water
NEW ZEALAND
The New Zealand Water & Wastes Association Waiora Aotearoa

2011/12 National Performance Review of Water Utilities

EXECUTIVE SUMMARY

Benchmarking is the process of comparing processes and performance metrics from one's own organisation with best practices from similar organisations. Performance benchmarking is becoming more of a 'top of mind' topic for organisations that manage public infrastructure. The current emphasis from central government is to encourage greater efficiency in the management of local infrastructure. This theme comes through in the recently implemented amendment to the local government financial reporting regulations to promote improved 'transparency, accountability and financial management' and in Treasury's 2011 National Infrastructure Plan. In the 2012 commentary[1] on progress, the Pilot Study[2] commissioned by Water New Zealand and the New Zealand Council for Infrastructure Development, which provided limited benchmarking on the way in which the urban water industry is being managed, was highlighted as 'an example of an industry taking ownership of the issues and seeking solutions in its own sector'. Water New Zealand's National Performance Review, which has been carried out annually over the past five years, is another initiative aimed at encouraging improvement in the management of water utilities through benchmarking of financial and non-financial performance measures. By comparing the performance of one's own organisation against measures from similar organisations, insight is provided into one's own relative performance, and that can help identify where and how improvement can be made.

The 2011/12 Review surveyed 16 organisations involved in providing the public with services associated with the three waters (water supply, wastewater and stormwater). The geographic areas surveyed ranged from predominantly urban to predominantly rural and from centralised wastewater treatment, only one wastewater treatment plant (WWTP) serving the district/city, to many WWPTs. The data gathered reflects the diversity of the operations and conclusions can be drawn about the factors that influence the unit cost of supplying water or treatment of wastewater. Indicatively the unit total cost (including depreciation costs and interest payments) of providing reticulated water ranges from $0.50 to $1.50 per cubic metre, whilst wastewater treatment ranges from $0.50 to $3.50 per cubic metre. The day to day operating cost (cost stripped of depreciation and interest) are indicatively 40% to 60% of the total cost, but the proportion varies depending upon prior investment, which drives the depreciation and interest costs.

The way in which some performance data is normalised for comparative purposes is also dependent upon the nature of the district/ city being served. For example, interruptions to supply normalised on a per 1000 properties served can give quite a different picture of relative performance amongst different water supply organisations to interruptions normalised on a per 100km length of water main, depending upon population density and the area covered by the water supply network.

A current central government initiative, being managed by the Department of Internal Affairs (DIA), aims to develop standardised non-financial performance measures for water and other infrastructure that will be mandatory from 2015 (probably beginning in the 2014/15 financial year). These measures are aimed at providing the public with information that can be used to assess how well their local government provided infrastructure is being managed. Some of the draft measures put forward for discussion, in late 2012, mirror those used in this National Performance Review. However the Review aims to also provide data, for example on water loss management and the

[1] Infrastructure 2012, National State of Infrastructure Report, A year on from the National Infrastructure Plan
[2] Implementing the National Infrastructure Plan in the Water Industry – a Pilot Study, July 2012.

condition of underground pipelines, with greater technical depth than would likely be included in the measures the DIA will finalise on. While measures included in future Reviews will clearly need to be aligned with the set the DIA finalises on, there is potential for the value of the Review to be enhanced by including additional technical benchmarking measures, for example on the extent that backflow prevention devices are used or the asset grading of above ground structures.

The way in which water is charged to customers varies across the 16 organisations, with three having universal metering and charging on the basis of water use, some giving residential customers the option of metered charging as an alternative to a uniform annual charge, some on the basis of a uniform annual charge for all, and one with no targeted water charge. In addition to charging on the basis of metering or payment of a uniform annual charge, some also allocate a proportion of general rates to cover the cost of water supply, such that an individual ratepayer will notionally be funding water supply to a greater or lesser extent depending upon the rateable value of their property. The hypothesis is put forward that even if the cost of water supply is made completely transparent to customers, it is only when customers can reduce their costs through reducing their use of water (ie when water is being charged on metered use) that there is a direct financial incentive for users to conserve water. Interestingly, three of the four organisations that recorded residential water use below 200 litres/ person/day have universal metering. Given that managing water demand can reduce the size and hence the cost of the water supply infrastructure and also, to some extent, the cost of the wastewater treatment infrastructure, as wastewater volumes mirror water usage, the debate over the long term value of water metering should continue. It would be useful if an algorithm were to be developed to accurately assess the alternative long term costs to help with local political decisions regarding water metering.

One of the non-financial performance measures included in the Review (and also in the list of performance measures regarding water demand management put forward for comment by the DIA) is average water use in residential areas on the basis of litres/person/day. This measure prompts discussion as to how the measure is best estimated without the benefit of universal metering, particularly where there is a large seasonal variation in the population (such as in Taupo District). One of the recommendations that came out of the independent audit carried out on the 2011/12 Review was that more prescriptive guidance should be provided on how participants should go about determining some of the measures, such as this one, thereby improving confidence in the survey data provided.

In addition to verification of data and the confidence rating applied to individual data, the audit provided recommendations aimed at enhancing future surveys by identifying survey questions that could be reasonably omitted and survey questions that could be modified or new ones added. The auditor cautioned about the need for changes to the survey questions year on year to be handled carefully, and for participants to be guided through the changes and the impact change may have upon their data collection processes.

There is also potential for survey questions to be included in future Reviews regarding the processes used by an organisation in the management of their assets - on the basis that if the management is right, good performance will follow.

INTRODUCTION

Coverage

The 2011/12 National Performance Review is the fifth annual survey of local authority water utilities undertaken by Water New Zealand. Coverage has gradually expanded over time from eight participants in 2007/08 to sixteen in this latest survey:

- Capacity–Hutt City (CAPH)
- Capacity–Wellington (CAPW)
- Dunedin City Council (DCC)
- Hamilton City Council (HCC)
- Tauranga City Council (TCC)
- New Plymouth District Council (NPDC)
- Invercargill City Council (ICC)
- Rotorua District Council (RDC)
- Veolia Water-Papakura (VWP)
- Whangarei District Council (WDC)
- Timaru District Council (TDC)
- Waikato District Council (WKDC)
- Waipa District Council (WPDC)
- Taupo District Council (TADC)
- South Taranaki District Council (STDC)
- Clutha District Council (CLDC)

With the exception of Capacity, which is a council controlled trading organisation (CCTO) serving both Wellington and Hutt cities, and Veolia Water, who are contracted by Watercare Services to manage water and wastewater reticulation in the former Papakura District, all other water utility functions are managed directly by the respective local authority.

For brevity, use of the generic term 'district' is used in this report to refer to a territorial authority (be it a city, district or unitary authority) or to an agency (be it a private company or CCTO) managing the infrastructure on behalf of the territorial authority. Similarly, for brevity, reference is made in the report, for example, to Tauranga for Tauranga City Council and Waipa for Waipa District Council.

Australia has undertaken an annual water utilities benchmarking survey since 2004/05 through the National Performance Report: Urban Water Utilities managed by the National Water Commission in collaboration with the Water Services Association of Australia (WSAA). While modelled on the Australian survey, the National Performance Review undertaken in New Zealand covers stormwater as well as water supply and wastewater.

Benchmarking

The primary objectives of benchmarking in the context of water utilities are:

- to provide a set of key performance indicators related to a utility's managerial, financial and operational activities to measure performance and provide managerial guidance; and

- to enable the utility to compare its performance with those of other similar utilities to identify areas needing improvement.

By providing comparative information on utilities' costs and performance, benchmarking can also be of value to other stakeholders, including:

- Government: to monitor and adjust sector policies and programmes.
- Regulators: to ensure adequate incentives are provided for improved utility performance, increased value for customers and suitable protection for the environment.
- Customers: to enable valid concerns to be addressed (by providing for greater transparency).

Better understanding is the first step towards better performance. The International Benchmark Network (IBNET) for Water Supply and Sanitation Performance (the 'blue book' published by the World Bank) notes that ...'comparison with similar utilities elsewhere in a country or region or with standards of international good practice can shed light on how well a utility is performing, identify areas for improvement, and help indicate a plan of action'. This applies equally to developed as well as developing countries.

The performance of the New Zealand infrastructure sector has recently been put under the spotlight. In their 2011 National Infrastructure Plan the National Infrastructure Unit of Treasury looked at the relative performance of New Zealand's five main infrastructure sectors (transport, telecommunications, energy, water and social) and found the water sector wanting, with poor relative scores under three of the six guiding principles used in the assessment. The report goes on to say that improvement, with 'greater emphasis on clarity, consistency and quality of financial reporting', is expected and amongst other things the report promotes the establishment of 'a flexible but common platform for reporting against the three waters infrastructure'. In their update report (Infrastructure 2012, National State of Infrastructure Report - A year on from the National Infrastructure Plan) the National Infrastructure Unit acknowledged the Pilot Study[3] of the urban water industry commissioned by Water New Zealand and the NZ Council for Infrastructure Development …'as an example of an industry taking ownership of the issues and seeking solutions in its own sector'.

Reform designed to promote better Transparency, Accountability and Financial Management (TAFM) was introduced in 2010 in an amendment to the Local Government Act 2002. As part of the TAFM reforms the Local Government (Financial Reporting) Regulations 2011 were introduced for implementation in the 2012/13 financial year to standardise the financial reporting used by local authorities.

Mandatory (non-financial) performance measures to be used from 2015 by local authorities when reporting on the delivery of five groups of activities (including water supply, wastewater and stormwater, and also including flood protection and control works) are currently under discussion (consultation closed at the end of February 2013). The stated rationale behind the introduction of mandatory performance measures is ...' being able to compare the level of service provided by different local government organisations will help communities to assess whether they need a higher or lower level of service'. Also, since ...'at least some of the cost is likely to be paid for

[3] Implementing the National Infrastructure Plan in the Water Industry – a Pilot Study, July 2012.

through rates and charges so it is important that the public has a say when a local government organisation is setting levels of service...'.

Comparing performance measures provided by different local authorities does enable the public to have a say in setting levels of service, but perhaps the benefits of benchmarking are greater for the local authority itself in that it enables it to compare its own performance and the way it goes about its activities with the performance of other local authorities providing a similar level of service.

A number of the performance measures put forward for discussion as part of the TAFM initiatives are the same as, or similar to, those covered in this Review. While greater use of standardised performance measures will, over time, inevitably result from the implementation of the TAFM reforms, the measures used in this Review were selected on the basis that they would currently be widely used amongst participants. Thus measures involving the recording of response times to complaints or the outcome of client satisfaction surveys were not included. Also, while reporting on compliance with resource consents or drinking water standards is valid feedback to ratepayers, it has a lesser significance in a benchmarking exercise and has not been included in this report. Also, some of this information is reported on nationally elsewhere, namely in the Ministry of Health's Annual Report on Drinking-water Quality.

In past Reviews survey data has been grouped under three 'wellbeing' headings, social, environmental and financial. However with some of the information collected it is not that straightforward as to which camp it resides in. Take for example water pricing. This measure obviously has a financial aspect to it, but it also has a social ramification on the ratepayers being charged for the water, and an environmental impact in so far as pricing along with metering of water can be used to manage demand and thus reduce water usage and hence the size of the infrastructure (and its energy requirements) to treat, store and reticulate the water. In view of this no attempt has been made to group survey data in this Review under the three wellbeings, rather the presentation of survey data has been guided by the way the TAFM reforms have been structured under the two generic headings of Financial Performance and Non-Financial Performance Measures.

One of the headline 'strategic opportunities' for the water sector put forward in the New Zealand National Infrastructure Plan was…'better demand management practices and consistent criteria for water infrastructure'. The purpose of this Review is consistent with this objective.

Data Confidence Rating

Where relevant, a measure of the participant's self-assessed confidence in the survey data supplied is provided by way of a shaded bar. The degree of confidence in the accuracy of the data ranges from A to N, as defined elsewhere in the report.

Currently for some participants the level of confidence regarding the condition and performance of some aspects of the water infrastructure in different parts of their district is variable. Some have well developed systems, while for others it will not be until their asset management and customer

feedback systems are further developed and coverage extended that the level of confidence regarding data on water utilities will reach similar levels.

Unlike previous reports on the National Performance Review of water utilities, data confidence ratings have not been provided for financial data in view of the robust third party audit to which this data has been subjected.

Verification Audit

Verification of data used in the 2011/12 Review and the way it had been derived was subject to independent audit carried out by AECOM. The audit was undertaken in two parts; firstly a desk top review of the data provided by each of the 16 participating organisations and secondly on-site interviews with four of them, two that had participated in prior year surveys (Veolia Water and Whangarei) and two that were new participants in 2011/12 (Clutha and Taupo).

The focus of the audit was on data consistency (and the identification of any discrepancies) and on the confidence rating of the data provided.

Key factors in the assessment of data consistency were:

- interpretation and compliance with guidance documentation (and hence the methodology used in arriving at the data provided);
- background assumptions, if any, that had been made;
- differences in data provided for 2011/12 and that provided in 2010/11, where applicable; and
- comparison of specific data across the participating organisation and with industry norms.

The key factor in the assessment of data confidence was the identification of the data source used and the reliability with which the information could be obtained from this source. Clearly there is greater confidence in data verified through a robust process, eg financial data audited by a third party.

In the on-site interviews the objectives were to gain an understanding of the adequacy of the guidance provided by Water New Zealand regarding completion of the survey questionnaire; what systems were in place to support the information sought and how selected data had been derived. As a result of the on-site interviews in particular the auditor has been able to provide suggestions for improvement to future surveys.

The auditor also undertook a peer review of the draft report on the 2011/12 Review.

The survey sought information intended to provide background on the proportion of customers in different categories, statistical data on the geographic area served, and the nature of the water infrastructure provided. The auditor found that some of the measures could have been better defined, in particular the split between rural and urban residential properties and the identification of different types of non-residential properties.

Related to this background information as well as to some of the more specific data sought in the survey, the auditor commented that a more prescriptive approach should be outlined in the survey guidance documentation. Also, participants should be encouraged to document the source of the base data and the methodology they use to derive the survey data (ie methodology specific to the asset management systems, property/population records and client feedback systems they employ) and the verification process employed. Such documentation would be of value in ensuring consistency year to year, particularly where there had been personnel changes.

In view of the expected requirement for use, from 2015, of mandatory performance measures to keep the public informed of the performance of each district in managing its infrastructure (following the Department of Internal Affairs review of draft measures, put forward for comment in late 2012) the auditor recommended that the survey questions in the 2012/13 survey should be aligned, where possible, with these performance measures once they have been finalised. However it was noted that the Water New Zealand National Performance Review seeks out infrastructure performance in greater technical depth than could be expected from the mandatory performance measures, eg water leakage indices and grading of underground assets. Recommendations are put forward by the auditor on additional measures (eg backflow protection provided to water supplies, proportion of underground pipes that have been subject to CCTV inspection, asset grading of above-ground infrastructure) that would enhance the technical value of the Review.

The audit report notes where modification to particular survey questions could enhance the value of the data collected and where further clarity could be provided in the guidance documentation. However, the auditor cautions against making any change to the survey questions without first canvassing the opinion of participants as change from year to year can, if not handled appropriately, lead to data inconsistencies. Also, use of teleconferencing is recommended as a way of keeping participants on-board with regard to change and so that there is a common understanding of what is required before the year's survey is begun.

The audit report notes that for the most part the participating organisations were able to provide consistent data, particularly where such data is collected as part of business as usual (and especially where such data is independently audited, eg the financial data). The auditors also found that there was general consistency between reporting organisations with regard to their assessment of data confidence and that for those participants who provided data in prior years, there was year on year consistency.

The audit report notes that from the on-site interviews there was a positive attitude towards being involved and an appreciation of the benefits of being able to compare performance across peer organisations. The staff interviewed also expressed a hope that more water utility organisations could be encouraged to participate, to enhance the value of the benchmarking that the Review provides.

GENERAL COMPARISONS

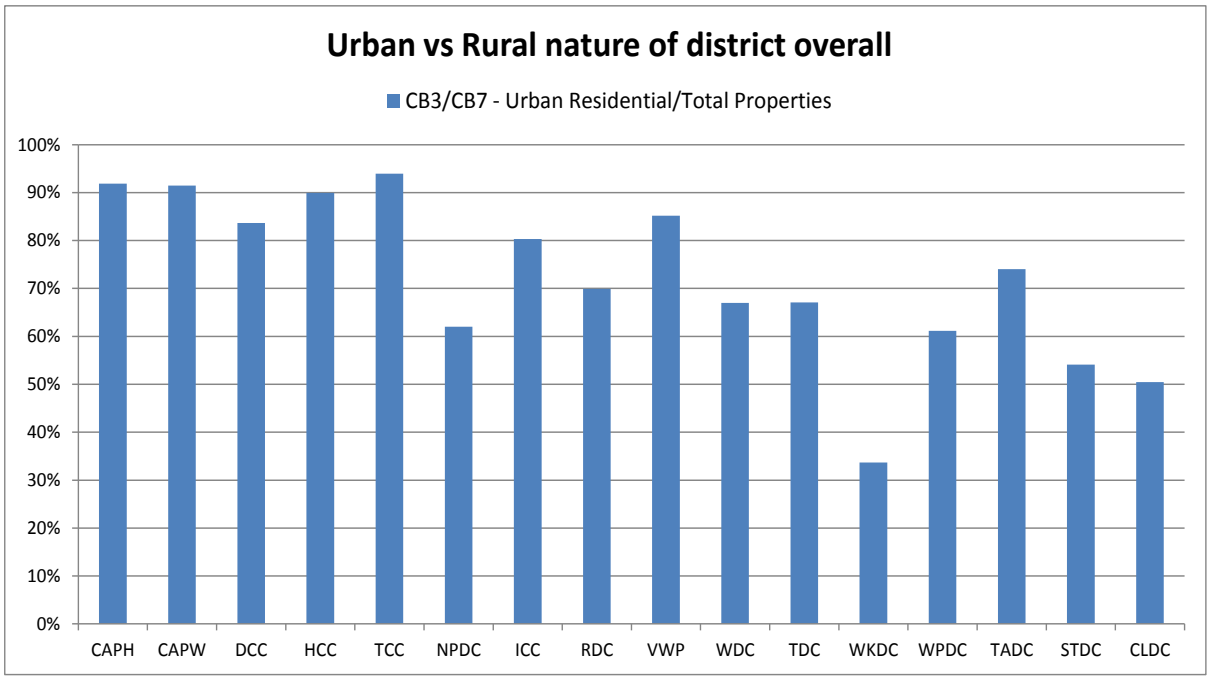
The varying size of the sixteen districts can be seen from the table below. The five larger ones (highlighted) each have a population over 100,000.

	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC
CB1 - Total Area (Ha)	37,988	29,900	335,000	11,079	13,400	232,400	38,000	261,906
CB1 - urban water supply area only								*4,953*
CB2 - Total Population	103,000	199,670	125,327	148,200	116,011	68,901	50,300	69,801
CB2 - urban water supply area only								*64,217*
CB7 - Total Properties	38,676	71,481	54,715	54,320	51,335	36,560	25,653	28,883
CB7 - urban water supply area only								*21,151*

	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC
CB1 - Total Area (Ha)	12,600	268,259	273,830	452,900	147,456	634,974	361,834	636,200
CB1 - urban water supply area only			*3,383*					
CB2 - Total Population	49,114	79,254	44,700	63,400	46,000	32,418	27,200	17,950
CB2 - urban water supply area only			33,400					
CB7 - Total Properties	19,220	39,724	21,112	28,846	20,330	23,188	15,810	13,163
CB7 - urban water supply area only			*14,750*					

Comparison is more relevant in a survey of this type if consistent data is available across participants. However even with data as basic as property classification many different approaches are used. Some have a simple property classification, eg Tauranga where properties are classified as either residential or non-residential. For others, while residential properties in urban areas are generally classified in a consistent manner, other types of property are classified in many different ways, which can make combining data for comparative purposes problematic.

Apart from Tauranga (for reasons noted above) a general indication of the urban/rural split of a district can be inferred from the proportion of urban residential properties, as per the chart below.



Classifying Invercargill as a predominantly urban district and using 80% urban residential to total properties (the proportion for Invercargill) as the dividing line between predominantly urban districts and predominantly rural districts, we have 7 urban and 9 rural for this year's group of 16 participants.

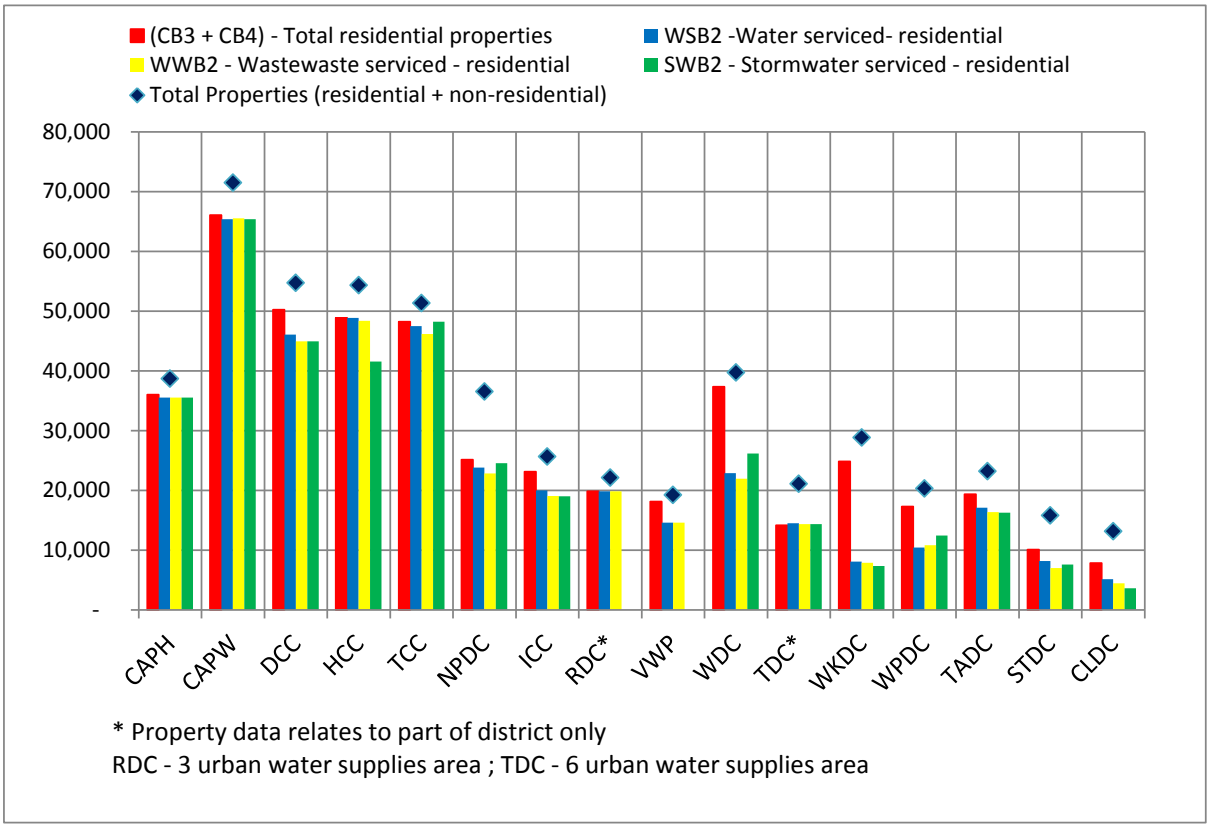
The aim of the survey was to obtain data on the entire area under each district's jurisdiction. This was achieved in all cases except for:

- TDC– coverage is for the part of Timaru district covered by the six 'urban' water supplies (Timaru, Temuka, Geraldine, Pleasant Point, Winchester and Peel Forest) only.
- RDC– coverage is for the part of Rotorua district covered by the three 'urban' water supplies (Central, Eastern and Ngongataha) only.

Because of the decision by Rotorua and Timaru to provide data about their urban areas only, a 9 urban/ 7 rural split is more representative for the participants in this year's Review.

In the case of 14 of the survey respondents the Review covers the three waters (water supply, wastewater and stormwater). However in the case of VWP coverage is for water and wastewater reticulation only in the former Papakura District (now part of Auckland City) as covered by Veolia Water's contract with Watercare Services, and in the case of Rotorua stormwater was not reported on.

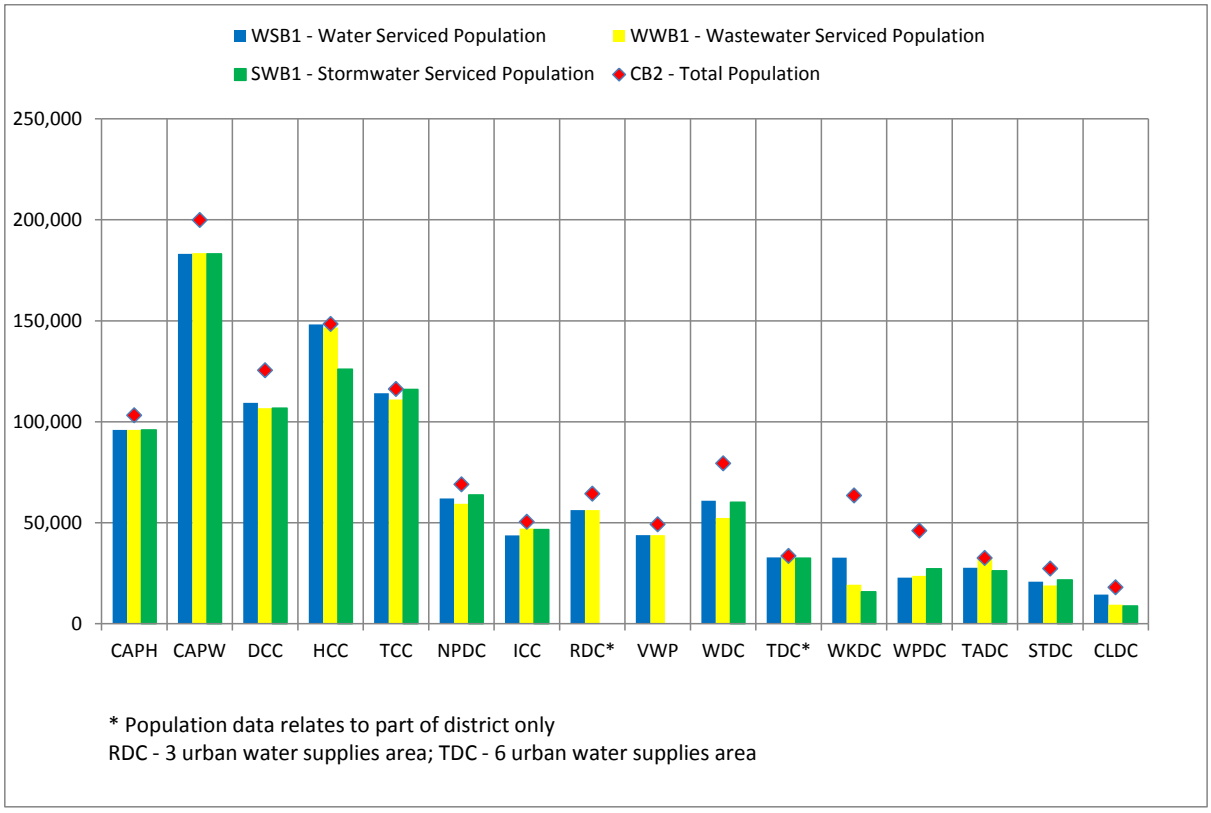
In looking at the coverage of each district by the three waters, as shown in the following chart, the focus has been on the number of serviced properties as this information is available directly from the local authority rating data.



* Property data relates to part of district only
RDC - 3 urban water supplies area ; TDC - 6 urban water supplies area

Note that there are a significant number of properties in Waikato, and to a lesser extent in Whangarei and Waipa that are not served by any of the three waters. Many rural properties in these districts, both residential and non-residential (which includes farming operations) get their water supply from tanks or bores and have on-site wastewater treatment. In Waikato about two thirds of the residential properties get water from tanks and bores.

An assessment of the population served is less reliable than properties served as occupancy data for individual properties is not included in council systems and can only be inferred from other sources. Nevertheless for comparison with previous Reviews an assessment of the permanent resident population provided with the three water services is presented in the chart below. Note that in some of the districts, particularly Taupo and to a lesser extent Rotorua and Tauranga, the seasonal population can be significantly greater than the permanent population, which puts additional load on water services, particularly over the summer holiday period. It is estimated that for Taupo the peak summer population can be up to 25% greater than the permanent population.



Asset Quantities

Volume data relates to annual volumes.

(a) Water Supply

	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC*
WSB1 - Water Serviced Population	95,915	183,067	109,396	148,200	114,181	61,987	43,785	56,311
WSB2 - Water Serviced Props - Residential	35,524	65,381	46,089	48,886	47,476	23,841	20,001	19,869
WSB3 - Water Serviced Props - Non-Residential	3,138	5,040	3,536	3,943	2,980	3,676	1,598	2,282
WSB4 - Total Water Serviced Properties	38,662	70,421	49,625	52,829	50,456	27,517	21,599	22,151
WSB5 - Water Supplied for Own Use (m^3)	12,899,625	27,212,296	15,990,414	18,630,232	12,542,100	11,368,098	8,626,875	10,469,624
Water Supplied per Serviced Property (m^3)	*334*	*386*	*322*	*353*	*249*	*413*	*399*	*473*
WSA1 - Length of Water Mains (km)	677	1,245	1,498	1,113	1,162	817	411	494
Serviced Properties per km of mains	*57*	*57*	*33*	*47*	*43*	*34*	*53*	*45*
WSA3 - Water Treatment Plants	-	-	12	1	2	4	2	4
WSA4 - Pump Stations	13	33	29	6	11	5	7	6
WSA5 - Water Supply Reservoirs	24	81	58	7	21	19	6	11
WSA6 - Capacity of Water Reservoirs (m^3)	71,577	126,502	151,000	88,200	82,076	63,000	71,300	43,450
Reservoir Days of Supply	*2.0*	*1.7*	*3.4*	*1.7*	*2.4*	*2.0*	*3.0*	*1.5*

* Water supply data relates to urban water supplies only

	VWP	WDC	TDC*	WKDC	WPDC	TADC	STDC	CLDC
WSB1 - Water Serviced Population	43,857	60,869	32,800	32,721	22,814	27,683	20,862	14,390
WSB2 - Water Serviced Props - Residential	14,619	22,883	14,500	8,107	10,424	17,108	8,214	5,163
WSB3 - Water Serviced Props - Non-Residential	1,097	2,236	1,780	3,973	369	1,849	1,021	2,053
WSB4 - Total Water Serviced Properties	15,716	25,119	16,280	12,080	10,793	18,957	9,235	7,216
WSB5 - Water Supplied for Own Use (m^3)	5,315,204	8,925,677	8,662,000	4,906,621	9,400,000	7,117,460	10,369,377	8,400,100
Water Supplied per Serviced Property (m^3)	*338*	*355*	*532*	*406*	*871*	*375*	*1,123*	*1,164*
WSA1 - Length of Water Mains (km)	353	730	351	700	585	462	642	2,205
Serviced Properties per km of mains	*45*	*34*	*46*	*17*	*18*	*41*	*14*	*3*
WSA3 - Water Treatment Plants	-	7	6	10	6	20	11	16
WSA4 - Pump Stations	1	22	9	10	11	47	6	56
WSA5 - Water Supply Reservoirs	1	45	10	31	14	62	36	68
WSA6 - Capacity of Water Reservoirs (m^3)	326	80,100	121,200	19,572	24,986	35,247	51,200	15,374
Reservoir Days of Supply	*0.0*	*3.3*	*5.1*	*1.5*	*1.0*	*1.8*	*1.8*	*0.7*

Reservoir days of supply (365 x capacity of water reservoirs / water supplied to own system) is a measure of the potential ability of the water storage systems to provide for drinking water in the event of an extended power outage. In practice, as the reservoirs will not be maintained at full capacity, the days of supply will be less than these figures indicate. Papakura has a single small capacity reservoir that supplies a small area, with pressure being maintained for the most part through connection to Watercare bulk mains.

The relatively long length of water mains in Clutha is due of the extensive reticulation network for 11 rural water supply schemes. This is also reflected in the relatively few serviced properties per km of water main.

(b) Wastewater

	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC*
WWB1 - Wastewater Serviced Population	95,915	183,487	106,676	146,718	110,999	59,361	47,074	56,252
WWB2 - Wastewater Serviced Props - Residential	35,524	65,531	44,943	48,397	46,153	22,831	19,096	19,847
WWB3 - Wastewater Serviced Props - Non-Residential	3,138	4,279	3,111	3,943	3,056	1,947	1,441	2,261
WWB4 - Total Wastewater Serviced Properties	38,662	69,810	48,054	52,340	49,209	24,778	20,537	22,108
WWB5 - Wastewater Treated by Own WWTPs (m3)	15,335,410	28,320,515	18,357,918	16,430,413	10,092,275	10,152,196	10,003,629	7,225,175
WWB8 - Wastewater Collected from Own Area (m3)	11,382,610	31,060,515	18,357,918	16,429,813	9,910,891	10,152,196	10,003,629	7,225,175
Wastewater collected per serviced property (m3)	*294*	*445*	*382*	*314*	*201*	*410*	*487*	*327*
WWB9 - Trade waste proportion of WWB8 (%)	7	4	9	15	6	10	30	25
WWA1 - Length of wastewater mains (km)	681	1,108	902	799	813	479	363	447
Serviced Properties per km of mains	*57*	*63*	*53*	*66*	*61*	*52*	*57*	*49*
WWA3 - Wastewater Pump Stations	45	62	83	127	144	33	29	73
WWA4 - Wastewater Treatment Plants in Own Area	1	2	7	1	2	2	3	1
WWA5 - WWTP Capacity currently utilised (%)	*21*	*77*	*37*	*35*	*79*	*100*	*70*	*88*

* Wastewater Data relates to area covered by urban water supplies only

	VWP	WDC	TDC*	WKDC	WPDC	TADC	STDC	CLDC
WWB1 - Wastewater Serviced Population	43,857	52,403	32,450	19,272	23,740	32,753	18,900	9,423
WWB2 - Wastewater Serviced Props - Residential	14,593	21,982	14,350	7,882	10,847	16,353	7,032	4,447
WWB3 - Wastewater Serviced Props - Non-Residential	1,097	1,568	1,760	1,188	235	1,468	409	993
WWB4 - Total Wastewater Serviced Properties	15,690	23,550	16,110	9,070	11,082	17,821	7,441	5,440
WWB5 - Wastewater Treated by Own WWTPs (m3)	-	5,891,288	8,065,000	2,307,163	1,683,944	3,229,355	5,618,941	1,683,015
WWB8 - Wastewater Collected from Own Area (m3)	3,206,305	5,891,288	8,065,000	2,307,163	2,306,381	3,222,355	5,618,941	1,683,015
Wastewater collected per serviced property (m3)	*204*	*250*	*501*	*254*	*208*	*181*	*755*	*309*
WWB9 - Trade waste proportion of WWB8 (%)	26	10	30	23	27	15	30	11
WWA1 - Length of wastewater mains (km)	261	585	338	246	244	350	156	146
Serviced Properties per km of mains	*60*	*40*	*48*	*37*	*45*	*51*	*48*	*37*
WWA3 - Wastewater Pump Stations	29	141	21	79	48	104	34	4
WWA4 - Wastewater Treatment Plants in Own Area	0	9	4	8	2	12	8	11
WWA5 - WWTP Capacity currently utilised (%)	*0*	*27*	*55*	*100*	*63*	*90*	*80*	*76*

WWA5 is an assessment based upon the design flow capacity of the existing WWTPs compared with recorded volumes of wastewater treated and is an indication of additional wastewater treatment capacity that could be achieved without significant upgrading cost. While the capacity of the WWTPs is a function of their design, several districts made an assessment of overall design capacity by aggregating the WWTP discharge consents. For wastewater networks with high infiltration/ inflow some of the 'spare' capacity will be needed to cope with wet weather peaks.

(c) Stormwater

	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC
SWB1 - Stormwater Serviced Population	95,915	183,067	106,676	125,970	116,011	63,814	46,617	-
SWB2 - Stormwater Serviced Props - Residential	35,524	65,381	44,943	41,553	48,237	24,544	19,002	-
SWB3 - Stormwater Serviced Props Non-Residential	2,435	4,165	3,111	3,352	3,098	4,325	1,295	-
SWB4 - Total Stormwater Serviced Properties	37,959	69,546	48,054	44,905	51,335	28,869	20,297	-
SWB5 - Length of Stormwater Mains	548	738	368	651	633	308	410	-
Serviced Properties per km of mains	*69*	*94*	*131*	*69*	*81*	*94*	*50*	

* Stormwater Data relates to area covered by urban water supplies only
Stormwater data not reported for Rotorua or Papakura

	VWP	WDC	TDC*	WKDC	WPDC	TADC	STDC	CLDC
SWB1 - Stormwater Serviced Population	-	60,154	32,450	15,768	27,217	26,177	21,685	8,754
SWB2 - Stormwater Serviced Props - Residential	-	26,154	14,350	7,369	12,436	16,302	7,586	3,618
SWB3 - Stormwater Serviced Props Non-Residential	-	3,588	1,760	2,173	369	2,849	1,088	808
SWB4 - Total Stormwater Serviced Properties	-	29,742	16,110	9,542	12,805	19,151	8,674	4,426
SWB5 - Length of Stormwater Mains	-	300	163	102	139	259	83	55
Serviced Properties per km of mains		*99*	*99*	*93*	*92*	*74*	*104*	*81*

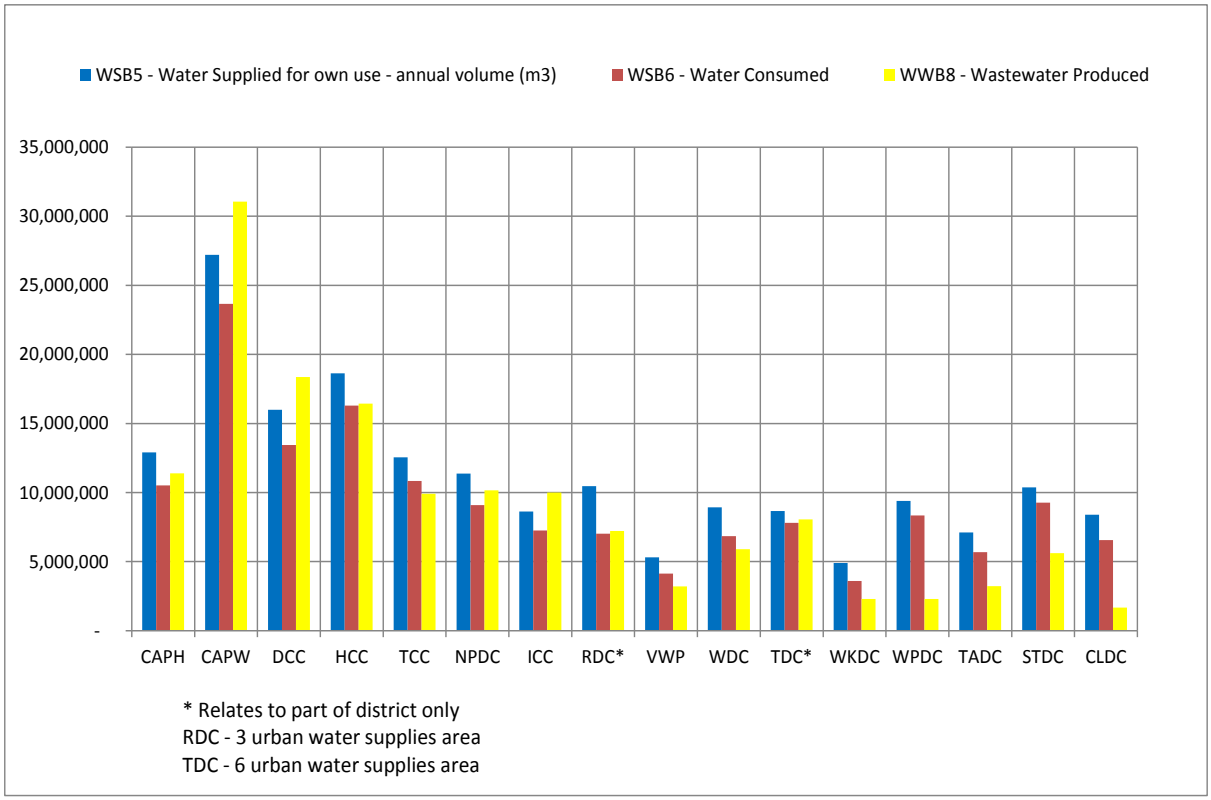
The length of stormwater mains excludes unlined channels and ditches as such stormwater conduits are not measured consistently across districts. Omitting the length of unlined channels and ditches underestimates the stormwater asset that is being maintained, particularly for predominantly rural districts.

Data on the number of stormwater devices has not been presented here due to inconsistency in the manner in which it was reported (due in part to such devices having been inadequately defined in the survey questionnaire).

Water Supplied/ Water Consumed/ Wastewater Treated

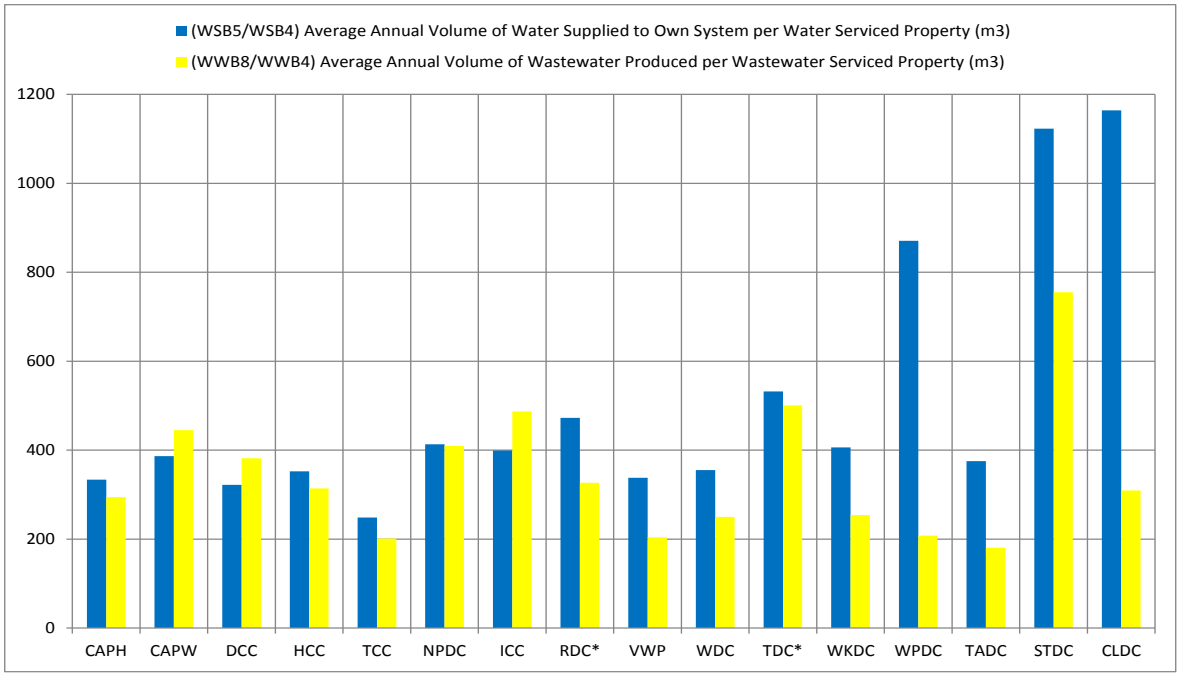
In the following chart the wastewater treated from the area under the district's jurisdiction is compared with the water supplied, and water consumed. In predominantly urban areas the wastewater treated might be expected to be marginally less than the water consumed unless there is extensive inflow and/or infiltration. The wastewater volumes associated with the area under the district's jurisdiction are significantly higher than water supplied in the case of Wellington, Dunedin and Invercargill. Where there is high infiltration/ inflow into the wastewater network it can impact upon capital and operational costs as additional pumping and pipe capacity are needed. In predominantly rural areas a greater proportion of the water consumed will not contribute to wastewater due to water supply coverage generally being greater than wastewater service coverage and because of agricultural/ horticultural uses. In these circumstances excessive infiltration/ inflow, should it be occurring, will not show up in the data.

For most districts there is a difference between the number of water serviced properties and wastewater serviced properties. Thus the comparison between water consumed and wastewater treated is not a simple 'water in, water out' equation, even if infiltration/ inflow and water uses that do not contribute to wastewater could be quantified.



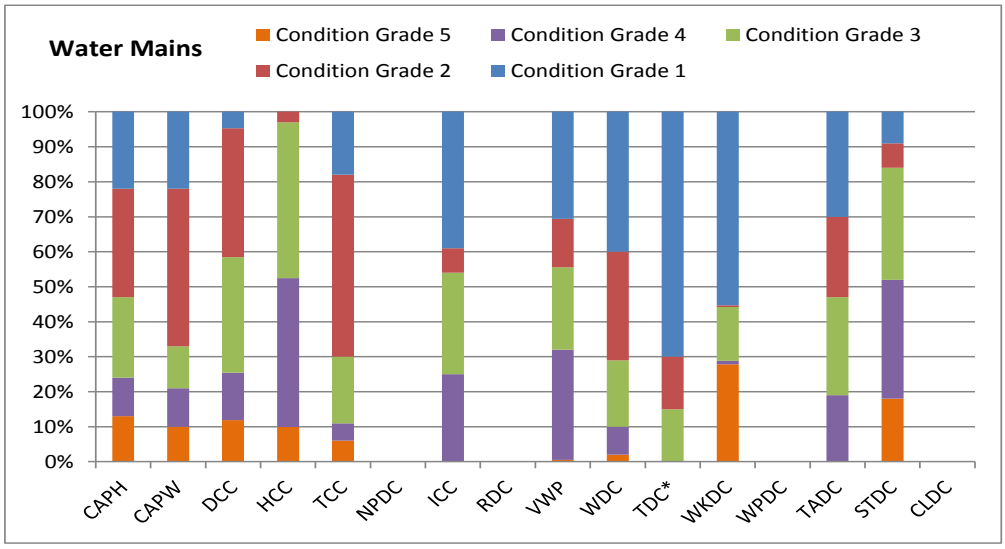
CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
A	A	B	B	A	A	A	B	A	A	A	B	B	B	B	C	WSB5
A	A	C	B	B	D	C	C	A	A	C	C	C	C	B	C	WSB6
A	A	B	A	B	A	B	A	A	A	B	C	A	B	B	A	WWB8

Similar data, but on a per serviced property basis, is shown in the following chart. Note for three predominantly rural districts that supply water for farm use (Waipa, South Taranaki and Clutha) average water usage per serviced property is, as expected, well above the average. In South Taranaki an estimated 53% of water produced is for rural water supplies. (One of the reasons similar high water usage per property is not seen in Rotorua and Timaru, both of which have a significant rural component, is that the survey data for these two districts covered their urban water supply areas only). The unexpectedly low water use per property in predominantly rural Waikato can be explained by the relatively high proportion of the rural community that are not on a reticulated water supply. The high wastewater volume per property for South Taranaki results from the relatively high trade waste component (estimated at 30%) from a few high use industries (mainly meat works).



Pipe Condition

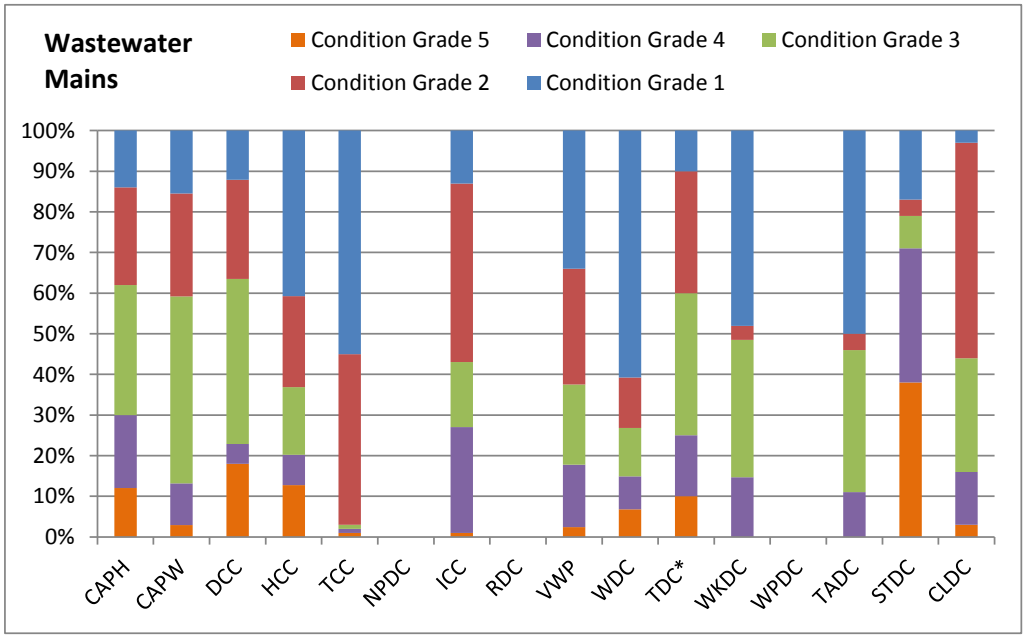
The grading assigned to mains was done in general accordance with the water asset grades defined in the New Zealand Infrastructure Asset Grading Guidelines, namely: 1= very good; 2 = good; 3 =moderate; 4 = poor; 5 = very poor. Some districts used alternative ways to arrive at the condition grading, eg from the age of different pipe types or in the case of wastewater and stormwater mains from CCTV data from random inspection of different pipe types. The condition data here is a best assessment extrapolated across the respective networks from the data available.



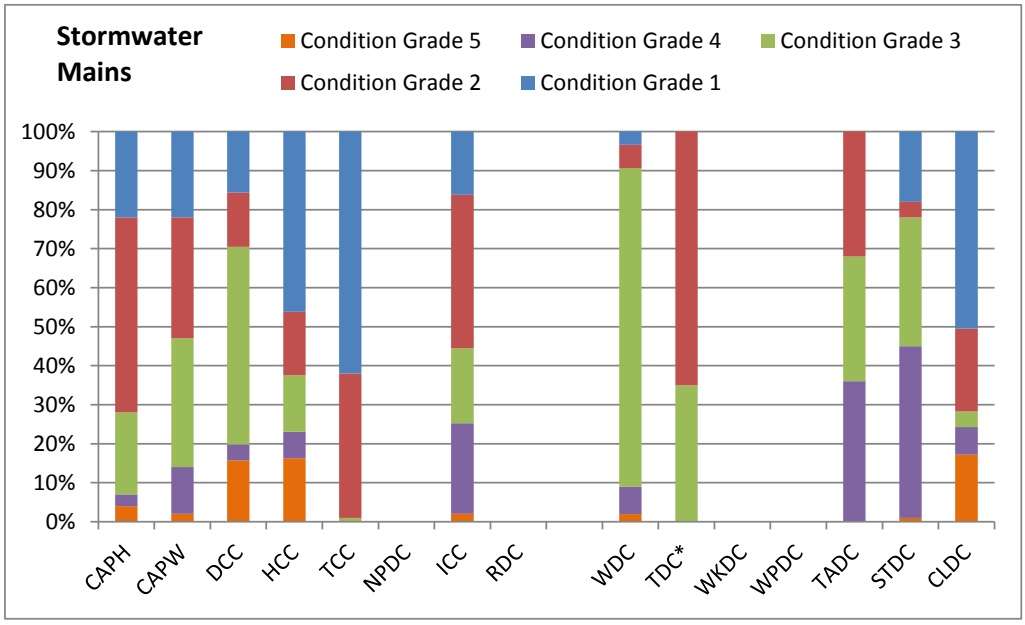
CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	A	B	B	C	N	C	N	C	D	D	E	N	D	C	N	WSA2

Where there is a data confidence of D or E there has generally been insufficient grading of the pipes carried out to be statistically representative of the system as a whole. Condition grading of water

mains were not reported by New Plymouth, Rotorua, Waipa and Clutha as this is an area for proposed future development of their asset management systems. Condition grading was not reported on by New Plymouth, Rotorua and Waipa for wastewater mains and in the case of stormwater mains by New Plymouth, Rotorua, Waipa and Waikato. Veolia Water's contract for Papakura does not cover stormwater. Pipe condition data for Rotorua and Timaru relates to the respective areas covered by the urban water supplies reported on rather than the whole district.

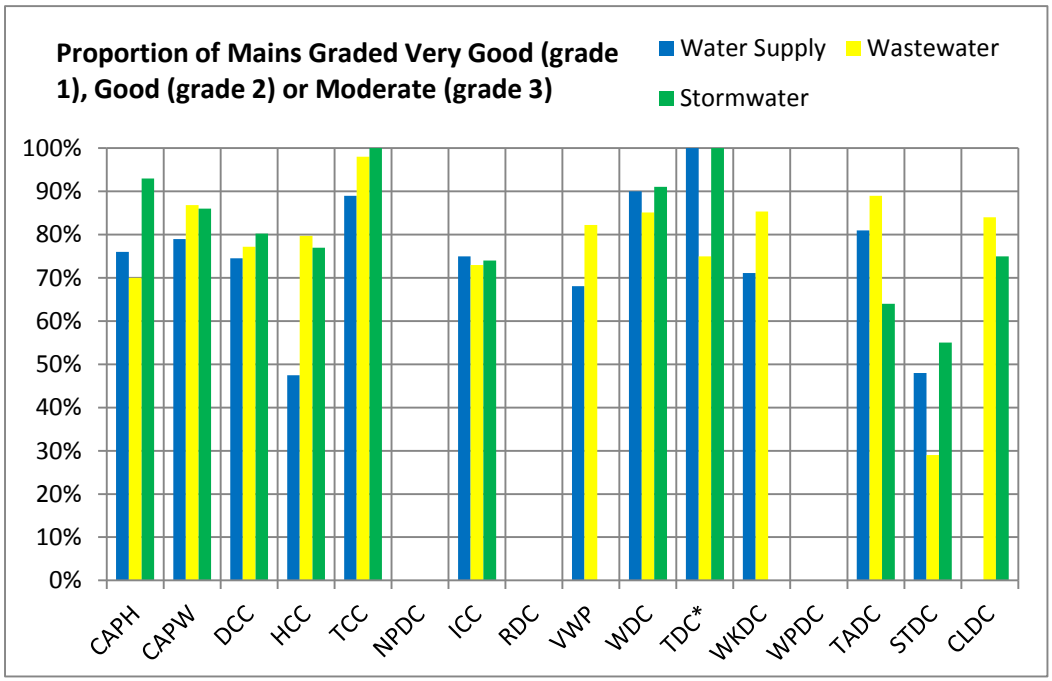


CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	A	B	B	B	N	E	N	B	D	D	E	N	D	C	D	WWA2



CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC		WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	A	B	B	C	N	E	N		D	D	N	N	E	C	D	SWA2

The proportion of pipe mains that have been assessed with a condition grading of 1 (very good), 2 (good) or 3 (moderate) is shown in the following chart. Grade 3 has been included as most water asset managers consider grade 3 (some internal or external degradation with only some deterioration beginning to be reflected in performance) as being a marginally acceptable condition.



Pricing

(a) Water Supply

Water is an essential resource that should be managed in a way that optimises the benefits of its use while minimising its wastage. Water demand can, to some extent, be managed by charging on the basis of water usage and charging in this way is a viable option, even in a location where there are plentiful supplies of cheaply obtained water, as managing demand can reduce the size, and hence cost, of the supply infrastructure. However, the decision to pursue a policy of introducing additional water meters has to be balanced against the cost associated with the installation and on-going monitoring of them. Water meter policy by district is summarised below:

CAPH	About 80% of the non-residential properties are metered. Only a few residential properties are metered for monitoring (not charging) purposes. There are no plans to extend metering to urban residential properties

CAPW	About 60% of the non-residential properties are metered. Very few residential properties (about 1%) are metered. Metering of residential properties is optional. No plans to actively extend metering to residential properties.
DCC	A few urban residential properties are metered for monitoring purposes only. Most non-residential properties are metered. Future policy is to continue with status quo.
HCC	A few urban residential properties metered for monitoring purposes only. Most non-residential properties are metered. No plans to extend metering in urban areas.
TCC	Universal metering
NPCC	About 200 urban residential properties are metered. Rural and high water use properties are either metered or on restricted flow. No plans to introduce universal metering.
ICC	No residential properties are metered. Most non-residential properties are metered. No plans to introduce meters to urban residential areas.
RDC	Urban residential properties not metered. Most non-residential and rural residential metered. Future policy is to continue with status quo.
VWP	Universal metering
WDC	Universal metering
TDC	Most urban non-residential properties metered but very few urban residential properties have meters. Most rural properties that are not metered are on restricted flow. No immediate plans to introduce additional meters.
WKDC	About 20% of residential properties are metered. Most non-residential properties are metered. Moving to universal metering over a ten year timeframe.
WPDC	About 10% of urban areas are metered. Most rural properties are metered. Long term aim is for universal metering.
TADC	A few urban residential properties on meters for general monitoring purposes only. Most non-residential and rural residential metered. No plans to introduce meters to urban residential areas.
STDC	Most non-residential and rural residential metered. Only a few meters in urban residential areas. No plans to further introduce meters to urban residential areas.
CLDC	All rural and one township fully metered. Other urban residential areas not metered. Policy re introduction of additional water meters under review.

Three of the districts (Tauranga, Papakura and Whangarei) have universal metering. Of the remainder there are two main approaches that have been adopted, either a plan to move to universal metering (Waikato and Waipa) or a continuation of the status quo where non-residential and rural residential properties are generally metered or have flow restriction, in view of their potential for greater water usage, while urban residential properties remain unmetered.

While the correlation is not that convincing, the three districts with universal metering have the lowest urban residential water consumption rates (200 litres per person per day or less). However this relatively low consumption rate is also achieved by Hamilton (without benefit of water metering). See also comments under Water Consumption in the Non-Financial Performance Measures of this report.

Pricing of water is signalled to customers where a targeted charge (often referred to as a uniform annual charge) forms part of the annual rates demand, or more overtly where water metering is employed and charging is based upon water use, or on the basis of a limited flow where flow restrictors are in place. Some districts indicate on their rates demands how much of the general

rates will be applied to specific activities, eg Wellington and Timaru, where the rates demand indicates that in addition to a uniform annual charge a specified proportion of the property value based general rates paid will be allocated to water supply.

Targeted water charges (including GST) for residential properties are summarised below. A standardised 200 m^3 (typical of annual consumption by urban residential properties) is used for comparative purposes where water is metered.

CAPH	$400 annual charge or $456 for 200 m^3 if metered
CAPW	$138 annual charge or $509 for 200 m^3 if metered
DCC	$415 annual charge
HCC	No targeted water charge
TCC	$342 for metered use of 200 m^3
NPCC	$295 annual charge or $239 for 200 m^3 if metered
ICC	$287 annual charge (equates to use of 204 m^3 where metered)
RDC	$213 annual charge. Also this is the minimum annual charge if metered (equates to use of 224 m^3)
VWP	$260 for metered use of 200 m^3
WDC	$430 for metered use of 200 m^3
TDC	$234 annual charge
WKDC	$400 annual charge or range of costs ($431 to $689) for metered use of 200 m^3
WPDC	$345 annual charge or $302 for metered use of 200 m^3
TADC	$285 annual charge
STDC	$492 annual charge or $552 for metered use of 200 m^3
CLDC	$365 average annual charge. Actual charge based on cost of running individual water zones, but no customer charged more than 25% above the average charge.

There is considerable variation in water pricing and in most cases there will be a difference between the revenue collected from fees, charges and other water related revenue (eg revenue from providing water supply to an adjacent district) and the cost of providing the service. As noted in the National Infrastructure Plan …'the Local Government Act 2002 provides a great deal of flexibility in how local authorities recover the cost of providing water services'… and …'this flexibility enables communities and councils to decide what degree of cross-subsidisation, if any, is appropriate for the delivery of water services'. In practice this means that other funds available to local authorities can be used to cover any deficit.

In terms of demand management it is only where price charging is on a metered basis that there will be direct encouragement for users to conserve water. Price signals provided by annual charges or statements regarding the proportion of general rates that are allocated to cover the cost of water supply are unlikely to be effective in this regard as such charges will be seen as just one of the many cost of owning a property and not something an individual customer can influence by reducing water use.

Of the three districts where universal metering is used for water charging, average per person water use by residents (in urban areas) is lowest in Whangarei where the pricing is highest.

In a number of instances where installation of a water meter on an urban residential property is voluntary, the price for typical average household consumption is greater where the water is

metered than the (alternative) annual charge. The decision to opt for metering would therefore be made only where water use is anticipated to be below average (eg apartment accommodation). In the case of Wellington in particular the pricing actively discourages most residents from signing up to water metering.

(b) Wastewater

Targeted Wastewater Charges (including GST) for residential properties are summarised below:

CAPH	No targeted wastewater charge
CAPW	$115 annual charge
DCC	$392 annual drainage charge (for wastewater and stormwater)
HCC	No targeted wastewater charge
TCC	Annual charge of $345.
NPCC	$479 annual charge
ICC	$208 annual charge
RDC	$377 annual charge
VWP	$494 (based on use of 200 m^3 of water)
WDC	$651 annual charge
TDC	$282 annual charge
WKDC	$538 to $763 annual charge depending on zone.
WPDC	$448 annual charge
TADC	$534 annual charge
STDC	$483 annual charge
CLDC	$274 annual charge

With the exception of Papakura, where there is a charging regime for wastewater based in part on water usage, charging for wastewater services is generally through an annual charge. For some there are additional charges if the property has more than one connection.

As for water supply, the price that customers are being charged for wastewater services is not always clear because of the use of general rates and funds from other sources to cover part of the cost of wastewater services. Also, pricing will not influence usage of wastewater services and an annual charge, where applied, will be seen as one of the unavoidable costs of owning a property.

(c) Stormwater

An annual charge for stormwater services is not generally applied. Exceptions are Invercargill ($93 annual charge) Waikato ($194 annual charge) and Clutha ($147 annual charge). In Dunedin an annual drainage charge covers both wastewater and stormwater and is split between the two in the general proportion of the respective costs of providing the service.

FINANCIAL PERFORMANCE

The 'total costs' reported in this section are in line with normal accountancy practice and cover the immediate costs in the year associated with providing the service together with the assessed annual reduction in the capital value of the assets associated with the service provided (depreciation) and the costs incurred with providing financing for past capital upgrades (interest costs).

In most cases the costs as recorded include (internal) management costs associated with both operational and capital works. While there are instances, eg New Plymouth, where internal costs are separately recorded in projects established for specific capital works, and then combined with external costs associated with the investigation and establishment of the capital works for capitalisation purposes, the practice is not widespread.

As noted earlier, in the case of Rotorua and Timaru the financial data is based on the cost of providing water services to the (mostly) urban areas of the respective districts each reported on.

Papakura (Veolia Water) did not provide cost data citing commercial sensitivity.

The following charts compare the revenue from fees and charges (uniform annual charges, connection fees and user charges based on metering or where properties are on a restricted flow) with the total cost to the district of providing the service for each of the three waters.

The cost impact upon a district is reduced if revenue is generated by exporting water to others or by importing wastewater for treatment. For water supply the chart also shows the unit cost to the district in providing the service to its own ratepayers:

$$\text{unit cost to district } (\$/m^3) = \frac{\text{total cost} - \text{revenue from supplying water to others}}{\text{volume of water supplied to system for own use*}}$$

**ie net of any water provided to adjacent districts*

and in the case of wastewater:

$$\text{unit cost to district } (\$/m^3) = \frac{\text{total cost} - \text{revenue from providing wastewater services to others}}{\text{own wastewater volume**}}$$

*** ie volume through own WWTPs plus any wastewater exported for treatment by others*

Tables and charts are also provided that show each of the main component costs:

- For water supply: energy costs/ cost of chemical and consumables/other external costs/ internal costs/depreciation/ interest.
- For wastewater : energy costs/ sludge disposal costs/other external costs/ internal costs/depreciation/ interest.
- For stormwater services: external costs/ internal costs/depreciation/ interest.

In the case of Capacity Hutt and Capacity Wellington the internal costs cover those of Capacity (a council controlled trading organisation or CCTO) together with the costs associated with overview of, and interaction with, the CCTO by the respective city councils.

'Other external costs' include, where applicable, costs associated with the purchase of bulk water, the cost of wastewater treatment services provided by an adjacent district and the cost of external contractors and consultants.

Overhead Allocation

In view of the various practices that districts adopt with regard to allocation of overhead costs, the aim for this survey had been to consistently evaluate internal costs on the basis of: internal costs = direct labour costs x 2.5. The 2.5 factor on direct labour costs (ie 2.5 times the salary costs associated with the hours applied to the work) is typical of an engineering consultancy business. In the event, while a few districts provided internal costs based on this approach most were unable to do so and provided the internal costs together with allocated overheads as recorded in their accounts. Interestingly, one council (Hamilton) uses timewriting to record direct labour costs and applies a 2.4 factor to cover indirect labour and other overhead costs to arrive at an overall cost for own services. While they do not use time writing, Timaru commented that their estimated direct labour cost times 2.5 closely approximated the internal cost recorded in their accounts. Notwithstanding the different ways that the internal costs have been arrived at, it is believed that the consistency in this data across participant districts is no worse than if internal costs as recorded in the accounts of the respective districts had been used by all.

Cost and Price Comparison

As previously noted there is often a deficit between the revenue from fees and charges and the cost of providing the service. The way in which the deficit is resolved is generally itemised in the district's annual report, though often not at a component activity level. In most annual reports the operational deficit (or surplus) has the non-cash items (usually just depreciation) eliminated and is then combined with capital expenditure and together with the source of funding for the combined opex and capex is presented in a 'funding impact statement'. The overall operational plus capital cost deficit is made up through a combination of funding from:

- general rates (usually property value based);
- other revenues (eg from services provided to non-ratepayers, infringement fees,etc);
- proceeds from sale of assets;
- development contributions received;
- subsidies received;
- reserves; and
- loan accounts.

The funding impact statement may also show transfers to reserves and repayment of loans. Thus it is generally not possible to determine from a district's annual report how much of the current year's general rates (or other sources of funding) are applied to support operational activities.

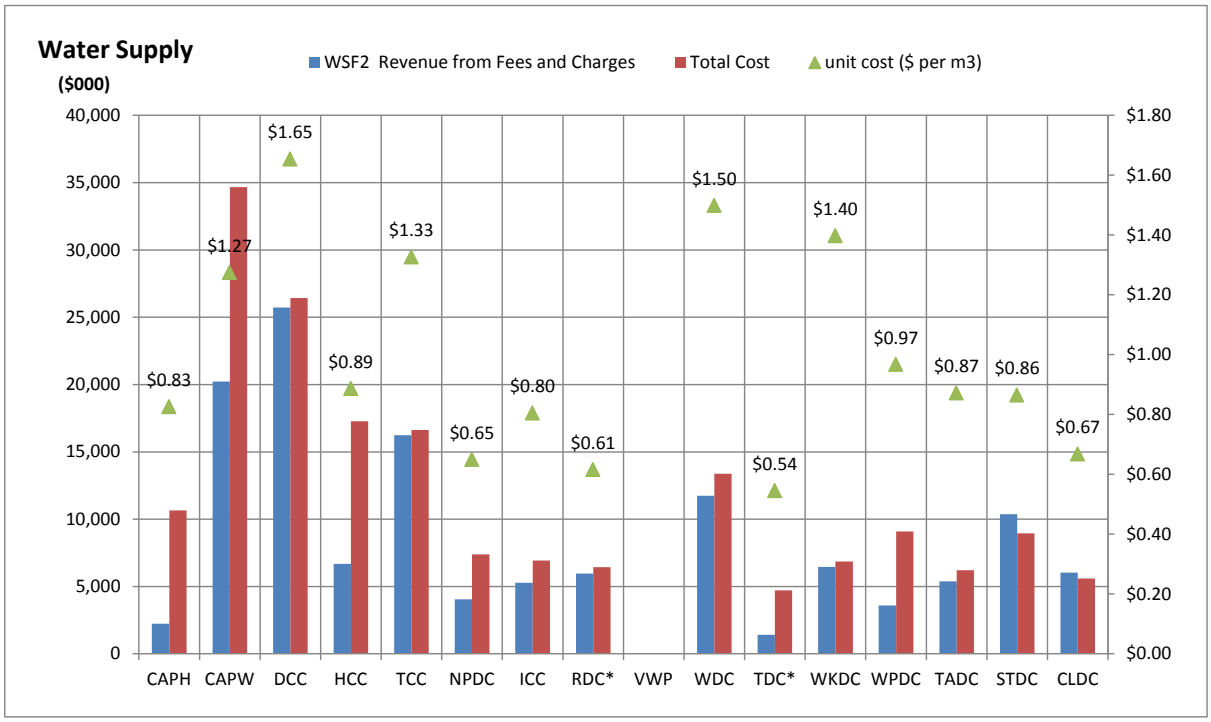
The way in which these funding impact statements are currently presented varies, but with the implementation of the TAFM reforms through the Local Government (Financial Reporting)

Regulations 2011 there will be a greater consistency in this reporting beginning in the 2012/13 year. These regulations prescribe the manner in which funding impact statements are to be presented at overall council level and for groups of activities.

To provide for even greater transparency it is strongly recommended that separate accounts are used for each of the three waters and that separate funding impact statements for each are presented in the annual report.

The trends in the total cost per serviced property for those districts where data is available for more than one year are also shown. The costs are as recorded in the financial systems of the respective districts and may include some cross-subsidisation from other activities within the organisation.

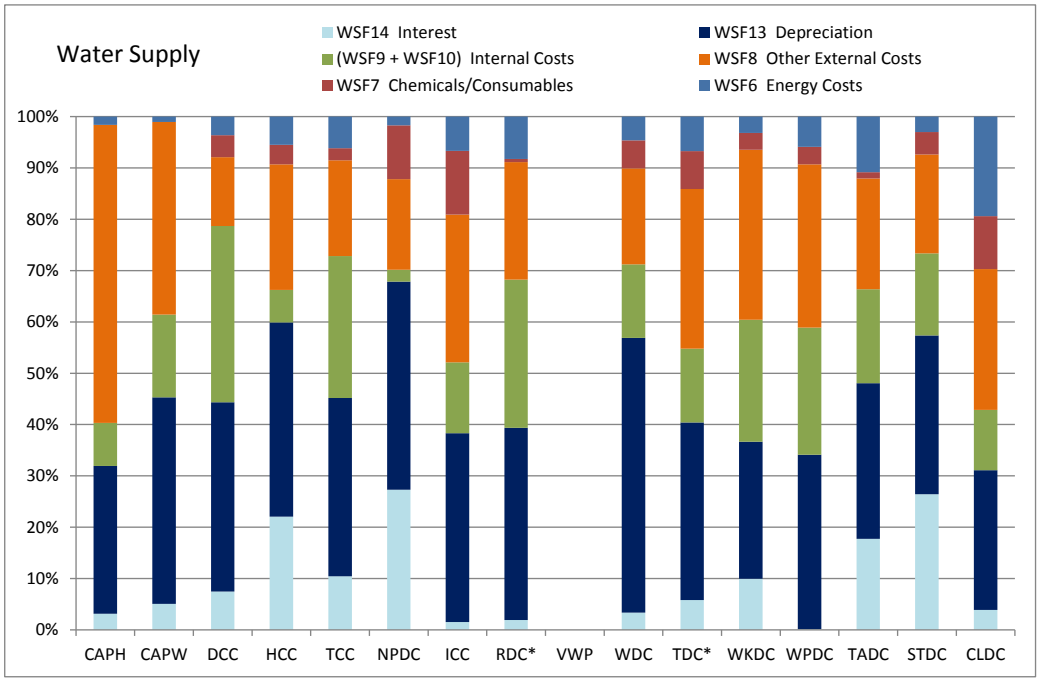
(a) Water Supply

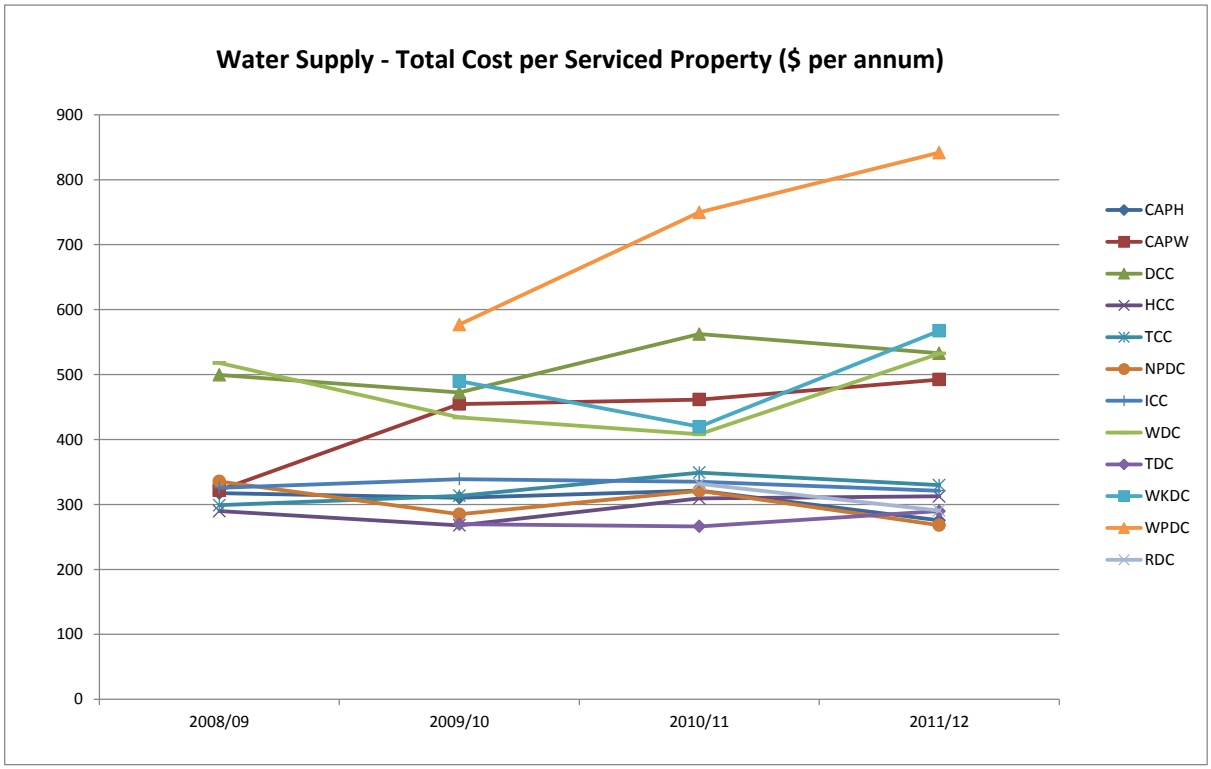


($000)	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC*
WSF1 Revenue from Water Supply to Others	-	-	-	775	-	-	-	-
WSF2 Revenue from Fees and Charges	2,235	20,229	25,735	6,677	16,248	10,912	5,285	5,958
WSF6 Energy Costs	174	365	953	950	1,025	126	465	530
WSF7 Chemicals/Consumables	-	-	1,139	658	390	774	858	40
WSF8 Other External Costs	6,182	13,012	3,544	4,225	3,102	-	1,999	1,475
(WSF9 + WSF10) Internal Costs	891	5,588	9,075	1,099	4,599	168	958	1,857
WSF13 Depreciation	3,065	13,934	9,753	6,537	5,778	2,991	2,548	2,409
WSF14 Interest	337	1,764	1,973	3,815	1,738	2,016	107	124
Total Cost	10,649	34,663	26,437	17,283	16,632	6,076	6,935	6,435

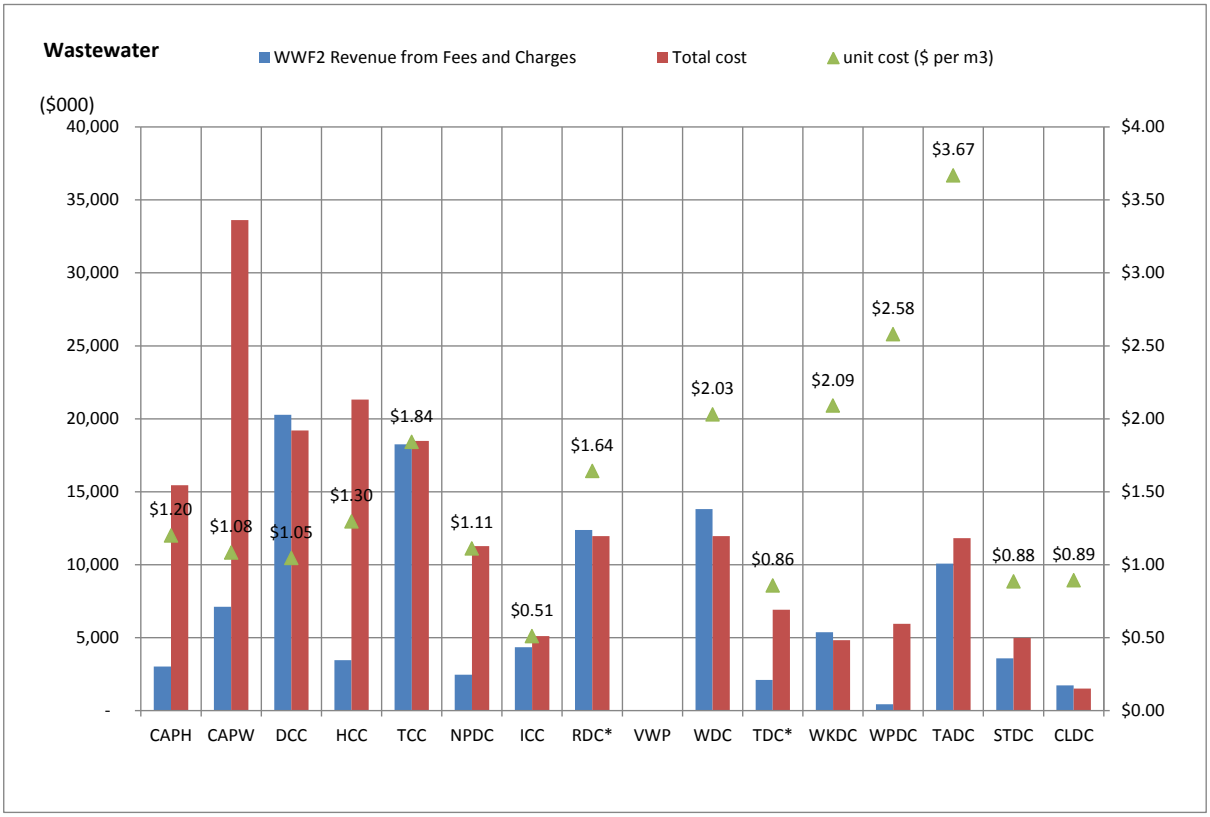
*Water Supply cost data for Rotorua and Timaru relate to urban water supplies only

($000)	VWP	WDC	TDC*	WKDC	WPDC	TADC	STDC	CLDC
WSF1 Revenue from Water Supply to Others	-	-	-	-	-	-	-	-
WSF2 Revenue from Fees and Charges	-	11,748	1,414	6,457	3,583	5,384	10,379	6,037
WSF6 Energy Costs	-	618	317	218	535	672	268	1,086
WSF7 Chemicals/Consumables	-	733	348	225	310	77	394	579
WSF8 Other External Costs	-	2,497	1,468	2,270	2,889	1,337	1,724	1,537
(WSF9 + WSF10) Internal Costs	-	1,918	678	1,627	2,251	1,136	1,431	658
WSF13 Depreciation	-	7,151	1,632	1,831	3,088	1,881	2,772	1,524
WSF14 Interest	-	451	275	682	12	1,099	2,366	219
Total Cost	-	13,369	4,718	6,853	9,085	6,202	8,957	5,603





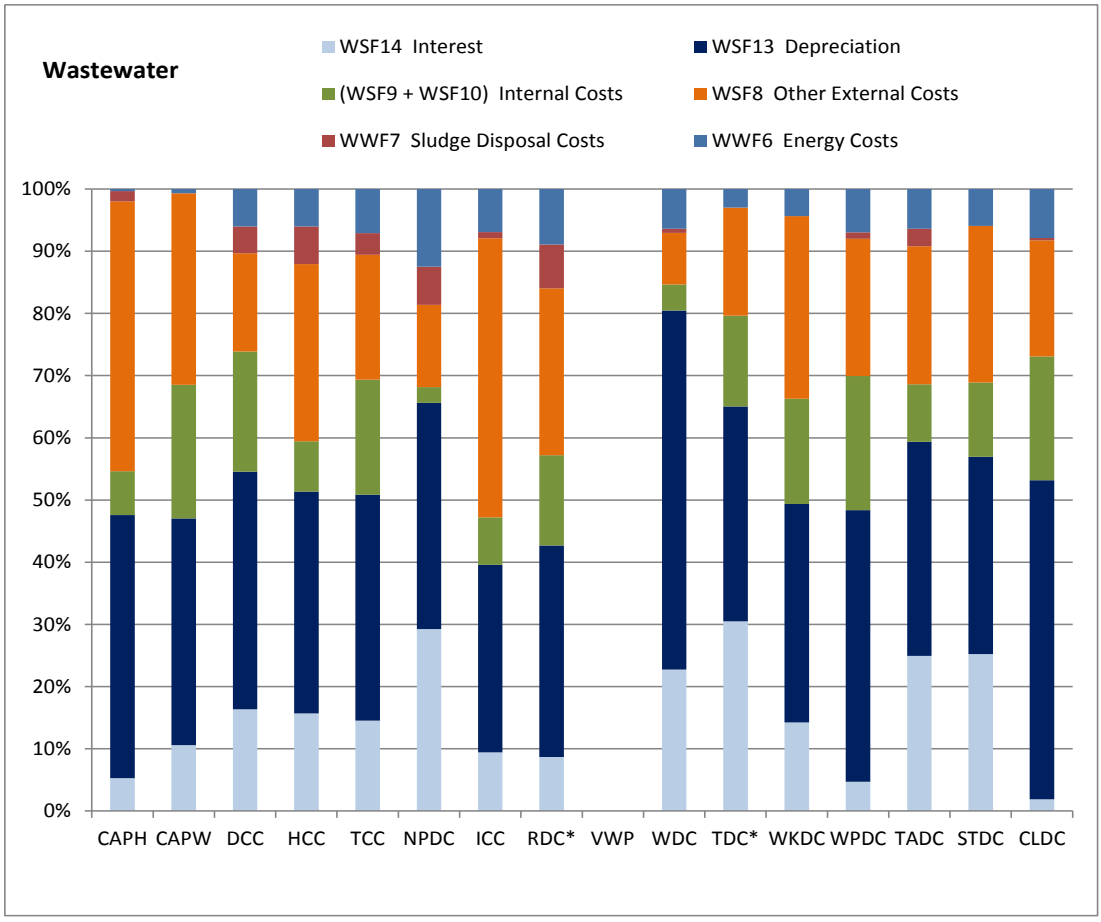
(b) Wastewater

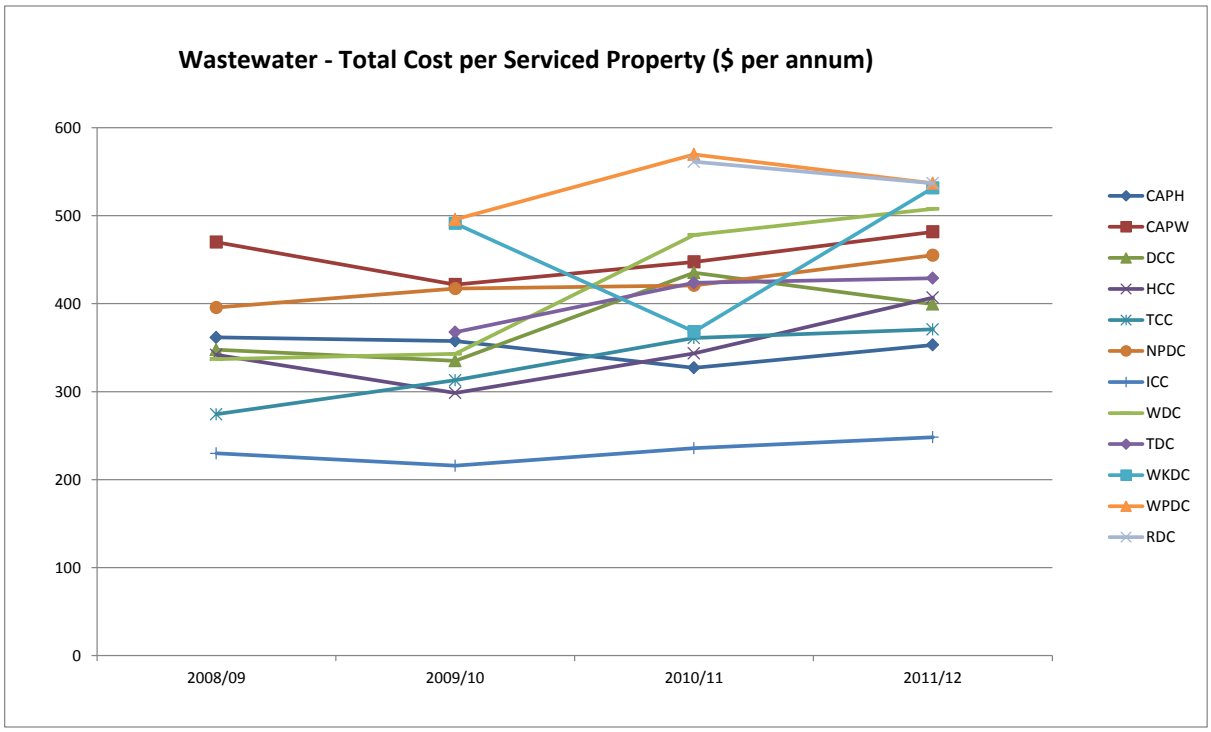


($000)	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC*
WWF1 Revenue for Wastewater Service to Others	1,796	-	-	9	230	-	-	82
WWF2 Revenue from Fees and Charges	3,021	7,117	20,273	3,445	18,252	2,462	4,343	12,383
WWF6 Energy Costs	49	224	1,154	1,280	1,310	1,407	353	1,067
WWF7 Sludge Disposal Costs	257	14	825	1,292	641	695	50	843
WSF8 Other External Costs	6,705	10,342	3,039	6,075	3,711	1,491	2,288	3,202
(WSF9 + WSF10) Internal Costs	1,090	7,226	3,704	1,723	3,417	286	391	1,739
WSF13 Depreciation	6,531	12,256	7,339	7,602	6,715	4,098	1,537	4,063
WSF14 Interest	816	3,559	3,136	3,338	2,683	3,298	480	1,036
Total cost	15,448	33,621	19,197	21,311	18,477	11,275	5,099	11,950

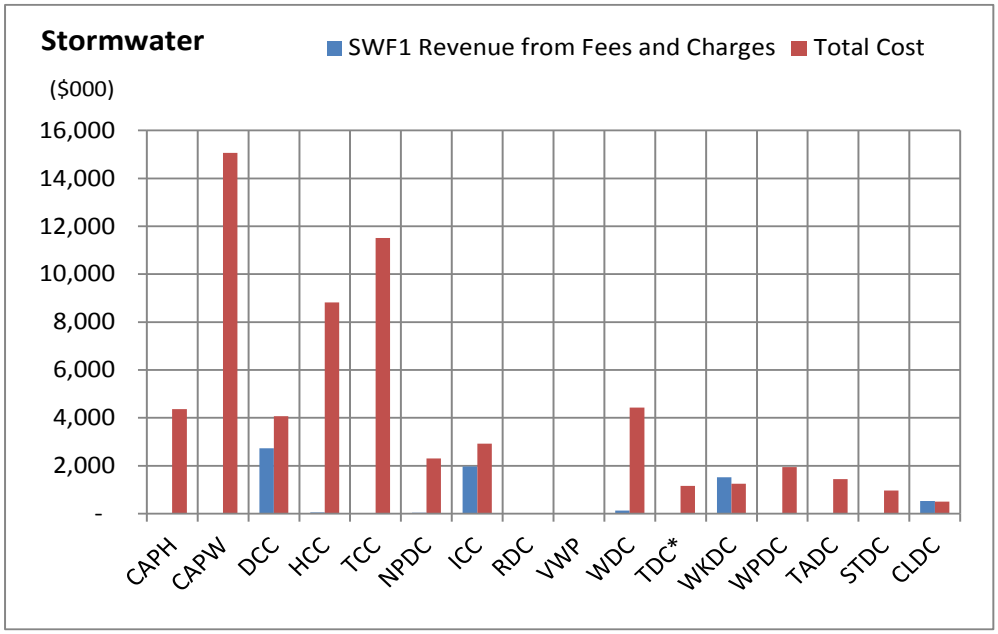
($000)	VWP	WDC	TDC*	WKDC	WPDC	TADC	STDC	CLDC
WWF1 Revenue for Wastewater Service to Others	-	-	-	-	-	-	-	-
WWF2 Revenue from Fees and Charges	-	13,804	2,097	5,373	431	10,072	3,582	1,723
WWF6 Energy Costs	-	764	206	210	415	754	294	118
WWF7 Sludge Disposal Costs	-	77	-	-	62	332	-	5
WSF8 Other External Costs	-	994	1,200	1,416	1,312	2,624	1,252	281
(WSF9 + WSF10) Internal Costs	-	497	1,010	816	1,283	1,096	593	299
WSF13 Depreciation	-	6,907	2,388	1,693	2,598	4,069	1,577	771
WSF14 Interest	-	2,716	2,106	686	279	2,945	1,255	28
Total cost	-	11,957	6,911	4,821	5,949	11,820	4,971	1,502

*Wastewater cost data for Rotorua and Timaru relates to area covered by urban water supplies only


Wastewater
WSF14 Interest
WSF13 Depreciation
(WSF9 + WSF10) Internal Costs
WSF8 Other External Costs
WWF7 Sludge Disposal Costs
WWF6 Energy Costs
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
CAPH CAPW DCC HCC TCC NPDC ICC RDC* VWP WDC TDC* WKDC WPDC TADC STDC CLDC


Wastewater - Total Cost per Serviced Property ($ per annum)
600
500
400
300
200
100
0
2008/09
2009/10
2010/11
2011/12
CAPH
CAPW
DCC
HCC
TCC
NPDC
ICC
WDC
TDC
WKDC
WPDC
RDC

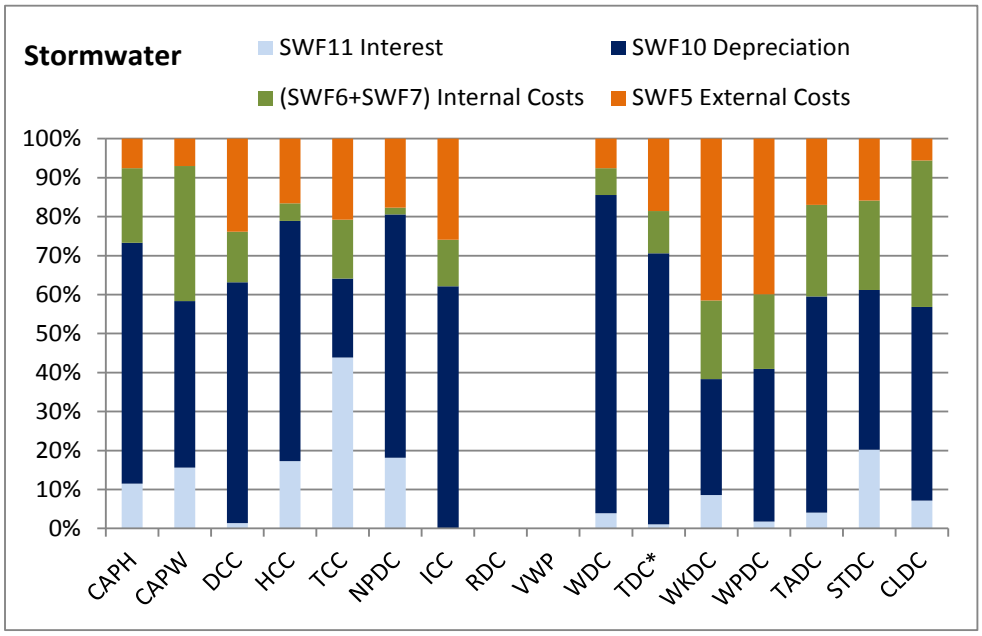
(c) Stormwater

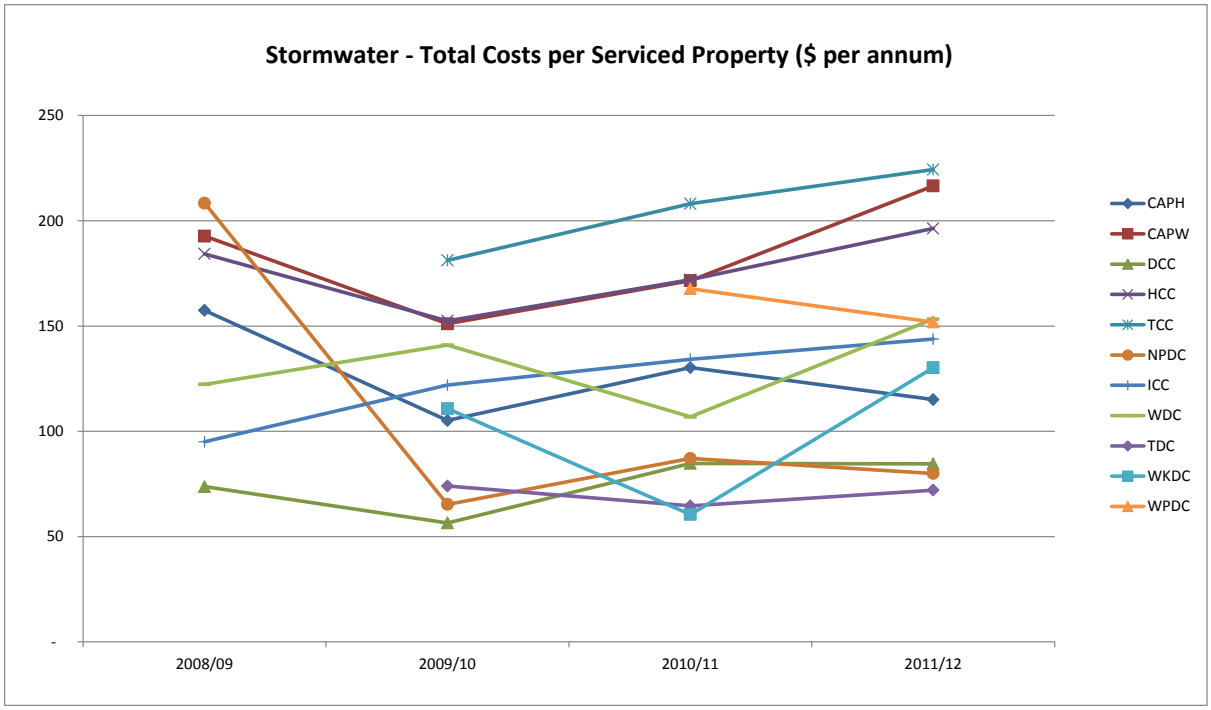


($000)	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC
SWF1 Revenue from Fees and Charges	12	-	2,733	52	11	43	1,975	-
SWF5 External Costs	331	1,057	970	1,463	2,389	408	757	-
(SWF6+SWF7) Internal Costs	835	5,222	528	398	1,740	41	349	-
SWF10 Depreciation	2,700	6,426	2,510	5,435	2,333	1,442	1,814	-
SWF11 Interest	503	2,356	57	1,521	5,052	419	-	-
Total Cost	4,369	15,061	4,065	8,817	11,515	2,309	2,920	-

*Stormwater data for Timaru relates to area covered by urban water supplies only

($000)	VWP	WDC	TDC*	WKDC	WPDC	TADC	STDC	CLDC
SWF1 Revenue from Fees and Charges	-	134	0	1,521	1	1	-	530
SWF5 External Costs	-	336	216	515	776	245	153	28
(SWF6+SWF7) Internal Costs	-	303	125	251	373	338	222	191
SWF10 Depreciation	-	3,618	808	370	761	798	396	252
SWF11 Interest	-	172	12	106	35	59	195	36
Total Cost	-	4,430	1,161	1,243	1,945	1,439	966	507





Operational costs

Operational costs (ie costs stripped of depreciation and interest) are the day to day running costs associated with operating water services. The (financial) efficiency with which the combined reticulation and treatment is being carried out can be determined by dividing the operational cost by the total volume of water or wastewater being treated. The unit operational costs are reduced where volume is increased in instances where water is treated and then exported to an adjacent district or wastewater imported for treatment. The unit operational cost for water supply is:

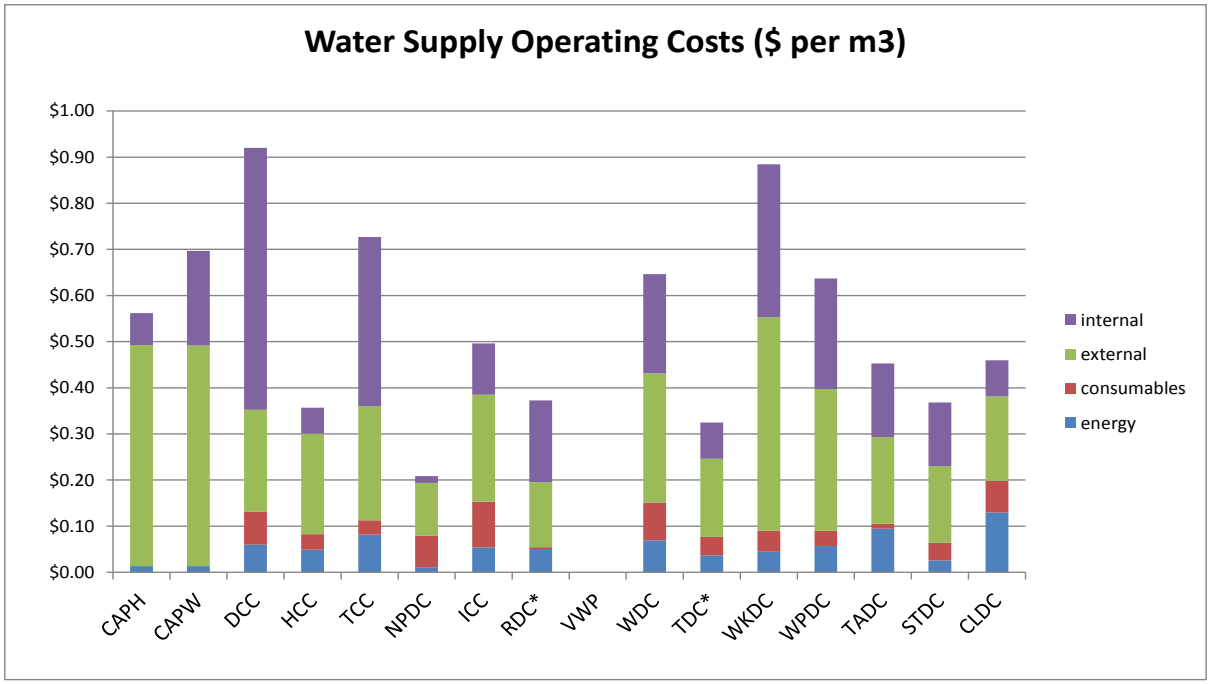
$$\text{unit operational cost } (\$/m^3) = \frac{\text{operational cost}}{\text{total water supplied to system (including any exported water)}}$$

and in the case of wastewater:

$$\text{unit operational cost } (\$/m^3) = \frac{\text{operational cost}}{\text{own wastewater plus any imported wastewater}}$$

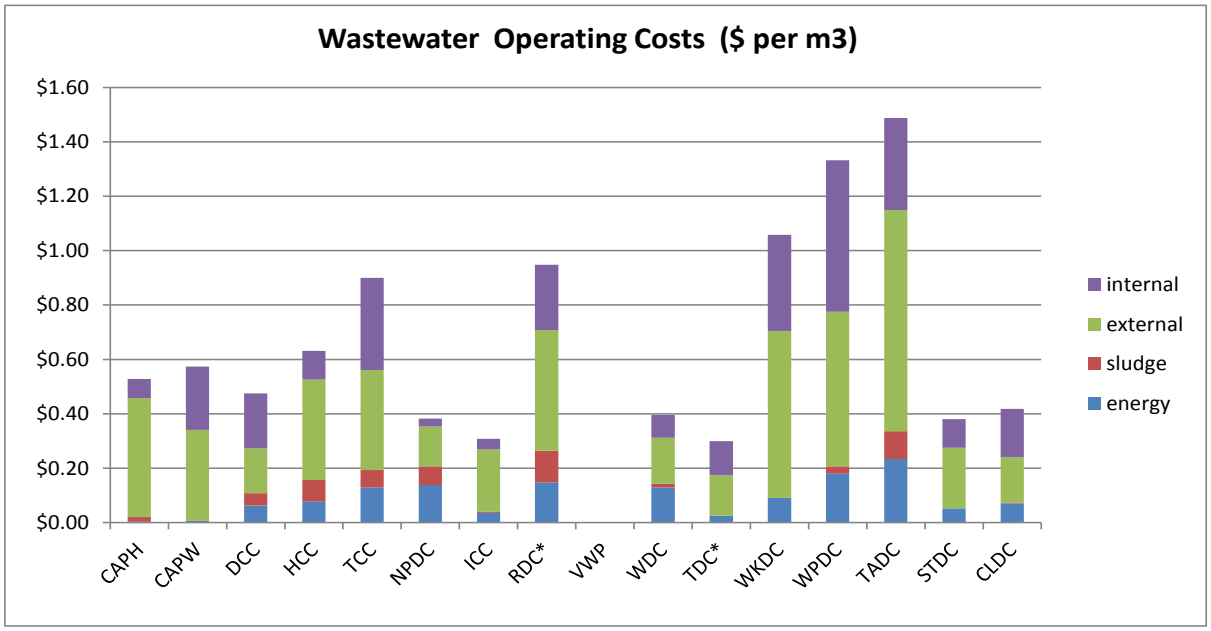
In instances where a proportion of the wastewater produced is exported for treatment (eg Wellington where about 9% of the wastewater is exported for treatment in Porirua) the unit operational cost reflects a combination of the efficiency of Wellington's own WWTP operations and the efficiency of the operation of Porirua's plant, as measured by the price paid for this service (which is included in the operational cost).

The major components that make up the unit operational costs are shown in the following charts.



*Water supply cost data for Rotorua and Timaru relate to their urban water supplies reported on. The wastewater cost data below relates to the area covered by these water supplies only.

Hutt and Wellington do not have costs associated with chemicals and consumables as all their bulk water is purchased from a third party (Greater Wellington Regional Council).



Some districts do not have any sludge disposal costs as sludge is being stockpiled on site, or alternatively, oxidation ponds were not desludged in the year.

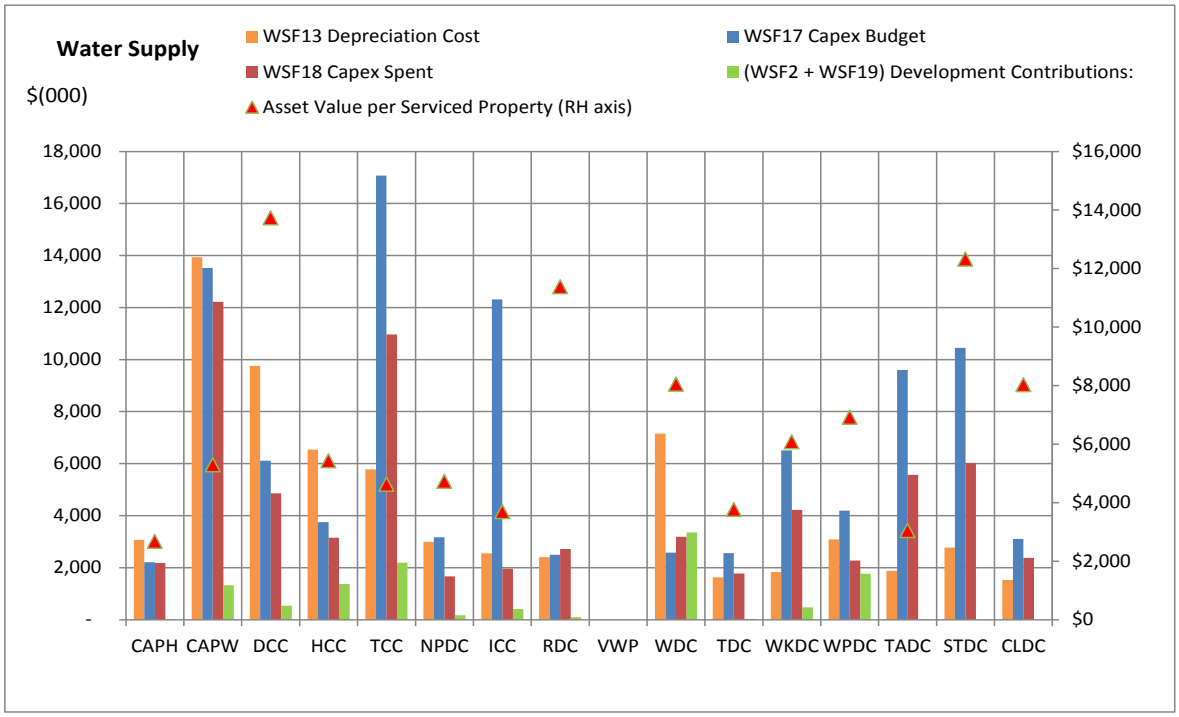
The relatively high unit operating cost for wastewater services incurred by Taupo relates to the many small WWTPs operated by that district (11 in addition to the plant serving the Taupo urban area) and resource consent requirements to dispose of effluent to land rather than discharge to water.

Capital Costs and Depreciation

While not specifically covered in the Local Government (Financial Reporting) Regulations 2011, the Cabinet Committee recommending the reporting changes proposed …'that all local authorities be required to disclose, by way of a note, the depreciation expense for assets used directly in the provision of each group of activities'. The recommendations went on to say that while depreciation is not an expense that directly needs funding, it is a proxy for the consumption of assets and that statement of the depreciation expense will help ratepayers judge whether capital expenditure is maintaining the asset base for each group of activities. This information can be readily provided by explicitly including depreciation in the operational component of the funding impact statement and then eliminating it.

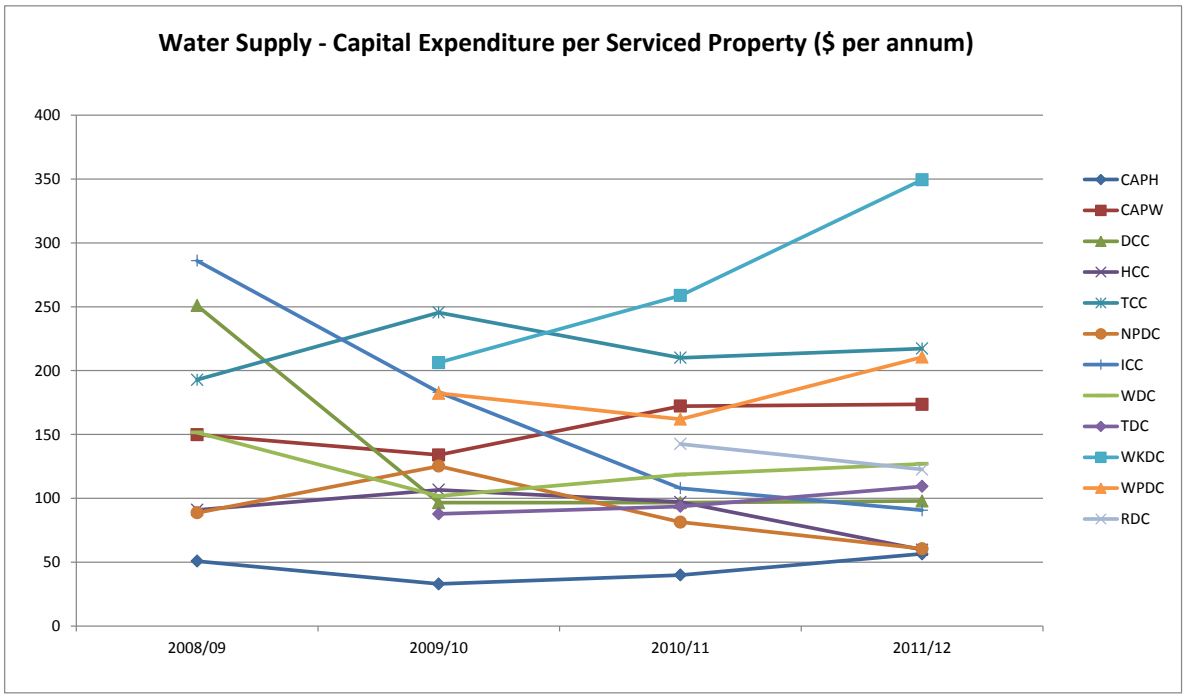
In the following charts the annual depreciation cost is compared with the actual capital expenditure and the budgeted capital expenditure. It is of interest to note that while all districts (with one exception) kept capex within budget, there were several where the actual expenditure was significantly below budget, indicating that the processes leading to implementation of the physical work fell behind schedule for one reason or another, or that the planning for the year's capital expenditure was over optimistic. The charts also show the current asset value per serviced property, a measure of the remaining value of investment (on a per property basis) in the infrastructure that has been made in the past.

(a**) Water Supply**

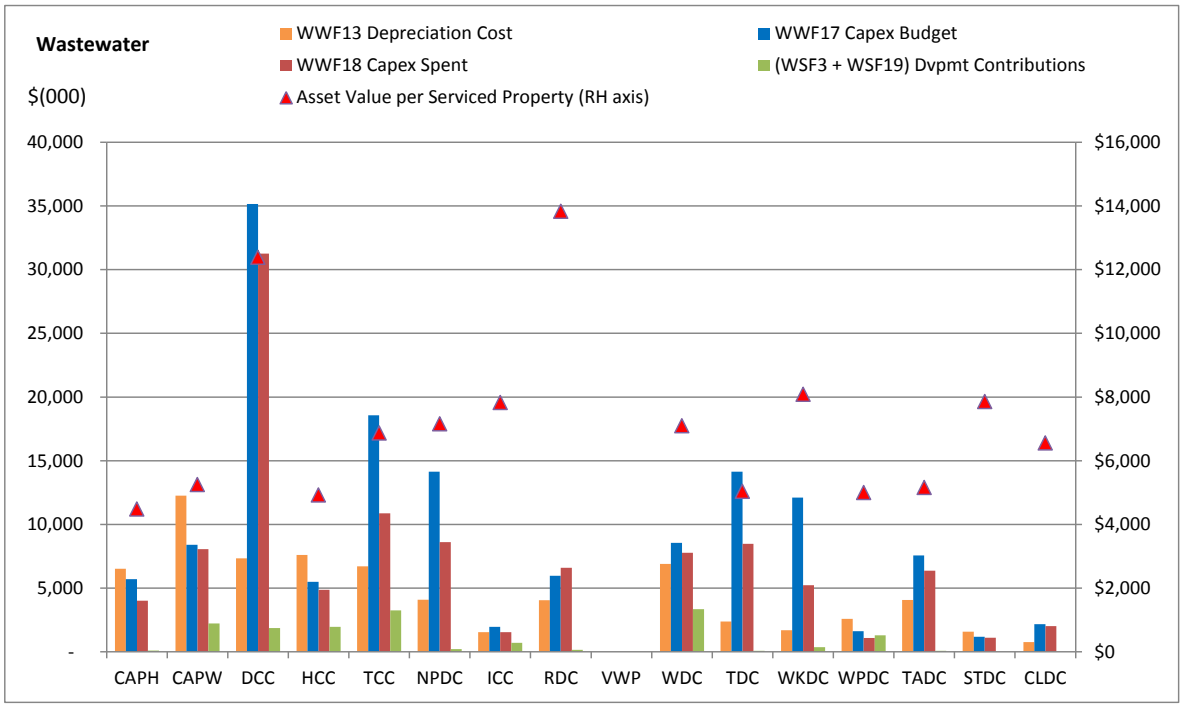


$(000)	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC
WSF13 Depreciation Cost	3,065	13,934	9,753	6,537	5,778	2,991	2,548	2,409
WSF17 Capex Budget	2,214	13,522	6,113	3,748	17,072	3,168	12,312	2,501
WSF18 Capex Spent	2,186	12,224	4,859	3,156	10,963	1,666	1,958	2,715
(WSF2 + WSF19) Development Contributions:	22	1,329	539	1,369	2,196	168	415	99
WSF20 Asset Value at Year End	103,000	372,000	680,784	286,511	232,865	129,815	79,613	251,711
Asset value per serviced property	$2,664	$5,283	$13,719	$5,423	$4,615	$4,718	$3,686	$11,363

$(000)	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC
WSF13 Depreciation Cost	-	7,151	1,632	1,831	3,088	1,881	2,772	1,524
WSF17 Capex Budget	-	2,584	2,557	6,512	4,195	9,600	10,447	3,106
WSF18 Capex Spent	-	3,190	1,780	4,220	2,272	5,571	6,023	2,378
(WSF2 + WSF19) Development Contributions:	-	3,353	33	474	1,768	24	-	-
WSF20 Asset Value at Year End	-	202,000	61,188	73,278	74,536	57,492	113,715	57,907
Asset value per serviced property		$8,042	$3,758	$6,066	$6,906	$3,033	$12,314	$8,025

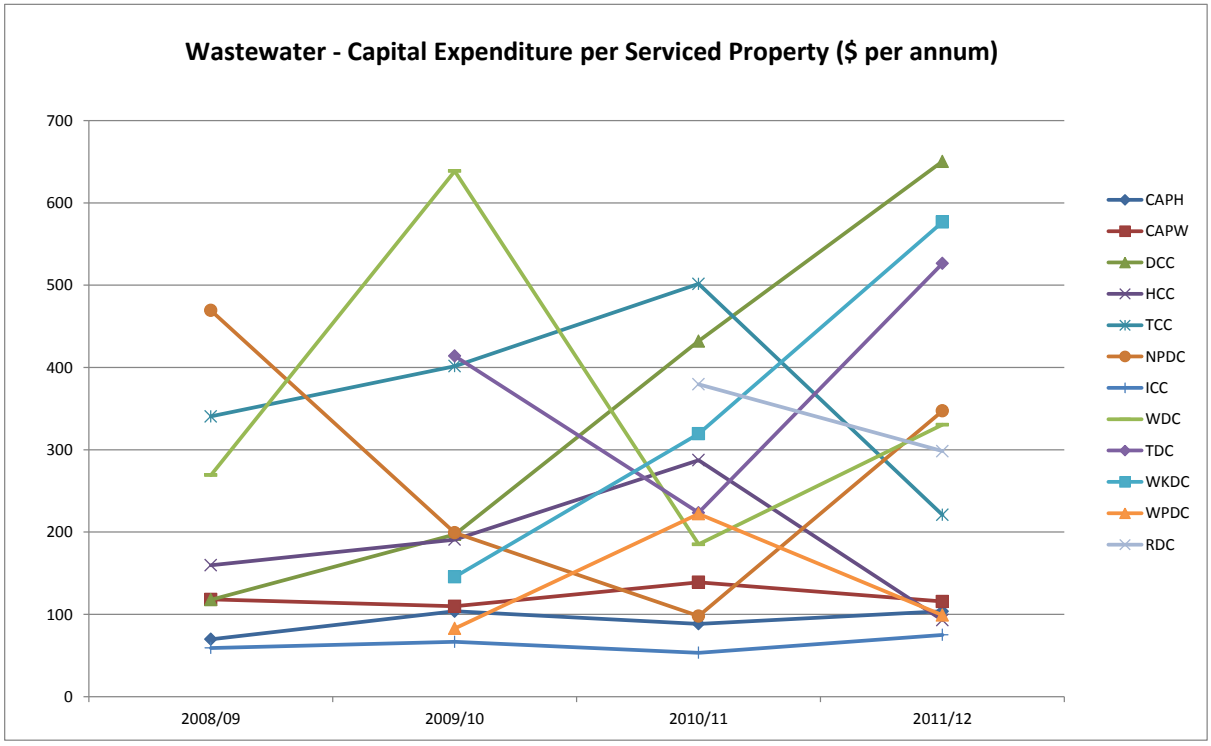


(b) Wastewater



($000)	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC
WWF13 Depreciation Cost	6,531	12,256	7,339	7,602	6,715	4,098	1,537	4,063
WWF17 Capex Budget	5,701	8,411	35,151	5,503	18,572	14,142	1,956	5,974
WWF18 Capex Spent	4,013	8,069	31,257	4,867	10,869	8,605	1,541	6,595
(WSF3 + WSF19) Dvpmt Contributions	95	2,228	1,860	1,973	3,257	217	705	157
WWF20 Asset Value at Year End	172,900	365,800	594,883	257,100	337,710	177,097	160,489	305,539
Asset Value per Serviced Property	$4,472	$5,240	$12,379	$4,912	$6,863	$7,147	$7,815	$13,820

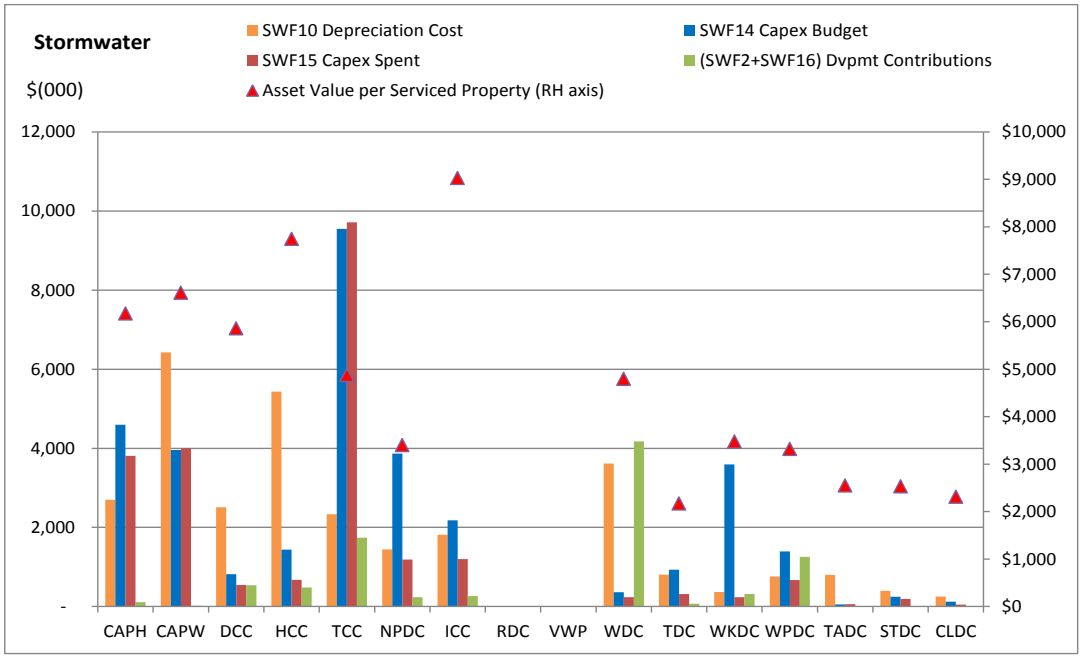
($000)	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC
WWF13 Depreciation Cost	-	6,907	2,388	1,693	2,598	4,069	1,577	771
WWF17 Capex Budget	-	8,555	14,138	12,117	1,613	7,574	1,184	2,167
WWF18 Capex Spent	-	7,782	8,482	5,232	1,098	6,376	1,110	2,014
(WSF3 + WSF19) Dvpmt Contributions	-	3,346	92	359	1,295	86	-	-
WWF20 Asset Value at Year End	-	166,879	81,070	73,278	55,295	91,797	58,397	35,640
Asset Value per Serviced Property		$7,086	$5,032	$8,079	$4,990	$5,151	$7,848	$6,551



Capital expenditure can, for legitimate means, be expected to vary from year to year to a greater extent than operational expenditure, for example where there is investment in a new WWTP or a halt to asset replacement due to budget constraints. Trends in capital expenditure for each of the three waters are shown for those districts where there is data available for more than one year. While customers are buffered from year on year variations through draw down of reserve funds or raising of loans for major capital expenditure there are benefits in districts keeping their capital expenditure reasonably steady from year to year in terms of the impact upon local industry tendering for the work.

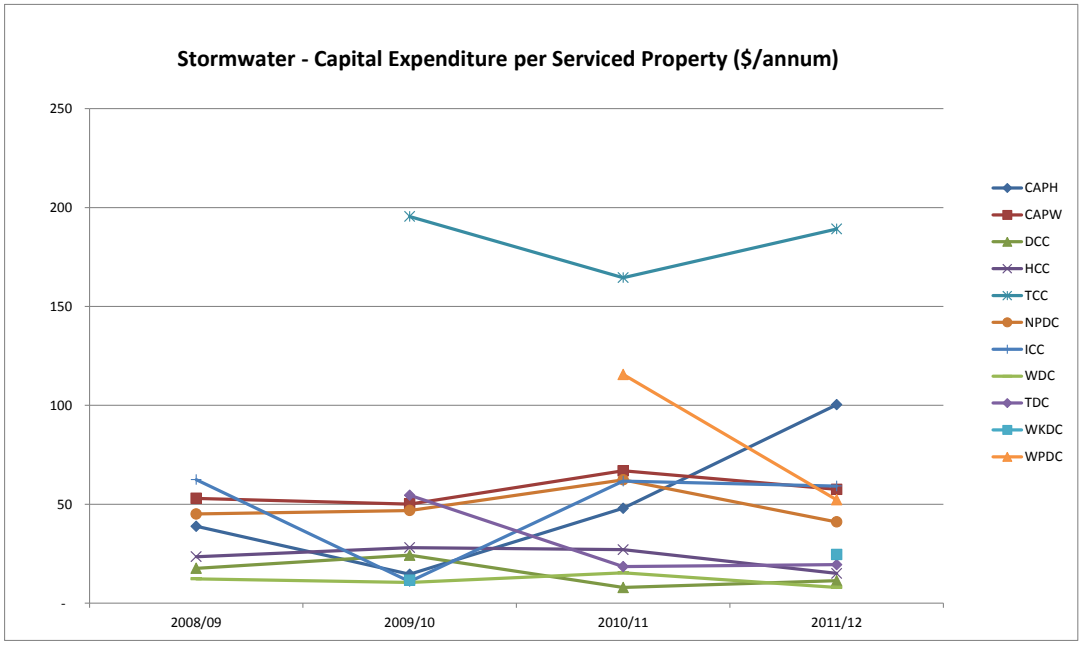
The steady increase in Dunedin's wastewater capex since 2008/09 relates to a major upgrade of the Tahuna WWTP.

(c) Stormwater



($000)	CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC
SWF10 Depreciation Cost	2,700	6,426	2,510	5,435	2,333	1,442	1,814	-
SWF14 Capex Budget	4,593	3,957	815	1,436	9,547	3,869	2,177	-
SWF15 Capex Spent	3,808	4,001	544	676	9,712	1,186	1,201	-
(SWF2+SWF16) Dvpmt Contributions	109	21	538	480	1,742	236	267	-
SWF17 Asset Value at Year End	234,400	459,600	281,611	347,868	250,258	98,143	183,228	-
Asset Value per Serviced Property	*$6,175*	*$6,609*	*$5,860*	*$7,747*	*$4,875*	*$3,400*	*$9,027*	

($000)	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC
SWF10 Depreciation Cost	-	3,618	808	370	761	798	396	252
SWF14 Capex Budget	-	359	931	3,591	1,391	53	246	122
SWF15 Capex Spent	-	237	313	235	669	57	191	48
(SWF2+SWF16) Dvpmt Contributions	-	4,174	73	313	1,254	-	-	-
SWF17 Asset Value at Year End	-	142,653	34,943	33,151	42,520	48,794	21,951	10,236
Asset Value per Serviced Property		*$4,796*	*$2,169*	*$3,474*	*$3,321*	*$2,548*	*$2,531*	*$2,313*



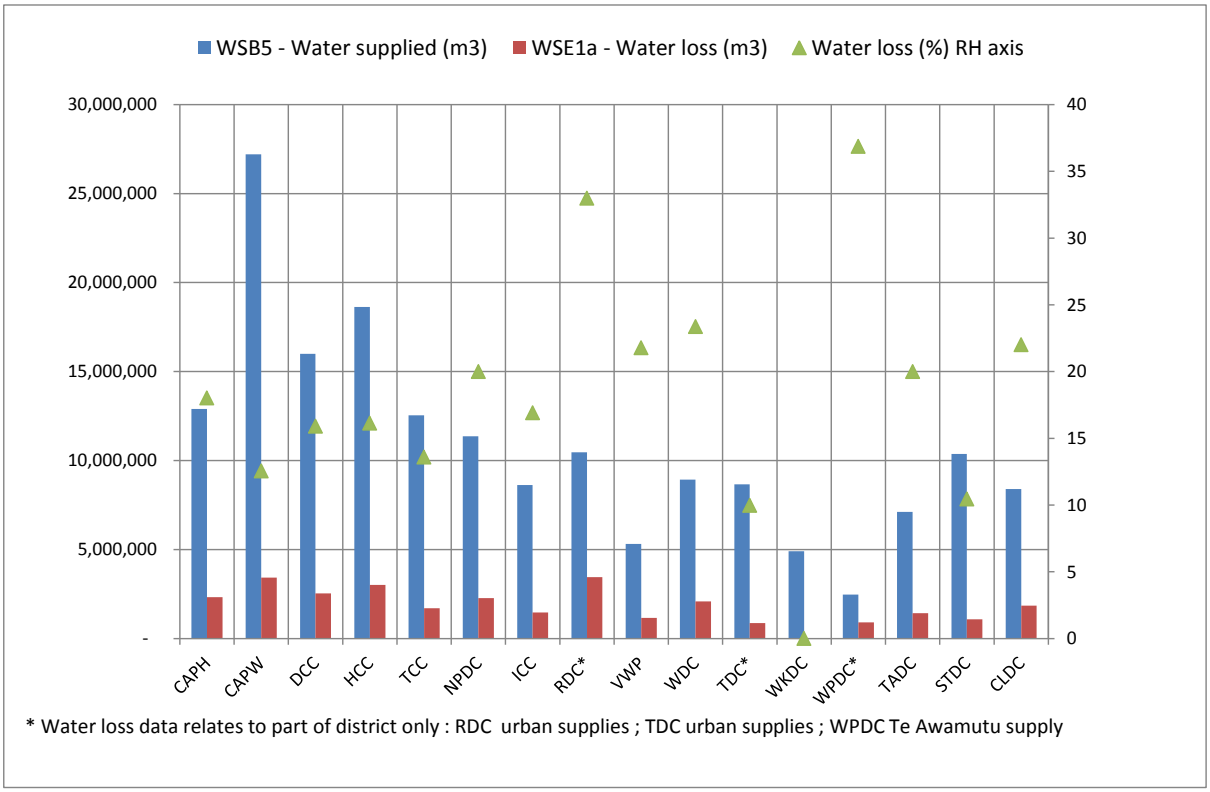
NON-FINANCIAL PERFORMANCE MEASURES

(a) Water Supply

Water Loss

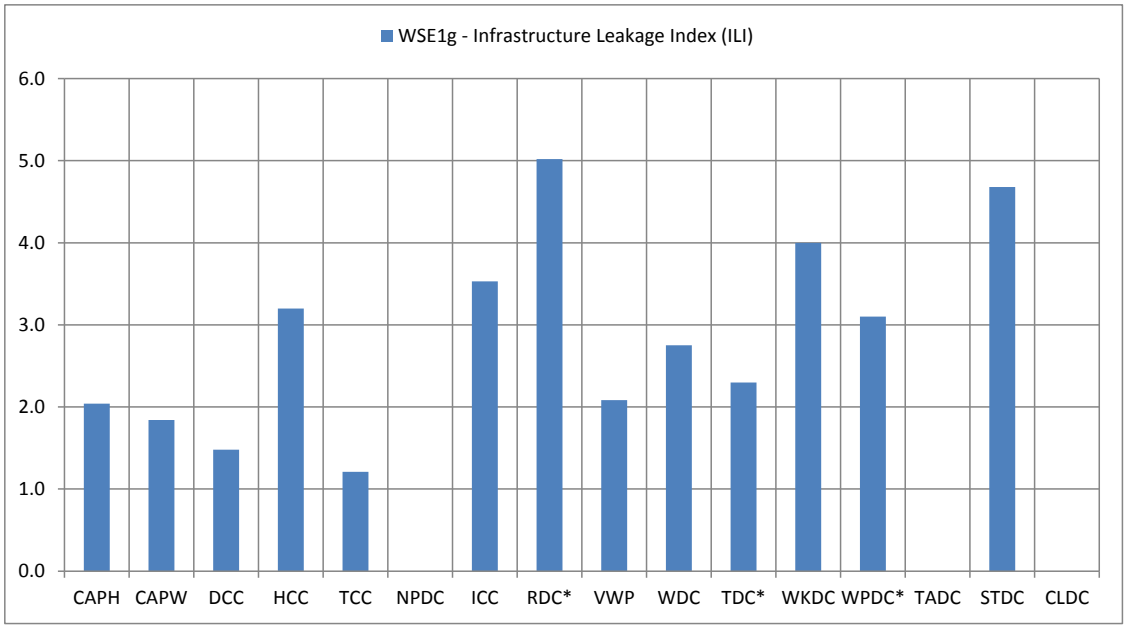
The water supplied to the reticulation system is metered by all districts and the volume supplied is known with some confidence. However the confidence with which water losses can be assessed varies across the districts surveyed. While all make an assessment of water loss overall (with varying degrees of confidence) not all participants have made an assessment of the efficiency with which water loss is being managed. While there are other approaches that can be employed (eg night flow monitoring or comparing water demand with dry weather wastewater flows) the industry standard for such an assessment is Benchloss. Benchloss evaluates CARL (current annual real loss) and by comparing this with UARL (unavoidable annual real loss) provides an infrastructure leakage index (ILI = CARL/UARL) which allows leakage in different systems to be benchmarked, taking into account the number of connections, length of mains and water pressure. International experience suggests that network losses are being effectively managed if ILI < 2, and that efforts to further reduce loss would be uneconomic unless there are water shortages. Benchloss is used by all districts except for:

- New Plymouth, Taupo and Clutha – Water loss assessment is in the process of development and currently water losses and the efficiency with which water loss is being managed are not known with much precision.
- Dunedin - An in-house spreadsheet is used to model water losses
- Waipa - Benchloss used for TeAwamutu water supply, and there are plans to extend its use across the district.



* Water loss data relates to part of district only : RDC urban supplies ; TDC urban supplies ; WPDC Te Awamutu supply

CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	A	D	B	B	D	C	D	A	A	C	C	B	D	B	D	WSE1a
A	A	B	B	A	A	A	B	A	A	A	B	B	B	B	C	WSB5

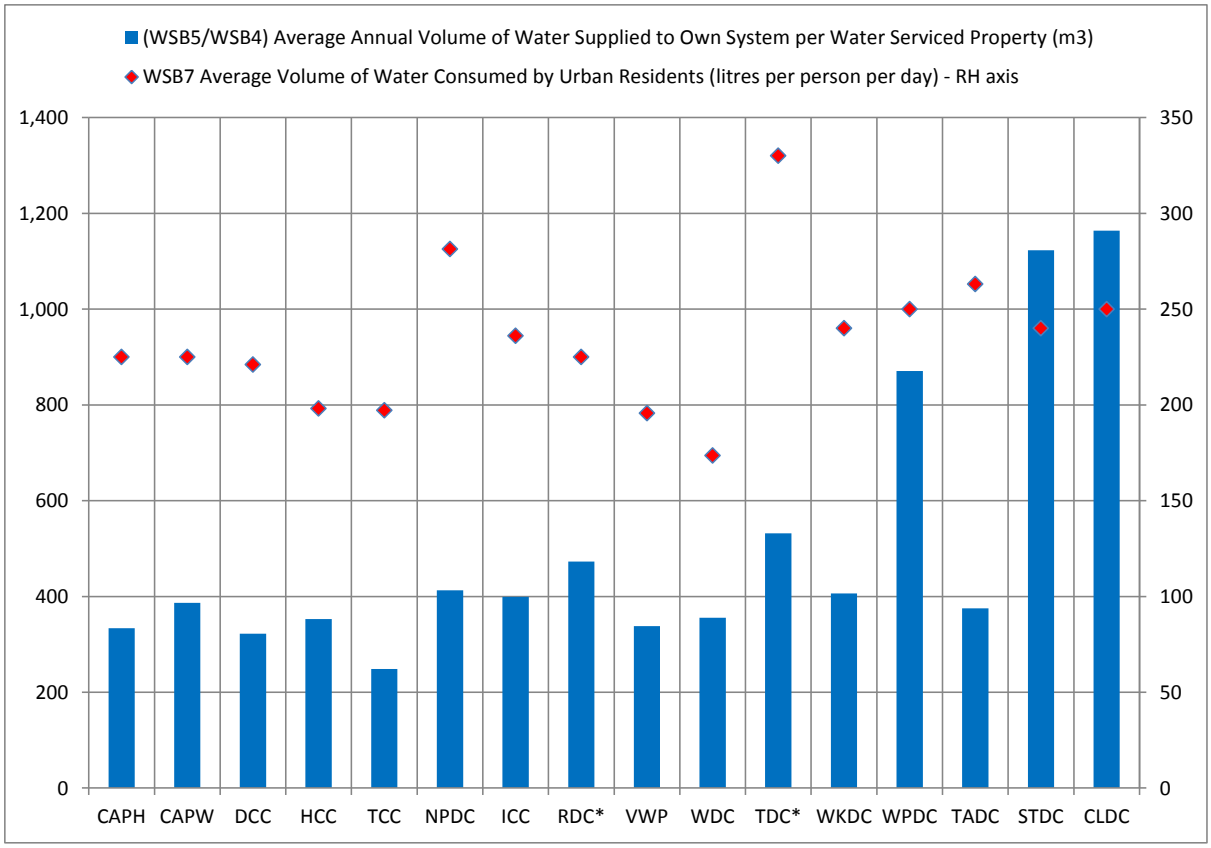


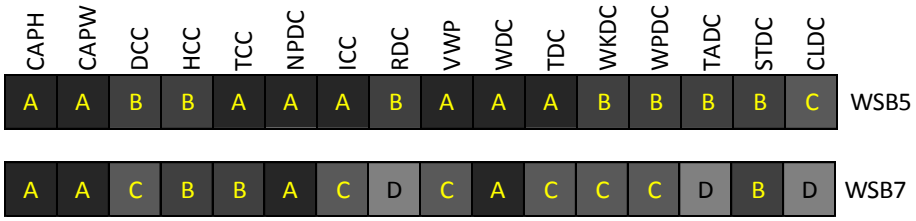
*RDC and TDC urban water supply areas only. WPDC – Te Awamutu supply area only.

CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	A	D	B	B	N	C	D	A	A	C	C	B	N	B	N	WSE1g

Water Consumption

The average water consumption per property is shown in the chart below. This data relates to the annual volume of water supplied to the reticulation system averaged over all water serviced properties in the district. As noted earlier the average water usage per property is, not unexpectedly, high for Clutha, Waipa and South Taranaki, the three predominantly rural districts that supply a significant volume of water to pastoral and arable farming operations.

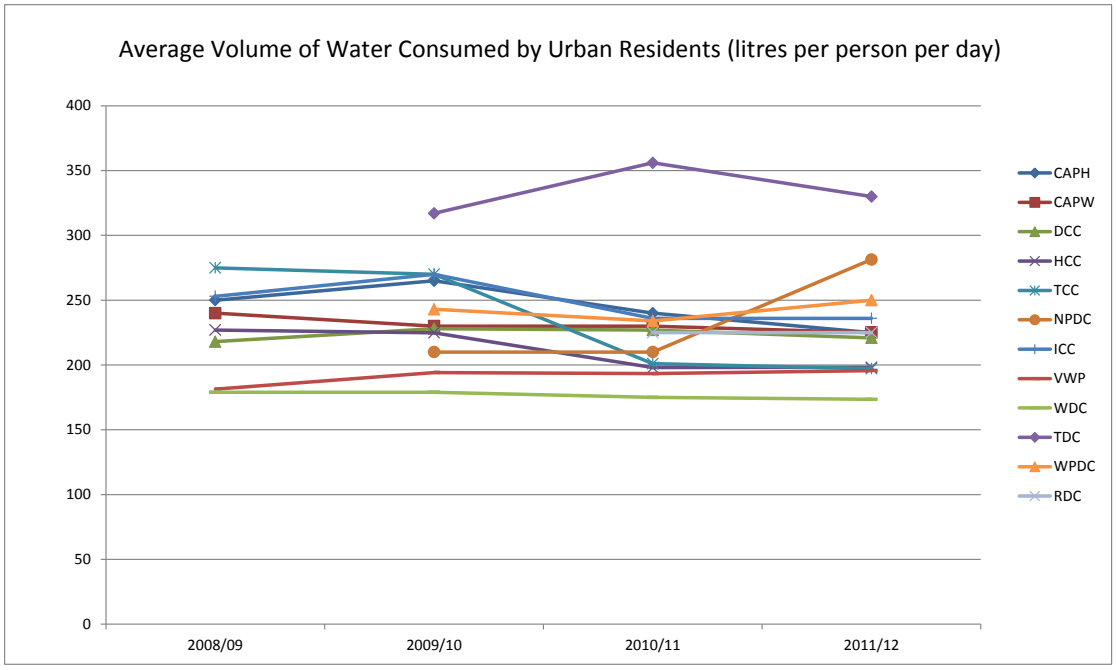




The assessment of daily water use per person is based largely on urban residential data. With the exception of Papakura, Tauranga and Whangarei where there is universal metering and in the two districts (Waipa and Waikato) moving towards universal metering, other districts have only a relatively few urban residential properties that are metered. For some the assessment thus has a fairly low confidence level due to the statistically small number of properties monitored to arrive at the figure and the (self-assessed) confidence ratings are questionable in some instances.

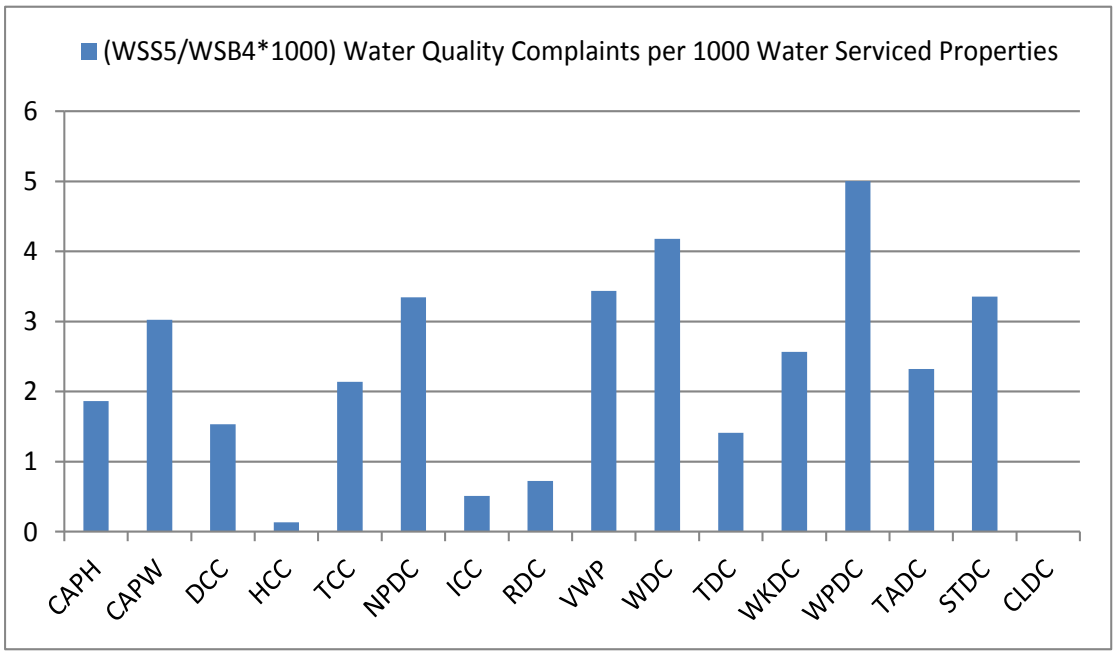
Where there is universal metering the (urban residential) consumption rates can be fairly accurately derived. However where there is no metering or only limited metered data available assumptions need to be made regarding water loss being included in the consumption rate and the number of people to whom the metered water relates. These assumptions can lead to relatively large uncertainty in the derived data.

Trends in the assessed average water consumption per person for those districts where data is available for more than one year are shown in the following graph.



Water Quality

Water quality is monitored on behalf of the Ministry of Health who publish the data from all districts in their annual Drinking-water Quality Report. The reporting covers compliance with acceptable microbiological contamination levels - measures that determine whether the water supplied is safe to drink. Also reported is compliance with acceptable levels of chemical contamination. Water quality complaints (normally related to the taste, odour or clarity of the supplied water) are more likely to be related to chemical contamination.



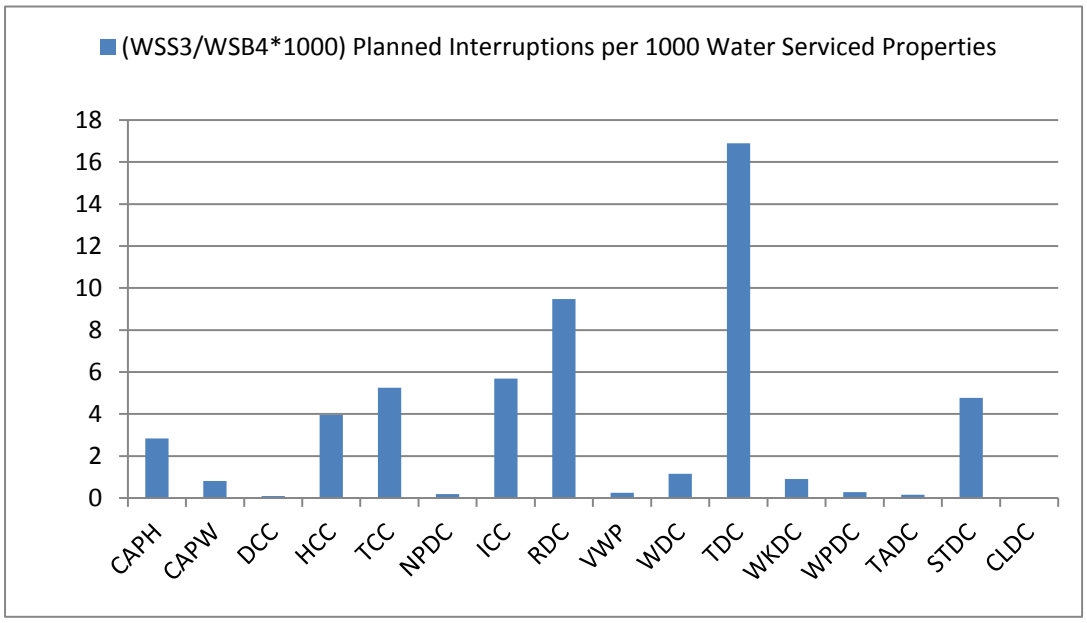
CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	B	A	C	A	A	B	B	B	A	A	C	B	A	A	A	WSS5

The unusually high number of water quality complaints (126 or 17.5 per serviced property) recorded by Clutha in the year has not been shown in the above chart as they largely relate to problems the district encountered with one of its 11 urban water supply areas, and is thus not representative of the district overall.

Interruptions to Water Supply

Interruptions to water supply can occur for a number of reasons, which may indicate that upgraded or new infrastructure is needed. The aim of the survey was to compare the frequency of both planned and unplanned interruptions.

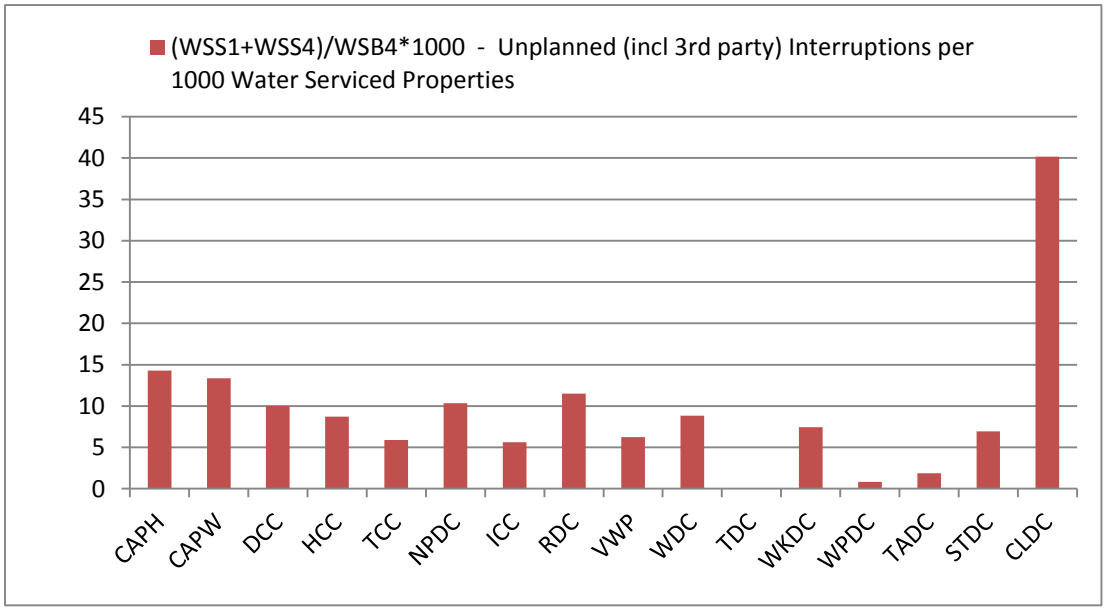
Data on planned interruptions to water supply are shown in the chart below.



CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	B	B	B	A	A	C	B	C	B	B	B	B	A	B	N	WSS3

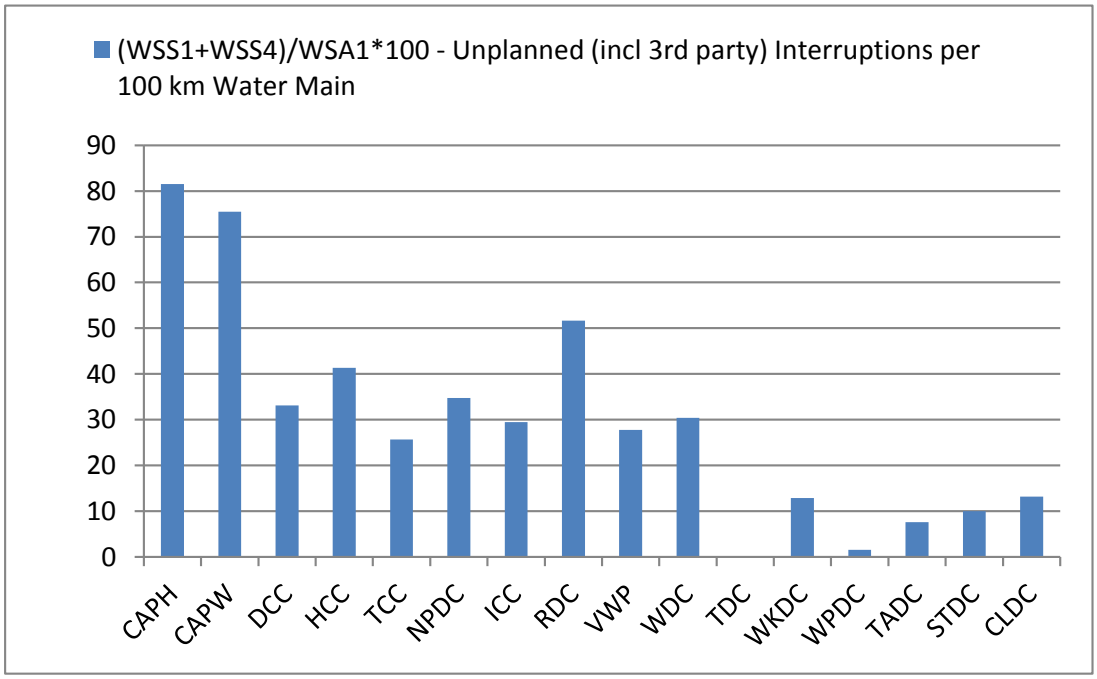
Dunedin claims to have been able to virtually eliminate planned interruptions to water supply by rerouting of the supply, as required, for maintenance works. Data on planned interruptions to water supply was not available from Clutha.

The frequency of unplanned interruptions is shown in the charts below. As some districts did not separately record interruptions causes by third parties, the data presented combines water supply interruptions resulting from both infrastructure break down and third party incidents. Data on unplanned interruptions to water supply was not available from Timaru.



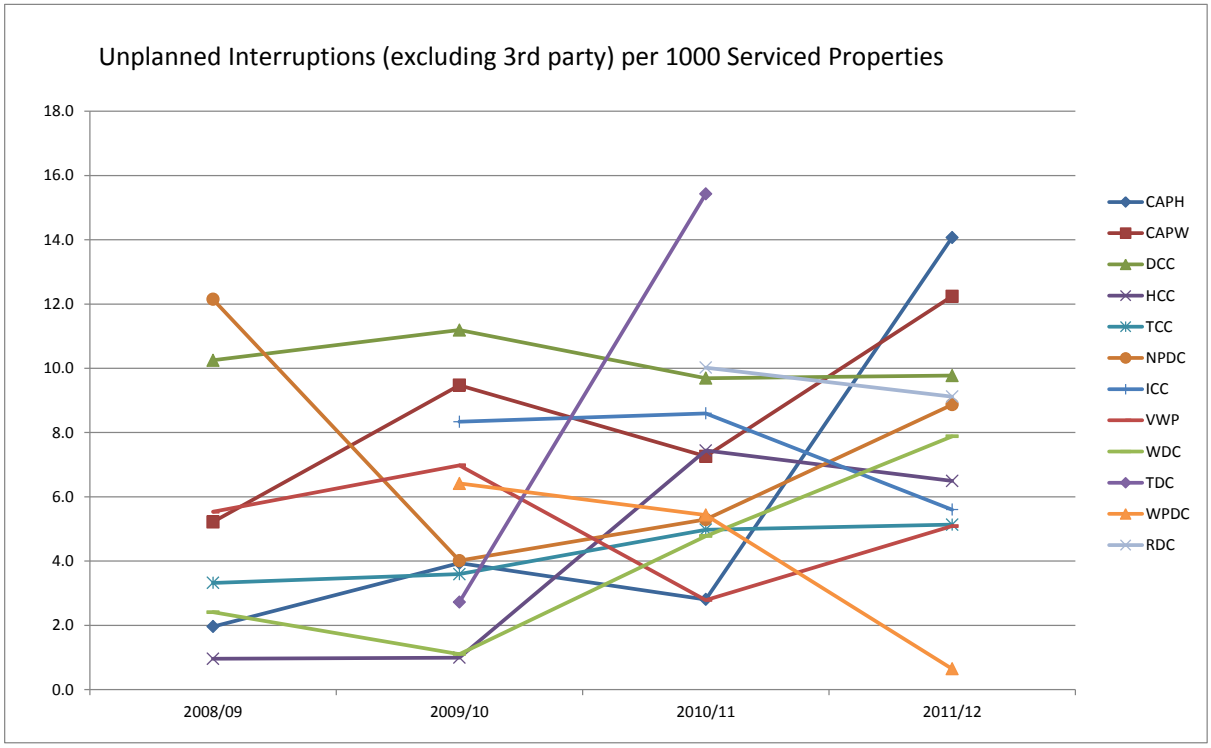
CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	B	B	C	A	A	C	B	B	A	N	D	D	B	B	A	WSS1 &WSS4

The outlier for Clutha in the above chart results warrants discussion. Clutha has an exceptionally long length of water mains for the number of properties served and, not unexpectedly, has a relatively high frequency of unplanned interruptions on a per property basis. If the unplanned interruptions are normalised by dividing by the length of water main an entirely different picture emerges:



Comparing these two charts demonstrates that a single performance measure can often be insufficient for benchmarking purposes, particularly where predominantly rural districts are being compared with predominantly urban districts.

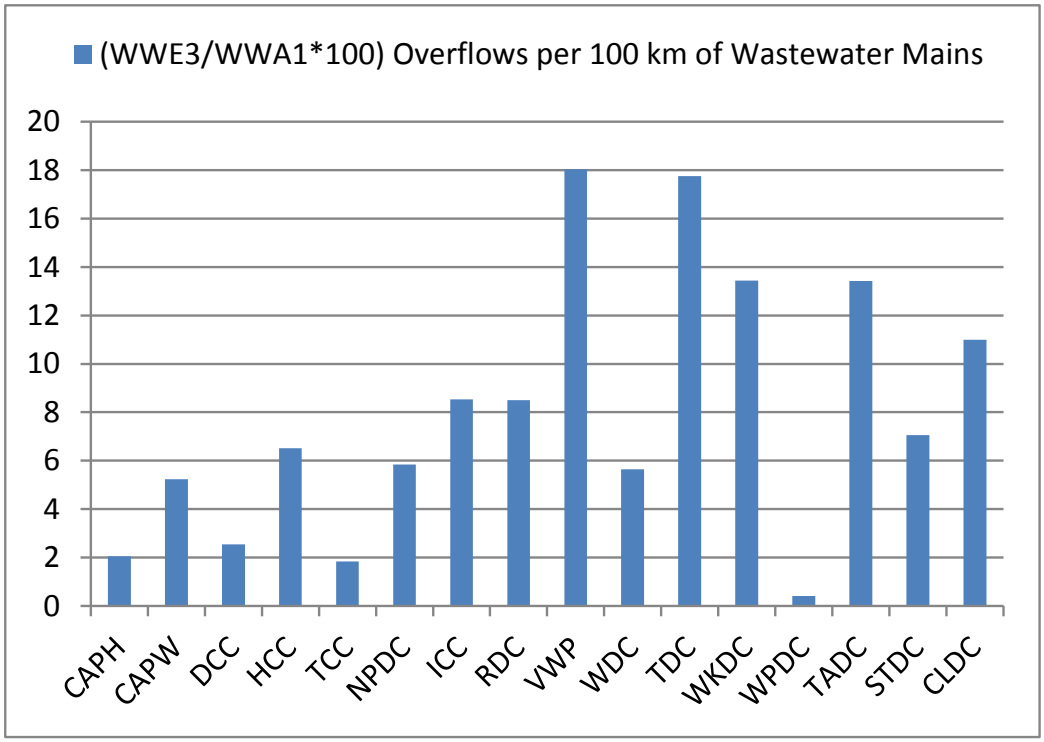
The number of unplanned interruptions to water supply excluding interruptions resulting from damage caused by third parties is a measure of essential maintenance/renewal work that has been deferred. Trends in this data, for districts where data is available for more than one year, are presented below.



(b) Wastewater

Wastewater Overflows

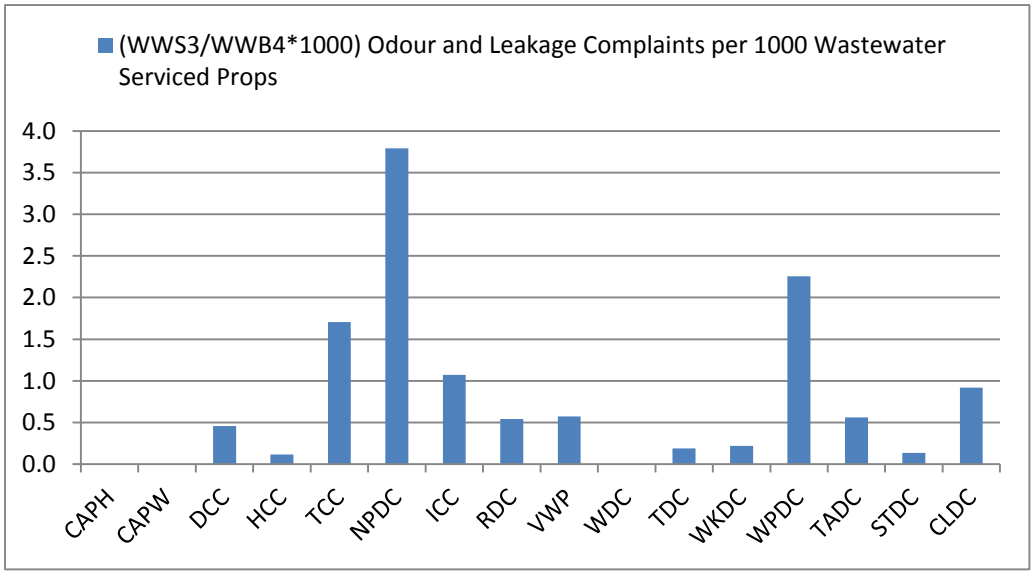
The aim of the survey had been to provide separate information on dry weather and wet weather overflows. Dry weather overflows are due to a system failure whereas wet weather overflows, due to inflow or infiltration of the sewerage system by stormwater, while they have an adverse effect upon the environment are normally permitted and regulated through district plans. Data on overflows recorded by districts is variable with some recording dry and wet weather overflows separately, some combined and some recording blockages that may or may not have caused overflows. The most consistent comparative data available is for combined wet and dry weather overflows, as shown in the chart below.



CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	A	D	A	A	B	B	C	B	A	B	A	A	A	B	A	WWE3

Wastewater Complaints

The aim of the survey was to record the frequency of complaints from the public about wastewater odours or leakage. However, although such incidents are recorded, some districts (Hutt, Wellington, and Whangarei) were not able to separately provide the data as the number of complaints about wastewater odour or leakage is included under total counts for the year pertaining to RFSs (requests for service) or CRMs (customer request management). For the remaining 13 districts the frequency of odour or leakage complaints per 1000 wastewater serviced properties is shown in the chart below. The relatively high number for New Plymouth may be overstated as there were 13 odour complaints in the year and 81 mains blockages, but not all of the blockages may have led to leakage.



CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC	VWP	WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
N	N	A	C	A	A	C	C	A	N	B	C	B	B	A	A	WWS3

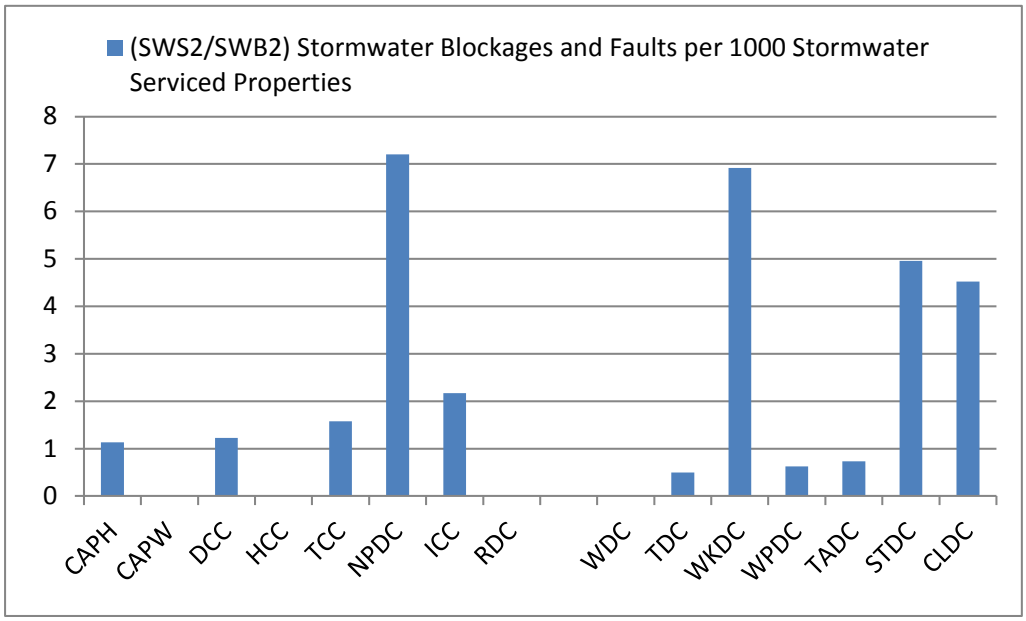
Sludge Disposal

Good management of wastewater systems requires appropriate disposal of both effluent and biosolids. There is a growing trend to investigate alternatives to disposal of sewage sludge at landfills in view of the cost, which will again rise from January 2013 as the cost of carbon emissions are reflected in landfill charges, and the beneficial use to which the sludge can be put. Currently Rotorua, Invercargill, New Plymouth and Taupo are the only districts that are making substantial beneficial use of sludge from wastewater treatment plants, though a number of other districts are actively looking at alternatives to landfill disposal.

CAPH	Landfill
CAPW	Landfill
DCC	50% landfill; 50% incineration
HCC	Currently all landfilled but vermicomposting trial underway
TCC	Landfill
NPCC	About 10% landfilled and 90% dried and then applied to land
ICC	Dried and then applied to land
RDC	Vermicomposting by third party and then applied to agricultural land
VWP	(not involved in wastewater treatment)
WDC	Landfill
TDC	No desludging of oxidation ponds in year. Future disposal of sludge under review.
WKDC	Landfill for most. At one plant sludge is dried on land that will be used for cropping in the future.
WPDC	Stored on site. Future use under consideration.
TADC	Application to farm land by third party
STDC	No desludging of oxidation ponds in year. Microbiological trial underway in ponds.
CLDC	Landfill

(c) Stormwater

The aim of the survey was to compare the number of complaints related to blockages or faults in the reticulated stormwater network, excluding complaints related to service connections and complaints lodged during extreme events such as during a civil defence emergency. However, as for complaints regarding wastewater, the way in which stormwater related issues raised by the public were recorded by a number of districts did not lend itself to having blockages and faults separately identified. For some, such complaints were included in RFSs or CRMs on stormwater issues with queries about overland flows, consent requirements, weed growth in drains (which may be a stormwater drainage fault or may be an amenity issue) and run off from buildings and driveways. Mixing of complaints with other queries applied to Wellington, Hamilton and Whangarei. Rotorua did not report on stormwater infrastructure and for Papakura, Veolia Water's contract does not cover stormwater drainage. For the remaining 11 districts the number of recorded complaints related to stormwater blockages or faults per 1000 stormwater serviced properties was as follows.



CAPH	CAPW	DCC	HCC	TCC	NPDC	ICC	RDC		WDC	TDC	WKDC	WPDC	TADC	STDC	CLDC	
B	N	A	N	A	A	C	N		N	B	C	B	B	B	A	SWS2

Appendix 1 - Data Confidence Descriptions

RATING	DESCRIPTION	PROCESSES	ASSET DATA
A	Highly reliable	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	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% to15% 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 2 – Survey Questions

COMMON DATA - Background Information			
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

WATER SUPPLY - Background Information			
WSB1	Total Water Serviced Population	Total residential population served 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 to area under the Councils' jurisdiction. This is 'Water Supplied' in terms of the standard Water Balance	m^3
WSB6	Authorised Consumption in Area under the Council's Jurisdiction	'Authorised Consumption' in terms of the standard Water Balance in area under the Council's jurisdiction	m^3
WSB7	Average Residential Water Consumed per Person per Day	Best estimate of the average daily water consumption by residential customers	litres/person /day

WATER SUPPLY - Asset Quantities			
WSA1	Total Length of Public Water Supply Network	Total length of public water mains excluding service connections (ie mains to property connections)	km
	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	%
WSA3	Total Water Treatment Plants	Total number of water treatment plants owed by (operated for) the Council in area under the Councils' jurisdiction	Nu
WSA4	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
WSA5	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
WSA6	Total Capacity of Water Storage Reservoirs	Total volume of treated water that could be stored in water supply reservoirs (at maximum levels)	m^3
WSA7	Properties with Water Meters - Residential	Number of residential properties with metered connections	Nu
WSA8	Properties with Water Meters - Non-Residential	Number of non-residential properties with metered connections	Nu
WATER SUPPLY - Environmental			
	Network Water Losses	Please supply available data:	
WSE1a		Estimated total network water loss	m^3
WSE1b		CARL (current annual real loss)	m^3
WSE1c		CARL (current annual real loss)	litres/service connection /day
WSE1d		CARL (current annual real loss)	m^3/km mains/day
WSE1e		UARL (unavoidable annual real loss)	m^3
WSE1f		UARL (unavoidable annual real loss)	litres/service connection /day
WSE1g		ILI - infrastructure leakage index (=CARL/UARL)	non-dimensional

WATER SUPPLY - Social			
WSS1	Unplanned Total Interruptions - WS	The number of unplanned interruptions to water supply service, excluding interruptions caused by third party damage	Nu
WSS2	Unplanned Interruption Frequency - WS	"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
WSS4	Third Party Incidents - WS	The number of unplanned interruptions to service caused by third parties	Nu
WSS5	Water Quality Complaints	Total number of water quality complaints received by the organisation in the reporting year	Nu
WSS6	Water Quality Complaints Frequency	"Water Quality Complaints" per 1000 water serviced properties	Nu/1000 prop
WSS7	Drinking Water Compliance	Proportion of water supplied from plants owned by (operated for) the Council that is fully compliant with the Drinking Water Standards (bacteria, protozoa and chemical - as per most recent MoH Annual Report on Drinking-water Quality)	%
WSS8	Annual 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	$/200$m^3$
WSS9	Proportion of Bill Based on a User Charge	Proportion of a standardised residential customer's bill (WSS8 above) based upon metered water	%
WATER SUPPLY - 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 WSF19)	$
WSF4	Total Revenue - WS	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	Cost of Chemicals and Consumables	Cost associated with chemicals and other consumable materials associated with water treatment	$
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	Capital Expenditure Budget	Capital expenditure budget for water supply in the reporting year	$
WSF18	Actual Capital Expenditure - WS	Capital expenditure on water supply for the reporting year, including any land purchase	$
WSF19	Development Contribution Assets	Value of assets vested in the council during the reporting year as part of development contributions	$
WSF20	Asset value at end of reporting year	Book value of asset after depreciation (and any impairment/revaluation) has been applied	$
WSF21	Actual Capital Expenditure per Property - WS	Actual Capital Expenditure per serviced property in the reporting year	$/property

WASTEWATER - Background Information			
WWB1	Total Wastewater Serviced Population	Total residential population served by a reticulated wastewater system	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 Treated in Council's own WWTPs	Volume of wastewater treated at WWTPs in area under the Council's jurisdiction	m^3
WWB6	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
WWB7	Wastewater 'Imported' for Treatment (if any)	Volume of wastewater imported from an adjacent Council's area of jurisdiction for treatment at the Council's WWTPs	m^3
WWB8	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
WWB9	Trade Waste	Estimated proportion of total wastewater produced (WWB8 above) that can be classified as trade waste	%

WASTEWATER - Asset Quantities			
WWA1	Total Length of Public Wastewater Network	Total length of public wastewater mains (excluding service connections)	km
	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	%
WWA3	Total Wastewater Pump Stations	Total number of wastewater pump stations in area under the Council's jurisdiction	Nu
WWA4	Total Wastewater Treatment Plants	Total number of wastewater treatment plants owned by (operated for) the organisation responsible for delivering wastewater services in area under the Council's jurisdiction	Nu
WWA5	Wastewater Treatment Plant Capacity Currently Utilised	Estimated combined annual flow related capacity of WWTPs currently being utilised (without significant upgrading)	%
WWA6	Design Capacity of Waste Water Treatment plants	Estimated combined annual flow related design capacity of WWTPs in area under the Council's jurisdiction (without significant upgrading)	m^3
WASTEWATER - 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	Total number of overflows in year irrespective of the weather conditions. (Provide this data if split between wet and dry weather overflows is not known)	Nu
WWE4	Dry Weather Wastewater Overflows Frequency	"Dry Weather Wastewater Overflows" per 100 km of wastewater mains length	Nu/100km
WWE5	WWTPs without Resource Consents	Number of operating wastewater treatment plants that do not have current discharge consents	Nu
	Compliance with Resource Consents	Compliance with wastewater discharge consents in year, measured by:	
WWE6a		abatement notices	Nu
WWE6b		infringement notices	Nu
WWE6c		enforcement orders	Nu
WWE6d		successful prosecutions	Nu
	Sludge Disposal	Disposal of wastewater sludge in year to:	
WWE7a		landfill	%
WWE7b		composting	%
WWE7c		other (specify)	%

WASTEWATER - Social			
WWS1	Annual Wastewater Bill Based on 200 m^3/yr Water Useage	The average residential customer's bill (GST included) for wastewater based on an annual consumption of 200 m^3 of water. (Leave blank if no targeted wastewater charge)	$
WWS2	Proportion of Bill Based on a User Charge	Proportion of a standardised residential customer's bill (WWS1 above) based upon metered water (as applicable)	%
WWS3	Wastewater Complaints	Number of complaints in reporting year related to wastewater leakage or odours	Nu
WWS4	Wastewater Complaints Frequency	"Wastewater Complaints" per 1000 serviced properties	Nu/1000 prop
WASTEWATER - 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 WWF19)	$
WWF4	Total Revenue - WW	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 reticulation and treatment	$
WWF9	Management Costs	Own organisation costs (includes salary, accommodation, IT,etc)	$
WWF10	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)	$
WWF11	Operating Cost - WW	Operating cost (*discounted for any revenue from the provision of wastewater services to other local authorities*) associated with providing wastewater services in the area under the Council's jurisdiction	$
WWF12	Operating Cost per Property	Operating Cost per serviced property	$/property
WWF13	Annual Depreciation	The 'fully funded' depreciation cost in the reporting year	$
WWF14	Interest	The interest cost for the reporting year	$

WWF15	Total Cost - WW	Total cost for the reporting year associated with wastewater services to the area under the Council's jurisdiction	$
WWF16	Total Cost per Property	Total Cost per serviced property	$/property
WWF17	Capital Expenditure Budget	Capital expenditure budget for wastewater in the reporting year	$
WWF18	Actual Capital Expenditure - WW	Capital expenditure on wastewater in the reporting year, including any land purchase	$
WWF19	Development Contribution Assets	Value of assets vested in the council during the reporting year as part of development contributions	$
WWF20	Asset value at end of reporting year	Book value of asset after depreciation (and any impairment/revaluation) has been applied	$
WWF21	Actual Capital Expenditure per Property - WW	Actual Capital Expenditure per serviced property in the reporting year	$/property

STORMWATER - Background Information			
SWB1	Total Stormwater Serviced Population	Total residential population served 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
STORMWATER - Asset Quantities			
SWA1	Total Length of Public Stormwater Network	Length of mains in public stormwater reticulation system (including culverts and lined channels), excluding service connections	km
	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	%
SWA3	Stormwater Treatment Devices	Total number of public stormwater treatment devices in the area under the Council's jurisdiction	Nu

STORMWATER - Social			
SWS1	Stormwater Charge	Average annual targeted stormwater charge (GST included) for a residential property, where applicable. (Leave blank if no targeted stormwater charge)	$
SWS2	Stormwater Complaints	Number of complaints related to blockages or faults in the reticulated stormwater network, excluding complaints related to service connections and complaints lodged during extreme events, eg a civil defence emergency	Nu
SWS3	Stormwater Complaints Frequency	"Stormwater Complaints" per 1000 stormwater serviced properties	Nu/1000 props
STORMWATER - 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 - SW	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 - SW	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 - SW	Total Cost per serviced property	$/property
SWF14	Capital Expenditure Budget	Capital expenditure budget for stormwater in the reporting year	$
SWF15	Actual Capital Expenditure - SW	Actual capital expenditure on stormwater in the reporting year, including any land purchase	$
SWF16	Development Contribution Assets	Value of assets vested in the council during the reporting year as part of development contributions	$
SWF17	Asset value at end of reporting year	Book value of asset after depreciation (and any impairment/revaluation) has been applied	$
SWF18	Actual Capital Expenditure per Property - SW	Actual Capital Expenditure per serviced property in the reporting year	$/property