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

---

STATEMENT OF EVIDENCE OF DAVID ADRIAN WALKER

ON BEHALF OF GREATER WELLINGTON REGIONAL COUNCIL

TECHNICAL EVIDENCE (ECONOMICS)

HEARING STREAM 2 – OBJECTIVES

28 FEBRUARY 2025

TABLE OF CONTENTS

INTRODUCTION

1 My name is David Adrian Walker. I am employed by GHD as Business Advisory Market Leader New Zealand and Pacific. In this role, I advise and review a wide range of macro-economic and micro-economic issues including the inevitable trade-offs between outcomes that society would like to achieve and the financial and other constraints that limit what is achievable.

2 I have prepared this statement of economic evidence on behalf of Greater Wellington Regional Council (**the Council**) in response to submissions and further submissions on the Proposed Plan Change 1 to the Natural Resources Plan for the Wellington Region (**PC1**) raising issues of affordability and a need for economic analysis of the impacts of PC1, particularly for council stormwater and wastewater infrastructure.

3 Specifically, this statement of evidence relates to the matters in the Section 42A Report – Objectives to assist with consideration of proposed objectives that require, amongst other matters, wastewater and stormwater infrastructure upgrades to support the proposed targets to deliver improvements to water quality.

4 I am authorised to provide this evidence on behalf of the Council.

QUALIFICATIONS AND EXPERIENCE

5 I hold the qualifications of a Bachelor of Arts degree in Economics (1980, University of Auckland) and a Bachelor of Commerce in Accounting (1983, University of Auckland), as well as being a registered Chartered Accountant (CA -1985), a Chartered Secretary (ACIS – 1986) and a qualified Cost Management Accountant (CMA – 1987).

6 I have 35 years of experience in senior roles as a commercial and executive advisor incorporating economics and accountancy in the private sector (PwC and GHD) and in government (Auckland City Council). I have led, worked on, or reviewed over 500 projects over those 35 years.

7 My role immediately prior to joining GHD as Business Advisory Market Leader was Local Government and Infrastructure Director and Lead at PwC, a role I held for almost twelve years. That role included the review of infrastructure and economic resource planning assessments, in particular to evaluate their robustness and defensibility.

8 In my role as Business Advisory Market Leader at GHD, I have prepared asset and infrastructure plans and in addition, reviewed evidence statements for a number of plan change and consent applications, including the RiverLink project in Wellington on behalf of the Council, Hutt City and the New Zealand Transport Agency; and on behalf of Wellington City Council[1] on questions of indigenous biodiversity and water sensitive design. I have also appeared on behalf of the legacy Auckland City Council at various planning hearings, including proposed developments.

9 I have worked closely with the GHD team advising Council on questions related to affordability and how costs could be covered for the proposed changes over the last 18 months, including early affordability work for wastewater improvements.[2]

CODE OF CONDUCT

10 I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023 (Part 9). I have complied with the Code of Conduct in preparing this evidence. My experience and qualifications are set out above. Except where I state I rely on the evidence of another person, I confirm that the issues addressed in this evidence 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.

SCOPE OF EVIDENCE

11 My evidence addresses several key questions related to the costs to ratepayers within the jurisdiction of four territorial authorities (**TAs**: Porirua, Wellington City, Upper Hutt and Lower Hutt) to improve their wastewater and stormwater networks to support achieving the freshwater Target Attribute States (**TAS**).

12 Actions explicitly to support coastal objectives were outside of our scope, as were potential costs to other stakeholders such as the New Zealand Transport Agency or Wellington Airport, and costs accruing to private land owners (such as remediating cross-connections)

[1] GHD – Significant Natural Areas, Section 32 Economic Assessment Indigenous Biodiversity, Wellington City Council, 24 April 2024, reviewed by me, can be found here: https://wellington.govt.nz/-/media/your-council/plans-policies-and-bylaws/district-plan/proposed-district-plan/files/hearing-streams/11/council-reports-and-evidence/council-report-and-evidence/appendix-f.pdf

[2] Earlier work by GHD, reviewed by me, can be found here: https://www.gw.govt.nz/assets/Documents/2023/10/Norman-D-and-Donaldson-E.-2023.-Wastewater-improvement-affordability-Implications-of-implementation-timeframes-for-affordability.pdf

referred to in paragraph 24.3. Our focus was the impact on TAs directly that would need to be funded by ratepayers.

13 The evidence further assumes that the costs of ensuring good water outcomes for growth (as opposed to the costs of remediating water outcomes for today's existing residents) are primarily borne by that growth and do not accrue to the ratepayer at large. This is in line with good economic principles of those benefitting from something paying for it, and is in line with separate work done on, for example, financial contributions whereby the residual impacts on water are offset by new development.

14 My analysis includes:

14.1 Indicative estimates of the costs to ratepayers across the four TAs for wastewater and stormwater network infrastructure investment interventions targeting:

14.1.1 the PC1 proposed freshwater TAS for *E. coli*, and dissolved zinc and copper

14.1.2 in the case of *E. coli,* comparing this to the minimum required improvement (**MRI**) by the National Policy Statement for Freshwater Management 2020 (**NPS-FM**), being one attribute state.

14.2 Commentary on how much of this required spending is already included in the Long-Term Plans (**LTPs**) of affected councils

14.3 An assessment of the affordability of achieving the MRI and TAS, including the incremental cost of achieving TAS where MRI are also set

14.4 An assessment of the achievability of the TAS within the 16-year timeframe (from now to 2040) from the practical perspective of the change in construction and investment activity required to achieve this timeframe

14.5 An evaluation of how affordability and achievability may improve over longer timeframes (presented in combination with the information above)

14.6 An indication of how TAS and MRI may reduce risk of *E. coli* infection across the two whaitua.

BACKGROUND CONTEXT

15 PC1 implements the NPS-FM in two of five whaitua in the Wellington Region – Te Awarua-o-Porirua (**TAoP**) Whaitua and Whaitua Te Whanganui-a-Tara (**TWT**). The plan change implements the regulatory and some of the non-regulatory recommendations from the WIPs that were produced by the Committees appointed by the Council for each of the whaitua community planning processes.

16 PC1 proposes new objectives, policies and rules that manage TA stormwater and wastewater networks to contribute to achieving the TAS and coastal water objectives. A key focus for TA stormwater networks are the dissolved copper and zinc TAS and coastal water objectives. Whereas, for TA wastewater networks the key focus is the *E. coli* TAS and enterococci coastal water objectives.

17 In line with the brief and communications with the regional council and its water specialist advisors, I understand that:[3]

17.1 *E. coli* is included in the NPS-FM as a compulsory attribute but includes an MRI from baseline state rather than a national bottom line (**NBL**)

17.2 Dissolved copper and zinc are not included as a compulsory attribute in the NPS-FM and they do not have an MRI or NBL

17.3 In certain places, to achieve the Macroinvertebrate Community Index (MCI), a metals improvement is likely needed. However, the extent to which metals in water need to be reduced to contribute to achieving the MCI is not clear and has not been assessed in my work.

[3] For instance in personal communications via Microsoft Teams with Dr Michael Greer.

INDICATIVE COSTS

18 Calculating the indicative costs associated with upgrading the TA stormwater and wastewater networks to meet their contribution to achieving MRI and/or TAS consisted of several steps:

18.1 Estimate the load reduction in metals (in the case of stormwater) or *E. coli* (in the case of wastewater) required to achieve the MRI and/or TAS in each part Freshwater Management Unit (**pFMU**)[45].

18.2 With assistance from water engineers and environmental scientists, present these load reductions in terms of the interventions that may be required. In the case of wastewater, for instance, this could be that approximately 64% of Grade 4 and 5 pipes (i.e. pipes in poor condition) be replaced in pFMU X, and that 49% of overflows in the same pFMU be mitigated. In the case of stormwater, for instance, it could be that 61% of impervious surfaces are treated by rain gardens or that 72% of impervious surfaces are treated by wetlands. I note that there are a multitude of factors that go into determining what might be an effective treatment for a particular output in a given pFMU and that the estimates of the interventions required are indicative, based on early modelling.

18.3 Estimate the cost of these interventions. This is another area where values should be seen as coarse indications of scale.

18.3.1 In the case of stormwater, the GHD team developed its own estimates of costs, relying on previous work where, for example, wetland costs per hectare were estimated, or where typical construction costs for a rain garden were estimated. Unit costs were then cross-checked with delivered and planned interventions in the Wellington Region to evaluate reasonableness. Again, the costs presented here are indicative rather than definitive.

18.3.2 In the case of wastewater, the GHD team again developed its own approach to estimating costs, with input from Wellington Water

[4] *Memorandum, Approach used to estimate the load reductions to achieve the copper, zinc and E. coli*; *TAS in Proposed Change 1 to the Natural Resources Plan for the Wellington Region*, Torlesse Environmental Ltd, 17/02/2025

[5] Memorandum Section 3, Important note on limitations, Torlesse Environmental Ltd, 17/02/2025

Limited (**WWL**) on the cost of pipe replacement. WWL also separately estimated costs for identifying cross-connections and for network upgrades (pump station, rising main and pipe capacity improvements) to reduce overflows. GHD had separately estimated costs to reduce overflows that yielded similar results, providing confidence that the scale of estimated costs for these interventions is likely to be in the appropriate range. Once again, I would caution that the figures presented below are indicative estimates.

19 Again, I would emphasise that there is a significant amount of uncertainty on the true costs of intervention. They could be materially higher or lower than those presented in my evidence, but this evidence provides a strong sense of scale to help decision-making.

20 Bearing in mind these caveats, I have estimated costs for the TA stormwater and wastewater network improvements required to achieve their contribution towards the freshwater metals TAS in PC1, *E. coli* MRI and *E. coli* TAS in PC1. More detail of how costs were estimated is set out in *Attachment 1: Explanation of Cost Methodology* attached to my evidence.

COSTS TO TA STORMWATER NETWORKS

21 The cost to upgrade the TA stormwater networks to meet their contribution to the metals TAS in the five pFMUs that are seeking an improvement, is estimated at between $626 million and $1.66 billion (see Figure 1).[6] This wide cost range depends on two main factors:

21.1 which intervention is chosen, as in some pFMUs multiple potential treatments were identified (such as wetlands, rain gardens, swales, roof replacement or a combination of these)

21.2 the assumption on whether or not wetlands or rain gardens could be accommodated on publicly-owned land, removing the requirement to purchase land for stormwater treatment, or if publicly-owned land were unavailable, could these interventions be accommodated on rural-zoned land, which costs a fraction of urban land. Because rural land costs a small fraction of urban land,

[6] The five pFMUs are represented by: Kaiwharawhara Stream, Te Awa Kairangi urban streams, Wai-o-hata, Waiwhetū Stream and Wellington urban.

there is a very small difference in total costs between the “no land required” and the “rural land required” scenarios.

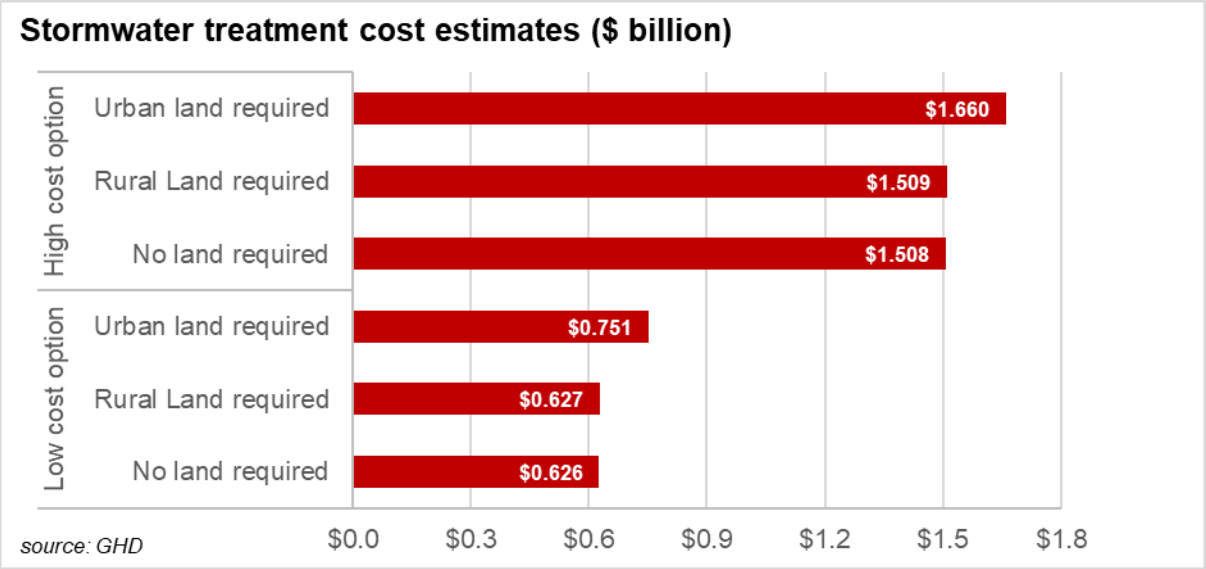


Figure 1. Estimated range of costs to upgrade TA stormwater networks associated with the metals TAS

COSTS TO TA WASTEWATER NETWORKS

22 The cost to upgrade the TA wastewater networks to meet their required contribution to achieving the *E. coli* MRI in the 13 pFMUs that require improvements (noting that no data was available for one additional pFMU) is estimated at between $2.40 billion and $3.36 billion.

23 The cost to achieve the PC1 *E. coli* **TAS** in the 13 pFMUs that require improvements, is estimated at between $3.17 billion and $3.71 billion, which implies a cost of up to $1.32 billion over and above what would be required to achieve the MRI.

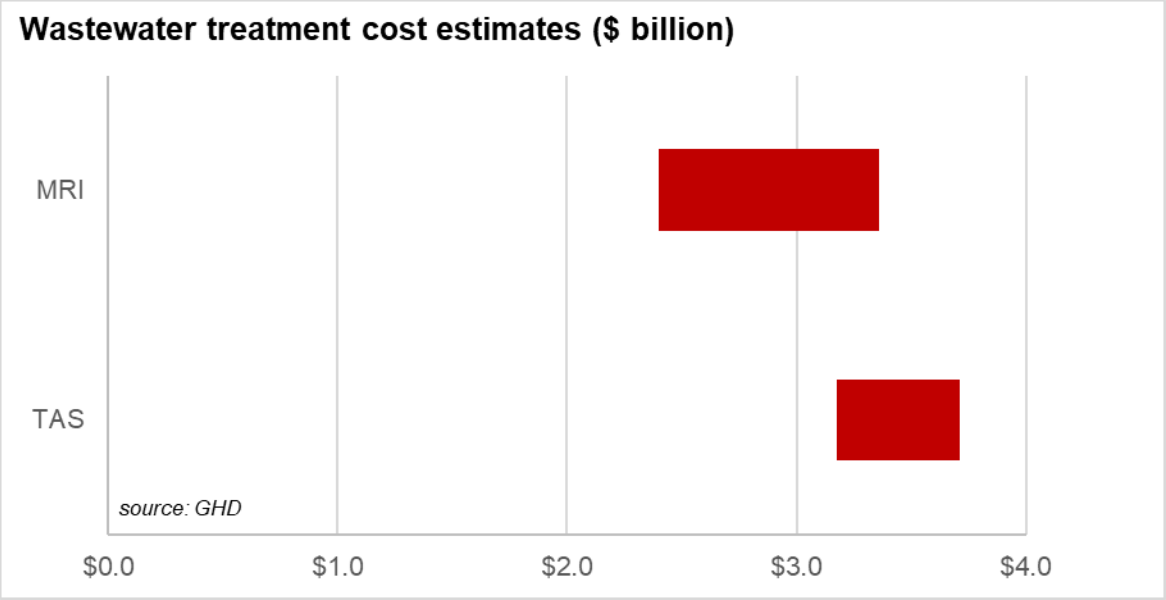


Figure 2. Estimated range of costs to upgrade TA wastewater networks associated with the *E. coli* MRI and TAS

CAVEATS ON INTERPRETING THESE FIGURES

24 Some further points to note on these estimated costs include:

24.1 These are costs associated only with resolving existing TA wastewater and stormwater network challenges. It is assumed in these calculations that new development (whether in greenfield areas or brownfield redevelopment) will pay for its own impacts via other mechanisms, and that other stakeholders such as NZTA or the Airport would pay for their own stormwater mitigations.

24.1.1 I acknowledge there is some debate as to whether the financial contributions offset mechanism being proposed in PC1 for greenfield development will capture all the impacts of that new development or whether there are some further negative impacts not captured, such as induced travel demand on other roads.

24.1.2 I acknowledge there is also debate as to whether redevelopment of existing brownfield areas via infill will contribute to reducing load reductions through removal of older buildings with older roofs, for example, or through better management of run-off on-site, or remediation of cross-connections.

24.1.3 In the absence of better data, I have assumed these negative and positive impacts broadly cancel each other out.

24.2 All the costs presented here are capital costs only and exclude any ongoing maintenance costs, as these have not been able to be meaningfully estimated at this point and are highly dependent on the mix of solutions applied. As such, these costs are likely to be underestimates.

24.3 No costs are included here that would be expected to accrue directly to private property owners, such as remediation of cross-connections to reduce *E. coli* levels from wastewater being connected into stormwater pipes. These would be, where they arise, a further cost imposed on private landowners, but the focus of my analysis is the overall affordability to ratepayers for improvements likely to be funded through the property rates mechanism.

24.4 No allowance is made for debt servicing costs if councils choose to fund these improvements via debt. The assumption is effectively that the treatments are funded on a "pay as you go" basis. In other words, I assume that the costs will be spread across the timeframe over which the treatments are expected to be made and that those costs are recovered in the same time period.

24.5 The possibility of stormwater filtration devices was explored as an alternative to using wetlands or rain gardens as treatments. This option was explored as it could potentially remove the need to purchase land to treat stormwater as they are more easily accommodated within existing road corridor land. However, all indications were that stormwater filtration devices would not result in significant cost savings, especially with their high ongoing maintenance costs. It is possible that in future more technological solutions may be found at more reasonable prices but I could not complete this evidence based on that assumption.

24.6 Costs for pump station and rising main upgrades have not been included because while WWL was able to provide case study estimates of the cost to increase capacity through a pump station and associated rising main, it is unclear how many pump stations would need to be upgraded. I note that a single example of a pump station upgrade cost provided to GHD was $3.3 million, so costs across the network to increase capacity could easily be in the tens or even hundreds of millions. My understanding is that there are several hundred pump stations across the WWL jurisdiction.

24.7 Wastewater costs were estimated based on assumptions about replacement of Grade 4 and Grade 5 pipes (i.e. pipes in poor condition) and reducing overflows by increasing capacity in areas where known overflows exist. Storage tanks are an alternative to pipe replacement or capacity increases, but require the purchase of land for storage purposes, whereas pipe replacement and upgraded pump stations can generally be accommodated on existing council-owned land.

24.8 The range for the MRI and for the TAS is set primarily by the choice of treatment type (such as wetlands versus roof replacements or swales in the case of stormwater or managing overflows versus replacement of Grade 4 and 5 pipes in the case of wastewater for instance).

SUMMARY OF COSTS

25 In total then, the cost of infrastructure upgrades to the TA stormwater and wastewater networks for their contribution to achieving the metal PC1 TAS, *E. coli* MRI and PC1 E. *coli* TAS (capital works only) is estimated at between $3.80 billion and $5.37 billion, or between $440 million and $2.98 billion more than achieving the *E. coli* MRI.

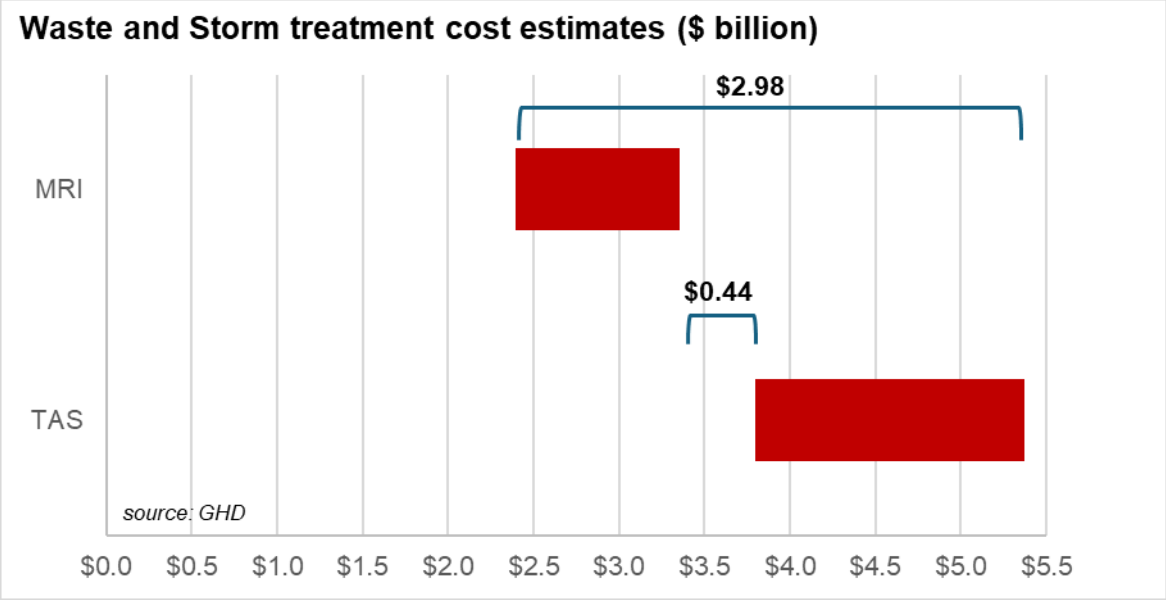


Figure 3. Costs to upgrade TA stormwater and wastewater networks associated with the metals TAS *E. coli* TAS, *E. coli* MRI

26 The difference in costs for TAs for their contribution to achieving the *E. coli* MRI versus the PC1 metals and *E. coli* TAS is driven by a number of factors, several of which have been set out already, but including:

26.1 the fact that no interventions are specified for stormwater in the case of MRI. Although as I pointed out above, it is possible that some improvement in metals levels will be needed to achieve an MCI, the extent of improvement required has not been modelled and consequently I was unable to cost a minimum improvement in metal levels that may be required to support achieving an MCI.

26.2 the extent of treatment needed to achieve the TAS is greater than that required to achieve the MRI in individual pFMUs.

26.3 the mix of locations and consequent state of infrastructure for where treatments are prescribed.

INCLUSION OF COSTS IN EXISTING LONG-TERM PLANS

27 Across the four councils, $1.47 billion is budgeted in the Long-Term Plans (**LTPs**) for spending on wastewater and stormwater renewals over the 10 years to 2034.

28 However, interrogating LTPs to understand what share of proposed capital spending on wastewater and stormwater renewals directly tackles the types of renewals covered in this evidence is a challenge. For example, a large proportion of the proposed $1.47 billion of total capital spend on wastewater and stormwater renewals over the next 10 years will be for the wastewater treatment plant renewal at Seaview, which is not money that would be targeted at reducing overflows through replacing and upsizing pipes and pump stations.

29 The $1.47 billion is likely to include all manner of other renewals that could cover anything from maintenance hole covers to wastewater treatment plant work. The $1.47 billion is therefore a significant overestimate of how much the four councils have already set aside specifically for the TA contribution towards achieving the TAS that are in the scope of my evidence.

30 In my view, the allowance in the LTP for investment that targets the MRI and TAS is likely at the low end given what we know about what is included in LTP budgets, such as the extent of pipe replacement in a given year. In other words, budgeted LTP spending will be far lower than that required. Simply put, the red line in Figure 4 is likely overestimating recent annual spending on wastewater and stormwater improvements that would contribute to

achieving the TAS, but is still lower than the annual spend required to meet the TA contribution to achieving both the *E. coli* MRI and PC1 metals and *E. coli* TAS for both the low cost and high cost scenarios.

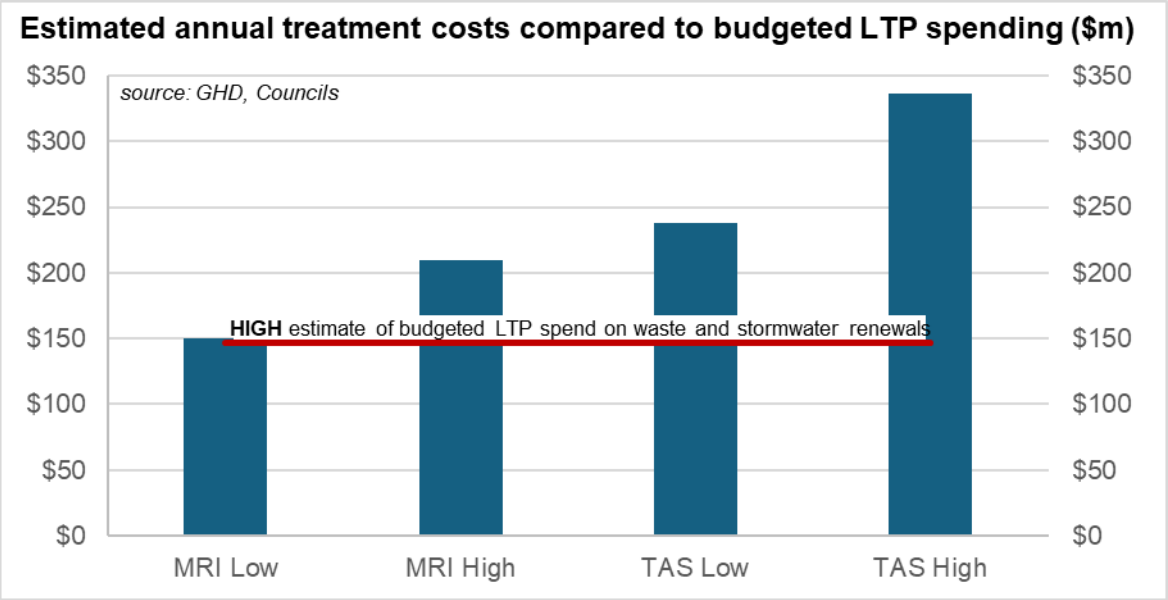


Figure 4. Annual spending per year for 16 years to achieve MRI and TAS compared with LTP budget

AFFORDABILITY OVER PROPOSED AND LONGER TIMEFRAMES

31 The costs set out above are large, but without the context of affordability. That context is important. I have considered affordability from three perspectives:

31.1 Implied cost of the TA contribution to achieving the PC1 metals and *E. coli* TAS compared to the *E. coli* MRI as a share of current rates costs

31.2 Total rates costs as a share of income

31.3 Working age population share across constituent council jurisdictions.

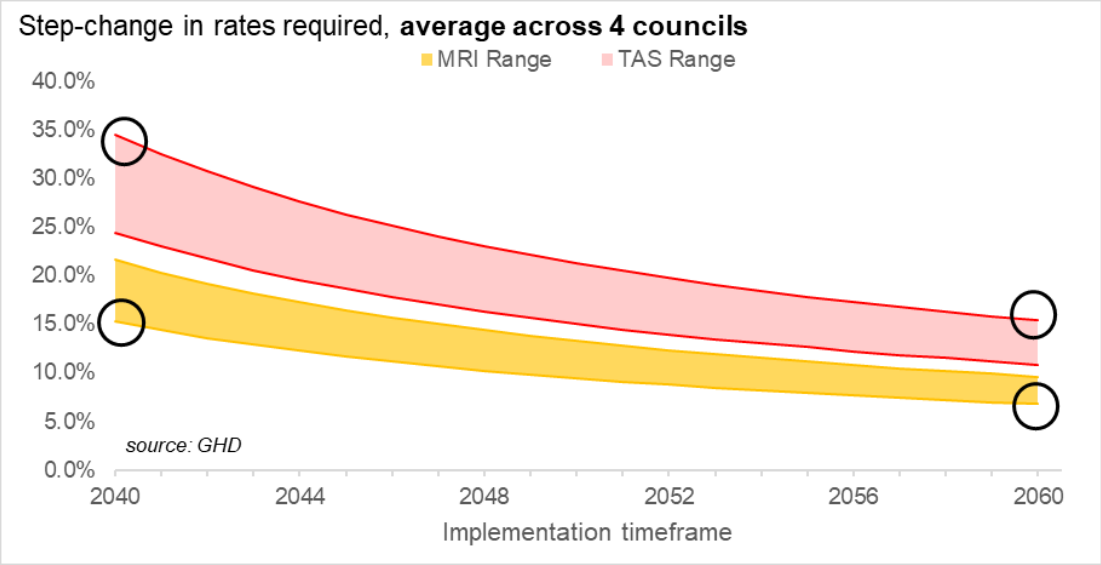
32 The share of each pFMU that falls into each of the four urban councils was estimated. Using these proportions, I was able to estimate the likely share of costs that would fall within the boundaries of each council jurisdiction. This made it possible to estimate how targeting metals and *E. coli* to achieve the various desired reductions in load would impose additional costs across council jurisdictions.

COSTS AS A SHARE OF CURRENT RATES COSTS

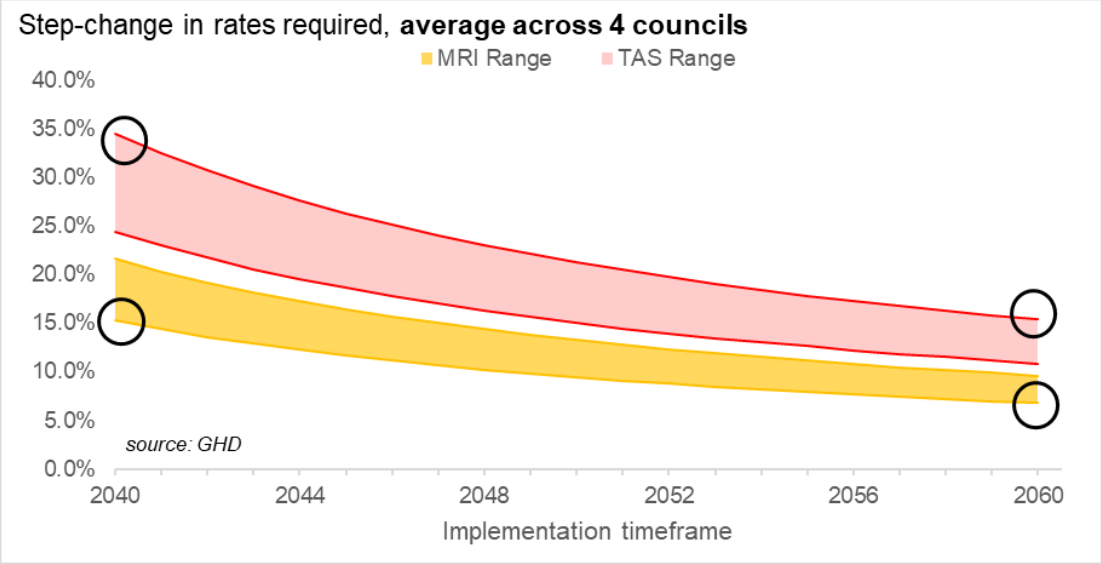
33 Dividing these estimated costs at the council level by current rates revenues at the council level (including rates collected on behalf of Greater Wellington Regional Council) made it

possible to estimate the implied or effective step-change in rates bills needed to achieve the TA contribution to the MRI or PC1 TAS that are in the scope of my evidence by the target date of 2040 (i.e. in 16 years), or over longer timeframes . I understand a number of TA submitters have sought a timeframe of 2060 for achievement of the TAS, so I have used this as the endpoint of my analysis for the impacts on rates. It was also possible to estimate the total step-change in rates required at a weighted-average level for the two whaitua combined.

34 These step-change estimates are presented in the five charts that follow in



35 Figure 5. Using the four circled points in the first graph in



36 Figure 5 as explanatory examples:

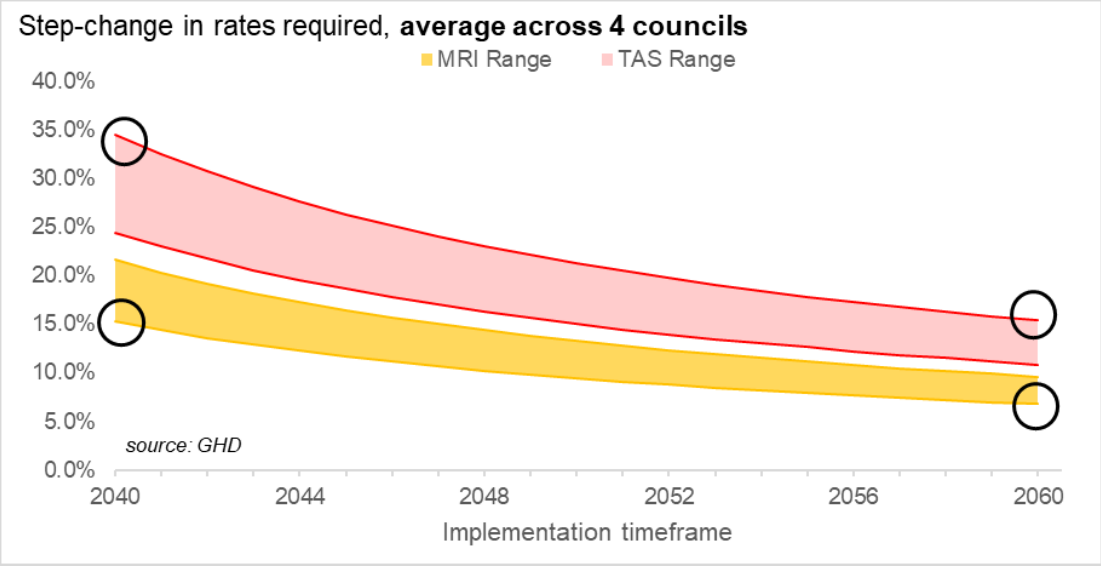
36.1 To achieve the TA contribution to the PC1 metals and *E. coli* TAS within 16 years across the four councils could require the equivalent of up to a 35% step-change in rates on average across the councils, sustained to 2040 if treatment costs are at the high end of the estimate.

36.2 To achieve the TA contribution to the *E. coli* more modest MRI within 16 years across the four councils could require the equivalent of at least a 15% step-change in rates on average across the councils with an upper estimate of 22%, sustained to 2040 if treatment costs are at the high end of the estimate.

36.3 If the delivery timeframe were slowed to 36 years, to achieve the TA contribution to the PC1 metals and *E. coli* TAS by 2060, the sustained step-change in rates could be as high as 15%. I would note that this step-change in rates is around the same size as the lower estimate required to achieve the TA contribution to the *E. coli* MRI in 16 years as discussed in paragraph 36.2. However, it would require that higher level of rates for an extra 20 years.

36.4 To achieve the TA contribution to the *E. coli* MRI over a 36-year timeframe (by 2060) would require at least a 6.9% sustained step-change in rates on average.

37 But impacts vary widely across council jurisdictions and timeframe adopted. The focus here is on the impact of achieving the TA contribution to the *E. coli* MRI or stricter metals and *E. coli* TAS by 2040 but the graphs in



38 Figure 5 also show the change in rates required to achieve the TA contributions to these TAS or the less stringent *E. coli* MRI over longer timeframes for the reader's reference.

Briefly, the indicative step-changes in rates for each council to achieve their contribution to the PC1 metals and *E. coli* TAS compared to the *E. coli* MRI by 2040 are as follows:

38.1 **Upper Hutt**: The metals and *E. coli* TAS would require a step-change of up to 72% in rates, maintained for **16 years**, or from 29% to achieve *E. coli* MRI.

38.2 **Hutt City**: The metals and *E. coli* TAS would require a step-change of up to 57% in rates, maintained for **16 years**, or from 20% to achieve *E. coli* MRI.

38.3 **Porirua**: The metals and *E. coli* TAS would require a step-change of up to 25% in rates, maintained for **16 years**, or from 14% to achieve *E. coli* MRI.

38.4 **Wellington City**: The metals and *E. coli* TAS would require a step-change of up to 25% in rates, maintained **for 16 years**, or from 13% to achieve *E. coli* MRI.

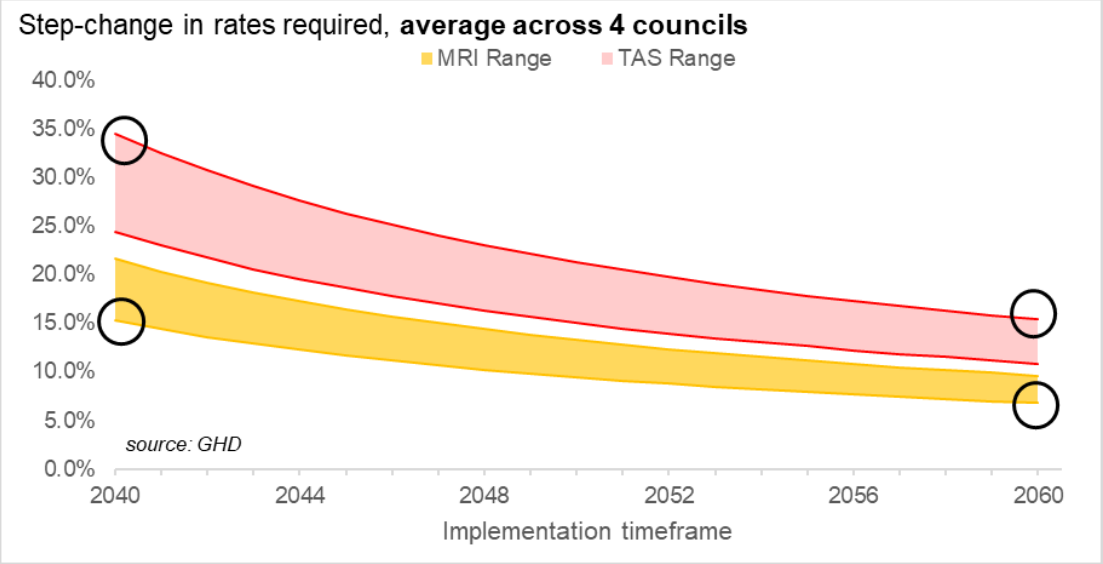
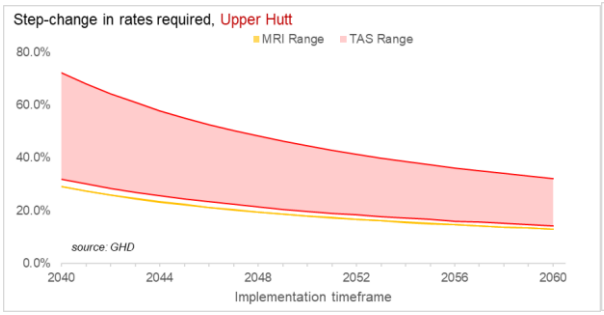
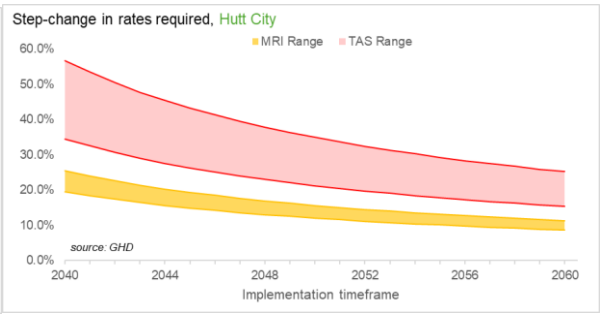
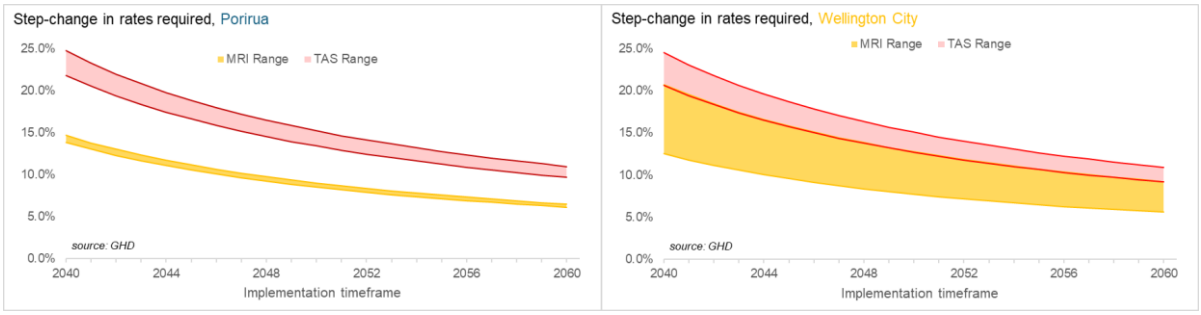


Figure 5. Effective step-change in rates to achieve TA contribution to the *E. coli* MRI, metals and *E. coli* TAS







39 As previously highlighted, the range of costs estimated here rest on:

39.1 which mechanisms prove to be practical to adopt in each pFMU (such as wetlands, rain gardens and/or roof replacement), whether land has to be purchased to accommodate treatment methods, and the percentage of pipes to be replaced and the extent to which overflows can be avoided

39.2 no allowance being made for ongoing maintenance costs, which would likely imply a larger step-change in rates on an ongoing basis

39.3 assumptions about how the improvements are funded – via a "pay as you go" mechanism as assumed here, or via debt. The challenge in using a debt model includes the range of variables that would need to be modelled here such as assumed interest rate and repayment period. However, more fundamentally, using a debt model adds complications because while it would enable the TA in the early years to spread the cost, ultimately it would catchup with the TA in the later years due to the build-up of debt and servicing costs.

39.4 The Government's Local Water Done Well policy[7] and legislation currently before Parliament proposes, subject to TA arrangements, an increased level of debt raising capacity would be available. This would enable local water service suppliers to bypass current TA debt cap limitations to fund additional infrastructure investment required by current and potentially future requirements such as that anticipated by PC1. However, as outlined in paragraph 33.3, ultimately all this debt raised to cover costs would have to be repaid, and uncertainty remains over how favourable or otherwise borrowing interest rates may be compared to today's arrangements.

[7] https://www.dia.govt.nz/Water-Services-Policy-and-Legislation

RATES AS A SHARE OF CURRENT HOUSEHOLD INCOMES

40 *Funding Local Government: Report of the Local Government Rates* (commonly known as the Shand Inquiry or Shand Report) was a landmark study that examined local government funding and financing in New Zealand and remains the primary authority on these questions today. It states that "as a rough benchmark affordability problems arise where rates exceed 5% of gross household income".[8]

41 As a starting point, I considered the level that rates were at in June 2024 across the four councils covered by this analysis. At present, all four councils have rates levels that fall below the 5% Shand Inquiry threshold, with Wellington City highest at around 4.2%.

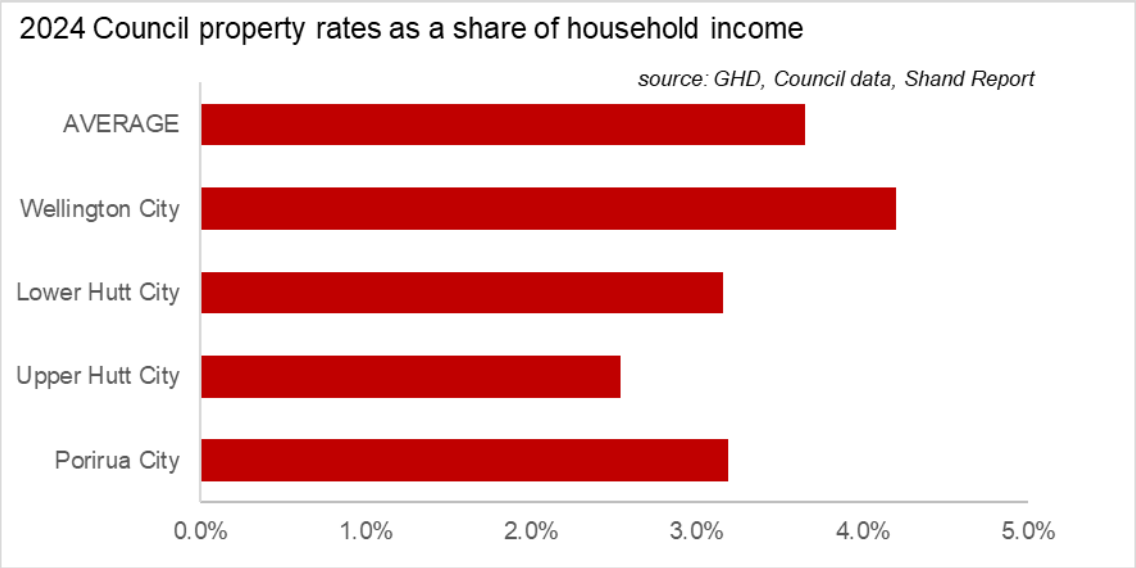
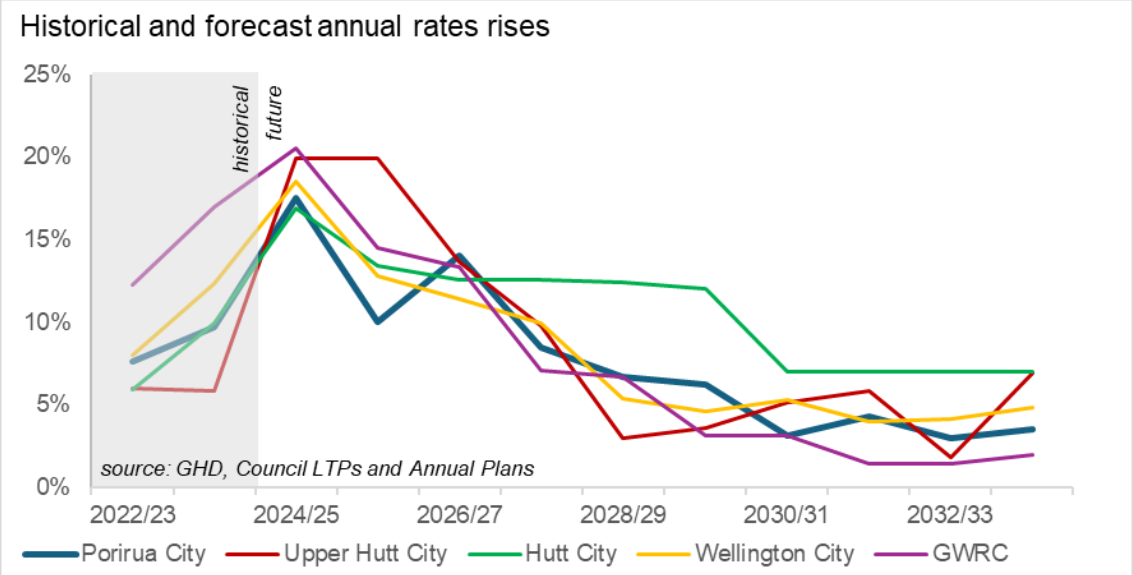


Figure 6. Current estimates of total property rates by council as a share of household income

42 These figures are for the year before large rates increases were announced in 2024 for the following several years via the new LTPs across all councils covered in this analysis, as well as the regional council. While I have noted above that some of the costs of working toward the desired target states may already be captured in the LTPs, a large majority of the costs required to achieve the TA contribution to the PC1 metals and *E. coli* TAS are not and would need to be added to the already-anticipated rates rises set out by councils. As

[8] Shand, D; Horsley, G; and Cheyne, C. (2007). *Funding Local Government: Report of the Local Government Rates Inquiry*, p.12. Retrieved on 18 December 2024 from https://ndhadeliver.natlib.govt.nz/ArcAggregator/arcView/frameView/IE12126512/http://www.dia.govt.nz/Agency-Independent-Inquiry-into-Local-Government-Rates-Index

shown in



43 Figure 7, all four local councils, as well as Greater Wellington Regional Council, have imposed large rates rises in the 2024/25 year now underway, ranging between 16.9% and 20.5% on average across councils.

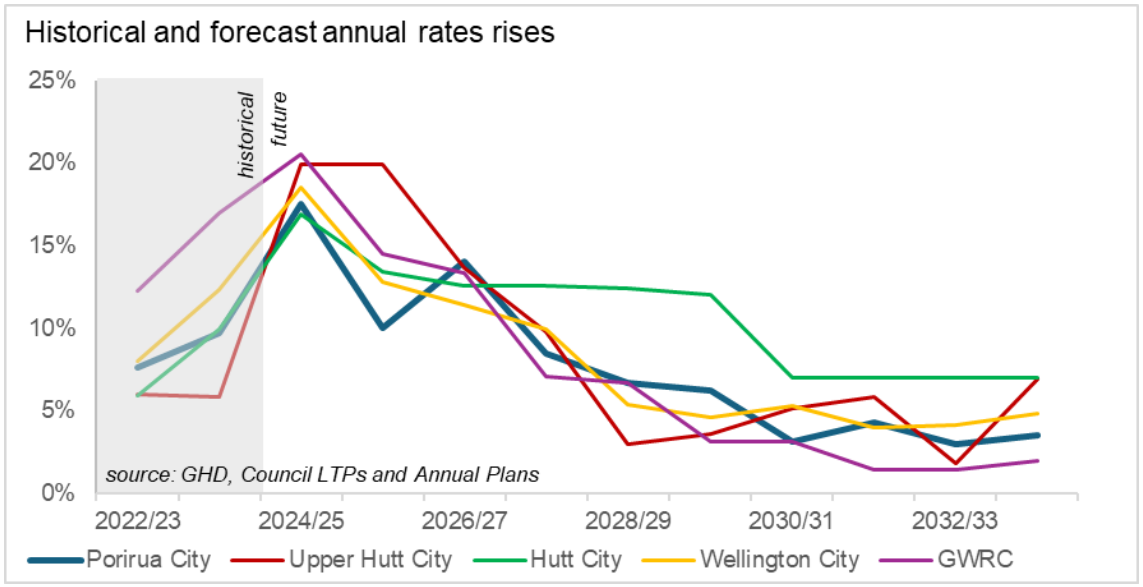
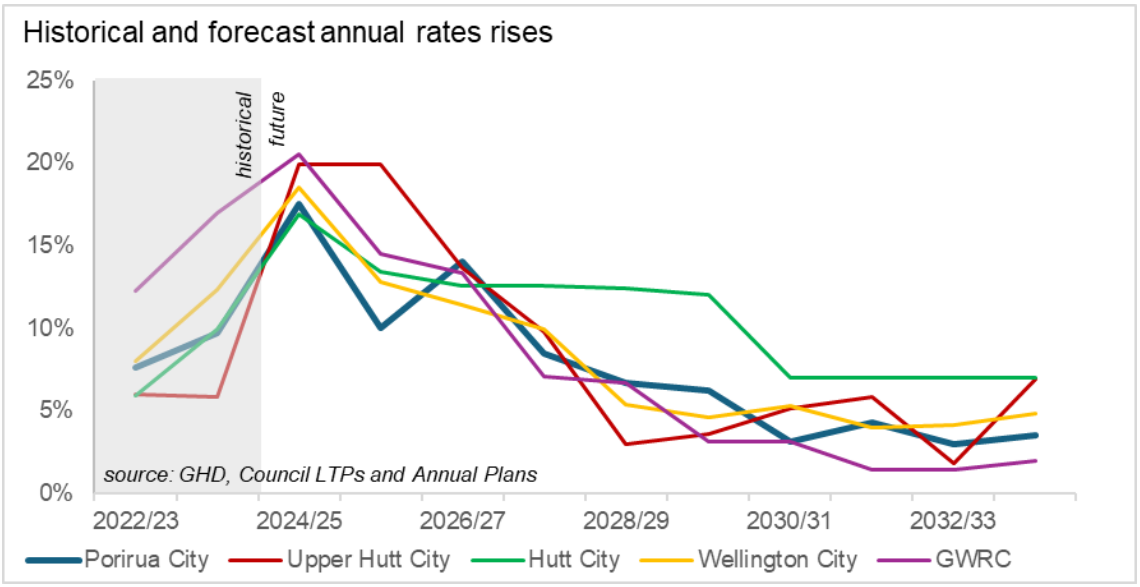


Figure 7. LTP rates rises historically and forecast by council

44 A further point to be noted from



45 Figure 7 is how quickly the pace of rates increases falls away from the high levels anticipated in the first few years. This is a common characteristic of LTPs. With far less certainty over total spending required in the last five years of the period in particular, anticipated spending tends to be optimistically low. In reality, when we reach those later years, rate rises tend to be higher than forecast today. This is a crucial detail in considering how ratepayers will be able to afford costs included in the LTP, let alone those estimated costs associated with their contribution to achieving water quality targets, which are likely to be much higher as I have already pointed out.

46 Using the forecast rate rises in the LTPs, and assuming the average annual percentage increase in household incomes in Wellington over the last 25 years to allow for household income growth in future, I was able to estimate approximate future rates as a share of household incomes, assuming no further rates increases for any reason beyond those already captured in the LTPs.

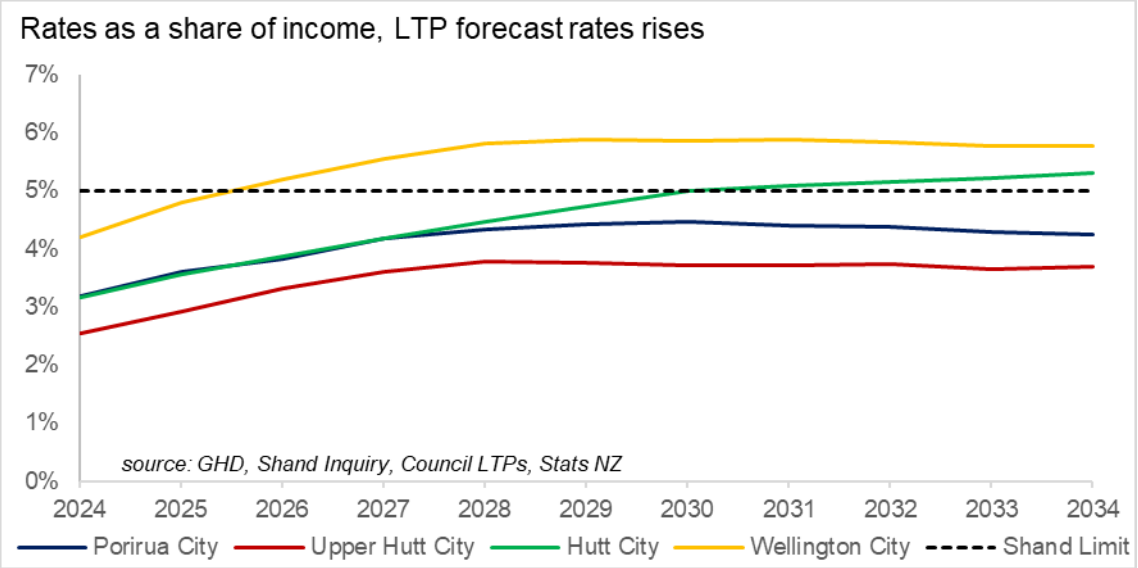


Figure 8. Rates as a share of household income without rates rises beyond those in the LTP

47 In the case of WCC and HCC, rates burdens are already likely to breach the 5% of household income threshold suggested by the Shand Inquiry as a maximum before affordability becomes a challenge. I would reiterate that while Hutt City's forecast for likely rates rises in later years seems more in line with what has happened in recent years, those for Porirua and Upper Hutt seem optimistic. I would anticipate that rates as a share of income could be substantially higher than

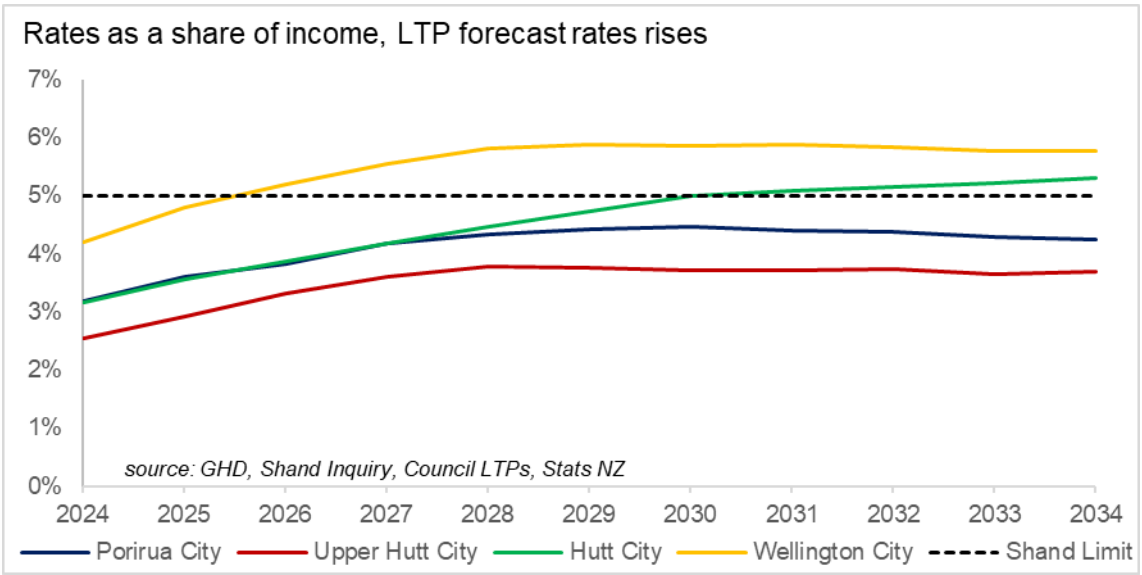


Figure 8 indicates, even without the extra spending required to achieve the TA contribution to the PC1 metals and *E. coli* TAS.

ABILITY OF THE LOCAL POPULATION TO ABSORB RATES INCREASES

48 A further way to consider affordability is to consider the composition of the local population relative to the New Zealand average. When a population is characterised by a high working-age cohort (in New Zealand defined as 15- to 64-year-olds), it is more likely to be able to absorb cost increases because this age group is characterised by higher labour force participation. High proportions of retirees (over-65s) or high proportions of under-15s (where there are fewer working adults per household) indicate potential for greater difficulty meeting the challenge of higher rates bills.

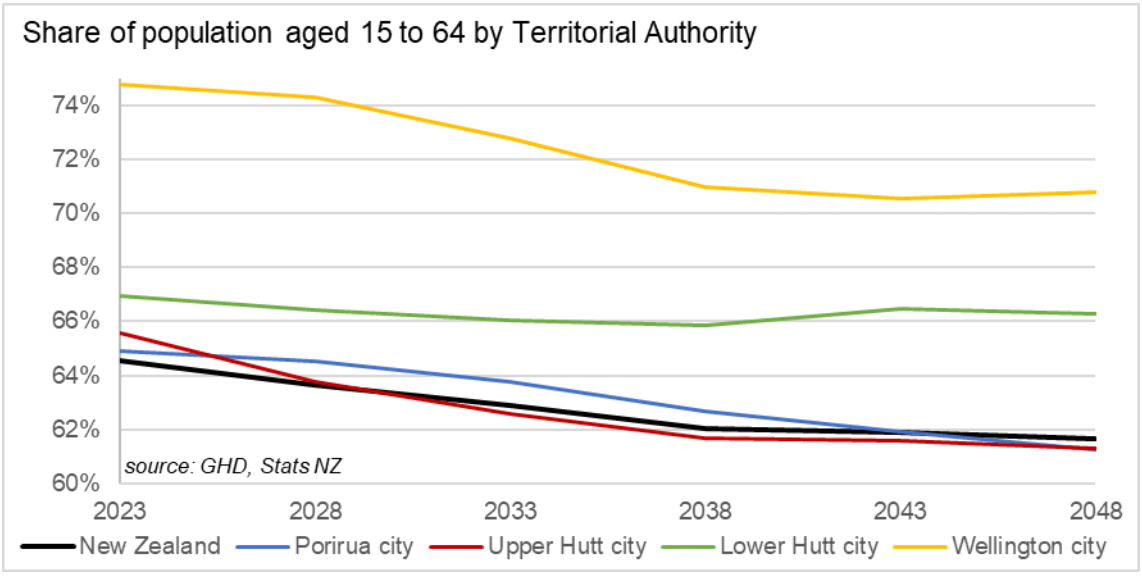


Figure 9. Forecast share of population of working age by council jurisdiction

Share of population aged 15 to 64 by Territorial Authority
74%
72%
70%
68%
66%
64%
62%
60%
source: GHD, Stats NZ
2023
2028
2033
2038
2043
2048
New Zealand
Porirua city
Upper Hutt city
Lower Hutt city
Wellington city

49 Figure 9 illustrates Porirua and Upper Hutt both have population profiles that mirror the

New Zealand average quite closely and are expected to continue to do so over the foreseeable future. On the other hand, Wellington City and Hutt City have higher proportions of working-age people than the other two cities or New Zealand overall, implying a somewhat greater ability to absorb increased costs.

50 However, this fact should be tempered by the scale of cost increase that would be required. At up to a 57% step-change rates increase in the case of Hutt City just to achieve their contribution to achieving the PC1 metals and *E. coli* TAS, excluding ongoing maintenance costs, affordability challenges are likely to emerge, even with Hutt City's population profile.

ACHIEVABILITY OVER PROPOSED AND LONGER TIMEFRAMES

51 Putting to one side the question of affordability, I considered whether the level of capital investment required to achieve the TA contribution to the *E. coli* MRI or the PC1 metals and *E. coli* TAS is achievable within the 16-year timeframe to 2040, and how a longer timeframe (to 2060) may affect this achievability.

52 One way to look at achievability is to consider the step-change required in investment over current levels:

52.1 Over the last four years, around $124 million has been budgeted per year on average across the four TA's for all stormwater and wastewater improvements and renewals capital works. In addition to pipe renewals, this includes any work on wastewater treatment plants, and any improvements in levels of service, such as the $150 million already spent on the Moa Point sludge minimisation facility. In other words, the $124 million overestimates what has been spent in recent years on investments that would contribute toward the *E. coli* MRI or the more stringent PC1 metals and *E. coli* TAS. The figure spent on renewals of the type of infrastructure covered in my evidence contributing to the achievement of *E. coli* MRI and PC1 metals and *E. coli* TAS will be significantly less than $124 million.

52.2 Over 10 years covered by the LTPs, around $147 million per year has been allocated for renewal and improvement of elements of the existing wastewater and stormwater networks. I have already pointed out that the allowance in the LTP for investments to directly tackle water quality improvement will be far

lower because this $147 million includes all sorts of other investments not aimed at achieving water quality improvements sought by PC1 covered in my evidence.

53 While total spending by TAs to contribute to achieving the PC1 metals and *E. coli* TAS could be $5.37 billion at the higher end, some of this estimated cost is for land purchases in the event of wetlands or rain gardens needing to be established in locations where there is not already publicly owned land. The cost of capital works excluding potential land purchases is estimated at $5.22 billion at the higher end.

54 The TA contributions to achieve the PC1 metals and *E. coli* TAS, between $238 million and $326 million of capital spending would be needed each year over the next 16 years (to 2040, black circled points on graph). This is above the average spend on all wastewater and stormwater renewals over the last four years, as demonstrated in

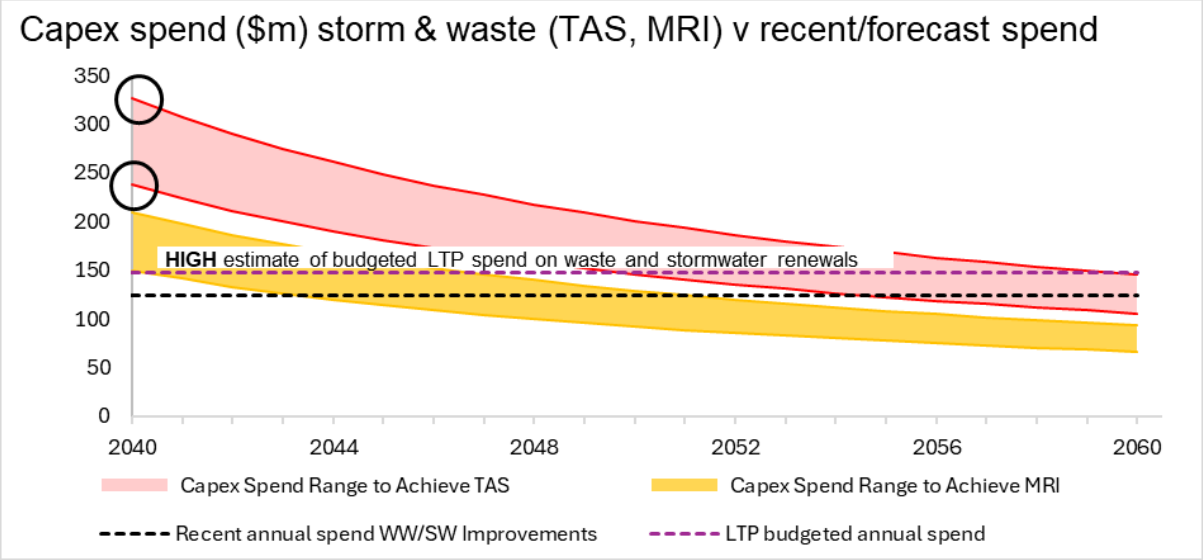


Figure 10. It is also well above what is budgeted to be spent over the next 10 years once LTP line items that do not target water quality improvements are removed from planned renewals spending.

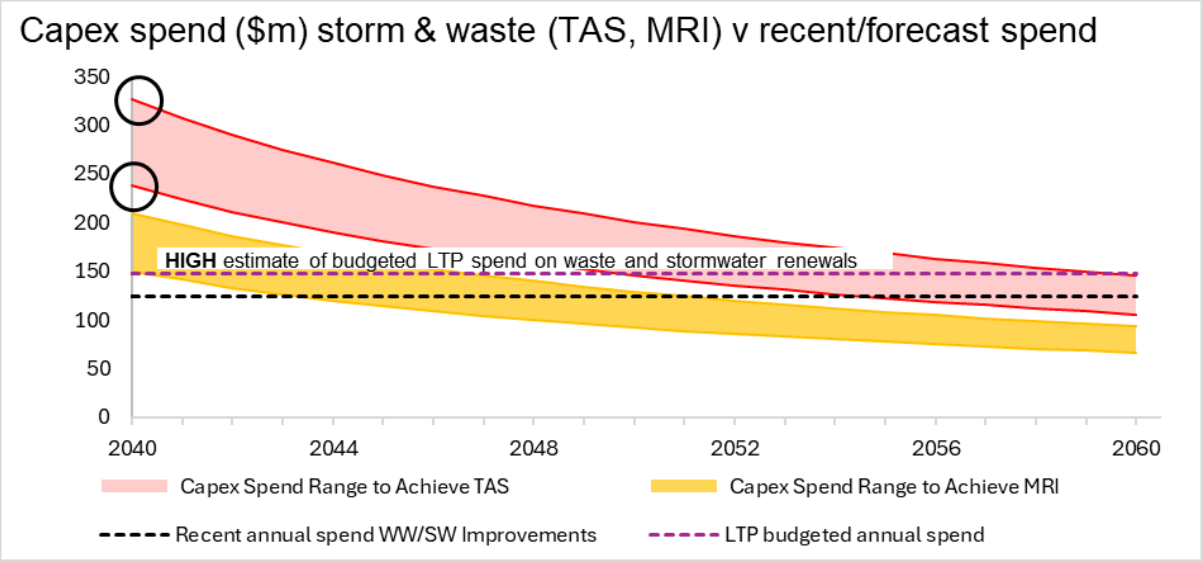


Figure 10. Recent and future LTP spend, estimates for the TA contribution to achieve *E. coli* MRI, metals and *E. coli* TAS

55 Another way to look at achievability is to consider whether Wellington has the workforce to deliver the infrastructure upgrades required. At present, the Wellington Region is characterised by a relatively low proportion of workers in the Heavy and Civil Construction sector. Around 1.5% of the entire New Zealand workforce works in this sector, while in the four TA's, the share of workers in the sector shown in

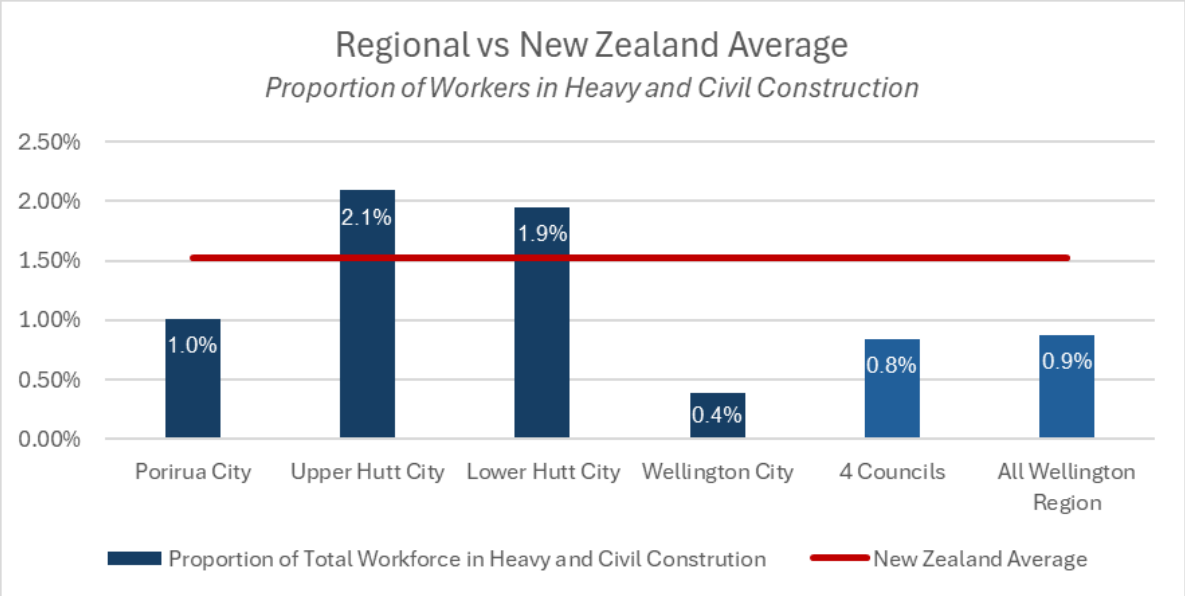


Figure 11 is just 0.8%, slightly lower than the Region-wide figure of 0.9%.

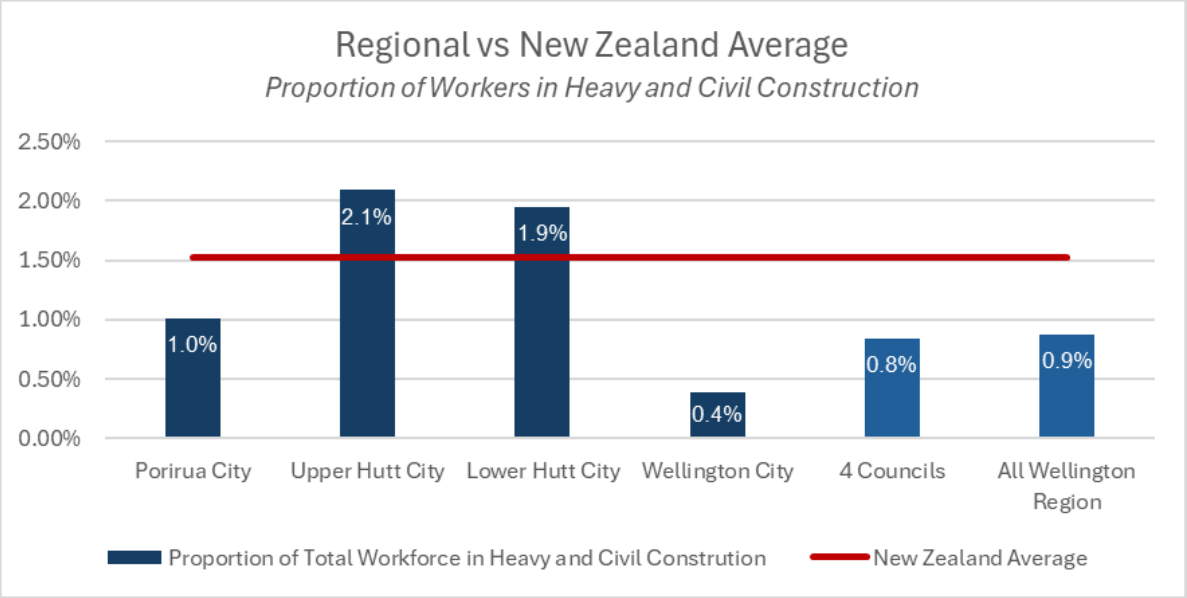


Figure 11. Share of workforce employed in Heavy and Civil Construction

56 The implication is that the Wellington Region already has a relatively low proportion of workers in the sector that would deliver the required infrastructure investment. There would need to be a significant influx of workers into the Heavy and Civil sector in the region to undertake the work as many other parts of the country are also investing to improve water outcomes.

57 Looking at total spend on Heavy and Civil construction in Wellington Region relative to recent spending on stormwater and wastewater renewals in the four councils, I was able to estimate the likely share of total workers in the sector that would be working on stormwater and wastewater renewals work today, and the step-change that would be required to hit the 16-year deadline for achieving the TAS. A step-change in employment of up to 162% (from 100% today to 262%) would be required on wastewater and stormwater renewals projects compared with what has been required recently. Moreover, this step-change would in effect need to be instant to complete the infrastructure upgrades required by 2040.

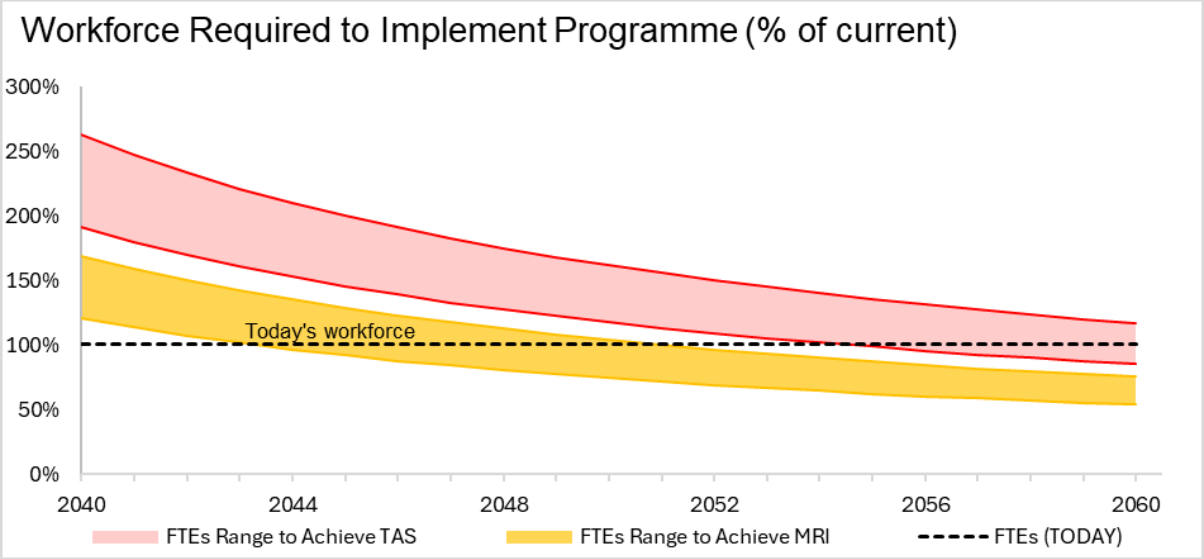


Figure 12. Step-change in workforce undertake the TA contribution to achieve *E. coli* MRI or metals and *E. coli* TAS

58 I would note again that this employment surge is in the context of a small pool of workers in Wellington Region, and that the step-change in wastewater and stormwater renewals of the types proposed in my evidence to contribute to the achievement of *E. coli* MRI or PC1 metals and *E. coli* TAS could be higher than the values in

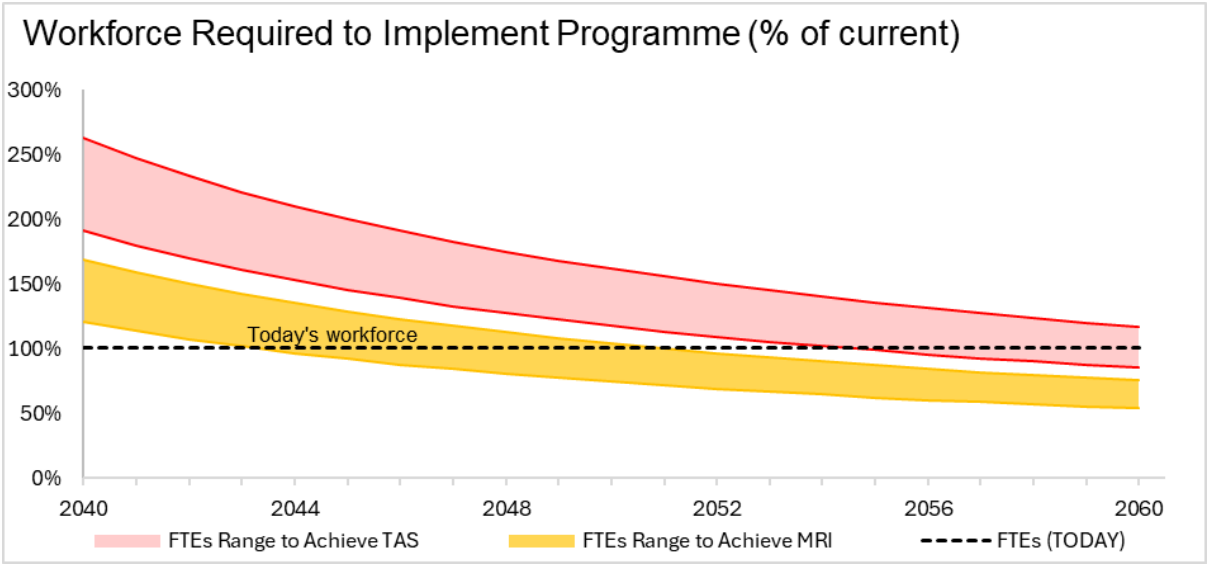


Figure 12. This is because I have compared the increase in spending on wastewater and stormwater renewals needed specifically to reduce metal and *E. coli* loads against the average of all wastewater and stormwater spending on renewals over the last four years.

59 Achieving the *E. coli* MRI would still require a significant step-change in the workforce and the amount of work delivered each year, requiring an increase in workforce of 20% to 69% compared to today's. However, this is more likely to be achievable than for PC1 TAS over a 16-year timeframe.

60 Over longer timeframes, around the 31-year mark, the workforce needed to deliver the capital works to contribute to the achievement of the PC1 metals and *E. coli* TAS will be more similar to the size of the workforce today. I note again that this is not a perfect like-for-like comparison as the recent historical spend also includes other much-needed infrastructure investment that could not be separated out from the analysis.

BENEFITS OF REDUCED *E. COLI* EXPOSURE

61 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).

62 By considering the current, MRI and TAS average *E. coli* risk levels in each pFMU, and the 16-year timeframe to achieve the PC1 *E. coli* TAS, I was able to model the likely reduction in weighted average risk of *E. coli* infection were MRI or TAS to be achieved. To keep it simple, I assume a straight-line pace of improvement from current levels to *E. coli* MRI or TAS over the next 16 years.

63 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

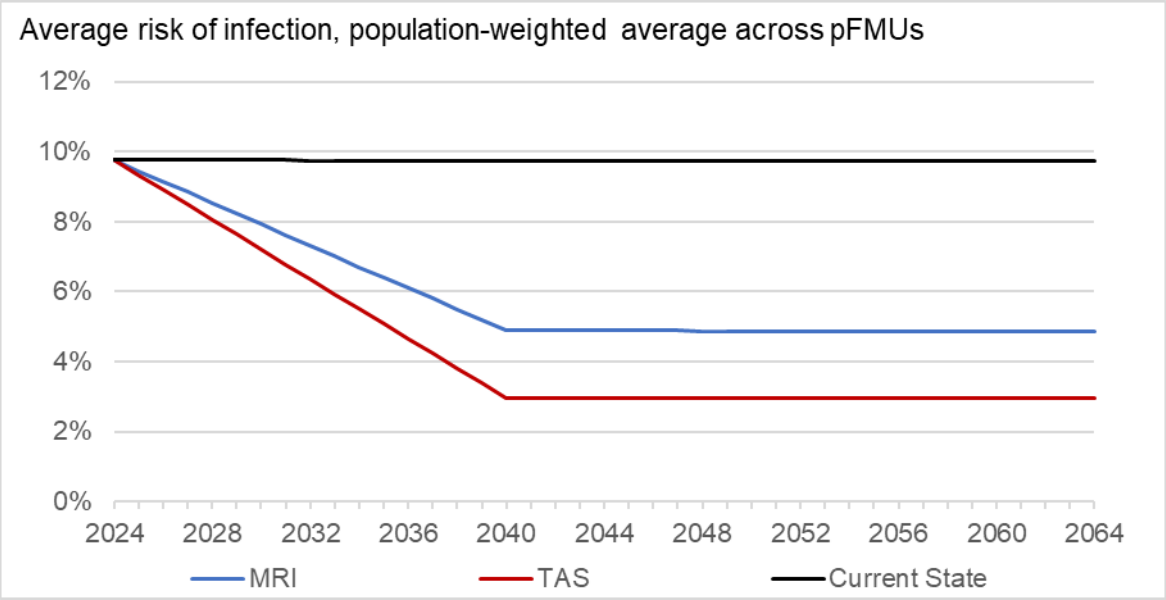


Figure 13.

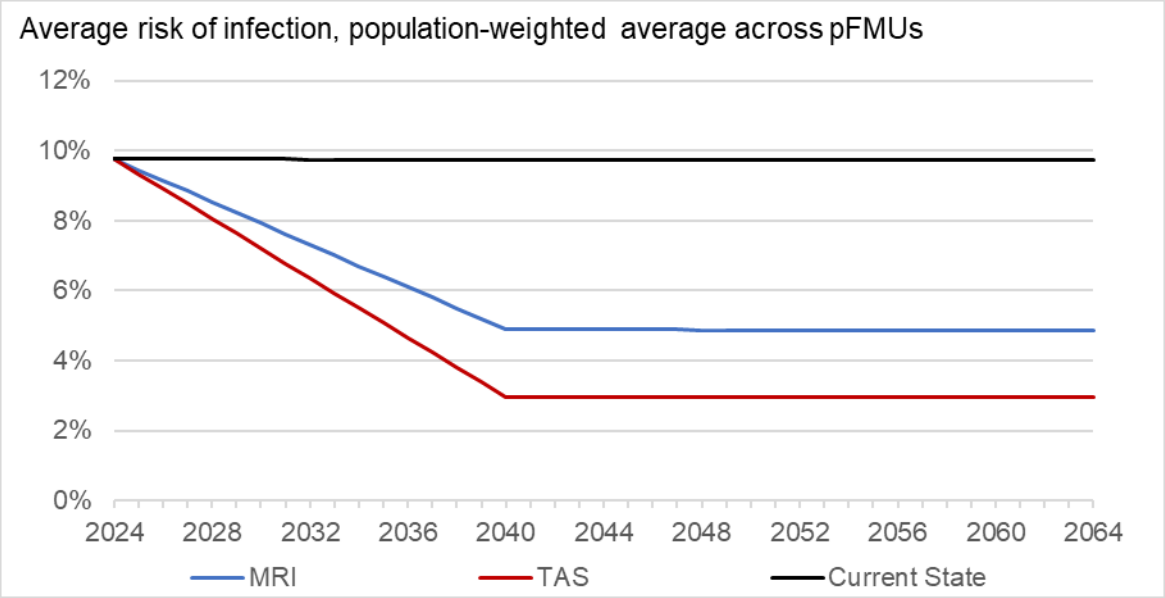


Figure 13. Weighted average risk of infection, Current *E. coli* levels, MRI and TAS

64 Achieving MRI for *E. coli* is expected to result in weighted average risk of infection on an average day to fall to 4.9% by 2040 assuming a 16-year implementation timeframe, around half the current level of risk. Reaching the PC1 TAS would imply a weighted average risk of infection of 3.0% by 2040, less than one-third of current risk levels. Achieving the *E. coli* MRI would reduce risk by about 72% of what achieving the *E. coli* TAS would. The assumption is that once target states are achieved, those improved levels are maintained.

65 Nevertheless, it is important to acknowledge that these are average risks of infection, and even if the *E. coli* TAS are achieved, imply a 1 in 33 chance of being infected by *E. coli* through a "random exposure on a random day" according to the NPS definition.

66 Across the two whaitua, the patterns of improvement suggested by achieving the *E. coli* MRI and the PC1 *E. coli* TAS are similar, as highlighted in

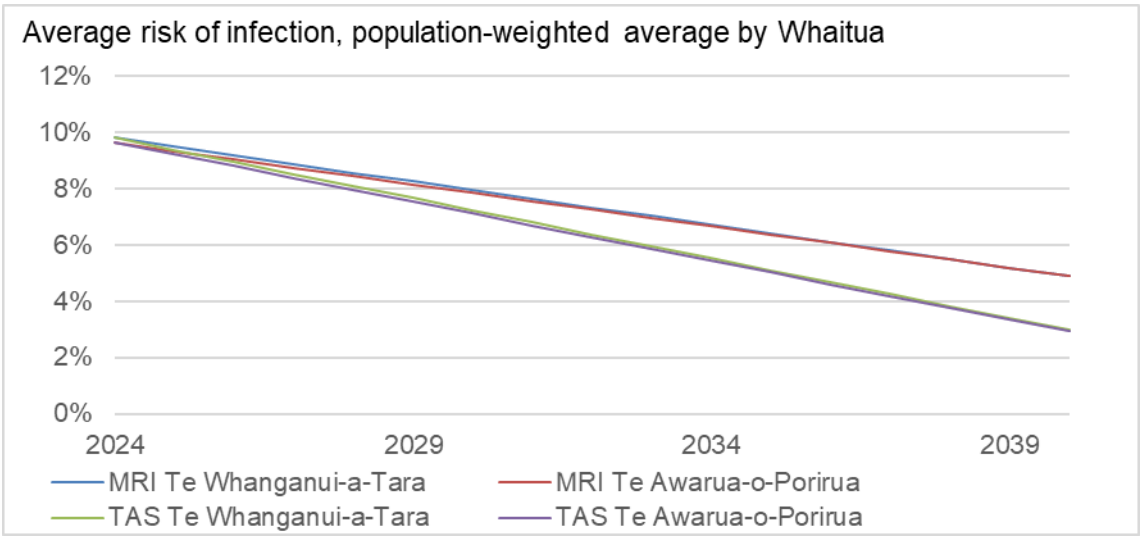


Figure 14.

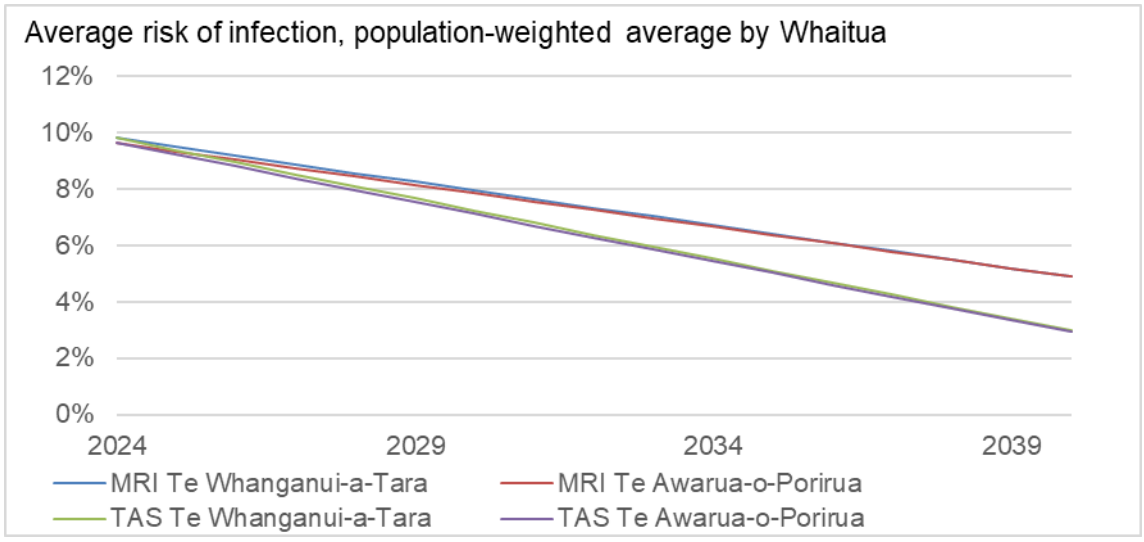


Figure 14. Weighted average risk of infection, *E. coli* MRI and *E. coli* TAS to 2040

67 The whaitua start from similar weighted-average risk of infection and under both the MRI and PC1 TAS targets would see approximately the same level of improvement.

68 The focus of this analysis was on affordability to ratepayers of the proposed targets. While some indication of improved water quality outcomes is provided in Figure 14, it does not answer the question of value for money – whether the environmental, social, cultural and financial benefits outweigh the costs. We would note that work has been done elsewhere in New Zealand on this topic (in the Waikato, for instance) that looked at the value people derive from improved water outcomes, including by ethnicity.[9] This work was used as a

[9] See 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

starting point for analysis of the benefits of improving water outcomes in our previous study.[10] While the Waikato report is now a decade old and was not undertaken specifically in the Wellington Region, it does provide a benchmark for considering the value people place on improved water quality as they consider the trade-offs required to achieve those outcomes.

[10] See section 6.1 in our previous report for instance, accessible here: 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

CONCLUSION

69 I appreciate that this evidence has introduced a lot of large dollar figures and percentages.

Indicator	Estimate	Deliver over 16 years to 2040		Deliver over 36 years to 2060	
		MRI	TAS	MRI	TAS
Estimated construction cost excluding maintenance and servicing ($bn)	Lower	$2.38	$3.80	$2.38	$3.80
	Upper	$3.36	$5.37	$3.36	$5.37
Implied sustained step-change in rates required immediately	Lower	15%	24%	7%	11%
	Upper	22%	35%	10%	15%
Implied step-change in workforce capacity required immediately	Lower	20%	91%	0%	0%
	Upper	69%	162%	0%	17%

Figure 15 summarises the key numbers and the paragraphs that follow discuss the implications of these.

Indicator	Estimate	Deliver over 16 years to 2040		Deliver over 36 years to 2060	
		MRI	TAS	MRI	TAS
Estimated construction cost excluding maintenance and servicing ($bn)	Lower	$2.38	$3.80	$2.38	$3.80
	Upper	$3.36	$5.37	$3.36	$5.37
Implied sustained step-change in rates required immediately	Lower	15%	24%	7%	11%
	Upper	22%	35%	10%	15%
Implied step-change in workforce capacity required immediately	Lower	20%	91%	0%	0%
	Upper	69%	162%	0%	17%

Figure 15. Summary of key data in this evidence

70 There is a significant amount of uncertainty on the true costs of intervention. They could be materially higher or lower than those presented in my evidence, but this evidence provides a strong sense of scale to help decision-making.

71 My evidence has demonstrated that the costs to the four TAs of contributing to the achievement of the PC1 metals and *E. coli* TAS are perhaps as high as $5.37 billion, and up to $3 billion more than achieving the *E. coli* MRI.

71.1 In my professional view, the costs to TAs of contributing to achieving the PC1 metals and *E. coli* TAS by 2040 is both unaffordable from a rates impact perspective and unachievable from a capacity perspective. Average rates could rise by up to 35% sustained for 16 years, while the workforce capacity would need to surge by up to 162% sustained over 16 years. Excluding any servicing and maintenance costs, achieving the TAS could cost up to $5.37 billion.

71.2 If we relax the timeframe to achieve the PC1 metals and *E. coli* TAS to 2060, average rates could still rise by up to 15% sustained for 36 years, while the workforce capacity would need to surge by up to 17% sustained over 36 years.

The longer timeframe allows the costs of improvements to be spread over a longer time period, but does not negate any of the $5.37 billion in spending, nor the maintenance and servicing costs associated with that spending.

71.3 Even achieving the less stringent *E. coli* MRI could require rates to rise by up to 22% sustained for 16 years, while the workforce capacity would need to surge by 20% to 69% sustained over 16 years. Achieving *E. coli* MRI would cost considerably less, at up to $3.36 billion at the high end of estimates, excluding maintenance and servicing costs. This is $2 billion less than the equivalent estimate for the cost of achieving the PC1 metals and *E. coli* TAS.

71.4 If we relax the timeframe to deliver the MRI to 2060, this could require rates to increase up to 10% sustained for 36 years without allowing for maintenance or servicing costs but would be able to be accommodated within current workforce capacity. However, it does introduce the risk of investment being delayed until much later and thus avoiding making genuine improvements in water quality.

72 The demographics of the four TAs covered by the two whaitua suggest that these jurisdictions are at least as well-equipped as New Zealand would be on average to absorb the costs associated with achieving the PC1 metals and *E. coli* TAS.

73 However, when viewed from the perspective of how much rates would need to rise beyond what is already a set of sharp rate rises in the current LTPs, it becomes clear that achieving the PC1 metals and *E. coli* TAS is unaffordable. A step-change in rates bills of up to 72%, sustained for 16 years, would be required, and it is evident that a significant share of these costs have likely not been captured in current LTP budgeting.

74 Further, with other large costs on the horizon for many infrastructure types, it is evident that some councils will breach the 5% threshold deduced by the Shand Inquiry as being a realistic upper threshold for rates as a share of household income. As highlighted, some councils' LTPs imply dramatically lower rates rises in later years, a pattern not reflected in reality in recent years. In fact, rates rises are likely to be higher than currently estimated, meaning more councils may breach the 5% threshold to achieve the TAS.

75 Even if affordability concerns could be dealt with, the scale of the step up in investment to achieve the TAS by 2040 seems ambitious from an achievability perspective. An instant step-change in employment in wastewater and stormwater renewals of up to 160% would be required to achieve the TAS in 16 years if the scale of intervention required is closer to

the high end. Spending by the four TAs on wastewater and stormwater renewals of the types covered in my evidence would have to be significantly higher than the average over the last four years, and far more than is budgeted per year over the next 10 in the LTPs.

76 Achieving the *E. coli* MRI or PC1 *E. coli* TAS will reduce the risk of *E. coli* infection. Achieving the *E. coli* MRI will achieve around 72% of the risk reduction across measurement points that would be occur by achieving the PC1 TAS in the 16-year timeframe to 2040.

DATE: 28 FEBRUARY 2025

DAVID ADRIAN WALKER
BUSINESS ADVISORY MARKET LEADER
GHD NEW ZEALAND AND PACIFIC