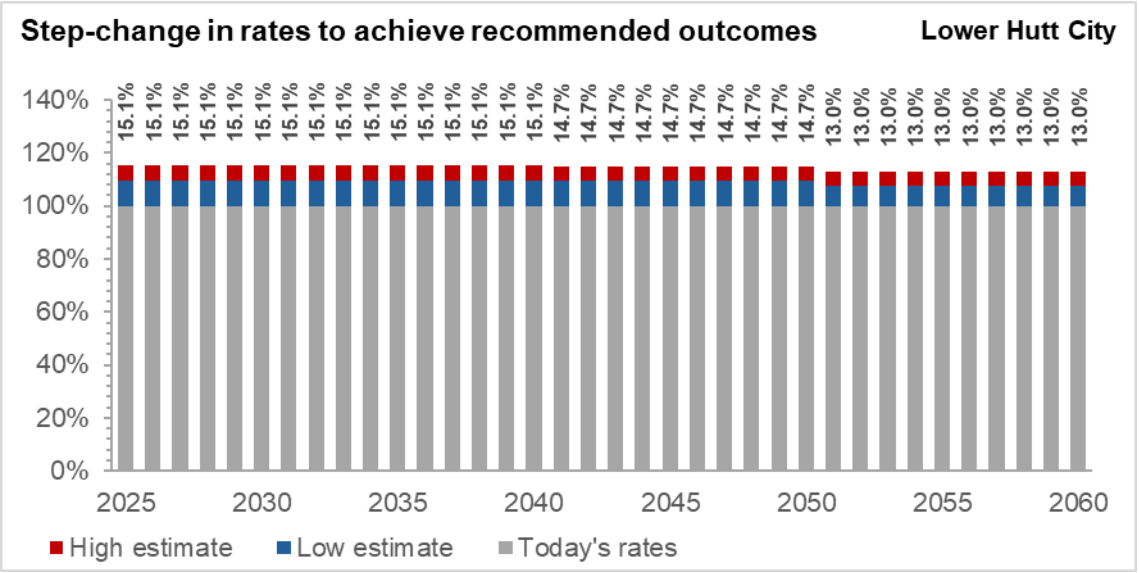
17 If these costs were to be spread across the years to 2040 only, my primary evidence identified this would require a step-change in rates of 15% to 33% across the four councils, sustained for 16 years. It would also require an instant step-change in capacity (workers, skills and machinery) to deliver the improvement of between 53% and 80% over current levels of resource. In my view, this makes achieving the section 42A amended TAS by 2040 both unaffordable and unachievable in some pFMUs.

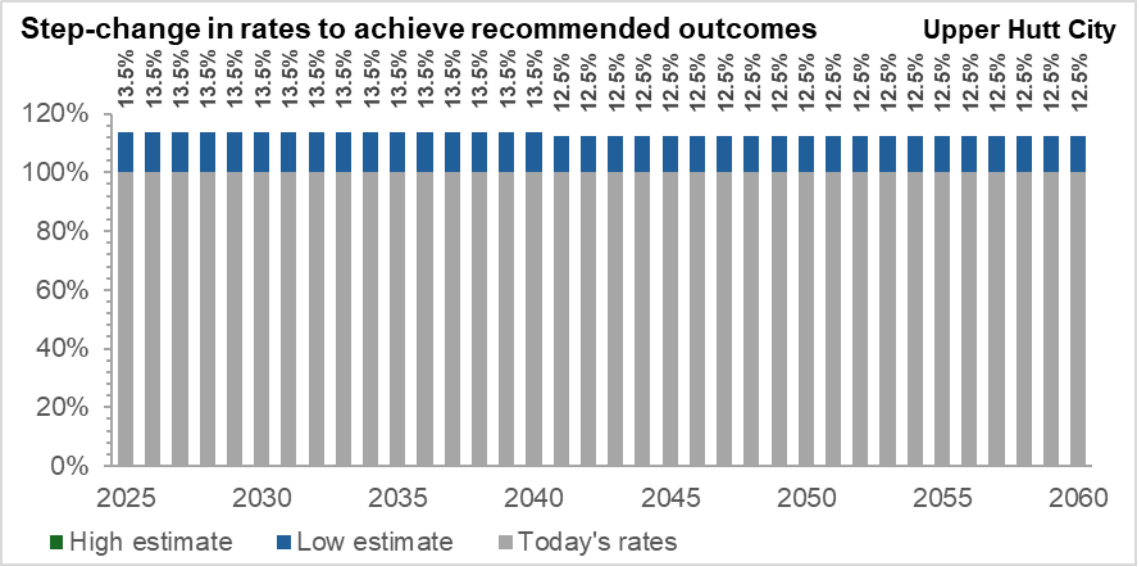
18 Consequently, I have set the recommended timeframes to deliver the s42A Report TAS in five pFMUs for wastewater where costs are anticipated to be particularly high, and in one pFMU for stormwater. I have reached this recommendation by considering the following three elements of affordability and achievability:

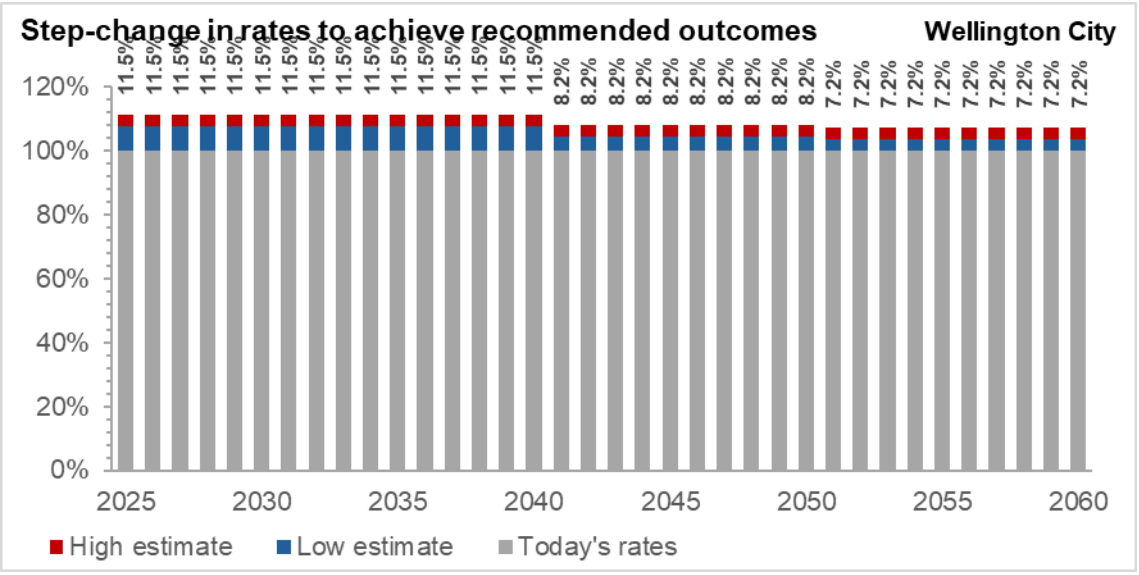
18.1 **Recent rates rises**: As I previously mentioned, setting a 2040 timeframe to achieve the targets would lead to very high rates increases. In recent years, councils facing an infrastructure deficit have been raising rates at levels not seen for many years. The average rates increase (unweighted) across the four territorial authorities (**TA**) and Greater Wellington Regional Council over the four years from 2024/25 to 2027/28 is 13.8%. Regular annual rates increases at this level are unsustainable in the long term.

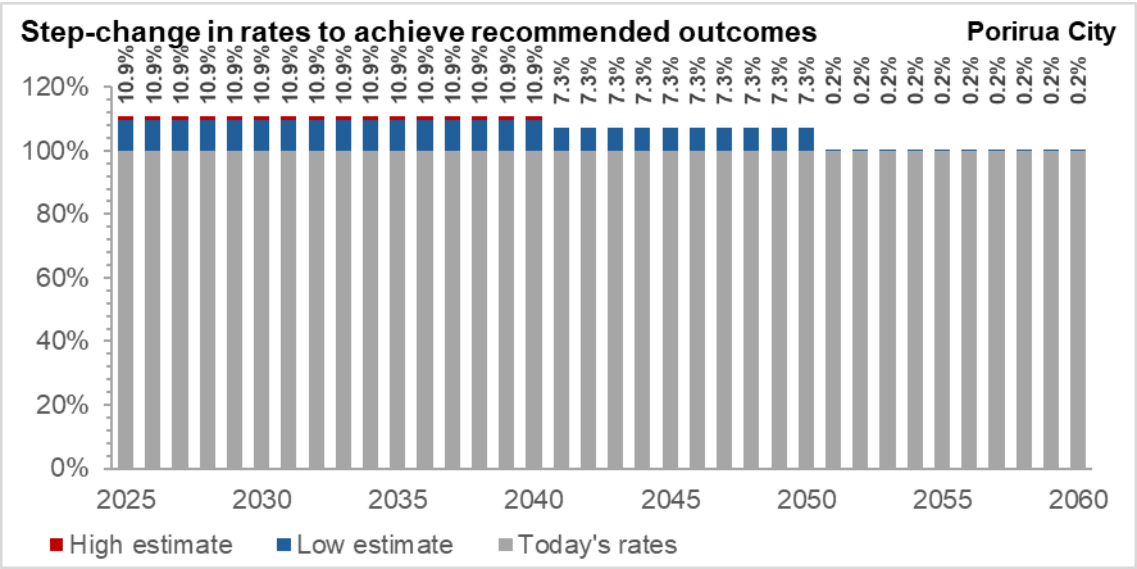
18.2 **Step-change in rates required**: The extension of timeframes I have modelled instead restricts the step-change in rates around this 14% level but for only one extra rating year. No further step-changes would need to be borne by ratepayers beyond year one. Figure 2 shows the one-off rates increase in 2025, followed by decreases in years 2040 and 2050 as specified pFMU catchment targets are met. The extended (mixed) timeframe used in Figure 2 corresponds with that outlined in Figure 1Figure 1

Figure 2 Implied step-change in rates to achieve s42A Report recommended TAS over the extended (mixed) timeframe for each TA



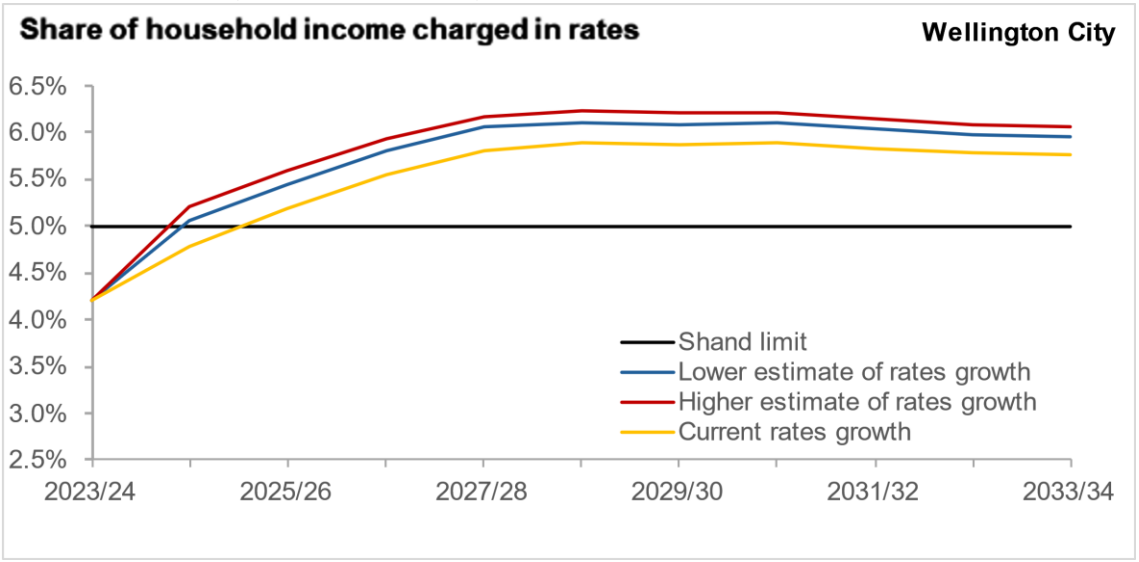


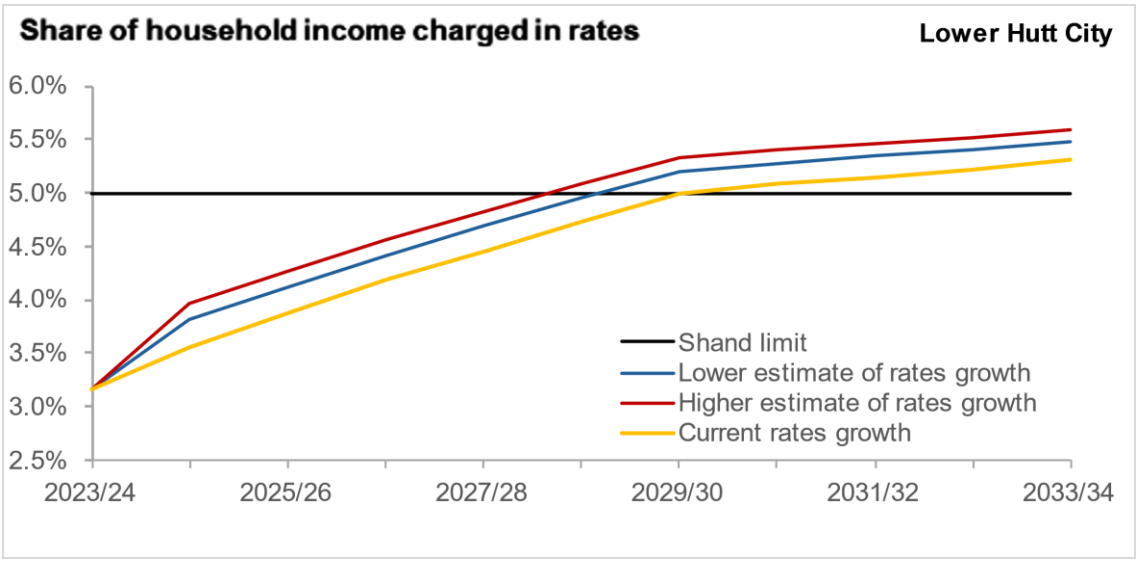


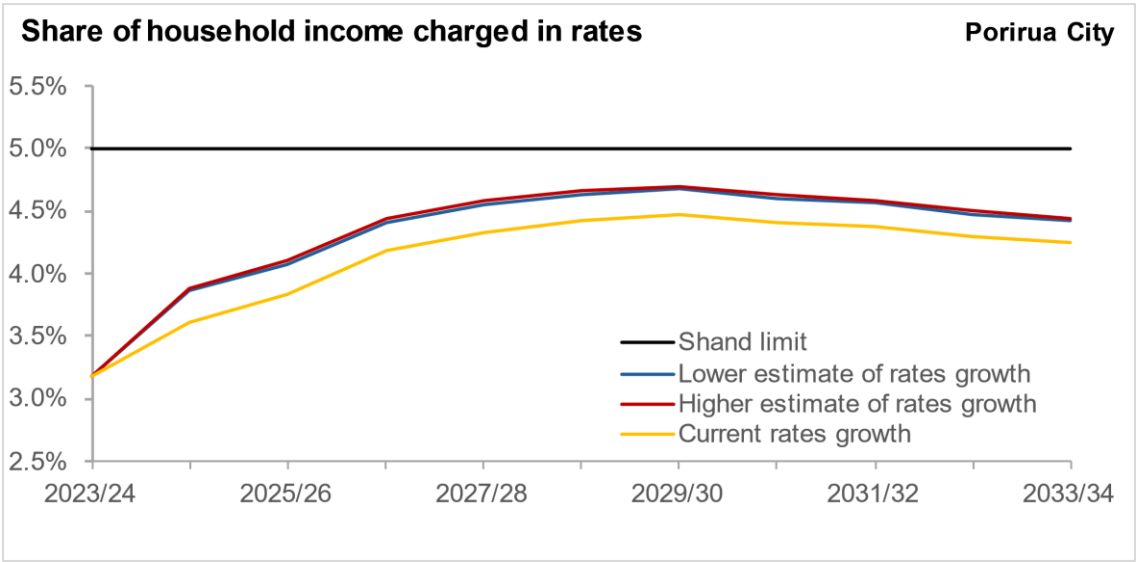


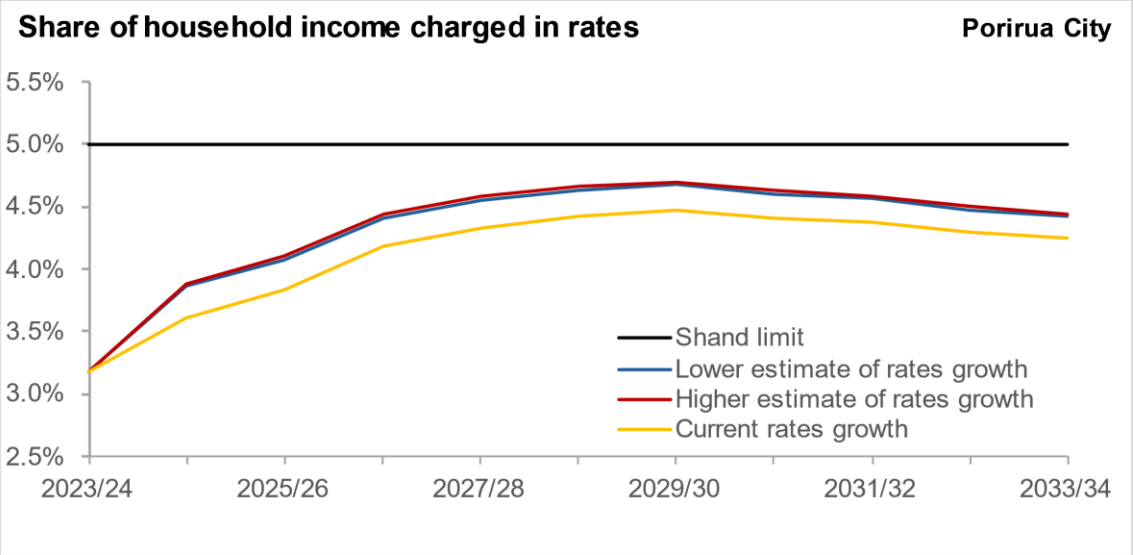
18.3 **Rates as a share of household income**: As explained in my statement of primary evidence, the Shand Inquiry evaluated the role of local government and the appropriate level of rates relative to incomes. While some councils have developed their own ways of measuring rates affordability, Shand remains the benchmark across New Zealand. The recent Local Government Inquiry did not set a new benchmark for rates affordability. It is evident that some councils (Wellington City and Hutt City) are likely to breach the 5% Shand benchmark with or without the extra spending on water. Nevertheless, spending on improved water outcomes needs to be cognisant of these other cost pressures on councils and balance genuine water quality improvements with not exacerbating the affordability challenge significantly. Figure **3** incorporates existing planned rates increases and s42A recommended TAS with the Extended (mixed) timeframe per Figure 1. Figure 3 illustrates the PC1 changes represent small percentage changes (<0.5%) that don't materially affect each council's position against the Shand benchmark.

Figure 3 Current and Additional (s42A TAS over Extended (mixed) timeframe) Rates as a share of household income (2024-34 LTP Period)



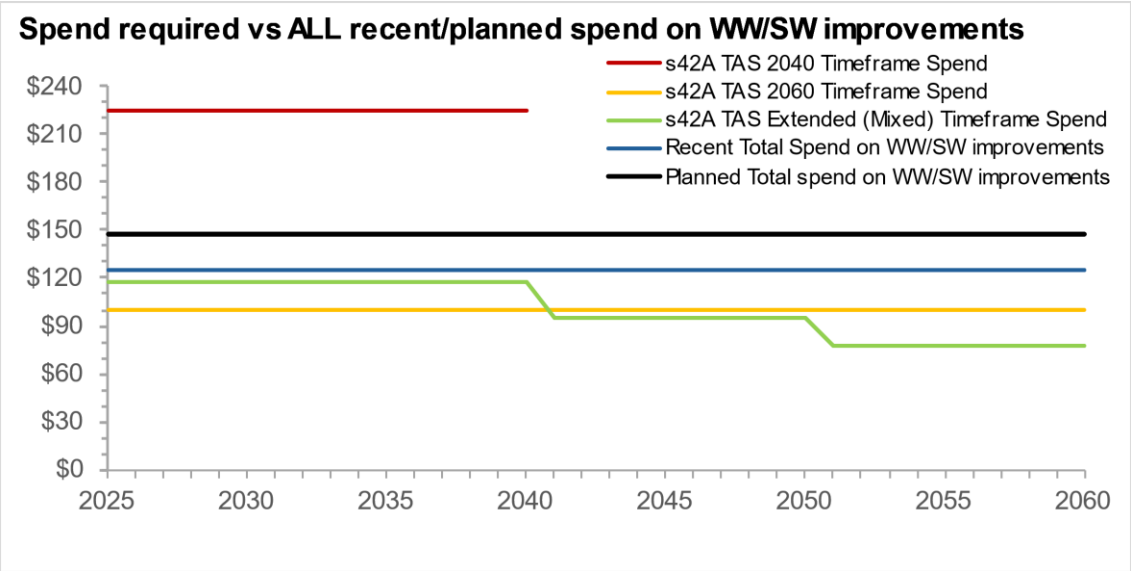






18.4 **Achievability relative to current industry capacity:** As I have previously pointed out, the s42A Report recommended targets will be hard to achieve by 2040 given the implied step up in capacity in the industry needed. Extending the timeframes that I have now updated, improves achievability as the step change in capacity will not be as dramatic. Figure 4 indicates the improved level of achievability of the s42A Report targets when timeframes are extended in some pFMUs as per Figure 1. I would note that this estimate is probably still quite optimistic because it compares the level of spending that would be required to achieve the targets relative to all recent or planned spending on wastewater and stormwater improvements. Recent and planned spending includes elements that will not directly contribute to the s42A Report targets, such as an upgraded wastewater treatment plant.

Figure 4 Estimated spend for s42a TAS for 2040 timeframe, 2060 timeframe and extended (mixed) timeframe compared to all recent and planned spend on wastewater and stormwater improvements



19 As an aside, I acknowledge the fact that as a result of the Local Water Done Well reform programme there will be changes to how WWL operates and is funded. These changes may lead to direct charges by WWL for wastewater services, for example. I would note several points here:

19.1 I have to provide evidence based on what is known at this time. It is impossible to predict accurately how the new structures will take shape and charge for services.

19.2 Even if the way WWL charges for water services changes, stormwater may not be included in that model and would therefore still be funded directly by councils.

19.3 The costs to remediate wastewater and stormwater issues would still be borne by ratepayers whether labelled “rates” or “water service charges” and therefore the estimates of affordability and achievability here remain valid in my view.

19.4 By using the extended (mixed) timeframe laid out in Figure 1 and expenditure profile in Figure 4, the achievability and affordability of the s42A TAS are improved to a point where they approximate the aforementioned economic benchmarks. This is reflected by the estimations constituting, a <0.5% increase in share of household budgets spent on rates, a one-off average rates increase of around 14%, and annual estimated spend being less than the total planned.

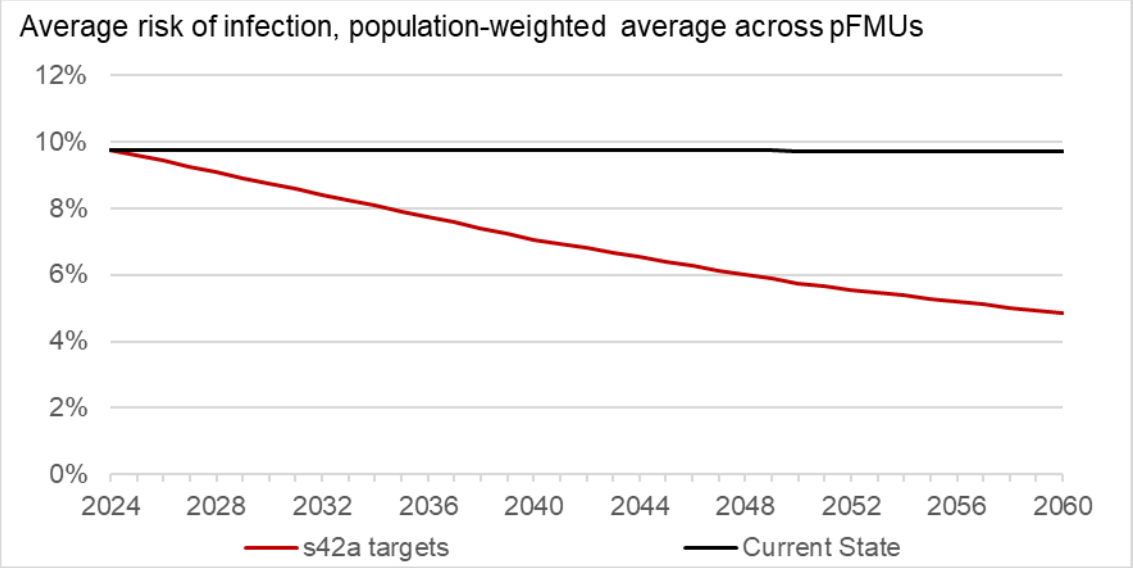
BENEFIT VALUE OF REDUCED RISK OF E. COLI INFECTION

20 Working with the Council and its consultant (Sense Partners) on population forecasts, I was able to estimate the expected population in each pFMU to the end of the 36-year analysis period (2060).

21 By considering the current state and s42A TAS for each pFMU and associated average *E. coli* risk levels in each pFMU, I was able to model the likely reduction in weighted average risk of *E. coli* infection were s42A TAS achieved. To keep it simple, I assume a straight-line pace of improvement from current levels to targets over the extended (mixed) timeframes recommended above (Figure 1).

22 The current average risk of infection across the two whaitua, weighted by population in each pFMU and its average risk level, is estimated at 9.8%. This average risk stays practically identical over time in the absence of any action, as shown in Figure 5.

Figure 5 Weighted average risk of infection, Current E. coli levels, s42A targets

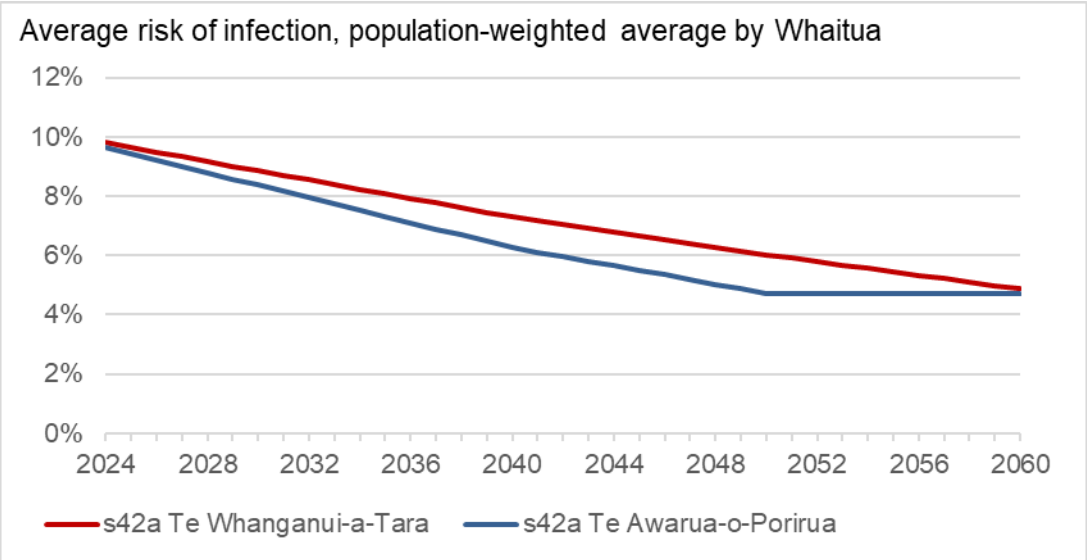


23 Achieving the 42a TAS for *E. coli* is expected to result in weighted average risk of infection on an average day to fall to 4.8% by 2060, less than half the current level of risk. The assumption is that once target states are achieved, those improved levels are maintained.

24 Nevertheless, it is important to acknowledge that these are average risks of infection, and even if the s42A targets are achieved, imply a 1 in 21 chance of being infected by *E. coli* through a "random exposure on a random day" according to the NPS definition.

25 Across the two whaitua, the patterns of improvement suggested by achieving the s42A *E. coli* targets are similar, as highlighted in Figure 6.

Figure 6 Weighted average risk of infection, s42A TAS over extended (mixed) timeframe



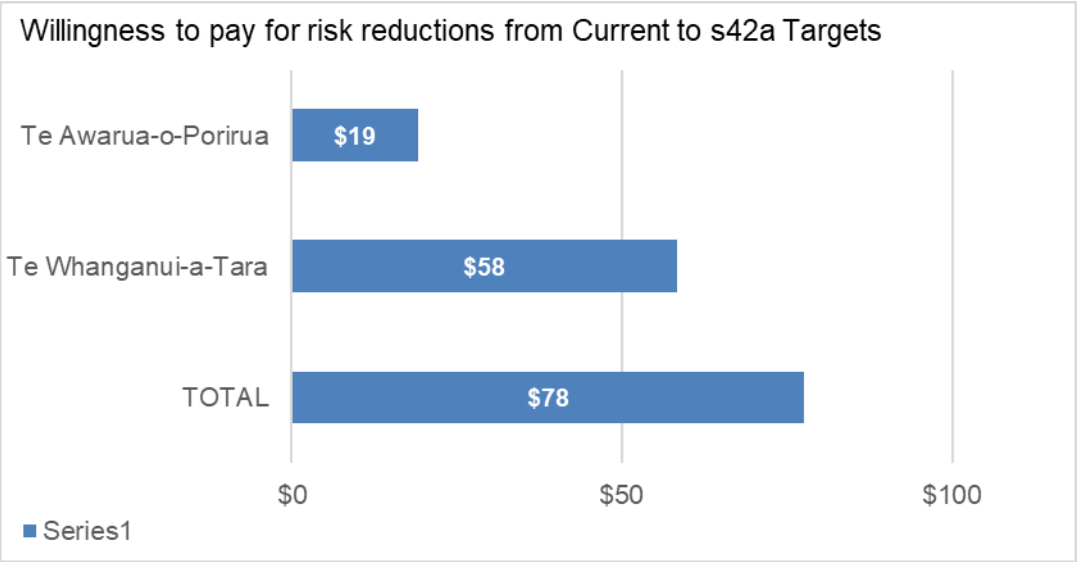
26 It is possible to estimate the value to the community of this reduced risk of infection. Work by the Ministry for the Environment[1] and by the Waikato Regional Council[2] has helped estimate the value people place on reduced risk of infection. By comparing willingness to pay for current risks of infection compared to the improved levels proposed by the s42A Report, it is possible to estimate the value people place on the improved levels of outcome.

27 Willingness to pay (**WTP**) to move from current levels to the risk-of-infection levels associated with the s42A TAS over the extended (mixed) timeframe is estimated at $78 million in total in net present value terms by 2060. Benefits are split across the two whaitua as shown in in Figure 7.

[1] Denne, T. (2020). *Essential freshwater package: Benefits analysis*. Completed for the Ministry for the Environment. Retrieved on 2 December 2024: https://environment.govt.nz/assets/Publications/Files/essential-freshwater-package-benefits-analysis.pdf

[2] Phillips, Y. (2014) *Non-market values for fresh water in the Waikato region: A combined revealed and stated preference approach*. Waikato Regional Council Technical Report 2014/17. Retrieved on 2 December 2024: https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/TR201417.pdf

Figure 7 Willingness to pay for reduced risk of infection from current levels to s42A targets achieved over the extended (mixed) timeframe ($ million, Net Present Value)



28 For the purposes of this analysis, I assumed 30% of residents are likely users of waterways, and 70% are non-users. Users unsurprisingly derive more value from a reduced risk of infection than non-users. However, the two cited studies found surprisingly high levels of willingness to pay among non-users, such that changing the assumption on share of residents who are users does not dramatically affect the results.

DATE: **28 March 2025**

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GHD NEW ZEALAND AND PACIFIC