NATIONAL PERFORMANCE REVIEW

2014-2015

water NEW ZEALAND

The New Zealand Water & Wastes Association Waiora Aotearoa

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Foreword

The delivery of 3 waters services; drinking water, storm water and wastewater, to the public of New Zealand is managed by Councils and a small number of Council Owned or Controlled Organisations. The Water New Zealand National Performance Review is the pre-eminent annual review of the performance of these services.

41 Councils and council controlled organisations participated in the 2014-2015 review, committing resources and data to provide a comprehensive National snapshot of 3 waters service delivery. Participation rates improved by 25% over the previous year's survey and the jurisdictions of the 41 participants cover over 85% of New Zealand's population.

Benchmarking performance between participants enables Water New Zealand to identify areas for improvement in the management of 3 waters assets. We work with Councils to achieve that objective. The survey reports Council performance against relevant international benchmarks, and against the Department of Internal Affairs Non-Financial Reporting Measure Rules.

The report was prepared by Water New Zealand staff member Lesley Smith, with auditing assistance from Colin Gerald and Miles Wyatt from AECOM.

John Pfahlert

Chief Executive, Water New Zealand

Executive Summary

The National Performance Review is now not only New Zealand's longest running review of 3 water service delivery performance it is also the most significant. With performance data running back to 2007-08, and participation of 41 entities with jurisdictions that cover over 85% of the population, the NPR provides an important report of the state of our 3 waters services.

Participants supply over 525 million cubic meters of water a year, and treat over 480 million cubic meters of wastewater. Together with the stormwater network distribution pipelines for 3 waters services stretch nearly 79,000km, enough pipe to run back and forth up the length of New Zealand nearly 50 times. Collectively these systems have a net worth of over 26 billion dollars.

The review collates performance information covering all dimensions of 3 waters service supply; social, environmental and financial. Sector trends and international comparisons revealed by the data are summarised here.

THERE IS PRESSURE ON OUR URBAN WATER SUPPLIES THAT CAN BE REDUCED

Two thirds of NPR participants issued water restrictions in 2014/15 which suggests there is pressure on the availability of water for urban supplies. International comparisons of residential water efficiency, water loss and levels of metering suggest there is much room for improvement.

Residential water efficiency has much room for improvement

At 275 L/person/day NPR participants have the highest average per capita residential water consumption of all international benchmarks examined. Average per capita consumption in other international benchmarking studies ranged from 119 L/person/day in the Netherlands to 195 L/person/day in Australia.

Water metering could be increased to improve water use efficiency

Water metering is an important enabler for improving water efficiency and reducing water loss. It enables the identification and management of water leakage and provides usage information that enables customers to appreciate and manage their own consumption.

Water metering is not yet common place amongst residential properties although it is generally in place for non-residential users. Only 3 participants have no non-residential metering, however only 7 participants had full residential water metering, and 22 have either no or very low levels of residential metering coverage.

There are opportunities to reduce water loss

Assessments of current annual real water loss indicate water loss in New Zealand is high relative to international benchmarks. 24 participants have undertaken water efficiency assessments using the infrastructure leakage index, which revealed four had high or very high water loss levels.

Nearly one third of NPR participants have yet to undertake a water loss efficiency assessment. Conducting assessments of these systems would likely reveal further opportunities to reduce water loss.

LARGER COUNCILS HAVE DEMONSTRATED EXPERTISE THAT WOULD SUPPORT SMALLER COUNCILS

Rural participants have less information on the condition of their assets than larger councils. Only half of rural participants reported having reliable data on the age of their pipelines and over one quarter had not undertaken condition grading assessments of their assets. Water loss efficiency information assessments have been conducted in only one third of rural councils. Staff secondments or structured twinning arrangements between rural and metro councils would assist in knowledge transfer.

BUDGETS FOR 3 WATERS CAPITAL EXPENDITURE ARE NOT BEING MET

Actual capital expenditure was only 64% of that budgeted, a decrease from 2013-14 when the gap was 68%.

CHANGES TO WATER AND WASTEWATER TARRIFFS COULD PROVIDE MORE EQUITABLE AND AFFORDABLE SERVICE PROVISION

In some regions residential water users are subsidising non-residential water users and holiday goers

Separate non-residential charges for water and wastewater based on user pays principles help fairly apportion network operational costs. Separate charges for non-residential customers are not always used. 27 participants reported using the same charging regime for residential and non-residential water users and 19 reported using the same charging regime for non-residential wastewater users.

Peak holiday populations also have a large impact on water and wastewater systems. Visitor water use and wastewater generation adds to the overall costs of reticulation and treatment. Water and wastewater services are generally funded through rates rather than volumetric charging, meaning that the resident population base often subsidises visitors' use of water and wastewater systems. The exception is regions where a large number of visitors stay in holiday houses as these have associated rates.

Volumetric charging regimes more fairly apportion costs to users. In regions where there is no water some participants have addressed visitor use of systems by adding a "pan charge". A pan charge is applied to users with additional toilets catering for visitors. Further application of such schemes would help address the large rates burden on usually resident populations in districts with high visitor numbers.

The affordability of 3 waters charges requires further investigation

For customers in the UK, affordability risks emerge when a household spends more than 3% of their disposable income on water and sewerage bills. A number of NPR participants are exceeding the UK affordability benchmark suggesting that some regions of New Zealand may face affordability risks. This would justify a national assessment of what could be considered affordable in the New Zealand context. Such an assessment would aid in tariff setting and targeting hardship and support programs to vulnerable customers.

Our current water and wastewater tariff structures are inconsistent and confusing

Total charges for three waters infrastructure vary by nearly a factor of 3. Residents served by over half the participants in the NPR charge less than $1000 for three waters services, whilst others pay over $2,000 for an equivalent service. There are also large variations in the price of tariffs across regions. Per unit charges for a cubic meter of water vary from $0.22 to $3.52.

These comparisons are limited by variation in charging regimes, which makes it difficult to interpret and compare water and wastewater tariffs. A single district will often employ multiple charging regimes and tariff structures. For example Taupo District Council has 21 separate water supply charges. Ashburton District Council uses fixed charge, per hectare charges, and sometimes volumetric charges. Simplifying charges would improve the public's understanding of the value of water and wastewater supply.

PARTICIPANTS REPORTED REVENUE THAT COVERED ONLY 64% OF EXPENDITURE

In 2014/15 NPR participants reported that they collected over $1.42 billion dollars in revenue for 3 waters services management; however expenditure on assets was over 2.2 billion dollars. This gap requires further analysis to understand which (if not all) of the following factors are influencing this figure;

a. Accounting processes are not capturing all of three waters revenue
b. There is double counting of expenditure on level of service renewals and funding depreciation
c. Reporting entities are economically sustainable

The gap is likely to be met in part by loans. Participants often borrow to finance large infrastructure upgrades. Councils use debt funding in part to apply principles of intergenerational equity. That is, the principle that those users who benefit from the use of an asset should pay for that asset. Debt funding provides a mechanism to spread the funding of an asset over a long period of time, which means that future generations will also be expected to pay for these costs. This approach is particularly applicable in the case of water assets, which are expected to have an operational life of several decades.

Further to this, taking on debt is not necessarily a bad thing and may make good economic sense, especially when interest rates are very low and the borrowed funds are being invested in long-term assets. However ability to service three waters debt may warrant further investigation. Over half the participants in the report had interest payments on three water assets that were in excess of 10% of reported three waters related revenue.

WASTEWATER TREATMENT PLANTS ARE OPERATING UNDER EXPIRED AND INCONSISTENT CONSENTS

Resource consents for effluent discharge have expired for 26 of the 190 wastewater treatment plants covered by the review. In most cases these plants are likely to be operating under their previous consent while a new consent is processed. Inconsistencies in consents were also evident. For example some wastewater treatment plants require consents related to air and sludge's while others don't; the majority have resource consents for the disposal of sludge, but not for air emissions. Additionally, of the 18% of treated wastewater that is discharged into freshwater bodies, nearly 10% received only primary treatment.

CONSISTENCY IN DATA COLLECTION AND REPORTING REQUIRES ONGOING ATTENTION

A central goal of Water New Zealand is to provide national consistency in the management of 3 waters assets. The National Performance Review assists in the achievement of this objective by defining a comprehensive set of performance attribute data that is iteratively improved with each round of the Review.

The National Performance Review will act as a vehicle for consistent data management

Data in this report suggests that consistent data interpretation and acquisition requires ongoing focus. Dramatic changes in performance against relatively static indicators, such as service coverage, since 2013/14 suggests inconsistencies in participants data collection and definition interpretation. Data recording and definition application are gradually refined through facilitated National Performance Review workshops.

Asset condition assessment methodologies require harmonisation to build a national picture of our asset base

Seven different standardised approaches were used to determine the condition of assets. Additionally, several more in-house methodologies were listed. Standardised approaches have been published by Water New Zealand, the Institute of Public Works Engineering Australasia (IPWEA), and New Zealand NZ Asset Management Support (NAMS). These organisations need to work together to ensure harmonisation of asset management guidance material provided to councils.

1. Background

1.1 About the National Performance Review

The National Performance Review (NPR) is an annual benchmarking exercise of water, wastewater and stormwater provision in New Zealand. The exercise provides comparative performance information to assist:

- Service managers identify opportunities for improvement and fast track developments through the learning of others.
- Decision makers access information on the status and trends of the 3 waters provision.

Council's and Council Controlled Organisation's responsible for water service provision voluntarily provide data and finances to produce the NPR. The report has been produced annually since 2007-08, over which time participation has steadily increased. This year the NPR benchmarks data from 41 participants whose districts cover over 85% of New Zealand's population.

The NPR is co-ordinated by Water New Zealand, a national independent not for profit organisation representing water professionals and organisations throughout New Zealand. Every year Water New Zealand collates data, produces this report, and co-ordinate's workshops and webinars to facilitate continuous improvement initiatives based on reported benchmarks.

Current activities and associated resources are updated on the project web page:
www.waternz.org.nz/NationalPerformanceReview

1.2 NPR Report Participants

Water, wastewater and stormwater service provision in New Zealand is the responsibility of 67 Territorial Authorities (TA's) (Department of Internal Affairs, 2014). The majority of councils covered in this report provide services directly. Exceptions are;

- **Auckland Council** who provide stormwater services but outsource water and wastewater service delivery to Watercare, a Council Controlled Organisation. Watercare's performance is reported separately from Auckland Council in the NPR.
- **Greater Wellington Regional Council, Wellington, Upper Hutt, Lower Hutt and Porirua City Councils** who deliver three waters network management through Wellington Water, a Council Owned Shared Services Organisation. Entities with services provided by Wellington Water are individually reported in this NPR.

To facilitate like to like comparisons, NPR participants have been categorised by the size of the population in their jurisdiction. Groups are shown in Table 1.

Table 1: Participants in the 2014-15 NPR by sector category

Metropolitan: Populations Exceeding 90,000		Provincial: Populations between 20,000 and 90,000				Rural: Populations under 20,000	
Auckland Council	1415550	Invercargill City Council	51696	Rotorua District Council	65280	Clutha District Council	16890
Hutt City Council	98238	Palmerston North City Council	80079	Selwyn District Council	44595	Central Otago District Council	17895
Wellington City Council	190956	South Taranaki District Council	26577	South Waikato District Council	22071	Gore District Council	12033
Christchurch City Council	367800	Whangarei District Council	85900	Taupo District Council	32907	Hauraki District Council	17811
Dunedin City Council	120246	Whakatane District Council	32691	Tasman District Council	47900	Kaipara District Council	4251
Greater Wellington Regional Council	381090	Ashburton District Council	31041	Thames – Coromandel District Council	26178	MacKenzie District Council	4158
Hamilton City Council	153000	Porirua City Council	51717	Timaru District Council	43929	Ruapehu District Council	11844
Tauranga City Council	120819	Upper Hutt City Council	40179	Waikato District Council	63378	Westland District Council	8304
Watercare	1415550	Horowhenua District Council	30096	Western Bay of Plenty District Council	47219	Wairoa District Council	7890
		Kapiti Coast District Council	49104	Waimakariri District Council	49989		
		Marlborough District Council	43416	Waipa District Council	46668		
		New Plymouth District Council	74187				

1.3 Accessing and Understanding NPR data

1.3.1 Data Definitions

Data definitions are provided in the New Zealand Water Industry 2014/15 National Performance Review Guide Notes (Water New Zealand, 2015). Definitions can be cross referenced by indicator codes listed in figures and tables. Guide notes are available online at: www.waternz.org.nz/NationalPerformanceReview

1.3.2 Data Availability

Raw data used to develop this report is available on request by emailing: technical@waternz.org.nz

A selection of indicators can also be accessed via the International Benchmarking Network for Water and Sanitation Utilities (IBNET) database. The database can be used to compare NPR participants' performance with over 1,400 other utilities around the world: https://database.ib-net.org/

Water loss indicators have been provided to the Leaksuite website. This will enable water loss practitioners to compare New Zealand's water loss with utilities abroad. Data and water loss support resources are available from: http://www.leakssuite.com/

1.3.3 Verification Audits

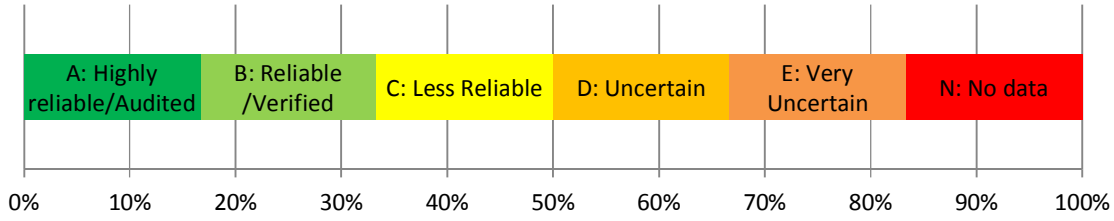
Each year an independent review of data is conducted by external auditors. 2014/15 audits where conducted by AECOM. The audits include desktop reviews of all data submissions and onsite audits at 20% of participant sites. Their purpose is to check:

- Indicator definitions are being correctly and consistently interpreted across participants
- Sound methodologies and calculations are being employed in data provision
- The validity of background assumptions
- Discrepancies with previous years and across participating organisations.

1.3.4 Data Confidence

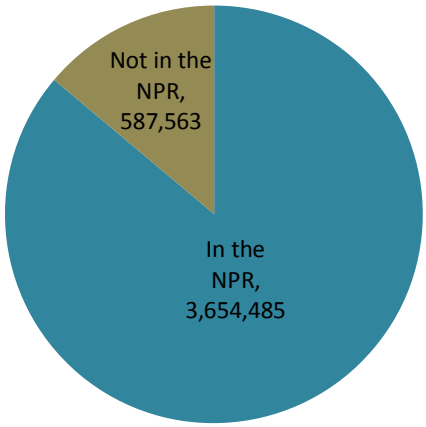
Participants have rated the confidence level of data provided using the scale in Figure 1. Appendix I describes this scale. Where data confidence is low across a number of participants this figure has been included to indicate the percentage of participants in each data confidence category.

Figure 1: Data confidence levels



1.3.5 Representativeness of New Zealand service provision

Figure 2: Proportion of the New Zealand population covered by NPR participant jurisdictions



Collectively the jurisdictions of the 41 participants included in this report cover over 85% of New Zealand's population. Good performance is likely to correlate with the capacity to participate in continuous improvement initiatives such as the NPR, suggesting trends in this report may show higher performance than exist across the 3 waters sector overall.

In general data covers the whole of a council's service district. Exceptions are;

- Kaipara Council data is for Dargarville only
- Wairoa wastewater data excludes wastewater at Opoutama and Mahia townships
- Timaru expanded 2014/15 reporting to cover their entire service district. Previous reporting on Timaru's water supplies and stormwater services covered urban schemes only. When comparing previous year data changes in Timaru's performance could be due to expanded reporting coverage.

1.4 Performance Comparisons

1.4.1 International Benchmarks

International performance indicators that align with the NPR have been included in this report and are shown in Table 2. Further detail on each is provided in Appendix II.

There are a number of differences between the way in which water services and infrastructure are structured and delivered in other countries which are not explored in this report. Importantly in New Zealand, 3 waters service delivery is generally delivered by local authorities and is just one of many services. A large number of participants in other international benchmarks operate as utilities with only water and wastewater delivery responsibilities. Difference in structure and scale of these association should be considered when interpreting international benchmarks.

Table 2: International Benchmarking Studies Referenced in the 2014-15 NPR

Participating Utilities	Reporting year	Data Source
Australia, Urban Utilities	2013-14	National performance report 2013-14: urban water utilities (Bureau of Meteorology, 2015)
Netherlands, drinking (not wastewater) utilities	2014	Dutch Drinking Water Statistics 2015 (Vewin, Association of Dutch water companies, 2015)
European Benchmarking Commission (EBC), mainly Western European water- & wastewater utilities	2013	Learning from International Best Practices: 2014 Water and Wastewater Benchmark (European Benchmarking Commission, 2015)
European Leakage Benchmarks, water utilities across Europe	-	EU Reference document Good Practices on Leakage Management (European Commission, 2015)
Pacific, 13 water and wastewater utilities	2014	IBNET Database, Multiple Utility Report (Pacific Water and Wastewater Association, 2015)
United Kingdom	2014-15	Web summary of companies performance (Ofwat: The economic regulator of the water sector in England and Wales, 2015)

1.4.2 Determinants of Performance

Variations in performance are driven by a combination of innate service area characteristics and alterable operational practices. Innate service area characteristics which are likely to influence performance are quantified in sections of the report listed in Table 3. Other innate determinants of performance not quantifiable by data in this report include (but are not limited to) topography, rainfall, soil type and surface water quality.

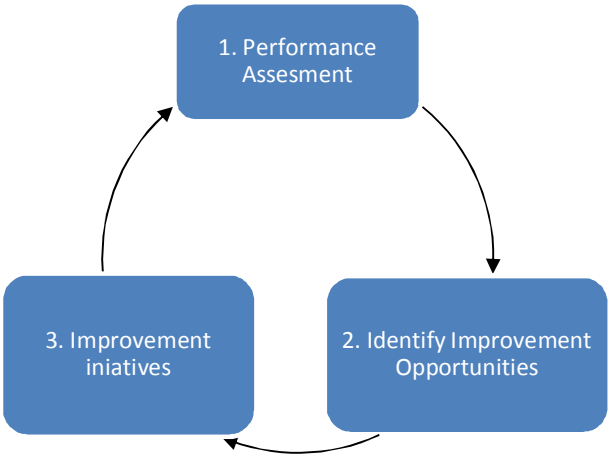
Table 3: Determinants of performance

Service Area Characterises	Report Section
Serviced Property Type	3
Utility Size	2.1
Connection Density	2.2
Holiday populations	3.2

1.5 Utilising the NPR for Continuous Improvement

The NPR is a cyclical continuous improvement exercise that consists of three consecutive steps: performance assessment, identification of improvement opportunities, and improvement initiatives.

Figure 3: National Performance Review Continuous Improvement Cycle



Participants are encouraged to utilise the NPR to improve 3 waters performance by undertaking activities outlined in Table 4. The table also shows Water New Zealand initiatives to facilitate the identification and adoption of best practices and address industry wide opportunities.

Table 4: Continuous Improvement Steps in the National Performance Review

Continuous Improvement Step	Water New Zealand	NPR Participants
1. Performance assessment	Review trends and international data to produce benchmarking report	Collate performance data
2. Identify Improvement Options	Facilitate continuous improvement workshop	Review benchmarks to identify areas of high or low performance
3. Improvement Initiatives	• Develop industry projects based on areas of common weakness (e.g. development of training materials or industry guidance). • Update data and definition guidelines.	• Contact high performing utilities to assist in areas of low performance • Undertake investigations to understand and improve areas of low performance • Celebrate areas of high performance (e.g. through annual reports, corporate newsletters, Water New Zealand national conference, Water New Zealand Journal)

1.6 Utilising the NPR to fulfil statutory requirements

Data in the NPR has been aligned with the following mandatory reporting requirements:

> **Non-financial performance measure rules**: The rules specify non-financial performance measures for local authorities to use when reporting to their communities. Local authorities are required to incorporate the performance measures into their long term plans and annual reports. Data and reporting in the NPR has been aligned with measures related to stormwater drainage, sewerage and the disposal of sewage, flood protection and control works and water supply.
>
> **Local Government (Financial Reporting and Prudence) Regulations 2014**: The regulations contain a set of benchmarks to measure the financial prudence of a local authority's plans and performance. Local authorities are required to include these in their long term plans and annual report. The NPR applies a number of these benchmarks to 3 waters service delivery.

Participants are encouraged to utilise NPR data to assist with mandated reporting. Appendix III cross-references NPR performance data indicators with mandated reporting measures required under

NPR benchmarks may also be of use to councils in meeting the following aspects of service delivery review requirements under section 17A of the Local Government Act 2002:

(5) If responsibility for delivery of infrastructure, services, or regulatory functions is to be undertaken by a different entity from that responsible for governance, the entity that is responsible for governance must ensure that there is a contract or other binding agreement that clearly specifies—

> *(a) the required service levels; and*
>
> *(b) the performance measures and targets to be used to assess compliance with the required service levels; and*
>
> *(c) how performance is to be assessed and reported;*

2. Asset Management

This section provides an overview of assets in the NPR that includes information on; scheme size, connection density, asset condition and condition assessment methodologies.

KEY OBSERVATIONS

Assets covered in the report have a net value of over $26 billion

The report covers nearly 79,000km of pipelines

Our oldest networks are our wastewater networks

Wastewater pipes have a median age of 39 years. The median age of water and stormwater networks is 32 and 34 years respectively, slightly lower than the European median water pipeline age at 37 years.

Multiple assessment methodologies are being applied to determine asset condition

Seven different standardised approaches were used to determine the condition of assets. Several more in-house methodologies were also listed. A significant opportunity exists to harmonise condition assessment approaches into a consistent set of national guidance material.

Rural participants have less information on the condition of their assets than larger councils

Only half of rural participants reported having reliable data on the age of their pipelines and over one quarter had not undertaken condition grading assessments of their assets. Staff secondments or structured twinning arrangements between rural and metro councils could assist in bridging this knowledge gap.

On average Australian utilities manage twice the number of water system connections

NPR participants have a median of 15,802 connections to the water supply system, around half of that of Australia at 31,348 and around a fiftieth of the average utility in the Netherlands.

Table 5: Asset quantities included in the NPR

Asset	Metro	Provincial	Rural	Total
Total length (km) of water supply network [WSA1]	17,836	14,294	4,305	36,436
Total length (km) of wastewater network [WWA1]	14,166	7,434	972	22,572
Total length (km) of stormwater network [SWA1]	10,730	7,933	801	19,464
Total Number of water supply reservoirs [WSA6]	395	749	282	1,426
Total Number of water treatment plants [WSA4]	39	195	61	295
Total Number of Wastewater treatment plants [WWA7]	39	107	44	190
Total Water Pump Stations [WSA5]	317	398	109	824
Total Wastewater Pump Stations [WWA5]	1,209	1,304	175	2,688

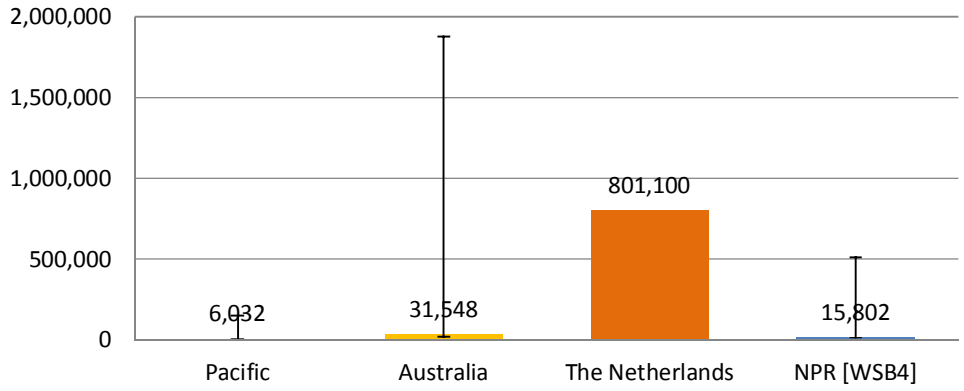
Table 6: Value of assets included in the NPR

Asset	Metro	Provincial	Rural	Total
Water Network	$6,342,090,656	$2,060,015,375	$305,063,475	$8,707,169,506
Wastewater Network	$7,696,526,053	$2,751,294,773	$211,365,856	$10,659,186,682
Stormwater Network	$5,716,889,181	$1,716,533,699	$107,208,101	$7,540,630,981
All 3 water assets	$19,755,505,890	$6,527,843,846	$623,637,433	$26,906,987,169

In general the quality of asset value data was reported as being good or very good, with the exception of Kaipara council who did not have data available.

2.1 Utility size

Figure 4: Range and median number of water connections compared with international benchmarks



*The figure for the Netherlands is an arithmetic average not a median average

Figure 5: Number of water supply serviced properties for metropolitan participants

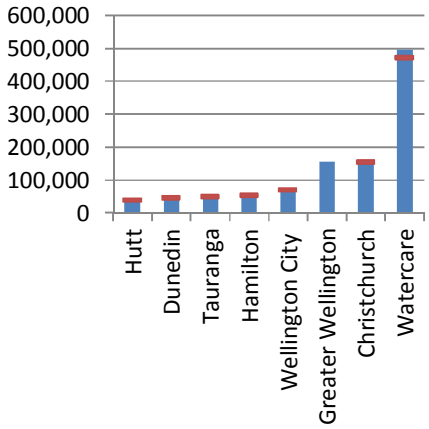


Figure 6: Number of water supply serviced properties for provincial participants

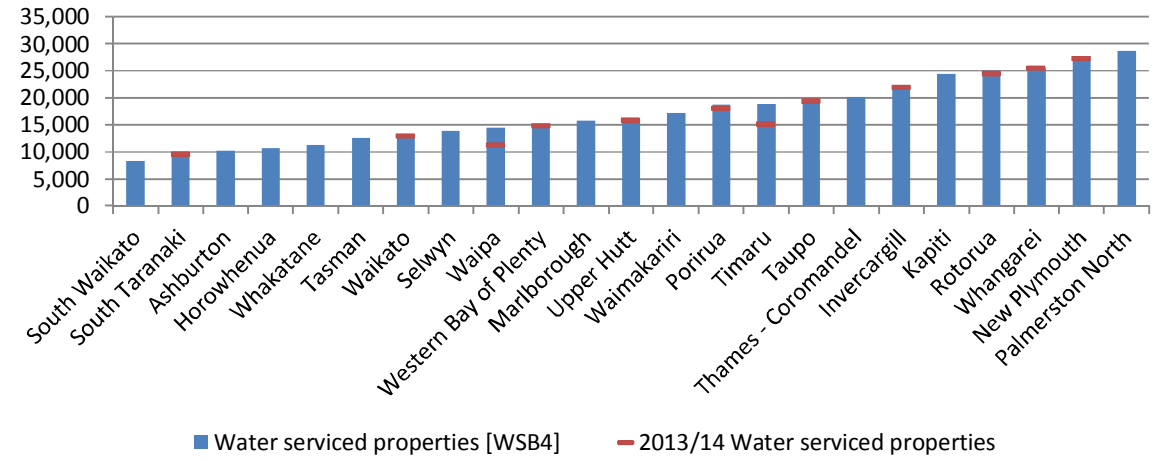
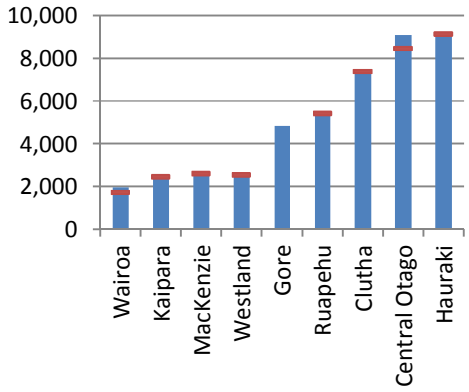
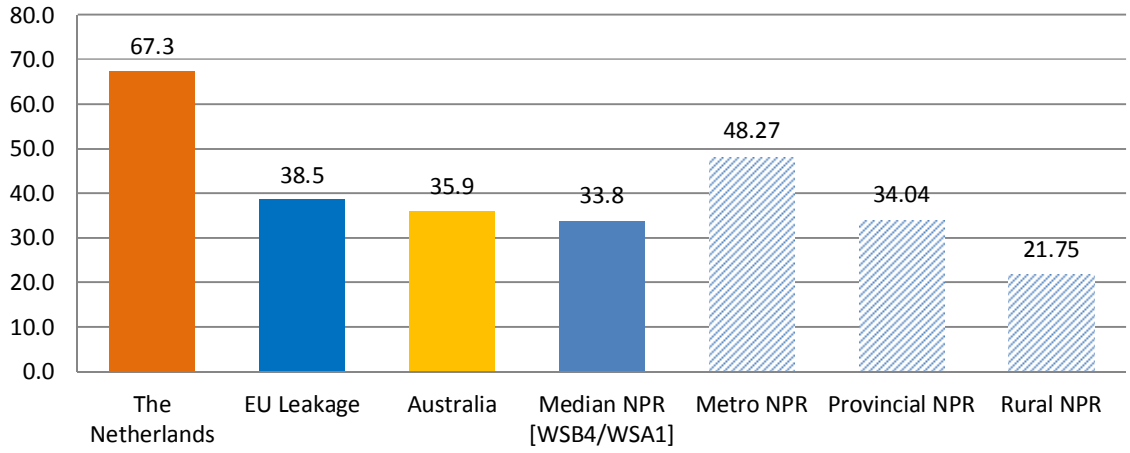


Figure 7: Number of water supply serviced properties for rural participants



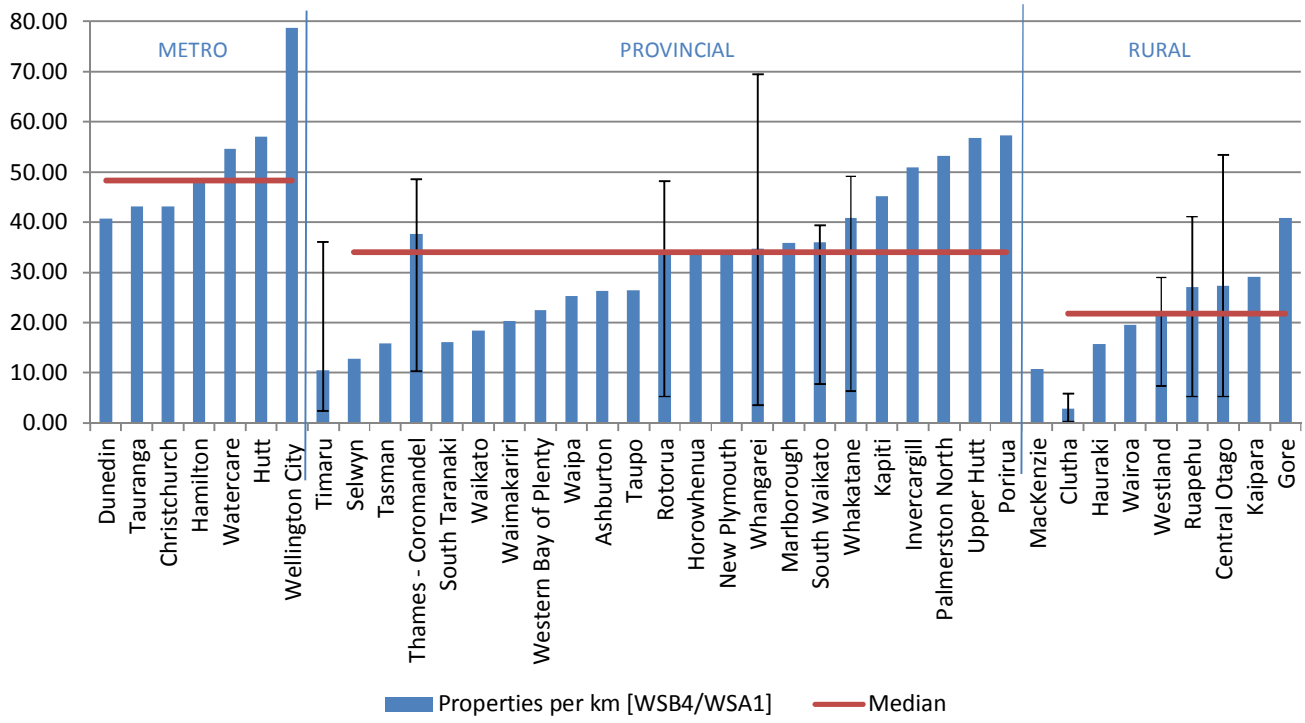
2.2 Connection Density

Figure 8: Median properties connected to water mains per km for NPR participants versus international benchmarks



*International benchmarks record connections to the water supply system, the NPR records property's connected. These figures will differ slightly where multiple units are serviced by a single connection.

Figure 9: Properties connected to water supply per km of pipe



2.3 Asset Condition

2.3.1 Pipeline Age

Figure 10: Median age for NPR and European pipelines in years

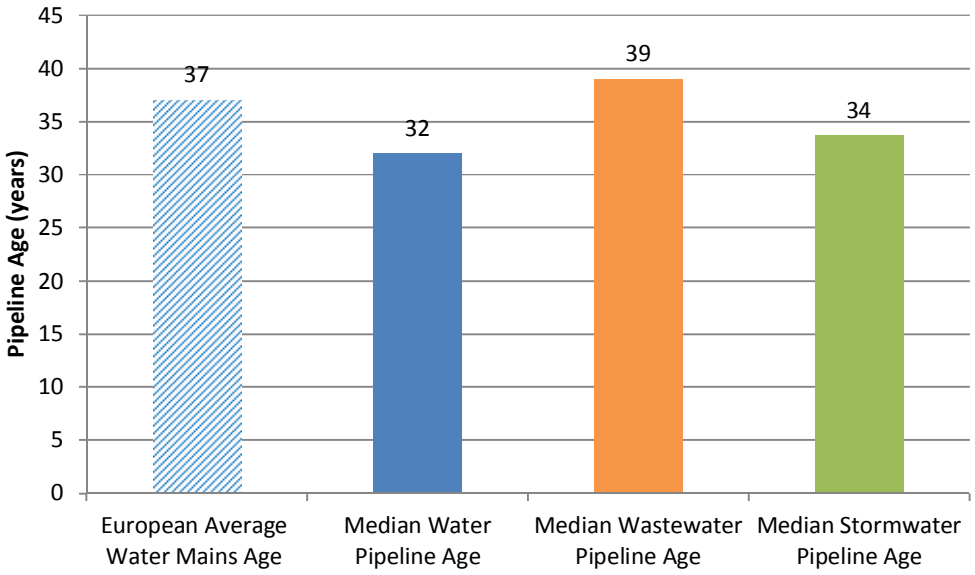


Figure 11: Data confidence for average pipeline age

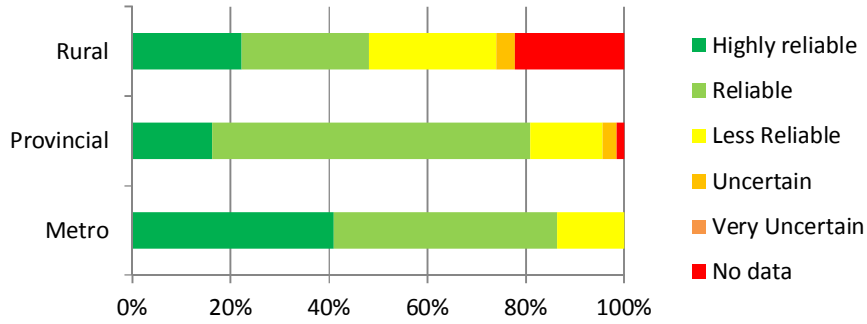


Figure 12: Average water pipeline age in years

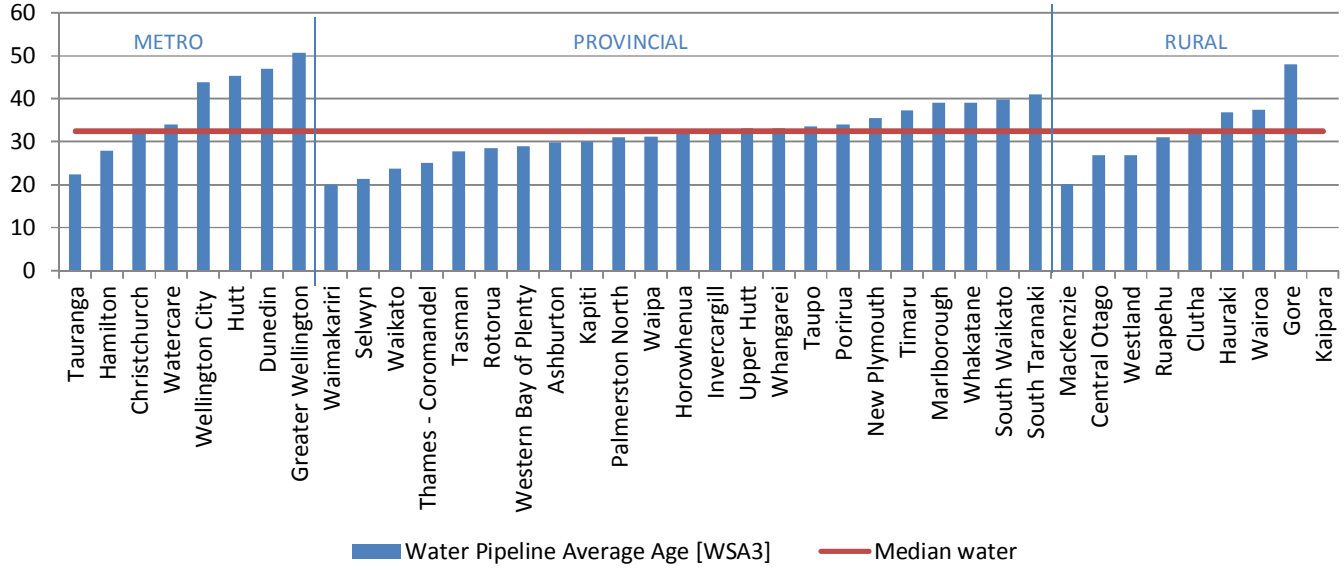


Figure 13: Average wastewater pipeline age in years

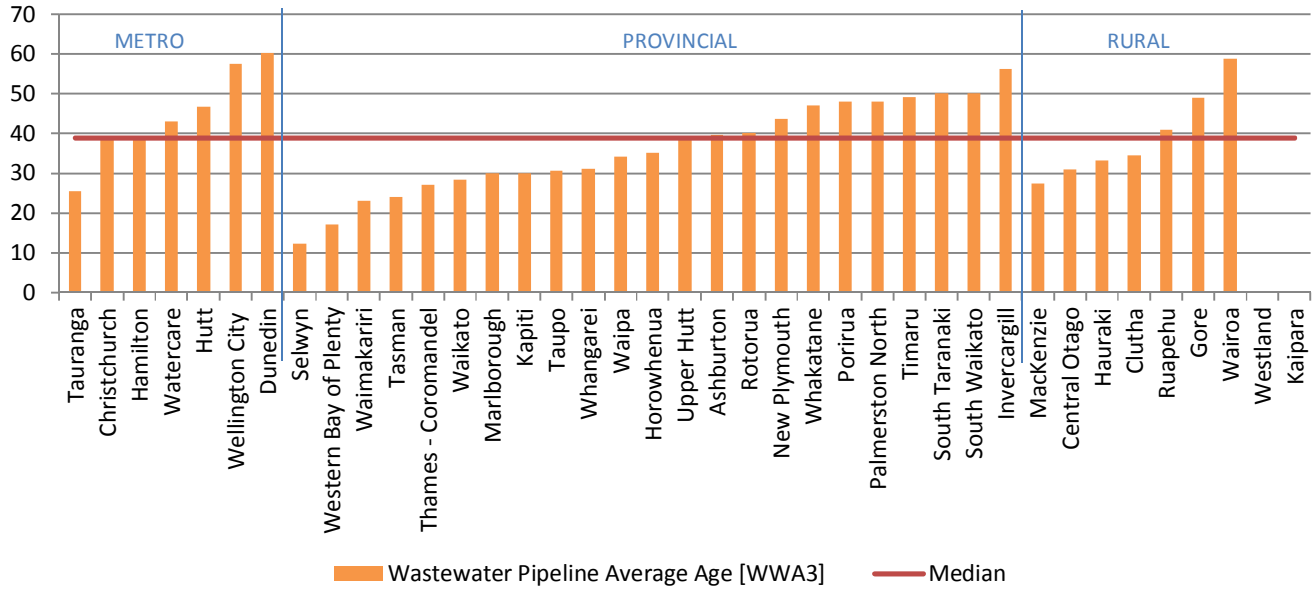
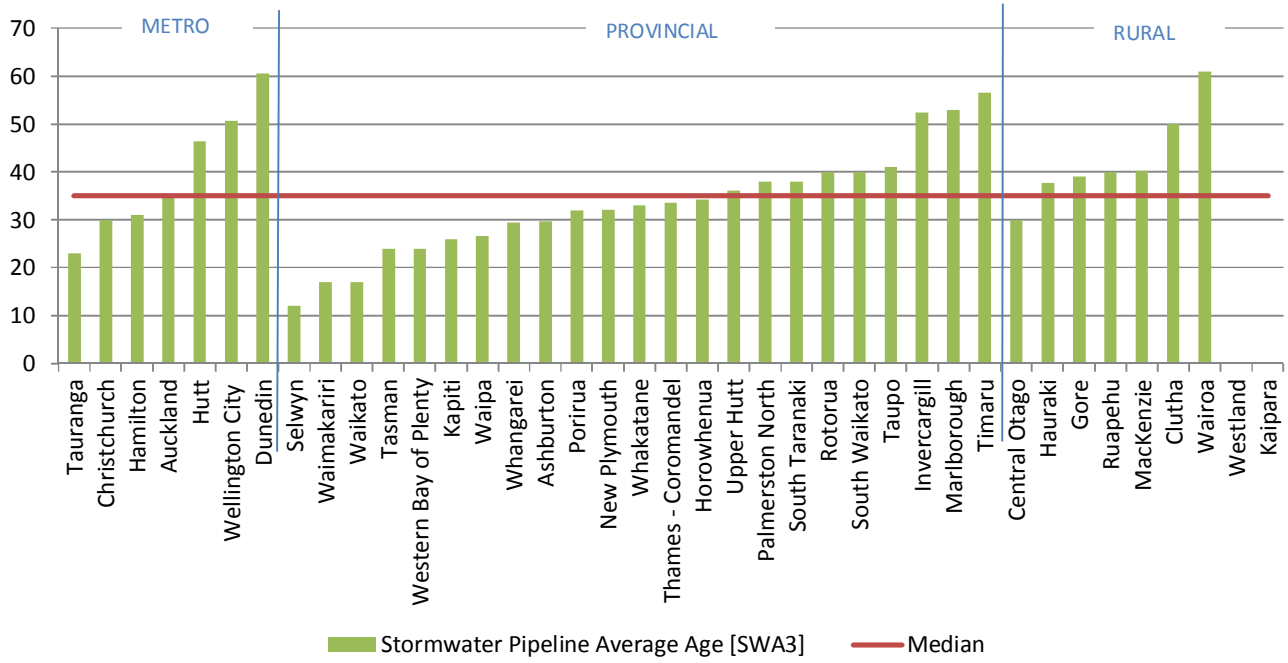


Figure 14: Average stormwater pipeline age in years



2.3.2 Asset Condition assessment methodologies

A number of participants employ multiple assessment methodologies for determining the condition of their assets. For example Kapiti District Council conduct water pipeline assessments according to the New Zealand infrastructure asset grading guidelines; wastewater pipe condition is assessed using CCTV surveys and in house knowledge, and stormwater asset condition grading is based on sampling, risk profiling and CCTV surveys.

Other councils have developed in house condition grading approaches, sometimes based on existing guidance material. For example the Greater Wellington Regional Council has combined the NAMS – International Infrastructure Management Manual and the NZWWA Visual Assessment of Utility Assets Guide to develop a condition assessment strategy specific to each asset type. Where a combination of assessment approaches is used, each approach has been counted once in each category in Figure 15 and Figure 16.

Figure 15: Approaches used for pipeline condition assessments

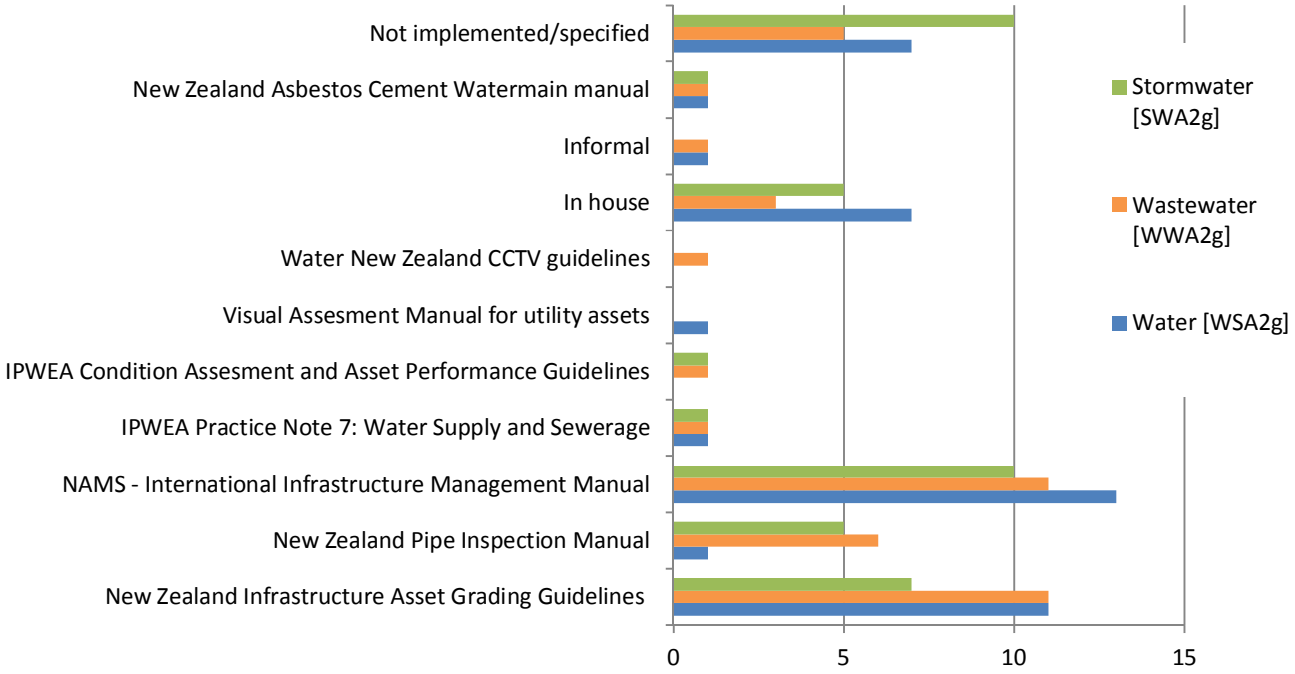
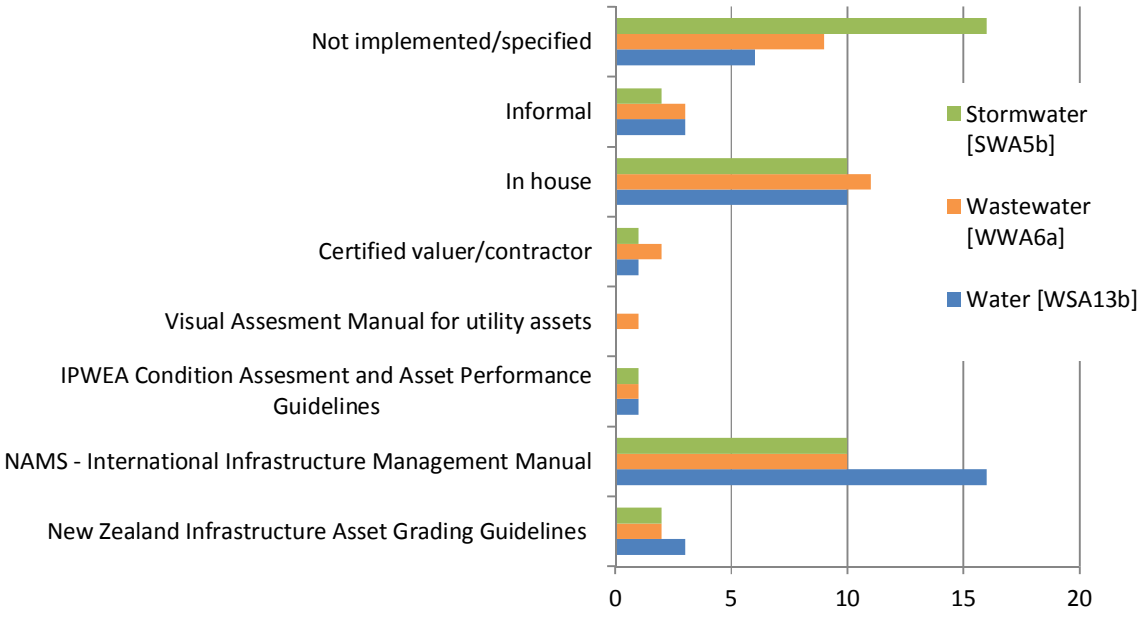


Figure 16: Approaches used for above ground asset condition assessments



2.3.3 Asset Condition Grading

The following tables show the condition grading and data confidence of pipelines. Where no data is shown it may be that condition grading data has not been provided or that the council has yet to assess asset condition. Dunedin City Council only applies condition grading for assets that have been physically assessed. Data confidence has been provided in corresponding figures illustrating that only a third of councils consider their condition grading data to be reliable.

Figure 17: Water pipeline condition grading

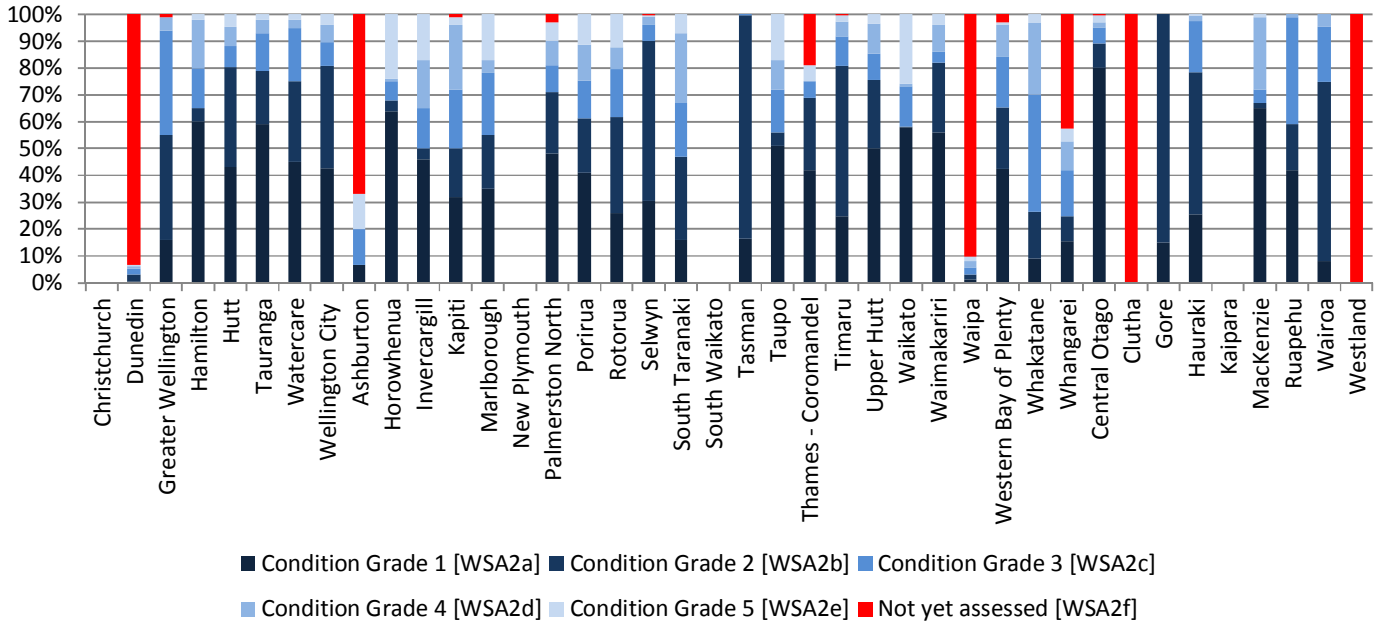


Figure 18: Data confidence of water pipeline condition grading

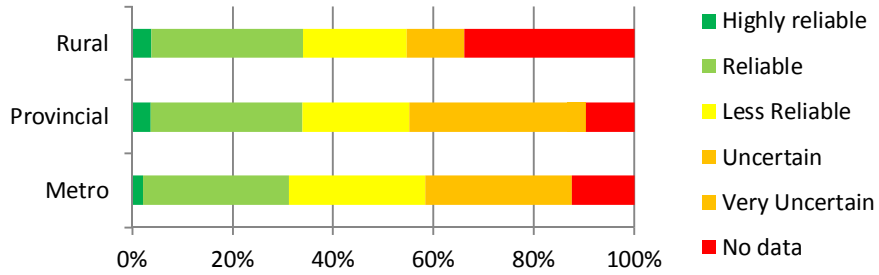


Figure 19: Wastewater pipeline condition grading

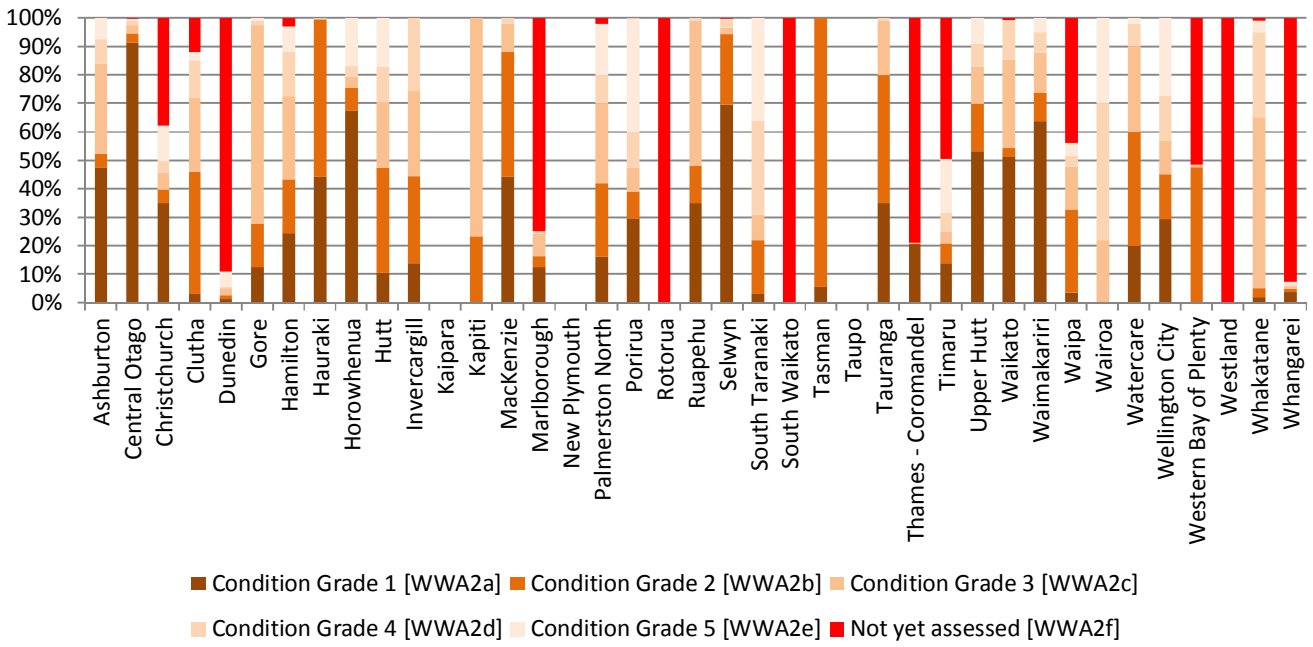


Figure 20: Data confidence of wastewater pipeline condition grading

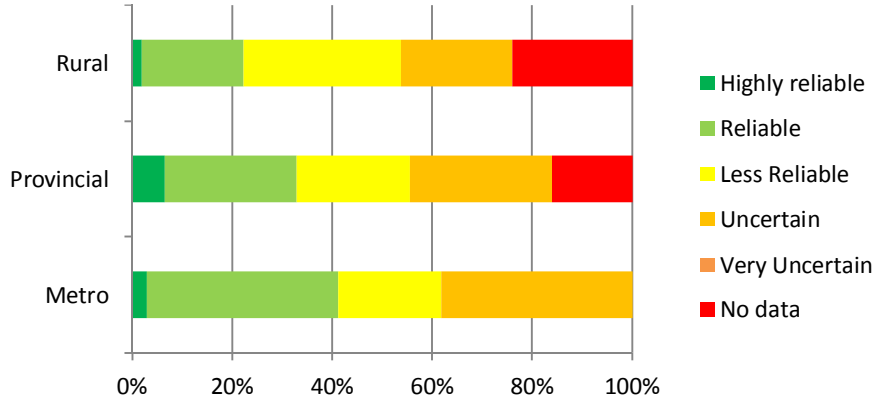


Figure 21: Stormwater pipeline condition grading

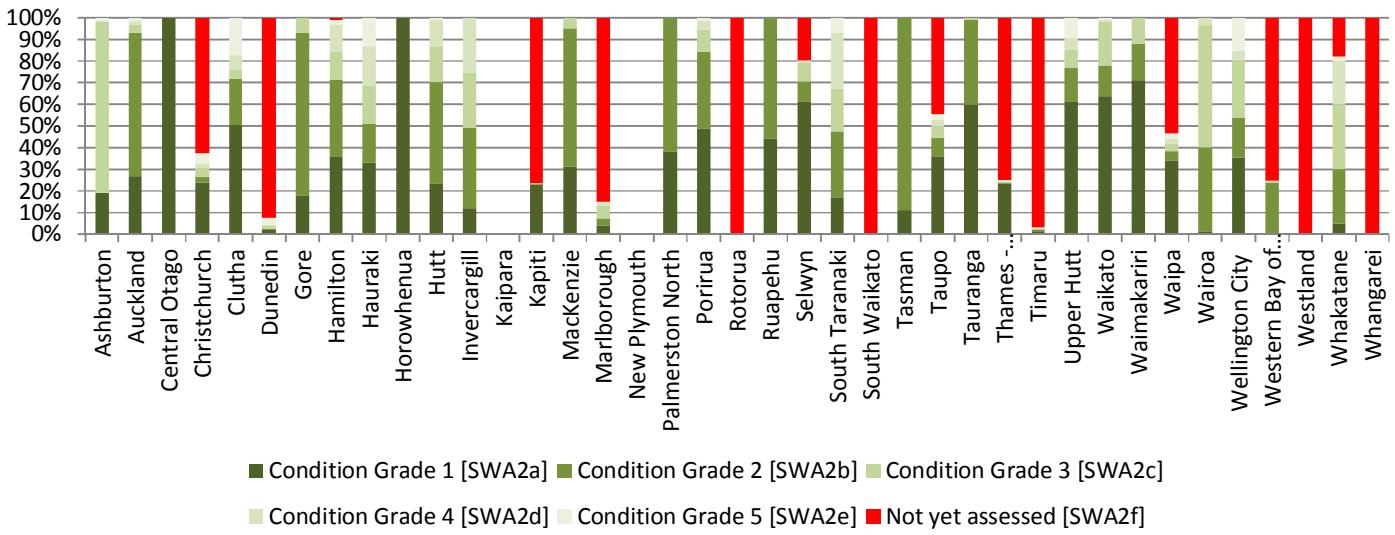
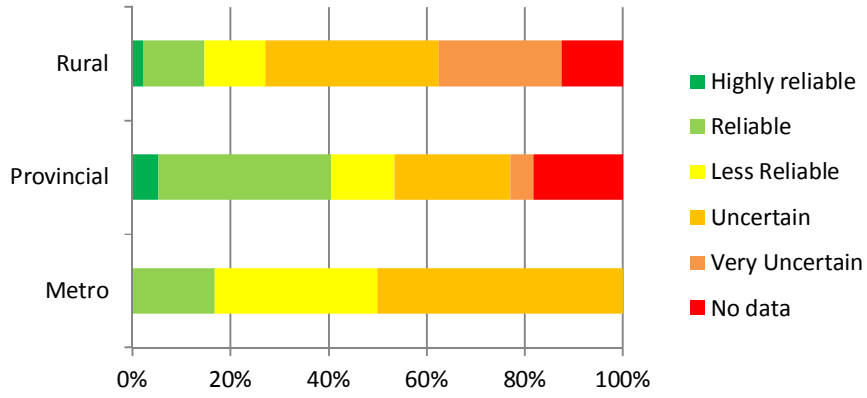


Figure 22: Data confidence of stormwater pipeline condition grading



3. Access to Service

This section of the report provides information on the service coverage of 3 waters infrastructure, associated tariffs and affordability. It also benchmarks service area characteristics likely to impact on participants' performance. These include; the types of properties serviced (e.g. rural or other non-residential), holiday populations and the number of separate schemes operated by participants.

KEY OBSERVATIONS

Variation in charging regimes can make it difficult to interpret the overall price of services and compare water and wastewater tariffs, and set realistic budgets

A number of participants operate multiple charging reigimes. The highest number of reported was 21 across 18,965 properties connected to the Taupo District Council water supply network. Tariff structures across districts can also differ. For example Ashburton District Council's Montalto scheme is based on a fixed charge plus per hectare charge, whereas their Methven-Springfield scheme employs a fixed charge and volumetric charges for water in excess of 12 m^3/day, or a separate fixed charge for an increased allowance.

Efforts to increase the public's ability to interpret water and wastewater charges would improve their understanding of water and wastewater supply costs and its value. Simple tariff structures would also assist finance and infrastructure managers set realistic budgets.

There are opportunities to align water and wastewater tariffs with user pays principles

Commercial Water Charges: . 27 participants reported using the same charging regime for residential and non-residential water users and 19 reported using the same charging regime for non-residential wastewater users. This is despite the fact that non-residential and residential customers will incur different reticulation and treatment costs owing to differences in water consumption and wastewater quality. Introducing separate non-residential charges for water and wastewater may create more equitable user charging regimes and increase participants ability to fund infrastructure.

Contaminant based charging: A small proportion of participants indicated they had contaminant charges for non-residential customers (however it is likely that others have such charges which have not been reported). Contaminants in wastewater affect treatment and biosolids management costs. Introduction of contaminant based charges would provide a user pays mechanism for wastewater treatment and biosolids management and an incentive for customers to undertake cleaner production initiatives to reduce contaminants.

Charge regimes for visitor water use: Peak holiday populations have a large impact on water and wastewater systems . Visitors' water use and wastewater generation adds to the overall volumes and costs of treatment and conveyance. In New Zealand water and wastewater services are largely funded through rates rather than volumetric charging regimes, meaning the resident population base is required to subsidise visitors' use of water and wastewater systems. Some councils have introduced pan based charges to address this gap. Sharing knowledge on alternative tariff structures in holiday areas could benefit a number of regions where visitor populations can be as high as 60% of the usually resident population.

The affordability of 3 waters charges requires further investigation

For customers in the UK affordability risks emerge when households spend more than 3% of their disposable income on water and sewerage bills. A number of participants are exceeding the UK affordability benchmark suggesting that some regions of New Zealand may face affordability risks. This would justify a national assessment of what could be considered affordable in the New Zealand context. Such an assessment would aid in tariff setting and targeting hardship support programs to vulnerable customers.

There are large variations in the price of water from $0.22 to $3.52 per cubic metre

There is room for more consistent data recording and reporting

Differences in service coverage and tariffs since 2013/14 reporting year are in some cases significant. Dramatic changes in these indicators over one year are unlikely and suggest inconsistent data source or collection methods have been applied. This indicates there is room for a number of participants to improve data recording and reporting systems.

3.1 Serviced Property Types

Different water users will have innately different water, wastewater and stormwater characteristics. For example rural residential properties will typically have larger outdoor watering demands, while some non-residential properties will require more extensive sewage treatment. Composition of property types correlates with council categories, as illustrated in Figure 23.

Figure 23: Median Percentage of Serviced Property for each Type by Sector Category

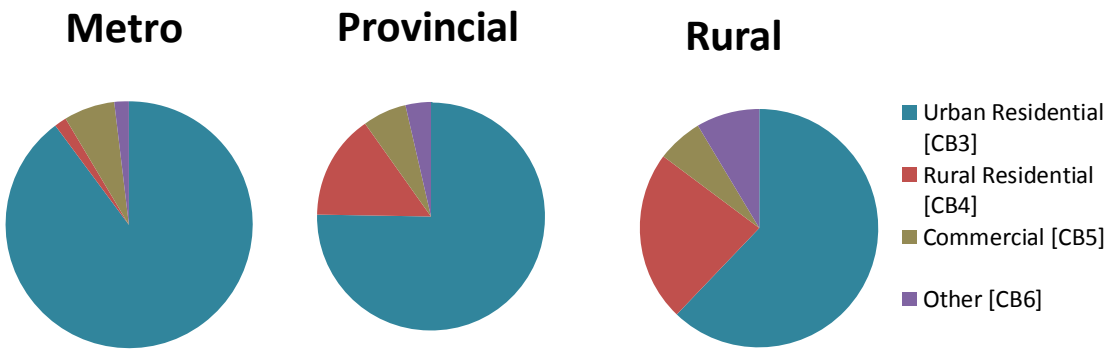
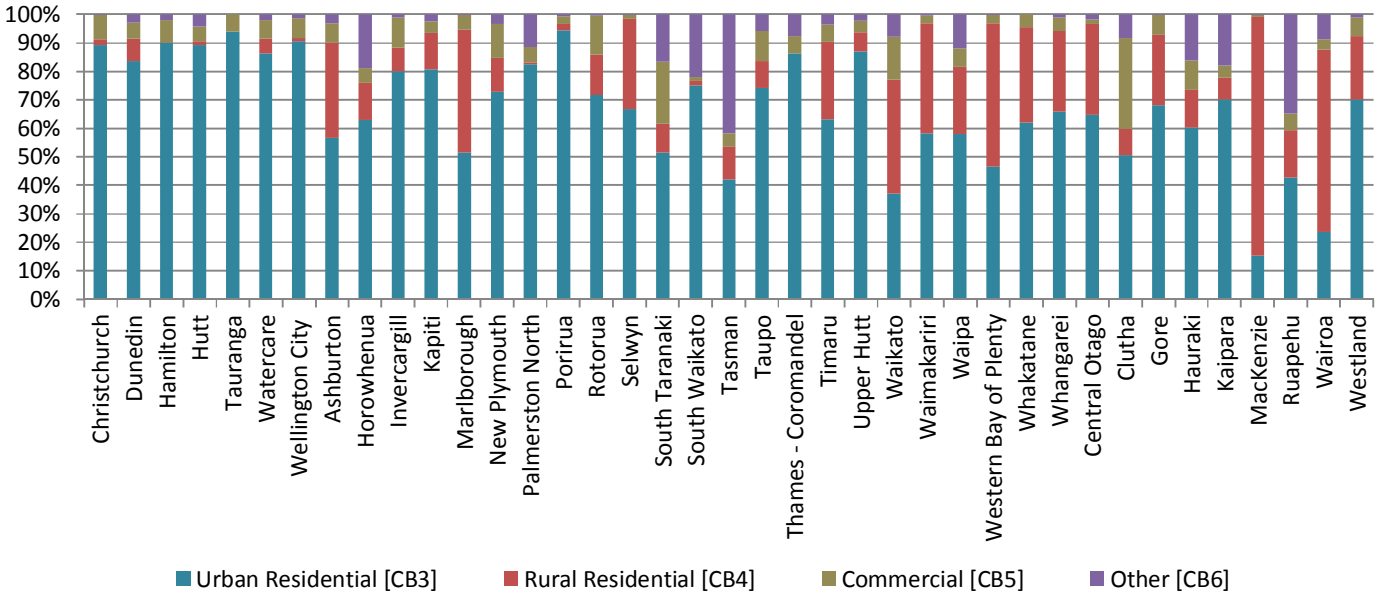


Figure 24: Percentage of serviced properties by type

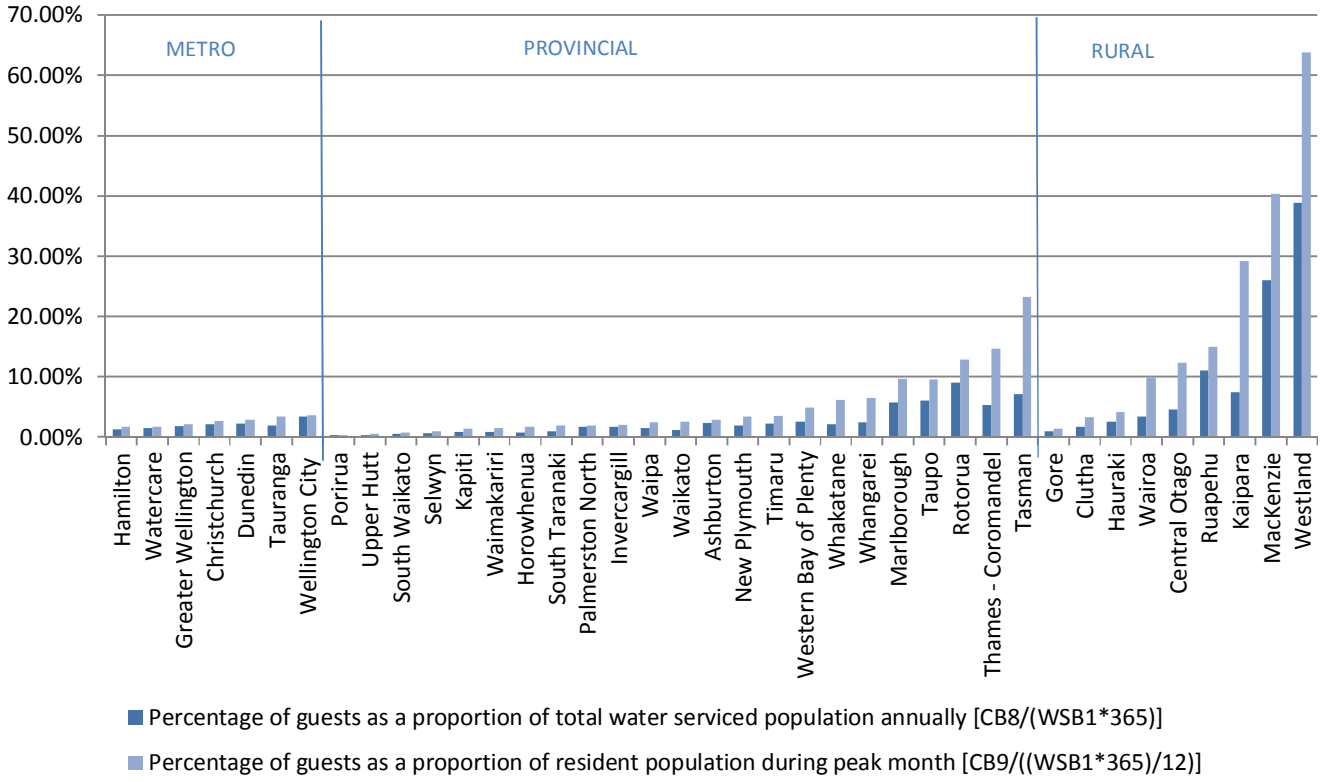


3.2 Holiday Populations

Peak holiday populations have a large impact on water and wastewater systems. Visitors' water use and wastewater generation also adds to the overall volumes and costs of treatment and conveyance.

In New Zealand water and wastewater services are largely funded through rates rather than volumetric charging regimes, meaning the resident population base is required to subsidise visitors' use of water and wastewater systems. To illustrate the relative impact of visitors on participants' water and wastewater schemes data on annual and peak month visitors statistics has been provided (Statisics New Zealand, 2015).

Figure 25: Annual and peak month guest nights as a proportion of usually resident water serviced population



3.3 Rural versus Urban Schemes

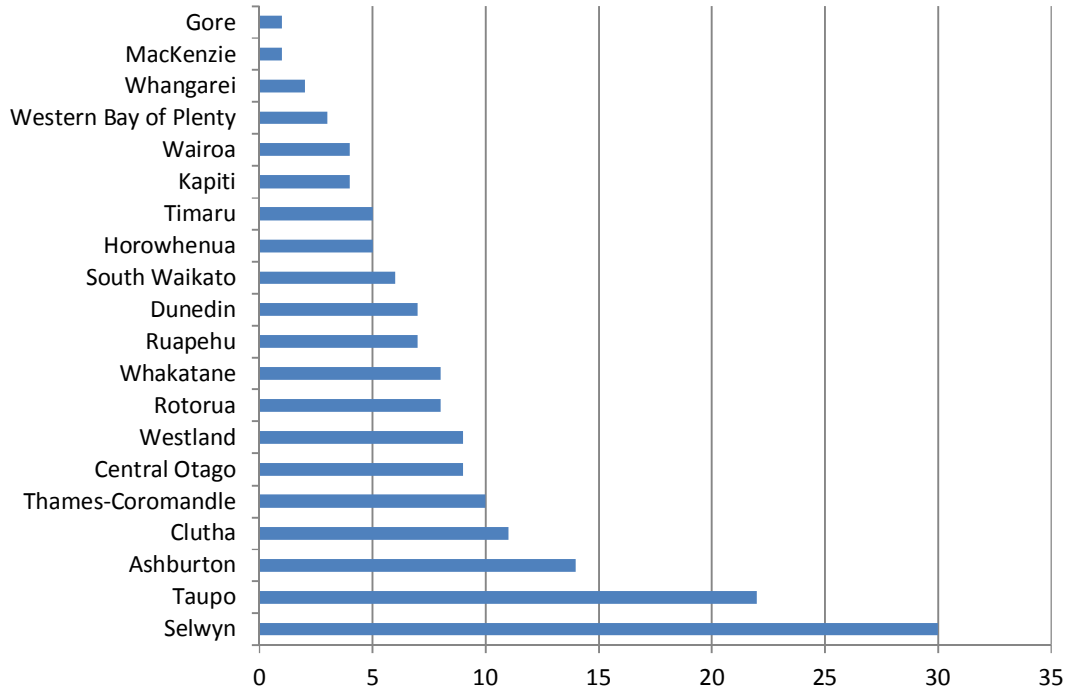
Urban and rural areas have innately different characteristics such as building density, land and water use and service accessibility. To account for these differences NPR participants were provided with the option of segregating rural scheme data for indicators in Table 7. There is currently no consistent national definition to distinguish urban and rural areas so the choice of which rural schemes to segregate was left to participant discretion. Figure 26 shows the number of schemes that data was provided for.

The number of connections in segregated schemes varied from 17 to 22,960, and the connection density varied from an average of 0.22 connections per km of pipe to 53.4 per km. In some cases data segregated as rural had higher numbers of connections and connection density than data in areas identified as urban. This prevented the NPR from making meaningful comparisons across urban and rural schemes. However where multiple participants provided separate scheme data the range of value has been illustrated using error bars on individual performance results.

Table 7: Data provided for segregated schemes

Code	Measure	Participants reporting segregated scheme data
WSB2 – WSB9, WSA1	Background Info (including network length)	Ashburton, Clutha, Central Otago, Dunedin, Kapiti, Ruapehu, Rotorua, South Waikato, Taupo, Thames-Corommandel, Timaru, Whangarei, Wairoa, Westland, Whakatane
WSA2a-g	Condition of Pipelines	Gore, Central Otago, Whakatane, Timaru
WSA3	Metering level	Rotorua, Gore, Central Orgao, Whakatane, Wairoa, Timaru, Taupo
WSA3	Average of Pipelines	South Waikato, Central Otago, Clutha, Whakatane, Timaru
WSE1	Water Loss	Selwyn, Rotorua, Central Otago, Christchurch, Thames-Coromandel, Whakatane, Timaru, South Waikato
WSE2	Average System Pressure	Central Otago, Whangarei, Timaru, South Waikato
WSS8a-b, WSS9a-c	Charges	Westland, Ashburton, Ruapehu, Kapiti, Horowhenua, Central Otago, Clutha, Whakatane, Western Bay, Timaru, South Taranaki, Wairoa

Figure 26: Number of schemes participants provided data for



3.4 Service Coverage

Service Coverage is determined by the number of residential properties in a service district connected to the reticulated network over the total number of residential properties in the service district. The exception is data for Waimakariri who have conducted a study to determine service coverage in their district.

Figure 27: Residential Water Service Coverage

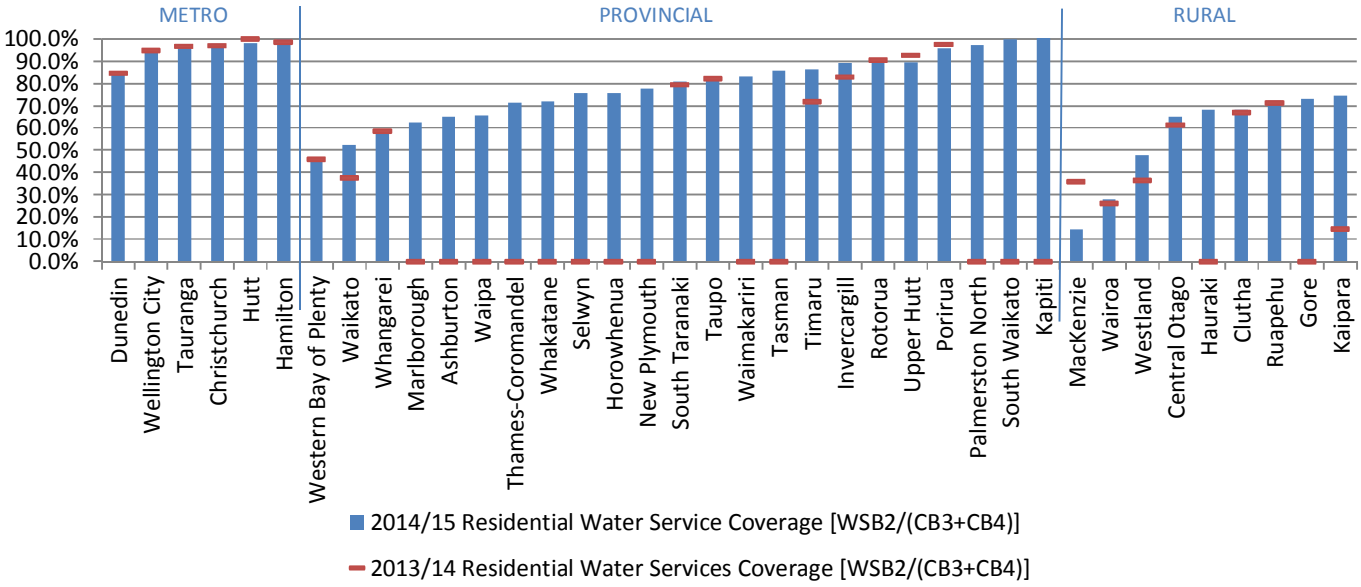


Figure 28: Residential Wastewater Service Coverage

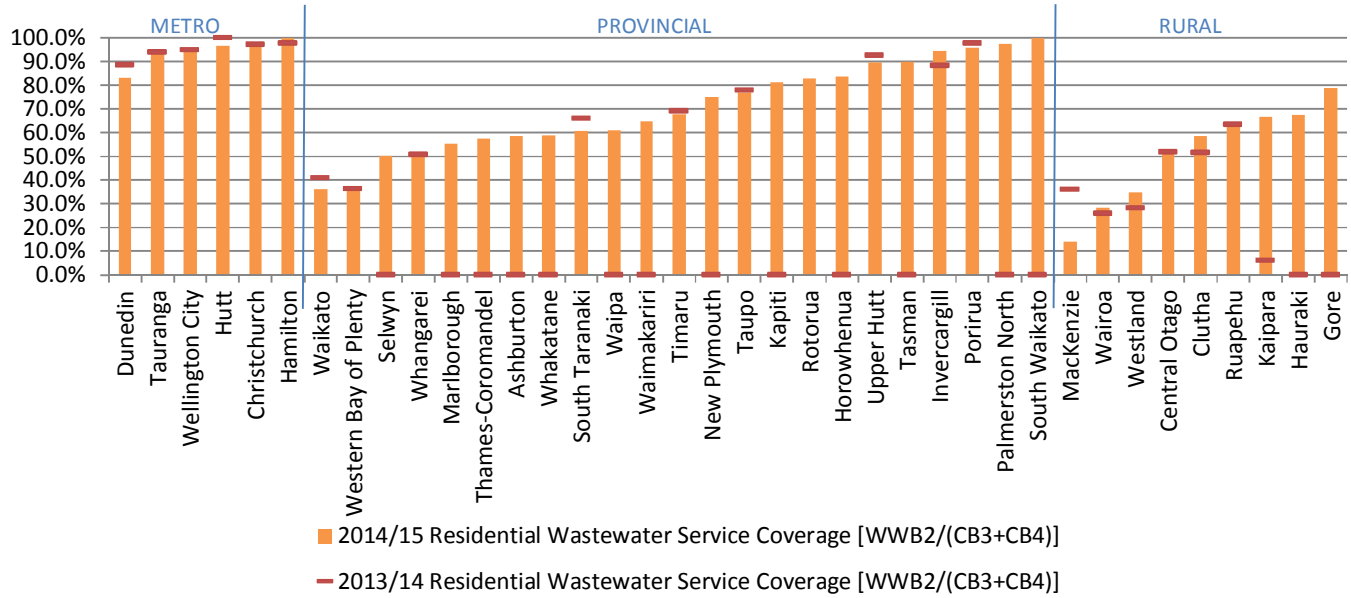
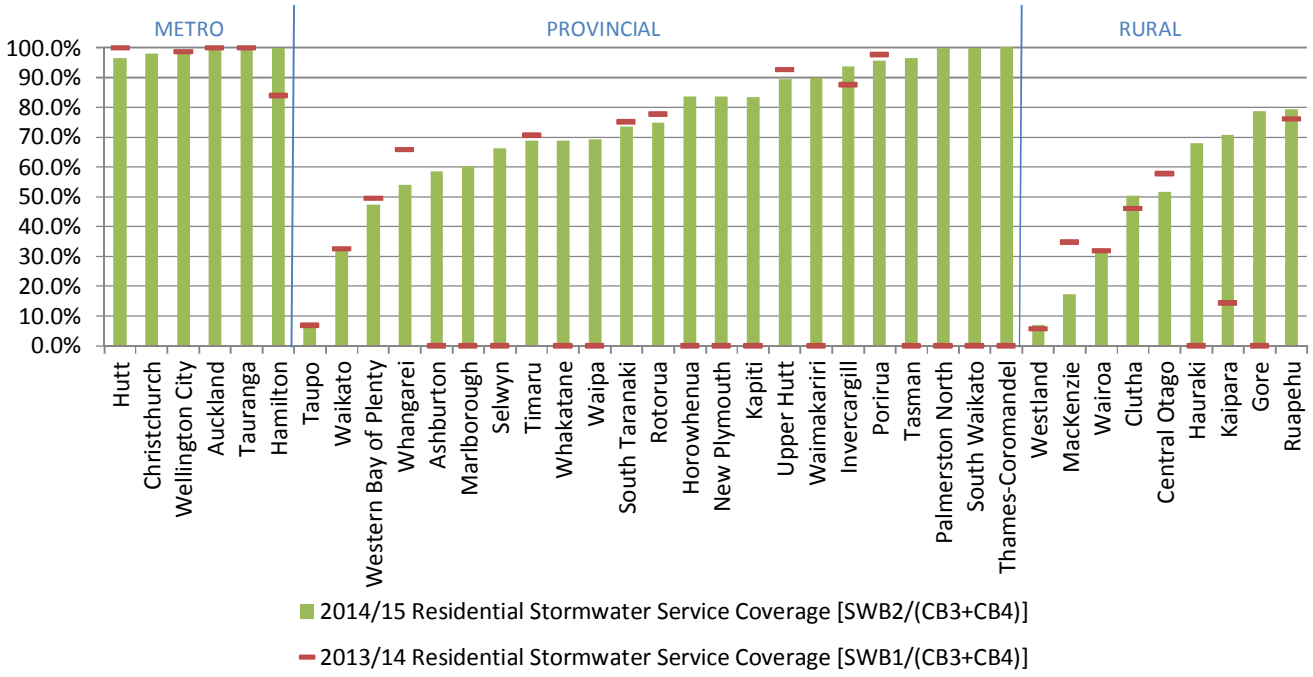


Figure 29: Residential Stormwater Service Coverage



3.5 Tarriff's

3.5.1 Residential tariffs

A number of participants employ different charging regimes across each of their water and wastewater schemes. Table 8 shows the number and type of regimes reported. These may be used in combination (e.g. a single jurisdiction may have a fixed annual charge, a free water allowance and two step usage charge) or use different regimes in different jurisdictions (e.g. fixed usage charges for unmetered supplies, and a combination of fixed and usage charges for metered supplies).

Fixed rate charges are generally applied either as targeted rates, uniform annual charges, or a proportion of general rates. In Paeroa and South Taranaki fixed charges have been based on a properties number of troughs and pipe size. Where fixed charges are associated with a property's capital value, average property values for the territory have been used for benchmarks.

1st, 2nd and 3rd step charging regimes refer to usage charges which vary based on the volumes of water used. In some cases water rates increase with increased usage, in others they decrease.
The free water allowance refers to metered supplies where a nominal first amount of water is provided free of charge.

Not all participants apply a separate charge for stormwater, making it difficult to compare total costs for three water provision across all customers. The cost of maintaining the stormwater system may either be funded through charges combined with the wastewater system, with road charges or as part of general rates. Participants who do have a separate stormwater charge are included in Figure 34.

Table 8: Residential water charging regimes

Council	Fixed annual charge	Free Water allowance	Usage charge 1st step	Usage charge 2nd step	Usage charge 3rd step	Per hectare charge	Number of charging	Usage charge ($/m3)
Ashburton	■	■	■		■	■	14	0.22-0.87
Central Otago	■		■				9	0.58-1.24
Christchurch	■						1	
Clutha	■						1	
Dunedin	■		■				1	
Gore	■						1	
Hamilton	■						1	
Hauraki			■	■			3	0.6087-1.6714
Horowhenua	■		■		■		4	0.55-1.24
Hutt	■						1	
Invercargill	■						1	
Kaipara	■		■				1	2.68
Kapiti	■		■				1	0.95
MacKenzie	■	■	■				3	0.7
Marlborough	■	■	■				1	1.88
New Plymouth	■						1	
Palmerston North	■						1	
Porirua	■						1	
Rotorua	■						1	
Ruapehu	■						7	1.78-2.67
Selwyn	■		■				2	0.4
South Taranaki	■		■				5	0.97-2.45
South Waikato	■	■	■				2	1.02
Tasman	■		■				1	1.98
Taupo	■		■				21	0.51-4.1
Tauranga	■		■				1	1.80
Thames – Coromandel	■		■				2	1.27
Timaru	■						5	
Upper Hutt	■						1	
Waikato	■		■	■			5	1.98-3.52
Waimakariri	■		■				1	
Waipa	■			■			2	0.9231-1.3453
Wairoa	■		■				3	0.45
Watercare			■				1	1.375
Wellington City	■						1	
Wester Bay of Plenty	■		■				3	1.173-1.288
Westland	■						1	
Whakatane	■		■				4	0.27-1.28
Whangarei	■		■				1	2.13

Figure 30: Annual 3 waters residential services charges for connections using 200m^3

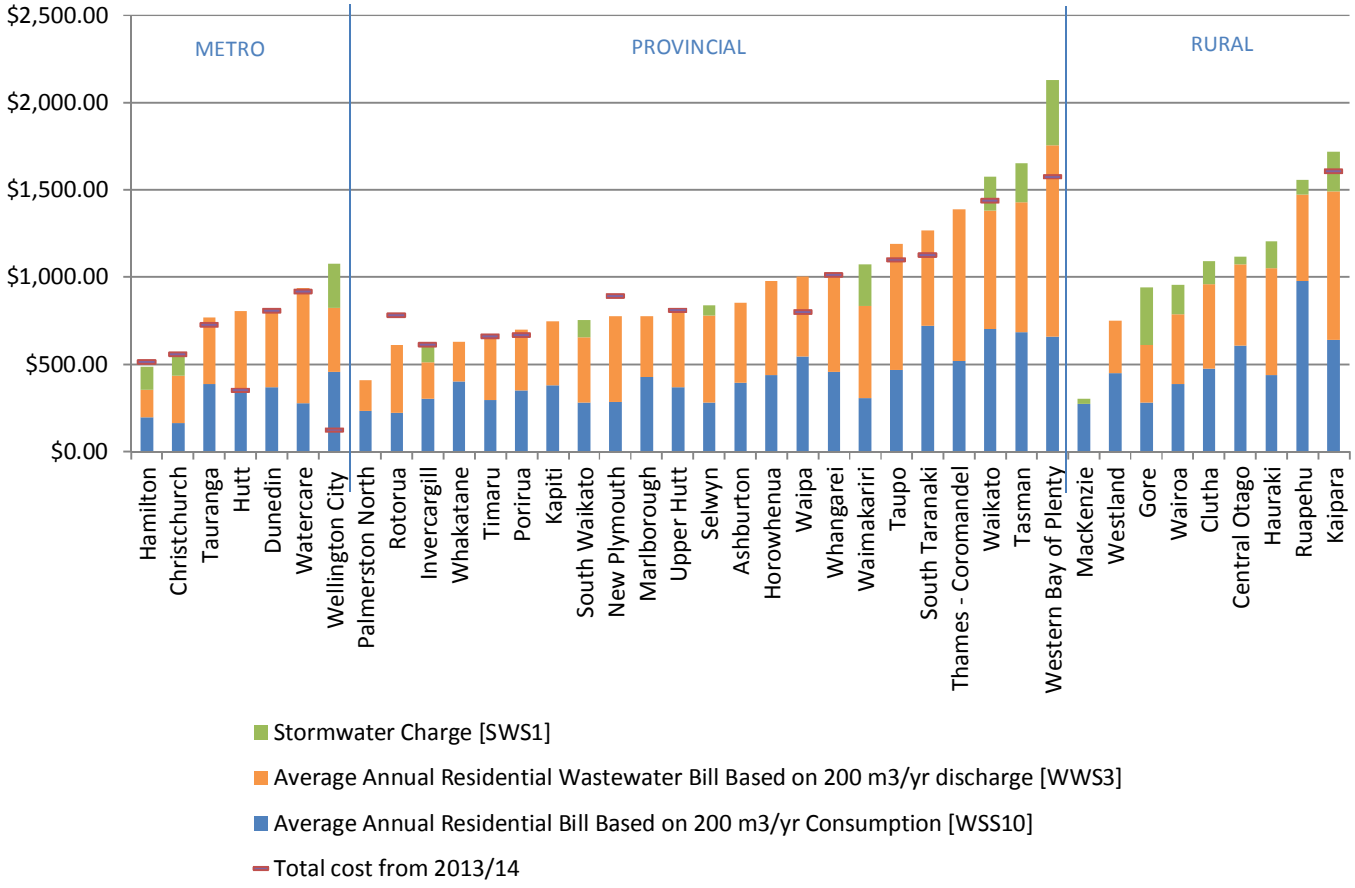


Figure 31: Median annual water charge for connections using 200m^3 per year

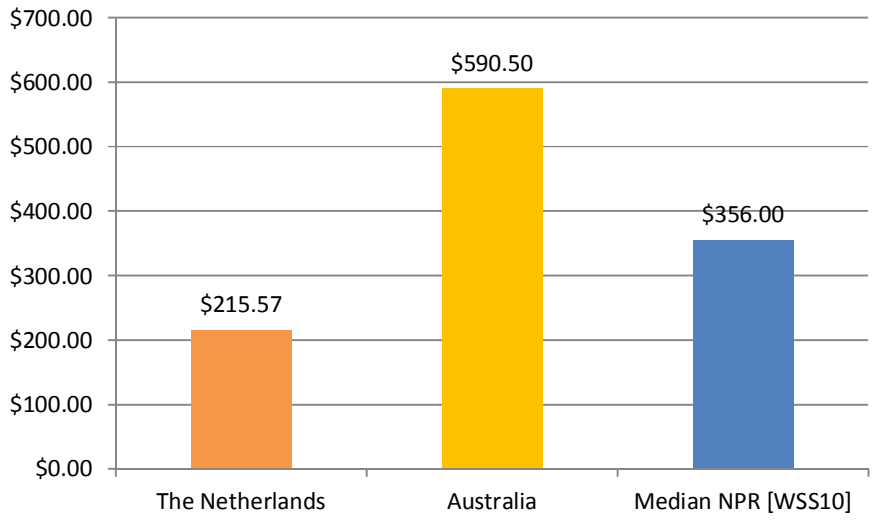


Figure 32: Water charges for a connection using 200m³ a year

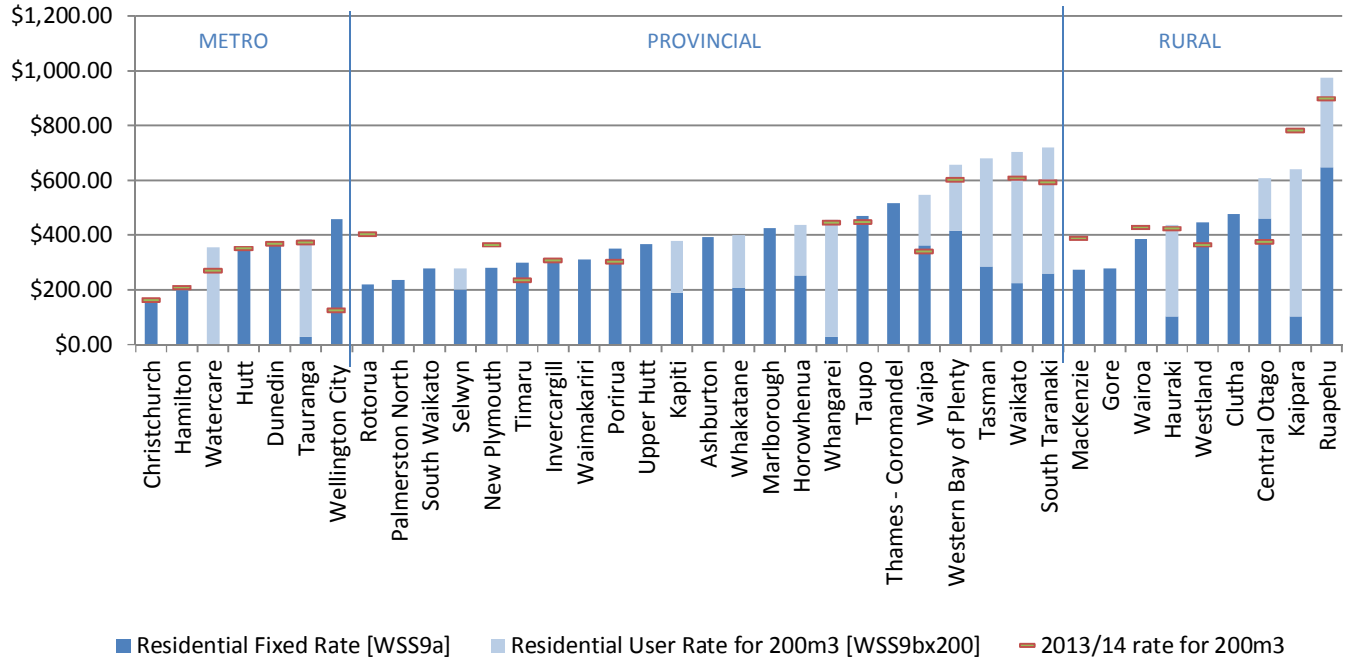


Figure 33: Wastewater charges for a connection using 200m³ a year

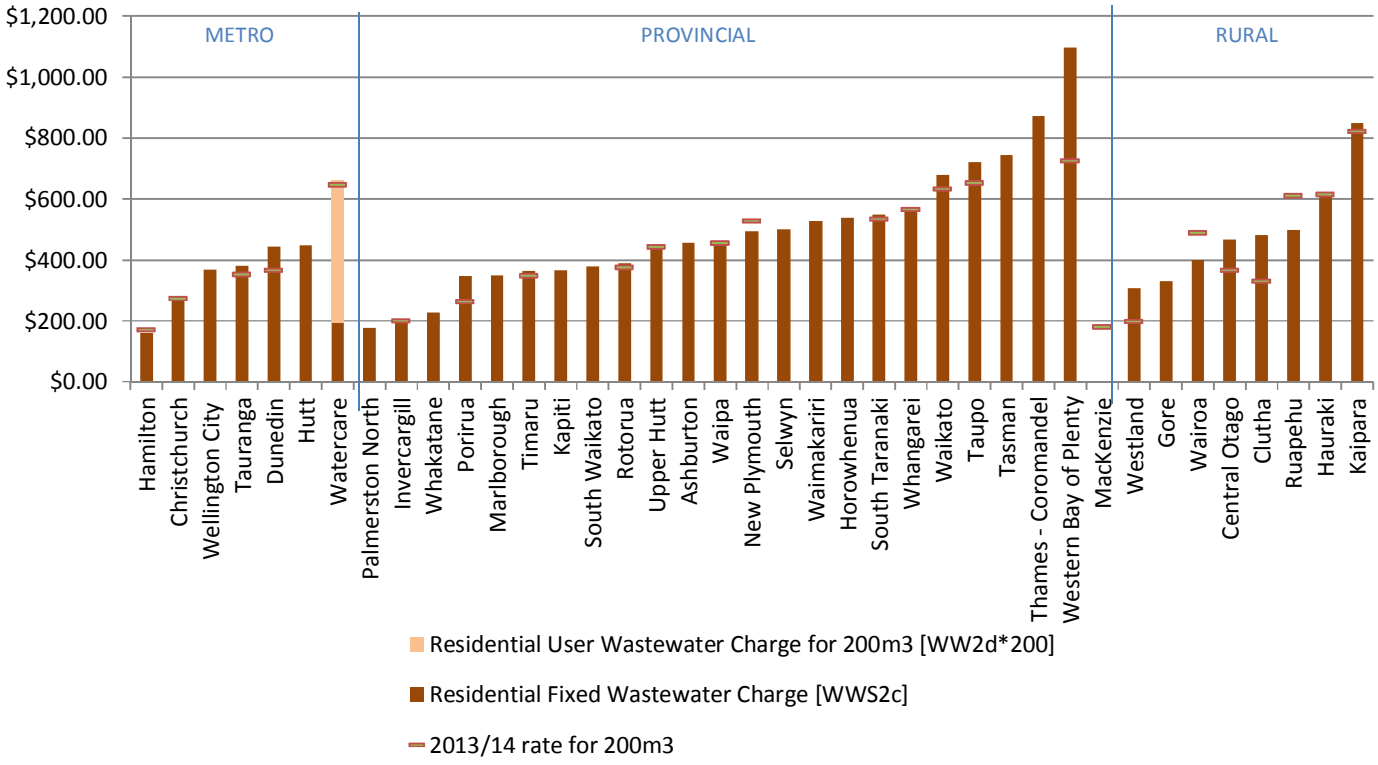
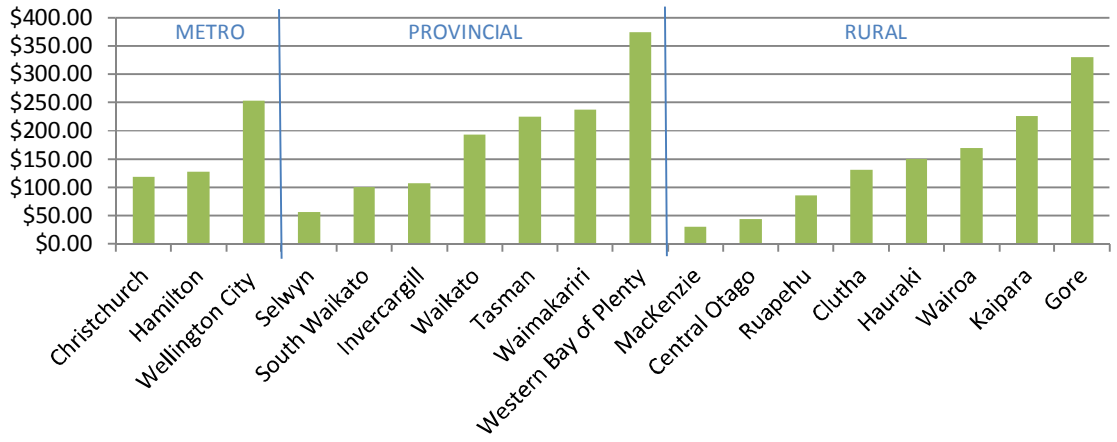


Figure 34: Stormwater charges per year



3.5.2 Non-residential tariffs

Unless a separate charge is listed in Table 9 and Table 10 non-residential tariffs are charged at the same rate as residential tariffs.

Only New Plymouth, Hamilton and Waikato provided contaminant charges for non-residential customers, however it is likely that other regions have charges which have not been provided.

Contaminants affect treatment and biosolids management costs. Contaminant based charges helps establish a user pays mechanism for their management and an incentive for customers to undertake cleaner production initiatives.

Figure 35: Number of participants with separate non-residential tariffs

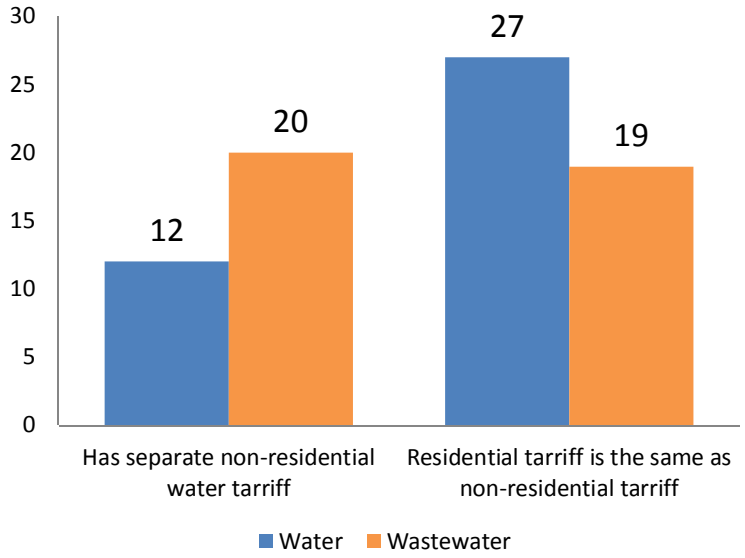


Table 9: Non-residential water tariffs

Participant	Non-residential water fixed charges ($/year)	Non-residential water usage charges ($/m^3)
Westland	$660.40/year for treated supplies, $480.10 for untreated	$1.30 in Hokitika, $1.20 in Franz and Fox, none elsewhere
Hamilton	$400/year	$1.66
Timaru	$298.35 (on average - varies by scheme) for non-residential urban customers is equivalent to the domestic fixed charge which provides an allocation of a volume of water	$0.58 for metered properties where volumes used are in excess of their allocation
Palmerston North	$40.25 to $865.95 depending on meter size	$0.87/m^3 year for a metered large user
Marlborough	Varies depending on scheme	$0.80/m^3 for high water users
New Plymouth	$142.50	$1.24/m^3 for first 50,000m^3, $1.265 for volumes in excess of this
Dunedin	$187-$1302 based on meter size	$1.43
Porirua		$1.25
Christchurch		$0.71
Wellington		$2.15
Invercargill	$304.37 base rate, plus a % of base rate dependent on capital value, varying between 20-400%	$0.39-$1.90 depending on "class" of water used
Waipa	$131.25	Meter water rates average of; 0.9231/m³ 1st 250m³, Above 250m³ $1.3453. Raw Water charge 0.2457/m³.

Table 10: Non-residential wastewater tariffs

Participant	Non-residential wastewater fixed charges ($/year)	Non-residential wastewater usage charges ($/m^3)
Invercargill	$204.69/year base plus a differential dependent on capital value that varies between 20-80%	Usage charge of $0.37/m^3 on average for trade waste, varies depending on waste type
Horowhenua	$538 (same as residential)	$0.559/ m^3
Hamilton	$156 for permitted tradewaste discharges $1,005 for conditional tradewaste discharges	$1.12/ m^3 Contaminant charges of: SS $0.67 /kg cBOD $0.98 / kg TKN $1.40 / kg TP $4.09 / kg Arsenic $204.00 / kg
Central Otago	$465.61 plus a pan tax	
Upper Hutt	$1,330	
Waikato		$1.01/m3 Contaminant charges of:

		AA $0.68/kg BOD $0.81 / kg BOD TP $4.81 / kg TKN $0.78 / kg
Waipa	$457.50	$1
Wastewater	$596	
Watercare	$174.00/year for users of less than 1,330 m^3 $440/year for users between 1,330 m^3 and 10,018 m^3 $6,150/year for users between 10,081 m^3 and 89,296 m^3 $65,960/year for users of 89,269 m^3 or more	$3.90 for users of less than 1,330 m^3 $3.70 for users between 1,330 m^3 and 10,018 m^3 $3.13 for users between 10,081 m^3 and 89,296 m^3 $2.46 for users of 89,269 m^3 or more
Wellington City	$0.00166073 per $ of capital value	
Timaru	$364 per pan or urinal	$0.74/m3 trade waste
Thames Coromandel	$872.54 for one pan: or $436.27 per pan for 2 pans and over (same as residential)	
Tauranga		$1.31 for trade waste customers
Marlborough	$118.69 for tradewaste customers	$0.349/$m^3$ trade waste charge in Blenheim $0.399/$m^3$ trade waste charge in Picton In addition, high organic waste dischargers are charged per kg BOD. Dischargers to Blenheim STP pay an upgrade charge on capital value.
Taupo	Connected (1st pan) $720.20 Connected (2 – 10 pans) $540.15 Connected (10+ pans) $360.10	
Ruapehu	Fixed charge of $767 on average, per pan charge for additional pans	
Rotorua	$447.00 for 1-4 pans $379.96 for 5-10 pans $357.6 for 11+ pans	
Palmerston North	$176 per pan	
New Plymouth	$357 for a controlled consent $513 for a conditional consent	$1.07/ m^3 Contaminant charges of: SS $0.88/kg BOD $2.74/kg Copper $362/kg Nickel $664/kg Zinc $111/kg
Invercargill	$204.69 base rate, plus a % of base rate dependent on capital value, varying between 20-400%	$0.37/ m^3 for high volume users

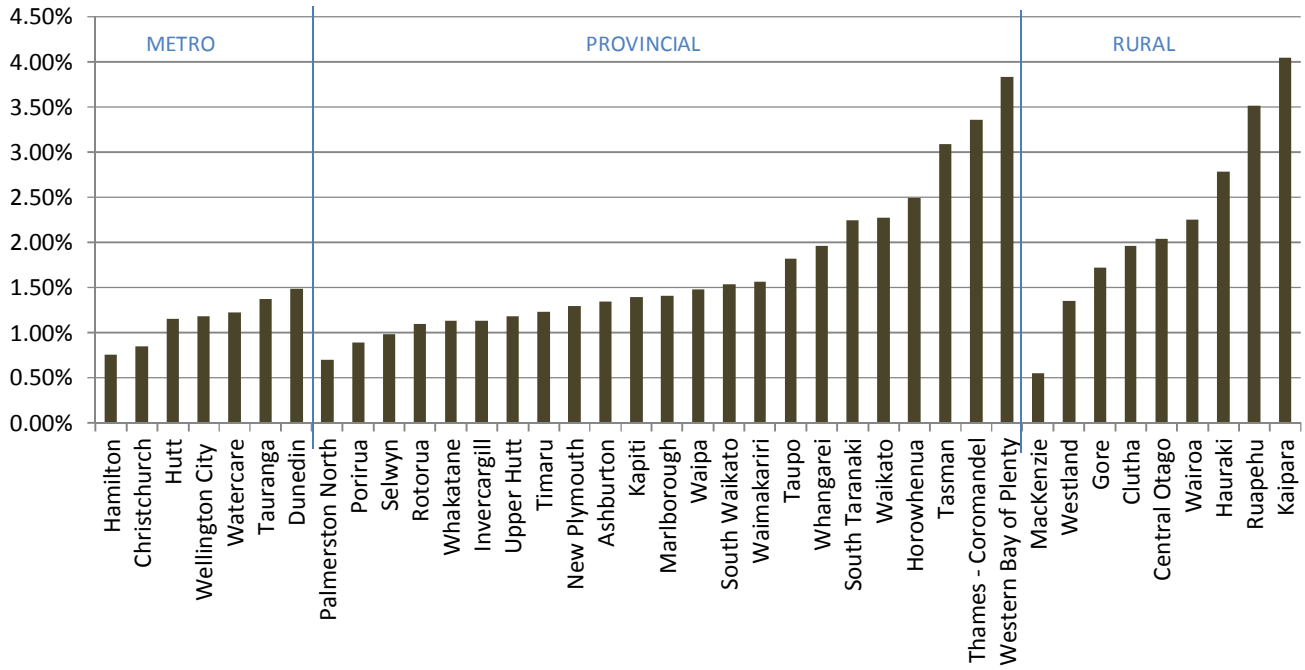
3.5.3 Rates Affordability

Councils are required to publish a rates affordability benchmark under the Local Government (Financial Reporting and Prudence) Regulations 2014 (New Zealand Government, 2014). An equivalent 3 waters service benchmark has been provided that compares 3 waters charges as a percentage of household income using 2013 Census Data (Statistics New Zealand, 2014). Note that this data does not fully reflect all 3 waters services cost as some participants are not able to segregate stormwater charges (for instance where they are combined with road charges).

A study by Ofwat (the economic regulator of the water sector in England and Wales) reports that 3 water service affordability risks emerge when a household spends more than 3% of their disposable income on water and sewerage bills (Ofwat, 2014-15). New Zealand has not determined an equivalent affordability risk level for the 3 waters, nor does it produce disposable income data at a territorial level meaning such an assessment is not currently possible.

A number of participants are exceeding the UK affordability benchmark suggesting that some regions of New Zealand may face affordability risks. This would justify a national assessment of where affordability risks are likely to occur. Such an assessment would aid in targeting hardship and support programs to vulnerable customers.

Figure 36: 3 waters charges as a percentage of household income



4. Financial Performance

This section of the report covers information on revenue, expenditure (including depreciation and borrowing costs) and budgeting. Reporting of metrics in this section has been aligned with The Local Government (Financial Reporting and Prudence) Regulations 2014 (New Zealand Government, 2014).

KEY OBSERVATIONS

There is a large gap between three waters revenue and expenditure

In 2014/15 NPR participants collected over $1.42 billion dollars in revenue for 3 waters services management; however expenditure on assets was over 2.2 billion dollars. This gap requires further analysis to understand if;

a. Accounting processes are not capturing all of three waters revenue
b. There is double counting of expenditure on level of service renewals and funding depreciation
c. Reporting entities are economically sustainable

Water and wastewater services in Australia receive nearly twice the revenue per property connection

Actual expenditure trails budgeted expenditure

Actual capital expenditure was less than budgeted expenditure by 34%, a decrease from 2013-14 when the gap was 32%.

The Essential Services benchmark provides a misleading indicator of depreciation funding

Whilst depreciation and capital expenditure on asset renewals would be expected to align over time, variations in annual performance against the essential services benchmark suggest this is a misleading measure for assessment if depreciation funding is being met.

Debt servicing of three waters infrastructure is an issue for over 20% of participants

A benchmark showing councils interest as a proportion of revenue for 3 waters assets aligns with the debt servicing benchmark required by The Local Government (Financial Reporting and Prudence) Regulations 2014. 3 waters infrastructure for 9 of the 41 participants did not meet the regulators debt servicing benchmark requirement that borrowing costs are equal or are less than 10% of annual revenue.

Operational costs of water and wastewater supply are only 60% of our Australian counterparts but vary largely

This suggests that there may be little room to improve operational overheads, however participants operational expenditure per property varies by a factor of four suggests there may be room for sharing best learnings.

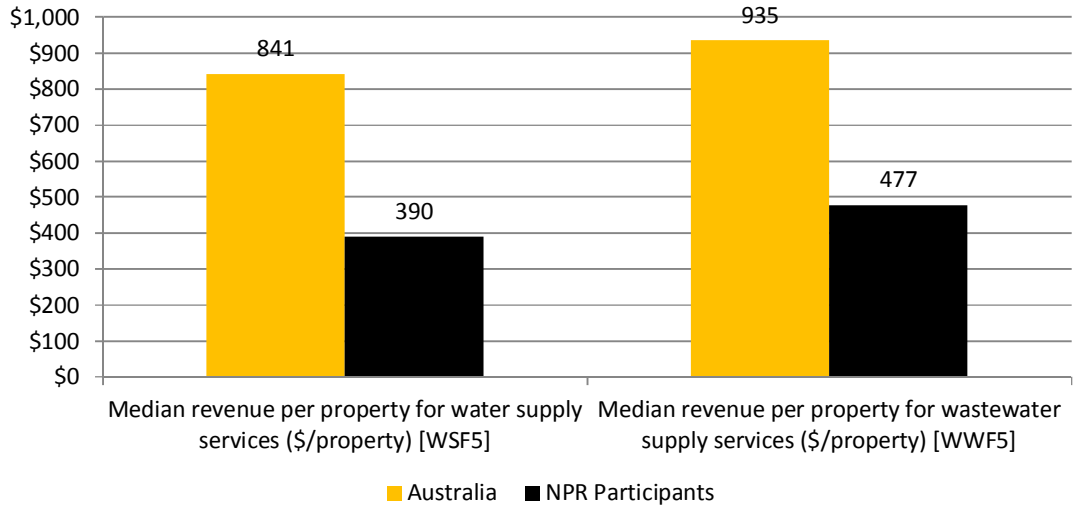
4.1 Revenue

Operating revenue is the principal source of three waters revenue. This figure includes revenue obtained from fixed charges (typically rates) and volumetric charges, special levies that apply to serviced properties, revenue from asset sales, revenue from other sources for specific activities (e.g. grants), and other revenue from operations which would otherwise be included (e.g. interest income).

In addition, supply of services to neighbouring authorities generates water supply revenue for Hamilton, Tasman and MacKenzie Councils. Hutt, Christchurch, Tauranga, Porirua and Tasman Councils receive revenue for the provision of wastewater treatment. Some authorities received revenue through developer contributions. Cash contributions made by developers (excluding asset contributions) are shown in Figure 40.

Total revenue for 3 waters services is significantly less than the median benchmarks of our nearest neighbour Australia.

Figure 37: Median revenue for water and wastewater supply



*Converted using exchange rate of $NZD1.07=$1AUD

Figure 38: 3 waters revenue for participants by revenue source

Sources of Revenue	Water	Wastewater	Stormwater	Total
Revenue from the supply of water/wastewater services to other authorities [WSF1, WWF1]	$30,997,498	$11,461,061		$42,458,559
Operating revenue [WSF2, WWF2, SWF3]	$444,522,056	$615,726,865	$217,154,837	$1,277,403,758
Development contribution revenue [WSF3, WWF3, SWF2]	$18,367,081	$54,129,023	$34,223,683	$106,719,787
Total Revenue	$493,886,635	$681,316,949	$251,378,519	$1,426,582,104

Figure 39: Revenue per property

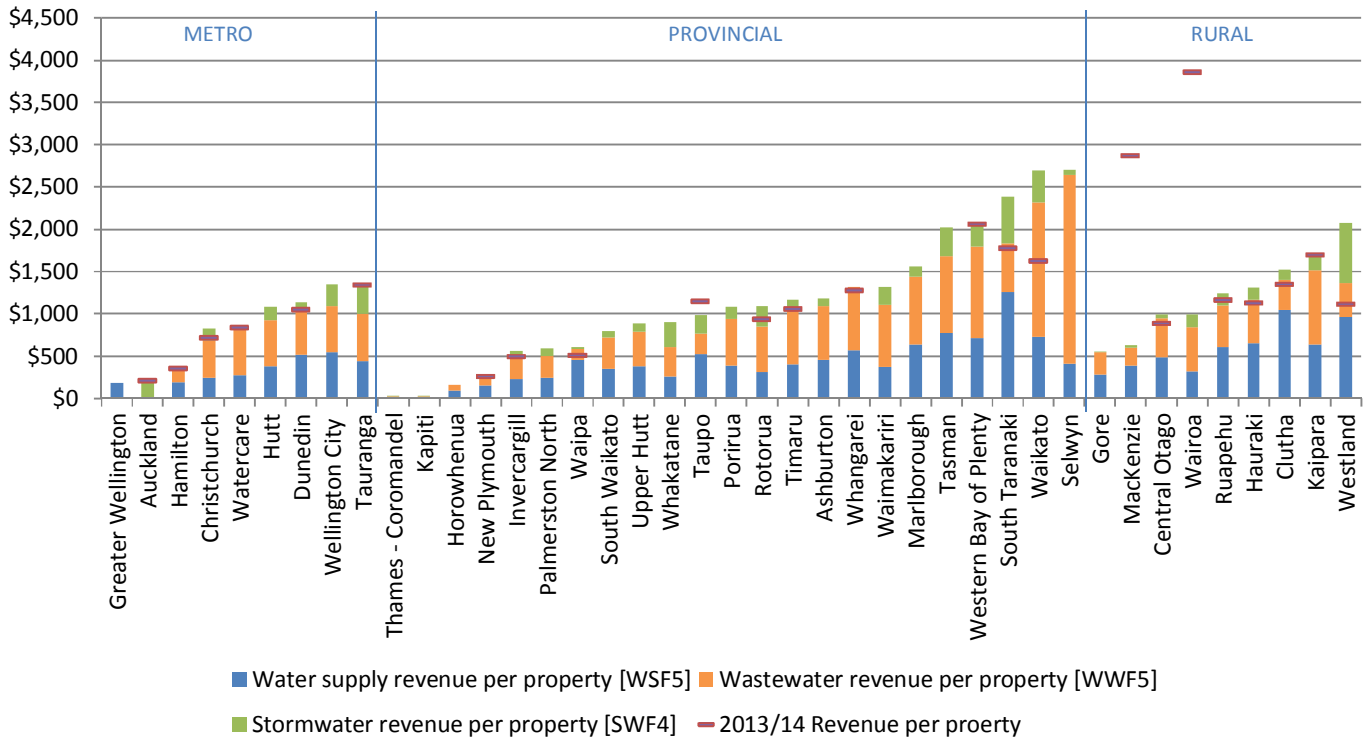


Figure 40: Developer contributions per property in metropolitan areas

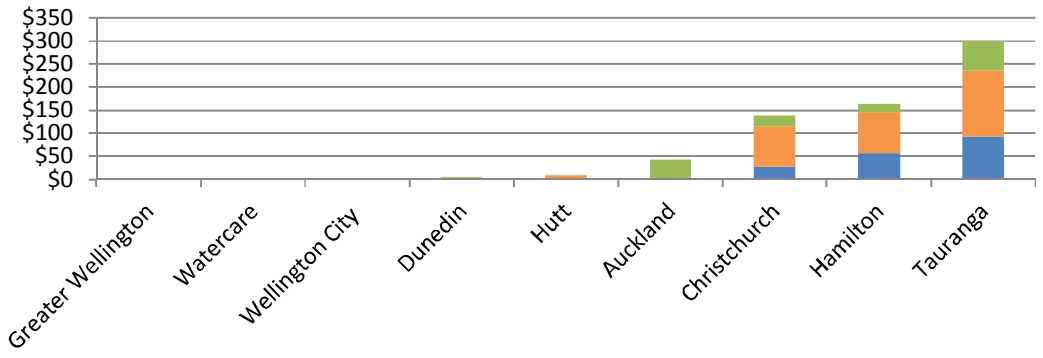


Figure 41: Developer contributions per property in provincial areas

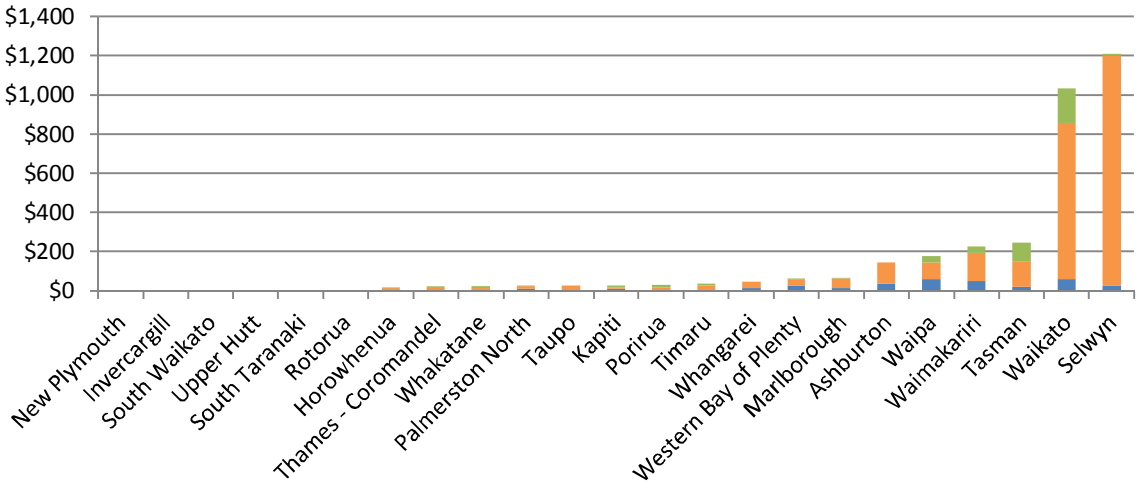
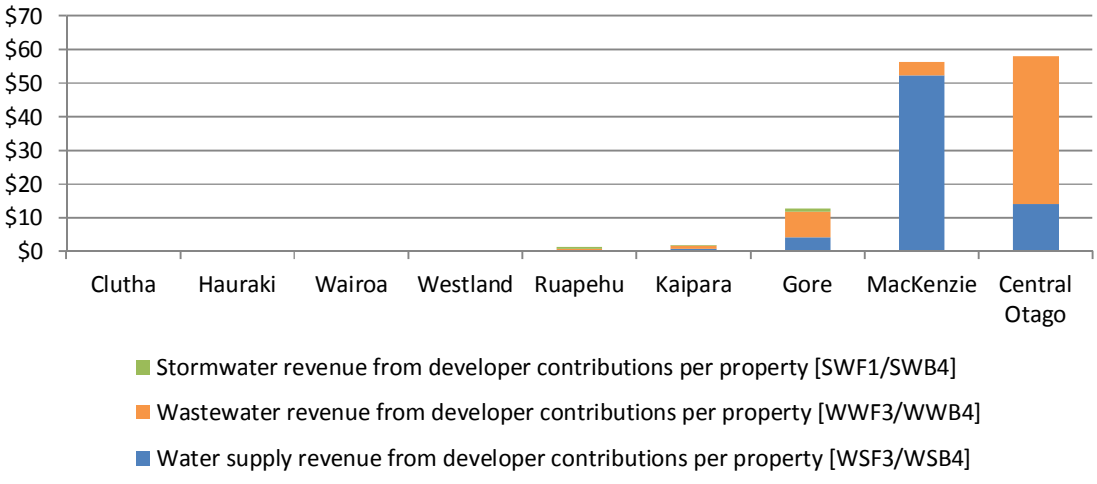


Figure 42: Developer contributions per property in rural areas



4.2 Expenditure

4.2.1 Types of Expenditure

Figure 43: Total expenditure for NPR participants

Cost category	2014-15 Expenditure for all NPR participants
Depreciation [WSF13+WWF14+SWF10]	$566,199,041
Interest [WSF14+WWF15+SWF11]	$192,099,891
Operational expenditure [WSF11+WWF12+SWF8]	$723,893,004
Capital expenditure [WSF18+WWF19+SWF15]	$740,271,373
Total expenditure	$2,222,463,310

Figure 44: Proportion of 3 waters expenditure by major cost category

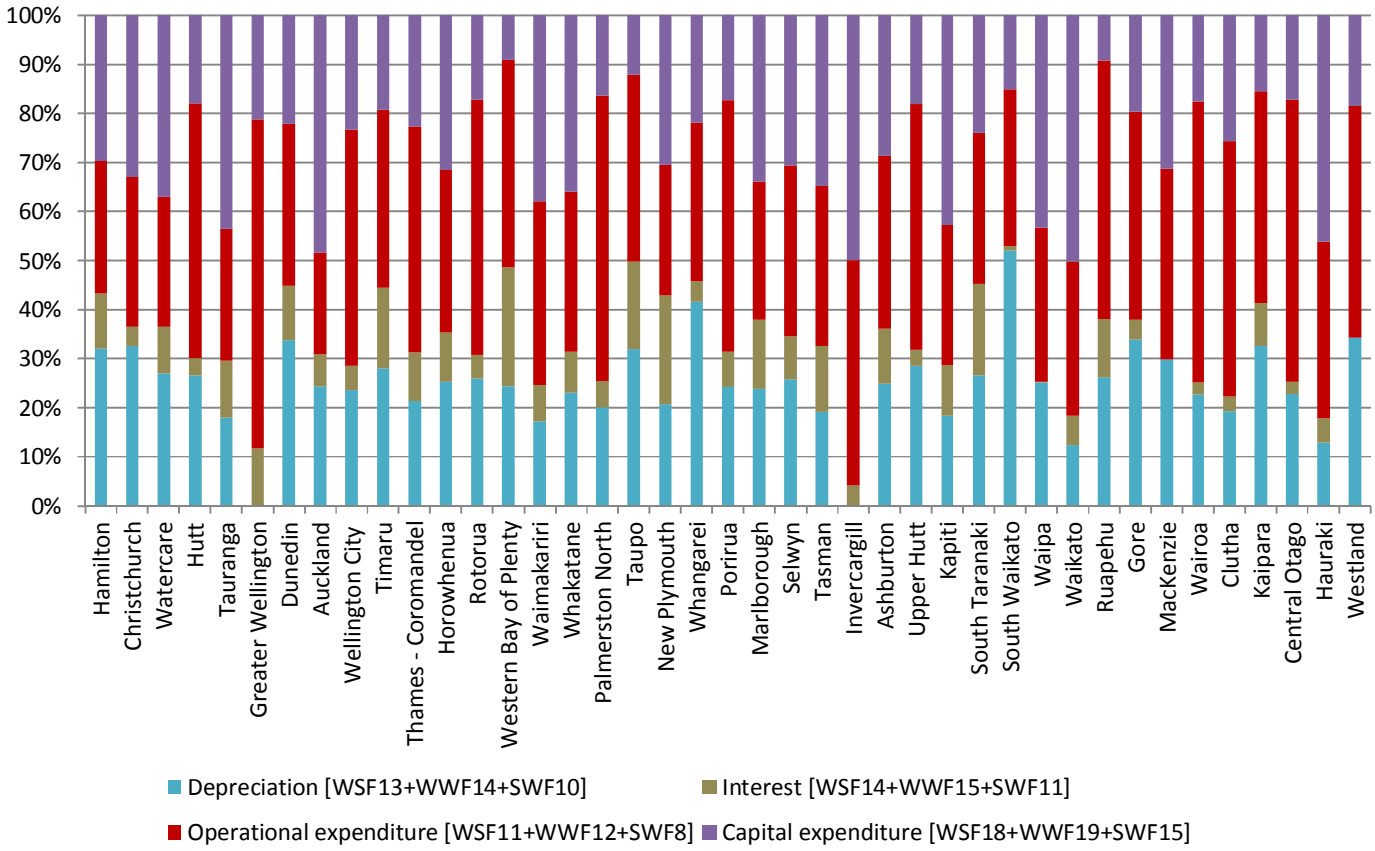
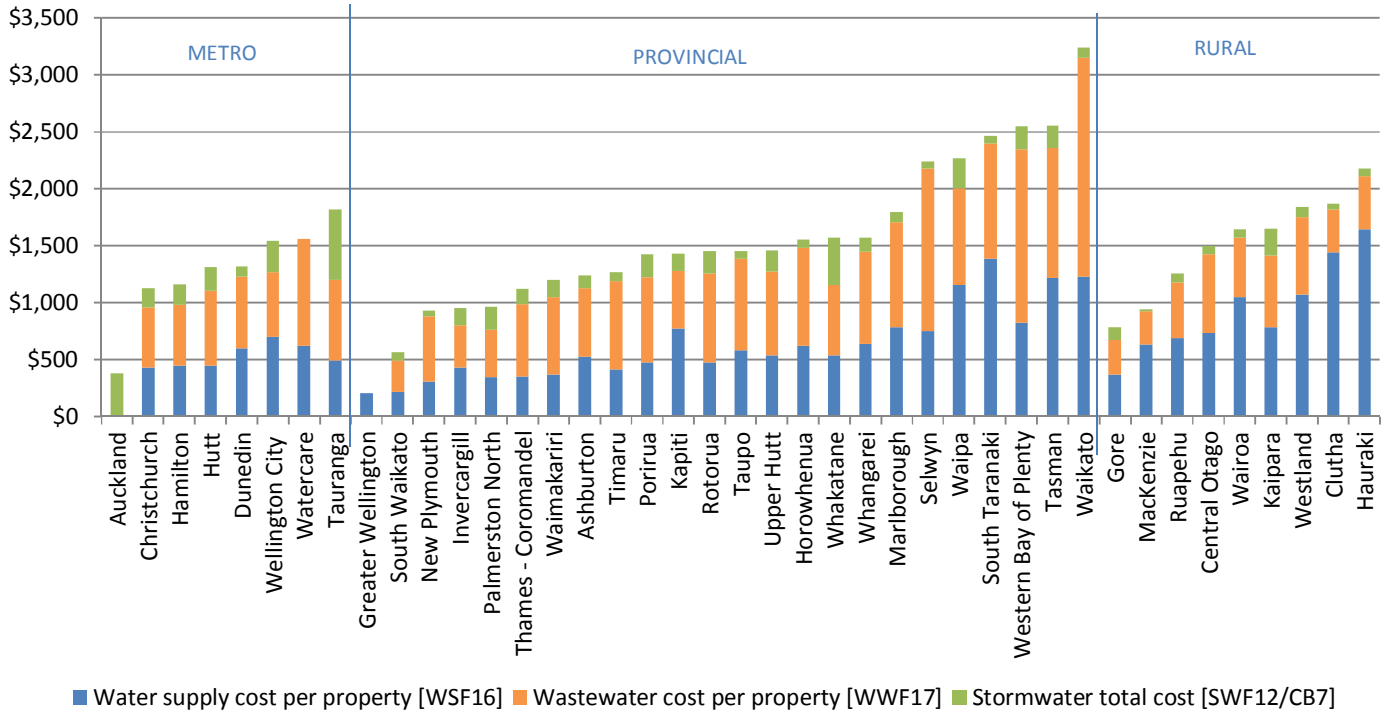


Figure 45: Expenditure per property on 3 water services



4.2.2 Growth Related Expenditure

Figure 46: Growth related capital expenditure for provincial participants

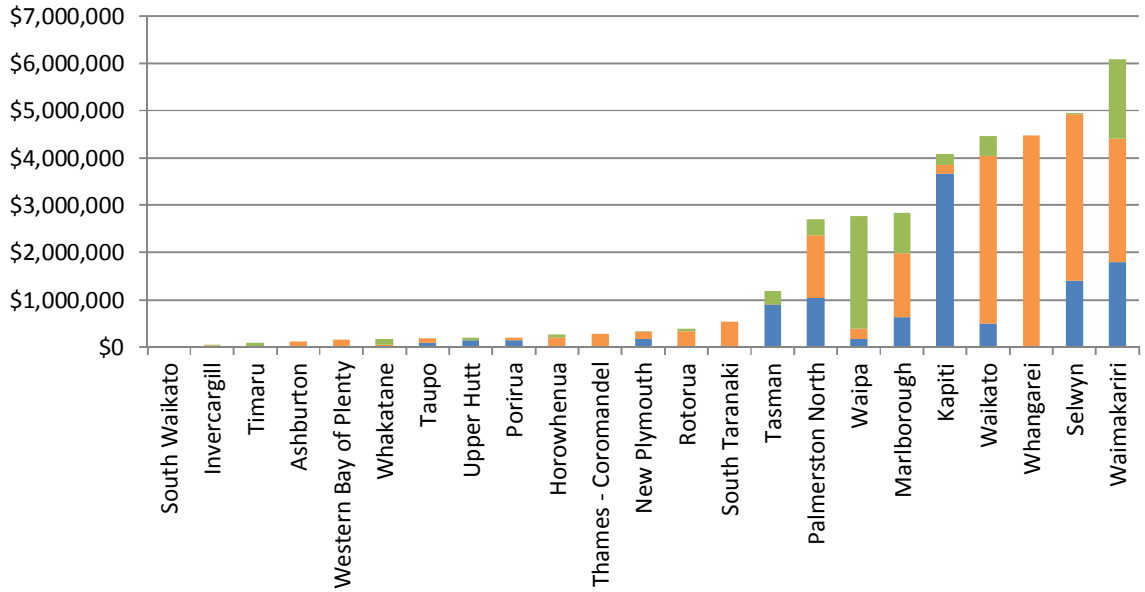
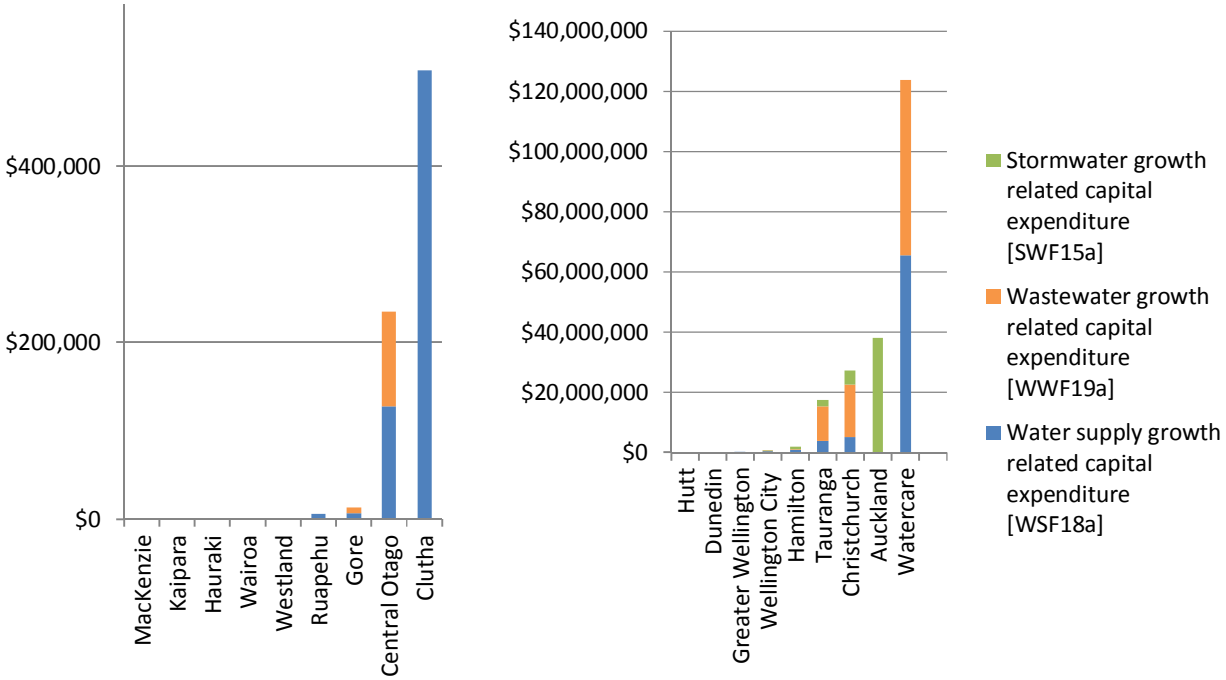


Figure 47: Growth related capital expenditure for rural and metropolitan participants



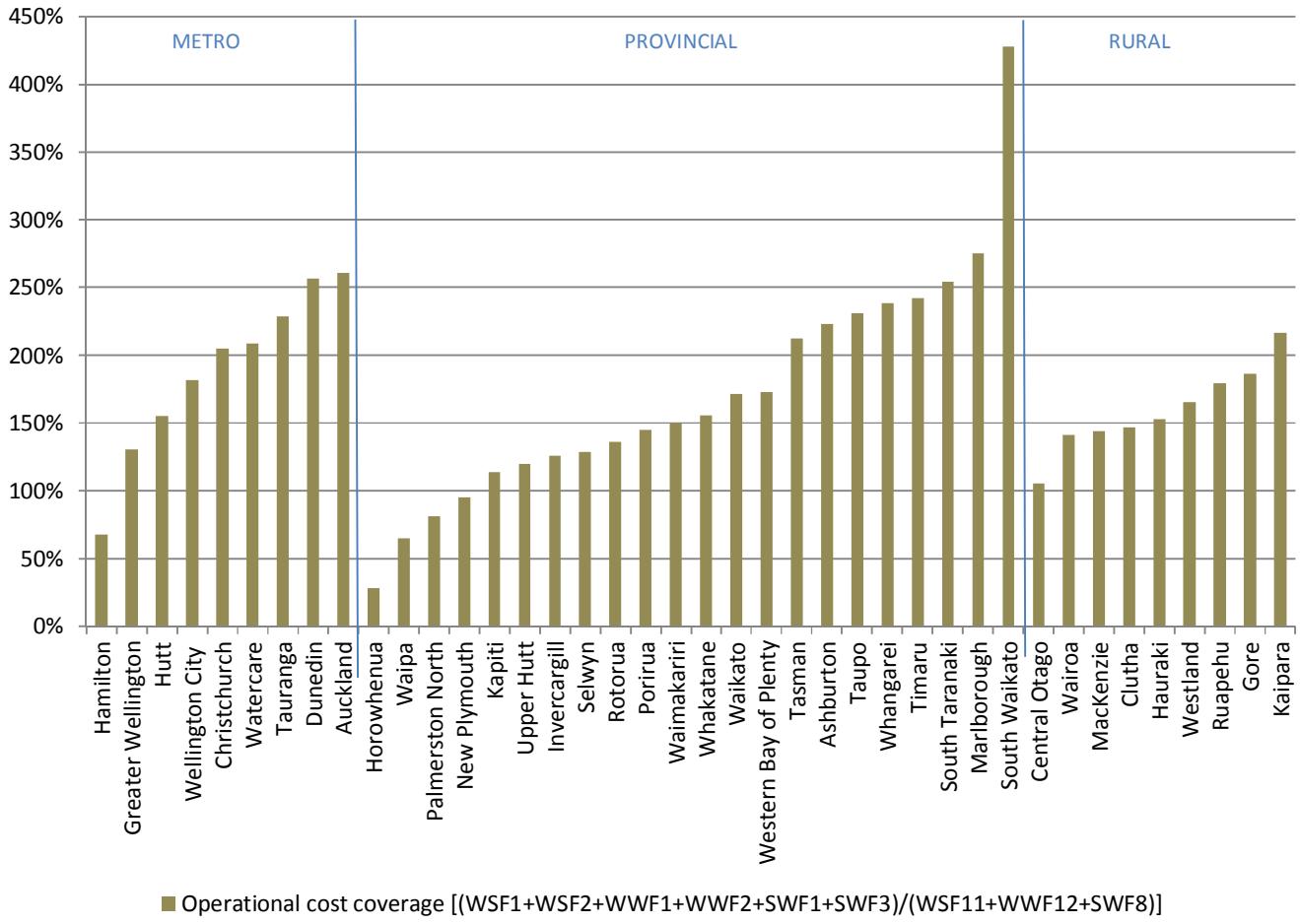
4.3 Budgeting

4.3.1 Balanced budget

Local authorities are required to report balanced budget benchmarks under the Local Government (Financial Reporting and Prudence) Regulations 2014 (New Zealand Government, 2014). The benchmark is met if revenue (excluding development contributions, financial contributions, vested assets, gains on derivative financial instruments, and revaluations of property, plant, or equipment) for the year exceeds its operating expenses for the year.

Operating expenses included in this benchmark have been interpreted as the operating cost of providing 3 waters services. It does not include costs associated with interest on loan payments or asset depreciation. Revenue in this metric differs from the metric shown in Figure 39, as this data does not include developer contributions (in order to maintain consistency with the Local Government Financial Reporting and Prudence Regulations 2014).

Figure 48: Revenue versus operating expenses



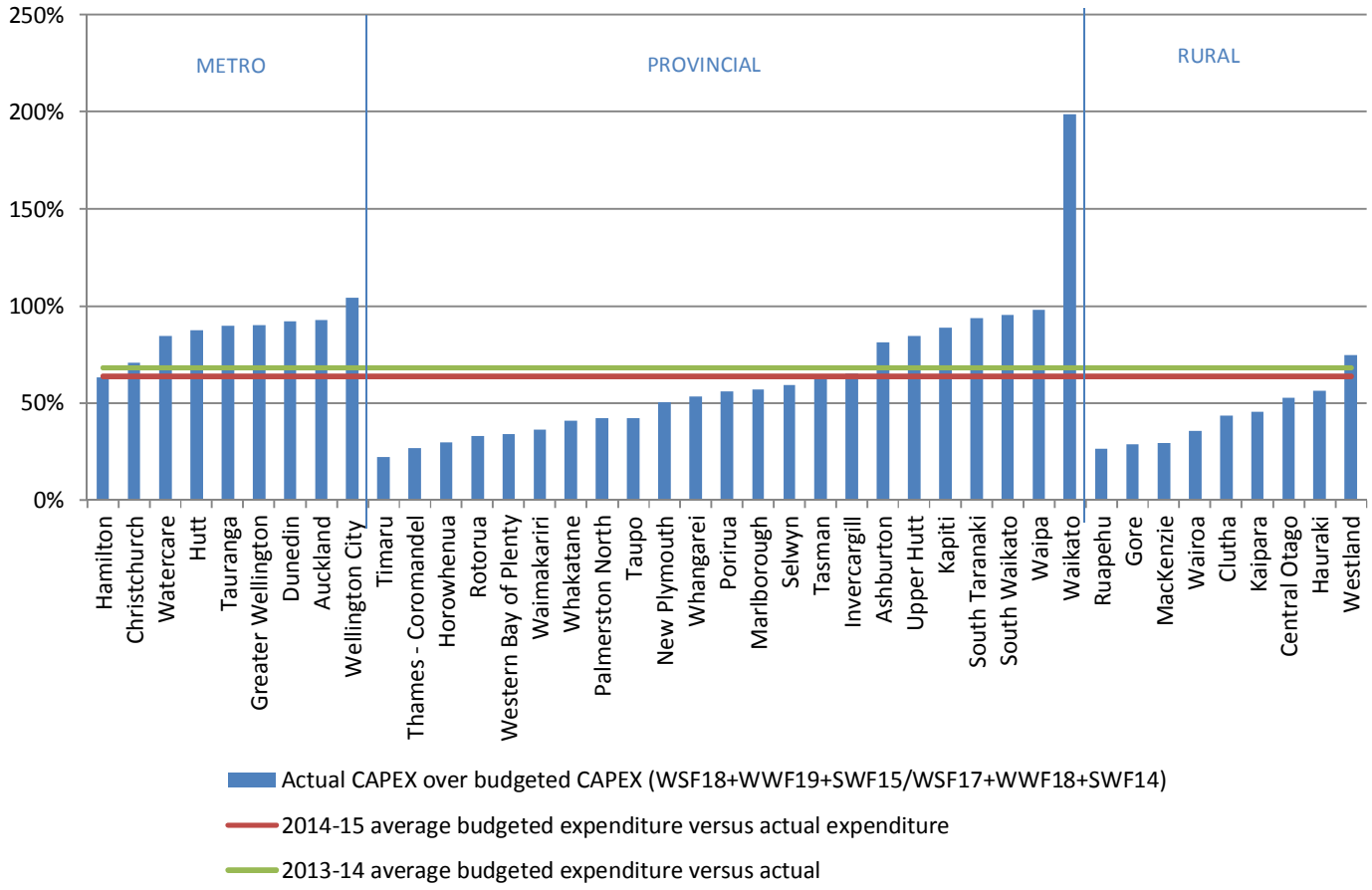
4.3.2 Delivery of Budgeted expenditure

Actual capital expenditure as a proportion of budgeted expenditure demonstrates a trend of 3 waters expenditure significantly trailing budgets. On average 64% of budgeted expenditure was delivered in 2014-15, a decrease from 2013-14 when 68% of budgeted expenditure was delivered.

Where there were shortfalls in actual against budgeted expenditure participant explanations included internal and external factors. Internal factors sited delays in project delivery, shifts in project priorities and budgets set to worst-case scenario contingency costs. Waimakariri sited external factors. These related to developer led work that is dependent on when a developer pushes "go" on their development, as well as large amounts of capital expenditure dependent on the red zoning of residential land following the Canterbury earthquakes.

Waikato District Councils actual expenditure exceeded budgeted expenditure as the budgeted figure included in the annual plan (and reported here) did not include the carry forward budget from previous years.

Figure 49: Actual capital expenditure as a ratio of budgeted capital expenditure across the three waters



4.4 Debt servicing

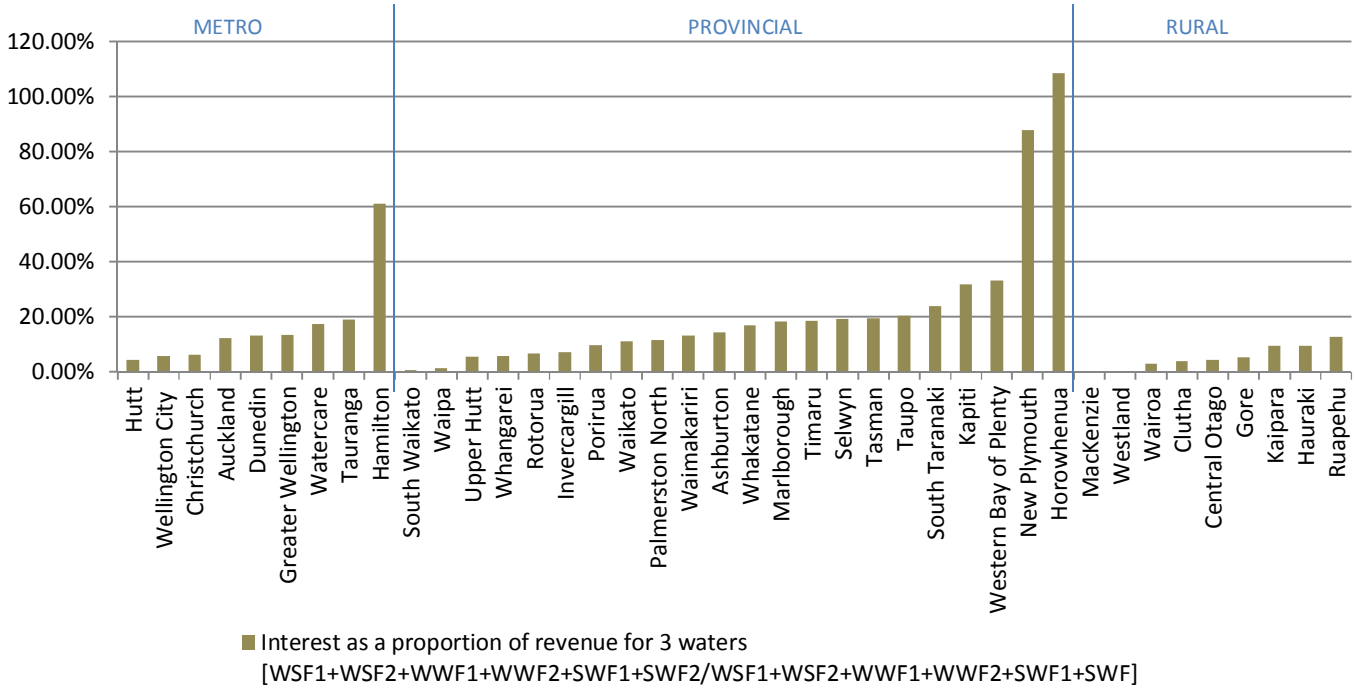
A benchmark showing councils interest as a proportion of revenue for 3 waters assets has been produced to align with the debt servicing benchmark required by Local Government (Financial Reporting and Prudence) Regulations 2014. The regulations specify that a local authority meets the debt servicing benchmark for a year if borrowing costs are equal to or are less than 10% of annual revenue.

Where participants have interest on debts approaching reported revenue it suggests not all three waters revenue has been accounted for. This is likely to be the case at Thames –Coromandel whose ratio of 1260.53% was a significant outlier and so not included in the figure.

If data is correct many participants are likely to exceed the debt servicing benchmark when considering only three waters infrastructure. However this benchmark applies to a councils entire operations, so exceedance of the benchmark in 3 waters may be balanced by higher revenue and lower interest in other areas.

Revenue shown in this metric differs from the revenue per property metric shown in Figure 39, as this revenue data does not include developer contributions which have been excluded in order to maintain consistency with the regulations.

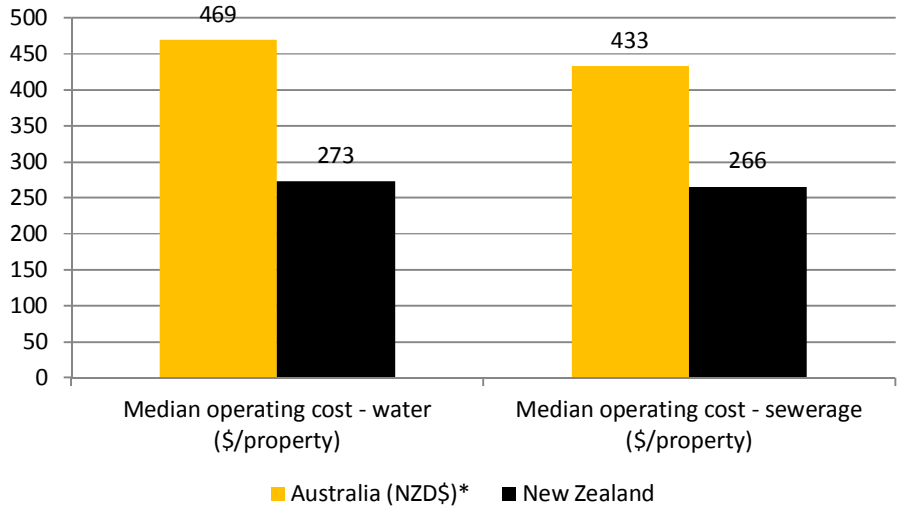
Figure 50: Interest on 3 water assets as a proportion of 3 water assets revenue



4.5 Operational Expenditure

Operational expenditure includes cost categories listed in Table 11. Operational expenditure on water and wastewater services per property in New Zealand is nearly half of that in Australia.

Figure 51: Operational cost per property for the delivery of water and wastewater services

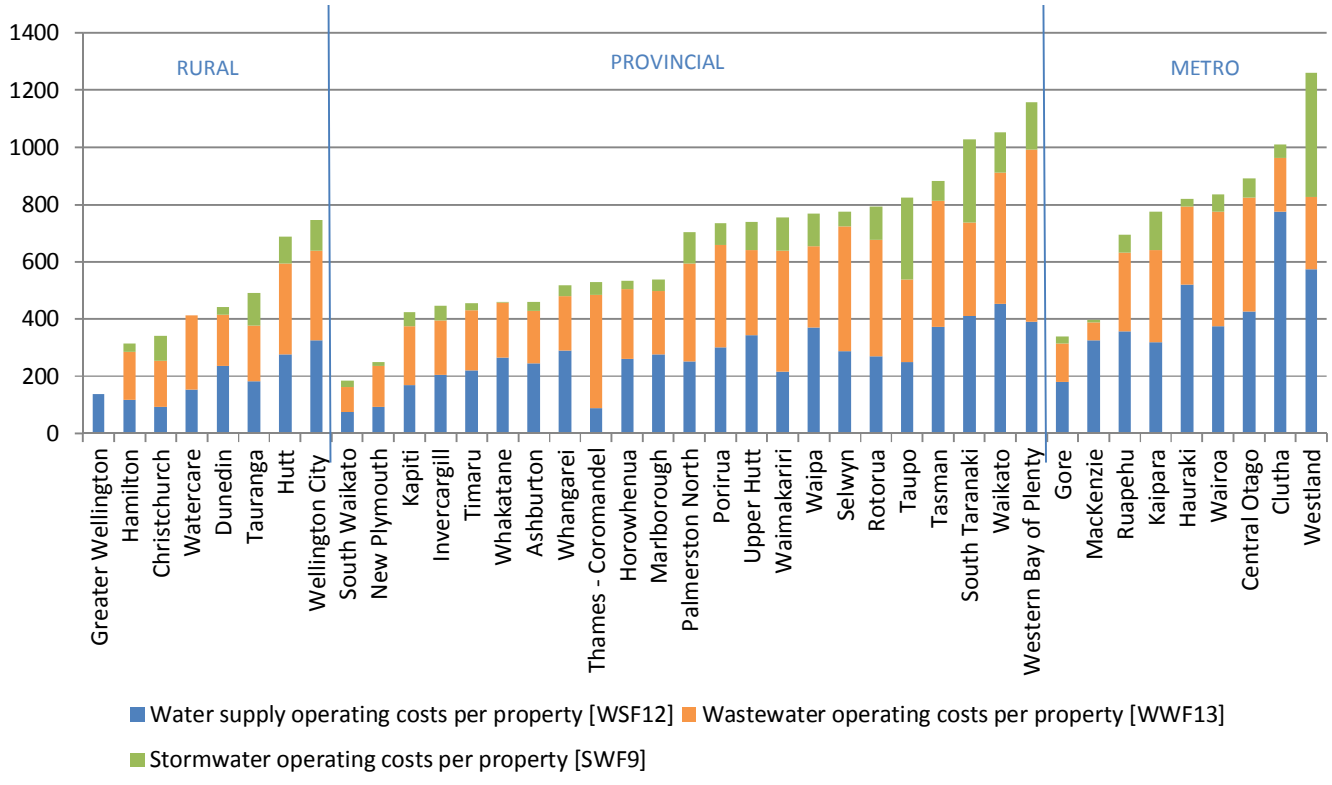


*Converted using exchange rate of $NZD1.07=$1AUD

Table 11: Operational expenditure by cost category for all NPR participants

Expenditure	Water	Wastewater	Stormwater	Total
Energy Costs [WSF6, WWF6]	$26,429,477	$31,476,480		$57,905,957
Chemicals and Consumables [WSF7]	$16,633,059			$16,633,059
Sludge Disposal [WWF7]		$17,119,587		$17,119,587
Management Costs [WSF9,WWF10, SWF6]	$99,120,440	$117,722,582	$36,231,918	$253,074,940
Councils Overview Costs (where management of the network is carried out by a standalone entity) [WSF10, WWF11, SWF7]	$11,035,987	$5,051,775	$3,267,232	$19,354,994
Other external operational costs [WSF8, WWF8, WWF9, SWF5]	$140,921,566	$158,026,184	$60,792,270	$359,740,020
Total	$294,140,530	$329,396,607	$100,291,420	$723,828,556

Figure 52: Operational expenditure per property



This figure normalises stormwater operating costs by number of properties connected to the network. In some regions, such as Taupo, properties may be served by the network however use sink holes (or other methods of drainage) rather than direct connections to stormwater pipes. In these areas stormwater costs per property appear higher. The participant workshop will explore if normalising stormwater data by residential properties, as opposed to stormwater connected properties would provide a more accurate comparison of stormwater performance indicators.

Figure 53: Proportion of water supply operational expenditure by cost category

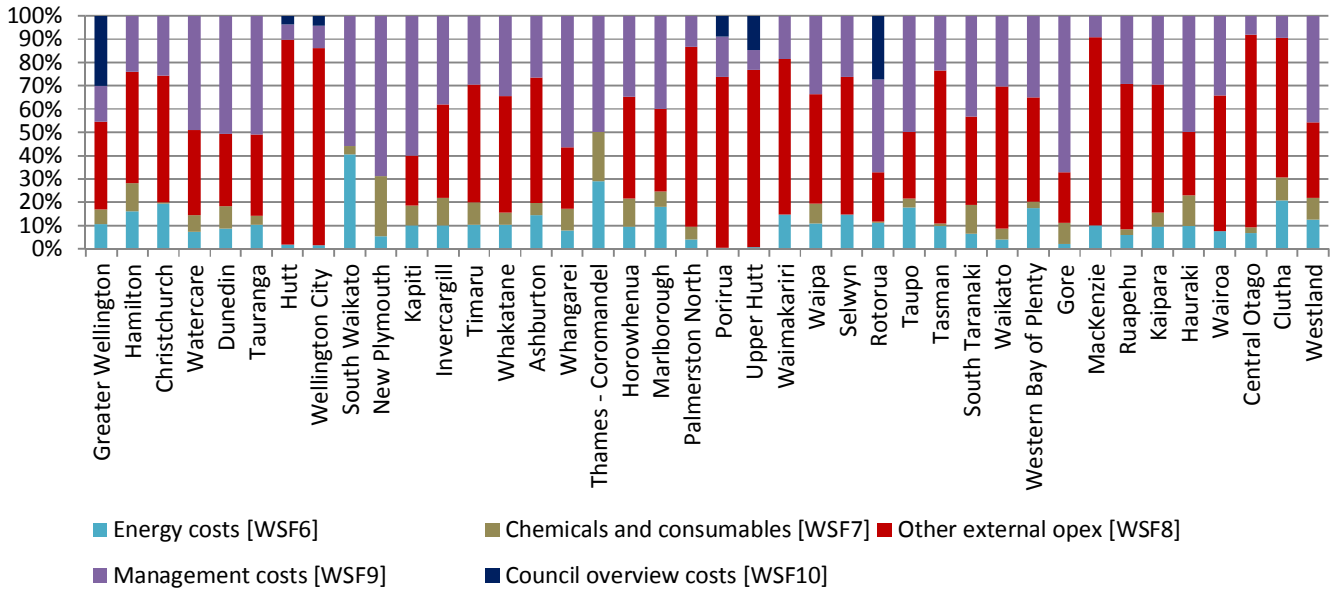


Figure 54: Proportion of wastewater supply operational expenditure by cost category

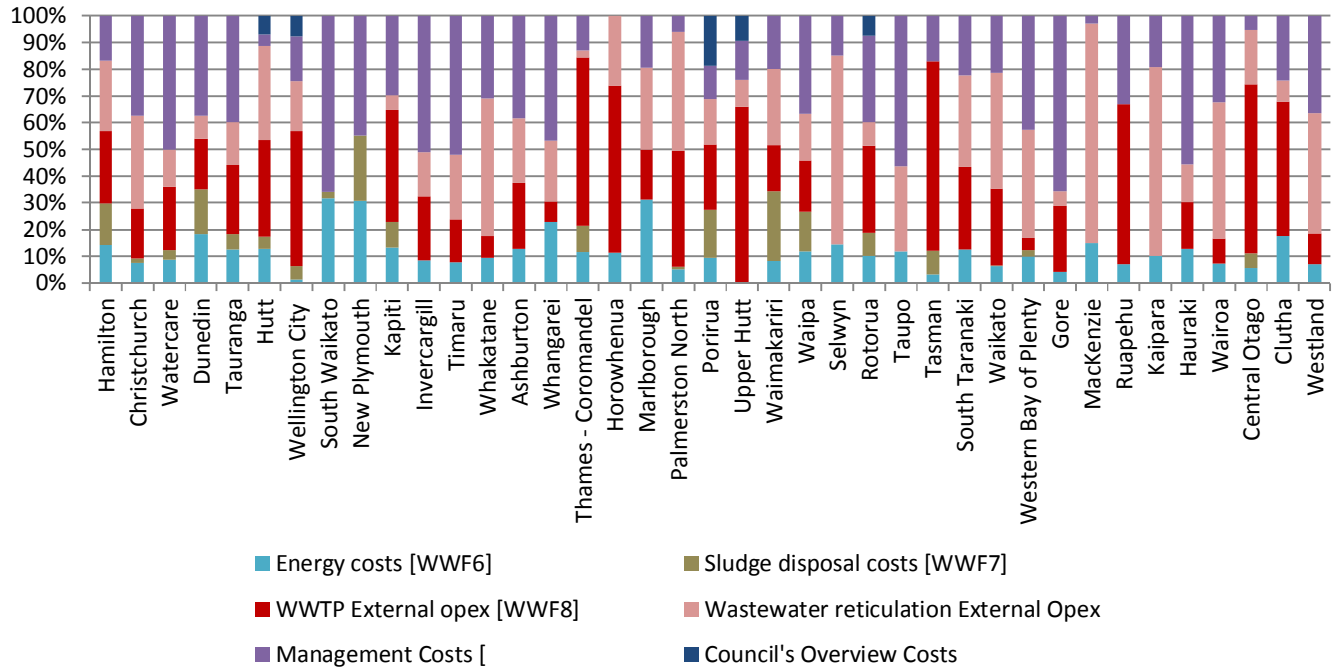
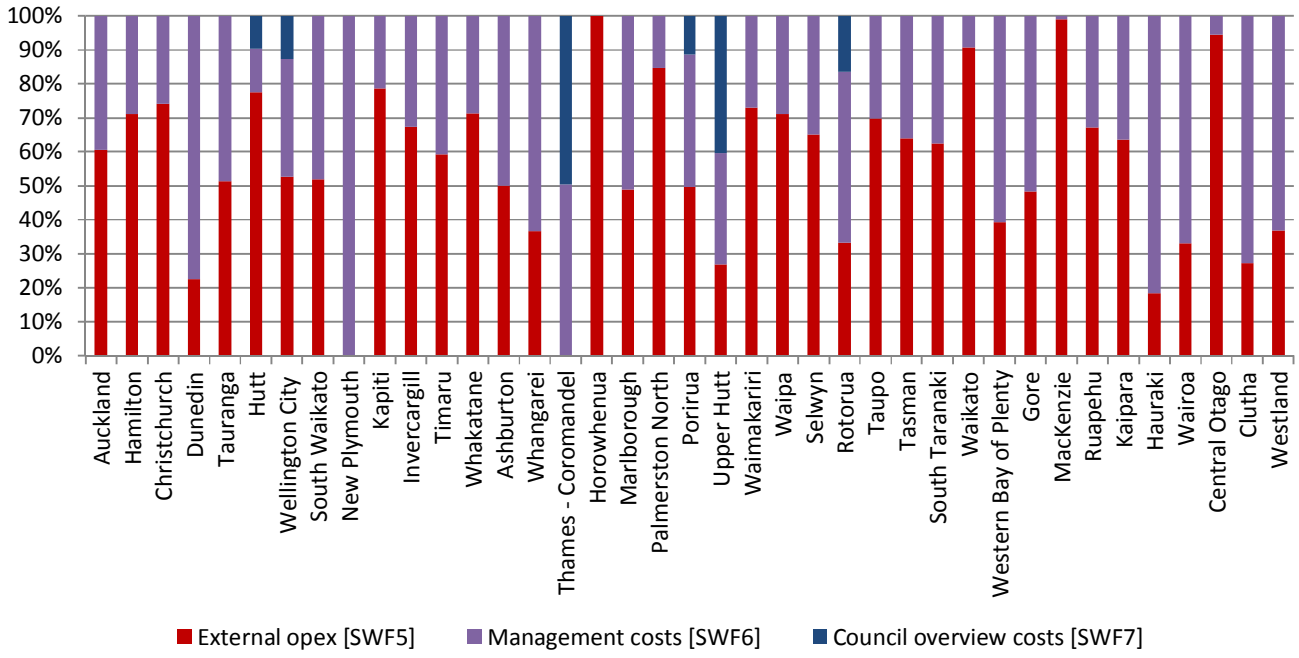


Figure 55: Proportion of stormwater operational expenditure by cost category



5. Water Demand Management

This section covers information on the management of water. It includes data on water abstractions, reservoir capacity, residential water efficiency and water loss.

KEY OBSERVATIONS

525 million cubic metres of water was supplied through NPR participant systems

Two thirds of participants issued water restrictions in 2014/15

Residential water efficiency is low relative to international benchmarks

NPR participants have the highest average per capita residential water consumption of all international benchmarks examined at 275L/person/day. Average per capita region in other international benchmarking studies ranged from 119 L/person/day in the Netherlands to 195 L/person/day in Australia.

Water metering is not yet common place amongst residential properties however is common place amongst non-residential properties

Only 7 participants had full residential water metering whereas 22 have no or very low levels of residential meters. 3 participants have yet to put in place water meters for non-residential water users.

There are opportunities to reduce water loss

Of the 24 councils who have undertaken water efficiency assessments using the infrastructure leakage index, four had water loss that was considered to be high or very high. Current annual real losses are also high in New Zealand relative to European and international benchmarks.

Nearly one third of NPR participants have yet to undertake a water loss efficiency assessment

5.1 Water Reservoir Capacity

Figure 56: Days of treated water stored in reservoirs on average

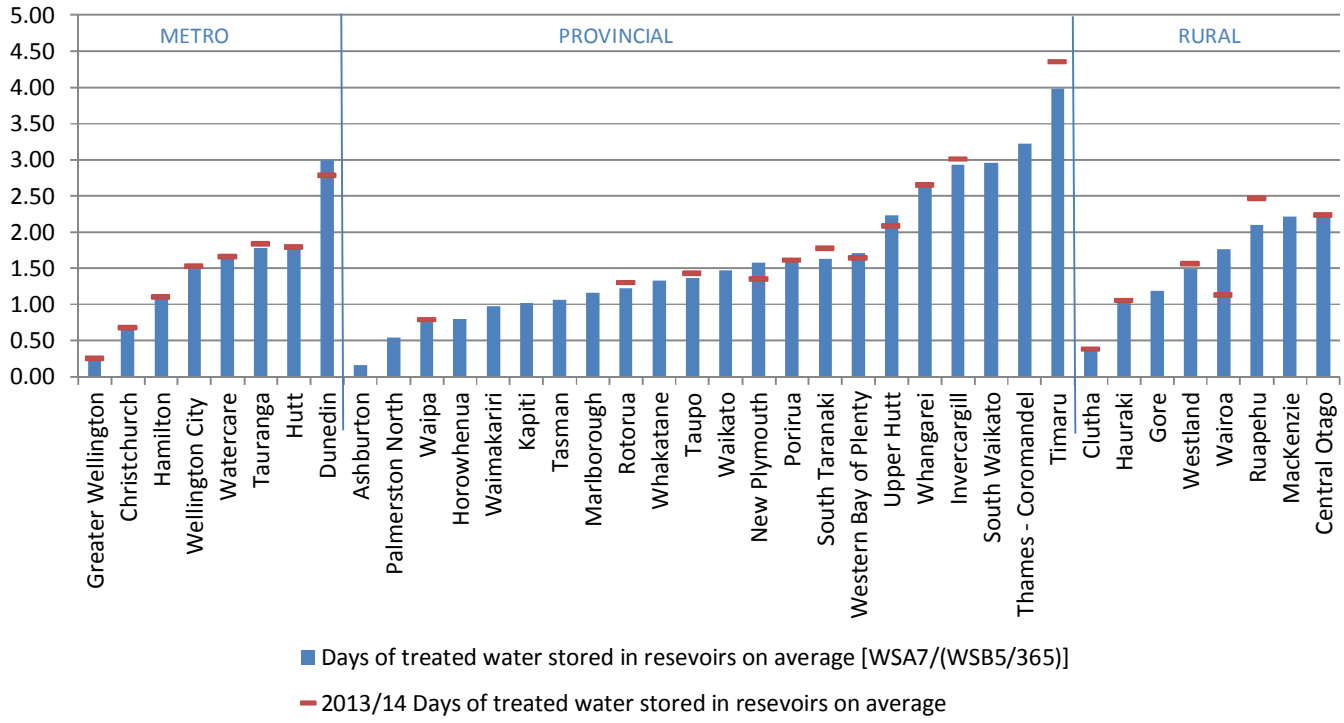
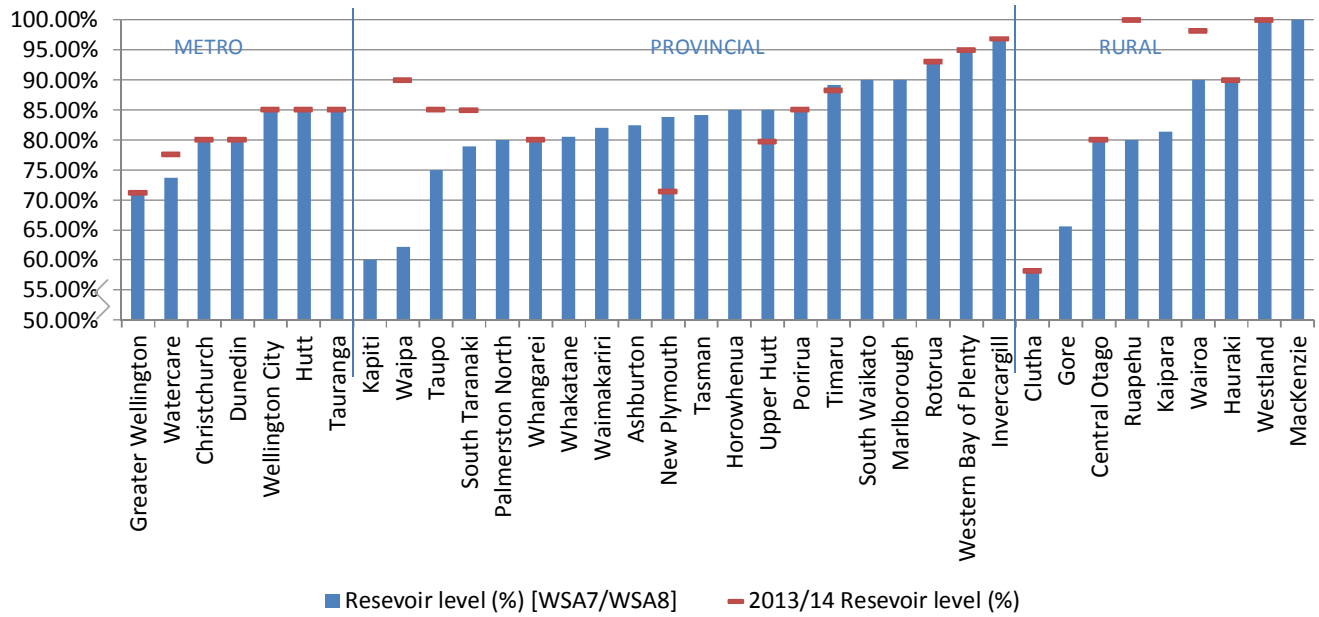


Figure 57: Treated water reservoir level on average



5.2 Water abstractions

Water abstractions refer to the total volume of water an organisation draws from various water sources to supply its customers and includes water losses. In total 525 million kilo litres of water was supplied to councils' systems.

Figure 58: Volume of water supplied to provincial council systems (m^3/year)

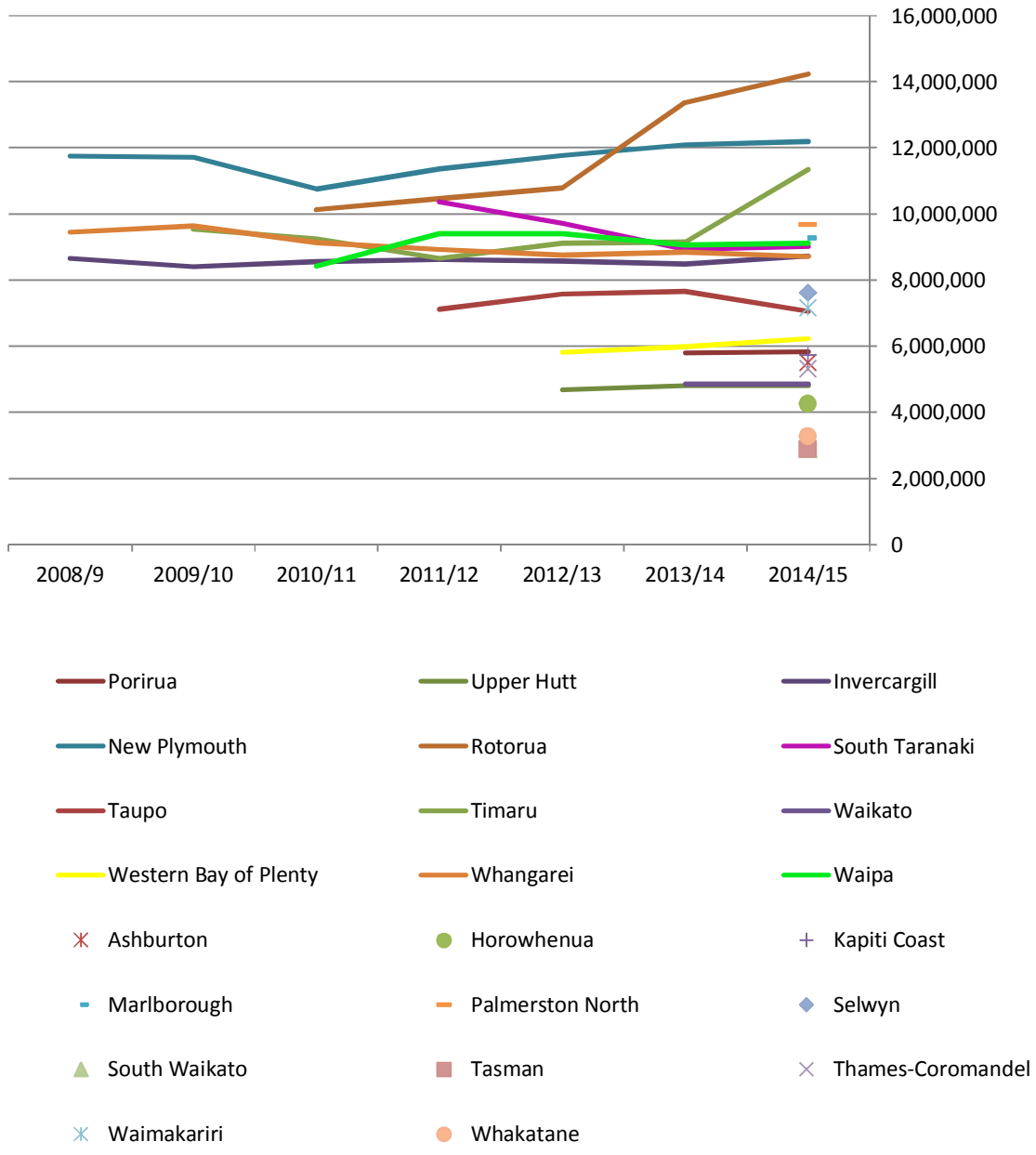


Figure 59: Volume of water supplied to metropolitan councils system (m^3/year)

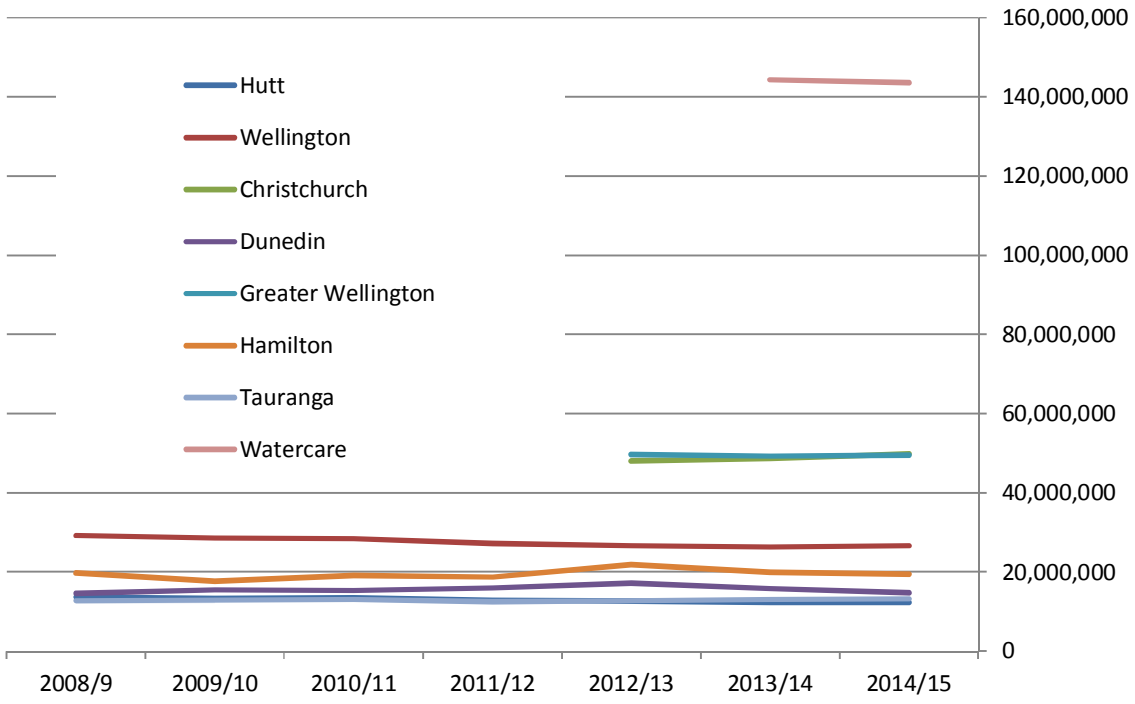
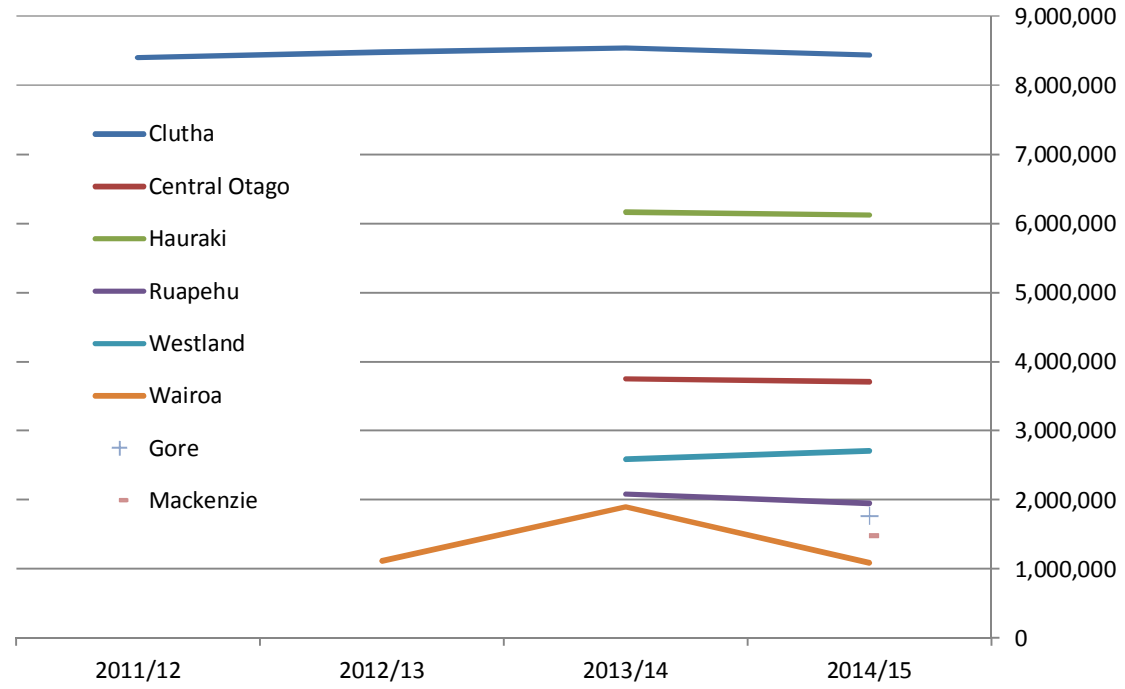


Figure 60: Volume of water supplied to rural council systems (m^3/year)



5.3 Water metering

Figures below show the percentage of meter installations. In some instances meters have been installed but are not used for volumetric charging. Information on charging regimes is in section 3.5. Selwyn is not included on graphs - whilst they are rolling out meters they do not currently have data to distinguish between residential and non-residential meters.

Figure 61: Residential water metering coverage (%)

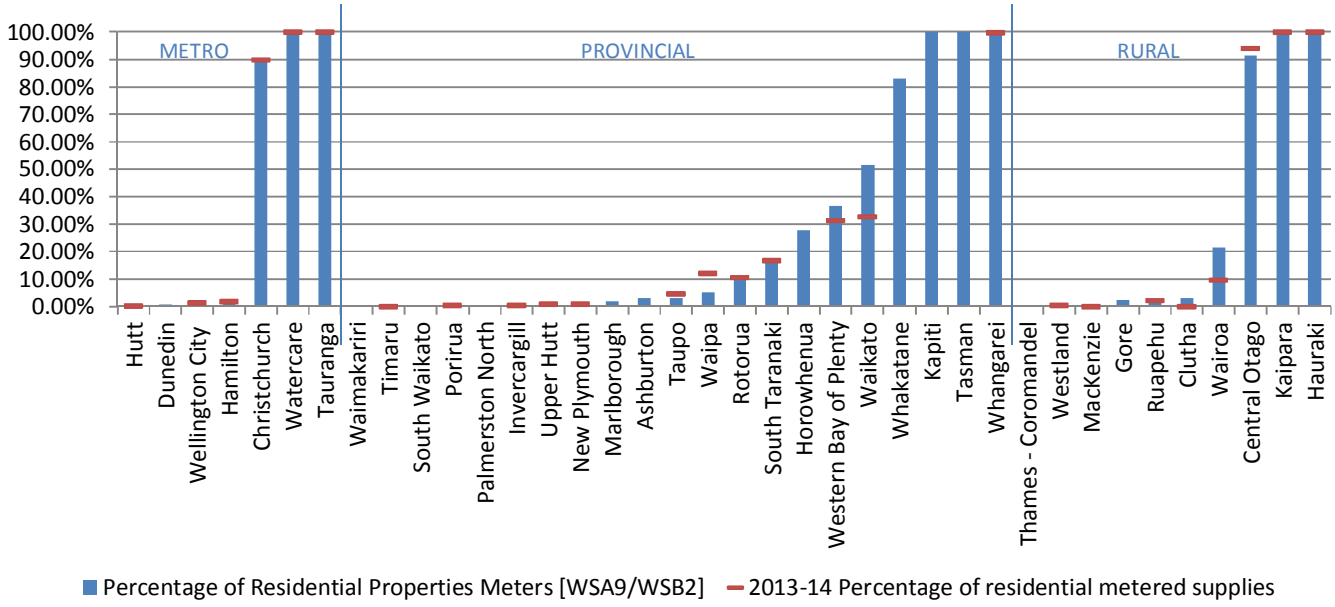
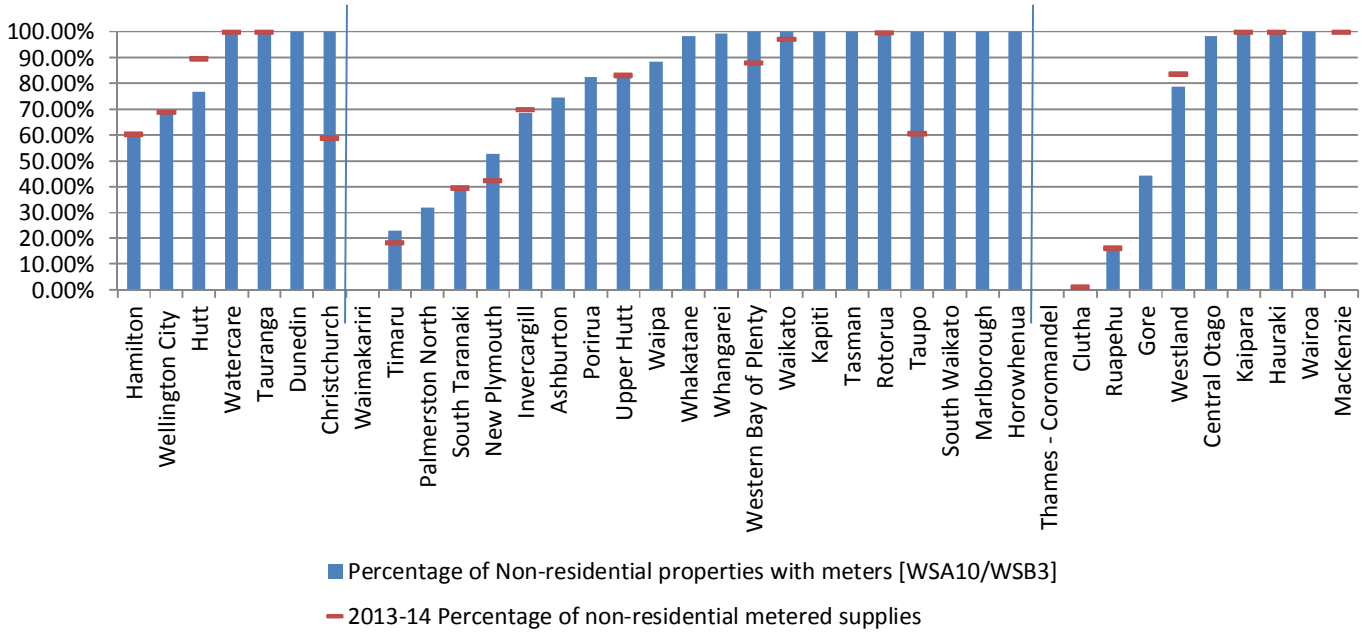


Figure 62: Non-residential water metering coverage (%)

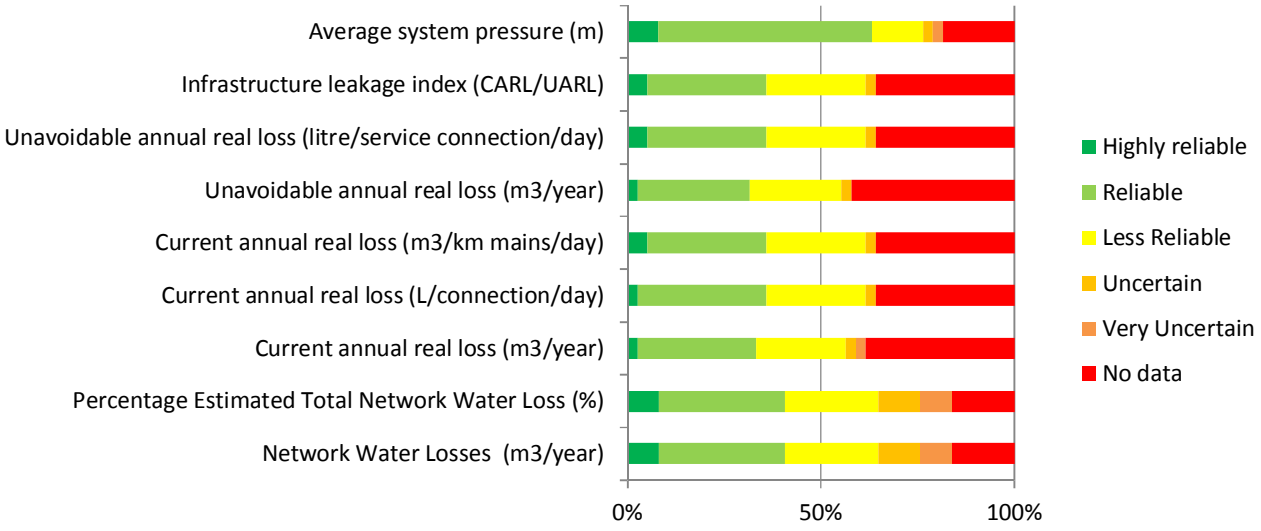


5.4 Water loss and changes

77,552,356 cubic metres of water was lost across NPR participant networks in 2014/15. Water loss efficiency metrics are required to assess if there are opportunities to reduce this figure. To this end a variety of indicators are assessed in the NPR and data confidence and availability for each of these is illustrated in Figure 63.

Reference material containing further detail on understanding and prioritising actions based on water loss performance indicators are included in the Water New Zealand Water Loss Guidelines (Lambert, 2010) and Benchmarking of Water Losses in New Zealand Manual (Dr Ronnie McKenzie, 2008). Supporting international material is publically available in the EU Reference document, Good Practices on Leakage Management (European Commission, 2015).

Figure 63: Water loss indicators and participant data confidence for each



5.4.1 The Infrastructure Leakage Index

The Infrastructure Leakage Index (ILI) is a water loss performance indicator for inter-utility water loss comparisons recommended by leading international best practice (European Benchmarking Commission, 2015) and New Zealand water loss guidance material (Dr Ronnie McKenzie, 2008). The European Benchmarking Commission (European Benchmarking Commission, 2015) uses the ILI to classify water loss as “very high”, “high”, “moderate” or “low” and outlines suggested actions for each of these categories.

ILI is determined using the following equation:

$$\text{Infrastructure Leakage Index} = \frac{\text{Current Annual Real Loss}}{\text{Unavoidable Annual Real Loss}}$$

ILI does not account for system pressure, which is a strong determinant of waterloss. Water loss comparisons should be made between systems of similar operating pressures. System operating pressures are included in Figure 64.

Figure 64: Infrastructure leakage index

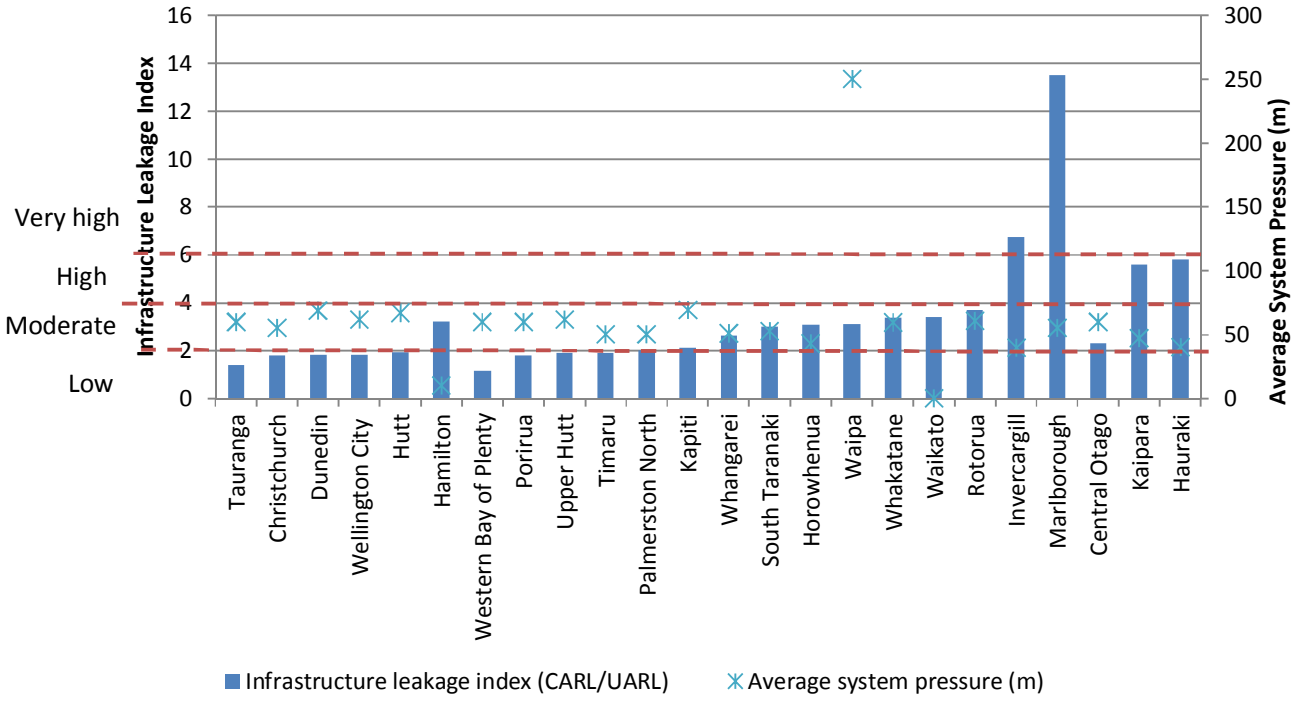
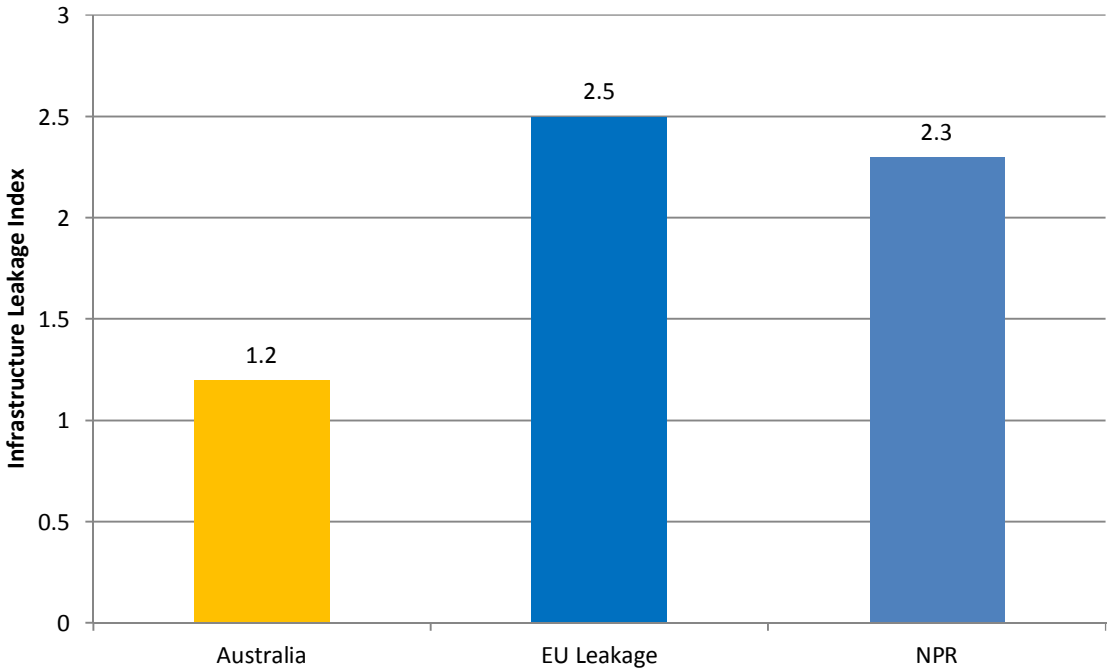


Figure 65: Median Infrastructure Leakage Index values of International benchmarking studies



5.4.2 Current annual real losses

The current annual real water loss of a system is the difference between total water losses and apparent losses. It includes overflows from reservoirs, overflows from the system and losses from leaks bursts up to the customer boundary. It does not include losses resulting from unbilled authorised consumption or unauthorised water consumption (such as water theft or unregistered customers).

Figure 66: Current annual real loss international benchmarking medians

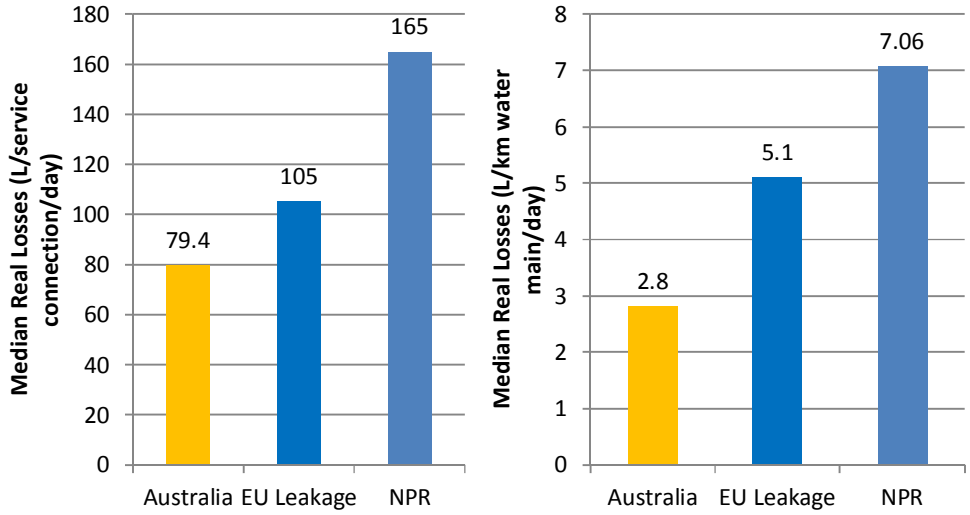


Figure 67: Current annual real water loss for metropolitan participants

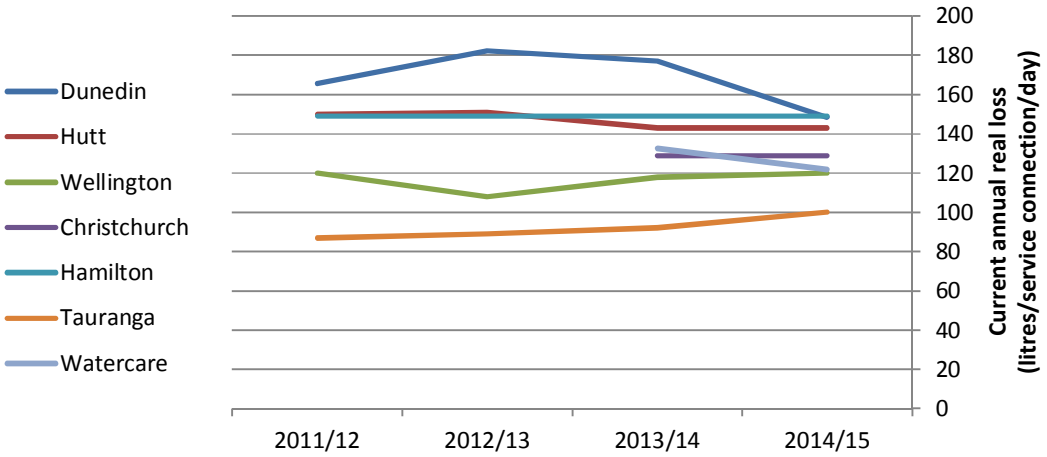


Figure 68: Current annual real water loss for provincial participants

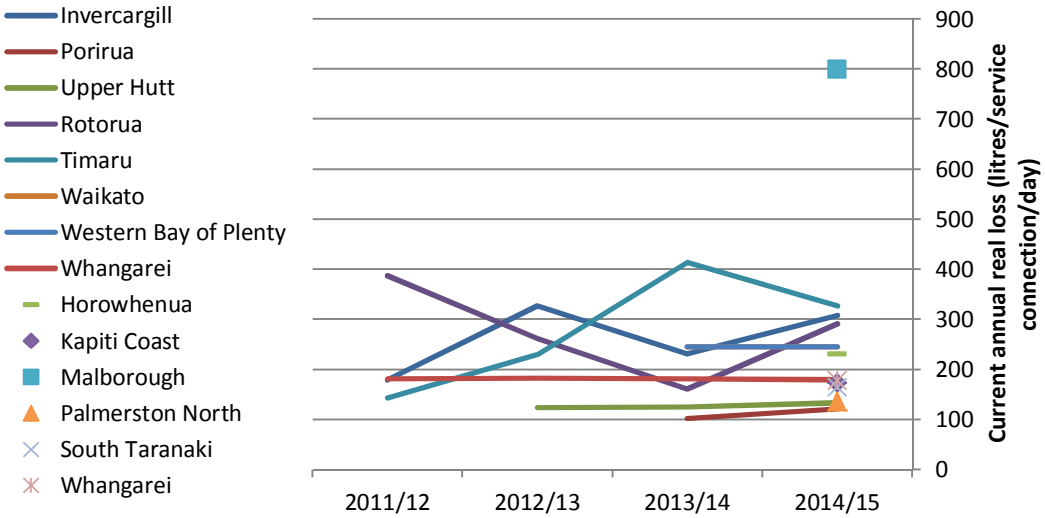
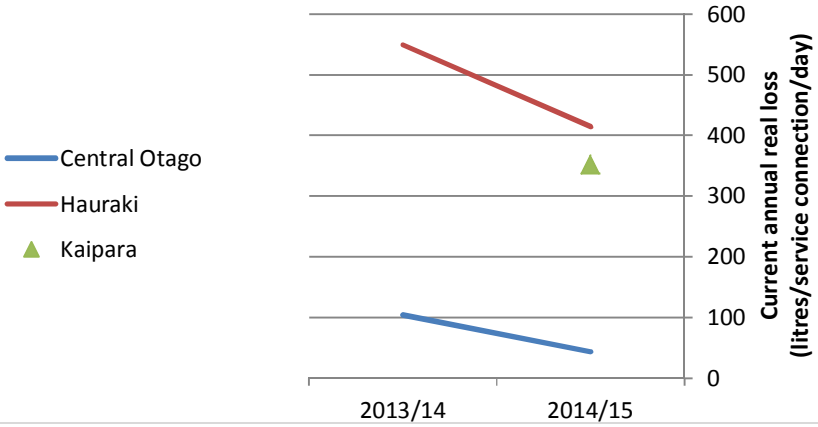


Figure 69: Current annual real losses for rural participants



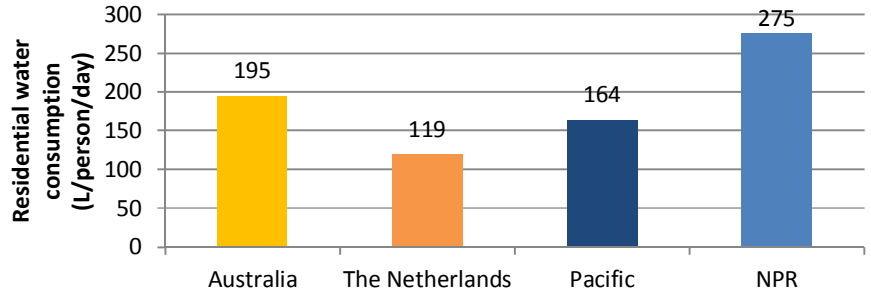
5.5 Residential water efficiency

Residential water consumption has been calculated using the following formula:

$$\text{[WSB8]} = \frac{\text{[WSB5]} - \text{[WSB7]} - \text{[WSB11]}}{\text{[WSB1]}}$$

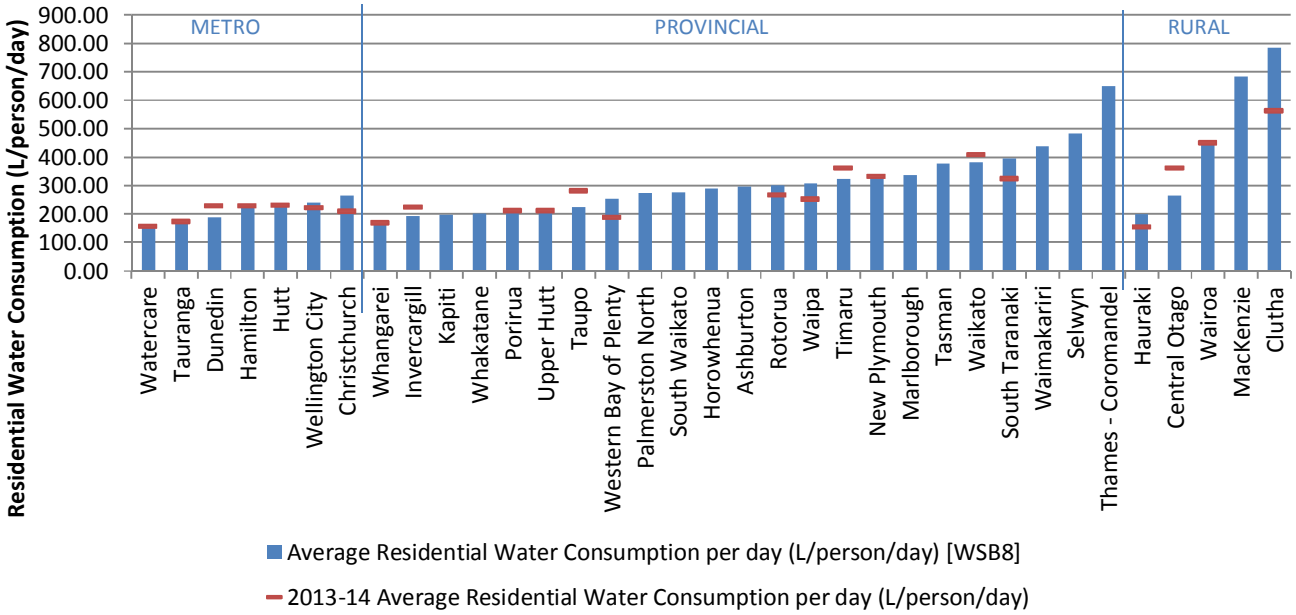
Where participants have more accurate data based on studies or universal metering coverage the formula has been overridden. Residential water consumption includes rural properties in some participant jurisdictions.

Figure 70: International residential water efficiency median values (L/person/day)



*Australian benchmarks record average water use in m^3/household/year. The daily figure has been determined based on average household size of 2.6 obtained from the Bureau of Statistics.

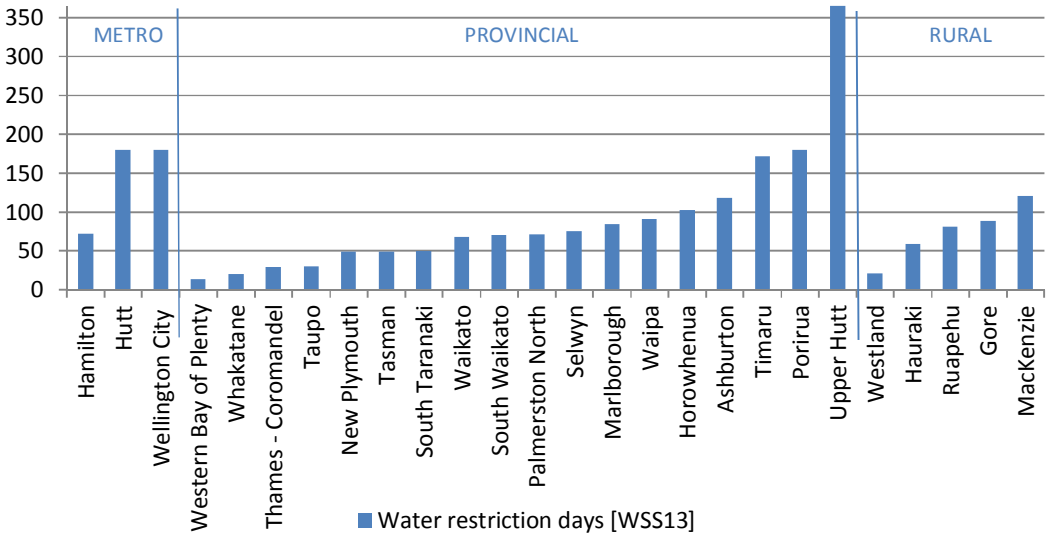
Figure 71: Residential water consumption (L/person/day)



5.6 Water restrictions

Councils not included on this graph, recorded no water restriction days.

Figure 72: Number of days a year water restrictions were applied



6. Environmental Management

This section of the report contains information on wastewater treatment, wastewater sludge, resource consents, wastewater overflows, stormwater treatment approaches and water and wastewater system energy use.

KEY OBSERVATIONS

480 million cubic metres of wastewater is treated by National Performance Review participants.

Around 18% of treated wastewater is discharged into freshwater bodies. Of this percentage nearly 10% received only primary treatment.

The majority of wastewater treatment plants required resource consents for the disposal of sludge, but not for air emissions

26 of 190 wastewater treatment plants resource consents for effluent discharge have expired. It is likely that these plants are operating under old consents while new ones are processed.

6.1 Wastewater Treatment

This NPR amalgamated data collection requirements of the Wastewater Treatment Plant Inventory initiative (Water New Zealand, 2015). This section of the report contains mainly a sector wide analysis of wastewater treatments. Data on the 190 wastewater treatment plants included in the review will be made available via the Wastewater treatment plant inventory webpage: www.waternz.org.nz/WWTPInventory

6.1.1 Wastewater discharges

Roughly 480 million cubic meters of wastewater is treated by National Performance Review participants. Treated wastewater is discharged to receiving environments as shown in Figure 73.

Figure 73: Receiving environment for treated wastewater by volume (m^3)

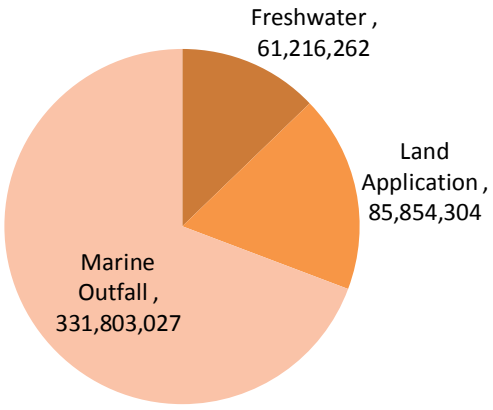


Figure 74: Level of treatment by receiving environment type

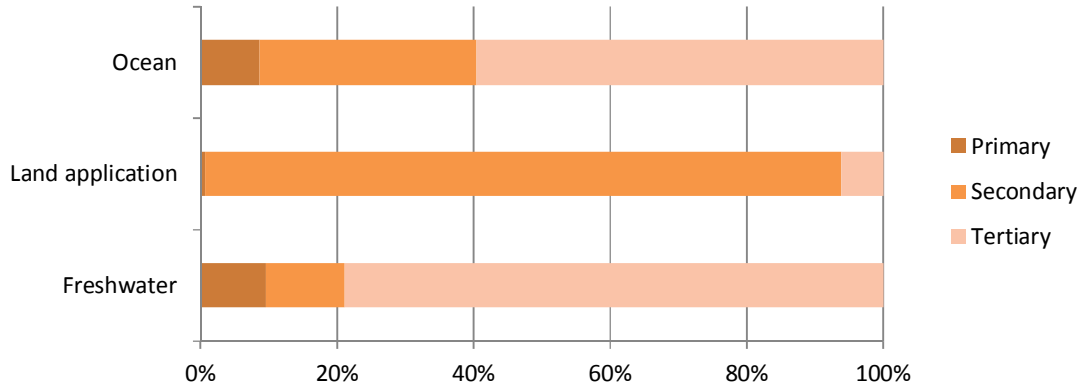
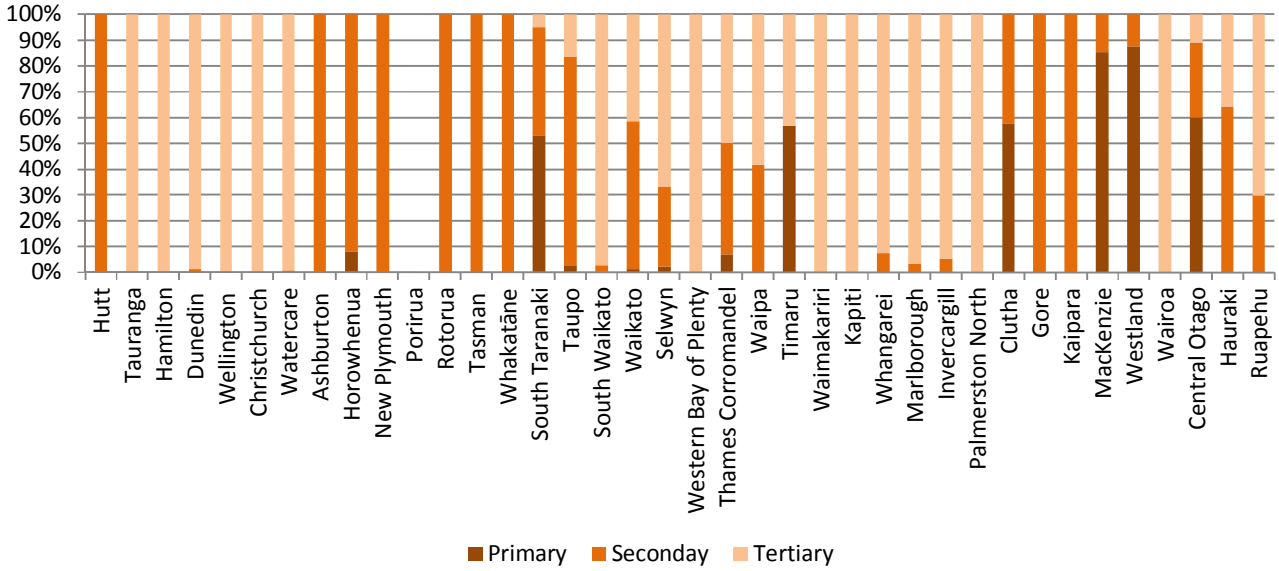


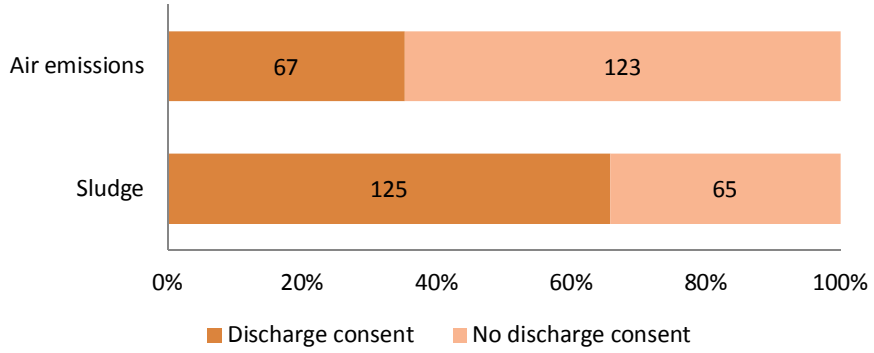
Figure 75: Level of treatment by participant



6.1.2 Discharge consents

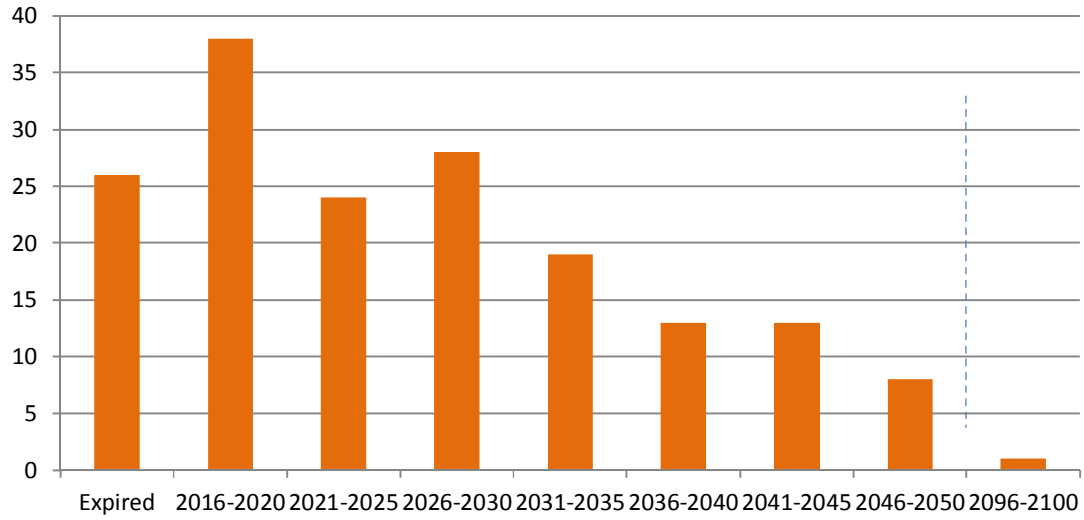
The type of discharge consents issued for each wastewater treatment plant varies. While all plants are required to have discharge consents for liquid effluent, discharges consents are not universally required for air emissions or sludge disposal. The low proportion of wastewater treatment plants with sludge disposal consents possibly reflects pond based treatment plants requiring only intermittent desludging.

Figure 76: Discharge consent requirements for air and sludges from wastewater treatment plants



The expiry date for wastewater treatment plant effluent shows 26 treatment plants to be operating on expired consents. It is likely that most of these treatment plants are operating under there old consent as there new consents are processed. The majority of these consents expire between now and 2050, with the exception of Watercare's Clark Beach treatment plant which has been issued a consent until 2100.

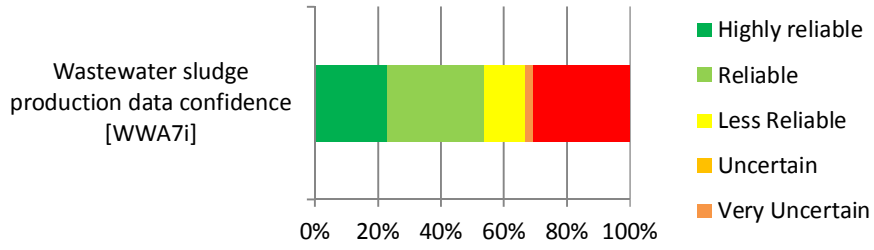
Figure 77: Wastewater treatment plant effluent discharge consent expiry dates



6.2 Wastewater Sludge

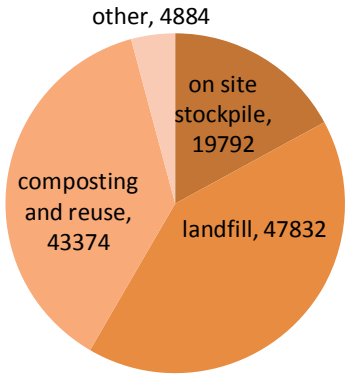
104,100 tonnes of wastewater sludge production was recorded by NPR participants, however at 123 wastewater treatment plants provided no sludge production data and a further 8 treatment plants recorded that no sludge was produced. Pond based wastewater treatment systems do not always require desludging on an annual basis, which may account for some of the missing data. The low proportion wastewater sludge data does suggest there may be a large number of wastewater ponds requiring desludging in the future. Operational and financial implications of desludging can be significant and should be considered in future planning.

Figure 78: Wastewater sludge production data confidence



Composting and other reuse options for wastewater sludges included vermicomposting (used for sludges produced at the Western Bay of Plenty District Council) and rehabilitation of the Stockton mine (used for sludges produced by Selwyn District Council). Wastewater sludge disposal options listed in the "other" category related to sludges transferred to other wastewater treatment plants for further treatment.

Figure 79: Wastewater sludge disposal routes by weight (tonnes of dry solids)



6.3 Consent Compliance

Across participants the number of resource consent non-compliances recorded was low. The total number of infringements issued for all participants is shown in Table 12.

Table 12: Resource consent non-compliances

	Compliance with stormwater discharge consents [SWE1]	Compliance with wastewater discharge consents [WWE4]
Abatement notices	0	1
Infringement notices	5	2
Enforcement orders	3	2
Successful prosecutions	0	0

6.4 Wastewater Overflows

Figure 80: Wastewater overflows per 1000 connections for metropolitan participants

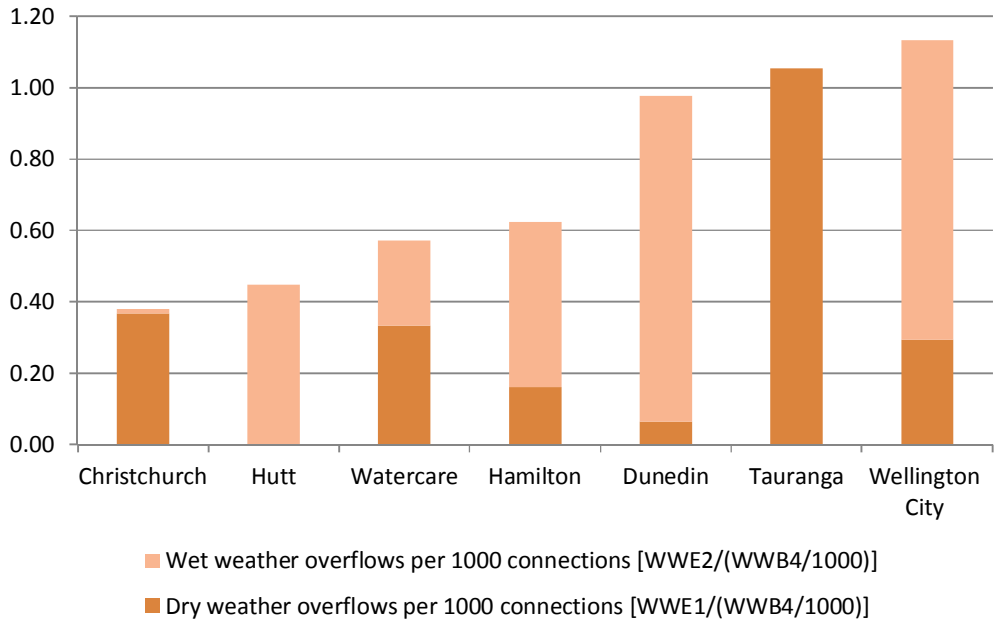
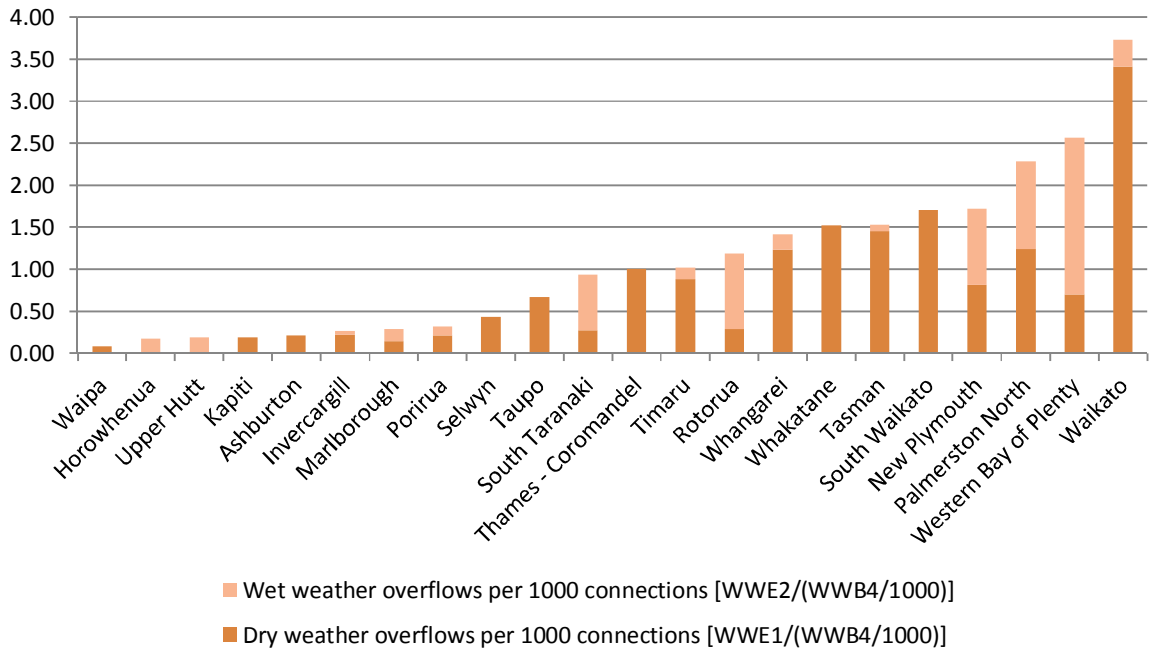
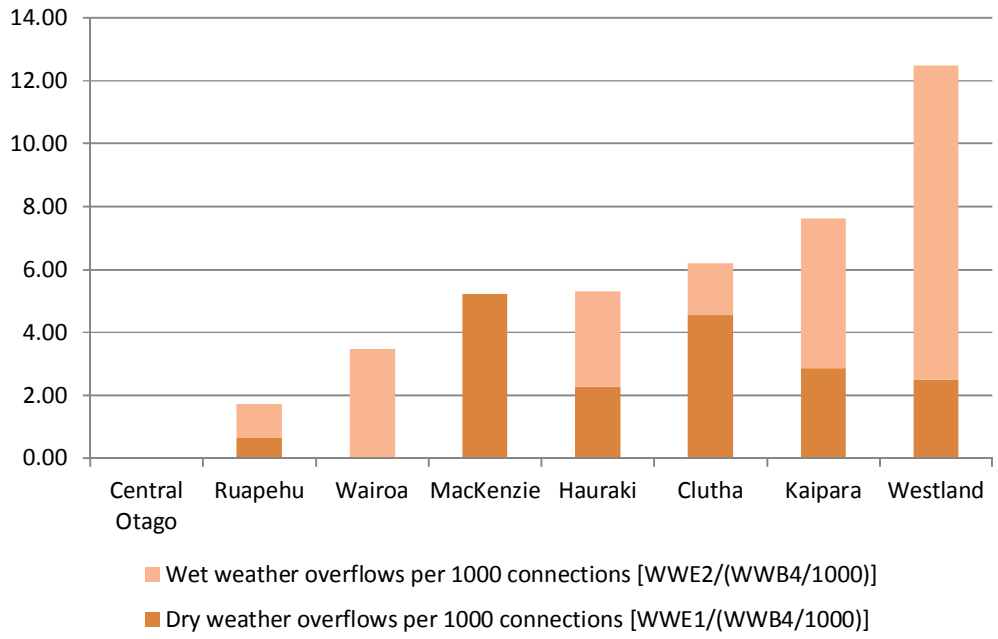


Figure 81: Wastewater overflows per 1000 connections for provincial participants



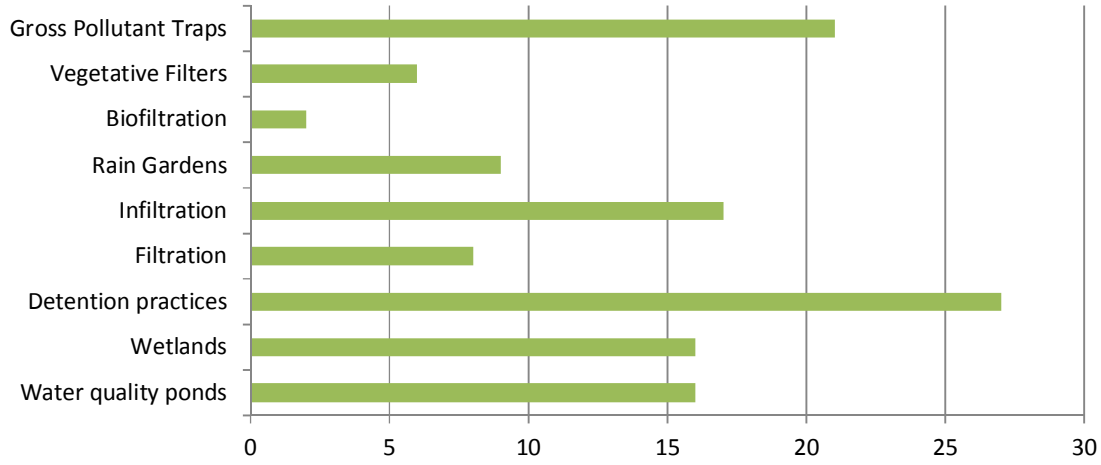
Waimakariri noted that wastewater overflow in 2014/15 where higher than normal due to a large storm event.

Figure 82: Wastewater overflows per 1000 connections for rural participants



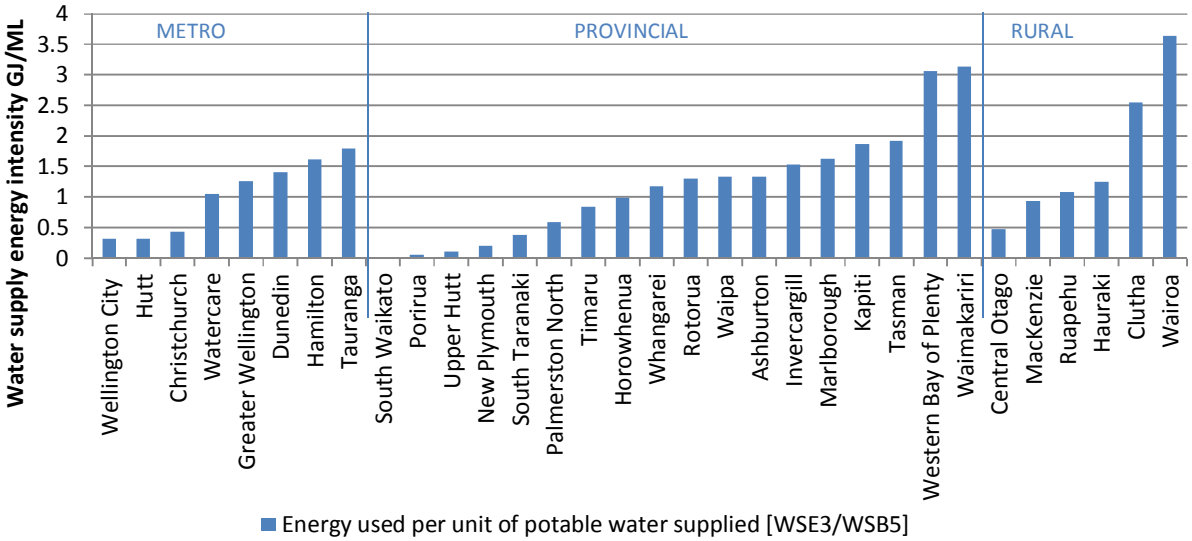
6.5 Stormwater Devices

Figure 83: Number of councils employing various stormwater management approaches



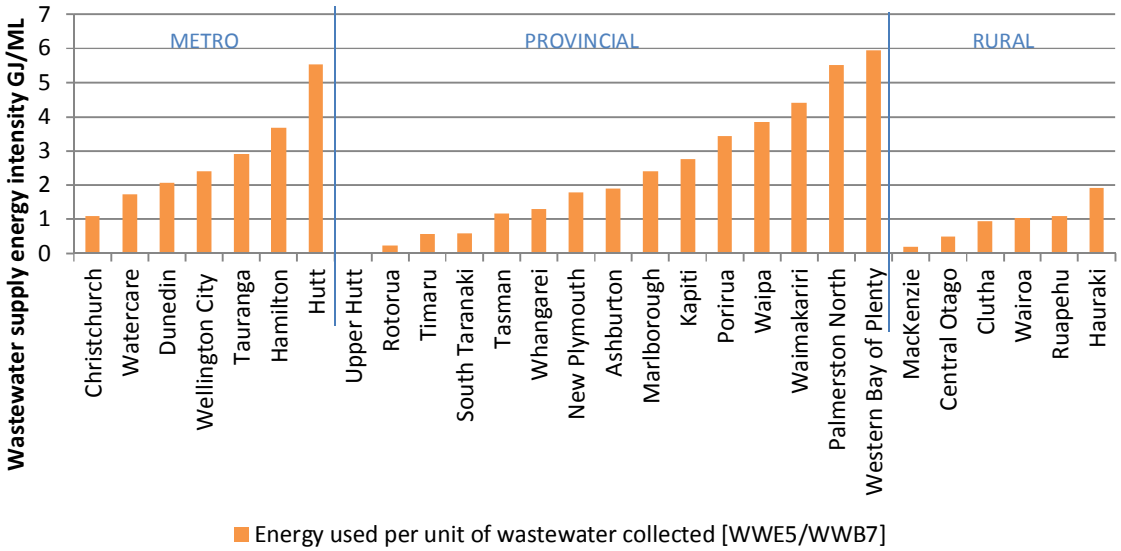
6.6 Energy Use

Figure 84: Energy intensity of water supply delivery



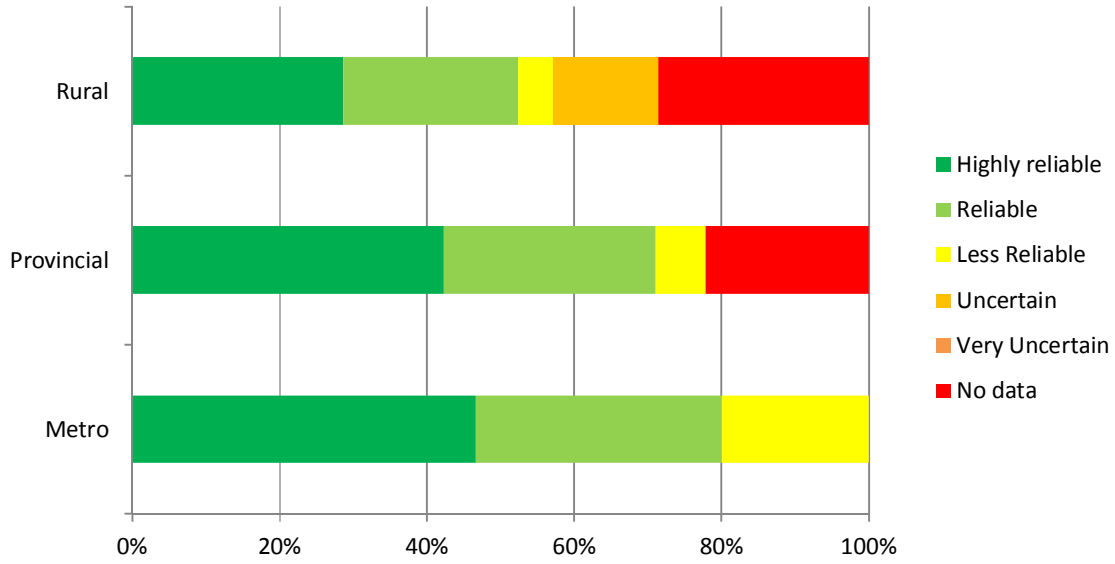
Data from Gore has been excluded from Figure 84 as it was a significant outlier at 378.5 GJ/ML. It is inferred that this data contains errors in reporting.

Figure 85: Energy intensity of wastewater supply delivery



Data from South Waikato, Horowhenua and Gore has been excluded from Figure 85 as they were significant outliers at 27.7, 1346 and 1075 GJ/ML respectively. It is inferred that this data contains errors in reporting.

Figure 86: Data confidence of energy data



7. Service Quality

This section provides information on customer complaints, fault response times and service interruptions that has been aligned with the reporting requirements outlined in the Non-financial Performance Measure Rules (Department of Internal Affairs, 2015).

KEY OBERVATIONS

A number of participants have yet to capture all the data required by the Non-financial Performance Measure Rules

7.1 Customer complaints

Complaints recording data in the NPR is aligned with regulated reporting requirements in the Non-Financial Performance Measure Rules (Department of Internal Affairs, 2015). Metrics and data availability is shown in Figure 87.

Individual councils' performance in relation to complaints is not provided here as complaints benchmarks can be misleading. High numbers of complaints may indicate a positive complaints reporting culture, while a low number may indicate poor complaints recording systems. Instead the range of complaints recorded is shown in Figure 88.

Steps to assist councils to comply with DIA measures and develop a positive complaints culture were covered in a follow up webinar from the 2013-14 NPR and associated resources are available at the following link: http://www.waternz.org.nz/NationalPerformanceReview

Figure 87: Data confidence for customer complaint data required for Non-financial reporting measure rules

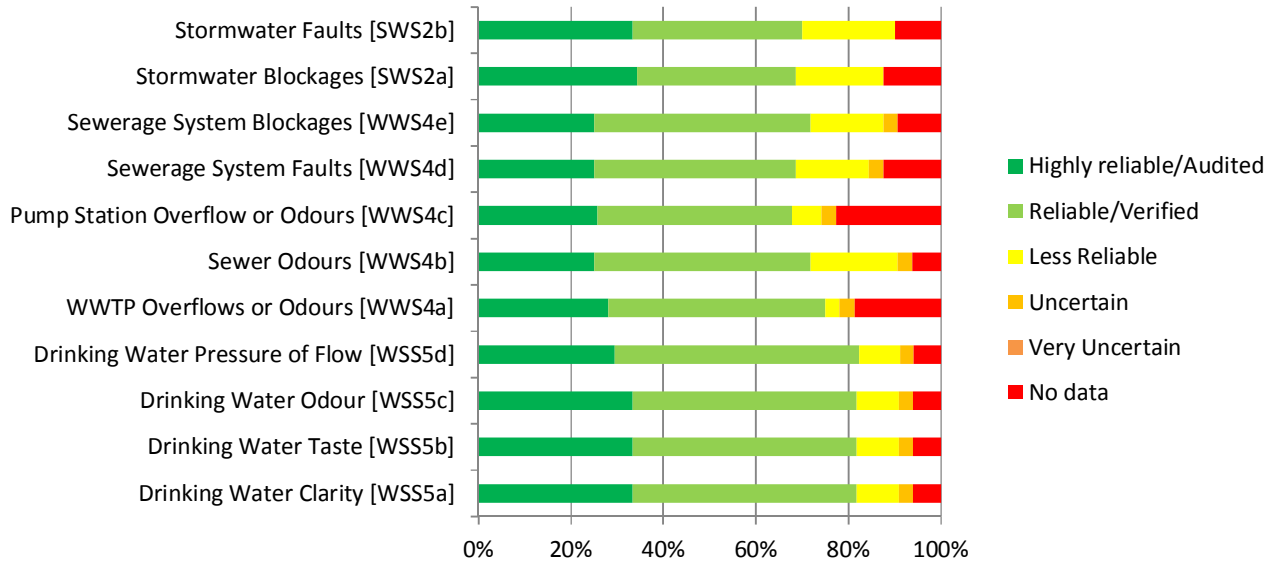
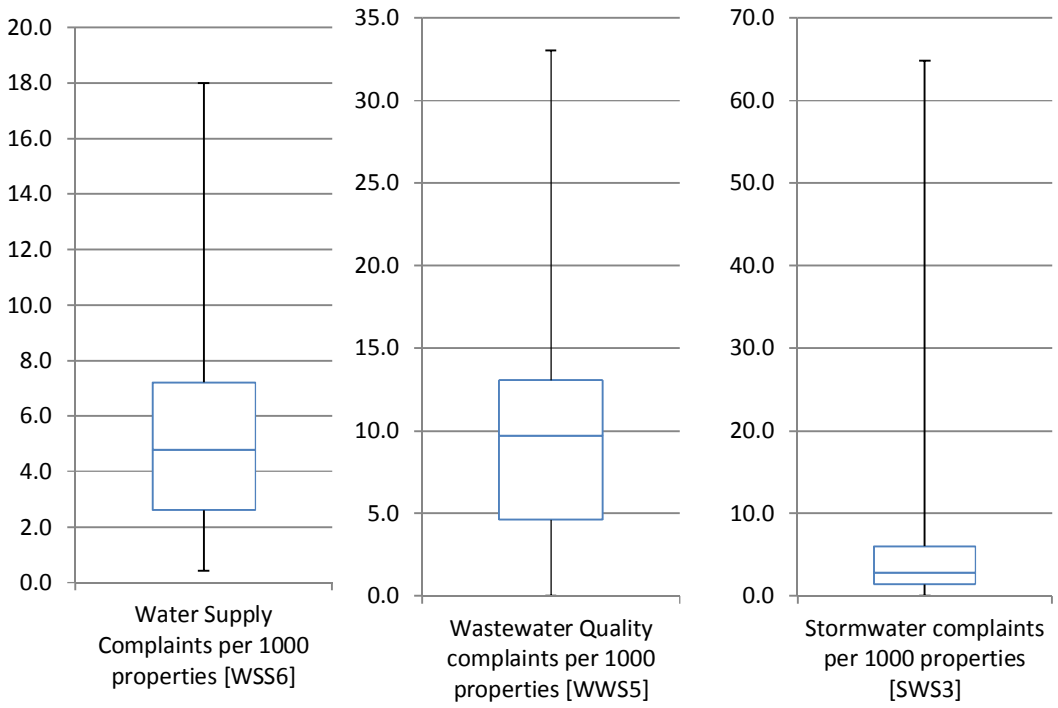


Figure 88: Complaints per 1000 properties



7.2 Interruptions

Water supply interruptions data in the NPR is aligned with regulated complaints reporting requirements in the Non-Financial Performance Measure Rules (Department of Internal Affairs, 2015). The metrics reported and data availability for these is shown in Figure 89.

Figure 89: Water supply interruptions data confidence

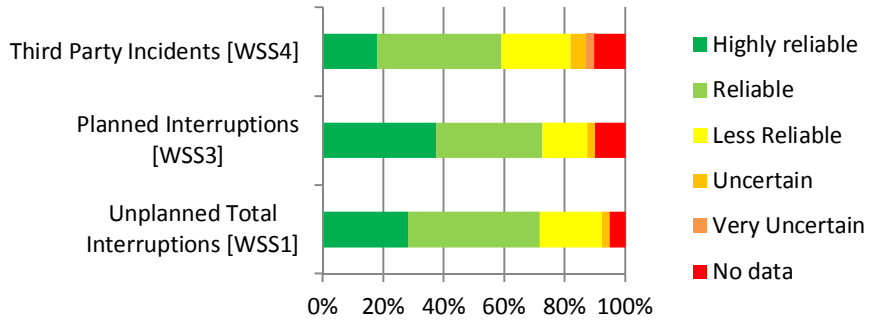


Figure 90: Unplanned water supply interruptions per 1000 water serviced properties for metropolitan participants

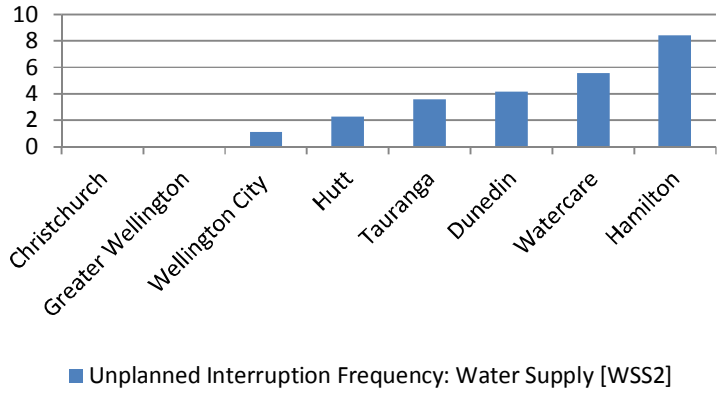


Figure 91: Unplanned water supply interruptions per 1000 water serviced properties for provincial participants

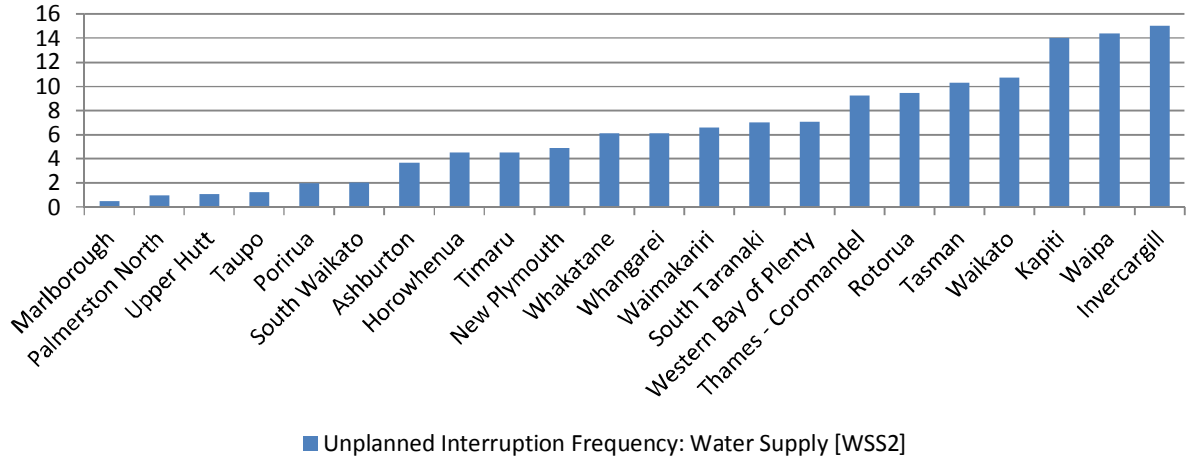
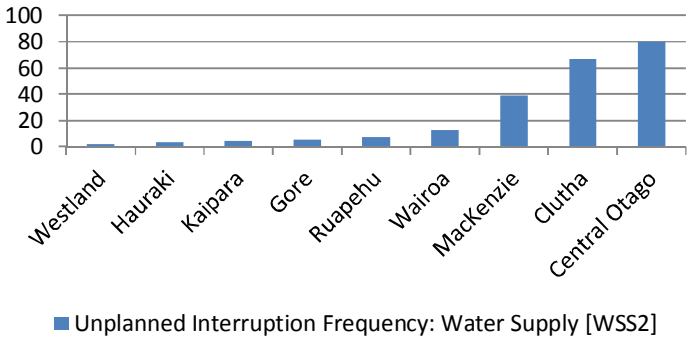


Figure 92: Unplanned water supply interruptions per 1000 water serviced properties for rural participants



7.3 Fault response and resolution times

Figure 93: Fault response and resolution time data confidence

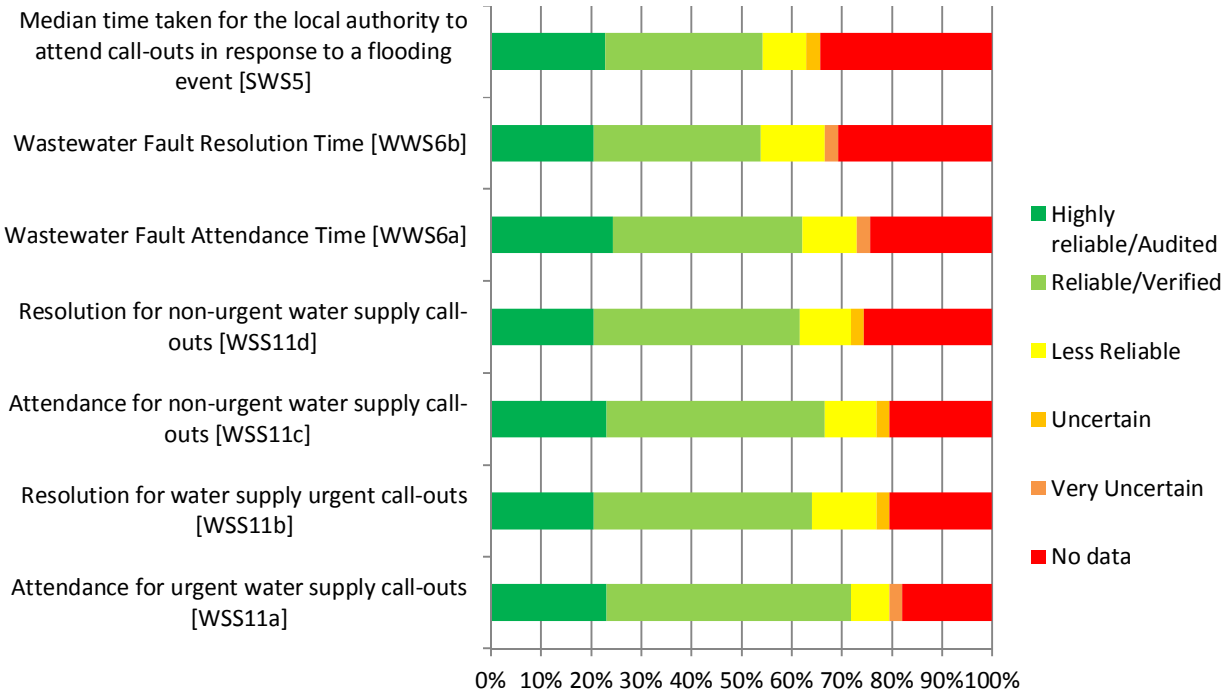


Figure 94: Response times for urgent water supply faults and unplanned interruptions

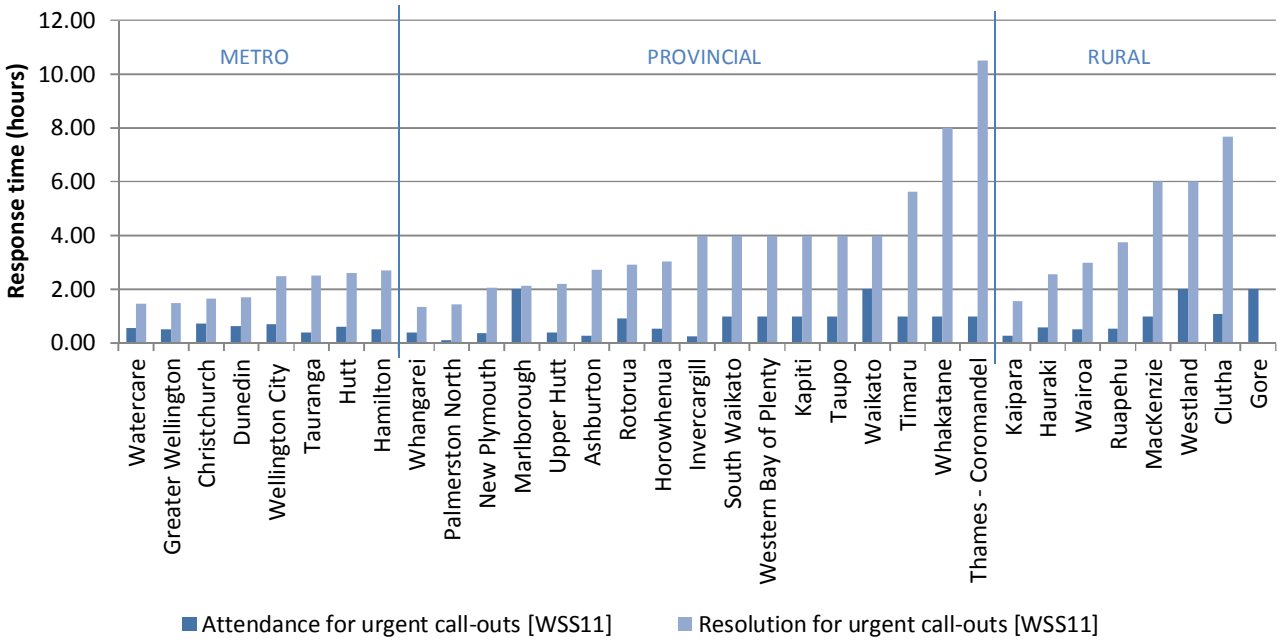


Figure 95: Response times for non-urgent water supply faults and unplanned interruptions

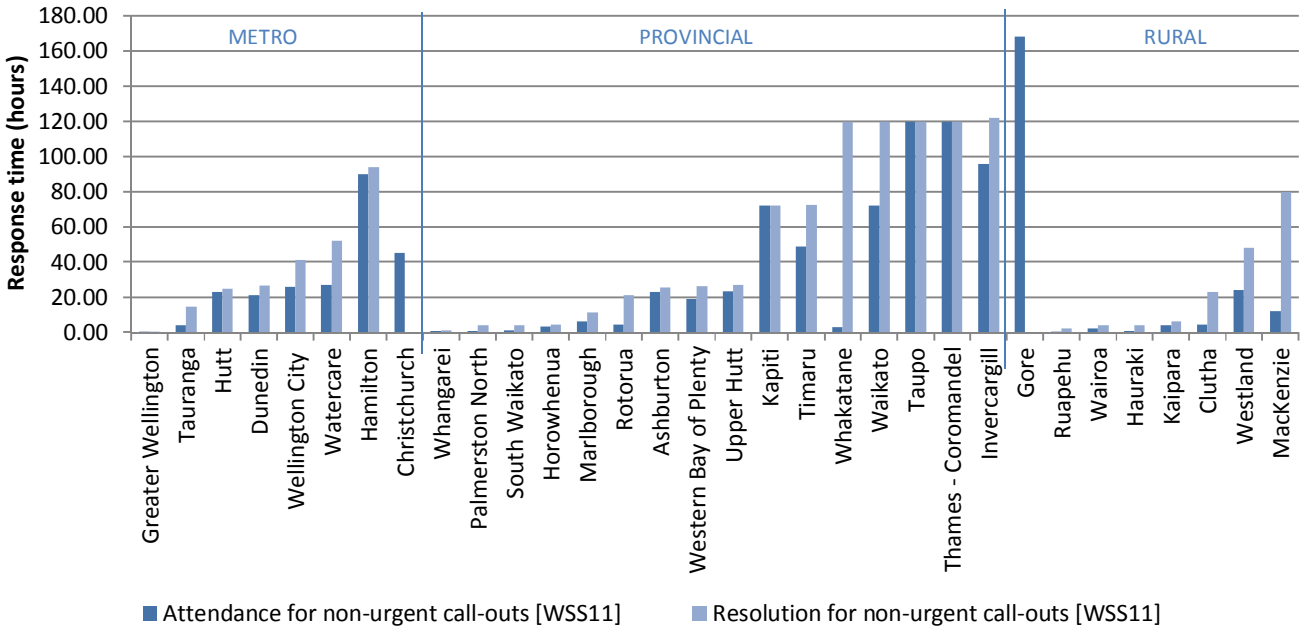


Figure 96: Response time for sewerage overflows resulting from a blockage or other fault

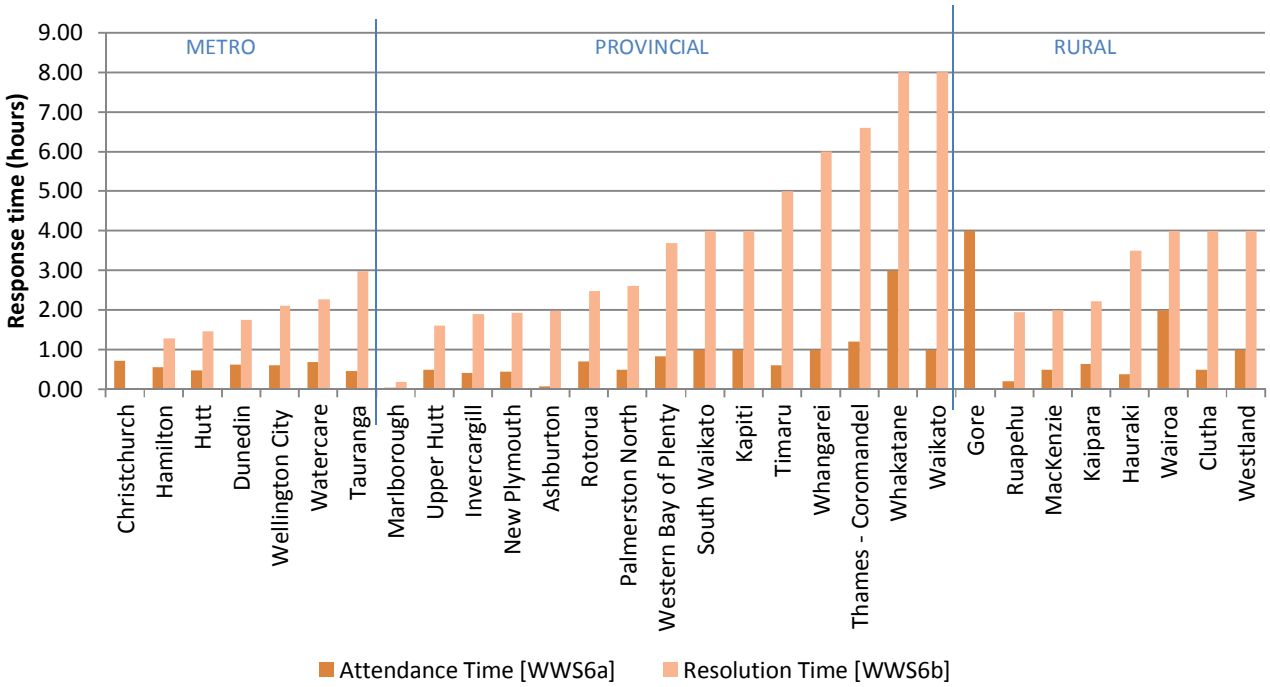
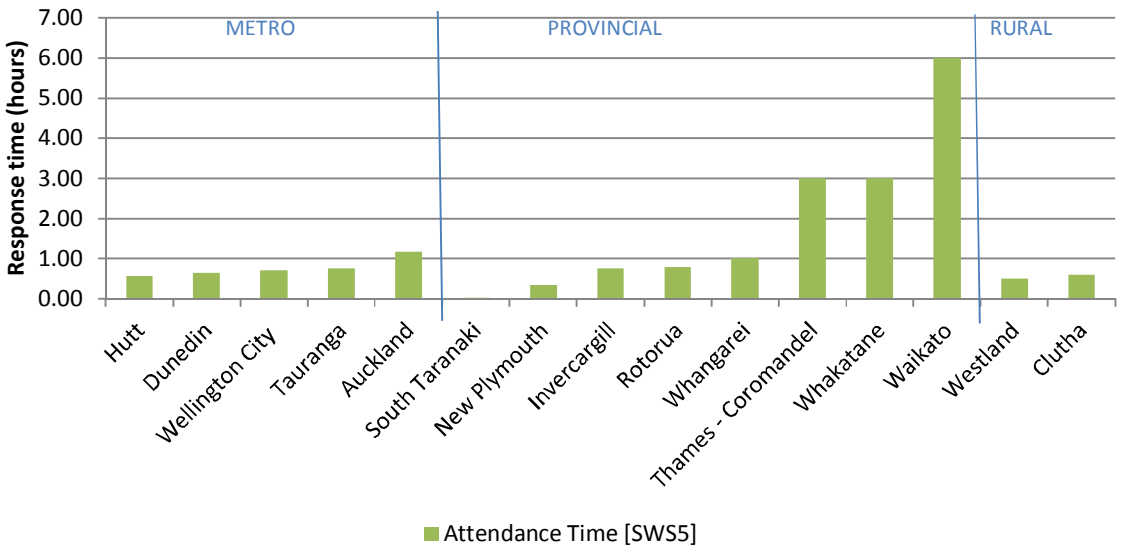


Figure 97: Median time taken for the local authority to attend call-outs in response to a flooding event



Kapiti was an outlier at 24 hours and so has not been shown on the figure.

Conclusion

Participation and data quality in the National Performance Review (NPR) has undergone a step change in recent years. The effort invested by councils and council controlled organisations in producing the NPR is significant. To realise the benefits it is imperative that this data is used to inform decision making and drive improvements to the 3 waters management.

DATA QUALITY AND CONSISTANCY REQUIRES ONGOING ATTENTION

High quality and consistent data definitions are essential for enabling meaningful performance comparisons. To this end the NPR process includes a workshop to align data definitions, attended by participant staff responsible for data collation. The initiative was launched in 2015 and proved a valuable platform for improving data consistency. The 2016 workshop will build on this platform to address data consistency issues identified in this review.

Concurrently a LINZ led project to develop national metadata standards for three waters infrastructure will provide definition for a number of industry metrics, many of which are already included in the NPR. Water New Zealand is contributing definitions used in the NPR to the metadata standards project.

Data quality is checked through participant reviews, external audits and Water New Zealand. Participants review data for correctness prior to submitting it to Water New Zealand who then conducts an initial quality check. Desk top and external audits are then completed by independent external auditors prior to data collation. Subsequently data is collated by Water New Zealand and provided to participants for a final review.

Many data errors are identified at the final review stage as comparative information highlights data anomalies. This creates significant rework both for participants and Water New Zealand. In the future external audits will be undertaken following (not prior) to report production. This will significantly reduce participant time, rework requirements of Water New Zealand and provide external auditors with additional information to inform data quality checks.

THREE WATERS DATA NEEDS TO BE MORE ACCESSABLE TO REALISE ITS VALUE

The NPR aligns with mandated financial and non-financial three waters reporting requirements; the Non-Financial Performance Measure Rules and the Local Government Financial Prudence Regulations. Water New Zealand is actively engaging with the Department of Internal Affairs to align indicators and NPR developments with regulated reporting requirements. Data reported under mandated measures needs to be accessible and easily understood to realise its value. Currently the NPR provides the only central repository for 3 water data, with mandated reporting delivered through individual annual reports.

Users of 3 waters data include; local councillors, members of the pubic engaged in service level discussions, central government officials with policy responsibilities and water services managers. Collating reported data enhances its value by enabling comparative and trending analysis.

The NPR uses excel data sheets to record and store information. This report is used as the central platform for performance comparisons, with raw data supplied on request. As the body of data grows this method of data storage and reporting is becoming increasingly cumbersome and inefficient. A web-based platform would enable additional intelligence to be extract from the data by;

- allowing participants to select like for like entities for performance comparisons
- allowing participants to generate reports and figures for their own purposes
- providing a central repository for data that facilitates temporal trending

Collating benchmarks into a web based platform would enable the report to focus on trends or issues that may affect the sector overall. Removal of individual performance data would significantly improve the readability of the report, making it more useful for informing decision making.

CONTINUOUS IMPROVEMENT INITIATIVES AND BEST PRACTICE CELEBRATION COULD IMPROVE SECTOR PERFORMANCE

Sector wide issues have been identified and are outlined in the executive summary. The report focuses on areas where there is an opportunity to lift performance. Water New Zealand will be investigating mechanisms with our member's to advance management of these issues including; water loss reduction, effective tariff structures and service affordability. We welcome the input of others on areas or initiatives they believe would benefit the sector.

While identification of sector wide issues has been the focus of the report, there are also many examples of innovation and good practice occurring around the country. We look forward to using follow up activities and subsequent issues of the NPR to extract, share and celebrate the many exemplary examples of three waters management occurring around New Zealand.

References

Bureau of Meteorology. (2015). *National performance report 2013-14: urban water utilities, Part A*. Melbourne: http://www.bom.gov.au/water/npr/docs/BoM_NPR_final_hr.pdf.

Cook, S. H. (2012). *Energy use in the provision and consumption of urban water in Australia: an update.* North Ryde, NSW, Australia: CSIRO.

Department of Internal Affairs. (2014). *Local Government Sector Profile*. Retrieved December 29, 2015, from localcouncils.govt.nz: http://www.localcouncils.govt.nz/lgip.nsf/wpg_URL/Profiles-Local-Government-Statistical-Overview-Index?OpenDocument

Department of Internal Affairs. (2015). *Local Government Policy.* Retrieved January 22, 2016, from Department of Internal Affairs: http://www.dia.govt.nz/diawebsite.NSF/wpg_URL/Resource-material-Our-Policy-Advice-Areas-Local-Government-Policy?OpenDocument

Dr Ronnie McKenzie, A. L. (2008). *Benchmarking of Water Losses in New Zealand Manual.* Wellington: Water New Zealand.

European Benchmarking Commission. (2015). *Learning from International Best Practices: 2014 Water and Wastewater Benchmark.* The Hague: European Benchmarking Commission.

European Commission. (2015). *EU Reference document Good Practices on Leakage Management WFD CIS WG PoM.* Luxembourgh: European Union.

Lambert, A. T. (2010). *Water Loss Guidelines.* Wellington: Water New Zealand.

New Zealand Government. (2014). *Local Government (Financial Reporting and Prudence) Regulations 2014.* Wellington: New Zealand Government.

Ofwat. (2014-15). *Affordability and debt.* Birmingham: Ofwat.

Ofwat. (2015). *Performance*. Retrieved 3 11, 2016, from Ofwat: http://www.ofwat.gov.uk/regulated-companies/comparing-companies/performance/

Ofwat: The economic regulator of the water sector in England and Wales. (2015). *Companies' performance 2014-15*. Retrieved December 22, 2015, from Ofwat: http://www.ofwat.gov.uk/regulated-companies/comparing-companies/performance/companies-performance-2014-15/

Pacific Water and Wastewater Association. (2015). *Multiple Utility Report*. Retrieved December 21, 2015, from Pacfic Water and Wastes Association: http://www.pwwa.ws/index.php?page=Database

Statisics New Zealand. (2015). *Accomodation Survey*. Retrieved 9 1, 2015, from Statisics New Zealand: http://www.stats.govt.nz/survey-participants/a-z-of-our-surveys/accommodation-survey.aspx

Statistics New Zealand. (2014, September 30). *2013 Census meshblock dataset*. Retrieved January 8, 2016, from Statistics New Zealand: http://www.stats.govt.nz/Census/2013-census/data-tables/meshblock-dataset.aspx

Vewin, Association of Dutch water companies. (2015). *Dutch Drinking Water Statistics 2015.* The Hague: http://www.vewin.nl/SiteCollectionDocuments/Publicaties/Dutch_Drink_water_statistics_2015.pdf.

Water New Zealand. (2015). *National Performance Review.* Retrieved December 2015, 2015, from Water New Zealand: http://www.waternz.org.nz/NationalPerformanceReview

Water New Zealand. (2015). *NZ WWTP Inventory*. Retrieved January 31, 2016, from Water New Zealand: http://www.waternz.org.nz/WWTPInventory

Appendix I: Data confidence ratings

RATING	DESCRIPTION	PROCESSES	ASSET DATA
A	Highly reliable/ Audited	Strictly formal process for collecting and analysing data. Process is documented and always followed by all staff. Process is recognised by industry as best method of assessment.	Very high level of data confidence. Data is believed to be 95-100% complete and + or - 5% accurate. Regular data audits verify high level of accuracy in data received.
B	Reliable/ Verified	Strong process to collect data. May not be fully documented but usually undertaken by most staff.	Good level of data confidence. Data is believed to be 80-95% complete and + or - 10% to 15% accurate. Some minor data extrapolation or assumptions has been applied. Occasional data audits verify reasonable level of confidence.
C	Less Reliable	Process to collect data established. May not be fully documented but usually undertaken by most staff.	Average level of data confidence. Data is believed to be 50-80% complete and + or - 15to20% accurate. Some data extrapolation has been applied based on supported assumptions. Occasional data audits verify reasonable level of confidence.
D	Uncertain	Semi-formal process usually followed. Poor documentation. Process to collect data followed about half the time.	Not sure of data confidence, or data confidence is good for some data, but most of dataset is based on extrapolation of incomplete data set with unsupported assumptions.
E	Very uncertain	Ad hoc procedures to collect data. Minimal or no process documentation. Process followed occasionally.	Very low data confidence. Data based on very large unsupported assumptions, cursory inspection and analysis. Data may have been developed by extrapolation from small, unverified data sets.
N	No data	No process exists to collect data.	No data available. *Please note* that 'no data available' is different to collecting a legitimate data value of zero (0), where the data confidence could potentially be very high.

Appendix II: International Benchmarking Studies

Australia, National performance report

National performance reports benchmark the pricing and service quality of water and wastewater provision by urban Australian water utilities. The report covers approximately 150 performance metrics and indicators from 78 water utilities and councils across Australia. The indicators include water resources, finance, pricing, assets, health, environment and customers.

The reports are produced jointly by the Bureau of Meteorology, State and Territory governments, and the Water Services Association of Australia, under the National Water Initiative. Comparisons made in this report are with the Australian urban utilities use data from 2013-14 (Bureau of Meteorology, 2015). This report is the ninth in the series and first to be co-produced by the Bureau.

Netherlands, Vewin

Since 1997 the Dutch water companies have engaged in a voluntary exercise to benchmark their performance against each other, in order to improve their efficiency and increase transparency. In general the companies included in the benchmarking study are public limited companies responsible for the production and distribution of drinking water but not wastewater.

Since 2012 sector benchmarking has become mandatory and is now commissioned by Vewin, the association of all drinking water companies in The Netherlands. The Dutch benchmarking exercise covers four areas: water quality; service; environment; and finance and efficiency. Comparisons made with Dutch performance made in this report are benchmarked against their 2014 data set (Vewin, Association of Dutch water companies, 2015).

The European Benchmarking Co-operation (EBC)

The European Benchmarking Co-operation is an industry-based, not-for-profit benchmarking initiative for water services that has been running since 2007. The EBC international benchmarking programme for mainly Western European water and wastewater utilities, with the objective to improve their services, but also facilitates national and regional benchmarking initiatives through regional hubs in the Danube region and Kenya.

In 2014 EBC organised its eighth international benchmarking exercise welcoming 48 participants from 17 different countries. Seven of these utilities are from countries outside Europe (Japan, Singapore, United States and Kenya). Comparisons made in this report with the EBC use data from the 2014 report, which is based on data from 2013 (European Benchmarking Commission, 2015).

Pacific, IBNET

The Pacific Water and Waste Association conducts an annual benchmarking exercise with the organisations members across the Pacific Islands. The report utilises the IBNET database developed by the World Bank.

Data in this report is compared with 2014 data supplied by 13 countries in the Pacific and Micronesian. No benchmarking report is produced for the PWWA so data has been extracted using a *Multiple Utility Report* on the PWWA section of the IBNET database (Pacific Water and Wastewater Association, 2015).

European Commission, Leakage Management Water Framework Directive

The European Union has recently commissioned a report examining water loss in a variety of context. The principle purpose of the report is to document practice and recommend advice for reducing water leakage; however the report also features recent data from case studies across Europe. Where relevant, median values of this data has been used for comparison with NPR results (European Commission, 2015).

UK, OFWAT

OFWAT prescribes a set of mandatory key performance indicators, and reports on the performance of water and sewerage companies using the information it publishes on these each year. OFWAT is the economic regulator of the water sector in England and Wales. It is a non-ministerial government department, established in 1989, when the water and sewerage industry in England and Wales was privatised.

There are 32 regulated companies in the water and sewerage sectors all of whom are covered in the public report. Of these, 18 are regional monopolies that provide either water services, or both water and sewerage services. Where there are comparable indicators this report compares the information that each company published in July 2015 (Ofwat: The economic regulator of the water sector in England and Wales, 2015).

Appendix III: Alignment with legislated reporting requirements

Non-financial performance measures rules

DIA Reference	DIA Measure	Corresponding NPR indicator	Corresponding Figure	Explanation of differences
PART 1	**WATER SUPPLY**			
1	**Safety of drinking water**	WSS7: Percentage of water supplied that is fully compliant with Drinking Water Standards	NA	
a	Compliance with part 4 of the drinking water standards (bacterial compliance	WSS7a: Bacteria compliance	NA	
b	Compliance with part 5 of the drinking water standards (protozoa compliance)	WSS7b: Protozoa compliance	NA	
2	**Maintenance of the reticulation network** Percentage of real water loss including methodology	WSE1b: Percentage estimated total network loss	Figure 65 – Figure 71	Total network loss includes apparent losses
		WSEc, WSEd, WSEe: Current annual real loss (m^3/km/day)		NPR uses units expressed as litres/service connection/day, m^3/km/day, m^3/day
3	**Fault response times**	**WSS11: Fault response time**	Figure 96 – Figure 97	
a	Attendance for urgent call outs	WSS11a: Attendance for urgent call outs (		
b	Resolution for urgent call outs	WSS11b: Resolution for urgent call outs		
c	Attendance for nonurgent call outs	WSS11c: Attendance for nonurgent call outs		
d	Resolution of nonurgent call outs	WSS11d: Resolution of nonurgent call outs		
4	**Customer satisfaction** Complaints per 1000 connections	WSB4: Total Water Serviced Properties	Figure 90	
a	Drinking water clarity	WSS5a Drinking water clarity		
b	Drinking water taste	WSS5b Drinking water		

		taste		
c	Drinking water odour	WSS5c Drinking water odour		
d	Drinking water pressure or flow	WSS5d Drinking water pressure or flow		
e	Continuity of supply	WSS1 Unplanned interruptions	Figure 91 – Figure 94	Sum of WSS1, WSS3 and WSS4 provides an indication of continuity of supply.
		WSS3 Planned interruptions		
		WSS4 Third party incidents		
f	The local authorities response to any of these issues	WSS11b Resolution for urgent call outs	Figure 96- Figure 97	The NPR has no qualitative assessment of responses other than response times
		WSS11d Resolution for non-urgent call outs		
PART 2	**SEWERAGE AND TREATMENT AND DISPOSAL OF SEWAGE**			
1	**System and adequacy:** Number of dry weather overflows per 1000 connections	WWE1 Dry Weather Wastewater Overflows	Figure 82 – Figure 84	
2	**Discharge compliance** with resource consent	WWE4 Compliance f wastewater discharge consent in one year	Figure 78, Figure	
a	Abatement notices	WWE4a Abatement notices	Table 12	
b	Infringement notices	WWE4b Infringement notices		
c	Enforcement orders	WWE4c Enforcement orders		
d	Convictions	WWE4d Convictions		
3	**Fault response times** median time to attend to blockage or fault	WWS6 Time to attend call-outs in response to sewerage overflows resulting from a blockage or other fault	Figure 98	
a	Attendance time	WWS6a Attendance time		
b	Resolution time	WWS6b Resolution time		
4	**Customer satisfaction:** Total number of complaints received per 1000 connections	WWB4 Total Wastewater serviced properties	Figure 90	
a	Sewage odour	WWS4a WTP overflows or odour		Includes WTP and pump station overflows
		WWS4b sewer odours		

		WWS4c pump station overflows or odour		
b	Sewerage system faults	WWS4d sewerage system faults		
c	Sewerage system blockages	WWS4e sewerage system blockages		
d	The territorial authorities response			The NPR has no qualitative assessment of responses other than response times
PART 3	**STORMWATER DRAINAGE**			
1	**System adequacy**			
a	The number of flooding events that occur in a territorial authority district	SWS4 Number of flooding events	NA	
b	Number of habitable floors per 1000 properties for each flooding event	SWS4b Number of habitable floors per 1000 stormwater serviced properties	NA	NPR does not record floors affected per 1000 events
2	**Discharge compliance** with resource consent	SWE1 Compliance of stormwater discharge consents in one year	Table 12	
a	Abatement notices	SWE1a Abatement notices		
b	Infringement notices	SWE1b Infringement notices		
c	Enforcement orders	SWE1c Enforcement orders		
d	Convictions	SWE1d Successful prosecutions		
3	**Response times** Median time to attend flooding event	SWS5 Flooding response time	Figure 99	
4	**Customer satisfaction** Complaints per 1000 properties	SWS3 Stormwater complaints frequency	Figure 90	

Local Government (Financial Reporting and Prudence) Regulations

Regulation Number	Benchmark	Associated NPR Figure
17	Rates Affordability	Figure 36
19	Balanced Budget	Figure 50
20	Debt Servicing	Figure 50

Appendix IIII: NPR Data fields provided by participants

COMMON DATA			
Code	**Measure**	**Description**	**Units**
Background Info		Total residential population served by a reticulated water supply	
CB1	Total Area	Total land area under the Council's jurisdiction	Ha
CB2	Total Population	Total residential population living in the area under the Council's jurisdiction	Nu
CB3	Properties: Urban Residential	Total number of urban residential properties in the area under the Council's jurisdiction	Nu
CB4	Properties: Rural Residential	Total number of rural residential properties in the area under the Council's jurisdiction	Nu
CB5	Properties: Commercial	Total number of commercial properties in the area under the Council's jurisdiction	Nu
CB6	Properties: All Other	Total number of properties other than residential and commercial properties (eg public schools and hospitals) in the area under the Council's jurisdiction	Nu
CB7	Total Properties	Total number of all properties in the area under the Council's jurisdiction	Nu
CB8	Guest Nights	Total number of guest nights in a Council's jurisdiction per year	Nu/year
CB9	Peak month guest nights	Maximum number of guest nights in Council's jurisdiction for a given month in the reporting year	Nu

WATER SUPPLY			
Code	**Measure**	**Description**	**Units**
Background Info			
WSB1	Total Water Serviced Population	Total residential population serviced by a reticulated water supply	Nu
WSB2	Total Water Serviced Properties: Residential	Total number of residential properties serviced by a reticulated water supply	Nu
WSB3	Total Water Serviced Properties: Non-Residential	Total number of non-residential properties serviced by a reticulated water supply	Nu
WSB4	Total Water Serviced Properties	Total number of all properties serviced by a reticulated water supply	Nu

WSB5	Water Supplied to Own System	Volume of water supplied in area under the Councils' jurisdiction. This is 'Water Supplied' in terms of the standard Water Balance	m^3/year
WSB6	Total Authorised Consumption in Jurisdiction	'Authorised Consumption' in terms of the standard Water Balance in area under the Council's jurisdiction	m^3/year
WSB7	Total non-residential Water Consumption	Water consumption for non-residential properties.	m^3/year
WSB8	Average Residential Water Consumed per Person per Day	Calculated residential water consumption based on "Water Supplied to Own System" and "Total Water Serviced Population"	litres/person /day
WSB9	Supply scheme name	The name commonly used to refer to the water supply scheme (enter only if data has been provided for multiple schemes, otherwise leave blank)	Text
Asset			
WSA1	Total Length of Public Water Supply Network	Total length of public water mains excluding service connections (ie mains to property connections)	km
WSA2	Condition of Pipelines	Proportion of water mains assessed as:	
WSA2a		Condition Grade 1	%
WSA2b		Condition Grade 2	%
WSA2c		Condition Grade 3	%
WSA2d		Condition Grade 4	%
WSA2e		Condition Grade 5	%
WSA2f		Not yet assessed	%
WSA2g	Pipeline Condition Assesment Approach	The condition grading approached used for WSA2, if not consistent with that outlined in the New Zealand Infrastructure Asset Grading Guidelines	Text
WSA3	Average Age of Pipelines	Weighted Average Age of All Pipelines within the "Total Water Serviced Area"	Nu
WSA4	Total Water Treatment Plants	Total number of water treatment plants in area under the Councils' jurisdiction	Nu
WSA5	Total Water Pump Stations	Total number of water pump stations (including those at a water treatment plant where applicable) in area under the Council's jurisdiction	Nu
WSA6	Total Water Supply Reservoirs	Total number of water supply reservoirs (but excluding bulk storage reservoirs and sub-surface suction tanks where applicable) in area under the Council's jurisdiction	Nu

WSA7	Total Water Stored in Reservoirs	Estimate of total volume of water normally stored in water supply reservoirs	m^3
WSA8	Total Capacity of Water Storage Reservoirs	Total volume of water that could be stored in water supply reservoirs	m^3
WSA9	Properties with Water Meters - Residential	Number of residential properties with metered connections	Nu
WSA10	Properties with Water Meters - Non-Residential	Number of non-residential properties with metered connections	Nu
WSA11	Sludge Production	Amount of water sludge produced	tDS/year
WSA12	Sludge Disposal	Percentage of water sludge disposal in year to:	
WSA12 a		landfill	%
WSA12 b		sewer	%
WSA12 c		other (specify)	%
WSA13 a	Condition Assessments of Above Ground Assets	Do you have a regular condition assessment programme?	Yes/No
WSA13 b		What protocol is used for the assessment e.g. NAMS	Comment
WSA13 c		What percentage of above ground assets are assessed within each AMP 3 year cycle?	%
Environmental			
WSE1	Network Water Losses (please supply available data)	Estimated total network water loss	m^3/year
		Percentage Estimated Total Network Water Loss	%
		CARL (current annual real loss)	m^3/year
		CARL (current annual real loss)	litres/service connection/day
		CARL (current annual real loss)	m^3/km mains/day
		UARL (unavoidable annual real loss)	m^3/year
		UARL (unavoidable annual real loss)	litres/service connection/day

		ILI (infrastructure leakage index (=CARL/UARL)	non-dimensional
WSE2	Average system pressure	Average system pressure	m
WSE3	Energy Consumption	Total energy consumed by water system including pumps, and water treatment plants (not including offices)	GJ/year
Social			
WSS1	Unplanned Total Interruptions: Water Supply	The number of unplanned interruptions to water supply service, excluding interruptions caused by third party damage	Nu/year
WSS2	Unplanned Interruption Frequency: Water Supply	"Unplanned Total Interruptions" per 1000 water serviced properties	Nu/1000 prop
WSS3	Planned Interruptions - WS	Total number of planned interruptions to water service for maintenance or renewal works	Nu/year
WSS4	Third Party Incidents - WS	The number of unplanned interruptions to service caused by third parties	Nu/year
WSS5	Water Quality Complaints	Total number of water quality complaints received by the organisation in the reporting year	
WSS5a		Drinking water clarity	Nu
WSS5b		Drinking water taste	Nu
WSS5c		Drinking water odour	Nu
WSS5d		Drinking water pressure or flow	Nu
WSS6	Water Quality Complaints Frequency	"Water Quality Complaints" per 1000 water serviced properties	Nu/1000 prop
WSS7	Drinking Water Compliance	Percentage of water supplied that is fully compliant with the Drinking Water Standards	
WSS7a		Bacteria Compliance	%
WSS7b		Protozoa Compliance	%
WSS8a	Non residential Fixed Water Charge	The fixed charge (inc GST) for non-residential customers (if applicable otherwise leave blank)	$
WSS8b	Non-residential Volumetric Water Charge	The volumtric charge (inc GST) for non-residential customers (if applicable, otherwise leave blank)	$/m^3
WSS9a	Residential Fixed Water Charge	The fixed charge (inc GST) for the supply of water services to residential customers. If not applicable to the organisation leave blank.	$

WSS9b	Residential Volumetric Water Charge	The volumetric charge (inc GST) for the supply of water services to residential customers. If not applicable to the organisation leave blank.	$/m^3
WSS9c	Residential Water Connection Charge	Average charge for a new connection to the water network (GST included) for a residential property.	$/m^3
WSS10	Average Annual Residential Bill Based on 200 m^3/yr Consumption	The average residential customer's bill (GST included) based on an annual consumption of 200 m^3	$/200m^3
WSS11	Fault Response Time	Time taken for the local authority to attend call-outs in response to a fault or unplanned interruption to its networked reticulation system.	
		Attendance for urgent call-outs	hrs
		Resolution for urgent call-outs	hrs
		Attendance for non-urgent call-outs	hrs
		Resolution for non-urgent call-outs	hrs
WSS12	Total number of staff - water		FTE
WSS13	Water restriction days	Number of days water restrictions were applied in all, or part of the Council's jurisdiction.	Days/year
Financial			
WSF1	Revenue from Supply of Water to Other Local Authorities	Revenue (if any) related to bulk water supply to other local authorities	$
WSF2	Operating Revenue	Operating Revenue associated with water supply to the area under the Council's jurisdiction. Excludes Development contributions	$
WSF3	Development Contribution Revenue	Development contributions - cash payment only. (Include asset contributions under WSF18)	$
WSF4	Total Revenue: Water Supply	Total water supply revenue for the reporting year related to area under the Council's jurisdiction	$
WSF5	Revenue per Property	Revenue per serviced property	$/property
WSF6	Energy Costs	Electricity costs associated with water supply	$
WSF7	Chemicals and Consumables	Cost of chemicals and consumables used to treat water before supplying to customers	$

WSF8	Other External Opex	All other external costs associated with the operation and maintenance of the water supply network , including purchase of bulk water (where applicable) and the cost of external consultants and contractors	$
WSF9	Management Costs	Own organisation costs* (includes salary, accommodation, IT,etc)	$
WSF10	Council Overview Costs	Council's 'overview' costs** where management of the network is carried out by a stand-alone entity (eg a CCTO)	$
WSF11	Operating Cost: WS	Operating cost (*discounted for revenue from sale of bulk water, if any, to other local authorities*) for the reporting year associated with water supply to the area under the Council's jurisdiction	$
WSF12	Operating Cost per Property	Operating Cost per serviced property	$/property
WSF13	Annual Depreciation	The 'fully funded' depreciation cost in the reporting year	$
WSF14	Interest	The interest cost for the reporting year	$
WSF15	Total Cost: WS	Total cost for the reporting year associated with water supply to the area under the Council's jurisdiction	$
WSF16	Total Cost per Property	Total Cost per serviced property	$/property
WSF17	Budgeted Capital Expenditure	Capital expenditure budget for water supply in the reporting year	$
WSF17 a		Growth	$
WSF17 b		Levels of Service/Renewals	$
WSF18	Actual Capital Expenditure	Capital expenditure on water supply for the reporting year	$
WSF18 a		Growth	$
WSF18 b		Levels of Service/Renewals	$
WSF19	Actual Capital Expenditure per Property: WS	Actual Capital Expenditure per serviced property in the reporting year	$/property
WSF20	Development Contributions	Value of assets vested in the council during the reporting year as part of development contributions	$
WSF21	Asset value at end of reporting year	Book value of asset after depreciation (and any impairment) has been applied	$

WSF22	Renewals vs Depreciation	Ratio of Capital Expenditure Budget (Renewals) to Annual Depreciation	Nu
WSF23	External Grants	Any external grants received (not awarded) during the financial year for capital or operational costs related to the water supply scheme	$

WASTEWATER			
Code	**Measure**	**Description**	**Units**
Background Info			
WWB1	Total Wastewater Serviced Population	Total residential population served by a reticulated wastewater system. Note this field will populate automatically based on census data and properties in the system. If you have more current population statistics please enter these in the data field.	Nu
WWB2	Total Wastewater Serviced Properties: Residential	Total number of residential properties served by a reticulated wastewater system	Nu
WWB3	Total Wastewater Serviced Properties: Non-residential	Total number of non-residential properties served by a reticulated wastewater system	Nu
WWB4	Total Wastewater Serviced Properties	Total number of all properties served by a reticulated wastewater system	Nu
WWB5	Wastewater 'Exported' for treatment (if any)	Volume of wastewater produced in area under the Council's jurisdiction that is exported for treatment by an adjacent Council's WWTP	m^3/year
WWB6	Wastewater 'Imported' for Treatment (if any)	Volume of wastewater produced in area under the Council's jurisdiction that is imported for treatment at the Council's WWTPs	m^3/year
WWB7	Total Wastewater Produced	Volume of wastewater produced within the area under the Council's jurisdiction and reticulated to a public wastewater treatment plant. (Excludes any on-site treatment of wastewater)	m^3/year
WWB8	Average Residential Wastewater Produced per Person per Day	Calculated residential wastewater produced based on "Total Wastewater Produced" and "Total Wastewater Serviced Population"	litres/person/day
Asset			

WWA1	Total Length of Public Wastewater Network	Total length of public wastewater mains (excluding service connections)	km
WWA2	Condition of Pipelines	Proportion of wastewater mains assessed as:	
WWA2a		Condition Grade 1	%
WWA2b		Condition Grade 2	%
WWA2c		Condition Grade 3	%
WWA2d		Condition Grade 4	%
WWA2e		Condition Grade 5	%
WWA2f		Not yet assessed	%
WSA2g	Pipeline Condition Assesment Approach	The condition grading approached used for WWA2 if not consistent with that outlined in the New Zealand Infrastructure Asset Grading Guidelines	Text
WWA3	Average Age of Pipelines	Weighted Average Age of All Pipelines within the "Total Wastewater Serviced Area"	Nu
WWA4	Network CCTV inspection	Percent of network that has had CCTV completed	%
WWA4a		Percent of network that has had CCTV completed for this financial year	%
WWA5	Total Wastewater Pump Stations	Total number of wastewater pump stations in area under the Council's jurisdiction	Nu
WWA6	Above ground assets	Do you have a regular condition assessment programme?	Yes/No
WWA6a		What protocol is used for the assessment e.g. NAMS	Comment
WWA6b		What percentage of above ground assets are assessed within each AMP 3 year cycle?	%
WWA7a	Treatment Plant name		
WWA7b	Treatment Plant Location		Northing
			Easting
WWA7c	Treatment Plant Level of treatment		Primary, Secondary, Tertiary

WWA7d	Volume of wastewater treated at Treatment Plant	Volume of wastewater treated at WWTPs	m3/year
WWA7e	Receiving environment for treatment plant effluent	Freshwater	%
		Land application	%
		Ocean	%
WWA7f	Proportion of Trade Waste	Estimated proportion of total wastewater entering the plant that can be classified as trade waste	%
WWA7g	Treatment Plant Design Capacity	Estimated combined annual flow capacity related to current design capacity of WWTP (without upgrading)	m^3/year
WWA7h	Treatment Plant Resource consents expiry date	Discharge to air	Date
		Discharge to sludge	Date
		Discharge of effluent	Date
WWA7i	Treatment Plant Sludge Production	Total quantity of sludge produced	tDS/year
WWA7j	Treatment Plant Sludge Disposal	Disposal of wastewater sludge in year to:	
		on site stockpile	%
		landfill	%
		composting and reuse	%
		other (specify)	%
WWA8	Total Length of Combined Sewer and Stormwater Pipelines	Total length of combined public wastewater and stormwater mains, excluding service connections (if any)	km
Environmental			
WWE1	Dry Weather Wastewater Overflows	Total number of dry weather wastewater overflows in year (eg due to blockages or power outages)	Nu
WWE2	Wet Weather Wastewater Overflows	Total number of wet weather wastewater overflows (usually related to stormwater infiltration)	Nu
WWE3	Total Wastewater Overflows	Toatal number of overflows in year irrespective of the weather.	Nu
WWE4	Compliance with Resource Consents	Compliance of wastewater discharge consents in year, measured by:	
WWE4a		abatement notices	Nu
WWE4b		infringement notices	Nu
WWE4c		enforcement orders	Nu
WWE4d		successful prosecutions	Nu

WWE5	Energy Consumption	Total energy consumed by wastewater treatement system including pumps and wastewater treatment plants	GJ/year
Social			
WWS1a	Fixed Charge - Non residential	The fixed charge (inc GST) for residential customers (if applicable otherwise leave blank)	$
WWS1b	Volumetric Charge - Non residential	The volumetric charge (inc GST) for residential customers (if applicable)	$/m^3
WWS2a	Name of charging scheme	If different charging reigimes are used for different wastewater schemes use the name commonly used to apply to the scheme (leave blank if only one charging reigime in the juridstiction)	Text
WWS2b	Properties in scheme	If individual chrarging reigimes are used list the number of properties to which the charging reigime relates (leave blank if only one charging reigime)	Nu
WWS2c	Residential Fixed Wastewater Charge	The fixed charge (inc GST) that some organisations apply for the supply of wastewater services to residential customers. If not applicable to the organisation leave blank.	$
WWS2d	Residential Volumetric Wastewater Charge	The volumetric charge (inc GST) that organisations apply for the supply of wastewater services to residential customers.	$/m^3
WWS2e	Residential Wastewater Connection Charge	Average charge for a new connection to the stormwater network (GST included) for a residential property.	$/m^3
WWS3	Average Annual Residential Wastewater Bill Based on 200 m^3/yr discharge	The average residential customer's bill (GST included) for wastewater based on an annual consumption of 200 m^3 discharge	$/200 m^3
WWS4	Total Wastewater Complaints	Total number of complaints in reporting year related to wastewater leakage or odours	Nu
WWS4a		WWTP overflow or odours	Nu
WWS4b		sewer odours	Nu
WWS4c		pump station overflow or odours	Nu
WWS4d		sewerage system faults	Nu
WWS4e		sewerage system blockages	Nu

WWS5	Wastewater Complaints Frequency	"Wastewater Complaints" per 1000 serviced properties	Nu/1000 prop
WWS6	Fault Response Time	Time taken for the local authority to attend call-outs in response to sewerage overflows resulting from a blockage or other fault in the local authority's sewerage system	
WWS6a		Attendance Time	hrs
WWS6b		Resolution Time	hrs
WWS7	Total number of staff - wastewater		FTE
Financial			
WWF1	Revenue from the Provision of Wastewater Treatment Services to Another Local Authority	Revenue (if any) related to the provision of treatment services associated with wastewater from an adjacent local authority	$
WWF2	Operating Revenue	Operating revenue associated with reticulation and treatment of wastewater from the area under the Council's jurisdiction. (Excludes development contributions and any revenue from sale of biosolids)	$
WWF3	Development Contribution Revenue	Development contributions - cash payments only. (Include asset contributions under WWF20)	$
WWF4	Total Revenue: Wastewater	Total wastewater revenue for the reporting year related to the area under the Council's jurisdiction	$
WWF5	Revenue per Property	Revenue per serviced property	$/property
WWF6	Energy Costs	Electricity/gas/fuel costs associated with wastewater reticulation and treatment	$
WWF7	Sludge Disposal Costs	Net Cost of Sludge Disposal (ie costs less any revenue from sale of biosolids)	$
WWF8	WWTP External Opex	All other external costs, including cost of wastewater treatment services (if any) provided by an adjacent local authority and the cost of consultants and contractors, associated with wastewater treatment	$
WWF9	Reticulation External Opex	All other external costs (including the cost of consultants and contractors) associated with the operation and maintenance of the Wastewater Network but excluding wastewater treatment	$

WWF10	Management Costs	Own organisation costs* (includes salary, accommodation, IT,etc)	$
WWF11	Council's Overview Costs	Council's 'overview' costs** where management of the network and/or wastewater treatment is carried out by a stand-alone entity (eg a CCTO)	$
WWF12	Operating Cost: Wastewater	Operating cost (*discounted for any revenue from the provision of wastewater services to other local authorities*) for the reporting year associated with providing wastewater services in the area under the Council's jurisdiction	$
WWF13	Operating Cost per Property	Operating Cost per serviced property	$/property
WWF14	Annual Depreciation	The 'fully funded' depreciation cost in the reporting year	$
WWF15	Interest	The interest cost for the reporting year	$
WWF16	Total Cost: Wastewater	Total cost for the reporting year associated with wastewater services to the area under the Council's jurisdiction	$
WWF17	Total Cost per Property	Total Cost per serviced property	$/property
WWF18	Budgeted Capital Expenditure	Capital expenditure budget for wastewater in the reporting year	$
WWF18a		Growth	
WWF18b		Levels of Service/Renewals	
WWF19	Actual Capital Expenditure	Capital expenditure on wastewater in the reporting year	$
WWF19a		Growth	
WWF19b		Levels of Service/Renewals	
WWF20	Actual Capital Expenditure per Property	Actual Capital Expenditure per serviced property in the reporting year	$/property
WWF21	Development Contributions	Value of assets vested in the council as part of development contributions	$
WWF22	Asset value at end of reporting year	Book value of asset after depreciation (and any impairment) has been applied	$

WWF23	Renewals vs Depreciation	Ratio of Capital Expenditure Budget (Renewals) to Annual Depreciation	Nu
WWF24	External Grants	Any external grants received (not awarded) during the financial year for capital or operational costs related to the wastewater scheme	$

STORMWATER			
Code	**Measure**	**Description**	**Units**
Background Info			
SWB1	Total Stormwater Serviced Population	Total residential population serviced by a reticulated stormwater system	Nu
SWB2	Total Stormwater Serviced Properties - Residential	Total number of residential properties served by a reticulated stormwater system	Nu
SWB3	Total Stormwater Serviced Properties - Non-residential	Total number of non-residential properties served by a reticulated stormwater system	Nu
SWB4	Total Stormwater Serviced Properties	Total number of all properties served by a reticulated stormwater system	Nu
Asset			
SWA1	Total Length of Public Stormwater Network	Length of mains in public stormwater reticulation system, including culverts and lined channels (excluding service connections)	km
SWA2	Condition of Pipelines	Proportion of stormwater mains assessed as:	
SWA2a		Condition Grade 1	%
SWA2b		Condition Grade 2	%
SWA2c		Condition Grade 3	%
SWA2d		Condition Grade 4	%
SWA2e		Condition Grade 5	%
SWA2f		Not yet assessed	%
SWA2g	Pipeline Condition Assesment Approach	The condition grading approached used for WWA2 if not consistent with that outlined in the New Zealand Infrastructure Asset Grading Guidelines	Text
SWA3	Average Age of Pipelines	Weighted Average Age of All Pipelines within the "Total Stormwater Serviced Area"	Nu

SWA4	Stormwater Management Practices	Stormwater management practices in use at council	
SWA4a		Water quality ponds	Yes/No
SWA4b		Wetlands	Yes/No
SWA4c		Detention practices	Yes/No
SWA4d		Filtration	Yes/No
SWA4e		Infiltration	Yes/No
SWA4f		Rain Gardens	Yes/No
SWA4g		Biofiltration	Yes/No
SWA4h		Vegetative Filters	Yes/No
SWA4i		Gross Pollutant Traps	Yes/No
SWA5a	Above Ground Assets	Do you have a regular condition assessment programme?	Yes/No
SWA5b		What protocol is used for the assessment e.g. NAMS?	Comment
SWA5c		What percentage of above ground assets are assessed within each AMP 3 year cycle?	%
SWA6	Network CCTV inspection	Percent of network that has had CCTV completed	%
SWA6a		Percent of network that has had CCTV completed for this financial year	%
Environmental			
SWE1	Compliance with Resource Consents	Compliance of stormwater discharge consents in year, measured by:	
SWE1a		abatement notices	Nu
SWE1b		infringement notices	Nu
SWE1c		enforcement orders	Nu
SWE1d		successful prosecutions	Nu
Social			
SWS1	Stormwater Charge	Average annual targeted stormwater charge (GST included) for a residential property, where applicable. (Leave blank if no targeted stormwater charge)	$
SWS1a	Stormwater Connection Charge	Average charge for a new connection to the stormwater network (GST included) for a residential property.	$

SWS2	Stormwater Complaints	Number of complaints related to blockages or faults in reticulated stormwater network, excluding complaints related to service connections and complaints lodged during extreme events, eg a civil defence emergency	Nu
SWS2a		Blockages	Nu
SWS2b		Faults	Nu
SWS3	Stormwater Complaints Frequency	"Stormwater Complaints" per 1000 stormwater serviced properties	Nu/1000 props
SWS4	Flooding Events	Number of flooding events that occur in a local authority's district	Nu
SWS4a		Number of habitable floors affected	Nu
SWS4b		Number of habitable floors affected per 1000 stormwater serviced properties	Nu/1000 props
SWS5	Flooding Response Time	Median time taken for the local authority to attend call-outs in response to a flooding event	hrs
SWS6	Total number of staff - stormwater		FTE
Financial			
SWF1	Operating Revenue	Operating revenue associated with stormwater in the area under the Council's jurisdiction. Excludes development contributions	$
SWF2	Development Contribution Revenue	Development contributions - cash payment only. (Include asset contributions under SWF16)	$
SWF3	Total Revenue: Stormwater	Total stormwater revenue for the reporting year	$
SWF4	Total Revenue per Property	Revenue per serviced property	$/property
SWF5	External Opex	All external costs (including consultant and contractor costs) associated with the operation and maintenance of the stormwater network	$
SWF6	Management Costs	Own organisation costs* (includes salary, accommodation, IT,etc)	$
SWF7	Council Overview Costs	Council's 'overview' costs** where management of the network is carried out by a stand-alone entity (eg a CCTO)	$
SWF8	Operating Cost: Stormwater	Operating cost for the reporting year associated with stormwater in the area under the Council's jurisdiction	$
SWF9	Operating Cost per Property	Operating Cost per serviced property	$/property

SWF10	Annual Depreciation	The 'fully funded' depreciation cost in the reporting year	$
SWF11	Interest	The interest cost for the reporting year	$
SWF12	Total Cost	Total cost for the reporting year associated with stormwater services in the area under the Council's jurisdiction	$
SWF13	Total Cost per Property: Stormwater	Total Cost per serviced property	$/property
SWF14	Budgeted Capital Expenditure	Capital expenditure budget for stormwater in the reporting year	$
SWF14a		Growth	$
SWF14b		Levels of Service/Renewals	$
SWF15	Actual Capital Expenditure	Actual capital expenditure on stormwater for the reporting year relating to the "Total Stormwater Serviced Area"	$
SWF15a		Growth	$
SWF15b		Levels of Service/Renewals	$
SWF16	Actual Capital Expenditure per Property: SW	Actual Capital Expenditure per serviced property in the reporting year	$/property
SWF17	Development Contributions	Value of assets vested in the council during the reporting year as part of development contributions	$
SWF18	Asset value at end of reporting year	Book value of asset after depreciation (and any impairment) has been applied	$
SWF19	Renewals vs Depreciation	Ratio of Capital Expenditure (Renewals) to Annual Depreciation	Nu
SWF20	External Grants	Any external grants received (not awarded) during the financial year for capital or operational costs related to the wastewater scheme	$

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