NZWWA Pilot National Performance Review 2007/2008 Summary Report

January 2009

Pilot National Performance Review 2007/2008

The New Zealand Water and Wastes Association (NZWWA) Board aims to establish an annual national performance review programme as a critical benchmarking tool for the water industry. The NZWWA Board view this initiative as a valuable building block for asset owners and managers alike to be able to publicly confirm the standing of the industry and the value delivered from public investment in the three waters assets.

The 2008 pilot national performance review has been the first step towards establishing the annual review programme. The pilot review expanded the Auckland Water Group annual performance review into a national context. Auckland region specific measures were removed and, in a number of areas, simplified. The pilot review involved eight participating utilities, each of which completed a spreadsheet of various performance indicators relevant to the three waters. They each reported their performance in environmental, social and economic areas.

It is expected that other participants will join the benchmarking programme in future reviews, including participants from the Auckland Water Group. The 2008 pilot programme has highlighted some areas that can be adapted and improved to produce more effective comparisons. However the results have been very positive and have established a good foundation for extending the review into a national programme.

The 2008 pilot national performance review involved eight local government organisations.

- Capacity–Hutt City (CAPH)
- Capacity–Wellington (CAPW)
- Christchurch City Council (CCC)
- Dunedin City Council (DCC)
- Hamilton City Council (DCC)
- New Plymouth District Council (NPDC)
- Tauranga City Council (TCC)
- Whangarei District Council (WDC)

NB: Capacity is the trading name of Wellington Water Management Ltd., a council controlled trading organisation.

Contents of Report

Introduction: Method and Reporting for the 2008 Pilot National Performance Review

The results of the 2008 Pilot National Performance Review are presented in this report.

The review required the eight participating water utilities to submit spreadsheets of data to NZWWA, reporting on a total of 126 measures. These were then collated to enable an independent audit to be carried out for validation of the data. Sixty measures were examined with a desktop audit for all eight participants, and an on-site audit for three of these participating organisations. The independent auditor also offered helpful recommendations that will be implemented in the next national performance review.

The desktop audit identified ratings for consistency and accuracy in terms of the data in the 75-80% range, data confidence levels in the 85-90% range, and data sources in the 80-85% range.

The onsite audit produced the same results for the measurement of consistency and accuracy of the data and data confidence levels, and an increase in the measurement for the consistency and accuracy of data sources – to the 85-90% range.

This report provides detailed comparisons of selected measures, relating to performance in environmental, social and economic areas of water supply, wastewater and stormwater services.

All variable measures relate to the 2007/2008 financial year.

An important factor influencing participating water utilities was the number of people served within each jurisdiction. This was highlighted in the audit report and in the collation of data. Each table and graph has therefore been sorted in order of population size, i.e. Christchurch City Council has the largest population of the eight water utilities with 348,114 people in its total jurisdiction. In contrast, New Plymouth District Council serves a population of 72,200 people (see page 7). These two councils are therefore likely to perform quite differently in some areas. With this in mind, tables throughout the report have been displayed in two groups based on population size, as follows:

Larger Utilities:	**Smaller Utilities:**
Christchurch City Council	Tauranga City Council.
Capacity – Wellington	Capacity – Hutt City
Hamilton City Council	Whangarei District Council
Dunedin City Council	New Plymouth District Council.

The aim is to provide a basis for relevant comparisons.

Section A sets the context for comparison between the water utilities. This includes area, number of properties, asset quantities, and water supply and wastewater volumes.

Section B focuses on environmental well-being and includes a comparison of water loss characteristics, and overflow events.

Section C concentrates on social well-being and covers water utilities' interaction with their customers and pricing mechanisms.

Section D covers economic well-being, comparing revenue and costs for each participant across each of the three waters.

Confidence Ratings

For each area of well-being (environmental, social, economic) confidence ratings have been illustrated to inform the degree of confidence in the data provided. A shaded bar is used to present these details. The darkest shade illustrates a very high degree of confidence in the accuracy of the data. Confidence decreases as the shade lightens – the lightest shade illustrates that no data was available.

Some measures are calculated using a combination of other values. For example:
WSF21 = WSF20 ÷ WSB25. The lowest confidence rating applicable to the factors in the calculation (i.e. WSF20 and WSB25) becomes the confidence rating for the measure in question (i.e. WSF21).

When the measure was not applicable to one or more water utilities, the width of the shaded bar was reduced accordingly.

Section A: Context for Comparison

Section A considers the general characteristics of each water utility in terms of their size and resources. This includes a comparative overview of:

- *jurisdictional area*
- *jurisdictional population*
- *number of properties in each jurisdictional area*
- *asset quantities*
- *water supply and wastewater volumes.*

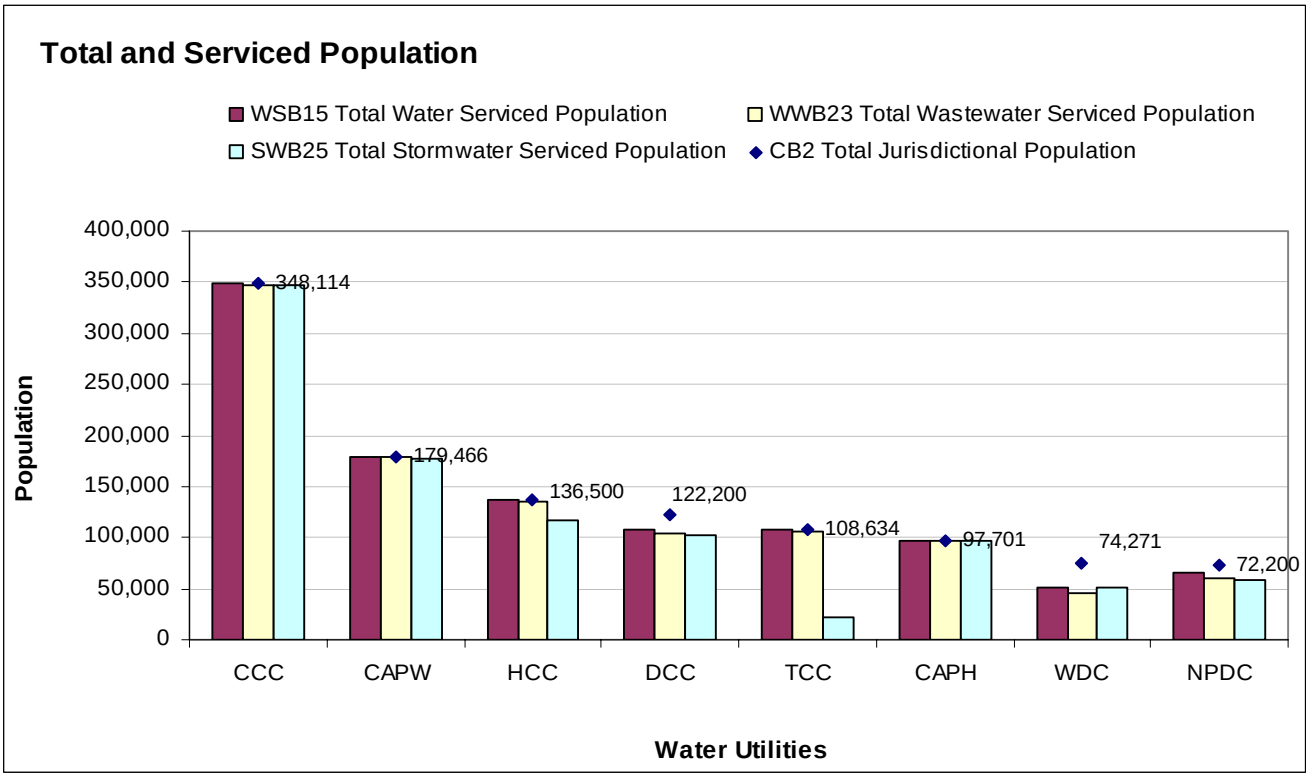
The table below lists several measures to illustrate the varying sizes of the eight water utilities. Dunedin City Council encompasses the largest land area of 334,922 hectares, but is the fourth largest in terms of total jurisdictional population. Christchurch has the largest population with 348,114 people, compared to New Plymouth District Council which serves a population of 72,200 people. The number of properties in the total jurisdictional area for Christchurch City Council is more than 4.5 times that of New Plymouth District Council.

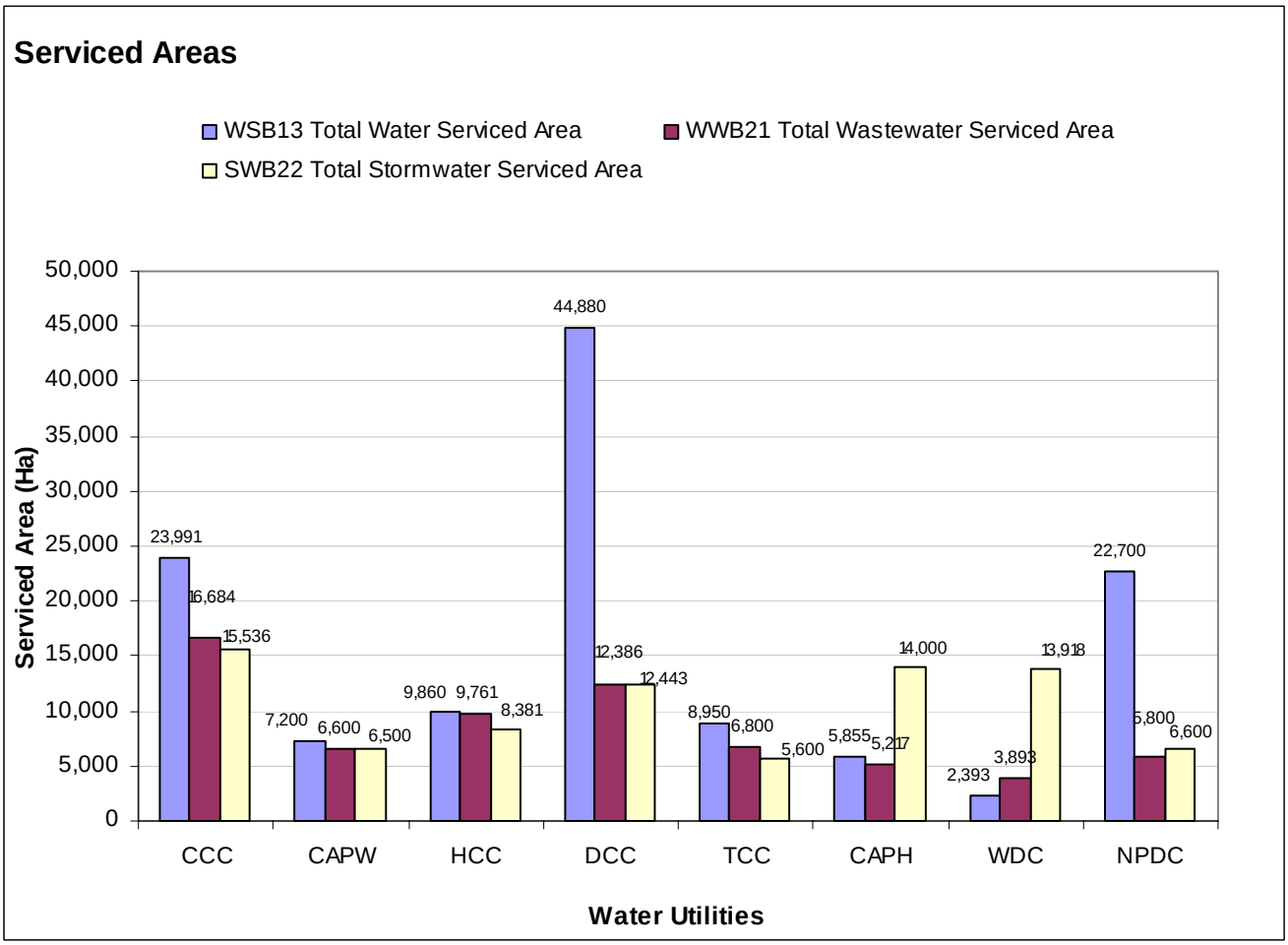
As illustrated in the graphs that follow, some asset quantities and water supply/wastewater volumes show a relationship with population size trends.

The utilities have been categorised in order of population size throughout the report. This enables comparison with utilities of similar size.

General size comparisons

Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
CB1 Total Jurisdictional Area (Ha)	16,075	29,000	9,860	334,922	12,825	37,700	272,187	220,000
CB2 Total Jurisdictional Population	348,114	179,466	136,500	122,200	108,634	97,701	74,271	72,200
CB4 Total number of Properties in the Total Jurisdictional Area	161,825	72,049	52,204	54,742	50,408	37,422	43,581	33,182

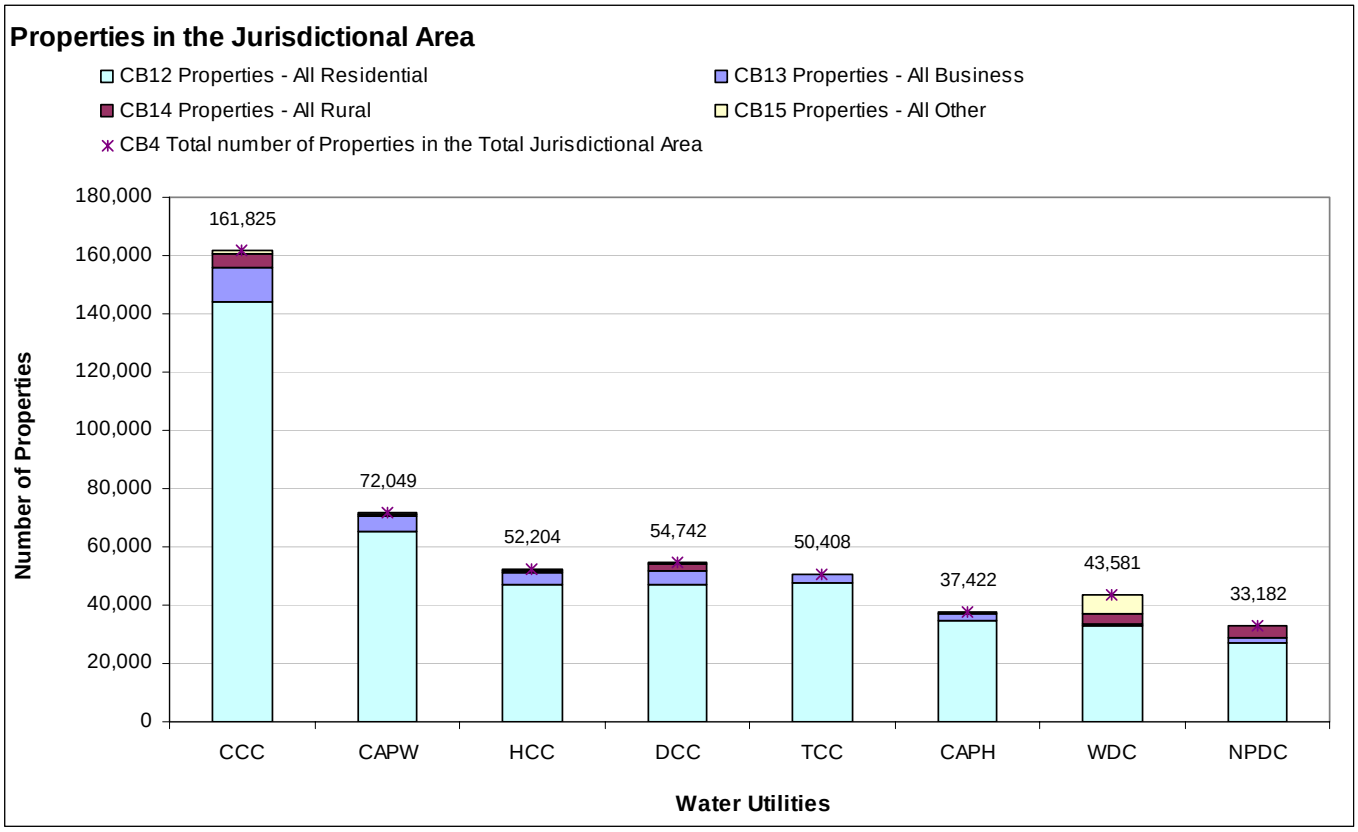

Total and Serviced Population
WSB15 Total Water Serviced Population
WWB23 Total Wastewater Serviced Population
SWB25 Total Stormwater Serviced Population
CB2 Total Jurisdictional Population
Population
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
348,114
179,466
136,500
122,200
108,634
97,701
74,271
72,200
CCC
CAPW
HCC
DCC
TCC
CAPH
WDC
NPDC
Water Utilities


Serviced Areas
WSB13 Total Water Serviced Area
WWB21 Total Wastewater Serviced Area
SWB22 Total Stormwater Serviced Area
Serviced Area (Ha)
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
23,991
16,684
15,536
7,200
6,600
6,500
9,860
9,761
8,381
44,880
12,386
12,443
8,950
6,800
5,600
5,855
5,217
14,000
2,393
3,893
13,918
22,700
5,800
6,600
CCC
CAPW
HCC
DCC
TCC
CAPH
WDC
NPDC
Water Utilities

Properties in the Jurisdictional Area

The graph below illustrates the number of serviced properties in more detail, showing a breakdown of residential, rural, business and other properties. This is another point of context in comparing water utilities. For example, at least 90+ % of properties served by Capacity–Wellington, Hamilton City Council, Tauranga City Council and Capacity–Hutt, are categorised as 'residential' properties.

In comparison, 12.5% of New Plymouth District Council properties are categorised as 'rural', while 24% of properties served by Whangarei District Council are either 'rural', 'business' or 'other'.

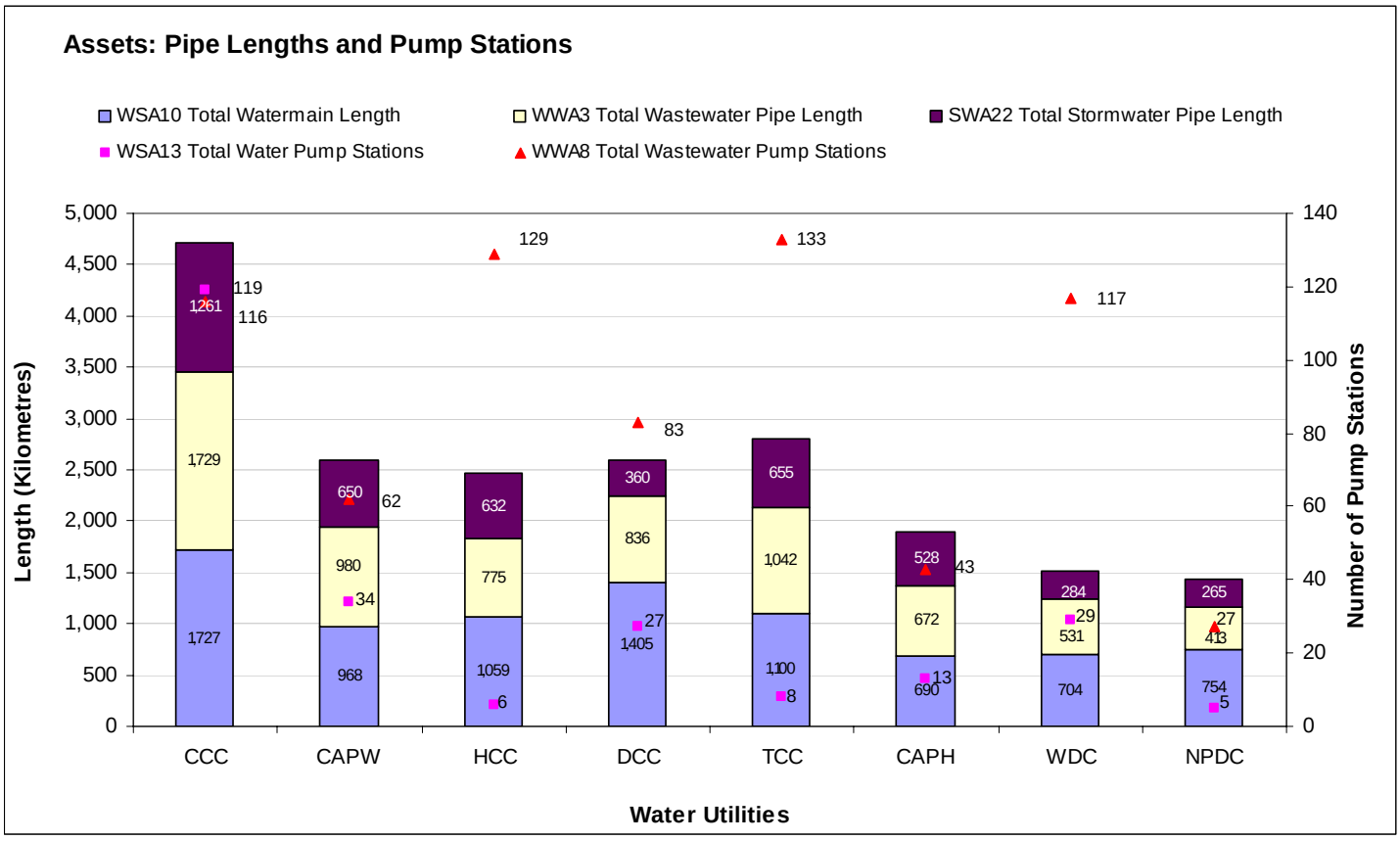


Asset Quantities

Detail of pipe networks for each water utility is illustrated in the graph below. Additional asset data is presented in the table on the following page.

In comparing the four largest water utilities, the total watermain length, wastewater pipe length and stormwater pipe length is averaged at 3095km. Christchurch City Council has the largest network, supported by 119 water pump stations, 116 wastewater pump stations, 128,238 water meters, 26,766 wastewater manholes and 10,097 stormwater manholes.

The smaller water utilities have an average total pipe length of 1909km. Tauranga City Council has 50,410 water meters and Whangarei District Council has 24,003 water meters. Whangarei District Council has the most wastewater treatment plants – 10 plants with a total wastewater treatment capacity of 60,405m³ per day – while Capacity-Hutt has one wastewater treatment plant with the capacity to treat 225,504m³ of wastewater per day.



Other Asset Quantities

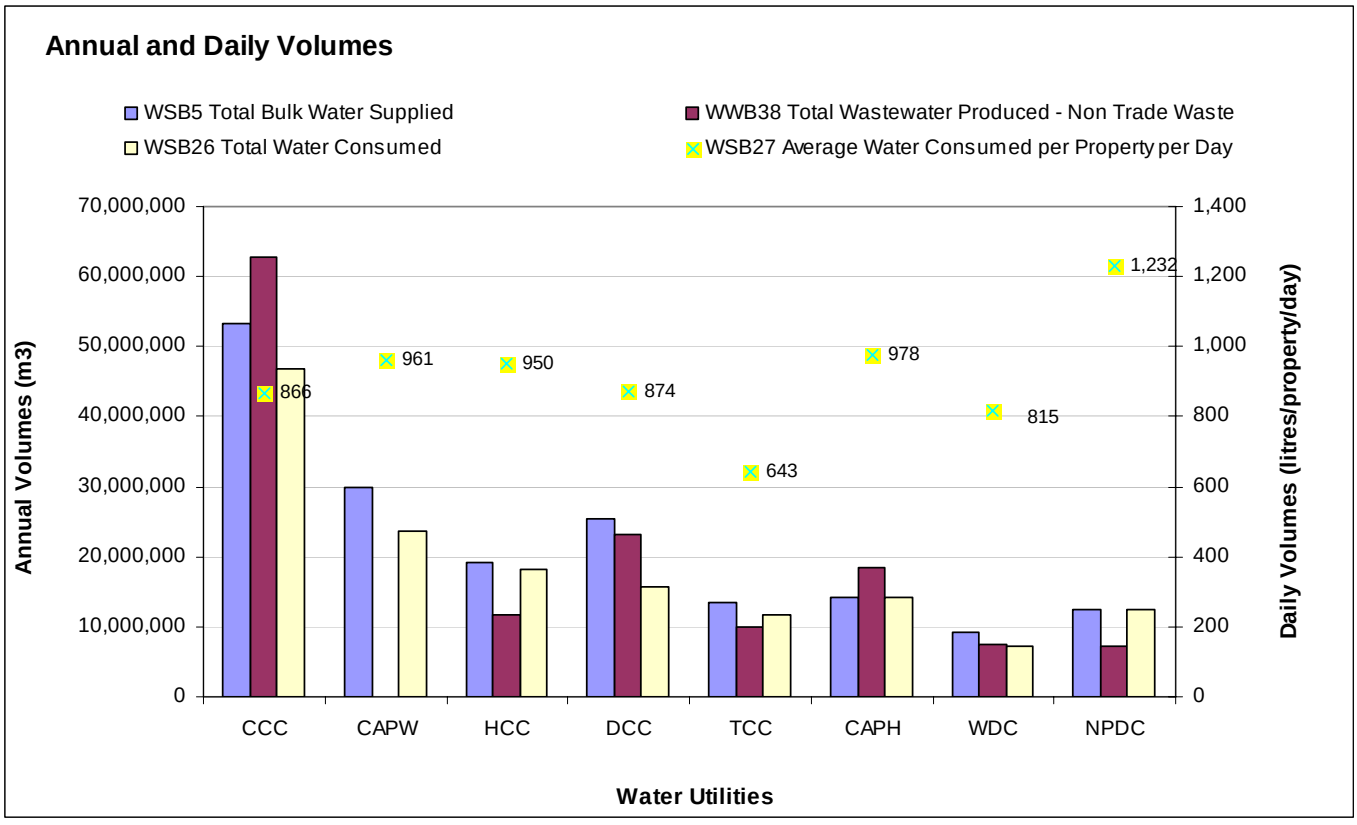
Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
Water Supply								
WSA15 Total Water Meters (Nu)	128,238	4,435	3,400	4,340	50,410	113	24,003	1,587
WSA14 Total Water Storage Reservoirs (Nu)	100	72	8	58	38	24	44	27
Wastewater								
WWA9 Total Wastewater Treatment Plants owned by (operated for) the organisation (Nu)	9	2.276 (incl. 27.6% share of Porirua Treatment plant)	1	7	2	1	10	2
WWA10 Wastewater Treatment Plant Capacity per Day (m^3/day)	204,000	319,373	104,000	75,866	40,000	225,504	60,405	69,000
WWA7 Total Wastewater Manholes (Nu)	26,766	17,687	14,265	11,906	14,731	14,741	8,211	6,780
Stormwater								
SWA23 Length of (public) lined, engineered open channels within the 'Total Stormwater Serviced Area' (km)	123.2	Data not captured	3.2	197.5	1	24 (total of all lined/unlined, engineered/ unengineered open channels)	1.8	0
SWA24 Length of (public) unlined, engineered open channels within the 'Total Stormwater Serviced Area' (km)	182.4	Data not captured	56.9	84.4	75	See note above	0.7	0
SWA27 Total (public) Stormwater Manholes (Nu)	10,097	17,401	11,958	6,524	10,092	11,224	8,211	
SWA28 Number of (public) stormwater treatment devices (Nu)	154	Data not captured	105	0	55	Data not captured	19	1

Water and Wastewater Volume

An indication of the water and wastewater volumes managed by each of the participants is illustrated below. The largest four water utilities show similarities in terms of average water use per property per day, ranging from 866 litres (CCC) to 961 litres (CAPW) per property per day. Christchurch City Council records the most water supplied and used as a total annual volume, and also the most total wastewater produced during the year.

The smaller water utilities illustrate more similarity in terms of the total bulk water supplied, wastewater produced and total water consumed. Capacity-Hutt supplies the most bulk water of this peer group at 14,253,000 m³, and produces the most wastewater at 18,414,000 m³. There is more variance in terms of the average water use per property per day, ranging from 643 litres (TCC) to 1,232 litres (NPDC) per property per day.

As can be seen in the graph below, Capacity-Hutt and Christchurch City Council reported higher production of wastewater than supply of potable water. Both utilities attributed the apparent 20-25% gain in sewage flow as infiltration of ground water into the wastewater system. This was explained by Christchurch City Council as a result of the sewer pipe network being placed below ground water level and the ageing of infrastructure allowing leakage into waste water flow. Capacity-Hutt noted inflow issues also affecting their measures.



NB: Data was not available from CAPW for the measure WWB38.

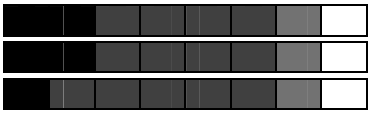
Section B: Environmental Well-Being

Environmental well-being focuses on measures that relate to the capacity of the natural environment to support, in a sustainable way, the activities of the communities in each jurisdiction.

Water Loss

Definition	Measure
WSE10 Volume of bulk water received from bulk supplier and/or own sources minus the billed volume of water supplied to serviced properties (including the volume of water billed via issued water permits) in the "Total Water Serviced Area".	Cubic metres
WSE14 Real system water losses = Non-revenue water – (unbilled authorised consumption + apparent losses)	Cubic metres
WSE15 Estimated real system water losses per 100km of "Total Watermain Length"	m^3 per 100km

Confidence Gradings



The aim of these measures is to identify the volume of water that is 'lost' from the water reticulation system before reaching customers.

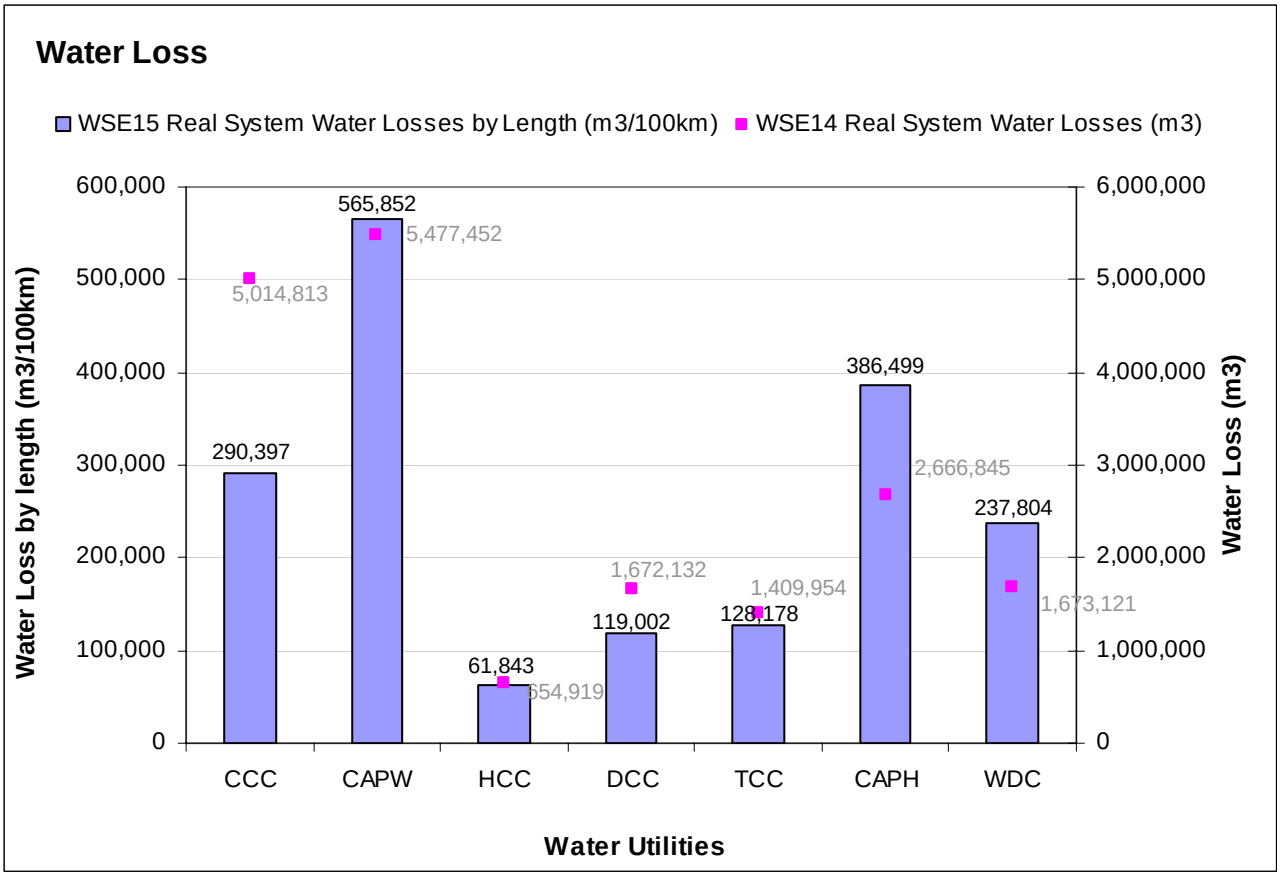
Real system water losses include water that escapes from the pipe system. This can be 'real' through leaks and bursts, or 'apparent', such as metering errors, unauthorised use, and authorised, but un- billed consumption such as fire fighting or routine maintenance.

Non-revenue water describes the volume of water that is not billed for.

In the table and graph below real water loss is shown as a volumetric total and per 100km of pipeline.

Water Loss Data

Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
WSA10 Total Watermain length (km)	1,727	968	1,059	1,405	1,100	690	704	754
WSB5 Total Bulk Water Supplied (m³)	53,276,431	29,912,979	19,262,320	25,291,079	13,389,646	14,131,988	9,220,145	12,536,500
WSE10 Non-Revenue Water (m³)	6,400,000	6,255,189	1,155,739	2,329,700	1,758,085	3,034,277	1,912,845	incomplete data
WSE14 Real System Water Losses (m³)	5,014,813	5,477,452	654,919	1,672,132	1,409,954	2,666,845	1,673,121	incomplete data
WSE15 Real System Water Losses by Length (m³per 100km)	290,397	565,852	61,843	119,002	128,230	386,499	237,804	incomplete data



NB: Data was not available from NPDC for the measures WSE14 and WSE15.

Combined Sewers

None of the participating water utilities operate combined sewers. All utilise separate sewer and stormwater pipe networks.

Overflow Events

Definition	Measure
WWE13 The total estimated volume of separate sewer overflow events from the 'Separate Sewer Length' caused by wet weather.	Cubic metres

Confidence Gradings


WWE13

This measure was supplied by half of the participants. It gives an indication of the sewer overflow volumes which may adversely impact on water quality, human health or ecosystem stability. Overflow volume can be used as an indicator of the capacity and condition of the sewerage network and how effectively it is being managed.

Tauranga City Council recorded just one overflow event. Whangarei District Council calculated overflow volume from any daily flows that exceeded the maximum capacity of the main wastewater treatment plant. When this occurs inflow is discharged to the environment.

Christchurch City Council noted that some of their overflow volumes were measured and some estimated, while Capacity-Wellington calculated an annual average across years 2005-2007.

Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
WWE13 Separate Overflow Volume (m^3)	33,919	44,000	No data	No data	300	No data	46,295	No data

Section C: Social Well-Being

Social well-being evaluates the factors enabling individuals, their families, hapu and communities to set goals and achieve them. These include education, health, the strength of community networks and associations, financial and personal security, rights, freedom, and levels of equity.

These measures include a comparison of:

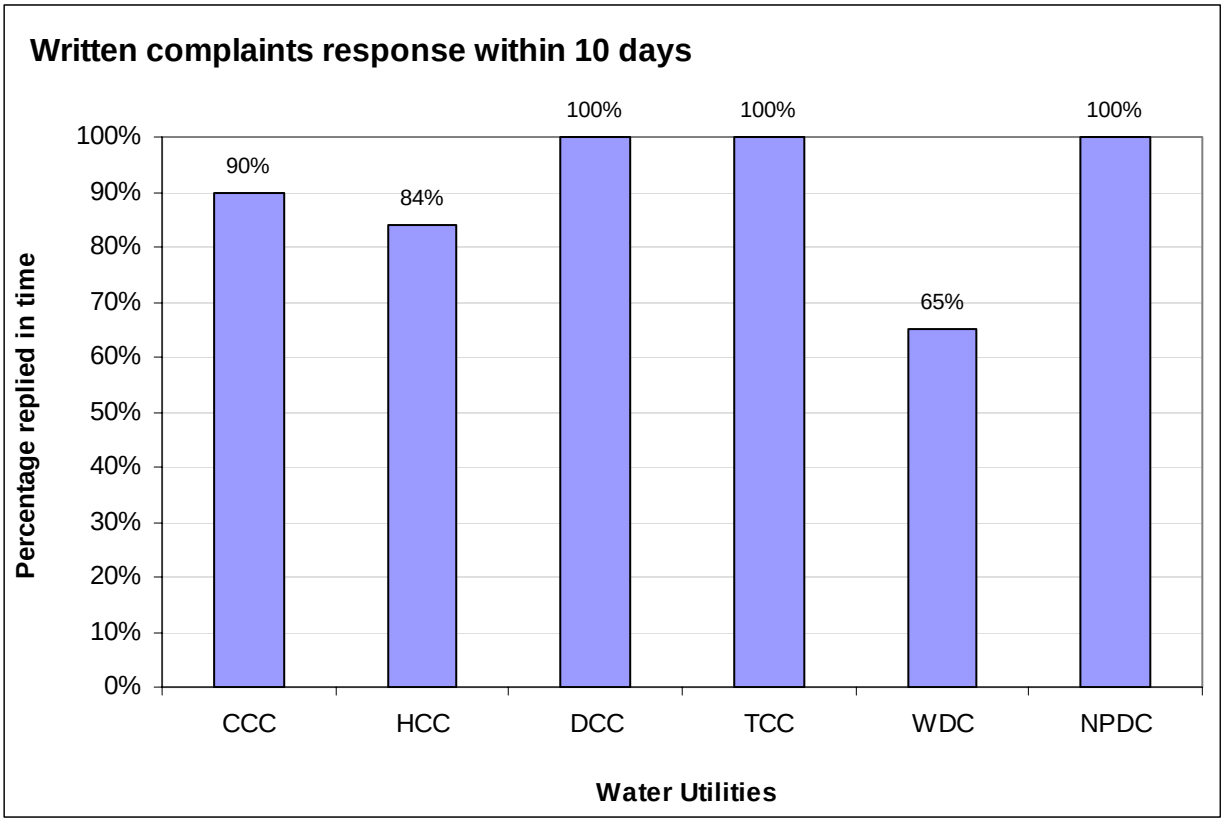
- written complaints responses
- consultation policies
- unplanned interruptions
- pricing for each of the three water services.

Written Complaints Response

Definition	Measure
CS1 Written Complaints Response: The percentage of complaints received that were replied to, with a meaningful response, within 10 days from receiving the complaint.	%

Confidence Gradings

CS1



This measure illustrates the water utility's responsiveness to customer complaints. The results made apparent that there were a range of procedures utilised:

- Christchurch City Council required a 5 day response to any letter, while most calls for service (not necessarily complaints) were responded to within 1 hour, 1 day or 3 days depending on the nature of the service required.

- Whangarei District Council utilised 'Heat' procedures when responding to letters of complaint. However they had no reliable indication of whether complaints were 'meaningfully responded to'. A best guess was made, based on log comments.

- Capacity–Wellington did not detail their performance as their policy is to respond within 15 days of receiving a complaint (rather than 10 days). Their data has therefore been excluded in the graph above.

- Similarly, Capacity–Hutt did not record their reply performance and so have been excluded from the graph.

- Several participants noted that considering just written complaints was too limiting – face to face, email and telephone are now more prevalent as a means of communication.

Consultation Policy

Definition	Measure
CS13 Does the organisation provide services to customers on the basis of a formal customer charter? Describe main features of the charter in Comments Box	Yes or No
CS14 If the organisation has adopted a formal consultation policy, how are the public/customers able to access or obtain a copy of the policy and what are the main features of the policy. If not, how does the organisation consult with or involve the public/customers in decision making - Description in Comments field.	Yes or No

Confidence Gradings

[redacted] CS13

[redacted] CS14

The purpose of this comparison is to provide an insight into how each organisation provides key information about themselves and their services to their customers, and an overview of their public consultation processes.

The table below presents varying approaches from each water utility. One similarity to note is that five of the eight water utilities employ the web for public consultation .

Water Utility		CS13 Customer Charter		CS14 Public Consultation Policy or Process
CCC	No		Yes	Adopted by Council in 2003. Accessible from website. Key features - key objectives, key principles and levels of consultation.
CAPW	Yes	Validity being reviewed presently	Yes	Available in the Wellington City Council LTCCP.
HCC	No	Long term plan is to develop customer charter	Yes	Available online: http://hamilton.co.nz/index.aspx?PageID=2145827721
DCC	Yes	The DRAFT Customer Charter outlines the obligations, commitments, responsibilities and standards of service that we can provide to our customers. In also sets out our agreed performance standards.	Yes	Available online from council website. Hard copy is available from council on request. Outlines process for making submission.
TCC	Yes	TCC calls it a Customer Commitment, it spells out how we will interact with customers, how we will treat them, how we will respond to different methods of contact and the turn-around times for each method of communication.	Yes	Available via the internet or request from Service Centre or by phone or in writing. Policy Objectives - • To strengthen and improve the way in which Council interacts with, and involves, the community in its decision making processes. • To encourage public involvement in Council's decision making processes in ways which are relevant and meaningful to the community. • To ensure Council has a good understanding of views within the community. • To ensure a consistent approach to community participation particularly in matters of significance. • To clarify for the community what can be expected of Council's various engagement processes.
CAPH	No		Yes	Available online: http://www.huttcity.govt.nz/Documents/council%20documents/Appendix%209.pdf
WDC	No	We use Bylaws to define obligations of Council and customers	No	Council has consultation guidelines which it uses for all consultations as required under the LGA 2002. The guidelines are an internal document but available on request. Consultation is undertaken for Annual plans, LTCCP, structure and district plan amendments and on a project by project basis for larger projects.
NPDC	Yes	Main headings of customer charter document: Your rights as a Customer; Our Commitment to You; Customer Feedback; Complaints Procedure	No	The council has decided not to have a formal consultation policy. This is because consultation techniques need to be designed to meet each new situation. Polices are fixed positions on issues and consultation effectiveness would be limited by such fixed positions. Instead the council has guidelines which are designed to assist staff in preparing a consultation exercise. These are available on request from the council. Consultation is ingrained practice within the organisation with teams within the council's Strategy and Policy group available to assist other parts of the organisation.

Unplanned Interruptions

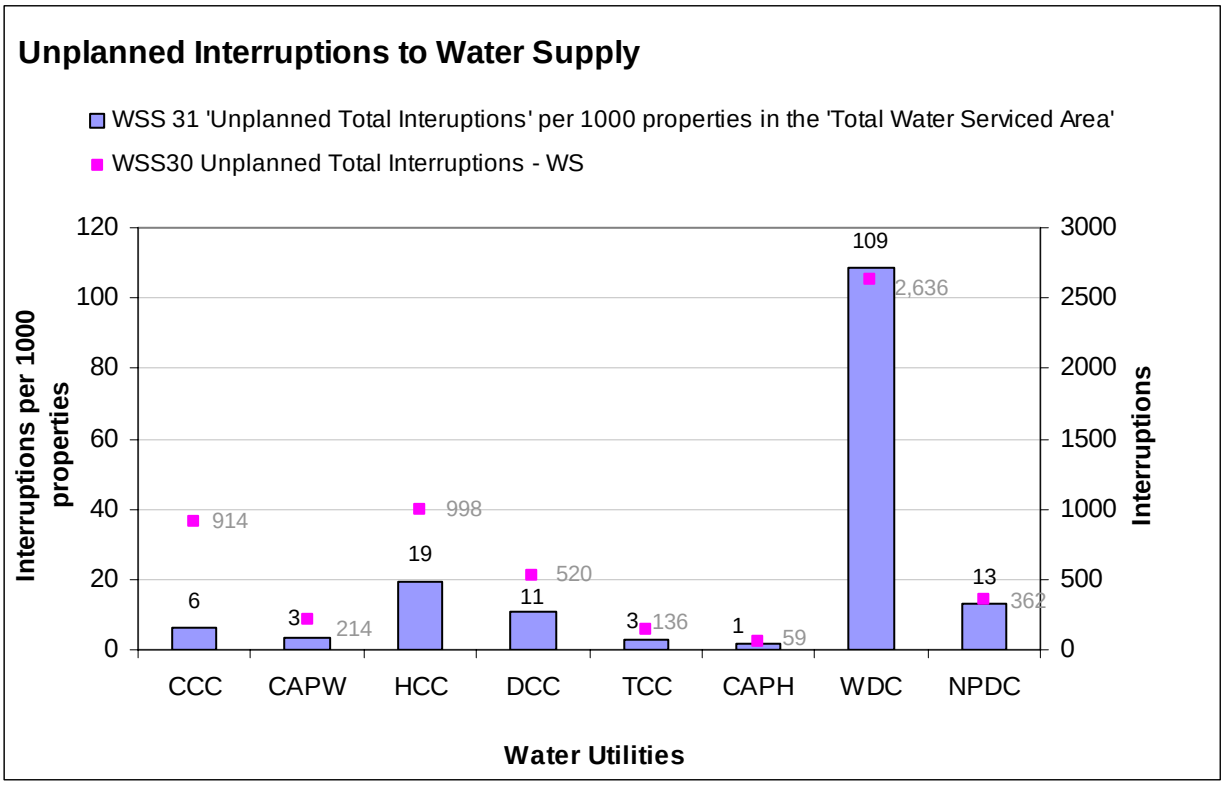
Definition	Measure
WSS30 The number of unplanned interruptions to service experienced by properties in the "Total Water Serviced Area"	Nu
WSS31 "Unplanned Total Interruptions" per 1000 properties in the "Total Water Serviced Area"	Nu/1000 prop

Confidence Gradings

WSS30

WSS31

The measure of unplanned interruptions to water supply records how often customers experience an unplanned total loss of water supply as a result of an asset failure in the reticulated network.



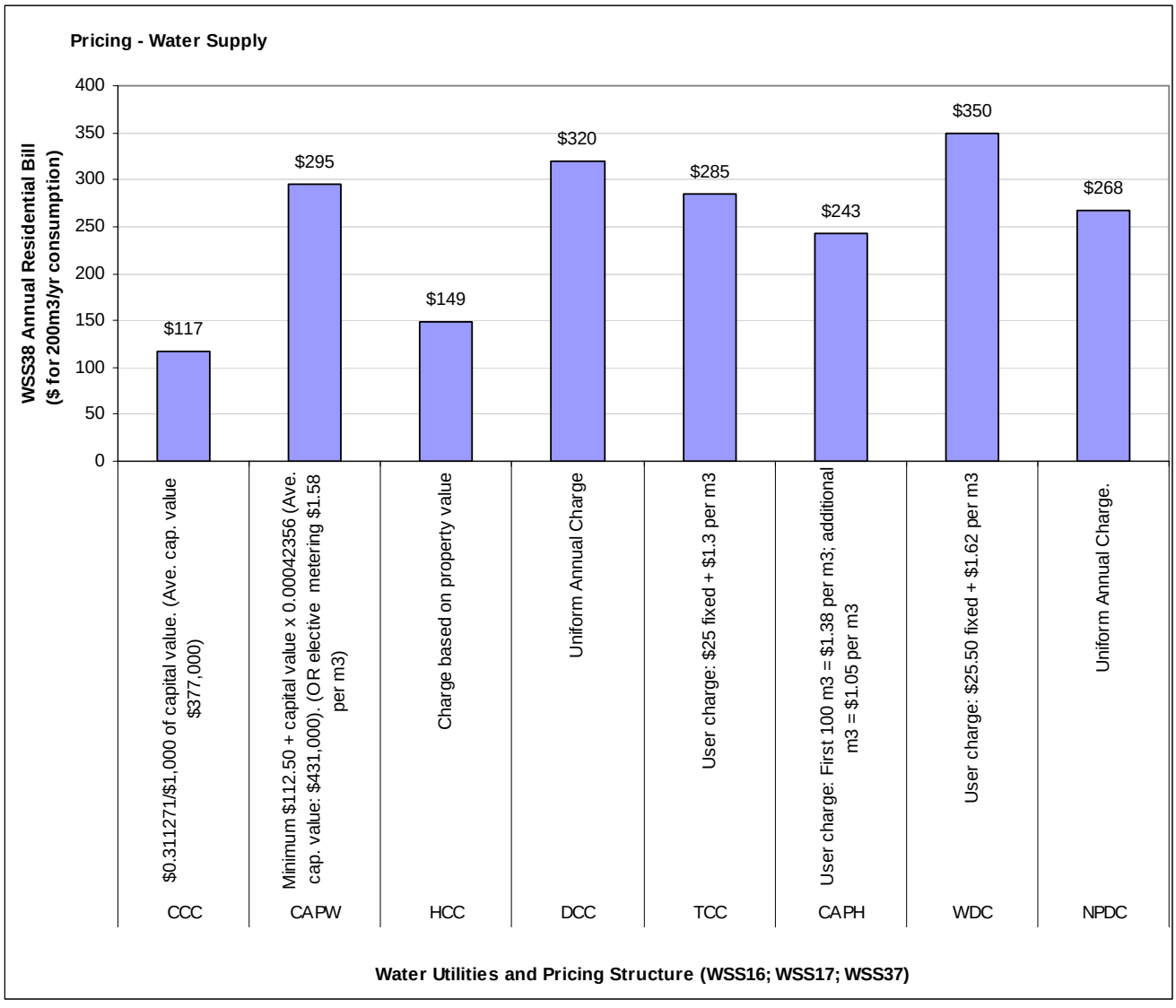
Whangarei District Council recorded notably high numbers of unplanned interruptions. 109 interruptions per 1000 properties was calculated as a best guess by Whangarei District Council contractors. The seven other utilities all recorded under 20 interruptions per 1000 properties.

Price of Water Supply Services

Definition	Measure
WSS16 Price: The fixed charge (inc GST) for residential customers	$ (inc GST) per annum
WSS17 Price: The user charge (inc GST) for residential customers	$/m^3
WSS37 Price: The minimum annual charge (inc GST) for residential customers	$
WSS38 Price: The average cost of a residential customer's bill based on an annual consumption of 200 m3	$/200m^3

Confidence Gradings

[redacted] WSS16
[redacted] WSS17
[redacted] WSS37
[redacted] WSS38



The price of water is charged to customers in various ways by the eight water utilities. These include minimum pricing, fixed charges (uniform annual charge) and user charges (volumetric

charging). The graph above shows what residential customers with an annual water consumption of 200m³ would be charged by each utility.

Participants who utilised minimum pricing were Capacity-Wellington ($112.50), Whangarei District Council ($25.50) and Tauranga City Council ($25). Whangarei District Council also allowed a prompt payment discount of 5%.

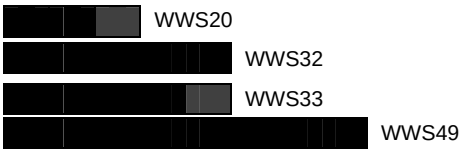
Uniform annual charges have been used by Dunedin City Council ($320), New Plymouth District Council ($268) and Christchurch City Council ($117), while Whangarei District Council and Tauranga City Council utilise metering and apply a volumetric charging system (Whangarei charges $1.62 per m³, Tauranga City Council charges $1.3 per m³).

Capacity-Hutt have a tiered volumetric system (the first 100m³ at $1.38 per m³, and any additional consumption at $1.05 per m³). Capacity-Wellington has an optional metering system, but otherwise bases their charges on property values. Hamilton City Council also uses a property value based system.

Price of Wastewater Services

Definition	Measure
WWS20 Price: The fixed charge (inc GST) for residential customers	$ (inc GST) per annum
WWS32 Price: (Average Annual Rates Charge) The dollar amount of an average annual rates bill for the supply of wastewater services to residential customers	$
WWS33 Price: (Fixed Uniform Annual Charge)The fixed uniform annual charge included in the rates per residential customer	$
WWS49 Price: The average cost of a residential customer's bill based on an annual consumption of 200m^3	$/200m^3

Confidence Gradings

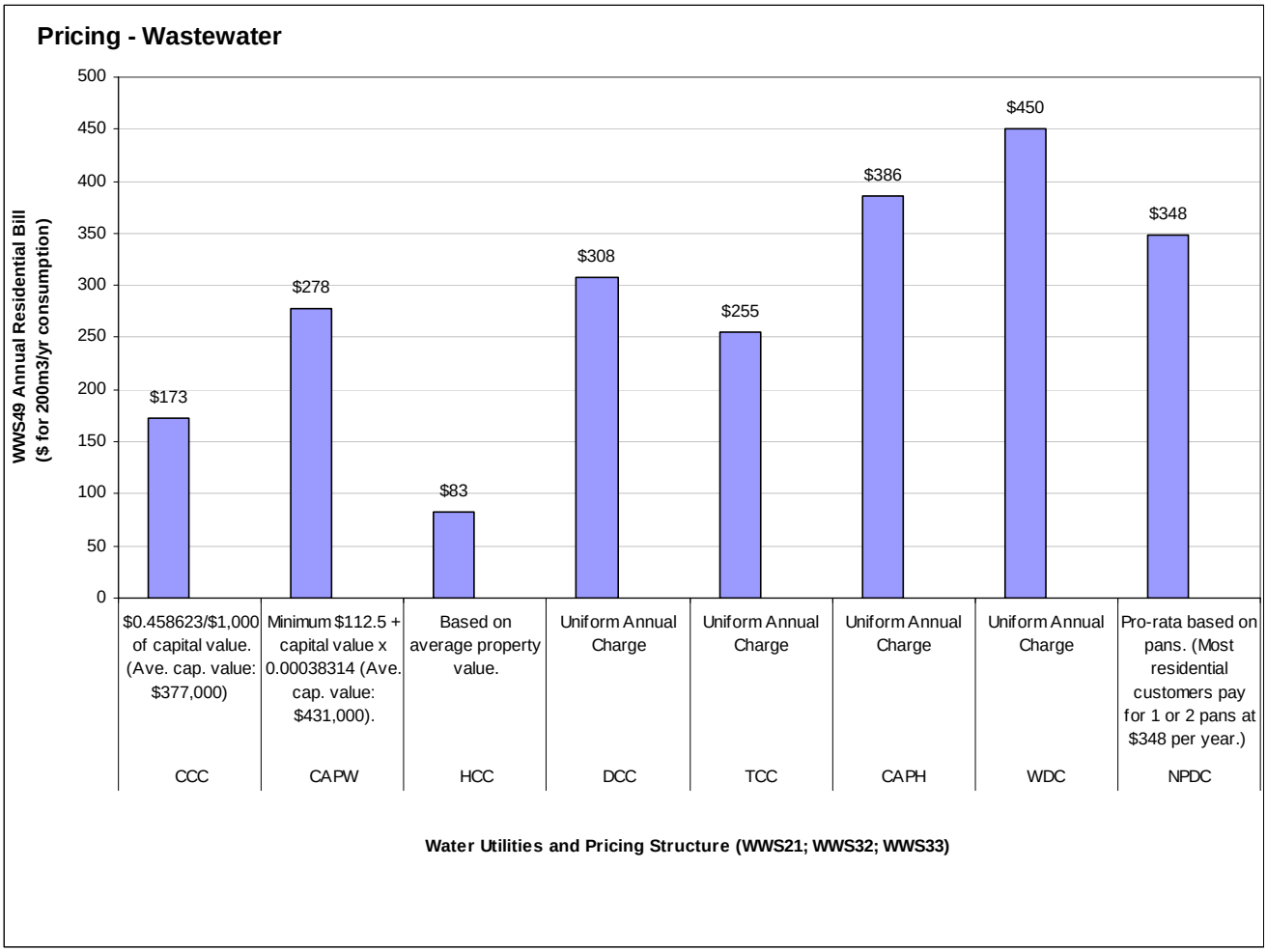


The eight water utilities reported three methodologies of charging for wastewater services. To enable a basis for comparison, the following graph illustrates the price that each utility would apply to each residence for 200 m³ of water consumption. This method results in a range of prices – from $83(HCC) to $450(WDC) per annum.

It is noted that none of the participants utilise a volumetric system to charge for wastewater services, although New Plymouth District Council use a pro-rata approach in that most residential customers pay for 1 or 2 pans at $348 per year.

Half of the participants use the uniform annual charge mechanism, including Whangarei District Council ($450), Capacity-Hutt ($386), Dunedin City Council ($308) and Tauranga City Council ($255).

Capacity-Wellington, Christchurch City Council and Hamilton City Council all utilise property value as a basis for price-setting.



Price of Stormwater Services

Definition	Measure
SWS34 Price: (Average Annual Rates Bill) The portion of the average annual rates bill used for stormwater services in the "Total Stormwater Serviced Area" (Inc GST)	$ per $ (inc GST).

The aim of this measure was to identify the price paid by customers for stormwater services. Participants were required to calculate the proportion of every dollar of the annual rates bill spent on stormwater services.

Inconsistencies emerged in the calculation of this measure. A method of calculation will need to be clarified for future performance reviews.

Section D: Economic Well-Being

Economic well-being involves the financial considerations for each water utility in providing three waters services.

Definitions

Operating Revenue: the total income for the reporting year relating to the total serviced area. This includes revenue from rates (minimum or fixed rate charges), but excludes developer or asset contributions.

Total Revenue: represents the total revenue for the organisation (Operating Revenue + Developer Revenue)

Operating Cost: includes operation, maintenance and administration costs (excludes depreciation and interest).

Total Cost: the total of all costs (Operating Cost, Depreciation and Interest)

Capital Expenditure: the capital expenditure made by each organisation as it relates to the relevant water service (water supply, wastewater or stormwater). This gives an idea of investment expenditure for the reporting period.

The key reporting measures in this section give an overview of the revenue and costs for the water utilities in the supply of water, wastewater and stormwater services. The measures are presented as actual values in tables and per serviced property values in graphs.

The graphs show that the total cost per property includes a component of operating costs. The balance is established with the addition of depreciation costs and interest costs. The total cost measure provides an overview of the total costs for each water utility to provide water supply, wastewater and stormwater services.

Alongside these costs is the recognition of capital expenditure. Rather than being identified as a cost, capital expenditure is categorised as an investment. The aim is to illustrate an overview of the magnitude of investment made by each water utility in the provision of water supply, wastewater and stormwater assets.

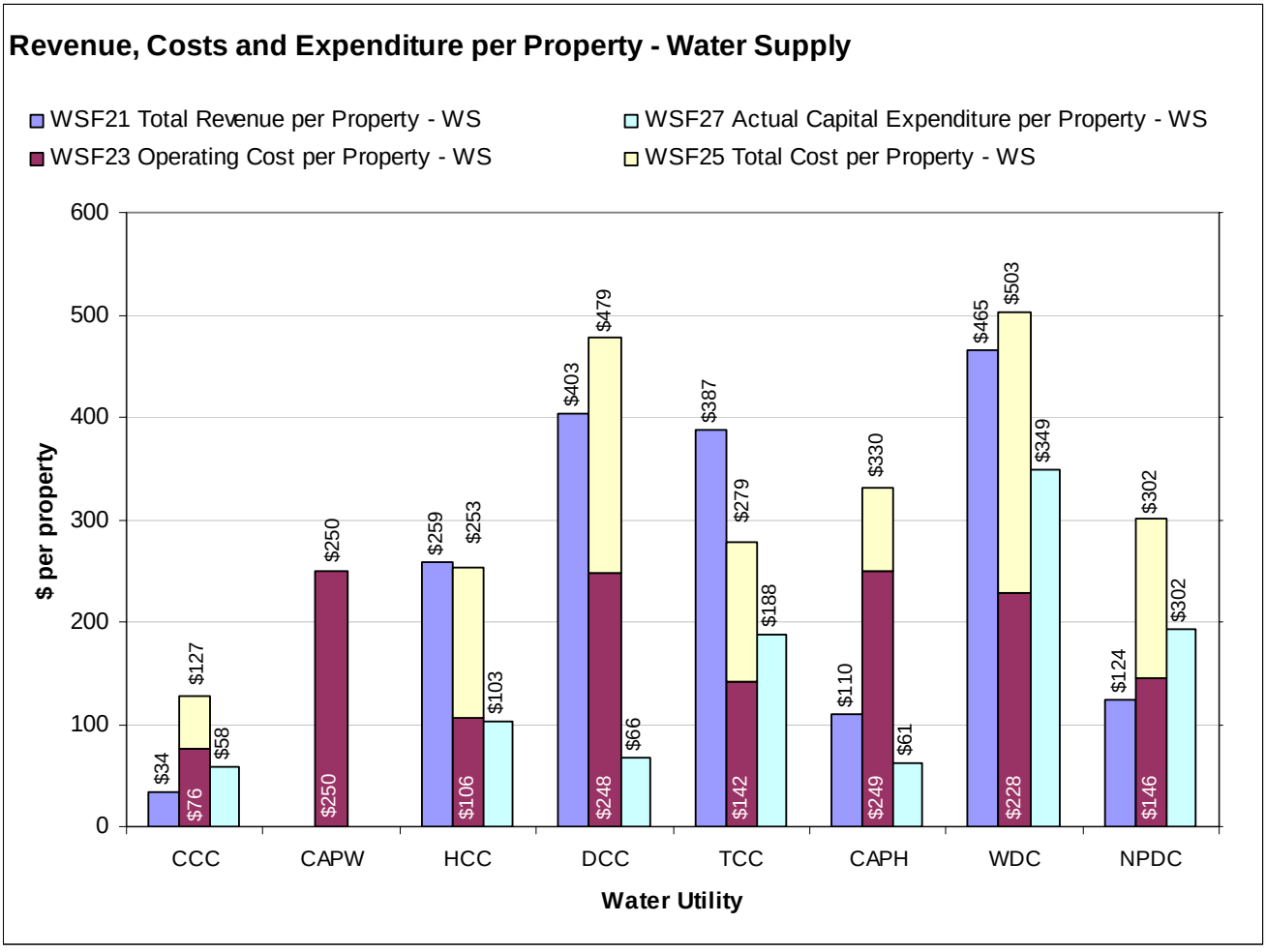
Water Supply Revenue and Costs

Confidence Gradings

As the graph overleaf shows, Whangarei District Council spent the most per property on capital improvements for water supply. However, it will also be noted in the table below that this did not equate to the highest expenditure – Tauranga City Council allocated $9,333,324 expenditure on water supply capital improvement projects.

Actual Revenue and Costs – Water Supply

Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
WSF20 Total Revenue – WS	4,973,654	Data not provided	13,529,622	19,767,000	19,204,340	4,344,974	11,263,024	3,445,800
WSF24 Total Cost - WS	18,798,814	16,856,838	13,201,000	23,464,000	13,822,211	13,084,673	12,190,339	8,411,830
WSF26 Actual Capital Expenditure - WS	8,630,560	Data not provided	5,383,000	3,255,000	9,333,234	2,418,624	8,450,840	5,377,400



NB: Data was not available from CAPW for the measures WSF21 and WSF27.

Wastewater Revenue and Costs

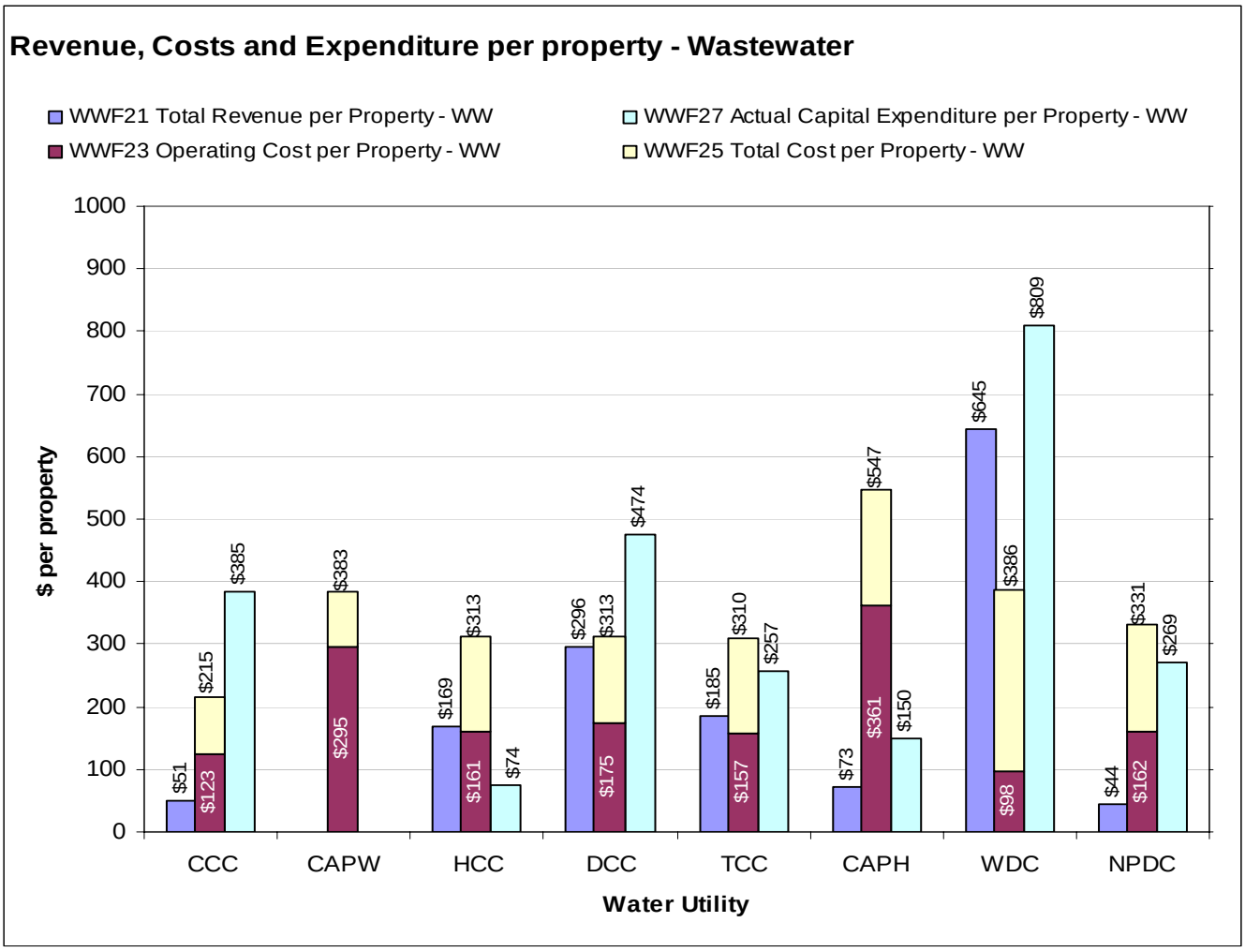
Confidence Gradings

Whangarei District Council also spent a considerable amount per property on wastewater capital improvement projects, amounting to $809 per property.

In the larger water utility peer group Christchurch carried out significant capital expenditure – $50,362,148 in total. This equated to $348 per property. In comparison, Dunedin City Council spent less than half this total figure, but with a much smaller population base their expenditure equated to $474 per property.

Actual Revenue and Costs – Wastewater

Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
WWF20 Total Revenue - WW	6,655,394	Data not provided	8,752,474	14,232,000	8,222,199	2,681,802	13,694,000	1,385,575
WWF24 Total Cost - WW	28,097,934	26,051,752	16,202,000	15,061,000	13,796,051	20,120,862	8,199,772	10,381,100
WWF26 Actual Capital Expenditure - WW	50,362,148	Data not provided	3,805,000	22,832,000	11,408,168	5,523,959	17,194,074	8,460,000



NB: Data was not available from CAPW for the measures WWF21 and WWF27.

Stormwater Revenue and Costs

Confidence Gradings

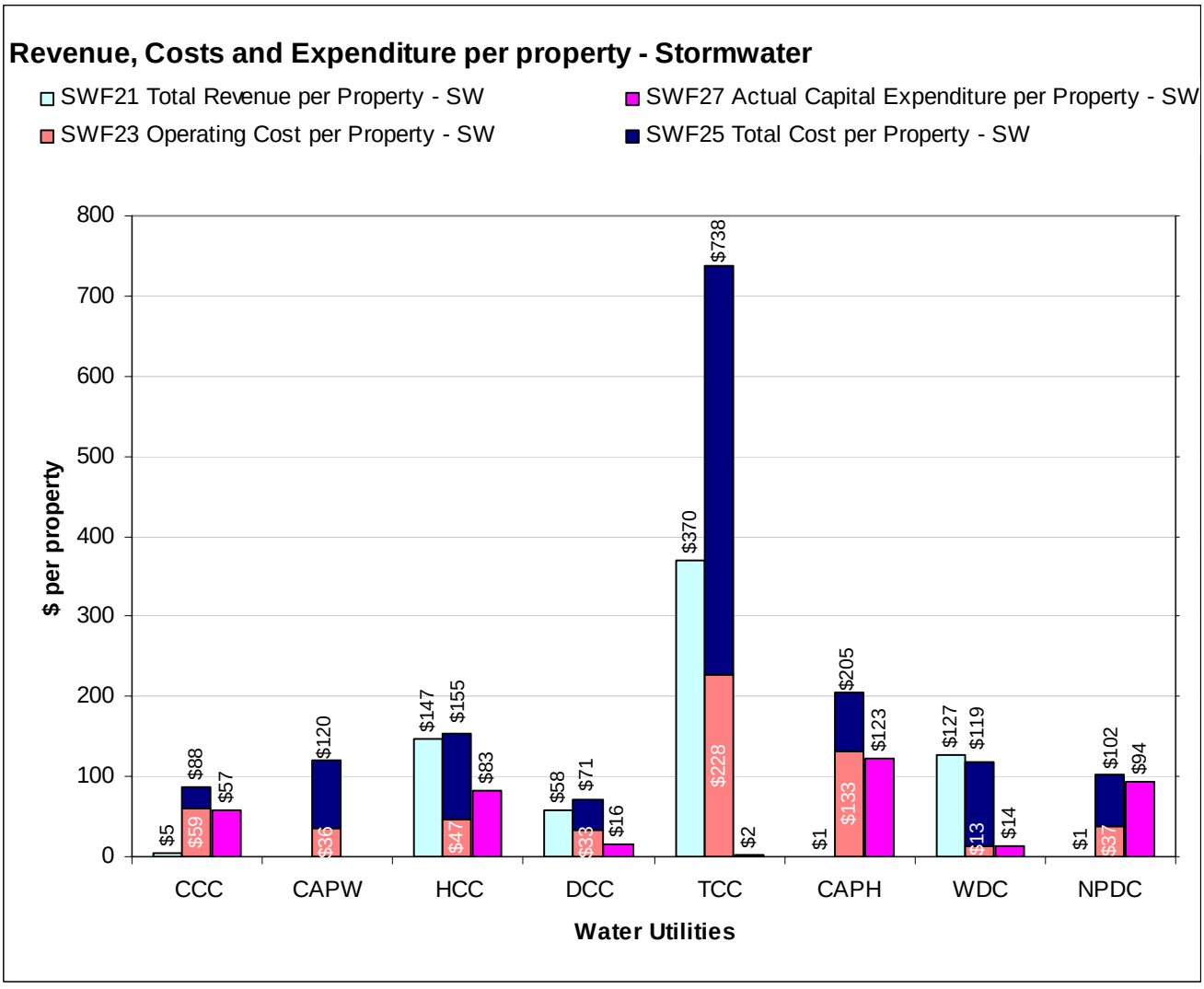
The graph overleaf demonstrates that most of the eight water utilities spent much less on stormwater capital improvements than on either water supply or wastewater system upgrades.

Tauranga City Council stands out as having considerably higher values per property in this area compared to the seven other water utilities – with a particularly high total cost per property. When considered in greater detail it can be seen that Tauranga City Council have a higher interest component within their costs compared to the other utilities. However, as illustrated in the table below the actual total costs are not noticeably different to the other water utilities. The factor contributing the most to the variance is the relatively small number of stormwater serviced properties within the Tauranga City Council area (9,747 properties),

which spreads revenue and costs over a smaller base. Tauranga City Council noted that they chose a conservative approach in identifying properties serviced in the total stormwater serviced area by only counting properties that are required to connect to the network.

Actual Revenue and Costs – Stormwater

Water Utility	CCC	CAPW	HCC	DCC	TCC	CAPH	WDC	NPDC
SWF20 Total Revenue – SW	616,237	Data not provided	6,539,100	2,782,000	3,607,641	38,996	3,311,779	20,000
SWF24 Total Cost – SW	11,052,674	8,553,846	6,869,000	3,409,000	7,190,444	8,075,035	3,092,537	2,236,900
SWF26 Actual Capital Expenditure - SW	7,241,368	Data not provided	3,695,000	784,000	22,784	4,840,202	371,411	2,071,500



NB: Data was not available from CAPW for the measures SWF21 and SWF27.

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.

Appendix 2: Definitions of Measures

				Page No
Common Measures: Background Information				
CB1	Total Jurisdictional Area	Total land area under the Council's jurisdiction	Ha	**6**
CB2	Total Jurisdictional Population	Total residential population living within the "Total Jurisdictional Area"	Nu	**6,7**
CB3	Predicted Population 2028	Predicted population of the "Total Jurisdictional Area" by 2028	Nu	
CB12	Properties - All Residential	Total number of residential properties within the "Total Jurisdictional Area"	Nu	**8**
CB13	Properties - All Business	Total number of business properties within the "Total Jurisdictional Area"	Nu	**8**
CB14	Properties - All Rural	Total number of rural properties within the "Total Jurisdictional Area"	Nu	**8**
CB15	Properties - All Other	Total number of properties other than residential, business and rural properties, within the "Total Jurisdictional Area"	Nu	**8**
CB4	Total Jurisdictional Properties	Total number of all properties in the "Total Jurisdictional Area"	Nu	**6,8**
CB16	Number of Beaches/Lagoons	Total number of monitored bathing beaches/lagoons in the "Total Jurisdictional Area"	Nu	
CB17	Estimated Length of Natural Streams	Total length of natural streams within the "Total Jurisdictional Area"	Km	
Common Measures: Environmental				
CE22	Total Wet Weather Sewer Overflow Volume	Total Sewer Overflow volume caused by Wet Weather	m^3	
CE27	Total Dry Weather Sewer Overflow Volume	Total Estimated Dry Weather Sewer Overflow Volume	m^3	
Common Measures: Social				
CS1	Written Complaints Response	Written complaints that were meaningfully responded to within 10 days, as a percentage	%	**15**
CS13	Customer Charter	Does the organisation provide services to customers on the basis of a formal customer charter? Describe main features of the charter in Comments Box	yes/no	**17**
CS14	Public Consultation Policy or Process	If the organisation has adopted a formal consultation policy, how are the public/customers able to access or obtain a copy of the policy and what are the main features of the policy. If not, how does the orgn consult with or involve the public/customers in decision making - Description in Comments field.	yes/no	**17**
Water Supply Measures: Background Information				
WSB13	Total Water Serviced Area	Total area serviced by the (public) reticulated water supply network	Ha	**7**
WSB15	Total Water Serviced Population	Total residential population served in the "Total Water Serviced Area"	Nu	**7**
WSB22	Total Water Serviced Properties - Residential	Total number of residential properties serviced in the "Total Water Serviced Area"	Nu	
WSB23	Total Water Serviced Properties - Non-residential	Total number of non-residential properties serviced in the "Total Water Serviced Area"	Nu	
WSB25	Total Water Serviced Properties	Total number of all residential and non-residential properties serviced in the "Total Water Serviced Area"	Nu	
WSB5	Total Bulk Water Supplied	Total volume of bulk water supplied	m^3	**11,13**
WSB26	Total Water Consumed	Total volume of water consumed by all customers (residential and non-residential) in the "Total Water Serviced Area"	m^3	**11**
WSB27	Average Water Consumed per Property per Day	Total Water Consumed per "Total Water Serviced Properties" per day	litres/property /day	**11**
Water Supply Measures: Asset Quantities				
WSA10	Total Watermain Length	Total length of watermains within the "Total Water Serviced Area" servicing all customers	Km	**9,13**
WSA11	Total Fire Hydrants	Total number of fire hydrants within the "Total Water Serviced Area"	Nu	
WSA12	Total Water Valves	Total number of water supply valves within the "Total Water Serviced Area"	Nu	
WSA13	Total Water Pumpstations	Total number of water pumpstations within the "Total Water Serviced Area"	Nu	**9**

WSA14	Total Water Storage Reservoirs	Total number of water storage reservoirs within the "Total Water Serviced Area"	Nu	**10**
WSA15	Total Water Meters	Total number of water meters within the "Total Water Serviced Area"	Nu	**10**
Water Supply Measures: Environmental				
WSE10	Non-Revenue Water	Volume of bulk water received from bulk supplier and/or own sources minus the billed volume of water supplied to serviced properties (including the volume of water billed via issued water permits) in the "Total Water Serviced Area".	m^3	**12,13**
WSE14	Real System Water Losses	Non-revenue water minus (unbilled authorised consumption plus apparent losses)	m^3	**12,13**
WSE15	Real System Water Losses by Length	Estimated real system water losses per 100km of "Total Watermain Length"	m^3/100Km	**12,13**
Water Supply Measures: Social				
WSS30	Unplanned Total Interruptions - WS	The number of unplanned interruptions to service experienced by properties in the "Total Water Serviced Area"	Nu	**18**
WSS31	Unplanned Interruption Frequency - WS	"Unplanned Total Interruptions" per 1000 properties in the "Total Water Serviced Area"	Nu/1000 prop	**18**
WSS40	Third Party Incidents - WS	The number of unplanned interruptions to service caused by third parties	Nu	
WSS41	Interruption Incidents - WS	The number of Incidents where one or more customers experience an unplanned total loss of Water supply due to asset failure, includes shut valves for Firefighting requirements, excludes third party damage	Nu	
WSS42	Total Interruption Incidents - WS	Total Number of incidents where any customer experience an unplanned total loss of water	Nu	
WSS44	Total Interrupted Hours	Sum of all hours of interruptions across all Interruption incidents	Nu	
WSS32	Average Interruption Duration per incident - WS	The average duration for which a serviced property in the "Total Water Serviced Area" is without supply due to unplanned interruptions.	Hours	
WSS37	Price - Minimum Charge	The minimum annual charge (inc GST) for residential customers (if applicable to your orgn, otherwise leave blank)	$	**19**
WSS16	Price - Fixed Charge	The fixed charge (inc GST) for residential customers (if applicable to your orgn, otherwise leave blank)	$	**19**
WSS17	Price - User Charge	The user charge (inc GST) for residential customers (IF APPLICABLE)	$/$m^3$	**19**
WSS38	Annual Bill Based on 200 m3/yr Consumption	The average cost of a residential customer's bill based on an annual consumption of 200 m3	$/200$m^3$	**19**
Water Supply Measures: Financial				
WSF 30	Operating Revenue - WS	Operating Revenue for the reporting year relating to the "Total Water Serviced Area" Excludes Developer contributions	$	
WSF31	Developer Revenue - WS	All WS developer cash or asset contributions	$	
WSF20	Total Revenue - WS	Total water supply revenue for the reporting year, relating to the "Total Water Serviced Area" (not unserviced properties)	$	**22,23**
WSF21	Total Revenue per Property - WS	Total Revenue per serviced property	$/property	**22,23**
WSF22	Total Operating Cost - WS	Total water supply operating cost for the reporting year relating to the "Total Water Serviced Area" (not unserviced properties)	$	
WSF23	Operating Cost per Property - WS	Total Operating Cost per serviced property	$/property	**22,23**
WSF28	Annual Depreciation	The current cost annual depreciation funding for water supply assets	$	
WSF29	Interest	The total interest for the reporting year relating to the "Total Water Serviced Area" (not unserviced properties)	$	
WSF24	Total Cost - WS	The total cost of providing water supply services for the reporting year relating to the "Total Water Serviced Area" (not unserviced properties)	$	**22,23**
WSF25	Total Cost per Property - WS	Total Cost per serviced property	$/property	**22,23**
WSF26	Actual Capital Expenditure - WS	Actual capital expenditure on water supply for the reporting year relating to the "Total Water Serviced Area" (not unserviced properties)	$	**22,23**
WSF27	Actual Capital Expenditure per Property - WS	Actual Capital Expenditure per serviced property	$/property	**22,23**
Wastewater Measures: Background Information				
WWB21	Total Wastewater Serviced Area	Total area serviced by the (public) reticulated wastewater network	Ha	**7**

WWB23	Total Wastewater Serviced Population	Total residential population served in the "Total Wastewater Serviced Area"	Nu	7
WWB32	Total Wastewater Serviced Properties - Residential	Total number of residential properties serviced within the "Total Wastewater Serviced Area"	Nu	
WWB33	Total Wastewater Serviced Properties - Non-residential	Total number of non-residential properties serviced within the "Total Wastewater Serviced Area"	Nu	
WWB35	Total Wastewater Serviced Properties	Total number of all residential and non-residential properties serviced within the "Total Wastewater Serviced Area"	Nu	
WWB44	Total Trade Waste Properties	Total number of trade waste properties by each LNO area	Nu	
WWB46	Total Trade Waste Volume	Volume of Trade Waste Produced by each LNO area	m^3	
WWB38	Total Wastewater Produced - Non Trade Waste	Total annual volume of Wastewater produced (excluding trade waste) by "Total Wastewater Serviced Properties" within the "Total Wastewater Serviced Area"	m^3	11
Wastewater Measures: Asset Quantities				
WWA1	Separate Sewer Length	Total length of (public) wastewater piped reticulation (gravity & pressure) servicing all properties in the "Total Wastewater Serviced Area"	Km	
WWA2	Combined Sewer Length	Total length of (public) combined piped reticulation (gravity & pressure) servicing all properties in the "Total Wastewater Serviced Area"	Km	
WWA3	Total Wastewater Pipe Length	Total length of (public) wastewater and combined piped reticulation (gravity & pressure) servicing all properties in the "Total Wastewater Serviced Area"	Km	9
WWA7	Total Wastewater Manholes	Total number of wastewater (separate & combined) manholes within the "Total Wastewater Serviced Area"	Nu	10
WWA8	Total Wastewater Pumpstations	Total number of wastewater pumpstations within the "Total Wastewater Serviced Area"	Nu	9
WWA9	Total Wastewater Treatment Plants	Total number of wastewater treatment plants owned by (operated for) the organisation in delivering wastewater services within the "Total Wastewater Serviced Area"	Nu	10
WWA10	Wastewater Treatment Plant Capacity per Day	Total capacity of "Total Wastewater Treatment Plants" per day	m^3/day	10
Water Supply Measures: Environmental				
WWE13	Separate Sewer Overflow Volume	Total estimated volume of separate sewer overflow events from the "Separate Sewer Length" caused by wet weather	m^3	14
WWE6	Combined Sewer Overflow Volume	Total estimated volume of combined sewer overflow events from the "Combined Sewer Length" caused by wet weather	m^3	
WWE16	Total Pumpstation Overflow Volume	Total estimated volume of wet and dry weather overflow events from all wastewater pumpstations in the "Total Wastewater Serviced Area"	m^3	
Wastewater Measures: Social				
WWS68	Total Estimated DWSO Volume	Sum of all estimated total volume discharged	m^3	
WWS48	Price - Minimum Charge	The minimum annual charge (inc GST) for residential customers (if applicable to your orgn, otherwise leave blank)	$	
WWS20	Price - Fixed Charge	The fixed charge (inc GST) for residential customers (if applicable to your orgn, otherwise leave blank)	$	20
WWS21	Price - User Charge	The user charge (inc GST) for residential customers (if applicable to your orgn, otherwise leave blank)	$/$m^3$	
WWS32	Price - Average Annual Rates Charge	The dollar amount of an average annual rates bill for the supply of wastewater services to residential customers	$	20
WWS33	Price - Fixed Uniform Annual Charge	The fixed uniform annual charge included in the rates per residential customer	$	20
WWS49	Annual Wastewater Bill Based on 200 m3/yr Water Consumption	The average cost of a residential customer's wastewater bill based on an annual water consumption of 200 m3	$/200$m^3$ water	20
Wastewater Measures: Financial				
WWF30	Operating Revenue - WW	Operating revenue for the reporting year relating to the "Total Wastewater Serviced Area " Excludes all developer contributions.	$	
WWF31	Developer Revenue - WW	All WW developer cash or asset contributions	$	

WWF20	Total Revenue - WW	Total wastewater revenue for the reporting year, relating to the Total Wastewater Serviced Area (not unserviced properties)	$	**24**
WWF21	Total Revenue per Property - WW	Total Revenue per serviced property	$/property	**24,25**
WWF22	Total Operating Cost - WW	Total Wastewater operating cost for the reporting year relating to the Total Wastewater Serviced Area (not unserviced properties)	$	
WWF23	Operating Cost per Property - WW	Total Operating Cost per serviced property	$/property	**24,25**
WWF28	Annual Depreciation	The current cost annual depreciation funding for wastewater assets	$	
WWF29	Interest	The total interest for the reporting year relating to the "Total Wastewater Serviced Area" (not unserviced properties)	$	
WWF24	Total Cost - WW	The total cost of providing wastewater services for the reporting year relating to the Total Wastewater Serviced Area (not unserviced properties)	$	**24**
WWF25	Total Cost per Property - WW	Total Cost per serviced property	$/property	**24,25**
WWF26	Actual Capital Expenditure - WW	Actual capital expenditure on wastewater for the reporting year relating to the Total Wastewater Serviced Area (not unserviced properties)	$	**24**
WWF27	Actual Capital Expenditure per Property - WW	Actual Capital Expenditure per serviced property	$/property	**24,25**
Stormwater Measures: Background Information				
SWB22	Total Stormwater Serviced Area	Total area serviced by the (public) reticulated stormwater network.	Ha	**7**
SWB25	Total Stormwater Serviced Population	Total residential population served in the "Total Stormwater Serviced Area"	Nu	**7**
SWB34	Total Stormwater Serviced Properties - Residential	Total number of residential properties serviced in the "Total Stormwater Serviced Area"	Nu	
SWB35	Total Stormwater Serviced Properties - Non-residential	Total number of non-residential properties serviced in the "Total Stormwater Serviced Area" (inside and outside the MUL)	Nu	
SWB37	Total Stormwater Serviced Properties	Total number of all residential and non-residential properties serviced in the "Total Stormwater Serviced Area"	Nu	
SWB5	Annual Rainfall	The total annual rainfall for the Council's "Total Jurisdictional Area"	mm	
SWB6	Combined Sewer Area	Total area within the "Total Stormwater Serviced Area" that is serviced by a combined sewer system	Ha	
SWB8	Percentage combined sewer area	"Combined Sewer Area" as percentage of "Total Stormwater Serviced Area"	%	
SWB7	Soakage Area	Total area within the "Total Stormwater Serviced Area" that is recognised as good soakage and where this is the predominant method of stormwater drainage.	Ha	
SWB9	Percentage soakage area	"Soakage Area" as percentage of "Total Stormwater Serviced Area"	%	
SWB38	Percentage Other Area	Percentage of "Total Stormwater Serviced Area" that does not rely on combined sewer or soakage for drainage	%	
Stormwater Measures: Asset Quantities				
SWA20	Stormwater Pipe Length	Length of (public) stormwater-only pipes within the "Total Stormwater Serviced Area" that are owned and substantially maintained by the organisation	Km	
SWA21	Combined Sewer Pipe Length	Length of (public) combined sewer pipes within the "Total Stormwater Serviced Area" that are owned and substantially maintained by the organisation	Km	
SWA22	Total Stormwater Pipe Length	Total length of all (public) stormwater and combined sewer pipes within the "Total Stormwater Serviced Area"	Km	**9**
SWA23	Lined Channel Length	Total length of (public) lined, engineered open channels within the "Total Stormwater Serviced Area"	Km	**10**
SWA24	Unlined Channel Length	Total length of (public) unlined, engineered open channels within the "Total Stormwater Serviced Area"	Km	**10**
SWA25	Total Channel Length	Total length of (public) lined and unlined, engineered open channels within the "Total Stormwater Serviced Area"	Km	
SWA27	Total Stormwater Manholes	Total number of (public) stormwater and combined sewer manholes within the "Total Stormwater Serviced Area"	Nu	**10**

SWA28	Stormwater Treatment Devices	Total number of (public) stormwater treatment devices within the "Total Stormwater Serviced Area"	Nu	**10**
Stormwater Measures: Environmental				
SWE22	Combined Sewer Overflow Volume	Total estimated volume of all "Combined Sewer Overflow Events" caused by wet weather	m^3	
Stormwater Measures: Social				
SWS49	Total Estimated DWSO volume	Total DWSO volume as the sum of all estimated discharge volumes from all events	m^3	
SWS34	Price - Average Annual Rates Bill	The portion of the average annual rates bill used for stormwater services in the "Total Stormwater Serviced Area" (Inc GST). PLEASE DESCRIBE IN "COMMMENTS" HOW THIS HAS BEEN CALCULATED	$ per $	**21**
Stormwater Measures: Financial				
SWF30	Operating Revenue - SW	Operating revenue for the reporting year relating to the "Total Stormwater Serviced Area" Excludes all developer contributions.	$	
SWF31	Developer Revenue - SW	All SW developer cash or asset contributions	$	
SWF20	Total Revenue - SW	Total stormwater revenue (income) for the reporting year, relating to the "Total Stormwater Serviced Area" (not unserviced properties)	$	**25,26**
SWF21	Revenue per Property - SW	Average Revenue per serviced property	$/property	**25,26**
SWF22	Total Operating Cost - SW	Total stormwater operating cost for the reporting year, relating to the "Total Stormwater Serviced Area" (not unserviced properties)	$	
SWF23	Operating Cost per Property - SW	Average Operating Cost per serviced property	$/property	**25,26**
SWF28	Annual Depreciation	The current cost annual depreciation funding for all stormwater assets	$	
SWF29	Interest	The total interest for the reporting year relating to the "Total Stormwater Serviced Area" (not unserviced properties)	$	
SWF24	Total Cost - SW	The total cost of providing stormwater services for the reporting year, related to the "Total Stormwater Serviced Area" (not unserviced properties)	$	**25,26**
SWF25	Total Cost per Property - SW	Average Total Cost per serviced property	$/property	**25,26**
SWF26	Actual Capital Expenditure - SW	Actual capital expenditure on stormwater for the reporting year, related to the "Total Stormwater Serviced Area" (not unserviced properties)	$	**25,26**
SWF27	Actual Capital Expenditure per Property - SW	Actual Capital Expenditure per serviced property	$/property	**25,26**