This AECOM report (Analysis of Panel Costs and Valuation Unit Rates) was commissioned by Wellington Water. It presents information comparing costs of service provision against a range of benchmarks for the following Wellington Water collaborative panel contracts:

• Operations and maintenance (O&M) “Alliance”.

• Capital works contractor panel.

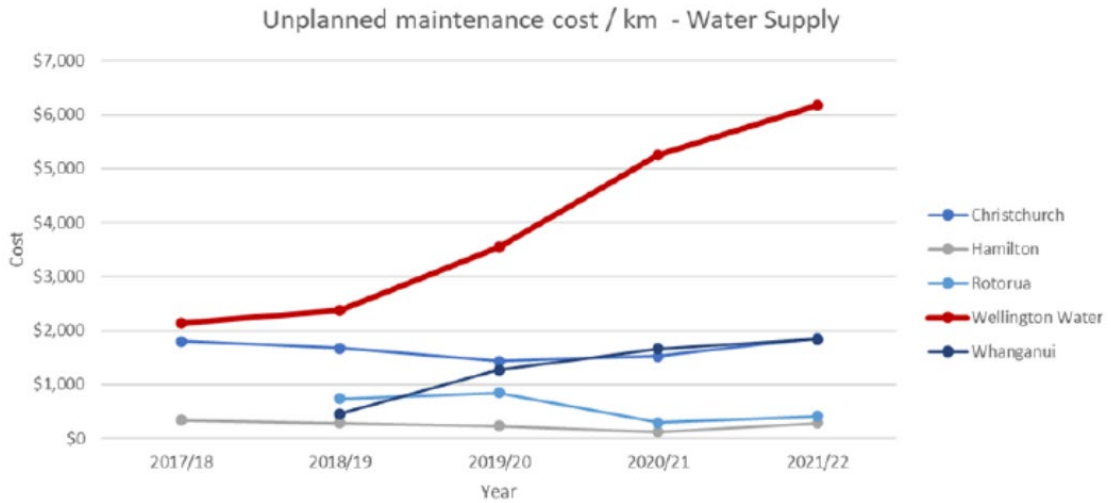
• Consultants panel.

Please note, Wellington Water has confirmed with the authors of the report (AECOM) that it is incorrect to take from the below ‘Unplanned Maintenance graph’ (also found on page 2 of the report) that the cost of a Wellington Water maintenance job is three times more than other comparable councils.

The graph does not show the cost per job. It shows the total unplanned maintenance expenditure on water supply per km of network length.

The age and poor condition of the region's network means that it requires a high number of reactive repairs (i.e. leak fixes) per kilometre, when compared to other councils. Therefore, the increase in spend shown on the graph reflects the increase of reactive repairs that Wellington Water has had to do to maintain an aging network.

Old infrastructure tends to break more frequently and is more expensive to fix. The cost of individual work is a factor in the overall figure, but it cannot be said it is the primary driver of the increasing unplanned maintenance cost. The review excluded assessment of contractor efficiency, although the report notes Alliance labour and plant rates are fair and reasonable compared to the competitive industry charges, and, if anything, appear to be somewhat low.



Prepared for
Wellington Water Ltd
Co No.: 09374382

Analysis of Panel Costs and Valuation Unit Rates

17-Feb-2025

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Analysis of Panel Costs and Valuation Unit Rates

Client: Wellington Water Ltd

Co No.: 09374382

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			Name/Position	Signature
A	04-Dec-2024	Initial draft findings for client information	[redacted] Director, Advisory	
0	14-Jan-2025	Final draft for Client comment	[redacted] Director, Advisory	
1	14-Feb-2025	Final	[redacted] Director, Advisory	[redacted]
2	17-Feb-2025	Final, amendment made to metric C2 commentary	[redacted] Director, Advisory	

Table of Contents

Executive Summary

This report presents information comparing costs of service provision against a range of benchmarks for the following Wellington Water collaborative panel contracts:

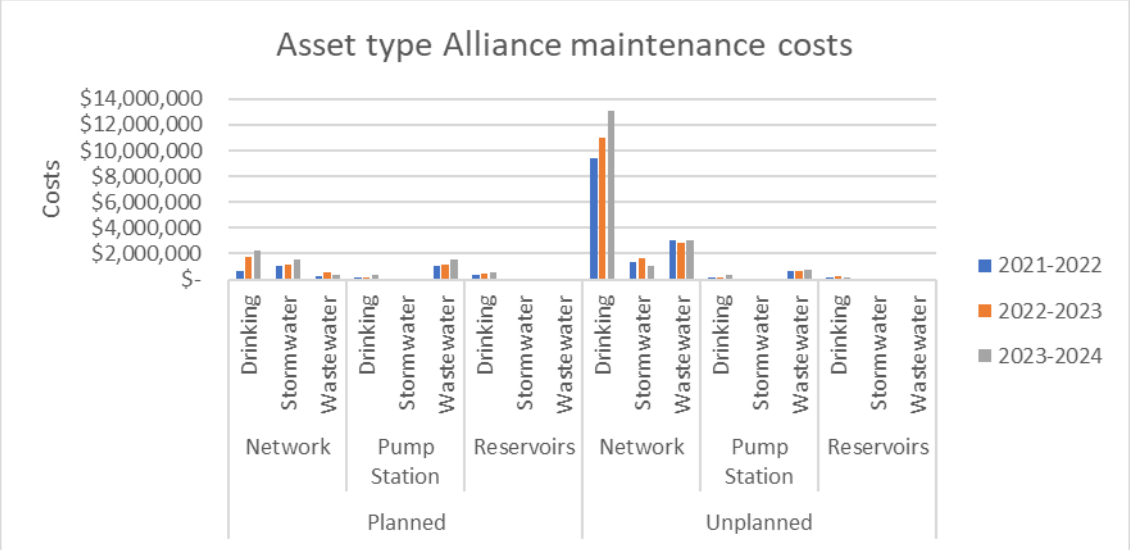
- Operations and maintenance (O&M) “Alliance”.
- Capital works contractor panel.
- Consultants panel.

In addition, unit rates for replacement of pipes applied within valuations have been reviewed and compared to a small selection of peer councils.

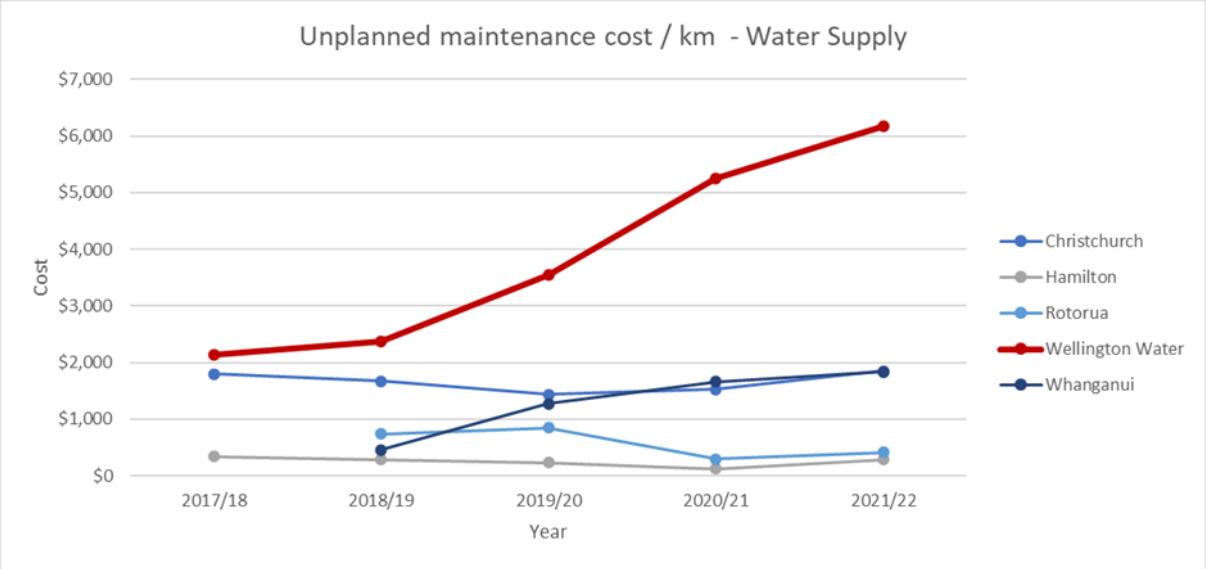
Limitations in data and timeframes has constrained the analysis and confidence in the outputs, although we believe that the outputs remain useful provided care is taken with their use, including use of independently sourced corroborating information. The report recommends further analysis to increase confidence in the outputs, should this be desired.

Key outputs are presented below.

O&M Alliance review



Expenditure is overwhelmingly focussed on water supply, particularly unplanned maintenance. Of this, 96% of Alliance maintenance costs are associated with unplanned network maintenance. Comparative analysis was not possible at the “asset-type” level, therefore, the main focus of this review is on the unplanned water supply maintenance costs.

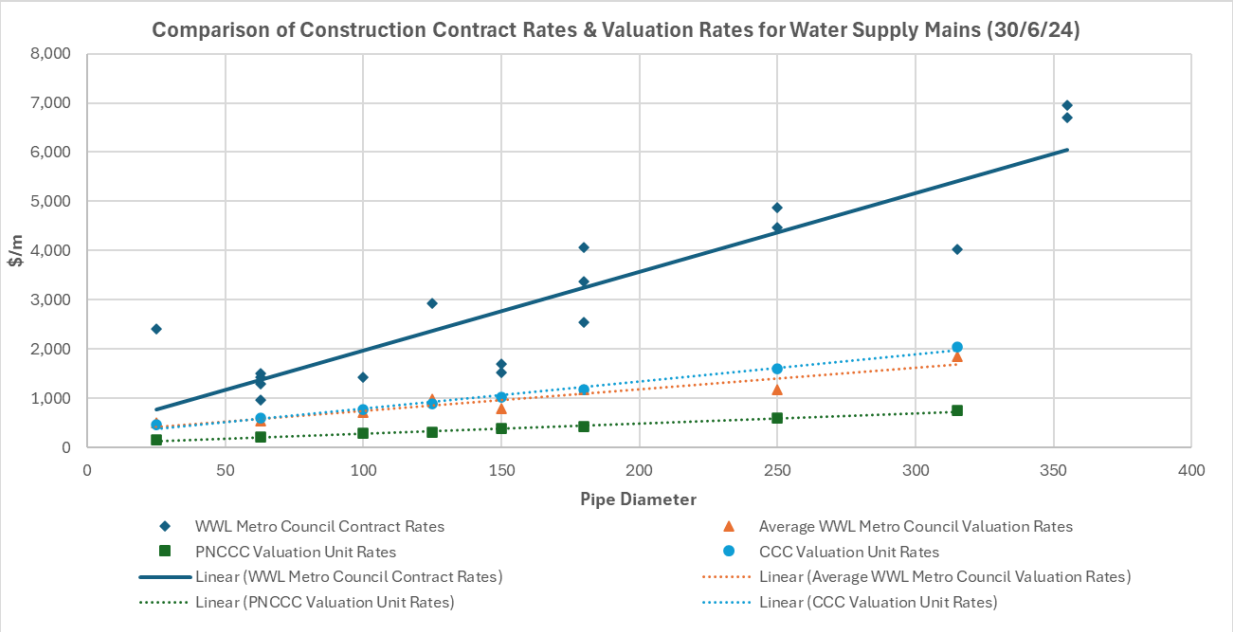


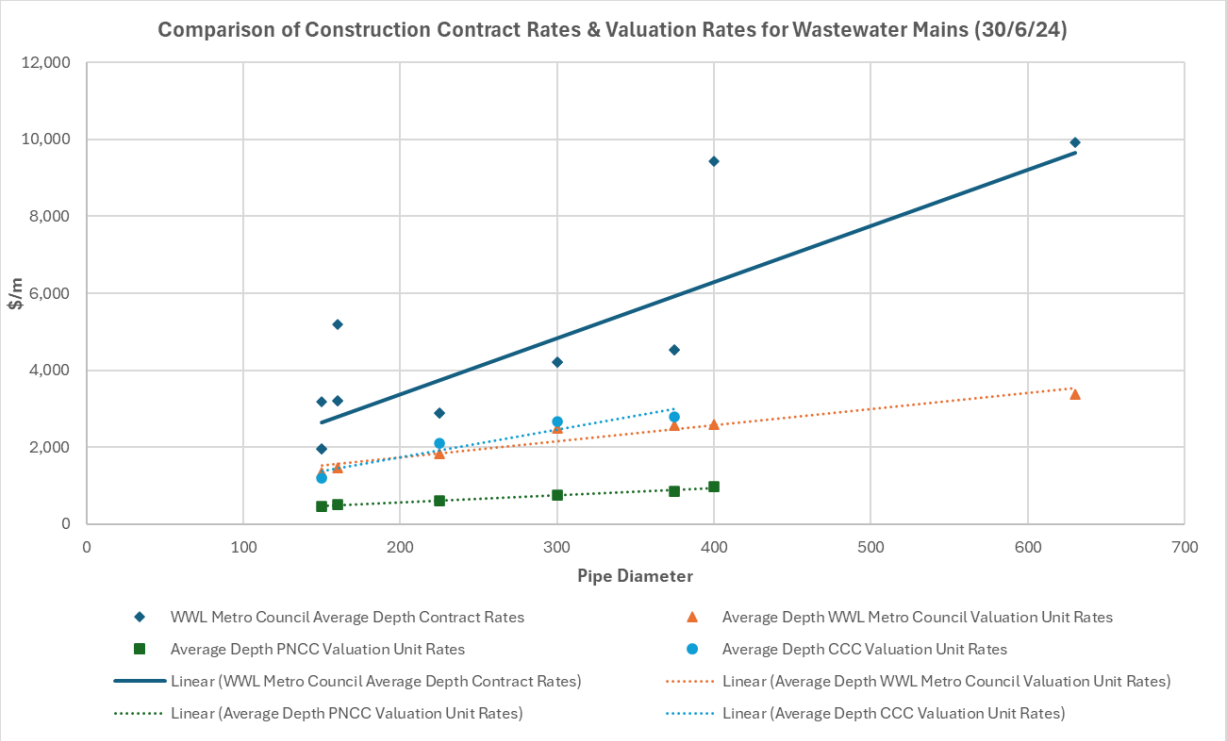
WWL unplanned water supply maintenance expenditure per km of pipe increased threefold between 2017 and 2022, with costs increasing by 73% between 2019 and 2022. Inflationary pressures between 2019 and 2022 are expected to have contributed around a third of this increase. The three-year average (2019-2022) expenditure on unplanned water supply maintenance expenditure per km of pipe is nearly three times higher than the peer council average. Higher maintenance expenditure may reflect cost structures as well as network condition.

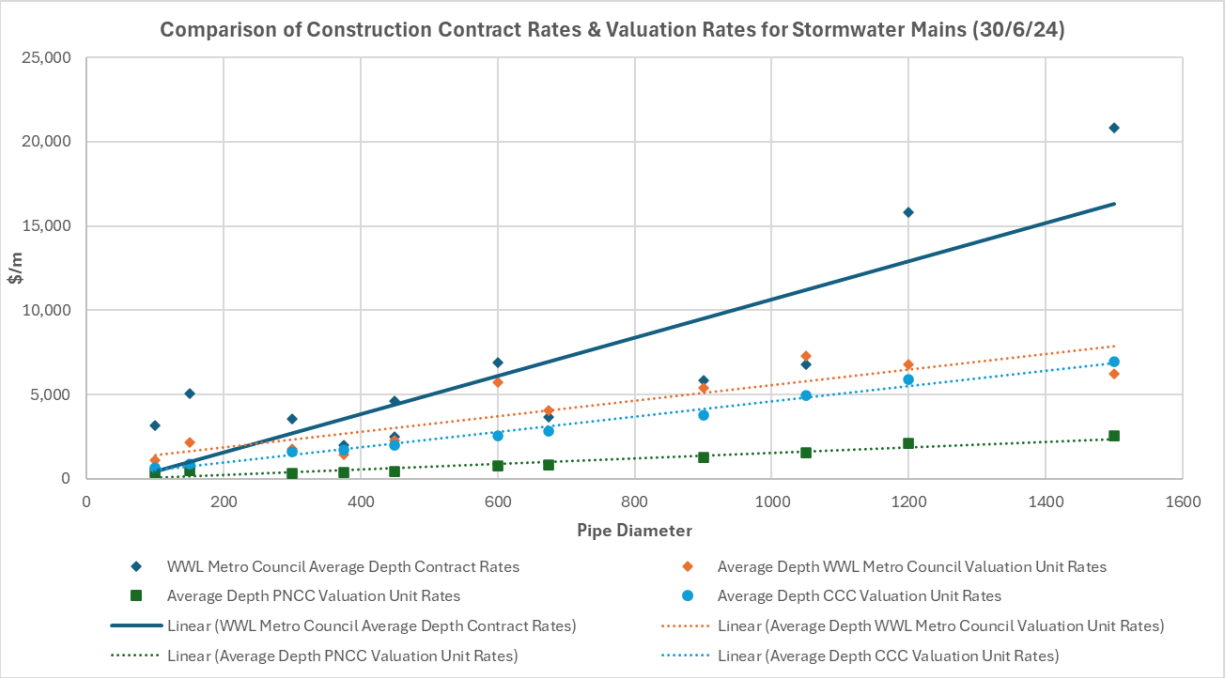
We believe that the Alliance labour and plant rates are fair and reasonable compared to the competitive industry charges, and, if anything, appear to be somewhat low. This does not include assessment of efficiency.

A simplistic initial analysis of rework was undertaken, limited significantly by data adequacy. This indicates that water supply maintenance may have the highest proportion of rework at around 10% but note that further analysis is required before this figure can be used.

Capital works contractor panel review







The average contract rates for pipe installation, in general, well exceed the average of the peer council valuation unit rates that are currently in use, particularly for water and wastewater, although note the limited peer council dataset used. This infers that cost of installation of pipes within the WWL networks is significantly higher than in the comparator council areas. This may reflect cost structures as well as local site differences, and comparison against a larger dataset would be advisable.

P&G as a proportion of total contract value is generally well above typical proportions within other linear infrastructure sectors. Of this, temporary traffic management and site establishment and disestablishment costs are significant.

We believe that the daywork and plant rates are generally considered fair and reasonable when compared to average market prices, although this does not include assessment of efficiency.

[redacted]

Consultants panel review

Our analysis indicates that charge rates are broadly in line with the general infrastructure industry expectations. However, given the volume of work released through this mechanism, limited bid effort and reduced risks, we would expect the rates to be towards the lower end of the range.

Overall proportions of fee to capital project cost are broadly in line with industry expectations assuming that construction monitoring and contract management tasks are included, although would be considered towards the upper end considering the routine nature of many of the projects. However, capital costs for routine pipe construction works appear to be significantly higher than comparator councils as noted in the capital works contractor review. Care should therefore be taken when using this professional services ratio to assess cost-effectiveness of this panel arrangement.

Valuation unit rates review

The WWL metro council valuation pipe unit rates are significantly higher than those used by other similar councils. However, from the analysis undertaken, these valuation pipe unit rates are, in general, significantly lower than the contract rates that have been extracted from the claims.

Overall, we believe that the current valuation unit rates in use are a little low. While it is normal practice to use current real rates for construction, it is not unreasonable to moderate these rates if future changes are expected in delivery models which may impact these costs in the near-future.

1.0 Introduction

1.1 Purpose of this report

This report presents information comparing costs of service provision against a range of benchmarks for the following collaborative panel contracts:

- Operations and maintenance (O&M) “alliance”.
- Capital works contractor panel.
- Consultants panel.

As part of its continuous improvement programme, Wellington Water (WWL) is reviewing the appropriateness and value for money provided by the current delivery models. Although WWL’s assessment will need to consider a wide range of factors, this report can contribute by providing some indication of relative efficiencies within the current models.

1.2 Scope

The scope of the work was to review:

- Cost information associated with the current collaborative panel contracts.
- Valuation unit rates.

1.2.1 Panel cost review

To review cost information associated with the current collaborative panel contracts and provide objective comparative commentary considering:

Table 1 Scope of review

Panel	Considerations
Alliance O&M contract (“Alliance”) with [redacted]	• Historical levels of O&M spend • O&M spend levels within the water sector and with other similar organisations/networks • Rates used for labour, plant and materials • Derived rates for major activity types (such as cost per water supply network unplanned repair)
Contractor Capital works construction panel	• Rates used for labour, plant and materials • Derived unit rates where possible for significant activity types (such as cost per metre of pipe construction for varying diameter ranges) • Historical trends for unit rates
Consultants Professional services panel	• Hourly charge (labour) rates • Derived rates for construction activity types (such as design fees as a percentage of capital cost) • Historical trends for these derived rates

The following was excluded from our scope of services:

- WWL internal costs associated with the Alliance and panel contracts.
- Commentary on whether the current arrangements represent value for money.

1.2.2 Valuation unit rate review

To undertake a review of unit rates used within the latest valuations for Hutt City and Upper Hutt City Councils. This will extend the scope of the analysis undertaken within the Contractor Panel cost review work.

[redacted]

1.3 Limitations

The following describes the key limitations to our review, with further detail provided in each of the four review streams described in Section 2.0.

1.3.1 Limited scope

Care should be taken with the interpretation of the information presented in this report. It should be considered only as a contributing indicator alongside assessment of wider considerations, such as how the current models contribute to an environment enabling rapid growth of capacity and capability.

1.3.2 Incomplete datasets

Datasets used within our analysis are not complete, for instance:

- **Context.** We have no visibility of the scope, complexity or size of the various projects undertaken. These aspects can fundamentally impact costs. While some analysis has relied on annual quantities where individual outliers have a less significant impact, others have been based on a limited number of discrete projects or activities.
- **Maximo fault records**. These records were not able to clearly identify what the issue was, what the resultant action was, and whether the fault was linked with other records. This necessitated assumptions to be made in some instances and limited its usefulness. Cost of rework was unable to be completed with confidence, and, for the purposes of comparisons with peer councils, National Performance Review (NPR[1]) data was used in preference to the Maximo data to achieve a "like for like" comparison.
- **O&M invoicing data**. NPR data is intended to capture all maintenance costs. However, in WWL's case, some maintenance costs are undertaken outside of the "alliance". Again, for the purposes of comparisons with peer councils, NPR data was used rather than the invoicing data to achieve a "like for like" comparison.
- **NPR dataset**.
  - The NPR dataset is not complete and, as identified within the Three Waters Reform work, there is evidence of differing interpretations of some of the measures by the participating councils. Confidence in the data decreases as the measures become more specific.
  - There was no relevant maintenance cost data to enable analysis of cost/repair before 2017.
  - Taumata Arowai[2] information submissions made following the discontinuation of the benchmarking programme after the 2020/21 round could not be readily reconciled with previous NPR submissions and was lacking maintenance cost information. It was therefore not able to be used.
  - "Faults" are not clearly defined. We have therefore separately used "complaints" and "unplanned service interruptions" as the broad indicators for "fault" and as a form of sensitivity analysis.
- **Capital works cost data**.
  - Labour and plant information was limited to eight schedules.
  - Useful capital works cost data informing comparative installation rate analysis and valuation unit rates analysis was limited to pipe data.
- **Valuation data**. We have indexed Christchurch City Council's rates used for comparative analysis from 2020 but note that there is a more recent valuation undertaken which may refine the outputs.

[1] Water New Zealand's national water sector benchmarking programme
[2] New Zealand's water (quality) regulator

1.3.3 Time constraints

The short review period limited both the depth and the breadth of analysis able to be undertaken. It meant that, for instance:

- **Depth**:
  - Discrepancies in the data sets (e.g. NPR data vs Maximo and alliance invoicing records used within the O&M review were not able to be reconciled).
  - Overhead cost components needed to be pro-rated and allocated to charge-out rates. Our approach has not been verified by WWL.
- **Breadth**:
  - O&M labour and plant rate analysis was undertaken on a sampled basis only.
  - Valuation unit rate comparisons were limited to two peer councils only.

2.0 Approach

2.1 O&M Alliance

2.1.1 Data sources

WWL provided AECOM with Schedules of Costs for the O&M spend for years 2022, 2023 & 2024. This included direct labour and plant costs from [redacted] (the Contractor) for both planned and unplanned maintenance works, along with cost relating to suppliers and subcontractors.

WWL also provided a total list of all network faults that have been logged within Maximo[3] for years 2022, 2023 & 2024.

Information provided by WWL above was reviewed against data that was sourced from the Water New Zealand National Performance Review (NPR) data set. supplemented by Taumata Arowai information submissions made following the discontinuation of the benchmarking programme after the 2020/21 round.

2.1.2 Metrics targeted

Specific metrics targeted were:

- **Metric O1**: Total cost of Alliance maintenance[4] by water service, asset class and activity type.
- **Metric O2:** Total cost of unplanned maintenance[5] compared to other regions.
- **Metric O3:** Total cost of water supply unplanned maintenance per length of network pipe compared to other regions.
- **Metric O4**: Total cost of water supply unplanned maintenance per serviced property compared to other regions.
- **Metric O5**: Total cost of water supply unplanned maintenance per complaint and per interruption compared to other regions as proxies for “average cost of unplanned response to an issue” and average cost of unplanned network repair”.
- **Metric O6:** Labour and plant rates compared to industry expectations.
- **Metric O7:** Proportion of rework.

2.1.3 Analysis undertaken

Metrics O1 – O5

Alliance O&M Maintenance Costs

Due to the large amount of data, it was necessary to extract targeted information from the Excel spreadsheets provided. From a high-level review, it was clear that majority of spend was on Water Supply, and particularly Network maintenance, with a secondary focus on Pump Stations and Reservoirs. Therefore, the analysis undertaken focused Water Supply Networks.

Maximo Faults

The Maximo list of faults from years 2021-2024 was reviewed and assumptions/rules inserted to try to:

- Identify the total number of faults and exclude multiple requests for service and complaints which may be attributed to a singular fault
- Identify ways in which rework could be identified and quantified

[3] Asset management information system used by WWL primarily for managing network maintenance
[4] As billed to WWL from the O&M “alliance” contractor
[5] Total maintenance costs as reported through WaterNZ

NPR Data

Alliance O&M cost and Maximo fault information provided by WWL was reviewed against information WWL submitted as part of the NPR benchmarking programme. Similarly, the Taumata Arowai data was reviewed against the NPR data. The discrepancies could not be reconciled within time available. Therefore, comparison of costs and fault data with similar councils in New Zealand was undertaken using the NPR data only for a "like-with-like" comparison.

Metric O6

To derive the hourly rates, we apportioned a series of overheads to each labour and plant item extracted from a sample of 20% of the "jobs" within the following progress claims:

- Financial Year 2021 – 2022, April 2022 Progress Claim
- Financial Year 2022 – 2023, April and September 2023 Progress Claim
- Financial Year 2023-2024, April 2024 Progress Claim

The overhead charges pro-rated and apportioned comprised:

- Salary & Wages Overhead
- Depot Overhead
- Direct Overhead
- Corporate Overhead
- IT Charges
- Implementation Cost
- Profit

Please refer to Appendix A for the methodology to derive the [redacted] "total" hourly rates. For simplicity, no escalation of rates to reflect inflation was built into this analysis, although, at around 15%, we do not believe this is material.

Metric O7

We have calculated the number of sites, each financial quarter, which have been revisited following works recorded in the first or second month of that quarter. This assumes that the initial fault has been visited, made safe and repaired during that first month. This is a rather simplistic approach, but all that was possible within the timeframes. The results are likely to under-represent the actual rework given:

- Sites that are revisited in following quarters are not included; each quarter analyses a different data-set with the assumption that the repair made was "successful".
- Sites are identified by "address" given data constraints (see Section 2.1.4). Given that a singular fault may be reported by several different addresses, there is the potential to under-count asset-specific fault rework.

2.1.4 Challenges, assumptions and limitations

Alliance does not deliver all maintenance services. While extracting data from the Schedule of Costs provided by WWL in spreadsheet format was relatively straightforward, The O&M alliance contractor does not deliver all maintenance services across all three waters services, e.g. much of the maintenance activities in the water and particularly the wastewater treatment facilities are undertaken by others. This provided challenges when benchmarking total maintenance costs with other councils, necessitating the use of the NPR dataset in preference.

Incomplete Maximo fault data set. The amount of fault information provided to AECOM by WWL was large but coding was insufficient to enable straightforward identification of individual asset faults. We have assumed that all faults recorded within one month at a singular address is a singular fault, with multiple records attributed to complaints, correspondence, inspections, making safe and repair.

However, it has not been possible within the project timeframes to test the validity of this assumption within this very large data set. In addition, although all complaints are logged to an address, only 40% of these records are logged to individual asset IDs. We have therefore used the address field within our initial "rework" analysis which likely under-represents the proportion of rework.

Disparity between WWL costs and fault data, and NPR data. We were unable to reconcile the WWL cost data as noted in the first sub-section above. We were also unable to reconcile the Maximo fault data with the NPR information. We therefore have used the NPR data to provide comparable metrics between councils for consistency.

Limited and volatile benchmarking data. Useable benchmarking data was limited to NPR information between 2017 and when it was discontinued in 2021. Participants were limited leading to a small "peer council" group and no maintenance costs were recorded for these relevant councils prior to 2017. The Taumata Arowai submission data post 2021 did not separate maintenance costs from total operational costs, therefore no analysis could be completed post 2021. As identified within the Three Waters Reform work, there is evidence of differing interpretations of some of the measures by the participating councils. Volatility of the data and confidence decreases as the measures become more specific, such as specific complaints types or "unplanned supply interruptions" data.

No asset class separation in NPR data. Maintenance cost data, while being separated into planned and unplanned within the NPR data, is not further categorised by asset class. We were unable then to directly compare costs for the dominant activity type alone (unplanned water supply network maintenance).

NPR definition of a fault is not explicit. The NPR data does not have a clear definition of a 'fault, therefore we have analysed both complaints and service interruptions separately as indicators of quantum of work in response to unplanned maintenance needs.

No escalation. Expenditure has been left as the value within the year it was made with no escalation made to reflect inflation. Commentary has been made on this where time comparisons are made. Other analysis compares values within each year to peer councils.

Complex and incomplete data set. The [redacted] cost data was quite complex and required a large degree of analysis to determine overall labour and plant rates. [redacted] we were unable to adjust our observations based on staff seniority and the rates expected for those personnel.

Context. The [redacted] data does not include any details of scope or quantum of the Opex works, hence it is difficult to assess whether the total charges for the individual projects are fair and reasonable.

2.2 Capital works contractor panel

2.2.1 Data sources

WWL provided AECOM with final claim documents for 42 contracts which are summarised as follows:

Table 2 Summary categorisation of contracts

Council	Pipe Renewals	New / Upgraded Storage	Pump Station Upgrades	H&S Upgrades	Other
GWRC	2				1
HCC	8			1	
PCC	8				1
SWDC	4		1		
UHCC			3	1	
WCC	9	2			1
Total	31	2	4	2	3

Note that in some instances, several contracts were contained in one claim document. The full list of contract claim documents that were provided is shown in Appendix B.

We also sourced past valuations for a small number of councils including:

- Christchurch City Council (used for comparison with WCC)
- Palmerston North City Council (used for comparison with HCC, PCC and UHCC)
- Carterton District Council (used for comparison with SWDC)

The pipe unit rate information within these three valuations were used to compare the unit rates for Metric C3.

Labour and plant rates were sourced from the Schedule of Prices Dayworks and Contingency (PROVISIONAL) from the following claims:

- FSTN Donald Street Pumping Station
- Featherston Watermain Renewal
- Titahi Bay Renewals [redacted]
  - July 2022 claim
  - March 2023 claim
- Dowse Drive Stormwater Upgrades
- HCC Sewer Renewals – Whites Lines East, Rahul Grove and Laery Street
- Avalon Wastewater Renewals
- Pitt Stratford and Wilton Wastewater Renewal

2.2.2 Metrics targeted

Three main metrics were targeted:

- **Metric C1**: The percentages of elements that make up Preliminary and General (P&G) costs
- **Metric C2**: The percentage of P&G costs relative to overall contract costs
- **Metric C3**: Total physical works cost per metre of pipe for various pipe diameters (given the majority of spend is focussed on network renewals)
- **Metric C4:** Labour and plant rates compared to industry expectations.

2.2.3 Analysis undertaken

Metric C1 - for each contract, the P&G elements were separated out and tabulated. This was initially done by dollar value and then converted to percentages as a proportion of overall P&G costs. The elements separated out included:

- Documentation & Insurance
- Establishment & Disestablishment
- Traffic Control
- Public Notification
- Advisory Signs
- As-built Drawings
- Survey
- Trench Shoring
- Safety Fences
- Reporting, Meetings & Auditing
- Early Contractor Involvement
- Utilities
- De-watering
- Butt Welding

[redacted]

The P&G analysis was completed for each separate council and the results were graphed for easy comparison. Summary charts comparing all councils have also been produced.

Metric C2 – for each contract we extracted the overall contract value to enable P&G to be assessed as a proportion of that overall contract value. As a check, we then reconciled our overall contract values with those compiled by WWL and all but two of the 42 overall contract values matched. The two differences are listed below.

Table 3 Contract value differences

Contract	WWL Value	AECOM Value	Difference
OPC100121_SW_WCC_Waikare St (4-7) SW Renewal	$274,896.38	$467,928.42	$193,032.04
OPC100976_WW_WCC_Waikare St (4-7) WW Renewal	$184,098.78	$474,571.54	$290,472.76

Other elements we had to take into consideration as they often sat outside of P&G included:

- Site Preparation
- Ground Investigations
- Environmental Compliance

It could be questioned why these three elements were often itemised separately from P&G. These three elements could easily be incorporated into P&G but their impact would not be that significant. Similarly, it is arguable whether Butt Welding should be included in P&G.

Three UHCC contracts also included consultancy and management fees within the claims. Normally these items would be considered as on-costs and were excluded from the analysis.

Metric C3 - our analysis focussed on pipes as our research indicated this was the biggest capital budget spend area. The other large budget spend area was storage but we only received one contract for a new reservoir, and other contract information received appeared to focus on H&S upgrades at reservoirs etc. which did not yield any useful unit rates information.

For each pipe renewal contract we derived unit rates for every pipe that was installed. We extracted the base cost for each pipe and then pro-rated all the other miscellaneous costs such as P&G, reinstatement and variations etc. to produce an overall cost. This overall cost was then divided by the installed length to produce a unit rate.

The install dates were determined from the claims and all rates indexed to 30 June 2024 using the Stats NZ Capital Goods Price Index S611031B – Systems for Water and Sewerage to ensure “like-for-like” comparison.

The analysis was undertaken per council for each of the three water types (water, wastewater and stormwater) and the pipe diameters for which we could derive unit rates from the contracts. For pipes of the same water type and diameter, weighted averages by length were calculated and those values were used for comparison purposes. Other factors that were taken into consideration when required were surface type (for water supply only), depth (for wastewater and stormwater only) and method of installation i.e. excavation versus trenchless.

Tables were then established to record these unit rates, contract unit rates (excavation and trenchless) and other council valuation unit rates. Note that the other council valuation unit rates all had to be indexed to 30 June 2024. These tables were then graphed for easy comparison.

Note that for presentation of the capital works analysis, the data was aggregated and averaged. SWDC data was excluded from this analysis with the focus being on just the four metro councils HCC, PCC, UHCC and WCC.

Tables were also created to compare oncosts and residual values and the results were graphed for easy comparison.

Metric C4 – Straightforward comparative analysis was undertaken on the labour and plant rates provided. For simplicity, no escalation of rates to reflect inflation was built into this particular analysis, although, at less than 25% between the earliest and the latest schedule, we do not believe this is material.

2.2.4 Challenges, assumptions and limitations

PDF information form. There we no challenges in performing the above analysis for Metric 1 and 2, although it would have been more efficient if we had spreadsheet versions of all the claims to minimise manual data transcription. The process of extracting unit rates from contracts was done at a high level given that the information form was mainly PDF documents which limited what we could achieve in the time available. The more rigorous approach would be to go through all the miscellaneous individual line items and pro-rata them across the actual assets they apply to, rather than our approach which pro-rated the miscellaneous items across all assets. This would require the information to be available in spreadsheet form and could be considered as a next step should WWL wish to have greater confidence in the outputs.

Assumed final claims. The analysis was based on use of dollars that have been claimed rather than the original contract value, the assumption being that information provided to us represented the final claims. There were some exceptions in that As-built Drawings had not been claimed for yet and we have just treated them as $0 as this is unlikely to have a material impact on the analysis outputs.

No pipe contract data for UHCC. We received no pipe renewal contracts for UHCC. We have therefore used the HCC contract rates for comparison purposes.

No analysis undertaken for GWRC. Our work in developing unit rates models has shown the challenges in developing unit rate profiles for bulk water assets, which typically require extensive project information. Given the limited timeframes and available information, we did not develop unit rate information for these bulk pipes.

Context. The data does not include context for the works, hence it is difficult to assess whether the total charges for the individual projects are fair and reasonable. Also, for both labour and plant hourly rates, it is not possible to make comment on the competitiveness of works using the dayworks versus priced items.

2.3 Professional services consultants panel

2.3.1 Data sources

WWL has provided statement of claims and consultant labour rates for the three panel consultants to AECOM to review. The statement of claims provided were for each month for calendar years 2022, 2023 & 2024.

This 2024 data was reviewed against the 2024 ACENZ members Remuneration Report.

2.3.2 Metrics targeted

Two main metrics were targeted:

- **Metric P1**: Labour charge out rates compared to industry expectations
- **Metric P2**: Consultancy fees compared to total capital works spend.

2.3.3 Analysis undertaken

The consultants charge out rates were compared to ACENZ industry benchmarks.

The total consultancy fees for the capital works projects provided were reviewed to determine if this percentage of fees was within generally accepted industry levels.

2.3.4 Challenges, assumptions and limitations

No significant challenges.

2.4 Valuation unit rates review

2.4.1 Data sources

There were two main data sources used for the unit rates review. The first main source was the most recent council valuations as provided by WWL to AECOM. These were:

- HCC valuation as of 30 June 2024
- PCC valuation as of 30 June 2023 (this was indexed up to 30 June 2024)
- SWDC valuation as of 30 June 2024
- UHCC valuation as of 30 June 2024
- WCC valuation as of 30 June 204

AECOM was also provided with the GWRC valuation as of 30 June 2024, but what was provided was not suitable for any unit rates analysis (see Section 2.4.4).

The second main source of information was the pipe renewal contracts provided to AECOM. As part of the capital works analysis undertaken, we were able to derive unit rates for various pipes sizes across all three waters.

A third source of information was past valuations for a small number of councils including:

- Christchurch City Council (used for comparison with WCC)
- Palmerston North City Council (used for comparison with HCC, PCC and UHCC)
- Carterton District Council (used for comparison with SWDC)

These three valuations were used to benchmark the WWL valuations.

2.4.2 Metrics targeted

No specific metrics were targeted as such although we have compared pipe unit rates across the different data sources for each council. We have also compared the oncosts and use of residual values etc. across all councils which is discussed in 3.4.7.

2.4.3 Analysis undertaken

As described in 2.2.3, Metric 3, although the results are presented at council level rather than being aggregated.

2.4.4 Challenges, assumptions and limitations

As described in 2.2.4. In addition:

No inclusion of oncosts. We have limited the unit rate analysis to use of raw rates (what it costs the contractor) so no oncosts have been included. This means that no comparative analysis has been completed on internal management costs or consultant-supplied design and project management costs as part of this review, although is included and referred to at a high level in 3.3.2.

Limited peer valuation data. While we believe the other councils we have chosen for comparison purposes, are suitable, this is a small data set. Further, some of these valuations are older than 2024 and required indexing.

No analysis for GWRC. As indicated above, we have reviewed the GWRC valuation data. The valuation provided was completed by Bayleys and is high level and includes no detail on unit rates. All values presented are lump sum with no quantities.

3.0 Analysis outputs and commentary

3.1 O&M Alliance

3.1.1 Metric O1 – Total cost of Alliance maintenance by water service, by asset class and by activity type

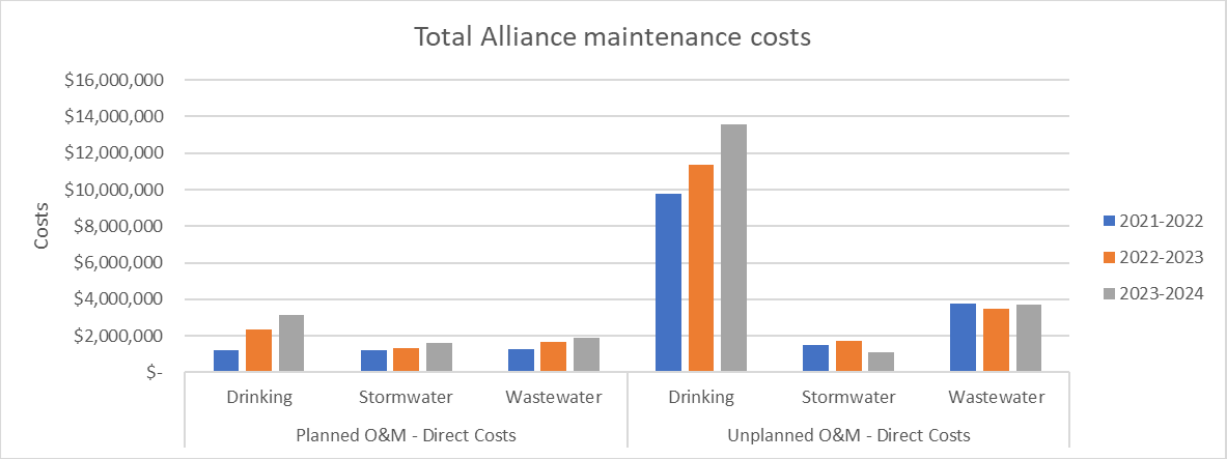


Figure 1 Total Alliance maintenance costs

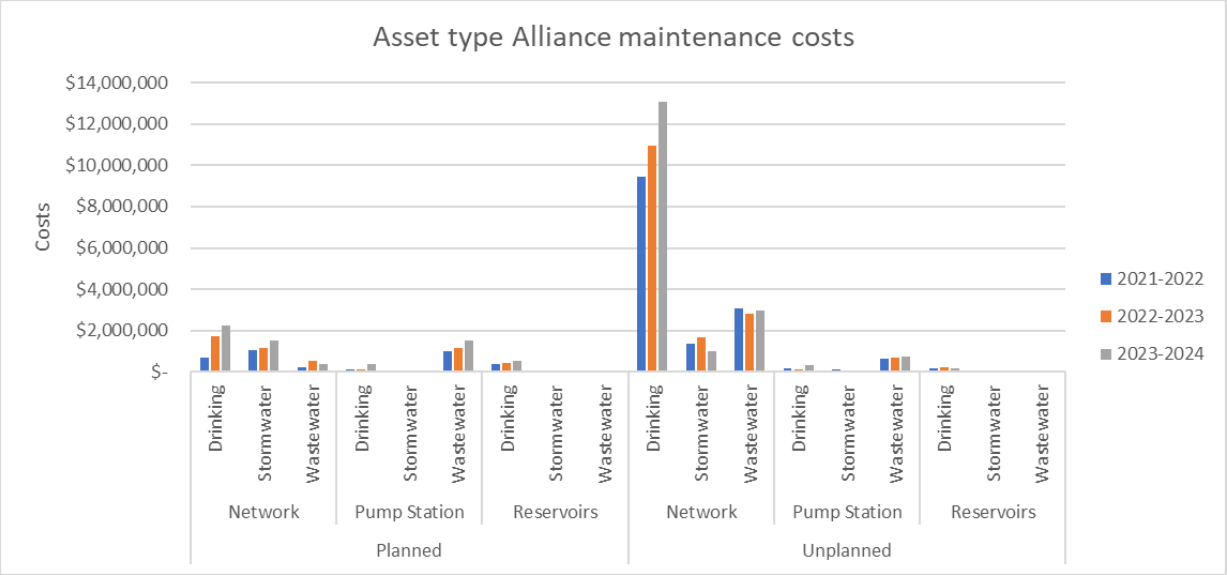


Figure 2 Total Alliance maintenance costs by water service and asset type

Comments:

- Expenditure is overwhelmingly focussed on water supply, particularly unplanned maintenance Of this, 96% of Alliance maintenance costs are associated with unplanned network[6] maintenance. Given the limitations in asset-type data in the comparative analysis datasets, the main focus of this review was on the unplanned water supply network maintenance costs.
- Expenditure has progressively increased in the past 3 years for unplanned water supply maintenance delivered by the Alliance. Around 25% of this could be attributed to national cost escalations associated with inflation.

[6] Pipes and associated assets such as valves and fitting

- Of the total unplanned wastewater maintenance costs associated with the Alliance: 80% of this is spent on wastewater network maintenance.
- Of the total unplanned stormwater maintenance costs associated with the Alliance: 93% of this is spent on stormwater network maintenance.

3.1.2 Metric O2 – Total cost of unplanned maintenance compared to other regions

Comparison of total unplanned maintenance expenditure against peer councils (Christchurch, Hamilton, Rotorua and Whanganui councils) using NPR data which includes ALL maintenance expenditure is shown in Figure 3. For completeness, planned maintenance is presented in Figure 4.

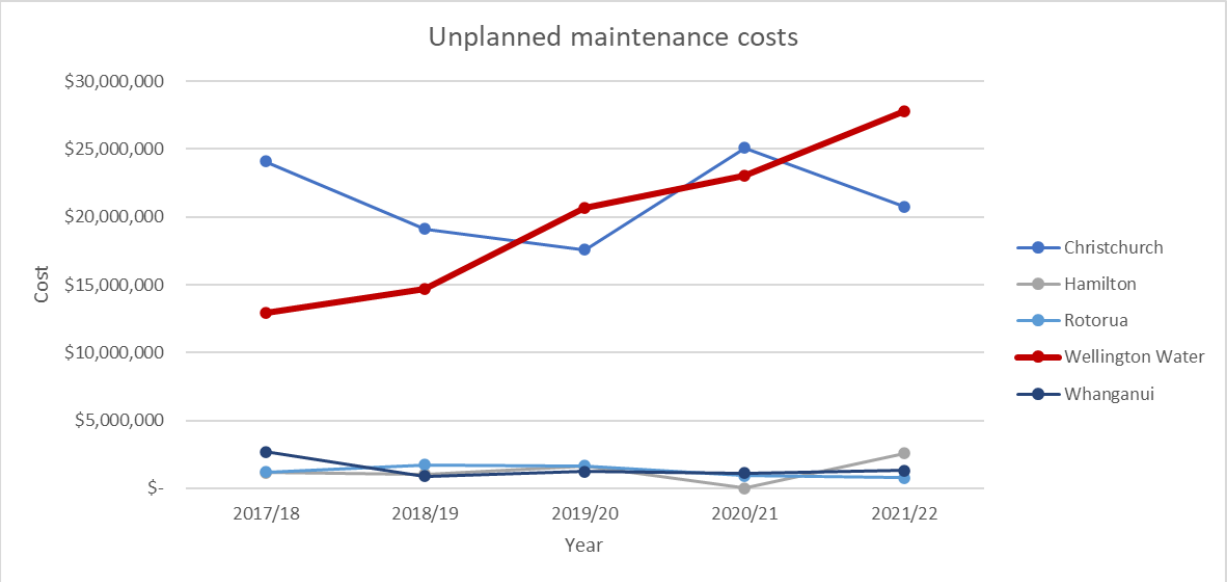


Figure 3 Total unplanned maintenance costs compared with peer councils (NPR data)

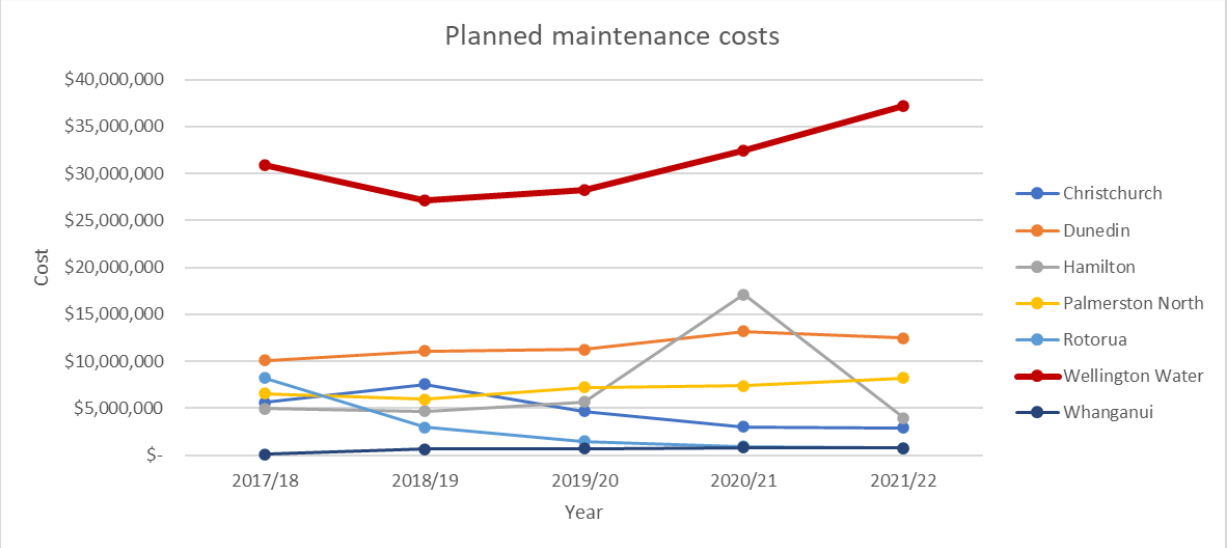


Figure 4 Total planned maintenance costs compared with peer councils (NPR data)

The total unplanned and planned maintenance costs associated with water supply are presented below in Figure 5 and Figure 6.

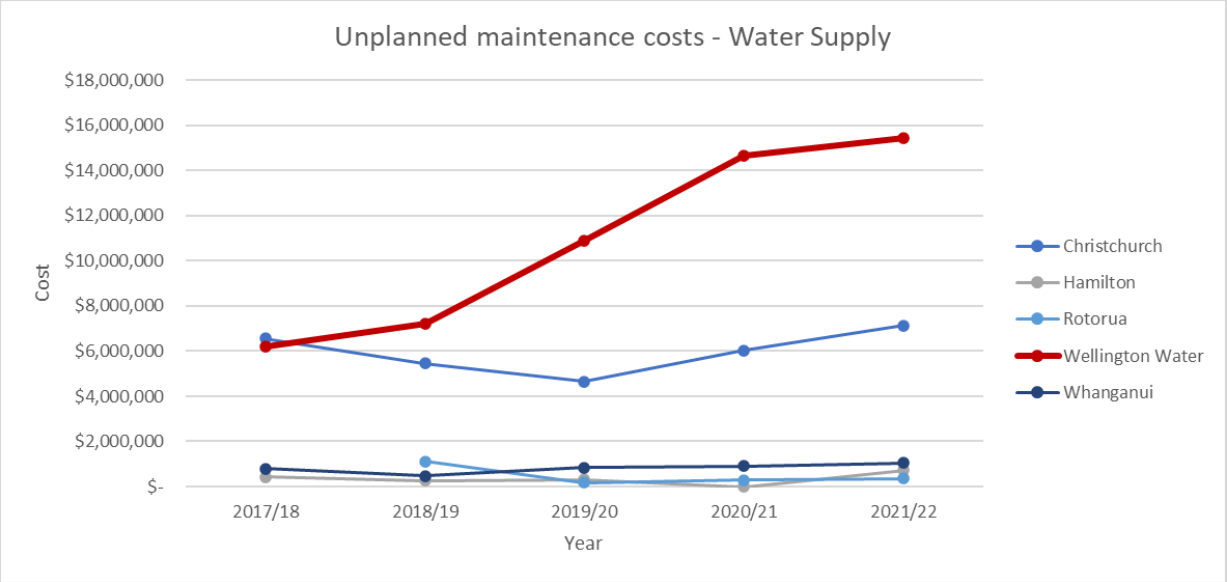


Figure 5 Total water supply unplanned maintenance costs compared with peer councils (NPR data)

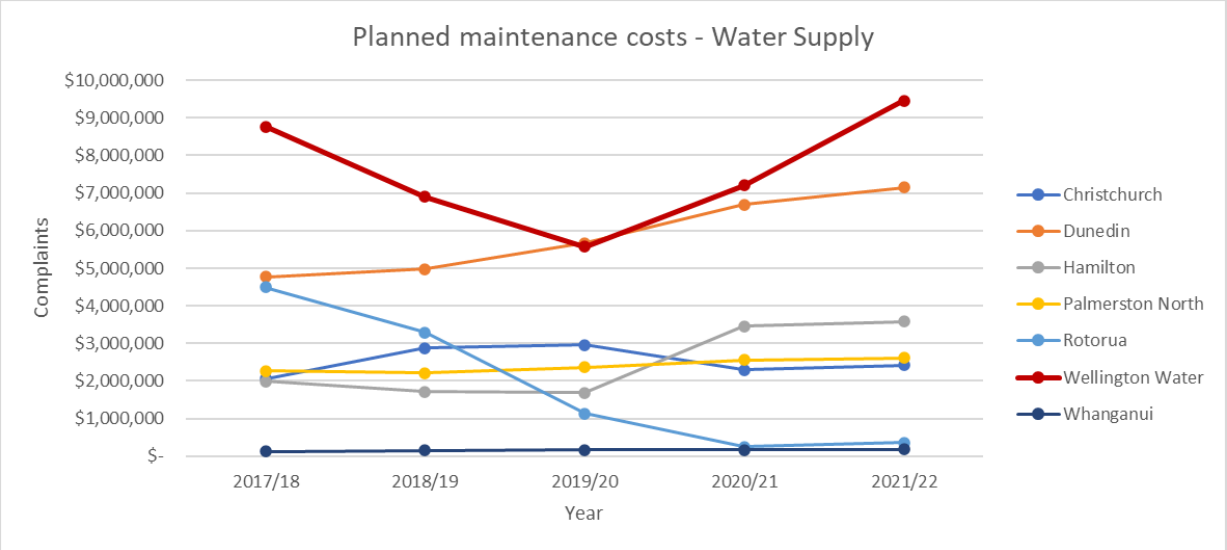


Figure 6 Total water supply planned maintenance costs compared with peer councils (NPR data)

Comments:

- General
  - Expenditure levels differ between that reported by WWL in the NPR, and that analysed within the data provided by WWL. This recognises that not all maintenance services are provided by the O&M alliance contractor. Expenditure associated with the Alliance makes up around 65% of the total water supply unplanned maintenance expenditure reported in the NPR, and only around 10% of the planned. Analysis has been completed for planned maintenance, and graphs with commentary in italics presented for completeness. While this provides some useful information, it is not directly relevant to services delivered by the Alliance and has not been carried forward into the Executive Summary.
- Total unplanned maintenance costs
  - WWL total unplanned maintenance expenditure more than doubled between 2017 and 2022 and is currently significantly higher than the average annual spend for these peer councils. Inflationary pressures within this time would have been expected to contribute around 35%

increase. Christchurch City Council similarly has high expenditure which is likely associated with ongoing issues with the 2010 and 2011 earthquakes.

- The three-year average (2019-2022) expenditure on total unplanned maintenance is 145% higher than the peer council average and 13% higher than that of Christchurch City Council.
- Higher maintenance expenditure may reflect cost structures as well as network extent and condition.

- Water supply unplanned maintenance costs
  - WWL unplanned water supply maintenance expenditure increased by around 150% between 2017 and 2022 and was consistently significantly higher the annual spend for all peer councils since 2018. Inflationary pressures within this time would have been expected to contribute around 35% increase. Christchurch City Council similarly has high expenditure which is likely associated with ongoing issues with the 2010 and 2011 earthquakes.
  - The three-year average (2019-2022) expenditure on total unplanned water supply maintenance is 225% higher than the peer council average and 130% higher than that of Christchurch City Council.
  - Higher unplanned maintenance expenditure may reflect cost structures as well as network extent and condition.
- *Planned maintenance costs*
  - *Total planned maintenance costs and total water supply planned maintenance costs are significantly higher than all other peer councils, although most of this work is delivered outside of the Alliance.*

3.1.3 Metric O3 – Total cost of water supply unplanned maintenance per length of network pipe compared to other regions

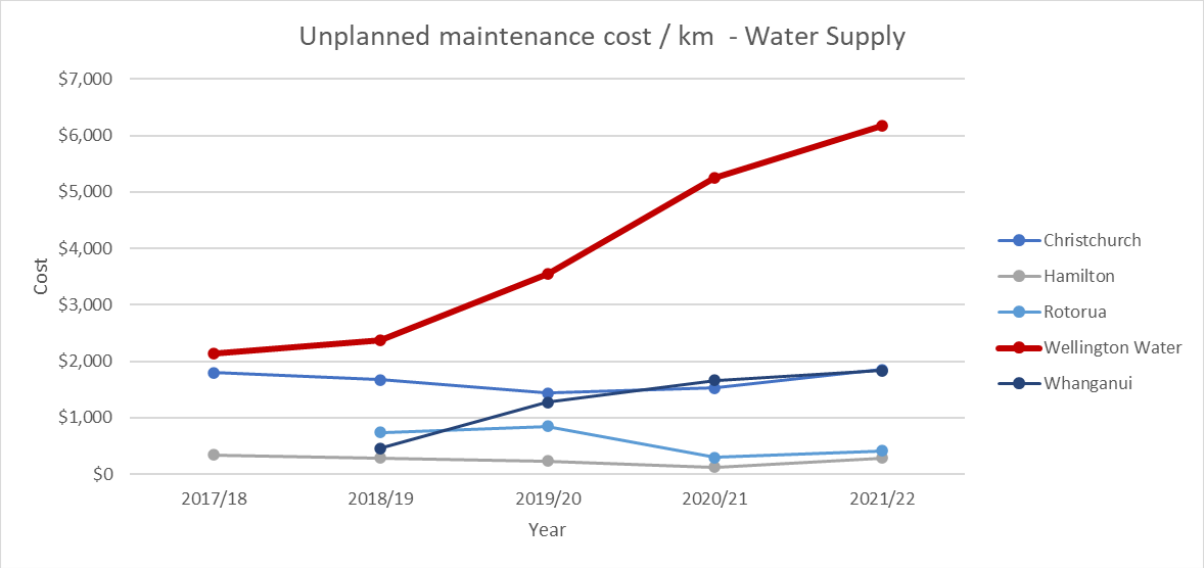


Figure 7 Total unplanned maintenance costs – water supply - compared with peer councils (NPR data)

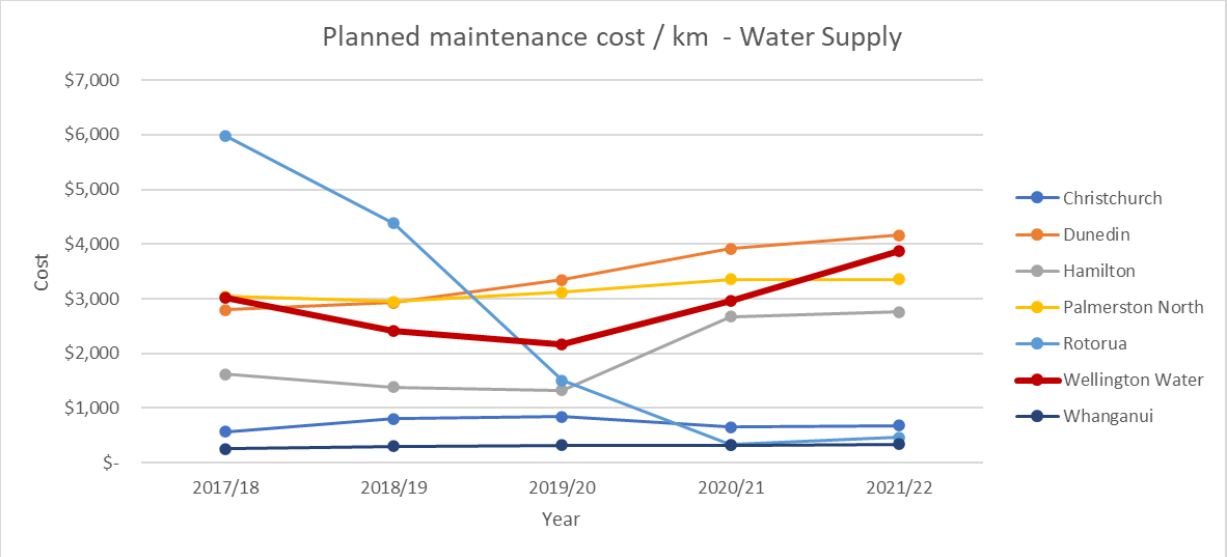


Figure 8 Total planned maintenance costs – water supply - compared with peer councils (NPR data)

Comments:

- WWL unplanned water supply maintenance expenditure per km of pipe increased threefold between 2017 and 2022, with costs increasing by 73% between 2019 and 2022. Inflationary pressures between 2019 and 2022 would have been expected to contribute around 25% increase.
- The three-year average (2019-2022) expenditure on unplanned water supply maintenance expenditure per km of pipe is nearly three times higher than the peer council average.
- Higher maintenance expenditure may reflect cost structures as well as network condition.
- *Planned water supply maintenance costs/km pipe - given that this is largely delivered outside of the Alliance, it is likely that the majority of the work undertaken is not directed to the network, meaning that this analysis is irrelevant.*

3.1.4 Metric O4 - Total cost of water supply unplanned maintenance per serviced property compared to other regions

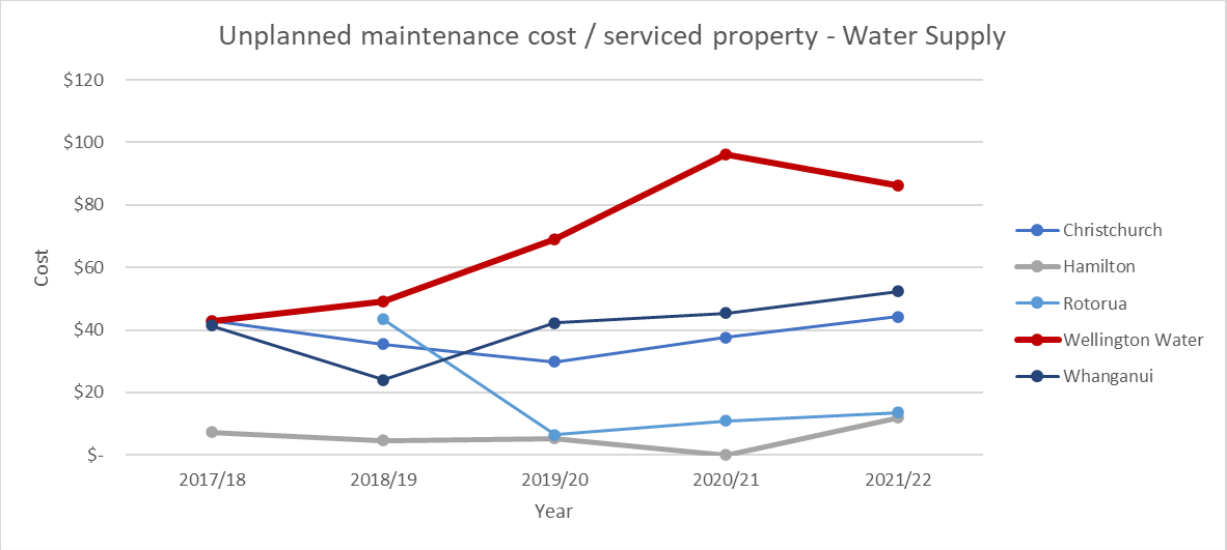


Figure 9 Total unplanned maintenance costs – water supply - compared with peer councils (NPR data)

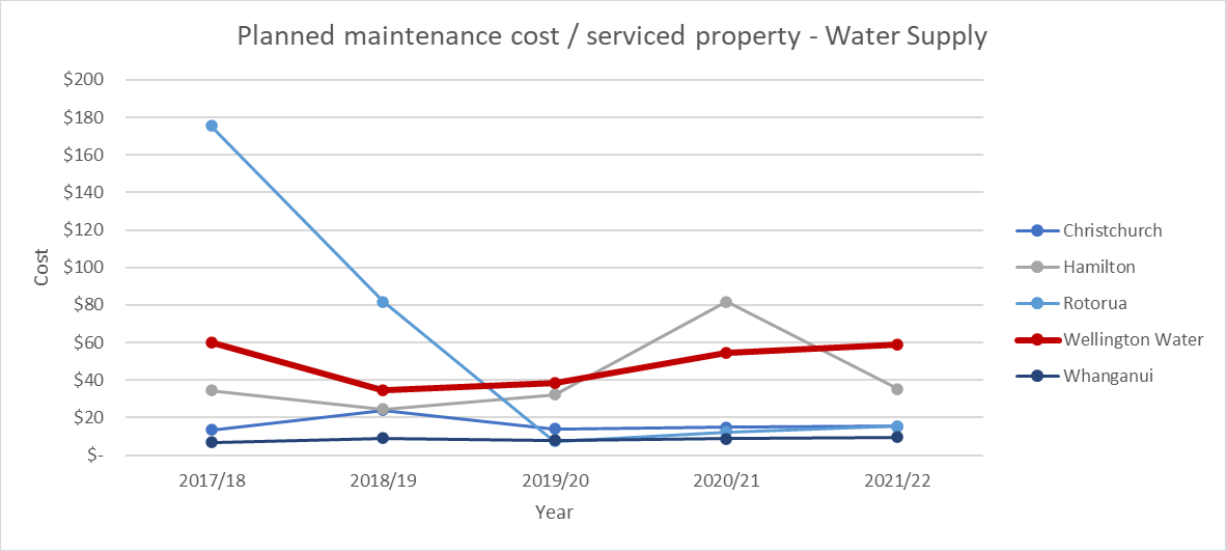


Figure 10 Total planned maintenance costs – water supply - compared with peer councils (NPR data)

Comments:

- WWL has the highest unplanned network maintenance spend per serviced property for water supply. This may reflect cost structures as well as network condition.
- *WWL planned water supply maintenance expenditure per serviced property is also high, although most of this work is delivered outside of the Alliance.*

3.1.5 Metric O5 - Total cost of water supply unplanned maintenance per complaint and per interruption compared to other regions

Firstly we looked at trends in interruptions and complaints as presented below in Figure 11 and Figure 12.

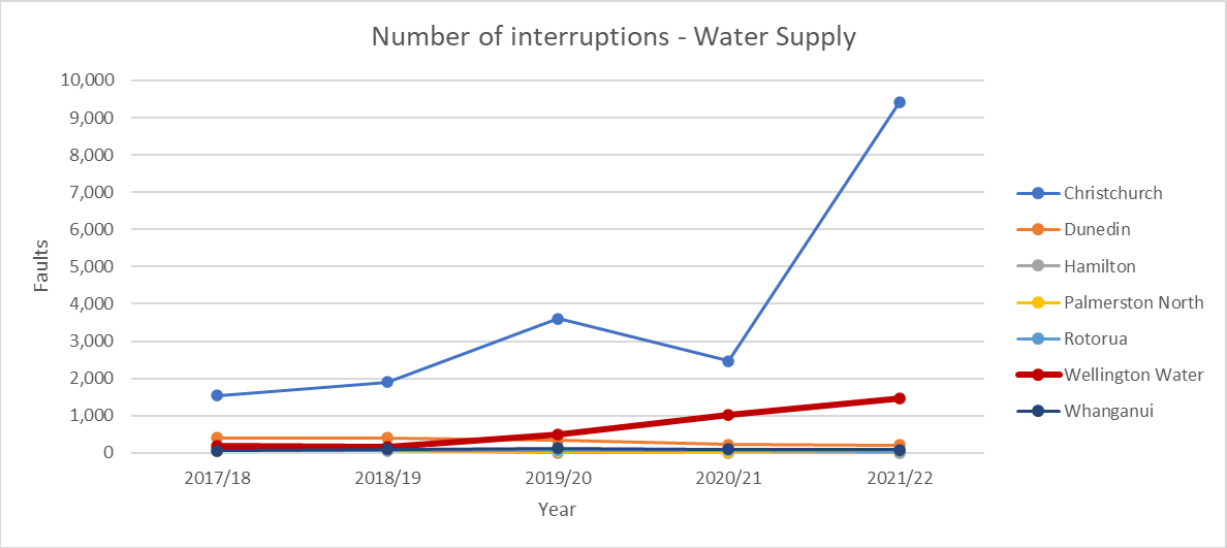


Figure 11 Unplanned water supply service interruptions compared with peer councils (NPR data)

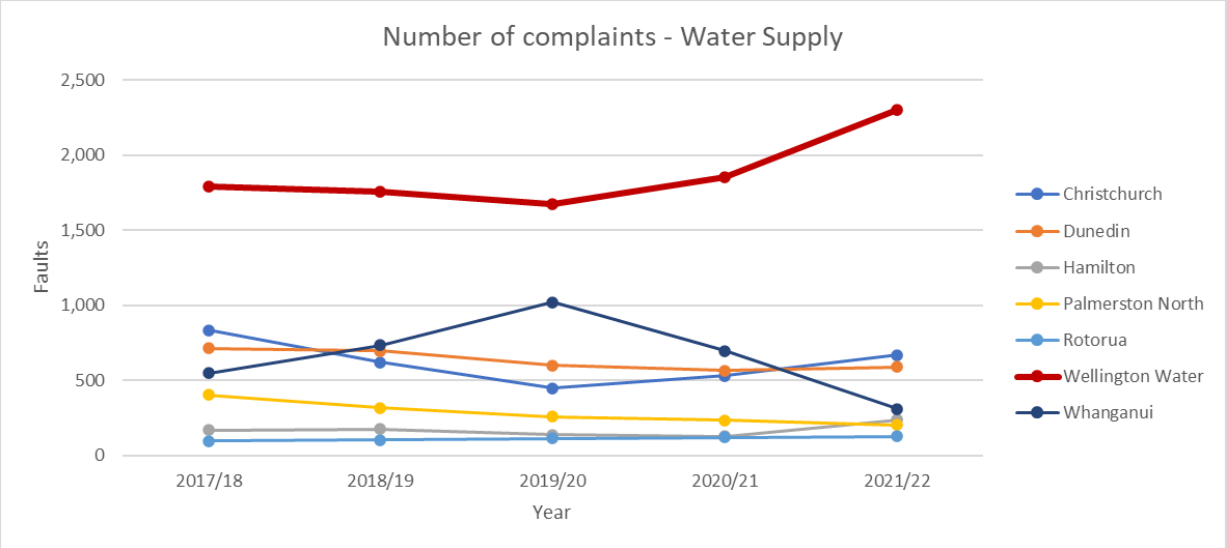


Figure 12 Water supply complaints compared with peer councils (NPR data)

Comments:

- WWL water supply network interruption events are above average compared to other councils, except for Christchurch. Christchurch's high numbers may reflect ongoing issues with the network following the 2010 and 2011 earthquakes, although could also reflect inconsistencies in reporting this metric across councils within the NPR programme. We believe there is an error with Christchurch City Council's 2021/22 value, possibly caused by delays to logging interruptions into the asset management information system in 2020/21. Care should be taken in using these outputs for comparative purposes.

- WWL records three times the average of the other councils water supply complaints, although we note inconsistencies with this metric across councils when compared to the number of unplanned interruptions in Figure 11 and consider that it is likely this reflects differing interpretations and reporting diligence. Care should be taken in using these outputs for comparative purposes.

Unplanned maintenance expenditure per service interruption and per complaint were then assessed as shown below in Figure 13 and Figure 14. We have taken a 2-year rolling average of interruptions and complaints to reduce the impact of data volatility. This assumes the Christchurch City interruptions data anomaly is due to delays in logging 2020/21 interruption events.

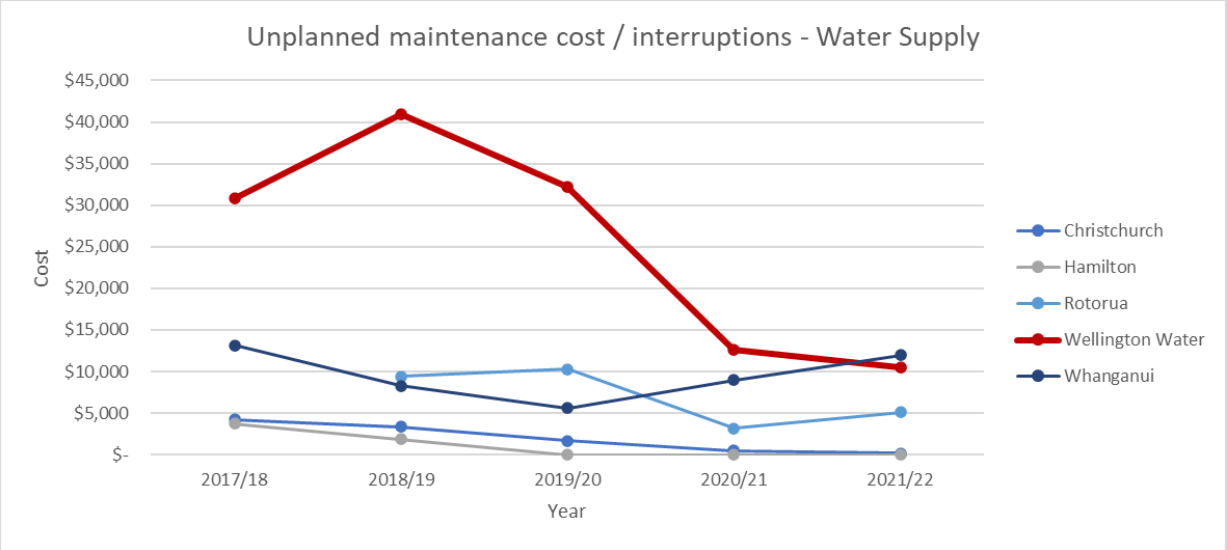


Figure 13 Unplanned maintenance costs per interruption – water supply - compared with peer councils (NPR data)

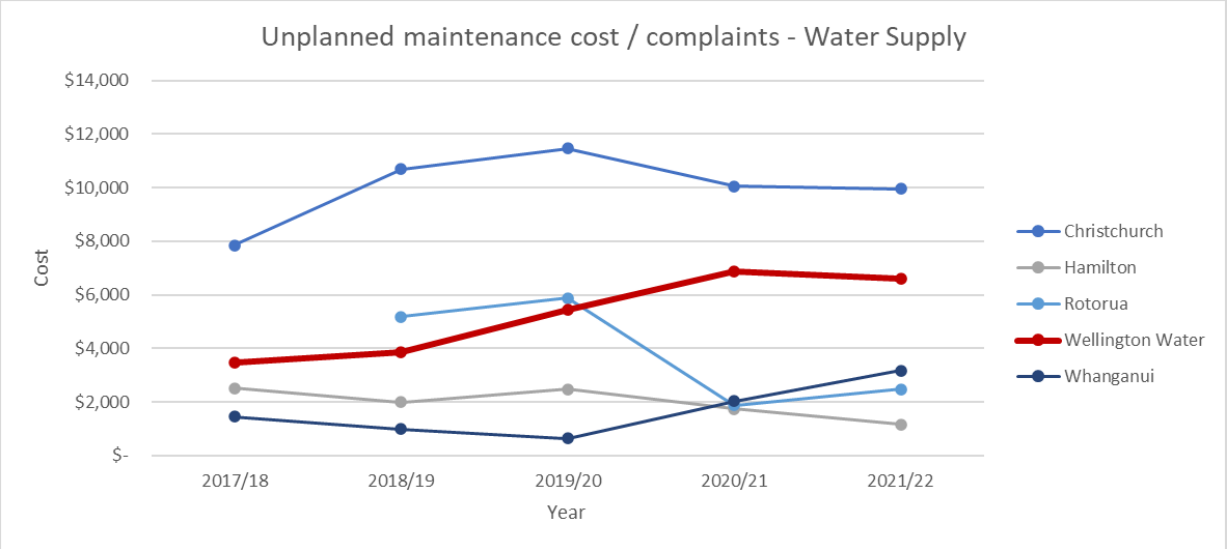


Figure 14 Unplanned maintenance costs per complaint – water supply - compared with peer councils (NPR data)

Comments:

- WWL's "cost per interruption" & "cost per complaint" are high compared to peer councils. However, these outputs and interpretations should be treated with caution. We recommend that more detailed analysis on actual costs of repair, both over time and comparatively with other councils, be used in preference if data is available.

3.1.6 Metric O6 - Labour and plant rates

Labour rates

The actual labour rates, which we assume refer to the gross earnings of the operative, seem fair and reasonable. [redacted]

[redacted]

This logic is applied and is considered typical of every organisation in the industry. Typically, a tradesman's rate would be made up of the following components:

- Gross pay before tax
- ACC
- Holiday pay
- Kiwisaver
- Tool allowance
- Insurance
- Non-productive supervision time
- Off-site overheads (head office charges)
- Profit
- An apportionment of on-site overheads

This would be expected to result in a wage rate of [redacted] hr receiving an uplift to a gross charge out rate of circa [redacted] inclusive of P&G and margin.

[redacted] seem to be fair and reasonable compared to the competitive industry charges, and, if anything, appear to be somewhat low. [redacted]

Plant rates

[redacted] applied an additional plant recovery charge and several other overhead charges as those applied to the labour rates. [redacted] plant hourly rates appear to be aligned with competitive industry charges. [redacted]

3.1.7 Proportion of Rework

We were unable to assess costs of rework but undertook some initial estimates of the proportion of faults that require re-work. This is a simplistic assessment only as described in 2.1.3, but all that was reasonable given the data limitations and the timeframes.

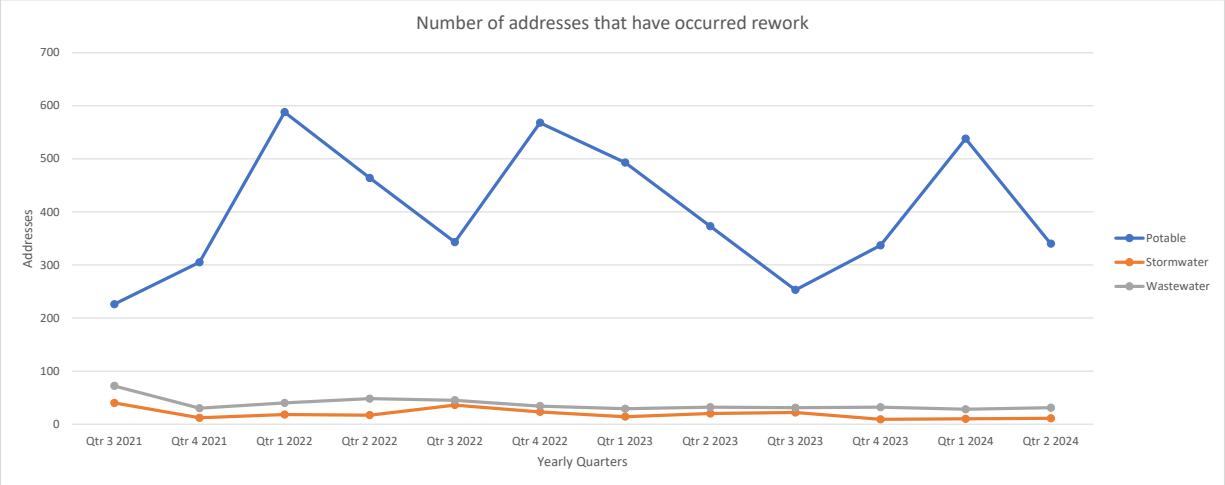


Figure 15 Number of addresses that have occurred rework

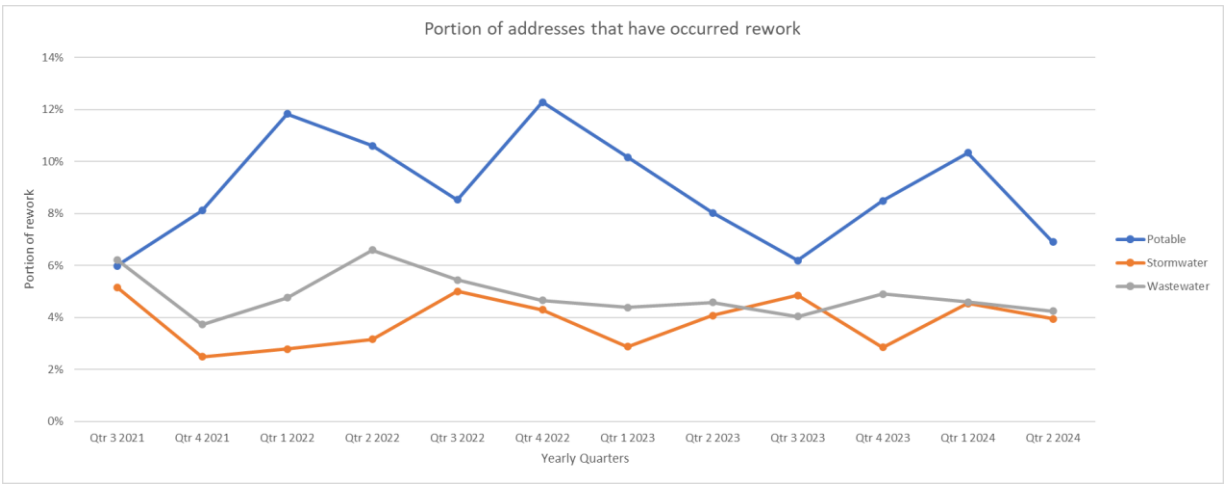


Figure 16 Proportion of addresses that have occurred rework

Comments:

- Water supply works would appear to have the highest rework proportion required with an overall figure of around 10%.
- This simplistic assessment potentially under-counts asset-specific fault rework. These outputs should be treated with caution pending further analysis which may only be possible with improved data capture.

3.2 Capital works contractor panel

3.2.1 Metric C1– Proportions of elements that make up P&G

3.2.1.1 Summary and commentary

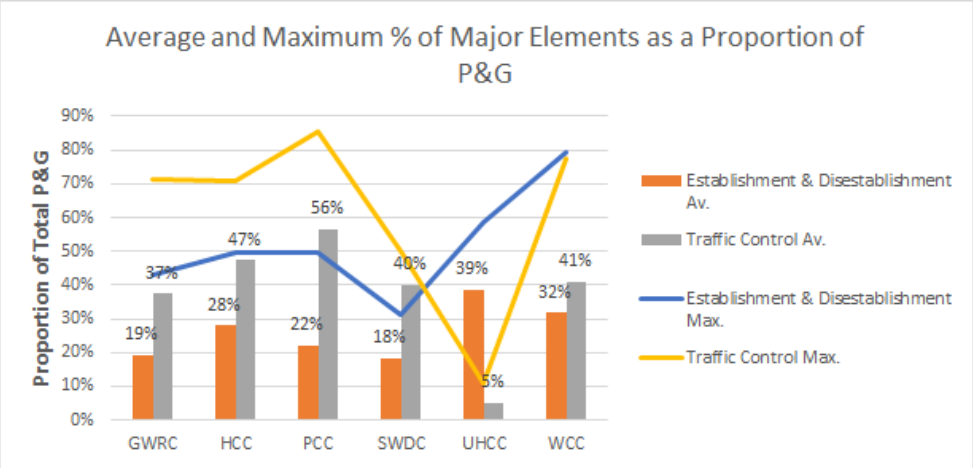


Figure 17 Major elements as a proportion of P&G

The average value of establishment and disestablishment ranges from 18% to 39% as a proportion of P&G. The average value of traffic control ranges from 5% to 56% as a proportion of P&G. The maximum value of establishment and disestablishment ranges from 31% to 79% as a proportion of P&G. The maximum value of traffic control ranges from 11% to 86% as a proportion of P&G.

Traffic control can represent a significant cost component of linear infrastructure works in New Zealand. There are standards and rules in place, as well as council expectations, which govern how traffic control is implemented and managed. Each contract is unique in terms of traffic control so there is no “rule of thumb” for what percentage of costs should be allocated to traffic control. Further assessment would be required to compare the relative intensity and effort of traffic control measures to understand potential for efficiencies.

Site establishment and disestablishment costs are significant. This P&G element provides a mechanism for contractors to be paid up-front and loading costs from elsewhere into site establishment and disestablishment would secure larger upfront payments. As each contract site is different, it would be worth undertaking some sample investigations to determine if the make-up of establishment and disestablishment costs are appropriate.

The following sub-sections present council-specific information.

3.2.1.2 GWRC

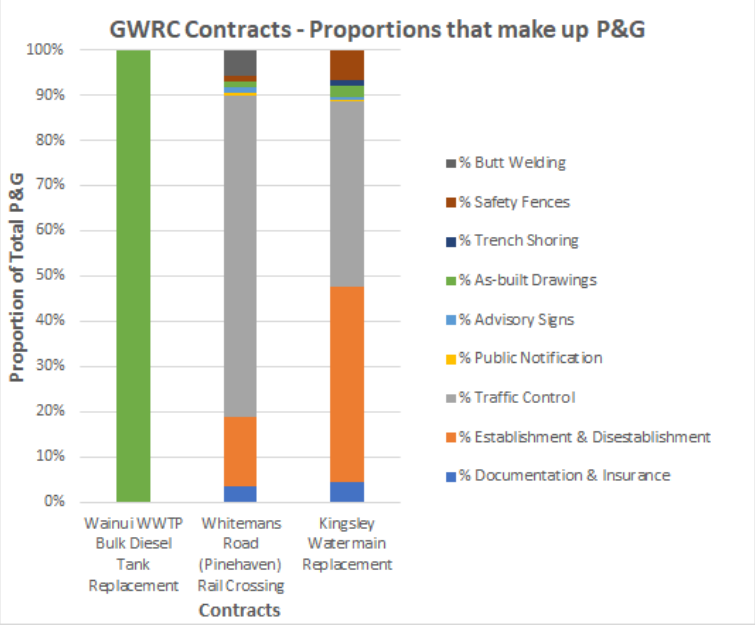


Figure 18 Proportions of P&G elements - GWRC

Elements that make up the greater proportion of P&G include:

- Establishment & Disestablishment: 0% to 43% with an average of 19%
- Traffic Control: 0% to 71% with an average of 37%

As-built Drawings is high in one contract with a value of 100% which on investigation, is probably acceptable given the nature of the contract.

3.2.1.3 HCC

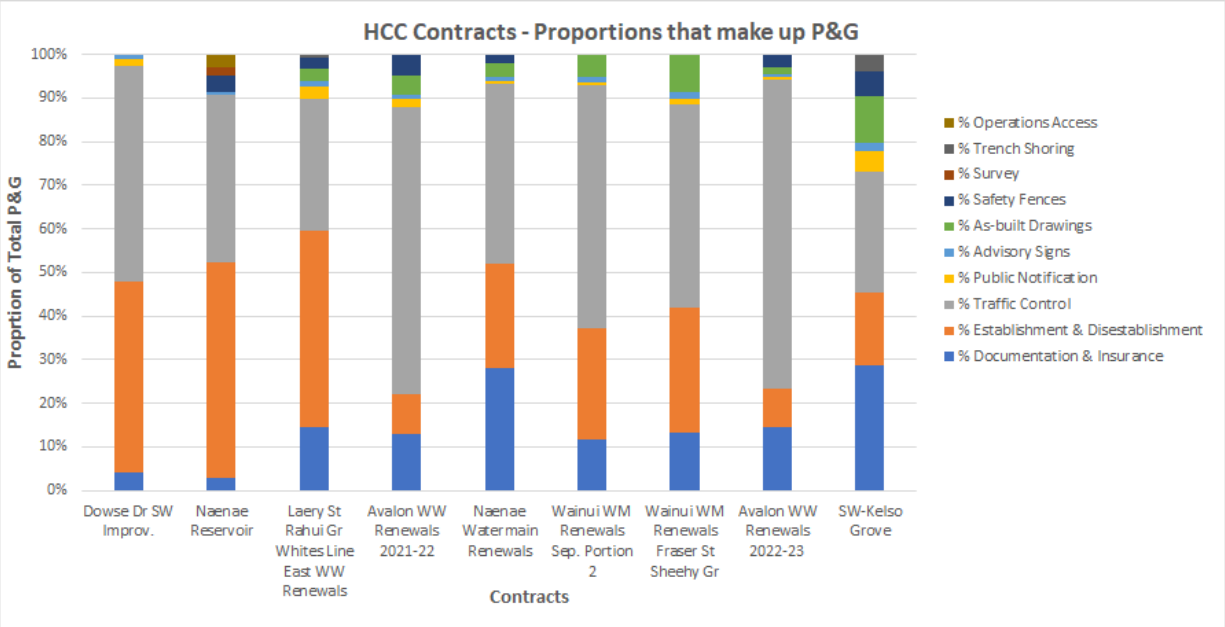


Figure 19 Proportions of P&G elements - HCC

Elements that make up the greater proportion of P&G include:

- Establishment & Disestablishment: 9% to 49% with an average of 28%
- Traffic Control: 28% to 71% with an average of 47%

Documentation is also high in two contracts with values of 28% and 29%.

3.2.1.4 PCC

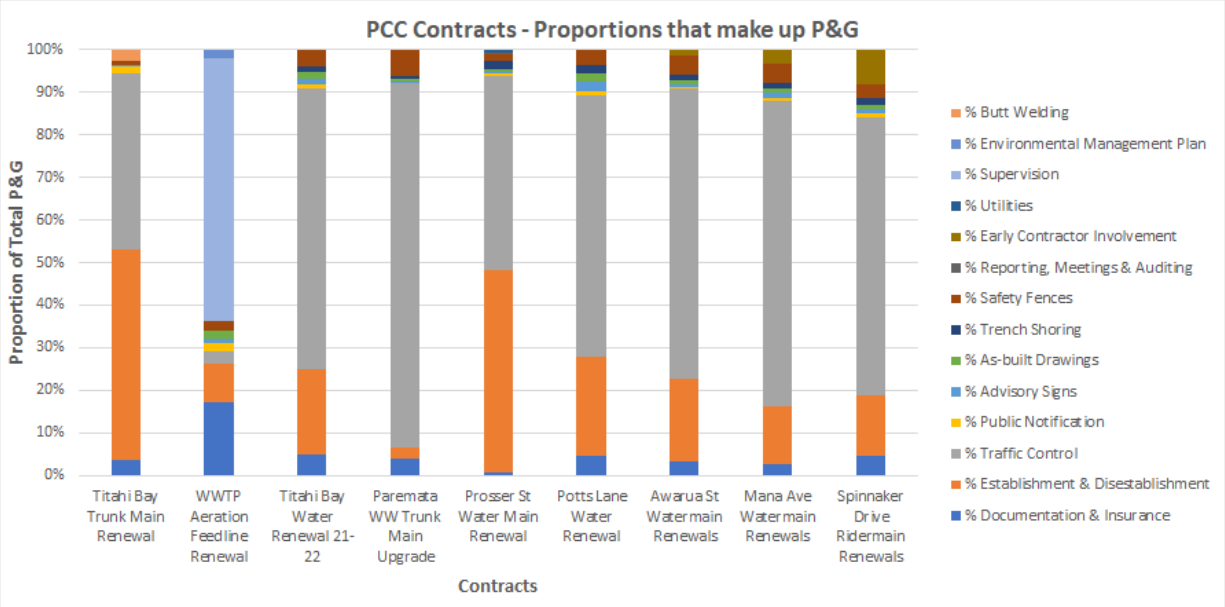


Figure 20 Proportions of P&G elements - PCC

Elements that make up the greater proportion of P&G include:

- Establishment & Disestablishment: 3% to 49% with an average of 22%
- Traffic Control: 3% to 86% with an average of 56%

Supervision is also high in one contract with a value of 62%.

3.2.1.5 SWDC

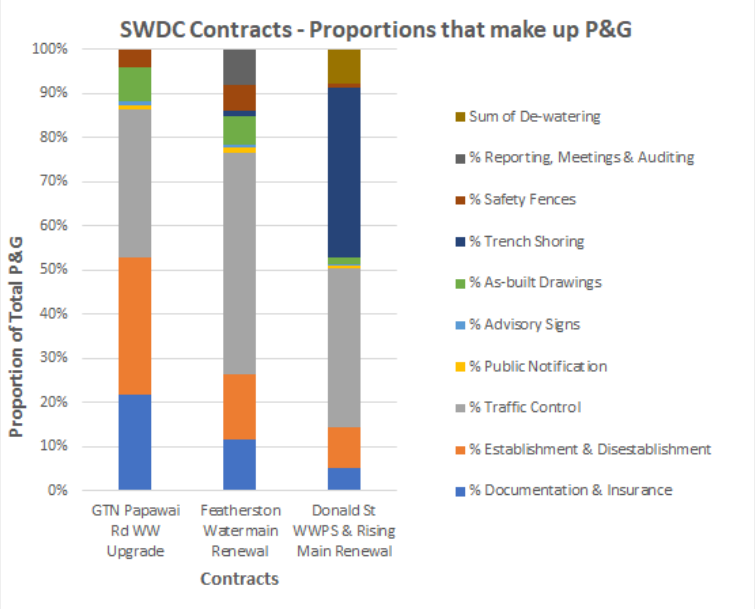


Figure 21 Proportions of P&G elements - SWDC

Elements that make up the greater proportion of P&G include:

- Establishment & Disestablishment: 9% to 31% with an average of 18%
- Traffic Control: 34% to 50% with an average of 40%

Documentation features highly for one contract with a value of 22% and Trench Shoring for another contract with a value of 38%.

3.2.1.6 UHCC

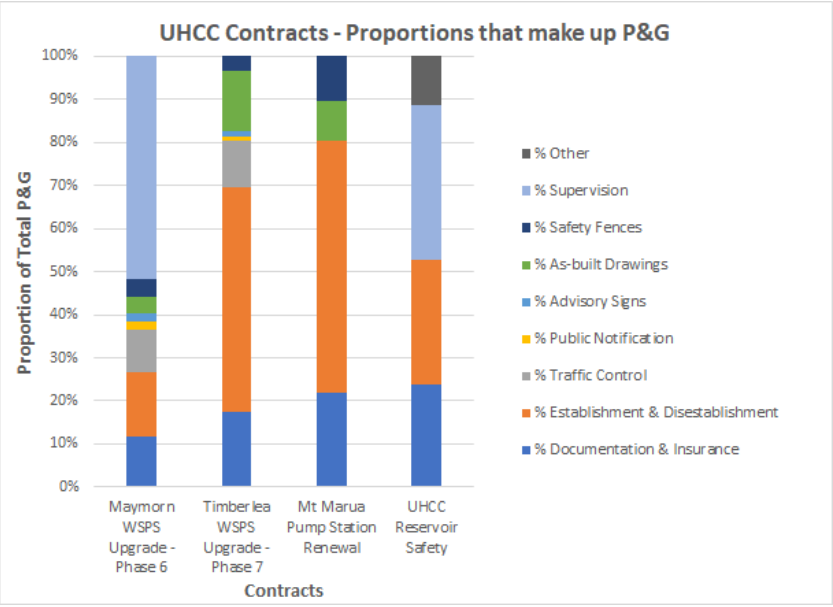


Figure 22 Proportions of P&G elements – UHCC

Elements that make up the greater proportion of P&G include:

- Documentation & Insurance: 12% to 24% with an average of 19%
- Establishment & Disestablishment: 15% to 58% with an average of 39%
- Supervision: 0% to 52% with an average of 22%

3.2.1.7 WCC

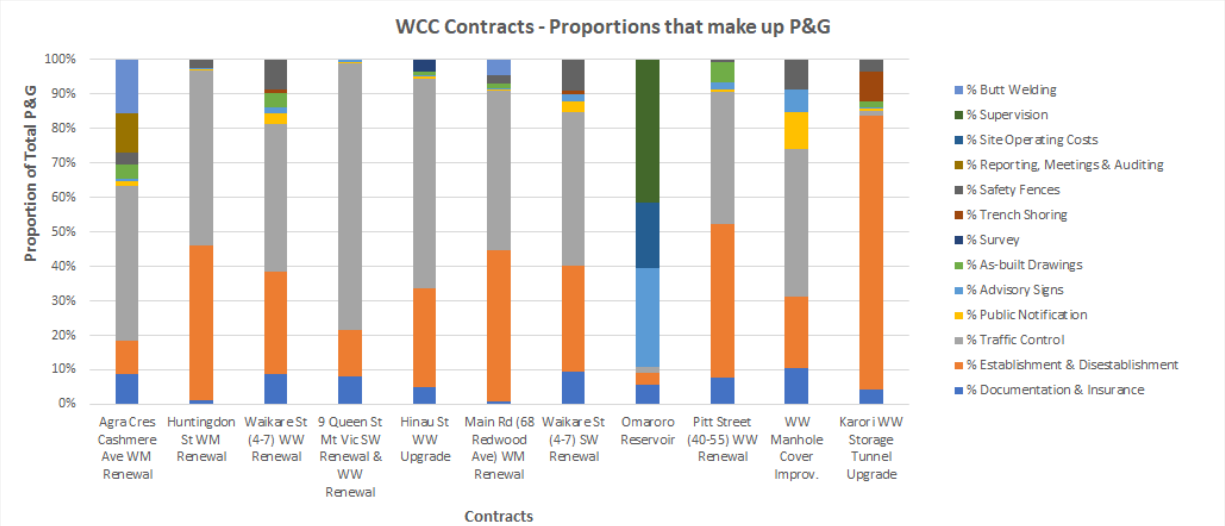


Figure 23 Proportions of P&G elements - WCC

Elements that make up the greater proportion of P&G include:

1. Establishment & Disestablishment: 3% to 79%% with an average of 32%
2. Traffic Control: 2% to 77% with an average of 41%

Supervision is also high in one contract with a value of 42%.

3.2.2 Metric C2 – Proportion of P&G relative to total contract value

3.2.2.1 Summary and commentary

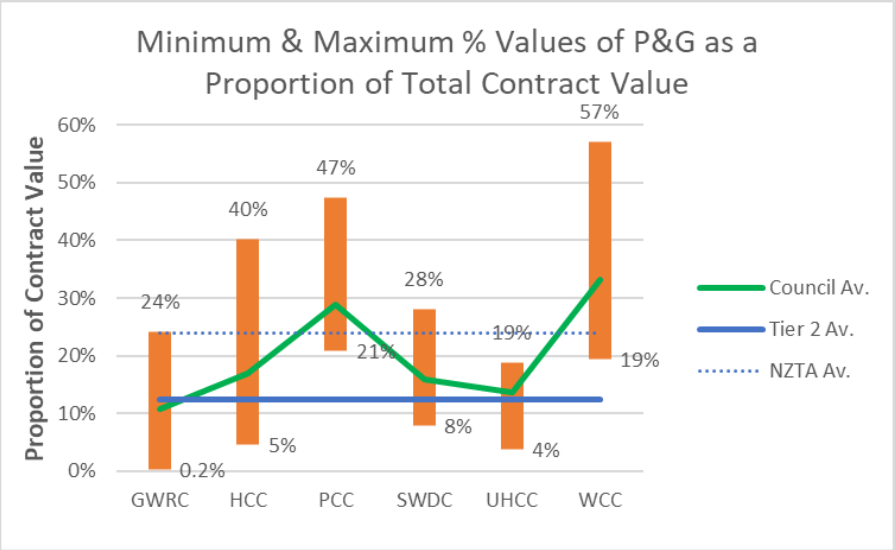


Figure 24 P&G as a proportion of total contract value

[redacted]

P&G as a proportion of total contract value ranges from a minimum of 0.2% to a maximum of 57%. The average ranges from 9% to 33%.

Our professional quantity surveying experience shows that P&G costs from Tier 2 contractors typically range from 10% - 15%, and from Tier 1 contractors delivering major infrastructure projects this range has progressively increased to now be from 15% to 25%. Analysis done by NZTA on a sample selection of roading contracts which range in value from $18M to $330m, yields a range from 14% to 31% with an average of 24%.

The above figure indicates that WWL are generally significantly higher than what we would expect from Tier 2 contractors but are below or consistent with the NZTA average for major projects. Major roading contracts and routine three waters contracts will differ. While both involve linear infrastructure, we suggest that P&G comparisons are better made with the Tier 2 contractor cost range expectations. Some elements included as P&G may be more typically included elsewhere in the contract schedules and there will be bespoke aspects to some of the WWL contracts warranting closer investigation to determine if the P&G costs are directly comparable.

3.2.2.2 GWRC

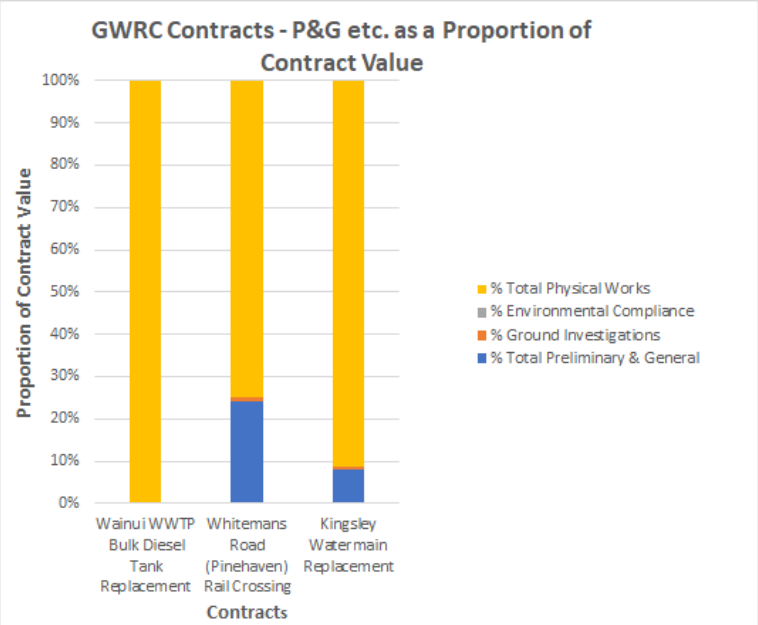


Figure 25 P&G as a proportion of total contract value - GWRC

P&G costs as a proportion of total contract value range from 0.2% to 24% with an average of 11%.

3.2.2.3 HCC

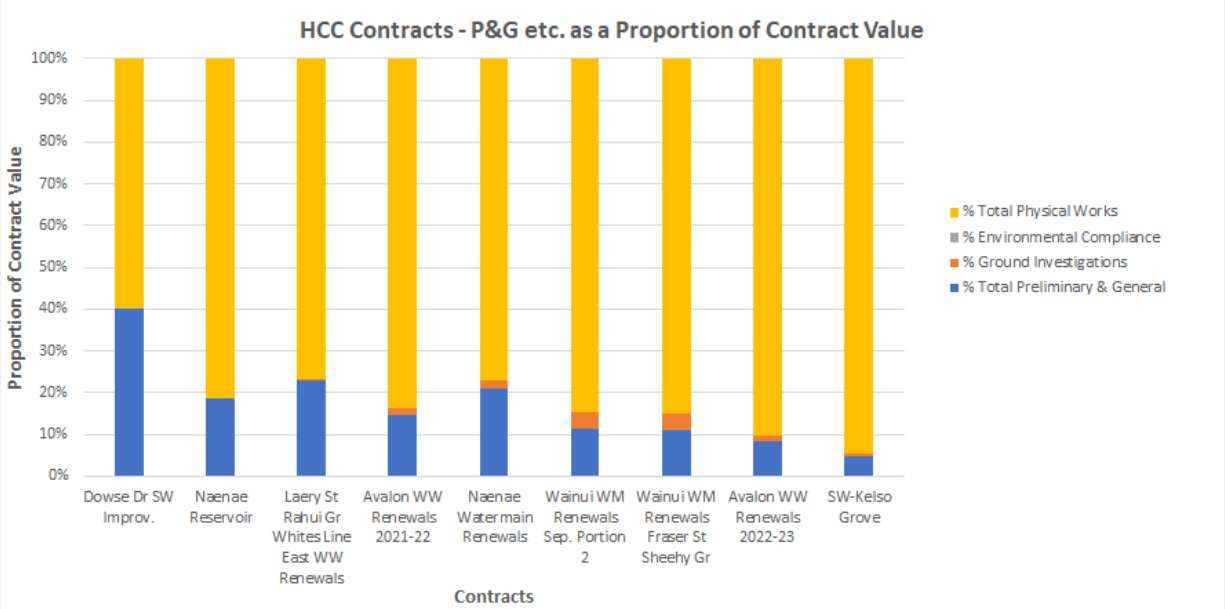


Figure 26 P&G as a proportion of total contract value - HCC

P&G costs as a proportion of total contract value range from 5% to 40% with an average of 17%.

3.2.2.4 PCC

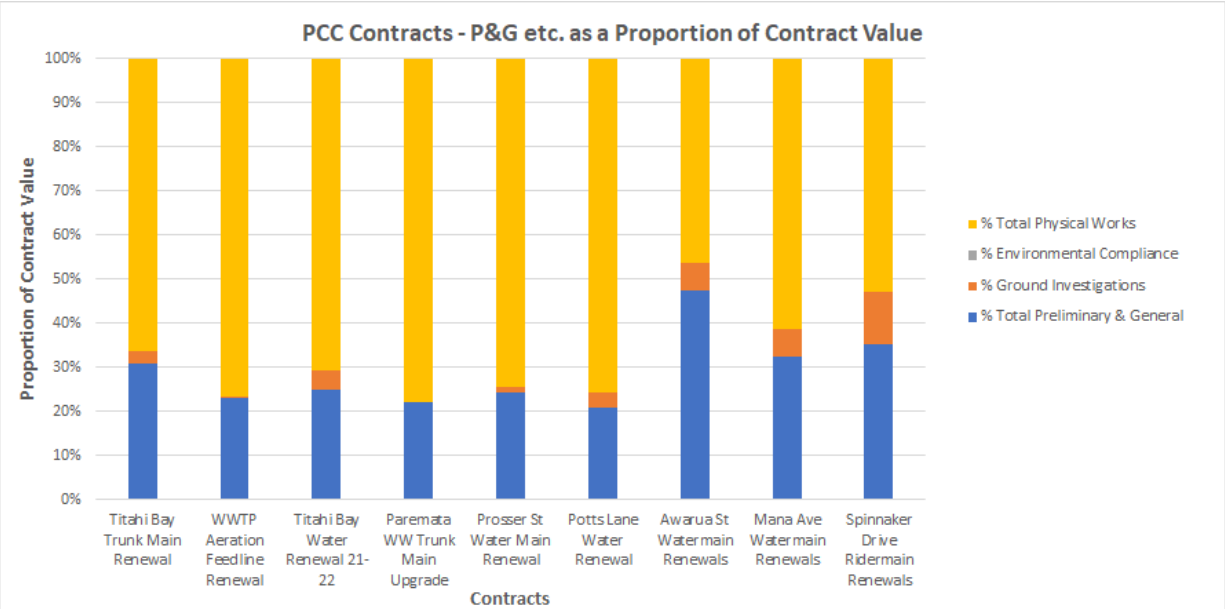


Figure 27 P&G as a proportion of total contract value - PCC

P&G costs as a proportion of total contract value range from 22% to 47% with an average of 29%.

3.2.2.5 SWDC

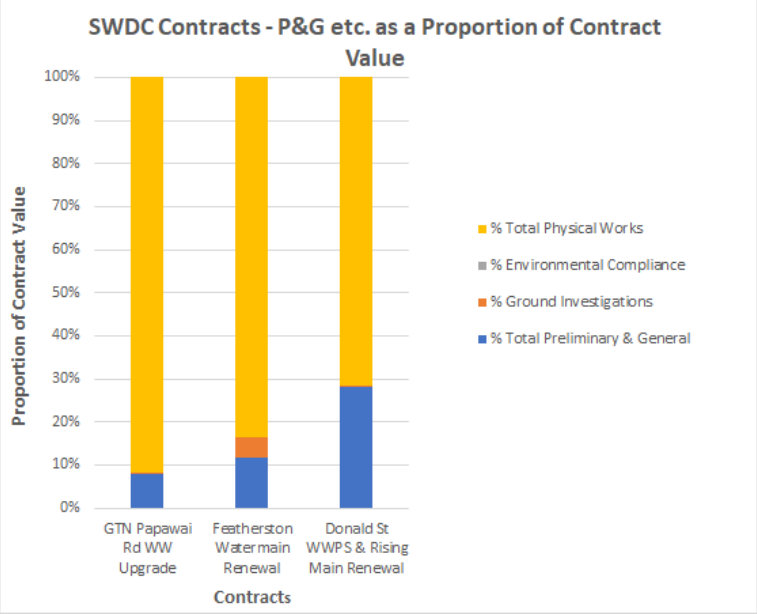


Figure 28 P&G as a proportion of total contract value - SWDC

P&G costs as a proportion of total contract value range from 8% to 28% with an average of 16%.

3.2.2.6 UHCC

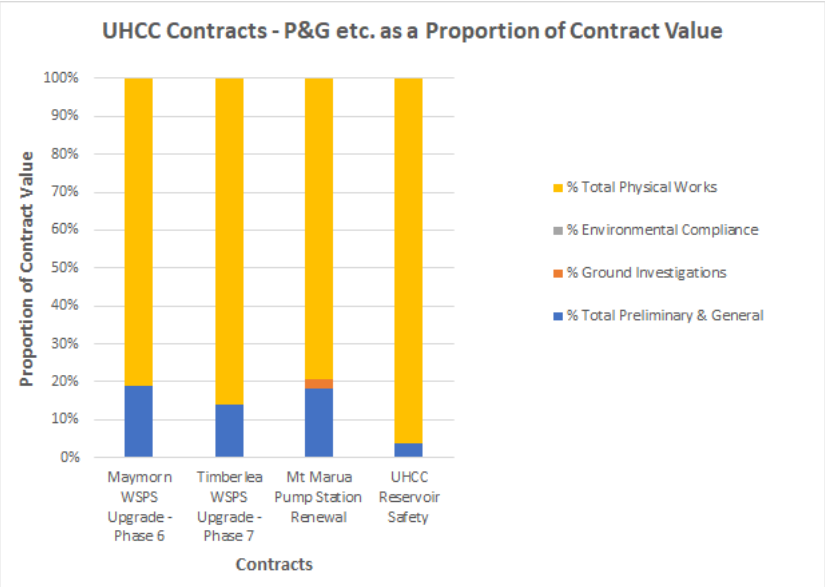


Figure 29 P&G as a proportion of total contract value - UHCC

P&G costs as a proportion of total contract value range from 4% to 19% with an average of 14%.

3.2.2.7 WCC

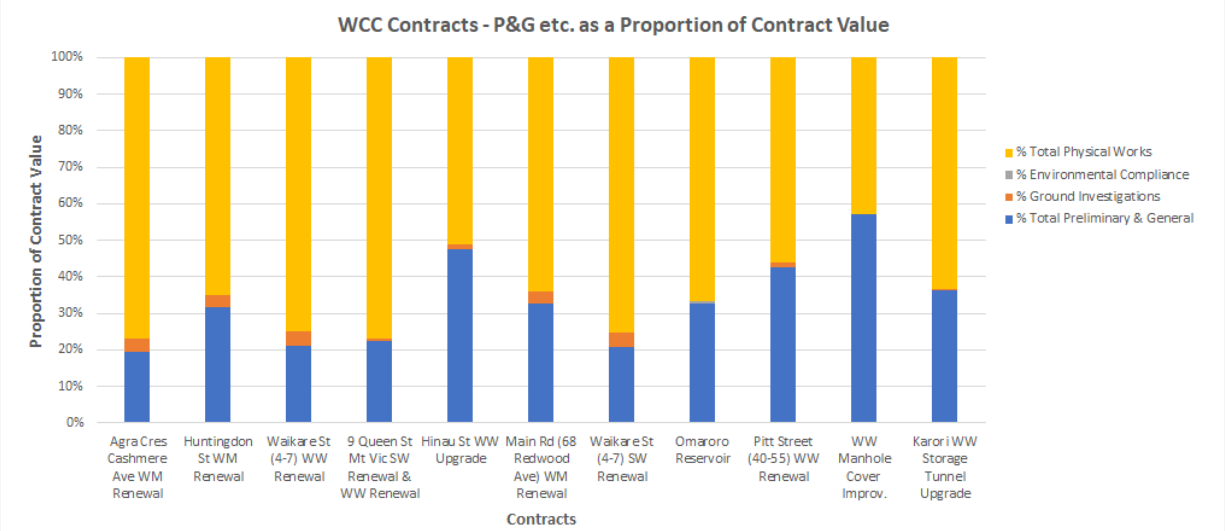


Figure 30 P&G as a proportion of total contract value - WCC

P&G costs as a proportion of total contract value range from 19% to 57% with an average of 33%.

3.2.3 Metric C3 - Total physical works cost per metre of pipe

3.2.3.1 Summary and commentary

From the analysis undertaken which is presented in the following sub-sections, the average contract rates, in general, well exceed the average of the peer council valuation unit rates that are currently in use, particularly for water and wastewater, noting the limited peer council dataset used. This infers that cost of pipe installation within the WWL networks is significantly higher than in the comparator council areas. This may reflect cost structures as well as local site differences, and comparison against a larger dataset would be advisable.

In addition, unit rates used within the current WWL valuations appear low as discussed further in 0.

3.2.3.2 Water supply

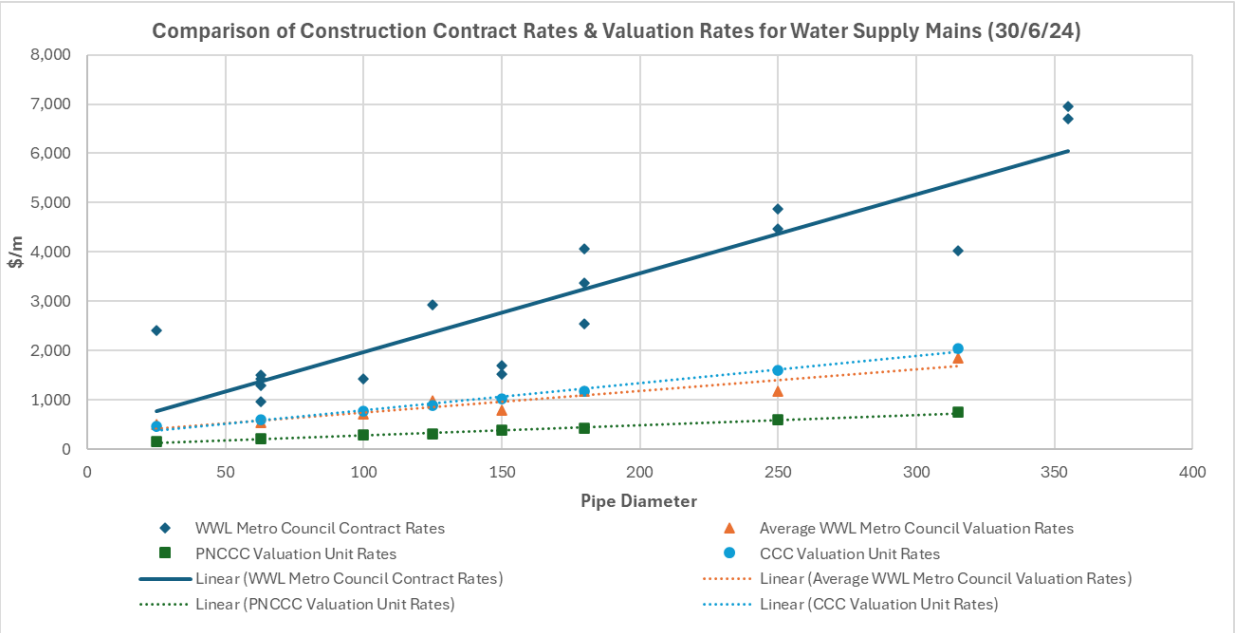


Figure 31 Unit rate for cost of installation of pipe – water supply

[redacted]

3.2.3.3 Wastewater

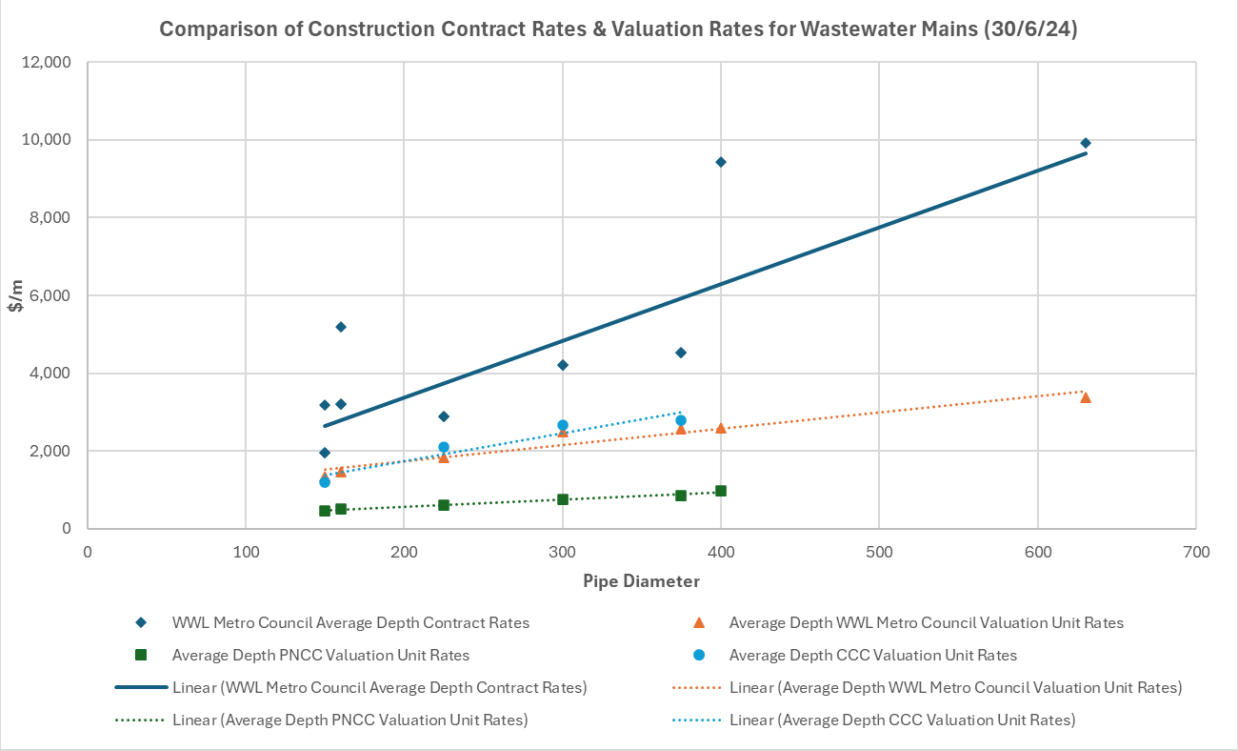


Figure 32 Unit rate for cost of installation of pipe – wastewater

3.2.3.4 Stormwater

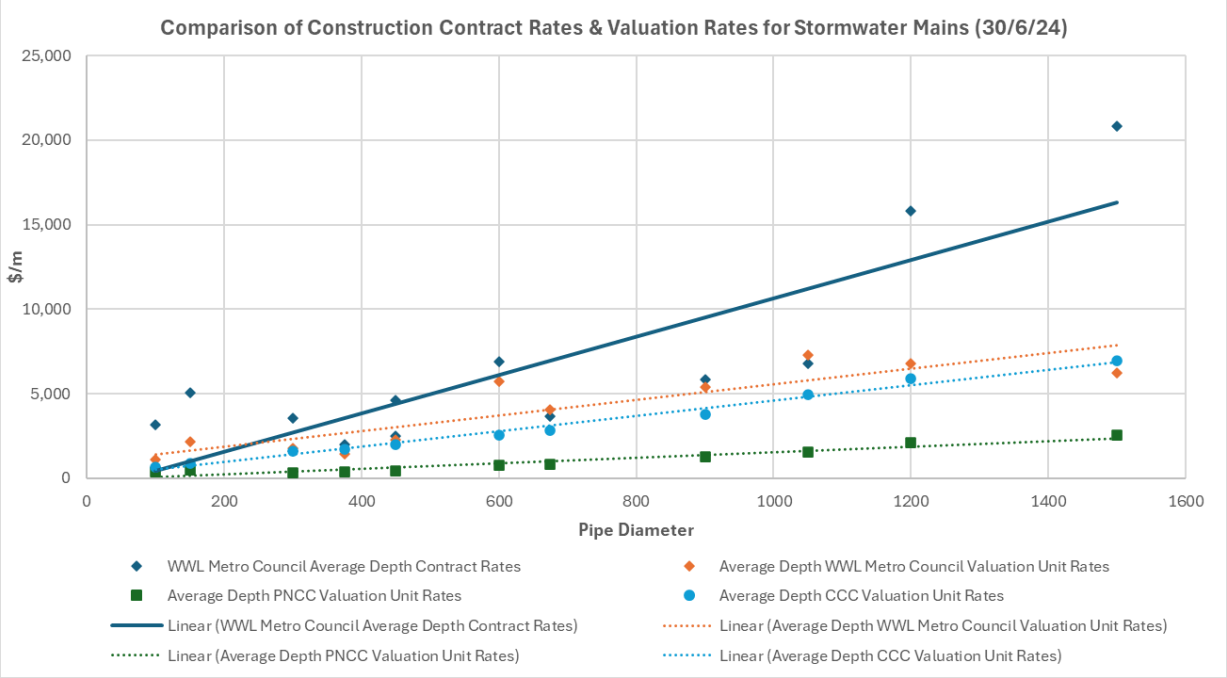


Figure 33 Unit rate for cost of installation of pipe – stormwater

3.2.4 Metric C4 - Labour and plant rates

Based on the information provided:

- We believe that the daywork and plant rates are generally considered fair and reasonable when compared to average market prices. We note, however, that rates applied within the Pitt Stratford and Wilton Wastewater Renewal contract are higher than the average rate of all of the other contracts, although also note that, given this is the most recent contract, escalation of rates over time could account for up to half of this difference:
  - Dayworks rates are higher by 30% – 75%
  - Plant rates are higher by 10% - 60%
- We note that Percentage of On-Site Overheads and Percentage of Off-Site Overheads & Profit ranges from 25% - 45%. This is considered higher than the typical range of 5% - 15%.
- There are two Titahi Bay Schedule of Prices, and both are from [redacted] Their daywork rates are not consistent and represent a 20% increase from July 2022 to March 2023.

3.3 Professional services consultants panel

3.3.1 Metric P1 – Labour rates compared to industry standard.

Table 4 Consultant charge rates compared to industry benchmark

Consultant Charge-out (standardised rates apply to all consultants)			
Job type	**Year**	**Consultants**	**ACENZ Range (2024)**
Graduate - Entry	Year 2021-2022	[redacted]	
	Year 2022-2023		
	Year 2023-2024		
Graduate 2nd Year	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Graduate 3rd Year	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Graduate 4th Year	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Professional	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Mid-level Professional	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Senior Professional	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Specialist	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Senior Specialist	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Senior Project Lead	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Advanced Specialist	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		
Project Director	Year 2021-2022		
	Year 2022-2023		
	Year 2023-2024		

[redacted]

We applied an assumed workforce profile utilised on a typical project as:

- 40%: Grad Entry – Grad 3rd Year
- 30%: Grad 4th Year – Mid-level Professional
- 20%: Senior – Senior Specialist
- 10%: Others

This provided a weighted average hourly rate for a typical project as presented below:

Table 5 Weighted average consultant hourly rate on typical project

Weighted average of workforce split			
Year	**Consultant rate**	**ACENZ medium rate**	**ACENZ minimum rate**
Year 2023-2024	$167	$177	$138

Comments:

Our analysis indicates that charge rates are broadly in line with the general infrastructure industry expectations. However, given the volume of work released through this mechanism, limited bid effort and reduced risks, we believe the lower rate envelope values would be the more applicable benchmark.

3.3.2 Metric P2 - Consultancy fees compared to total capital works spend

Table 6 Consultancy fees as a proportion of capital works spend

Service	Physical Works	Consultants	WWL Overheads	Total Project Cost	Avg % of Consultants	Avg % of WWL OH
WS	$49,142,910	$8,030,696	$7,369,273	$64,542,879	12%	11%
WW	$39,662,670	$4,721,685	$3,596,544	$47,980,899	10%	7%
SW	$4,431,382	$841,696	$430,535	$5,703,613	15%	8%

Comments:

- The data provided indicates that design and contract management fees range from <1% of the total project cost to around 65%. This would be expected to reflect project size, complexity, and so on.
- Overall weighted average of these fee proportions are broadly in line with industry expectations assuming that construction monitoring and contract management tasks are included, although would be considered towards the upper end considering the routine nature of many of the projects
- Overall on-cost proportions for projects of this nature, including consultants fees and internal costs, are generally estimated at around 15% indicating that there may be scope to streamline current arrangements.
- Implications of higher-than-expected project construction costs (Metric C3, Section 3.2.3) should be considered when assessing professional services ratios such as this.

3.4 Valuation unit rates review

3.4.1 Summary and commentary

The WWL metro council valuation pipe unit rates are significantly higher than those used by other similar councils. However, from the analysis undertaken, these valuation pipe unit rates are, in general, significantly lower than the contract rates that have been extracted from the claims. The unit rate derivation analysis on claim information was undertaken at a high level. More detailed analysis may refine the outcomes; however, we believe there will still be a significant difference between actual costs of pipe installation and the rates used within the valuations.

Overall, we believe that the current valuation unit rates in use are a little low. While it is normal practice to use current real rates for construction, it is not unreasonable to moderate these rates if future changes are expected in delivery models which may impact these costs in the near-future.

PCC valuation rates are lower than the HCC, UHCC and WCC rates with the difference being anywhere from 10% to 100%. This reduces the average WWL metro council rates. Although this average is comparable with Christchurch City Council's valuation rates, it is well below the average contract rates. Valuation unit rates from PNCC are the lowest of all the rates analysed.

The following sub-sections present council-specific information.

3.4.2 HCC

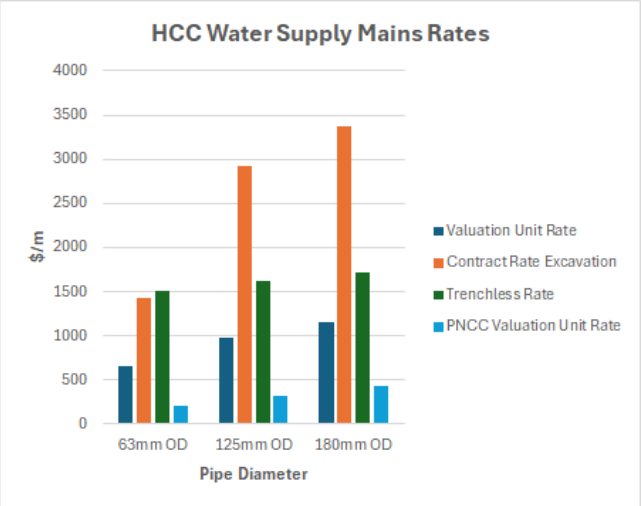


Figure 34 Valuation and contract rate information compared to peer council – HCC water supply

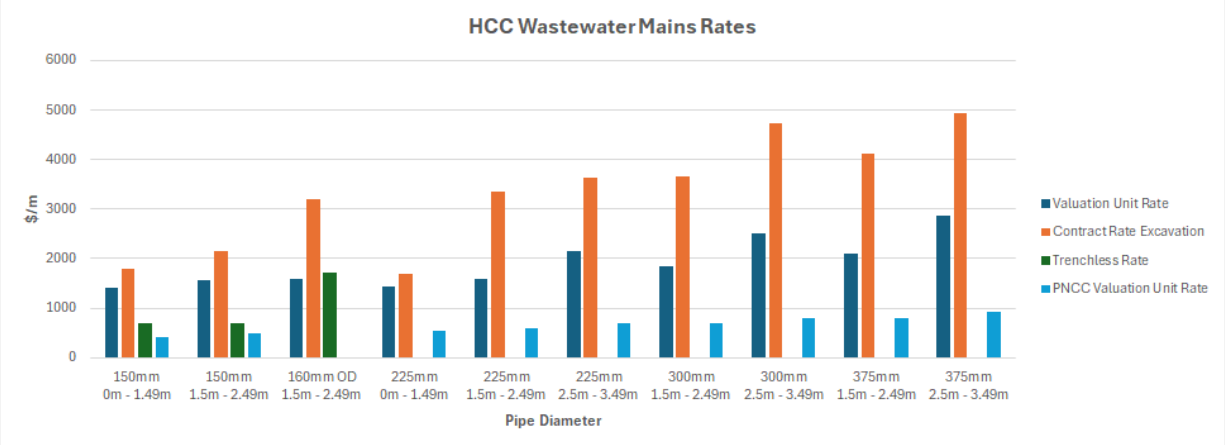


Figure 35 Valuation and contract rate information compared to peer council – HCC wastewater

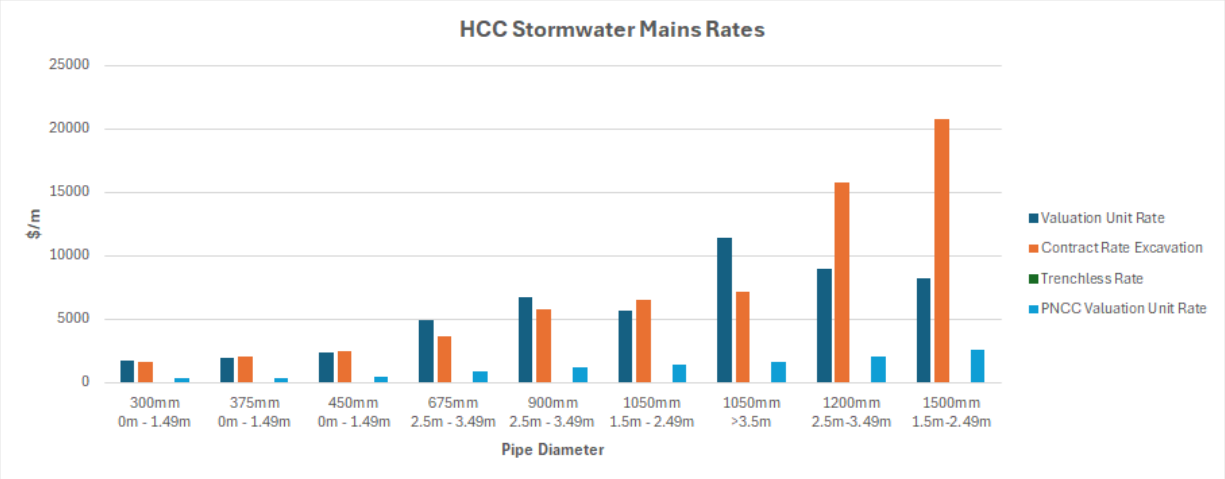


Figure 36 Valuation and contract rate information compared to peer council – HCC stormwater

3.4.3 PCC

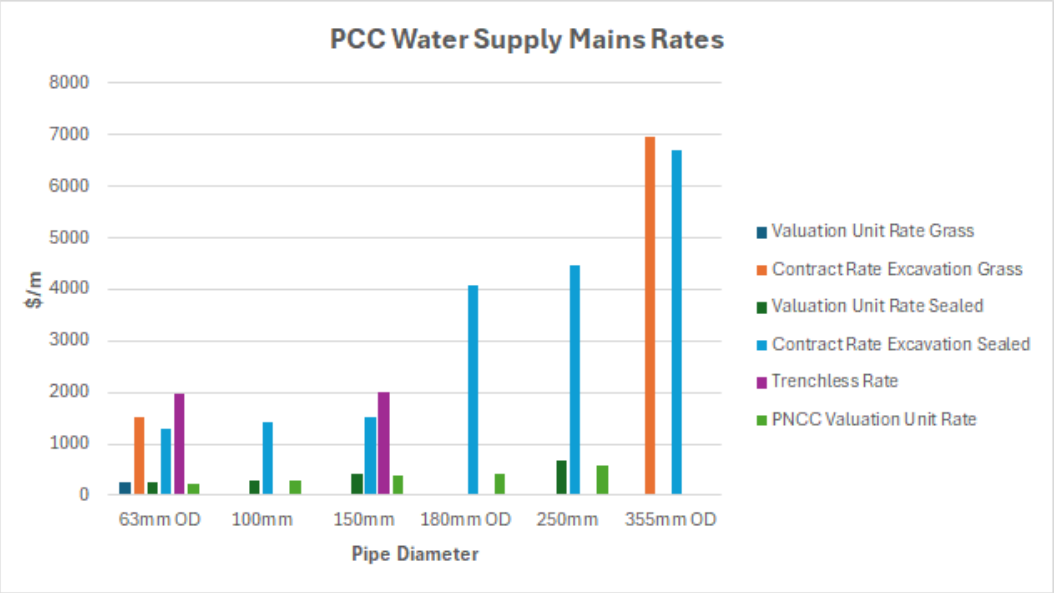


Figure 37 Valuation and contract rate information compared to peer council – PCC water supply

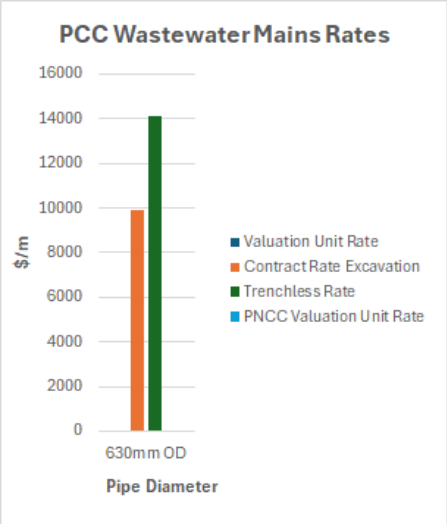


Figure 39 Valuation and contract rate information compared to peer council – PCC wastewater

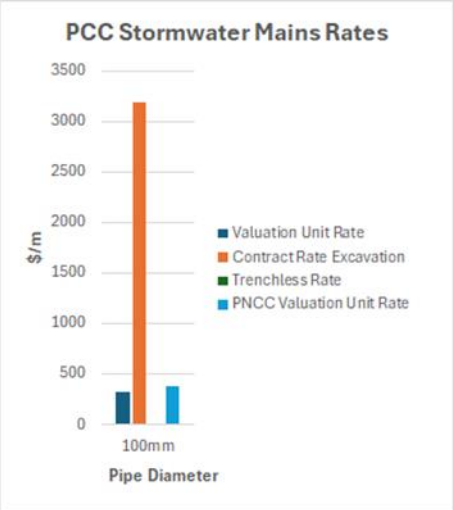


Figure 38 Valuation and contract rate information compared to peer council – PCC stormwater

3.4.4 SWDC

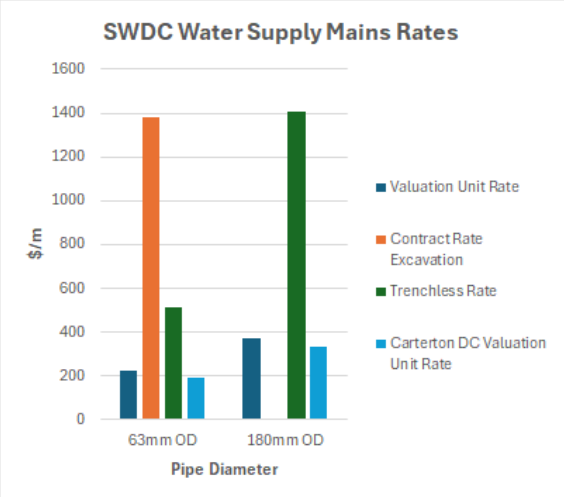


Figure 40 Valuation and contract rate information compared to peer council – SWDC water supply

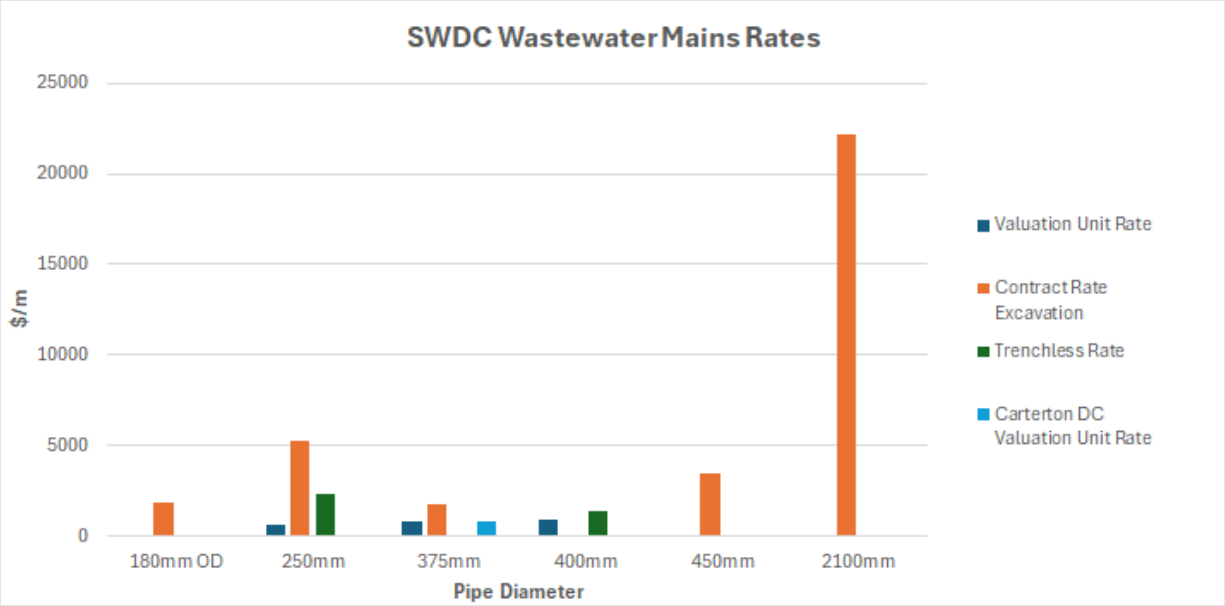


Figure 41 Valuation and contract rate information compared to peer council – SWDC wastewater

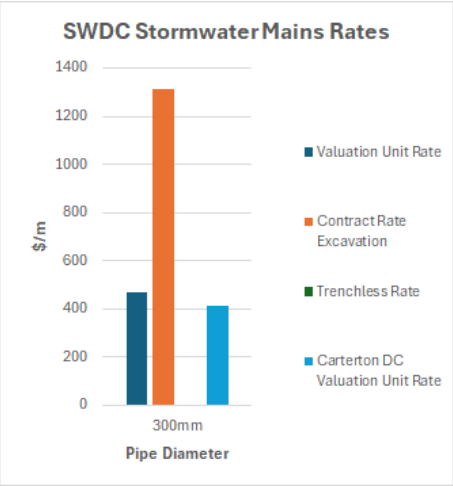


Figure 42 Valuation and contract rate information compared to peer council – SWDC stormwater

3.4.5 UHCC

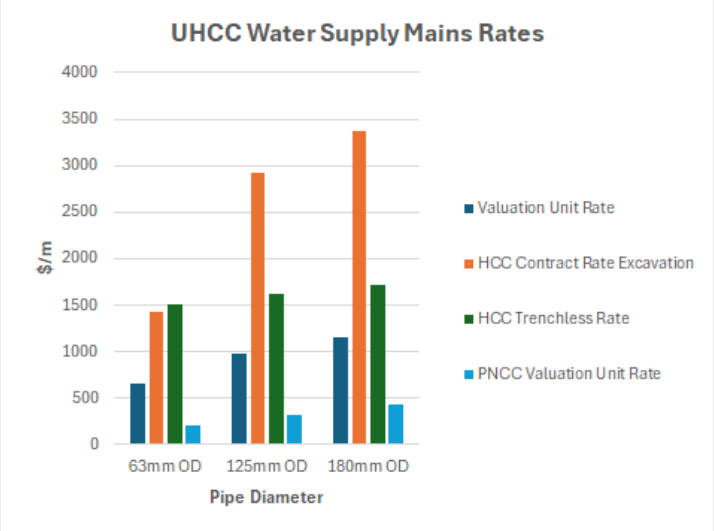


Figure 43 Valuation and contract rate information compared to peer council – UHCC water supply

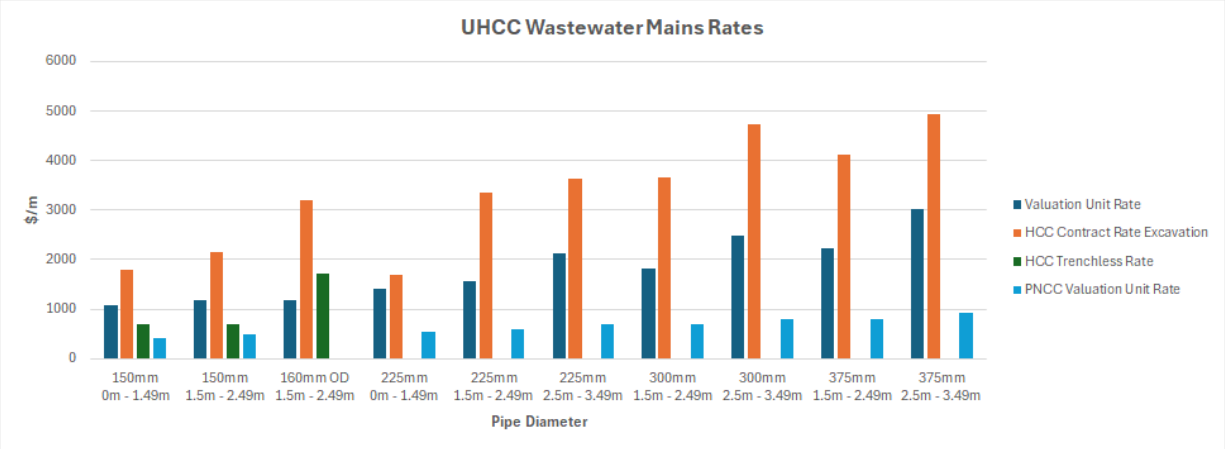


Figure 44 Valuation and contract rate information compared to peer council – UHCC wastewater

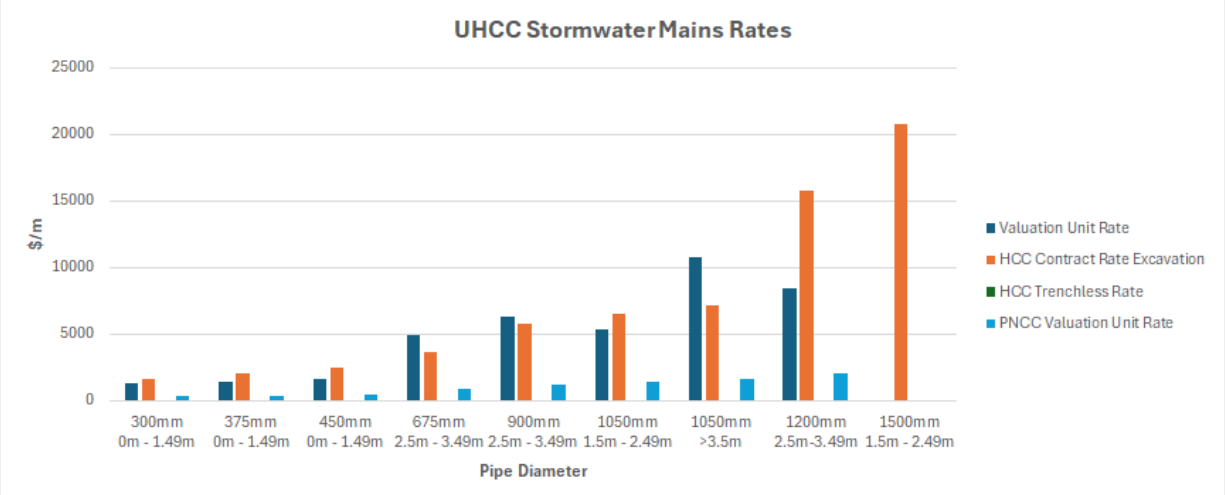


Figure 45 Valuation and contract rate information compared to peer council – UHCC stormwater

[redacted]

3.4.6 WCC

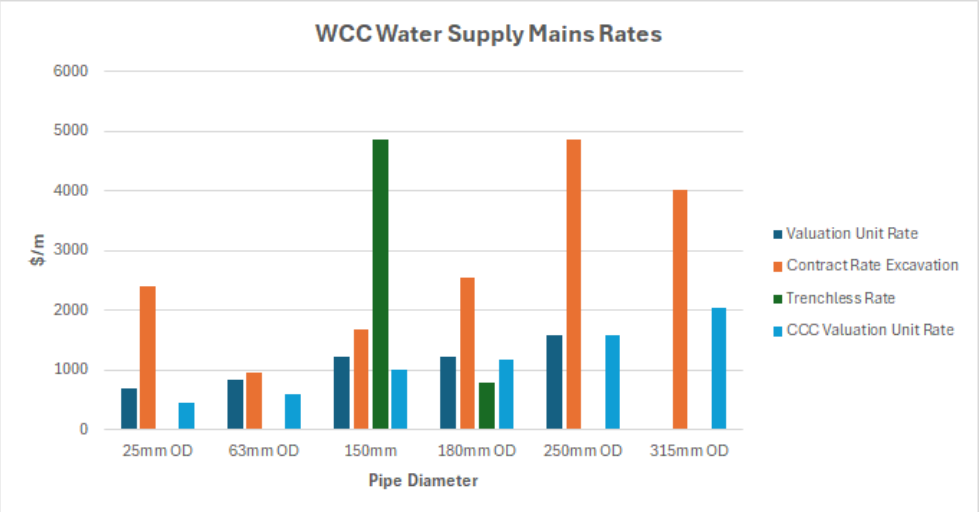


Figure 46 Valuation and contract rate information compared to peer council – WCC water supply

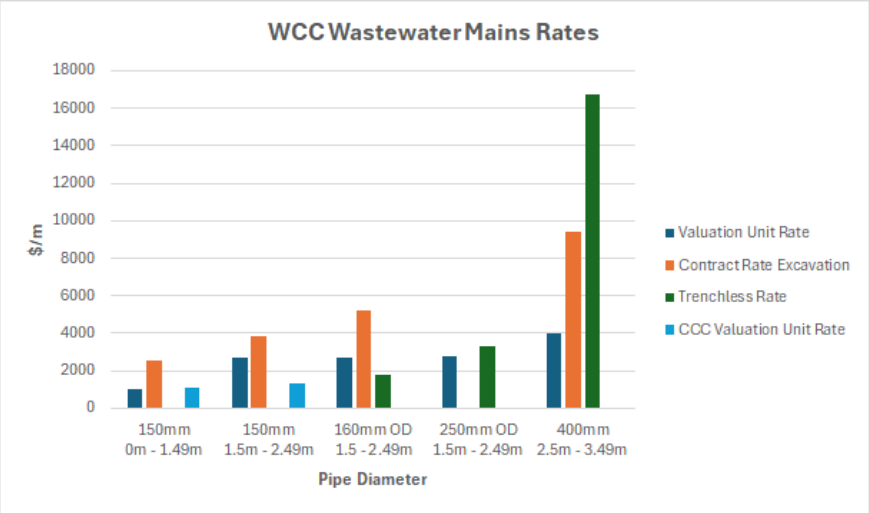


Figure 47 Valuation and contract rate information compared to peer council – WCC wastewater

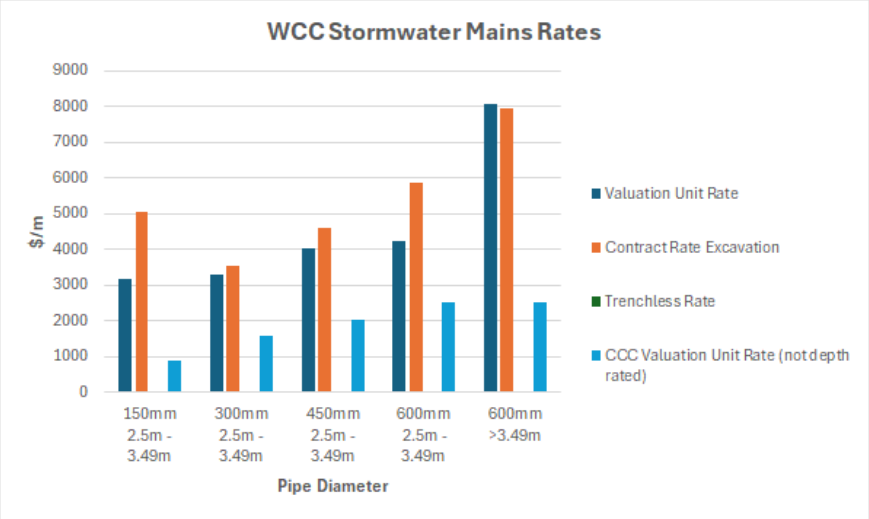


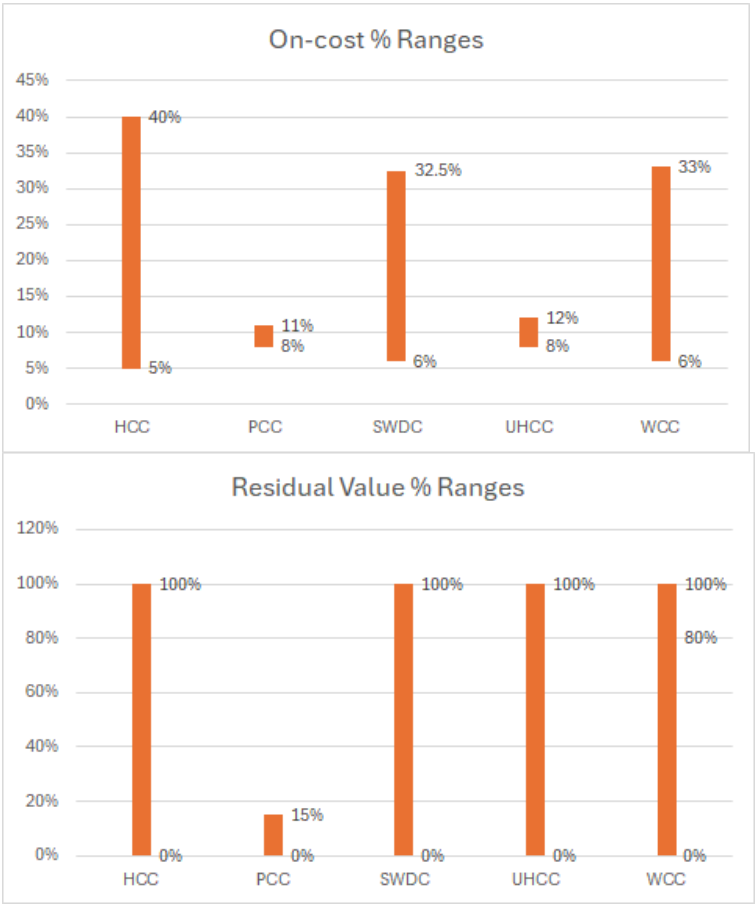
Figure 48 Valuation and contract rate information compared to peer council – WCC stormwater

3.4.7 On-cost rates, residual values etc.

AECOM's examination of how current valuations were being executed, is summarised in the following table.

Council	P&G in Base Rate	On-costs	Residual Values Used	Depth Multipliers Used	Other
GWRC	Unknown	Unknown	Unknown	Unknown	
HCC	Yes	WW Treatment Plant = 40% WW Misc. Structures = 5, 12 & 20% Everything else = 12%	100% RV for earthworks	Wastewater & Stormwater	
PCC	Yes	WW Pump Stations = 8 & 11% Everything else = 11%	15% RV for some pipes (unclear why)	No	Uses a city centre index of 15% Differentiates between surface types for Water Pipes
SWDC	Yes	WS Treatment Plant = 32.5% WW Oxidation Ponds = 32.5% Water Races = 6% Stormwater Channels = 6% Everything else = 12%	100% RV for Water Races 100% RC for Stormwater Channels	No	On-costs include a 2% contingency for everything except Treatment Plant and Oxidation Ponds which use 8%
UHCC	Yes	Stormwater Channels = 8% Everything else = 12%	100% RV for earthworks associated with Reservoirs/Tanks	Wastewater & Stormwater	
WCC	Yes	WS Reservoirs/Tanks = 6% WW Storage = 8% WW Treatment Plant = 10-33% Everything else = 12%	80% RV for Wastewater Tunnels 100% RV for earthworks associated with Treatment Plant	Wastewater & Stormwater	

Graphically, the on-cost and residual value percentages, range as follows:



Individually, we do not believe the valuation processes relevant to on-costs, residual values and so on require close scrutiny (GWRC excluded, and also unit rate derivations). However, looking at them collectively, there are a range of differences which would be worth addressing for consistency in approach to future valuations.

Elements that stand out which we believe should be addressed include:

- On-costs – values of 20%, 32.5%, 33% and 40% seem very high. From AECOM's own valuation experience, we have never encountered on-costs this high. Other on-costs in use appear reasonable but they could be standardised across all councils.
- Residual values – it would appear residual values are being used as a mechanism to effectively non-depreciate assets. From AECOM's own valuation experience, we have never seen non-depreciation done like this. This doesn't necessarily mean the approach is wrong, but clarification should be sought on the appropriateness of the approach used.
- Depth multipliers for pipes should be used for all councils – this is predicated on depth values being known.
- Use of city centre and surface type indices is good practice but relies on being able to identify assets as being located in a city centre and what the surface above them is.
- We have not seen contingencies being used when building up on-cost rates.

4.0 Next Steps

The following bullets outline some key future analysis which could be considered should increases in confidence in the outputs and conclusions drawn be required:

4.1 O&M Alliance review

- **Coding of faults**. Requests for service, coded to address, and response to these requests for service, including standardised fault cause and costs assigned to individual assets, could be improved to enable better analysis of faults and costs of response and rework. This should also be the basis for future Taumata Arowai regulatory reporting.
- **Improvements to Taumata Arowai reporting**. This is a whole-of-sector issue and will progressively occur as the regulator matures. There are currently a range of measure interpretations and data confidence is not high when undertaking benchmark or comparative analysis.
- **Cost of rework analysis**. Further analysis is required on this metric. We believe the first step in this would be to review and potentially strengthen data capture processes to enable this.

4.2 Capital works and valuation review

- **Apportionment of P&G**. Undertake more detailed review of capital works contracts to enable more precise apportionment of P&G type items
- **Project context**. Include project complexity and size analysis to recognise project context
- **Increase peer council valuation data**. Increase number of valuation peer councils and source most recent valuation data

4.3 Professional services review

- **Project context**. Include project complexity and size analysis to recognise project context

Appendix A

Deriving [redacted] Hourly Rates

Appendix A Deriving [redacted] Hourly Rates

Derivation of Labour and Plant Hourly Rate.

Four Financial Year's COG Alliance Partner Claims have been used in detail to analyse the actual labour and plant rate claimed.

[redacted] Direct Costs comprised of Labour Charge out, Plant Charge out, Plant recoveries, Subbies, Suppliers and Stock Allocation.

Each Job Number's Direct Costs have been subjected to various Overheads such as Salaries and Wages Overheads, Depot Overheads and Direct Overheads.

On top of these, the total cost has been subjected to additional Overheads and Profits consisting of Corporate Overheads, IT Charges, Implementation Budget Cost and Profits.

[redacted] Labour Hourly Rate

The following are the steps made in determining the [redacted] labour hourly rates:

Step 1 : Each staff member has a variable actual labour rate. We took the average actual rate for every financial year and compared with the labour charge out rate:

- [redacted] for FY2021 – FY2023 while
- [redacted] for FY2023 – FY 2024

Step 2 : Calculate the percentage of each Direct cost over the total Direct Costs.

Step 3: Calculate the corresponding prorated overheads and profit of the Job Number's labour cost component.

Step 4: Divide the prorated labour cost components to the total number of hours incurred to specific job number.

Step 5: Labour hourly rate is equal to [redacted] labour charge out rate plus the hourly overheads and profit for each individual staff members involved in the Job number.

[redacted] Plant Hourly Rate

The following are the steps made in determining the [redacted] plant hourly rates:

Step 1 : We note that there is a consistent plant charge out hourly rate on all financial , thus, there is no need to take an average plant charge out rate.

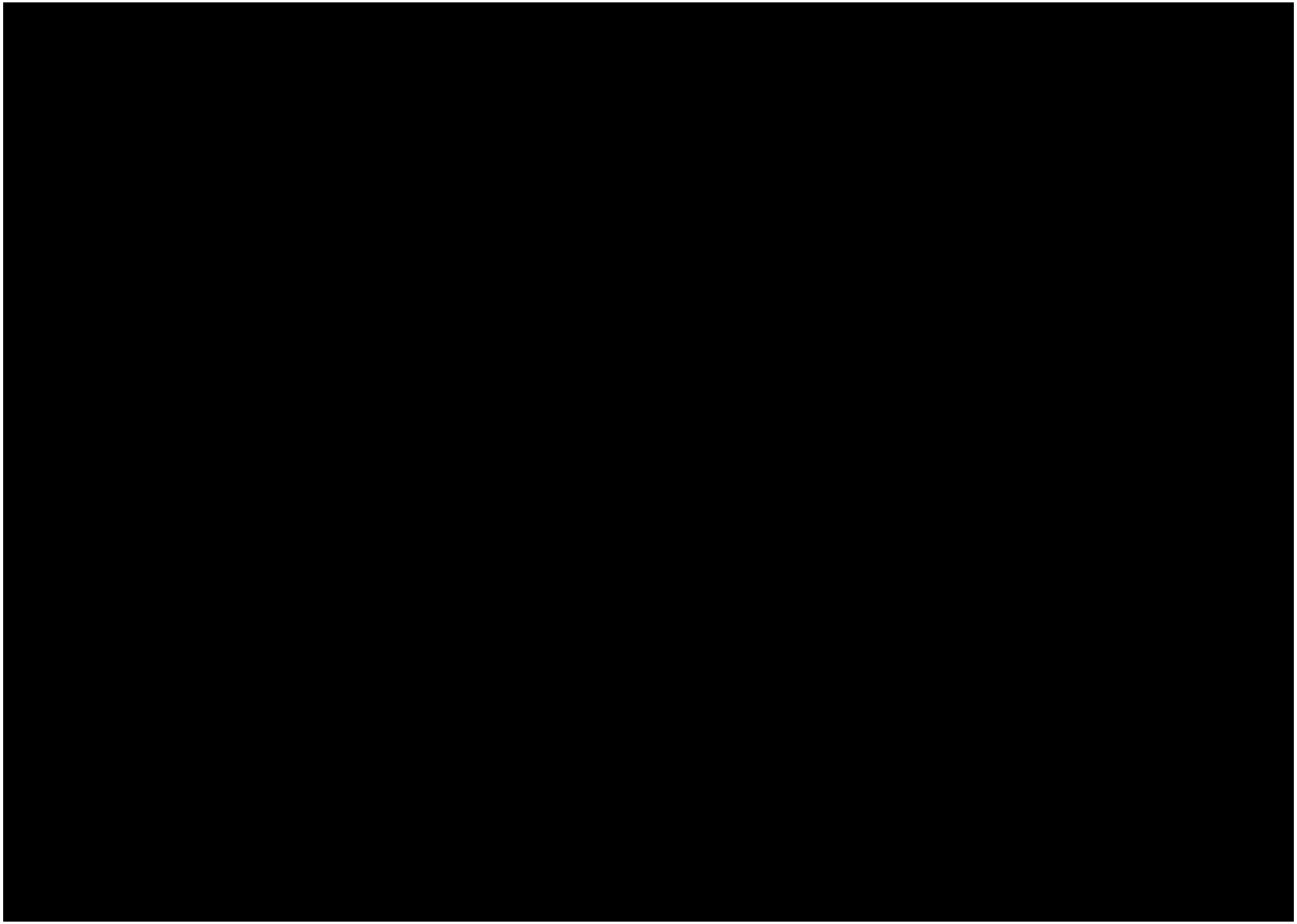
Step 2 : Calculate the percentage of each Direct cost over the total Direct Costs.

Step 3: Calculate the corresponding prorated overheads and profit of the Job Number's plant and plant recoveries cost component.

Step 4: Divide the prorated plant and plant recoveries cost component to the total number of hours involved

Step 5: Plant hourly rate is equal to [redacted] plant charge out rate plus the hourly overheads and profit for each plant required in the Job number.

[redacted]



Example : Job Number 40H603

Reference : "**Work – Opex"** Tab

[redacted]

Apportionment of Overheads (Salaries and Wages, Depot and Direct O/H, Corporate O/H, IT Charges, Implementation Cost and Profit)

[redacted]

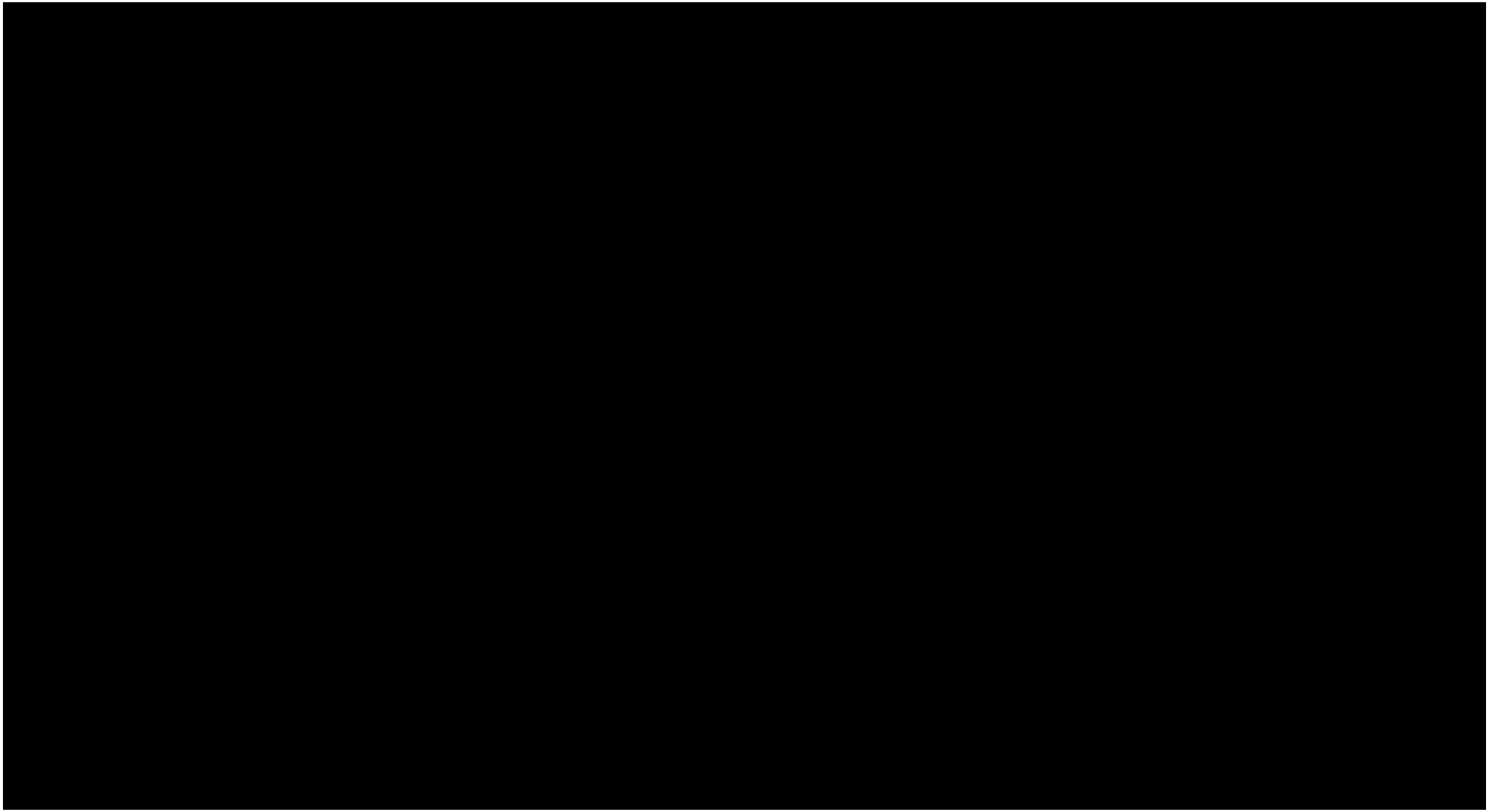
Equally apply hourly Job [redacted] Overheads and Profit to individual personnel that are involved to derive [redacted] Hourly Labour Rates

[redacted]

Equally apply hourl [redacted] Overheads and Profit to plants that are involved to derive [redacted] Hourly Plant Rates

[redacted]

[redacted]



Appendix B

CAPEX Contract Claims Documents

Appendix B CAPEX Contract Claims Documents

The following is the full list of 42 CAPEX contract claims documents which were analysed by AECOM for input into the review work undertaken.

Table 7 CAPEX Contract Claim Documents Analysed

#	Council	Contract	Category	Claim Amount	Comment
1	GWRC	[redacted]	Treatment Plant	$359,161.38	
2	GWRC		Network	$1,350,079.87	
3	GWRC		Network	$5,584,609.94	
4	HCC		Network	$322,159.25	
5	HCC		Storage	$1,937,912.07	
6	HCC		Network	$920,444.93	
7	HCC		Network	$3,512,645.76	
8	HCC		Network	$2,800,255.85	
9	HCC		Network	$1,254,113.07	
10	HCC		Network	$1,950,023.93	
11	HCC		Network	$10,994,320.72	
12	HCC		Network	$2,845,824.71	
13	PCC		Network	$7,123,453.67	
14	PCC		Treatment Plant	$1,242,550.52	
15	PCC		Network	$1,052,220.74	
16	PCC		Network	$10,981,292.68	
17	PCC		Network	$5,842,997.95	

[redacted]

#	Council	Contract	Category	Claim Amount	Comment
18	PCC	[redacted]	Network	$2,463,058.22	
19	PCC		Network	$2,994,606.06	
20	PCC		Network	$1,899,599.36	
21	PCC		Network	$794,412.66	
22	SWDC		Network	$2,451,355.00	
23 & 24	SWDC		Network	$877,475.59	Both contracts were included in a single claim document
25 & 26	SWDC		Network	$2,336,070.10	Both contracts were analysed together
27	UHCC		Pump Station	$570,906.43	The claim amount also included a consultancy and management fee of $254,955.22 which was excluded from the analysis as this is considered an on-cost
28	UHCC		Pump Station	$622,589.80	The claim amount also included a consultancy and management fee of $356,151.36 which was excluded from the analysis as this is considered an on-cost
29	UHCC		Pump Station	$255,025.74	The claim amount also include a consultancy and management fee of $178,191.31which was excluded from the analysis as this is considered an on-cost
30	UHCC		Storage	$1,539,654.00	
31	WCC		Network	$3,056,238.73	
32	WCC		Network	$2,118,858.06	
33	WCC		Network	$474,571.54	AECOM's claim amount assessment differs by $290,472.76 from WWL's assessment and it is unclear why

[redacted]

#	Council	Contract	Category	Claim Amount	Comment
34 & 35	WCC	[redacted]	Network	$1,258,136.96	Both contracts were included in a single claim document
36	WCC		Network	$2,798,750.59	
37	WCC		Network	$2,391,587.30	
38	WCC		Network	$467,928.42	AECOM's claim amount assessment differs by $193,032.04 from WWL's assessment and it is unclear why
39	WCC		Storage	$48,090,095.56	
40	WCC		Network	$573,124.51	
41	WCC		Network	$707,623.50	
42	WCC		Network	$1,231,571.93	