



**SOUTH WAIRARAPA
DISTRICT COUNCIL**
Kia Reretahi Tātau

South Wairarapa District Council

Three Waters Capital Programme Assurance Report

May 2025

Document status

Job #	Version	Written	Reviewed	Approved	Report Date
3020	1	Cushla Anich and Evan Ou Yang	Stuart Cross	Cushla Anich	14 May 2025
3020	2	Cushla Anich	Evan Ou Yang and Stuart Cross	Cushla Anich	22 May 2025
3020	3	Cushla Anich and Evan Ou Yang	Stuart Cross	Cushla Anich	27 May 2025

Contents

Overview	1
Introduction	1
Background	1
Review scope	1
Review approach	1
High level findings	3
Validation of the capital programme	3
Terms used	3
Service delivery models	4
Wellington Water's cost estimation	5
Project contingency and funding risk allocations	6
Capital projects cost structure	7
Deep dive on two projects	8
Featherston Watermain Renewals – OPC101521	8
Greytown WWTP Consent Compliance Upgrade – OPC101647	9
Conclusions	10
Key observations	10
Recommended next steps	11
Appendix A Information reviewed	12
Appendix B WWL Cost Estimation Manual Extracts – Section 6, Contingency and Funding Risks	14
Methodology	14
Simple Approach	15

Overview

Introduction

Morrison Low has been engaged by South Wairarapa District Council (Council / SWDC) to undertake an assurance review of its three waters capital programme. This is to provide assurance to Council that their project costs are reasonable and comparable with industry standards.

Background

SWDC is concerned that the cost of its three waters capital programme prepared by Wellington Water (WWL) for the 2024 Long Term Plan is too high. SWDC is joining with the three other Wairarapa councils to form a regional water Council Controlled Organisation (CCO). The partner councils are concerned that the capital forecasts are too high and have low confidence in the cost estimates prepared by WWL. There has also been intense media attention recently on WWL's contractor costs being above industry standards.

Review scope

The review scope was confirmed with Council's Group Manager Infrastructure and Community Operations on 8 May 2025 and includes:

- Comparison of the cost structure with the industry standard to understand if it is reasonable.
- Water supply and wastewater capital programmes covering only network renewals and plant upgrades.
- Covers capital renewals and upgrade projects.
- Forward looking projects and programmes.

The review exclusions are:

- Operational expenditure.
- Stormwater assets.
- Reviews of completed projects.
- Reviewing the programme justification.

Review approach

Our overall approach to reviewing the three waters capital programme is summarised in the figure below.

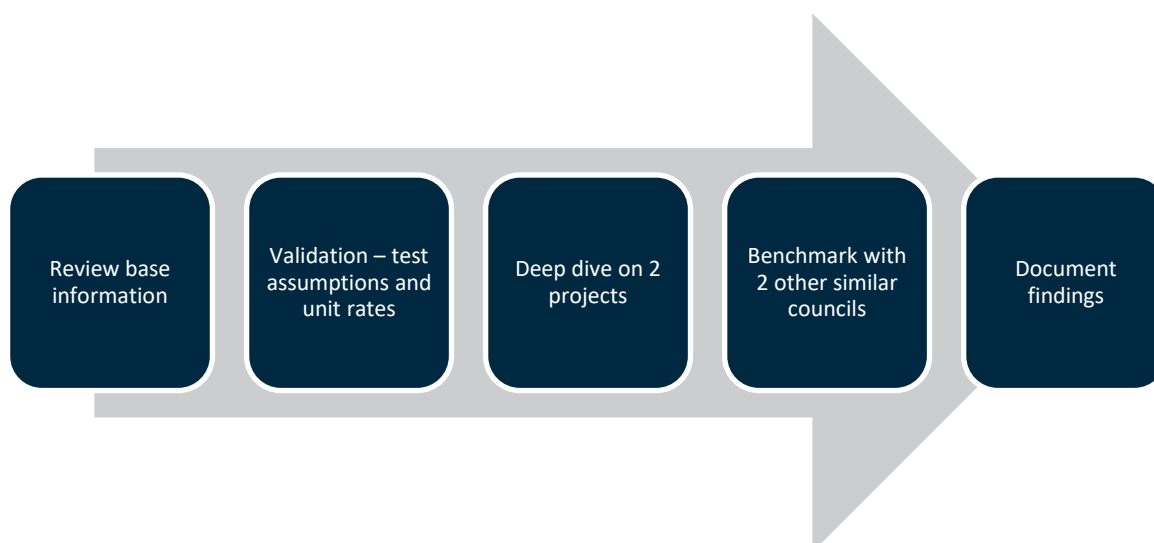


Figure 1 Overall approach to reviewing the three waters capital programme

The approach adopted as part of our assurance review was:

- Validation of capital programme - including unit rates to develop the programme and costs breakdown.
- Deep dive on two capital projects – one water supply and one wastewater. The two selected projects were:
 - Featherston watermain renewals.
 - Greytown WWTP compliance upgrades.
- Benchmarking with similar sized councils - one in the Wairarapa and one from another region. The two selected councils were:
 - Carterton District Council (CDC).
 - Hauraki District Council (HDC).

This high-level review was based on:

- Discussions and correspondence with Council’s three waters staff on 8 and 9 May 2025.
- Review of information provided by Wellington Water including project plans and advisory memos. Refer to Appendix A for the detailed list.
- Interviews with benchmarking councils:
 - 13 May 2025 for Carterton District Council.
 - 12 May 2025 for Hauraki District Council.
- Updated the draft Assurance Review Report following Wellington Water’s feedback received on 20 May 2025 (based on their review of the draft report dated 14 May 2025).
- Updated the draft Assurance Review Report following:
 - Council’s feedback as discussed on 22 May 2025.
 - Clarification on the 9% corporate rate on 23 May 2025 (confirmed that this rate was unrelated to 3 waters capital programme managed by WWL).

High level findings

Validation of the capital programme

Terms used

There were various terms used with preparing cost estimates for Council as summarised in the table below. This is not intended to be a comprehensive list but to help with the language used with developing the Three Waters Capital Programme for this assurance review.

Table 1 Summary of terms

Term	Description
Annual recurring projects	These are placeholder capital budgets covering reactive renewals, modelling and global consenting.
Base Estimate	The total sum of the elements that make up an estimate, including provisional sums. This includes physical works / contractor costs, design consultant, project management and other costs such as legal, consenting, procurement. It excludes contingencies and escalation, and Wellington Water's management fee.
Cost Estimate Manual	WWL's manual provides instructions on how to provide and record cost estimates. It uses the concept of risk-based cost estimating for applying to all capital projects.
Contingency	A financial provision for risks and is added to the Base Estimate. WWL uses 40% contingency for Level One Estimates.
Estimate Types	WWL uses Level 0 to 4 estimate types, dependent on their position in the project lifecycle.
Funding Risk	An additional provision for known / unknown risk between the Expected and 95 th Percentile Estimates. There is a 95% probability that the final out-turn cost will be less than the 95 th Percentile Estimate. WWL uses 60% Funding Risk for Level One Estimates.
Panel Management Fee	WWL's panel management fee was 2.15%, covering the administration of the consultant's panel. We understand that WWL has now disestablished the Panel Lead and sub-consultant arrangement.
Strategic Advisory memos	WWL provides Stage 1, 2 and 3 Strategic Advisory memos to Council regarding their three waters operational and capital expenditure budgets to support the Long Term Plan process. The memos identify timing issues and risks with investment decisions.

Term	Description
Unit rate	Contractor's cost for physical works based on a quantity such as length (i.e. watermain length per metre) or at asset component level (i.e. inlet screen provision).
Wellington Water's management fee	WWL allocates a 10% cost to all capital projects for the overall programme management of the capital programmes, including providing Strategic Advisory memos. Note that a 6% rate was applied to the capital projects sighted for this review.

Service delivery models

SWDC and the two benchmarking councils operate under different service delivery models for three waters as summarised in the table below. These differences are important to understand as they impact how the capital programme is developed and delivered.

It is acknowledged that councils use different engineering and construction standards. It is noted that NZS 4404:2010 Land Development and Subdivision Engineering is a key document under the Wairarapa Combined District Plan 2019 which covers SWDC and CDC. It has been assumed that these three councils follow good industry practice throughout the project lifecycle. This includes as-built preparation and the operationalising of the capital projects. However, the assurance review did not compare these practices as the focus was on cost estimation and not project quality.

Table 2 Service delivery model summary

Council	Current service delivery model
CDC	CDC operates a hybrid model. The upfront investment planning, including asset management, is undertaken in-house. External specialists are used as required such as preparing concept design cost estimates. For network renewals, CDC has engaged: - G&C Diggers for the physical works under a long term network renewal contract (seven years). - Calibre consultants for the professional services contract. For the current treatment plant upgrade, CDC has adopted a design building procurement methodology. There is an independent Engineer to the Contract (external consultant). Project management is generally undertaken in-house including: - One dedicated project manager across all Council activities including three waters. - Infrastructure Services Manager for three waters knowledge and advice including procurement.

Council	Current service delivery model
HDC	HDC also operates a hybrid model. The functions undertaken in-house include: • Upfront investment planning including asset management. • Project Management Office. • Engineering design team. • Works Unit. External consultants are used on a 'case by case' basis and depend on the project complexity. The Works Unit undertakes routine physical works but not large plant upgrades. They have limits on how much work can be delivered. Internal workshops are used to gather knowledge from the PMO, asset managers and operations for preparing high level cost estimates. Base physical costs collated by the PMO are also used in preparing the cost estimates. Business cases are also used to inform the budget planning process (where these have been prepared).
SWDC	SWDC became a shareholding council of Wellington Water Ltd (WWL) on 1 October 2019. Wellington Water is responsible for managing and providing three waters services to Council. It provides planning, advice, design, project and operations management, maintenance, and monitoring relating to 3 water assets and services. It advises Council on investment priorities in its planning processes. SWDC makes the final decisions on investment. Historically SWDC has taken a hands-off approach under this arrangement. Information received from WWL has not always been actively scrutinised by SWDC as the client and asset owner. We understand that SWDC is taking the project management of the three water capital projects back in-house from Wellington Water from 1 July 2025. WWL was formally notified on 6 May 2025 that SWDC is removing the capital renewals and capital projects and returning them to manage directly.

Wellington Water's cost estimation

Wellington Water has an established method for cost estimation, as outlined in its Cost Estimation Manual requirements. Where projects are at early stages of development, there is a large degree of contingency and funding risk applied. There are references to different levels of cost estimates throughout this report with their corresponding risk allocations. Refer to Appendix B for details.

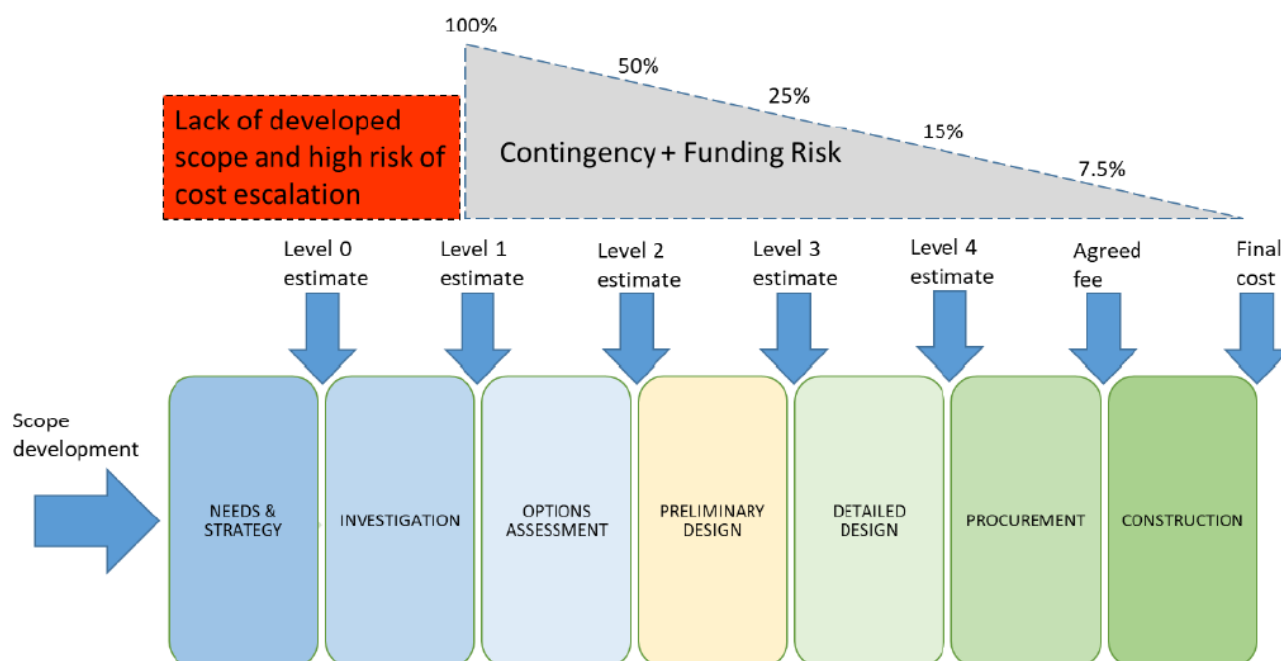


Figure 2 Illustration of scope and estimate development with contingency and risk

Project contingency and funding risk allocations

The table below shows the percentage of risk allocation SWDC and the two benchmarking councils apply to the projects. It is noted that all WWL's projects that we reviewed have only adopted the 'Simple Approach' whereby the level of contingency and funding risk is allocated based on the different types of estimate.

Table 3 Contingency allocation

Organisation	Contingency - % of Project Cost
CDC	Approximately 50% initially at early cost estimation and would reduce to 20% as risks are better understood through early investigations.
HDC	At least 10% for construction projects, which may be more in some cases, depending on the project's scale and complexity. HDC does not apply a fixed contingency percentage but assessed on a 'case by case' basis. Depending on how well scoped the project is, they use the following cost estimate ranges: - Project management fee – 5 to 10%. - Design and others professional inputs – 8 to 12%. - Contingency – 10 to 15%. A current water supply capital project was provided (\$3.1m total budget) for comparison with the cost estimate allocation as follows: - Project management fee at 5%. - Internal costs (to be capitalised as part of the project) <1%. - Professional services at 3%.

Organisation	Contingency - % of Project Cost
	- Construction at 82%. - Other costs – consenting, legal etc <1%. - Contingency at 10%.
SWDC	As per Wellington Water’s Cost Estimation Manual. Refer to Appendix B for the extract of the calculation methodology. Wellington Water uses 40% contingency and 60% Funding Risk for Level One Estimates.

Based on the interviews with CDC and HDC, it is acknowledged that they have different approaches to allocating project contingency, with decisions predominantly based on the scale and complexity of the project. The risks are generally managed by:

- Sound upfront planning and undertaking risk assessment based on three waters knowledge. The level of contingency applied would be dependent on the level of risk.
- Reduce uncertainties at an early stage by investing in investigations before developing the cost estimates.
- Cost estimates are reviewed by independent subject matter experts or through group discussions / moderations before finalising.
- Risk mitigation is proportional to the project complexity rather than the project value.

Capital projects cost structure

Based on the findings from our review, Wellington Water’s capital project cost estimate (with Simple Approach) would generally consist of the following items:

1. Estimated consultancy fee – projects could include multiple consultants.
2. Consultancy’s panel management fee – expensed at 2.15% of the overall consultancy fee estimate for the projects reviewed (noting this panel arrangement has since been disestablished).
3. Provisional sums for other professional services as required.
4. Estimated construction costs, including provisional sums as required (we note that there would also be a component of Fulton Hogan’s alliance cost, but this has not been verified from the documents provided).
5. Wellington Water’s management fee, a 6% blanket rate applied to items 1-4 (collective) above for the projects sighted.
6. Percentage of contingencies applied to items 1-5 (collective) above, depending on the estimate type.
7. Percentage of funding risk applied to items 1-6 (collective) above, depending on the estimate type.

It is noted that the application of item 7 (funding risk) is explicitly related to Wellington Water’s costing methodology, which was not observed at the two benchmarking councils. CDC and HDC would also have a fee component for project management and contingencies (i.e. items 5 and 6).

Our findings indicate that:

- The 6% management fee component is at a reasonable level and consistent with industry practice (such as Watercare's contract with Waikato District Council and HDC's project management fee).
- The 10% management fee component is considered at the higher end of industry practice.
- However, the contingency component is significantly higher at the early stages of cost estimates, and there is no Funding Risk applied by the other councils.

Collectively, the level of contingencies and funding risk allocation applied at the early stages of a cost estimate could account for over 100% of the project's base cost (i.e. doubling the overall cost estimate). The application of these hefty contingencies and funding risk allocation is based on the theoretical concept of risk-based cost estimating rather than sound three waters knowledge.

Deep dive on two projects

The following two subsections outline the key findings from a detailed review of two capital projects. From our industry experience, watermain renewal projects are considered simple in terms of risk, compared to treatment plant compliance upgrades that are considered complex. The Cost Estimation Manual does consider risk at profile level and only project cost value but not project complexity.

Featherston Watermain Renewals – OPC101521

The project has a cost estimate of \$5.77 million¹, covering 2,267m of pipe renewal based on the project management plan. Approximately 10.8% of the cost estimates are associated with consultancy fees, and 6% are associated with WWL's management fee. This equates to a lineal metre replacement rate of around \$2,550 per metre.

When interviewing with CDC, this replacement cost appears to be consistent with their watermain renewal cost of around \$2,700 per metre. This includes the watermain renewal and installing new ridermain to remove laterals across the road carriageway, so it is a modern reticulation system.

However, we note that SWDC's capital programme has budgeted \$7.6 million for the project. We are unable to verify the origin of this variance. However, the estimate may have been revised after WWL received a detailed design report with a Level 4 cost estimate. According to WWL's cost estimation manual, a Level 4 cost estimate should also account for a 5% project contingency and a 10% funding risk.

A \$7.6 million budget (as final figure in the capital programme) is significantly higher than the original estimated amount of \$5.77 million. Assuming there have been no changes to the scope of work, at \$7.6 million, this would equate to a lineal metre replacement rate of around \$3,350 per metre, which is significantly higher than CDC.

The Featherston Watermain Renewals project also utilises two consultancies (Stantec and Calibre), as well as WWL management. This is inefficient use of resources for a relatively simple project and not consistent with the two benchmarking councils and good industry practice.

We understand that the use of two consultants as well as WWL was driven by the consultant panel structure. Wellington Water (up until recently) operated a Panel Lead and sub-consultant arrangement. For the Featherston Watermain Renewal Project, Stantec was the Panel Lead and Calibre (now Egis) their sub-

¹ Construction is estimated at \$4.83 million and as based on Stantec assessed rates from initial project management plan preparation.

consultant. Calibre delivered the project management and design services with Stantec providing administrative services. WWL has now disestablished the Panel Lead and sub-consultant arrangement (as noted in Terms Used Section).

Greytown WWTP Consent Compliance Upgrade – OPC101647

The project has a Level 1 cost estimate of \$21.8 million for the first ten years (from 2022/23 to 2031/32) based on the project management plan. In accordance with WWL's Cost Estimation Manual, a Level 1 cost estimate would also include a 40% project contingency and a 60% funding risk.

We can confirm that these additional allowances have been included in the cost estimate, totalling approximately \$12.1 million, which represents 55.5% of the total cost estimate. Whilst this allocation aligns with WWL's approach of estimating contingencies and risks, this level of allowance is significantly higher than that of the two benchmarking councils.

Council's ten-year capital programme (from 2024/25 to 2033/34) has been budgeted at \$20.1 million for the project over nine years, demonstrating that the same level of investment has been adopted based on WWL's recommendation. In our opinion, the project cost estimate could have been moderated prior to adoption, given its high level of cost uncertainty. Provided that the project estimates also include a bespoke solution, we are unable to benchmark the rates, as the project was only estimated at a high level without any detailed cost breakdowns.

Based on WWL's Cost Estimation Manual, the level of contingency and funding risk allocation would reduce as the scope development progresses over time (refer to Figure 2), as costs become more certain. We are uncertain how this would be reflected in Council's budget on an annual basis or in the longer term (if any). If there are significant variances between estimates and agreed project costs, it could potentially have adverse implications on project funding or Council's rates.

Conclusions

This section outlines our key observations and the recommended next steps from our high level review.

Key observations

Based on the detailed capital programme provided by WWL, we note the below at a programme level:

- There are cost inconsistencies between the programme and the project documents provided by WWL. Most probably, these projects have received a revised cost estimate since the time documents were generated.
- Most capital projects would account for a certain degree of contingency and funding risk in their cost estimates. The level of allowance would depend on the type of estimate at different stages of scope development.
- The application of funding risk allocation is explicitly related to WWL's costing methodology, which differs from that of the two benchmarking councils. Together with contingency allocation, they could account for over 100% of the project's base cost at the early stage of the cost estimate.
- Risk assessment is broadly based on project value and high level risk profile, and not necessarily proportional to the project complexity.

Based on our findings from the deep dive on two projects, we note the following at the project level:

Featherston Watermain Renewals:

- The renewal rate per lineal metre is more comparable to CDC's when excluding the additional costs, such as contingency and funding risk allocation.
- The Featherston Watermain Renewals project uses two consultancies plus WWL management. This is inefficient use of resources for a relatively simple project and not consistent with the two benchmarking councils and good industry practice. It is acknowledged that this was driven by the consultant panel structure which has now been disestablished.

Greytown WWTP Consent Compliance Upgrade:

- The allowance of contingency and funding risk allocation represents 55.5% of the total cost estimate (i.e. a Level 1 cost estimate). This level of allowance is significantly higher than that of the benchmarking councils, and possibly overstating the project cost.
- The level of contingency and funding risk allocation would reduce as the scope development progresses over time as costs become more certain. However, we are not able to verify how this would have an impact on Council's budget on an annual basis or in the longer term.

Recommended next steps

The next steps for finalising the assurance review are:

1. Council is to:
 - Implement the learnings to improve the process robustness with three water capital project planning and delivery.
 - Set up an in-house project management function aligned to good industry practice appropriate for a small district council.
2. Morrison Low is to:
 - Provide the updated Review Report including feedback from Wellington Water for Council's consideration.

Appendix A Information reviewed

Table 4 Summary of information reviewed

Organisation	Date provided	Information provided
HDC	26 May 2025	Example current capital project - Kerepehi raw water storage tanks (by email).
SWDC	9 May 2025	Detailed Design Report Tauwharenikau Pipeline Crossing (December 2024)
		Greytown WWTP Consent Compliance Upgrades (12 August 2022)
		Greytown WWTP Upgrade Cost Estimate with Timings (spreadsheet)
		Martinborough WWTP Consent Compliance Upgrade (12 August 2022)
		Martinborough WWTP Upgrade Cost Estimate with Timings (spreadsheet)
		Project Management Plan Martinborough WWTP Consent Compliance Upgrades (14 May 2024)
		Project Management Plan Greytown WWTP Consent Compliance Upgrades (15 May 2024)
		Project Management Plan Featherston Watermain Renewals (28 March 2023)
		SWDC FY 24-34 Annual Recurring (spreadsheet)
	12 May 2025	Wellington Water Cost Estimation Manual (September 2022)
		SWDC Stage 3 Reconciliation (February 2025)
	13 May 2025	South Wairarapa Project Day – 5 projects only (spreadsheet)
	14 May 2025	Appendix B Level 1 Cost Estimate (Waiohine WTP Phase 3)
		Featherston Watermains Cost Estimate Report Calibre (spreadsheet)
		Featherston pH Correction Level 0 Cost Estimate Reinforced Concrete (spreadsheet)

Organisation	Date provided	Information provided
		Featherston Watermain Level 0 Cost Estimate (spreadsheet)
		Featherston Watermain Level 1 Cost Estimate (spreadsheet)
		Greytown WWTP Cost Estimate v4 (pdf)
		Martinborough WWTP Cost Estimate v4 (pdf)
		Waiohine pH dosing upgrade Level 4 Detailed Design Cost Estimate Beca (pdf)
Wellington Water	6 May 2025	SWDC Preliminary Advice Memo for proposed three waters capital and operational expenditure budgets for 2024 LTP (26 November 2025)
		SWDC Advice Memo for proposed three waters capital and operational expenditure budgets for 2024 LTP (25 February 2025)
		SWDC Stage 3 Advice Memo (28 April 2025)
		SWDC Water Services AMP (29 April 2025)
	21 May 2025	WWL high level feedback on South Wairarapa District Council – Three Waters Capital Programme Assurance Report (20 May 2025)

Appendix B WWL Cost Estimation Manual Extracts – Section 6, Contingency and Funding Risks

Methodology

The following schematic shows the methodology that shall be used to calculate Contingency and Funding Risk values and the various stages of the project life cycle:

Cost Estimate ¹ and Risk Profile Bands				
Estimate Type	<\$50k and No high or extreme risks.	>\$50k - \$5M or 1 or more high or extreme risks	>\$5M - \$10M or 5 or more high or extreme or unusual risks	>\$10M
Level Zero, or Level One	Simple	Simple	Simple	Simple
Level Two	Simple	General	General or Advanced	General or Advanced
Level Three	Simple	General	General or Advanced	Advanced
Level Four	Simple	General or Advanced	Advanced	Advanced
Construction	Simple	General or Advanced	Advanced	Advanced

¹ Cost bands are based on the Expected Estimate of the construction phase. Risk rates as defined by Wellington Water risk management process

Simple Approach

The applied contingency represents an average allowance: it is estimated with an assumption of a 50% chance of being exceeded. In the absence of better information, the following table provides suggested contingency and funding risk rates:

Table 5 Suggested contingency and funding risk rates

Estimate Type	Project Contingency	Funding Risk
Level One	40%	60%
Level Two	20%	30%
Level Three	10%	15%
Level Four	5%	10%
Engineer's Estimate	3%	4.5%

The contingency is added to each of the elemental costs to give the total project Expected Estimate. The funding risk is added to the Expected Estimate to give the 95th Percentile Estimate i.e. The Base Estimate plus Contingency equals the Expected Estimate. The Expected Estimate plus the Funding Risk equals the 95th Percentile Estimate.