

2010-11  
**WATER SUPPLY AND SEWERAGE**

NSW BENCHMARKING REPORT



Local Government  
Association of NSW



Shires Association  
of NSW



Department of  
Primary Industries  
Office of Water



**2010-11**

**NSW WATER SUPPLY AND SEWERAGE**

BENCHMARKING REPORT

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**BEST PRACTICE MANAGEMENT**

**2010-11 NSW WATER SUPPLY AND SEWERAGE  
BENCHMARKING REPORT**

April 2012

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# Foreword

Performance monitoring and benchmarking are becoming increasingly important tools for the efficient and effective management of water supply and sewerage utilities. The National Water Initiative has extended the 1994 *Strategic Framework for Water Reform* to provide for national performance reporting of pricing and service quality for water delivery. It commits water utilities to effective, efficient and accountable water management.

In line with the National Water Initiative, the NSW government has developed the *Best-Practice Management of Water Supply and Sewerage Guidelines*<sup>1</sup>. These guidelines, which were updated in 2007, are the key driver for reform of planning and management and for continuing performance improvement by each utility through the *NSW Best-Practice Management of Water Supply and Sewerage Framework* (page 6). The Framework requires Local Water Utilities (LWUs) to undertake annual performance monitoring in accordance with the *National Water Initiative*<sup>2</sup>, with the aim of improving productivity and the quality and efficiency of services to all NSW residents. Performance monitoring is also important for public accountability and has been strongly endorsed by the Independent Pricing and Regulatory Tribunal<sup>3</sup> and the Productivity Commission<sup>4</sup>.

This *2010-11 NSW Water Supply and Sewerage Benchmarking Report* discloses the full suite of NSW water supply and sewerage performance indicators for all NSW water utilities including Sydney and Hunter Water Corporations over the past six years, enabling each utility to monitor trends in its performance indicators and to improve its productivity and performance through benchmarking against similar utilities. Independent auditing and data validation assure data reliability of the NSW Performance Monitoring System (pages 1 and 285).

A summary of the key performance indicators for all NSW urban water utilities, together with the overall Statewide performance of the NSW non-metropolitan water utilities and comparison of that performance with interstate utilities, are provided in the companion report *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*.

The *Benchmarking Report* has been prepared by the NSW Office of Water since 1986. To facilitate comparisons, the Minister for Primary Industries has made both the performance monitoring report and the benchmarking report available on the NSW Office of Water website ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

To provide a balanced view of the long-term sustainability of NSW water utilities, a triple bottom line (TBL) accounting focus has been adopted, with performance reported on the basis of social, environmental and economic performance indicators.

NSW performance monitoring and benchmarking also provide valuable data for continuous performance improvement by disclosing the present position and facilitating development of suitable information and responses to address the future water supply and sewerage needs for non-metropolitan NSW. This ensures an appropriate focus and targeting of responses and initiatives to address current and emerging issues. Page 1 provides a summary of such information and responses.

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<sup>1</sup> *Best-Practice Management of Water Supply and Sewerage Guidelines*, Department of Water and Energy, August 2007 ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

<sup>2</sup> *National Performance Framework – 2010-11 Urban Performance Reporting Indicators and Definitions*, National Water Commission/Water Services Association of Australia, April 2011 ([www.nwc.gov.au](http://www.nwc.gov.au)).

<sup>3</sup> *Pricing Principles for Local Water Authorities*, Independent Pricing and Regulatory Tribunal NSW, 1996.

<sup>4</sup> *Australia's Urban Water Sector*. Productivity Commission Report No.55, August 2011 ([www.pc.gov.au](http://www.pc.gov.au)).

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## Acknowledgements

The Local Government Association of NSW and the Shires Association of NSW (LGA and SA) are acknowledged for their strong and continuing support for the NSW annual water supply and sewerage performance monitoring system since its commencement in 1986.

The contribution of NSW Health is acknowledged for providing additional water quality data (from the NSW Water Quality Database) and water quality monitoring compliance data. This data has been incorporated into Tables 5 and 12 and Appendix D1.

The NSW Local Government Water Directorate is also acknowledged for its support and significant contributions.

The success of the NSW performance monitoring system is contingent on full participation by all NSW Local Water Utilities (LWUs). The continuing participation of each LWU in the performance monitoring system and each LWU's significant efforts in providing current, accurate and timely data on its performance for each of the past six years are therefore particularly acknowledged.

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# 1. Introduction

This *NSW Water Supply and Sewerage Benchmarking Report* discloses the full suite of NSW water supply and sewerage performance indicators and benchmarking data for all NSW urban water utilities over the past six years. The data is presented in the form of 66 figures and 18 tables and provides comparative information to enable each local water utility (LWU) to improve its productivity and performance through benchmarking its performance against that of similar LWUs.

A companion report, the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* (available at [www.water.nsw.gov.au](http://www.water.nsw.gov.au)), provides the key performance indicators for the NSW water utilities together with the overall Statewide performance of the NSW non-metropolitan water utilities and compares that performance with interstate utilities. To avoid duplication, these matters are not repeated in this *Benchmarking Report*.

The NSW component of the *National Performance Report 2010-11 for Urban Water Utilities* is shown in Appendix F [page 250] of this Benchmarking Report while national performance comparisons are shown in Appendix A [page 182]. Independent auditing and validation assure data reliability (page 287).

This Benchmarking Report discloses the NSW results for the approximately 150 NWI Performance Indicators as shown in Note 15 on page 33.

In addition, the Benchmarking Report is a valuable annual **resource kit** and continuous improvement tool for the NSW utilities by reporting a broad range of current and emerging issues and providing information and suggested responses to assist the utilities. These include:

- Data reliability of the NSW Performance Monitoring System [pages 1, 285, 287]
- Minimising the regulatory burden and avoiding duplication in reporting [page 3]
- Statewide medians [pages 103, 104, 108, 109]
- Performance percentiles on a % of LWUs basis [pages 236 and 237]; National Medians
- Risk-based drinking water quality management plan [page 9]
- Achievement of microbiological compliance [page 8]
- Boil water alerts and lessons learnt [page 10]
- Effective disinfection of a water supply distribution system [page 248]
- Water quality sampling locations and frequency [page 206]
- Performance of each LWU's water and sewage treatment works [pages 238 and 243]
- Best-practice management [page 5], NSW Best-Practice Management Framework [page 6] and best-practice management compliance [page 105]
- Renewals [page 11]
- Leakage [page 13]
- Benefits of the strong NSW pricing signals [page 11]
- Achieving full cost recovery [page 19]
- Achieving efficient water use [page 11]
- Greenhouse gases [page 14] and NSW greenhouse gas calculator [page 273]
- Improving performance [page 15]
- Triple bottom line (TBL) Performance Report [pages 4, 28, 232, 234]
- Action plan [pages 4, 19, 26], 'liveability', emerging issues, financial plan update [page 19]
- NSW Performance monitoring database [page 189]
- Economic efficiency indicators for four sizes of LWUs [page 18]
- Local Government Integrated Planning and Reporting Framework, 2010 [page 8]
- Software, guidelines, training, tools and assistance available from the NSW Office of Water [pages 8, 11, 13, 17, 21, 34]
- Contents of tables 5 to 18 [page 35]
- General notes [page 30]

## 2. NSW water utilities

This report discloses performance indicators for all NSW urban water utilities, comprising the 105 non-metropolitan local water utilities (LWUs) together with four metropolitan utilities (Sydney Water, Hunter Water, Sydney Catchment Authority and Hawkesbury Council). All utilities are listed in the table below in alphabetical order. To facilitate comparisons with similar sized LWUs, tables 5 to 18 of this report are sorted in order of the number of connected properties served. The number shown beside each utility in the table below is its rank in terms of connected properties for water supply. For example, the table shows '11 Albury City', indicating that Albury City is the 11th LWU in the water supply tables. LWUs are grouped in four size ranges: over 10,000, 3,001 to 10,000, 1,501 to 3,000, and 200 to 1,500 connected properties.

### NSW water utilities (non-metropolitan and metropolitan) in alphabetical order

11	Albury City	54	Deniliquin	59	Lachlan	3	Shoalhaven
29	Armidale Dumaresq	18	Dubbo	48	Leeton	35	Singleton
				22	Lismore (R)	52	Snowy River
24	Ballina (R)	26	Essential Energy	31	Lithgow		Sydney Catchment Authority
100	Balranald (DS)	15	Eurobodalla	61	Liverpool Plains		Sydney Water
21	Bathurst Regional			102	Lockhart (NO WS)		
23	Bega Valley	12	Fish River WS (BS)			13	Tamworth Regional
47	Bellingen	51	Forbes	5	MidCoast	69	Temora (NO WS)
53	Berrigan (DS)			32	Mid-Western Regional	68	Tenterfield
72	Bland (NO WS)	84	Gilgandra	38	Moree Plains	93	Tumbarumba
78	Blayney (NO WS)	60	Glen Innes Severn	65	Murray (DS)	43	Tumut
89	Bogan	28	Goldenfields (NO SGE)	101	Murrumbidgee	6	Tweed
97	Bombala	1	Gosford	41	Muswellbrook		
104	Boorowa	20	Goulburn Mulwaree			45	Upper Hunter
87	Bourke (DS)	80	Greater Hume	34	Nambucca	73	Upper Lachlan
105	Brewarrina	30	Griffith	46	Narrabri	85	Uralla
27	Byron (R)	94	Gundagai	63	Narrandera	107	Urana (NO WS)
		44	Gunnedah	62	Narromine		
91	Cabonne	90	Guyra			9	Wagga Wagga (NO WS)
92	Carrathool	81	Gwydir	83	Oberon (R)	88	Wakool (DS)
103	Central Darling (DS)			19	Orange	98	Walcha
40	Central Tablelands (NO SGE)	76	Harden (R)			79	Walgett (DS)
		30A	Hawkesbury (NO WS)	71	Palerang	96	Warren (DS)
14	Clarence Valley	86	Hay (DS)	36	Parkes	55	Warrumbungle
67	Cobar (R)		Hunter Water	7	Port Macquarie-Hastings	95	Weddin (NO WS)
66	Cobar WB (BS)					57	Wellington
10	Coffs Harbour	37	Inverell	17	Queanbeyan (R)	74	Wentworth (DS)
99	Coolamon (NO WS)					16	Wingecarribee
50	Cooma-Monaro	106	Jerilderie (DS)	33	Richmond Valley	2	Wyong
75	Coonamble	77	Junee (NO WS)	8	Riverina (NO SGE)		
58	Cootamundra (R)			4	Rous (BS) (NO SGE)	56	Yass Valley
42	Corowa	25	Kempsey			49	Young (R)
39	Cowra	70	Kyogle				

R – Reticulator; DS – Dual Supply; BS – Bulk Supplier; NO WS – No water supply; NO SGE – No sewerage

## 3. NSW Performance monitoring system

### 3.1 Performance reporting

Performance monitoring and benchmarking are required under National Competition Policy and the National Water Initiative, are important for public accountability and have been strongly endorsed by the Independent Pricing and Regulatory Tribunal (IPART) and the Productivity Commission.

The State Government promotes continuous performance improvement to improve the quality and efficiency of services to the NSW community. Performance benchmarking provides valuable comparative data which enables each local water utility (LWU) to review and improve its productivity and performance by examining trends in its performance indicators and by benchmarking its performance against that of similar utilities.

The NSW Performance Monitoring System has been conceived and has continued to operate as a 'one stop shop'<sup>5</sup> in order to **minimise the regulatory burden and avoid duplication** in reporting. Water supply and sewerage non-financial data is obtained from each LWU's annual performance reports for their water and sewerage businesses. These reports are required to be lodged by each LWU on the NSW Performance Monitoring Database by 15 September each year in order to comply with the *Best-Practice Management of Water Supply and Sewerage Framework* (page 6). Financial data is obtained through the Division of Local Government from each LWU's Special Schedule Nos 3 to 6 and Notes 2 and 3 of the Special Purpose Financial Reports of their *2010-11 Annual Financial Statements*. The NSW Office of Water obtains the water, sewerage and trade waste charges from each LWU's website. The Office of Water then validates the data (Appendix H on page 285) and provides relevant data to other Government agencies as required (ie. to ABS, BOM, NWC, etc).

### 3.2. Benchmarking

Each LWU can improve its performance in areas of apparent under-performance by benchmarking its key work processes in these areas with the work processes of one or two high-performing similar LWUs and implementing the best-practices thus identified. This will provide better customer service, reduced environmental impact and better value-for-money for the community.

In addition, each LWU should undertake 'Syndicate Benchmarking' with a group of LWUs with similar characteristics. The best-practices thus identified can then be adopted by the other LWUs.

<sup>5</sup> Successful coordination and cooperation with Commonwealth agencies (ABS, BOM, NWC) has **avoided duplication in reporting**. The single data collection in the NSW Performance Monitoring System enables the NSW Office of Water to:

- § Annually provide data to NWC for the 29 NSW LWUs eligible to report in the National Performance Report;
- § Annually provide data to ABS; the performance indicator set has been extended by over 45 indicators to meet BOM and ABS requirements;
- § Annually provide inputs for Statewide reports and submissions, including the State of the Environment Report; and
- § Annually prepare:
  - The NSW Performance Monitoring Report, which discloses the overall Statewide performance of LWUs and compares that performance with interstate utilities;
  - This NSW Benchmarking Report;
  - A Triple Bottom Line Report for each LWU (examples on pages 28 and 29 and pages 232 to 235); and
  - An Action Plan template for each LWU (example on pages 26 and 27).

The Australian Bureau of Meteorology 2011 Regulations for Category 7 have been aligned with the national performance reporting through 57 water resources performance indicators (page 26 of the National Performance Framework [www.nwc.gov.au](http://www.nwc.gov.au)). Utilities with over 10,000 connected properties are required to report mostly monthly data for those indicators. The NSW Performance Monitoring Database is being extended to enable the 29 eligible NSW LWUs to report this data through the NSW Database. Utilities which report these indicators to BOM will be exempted from reporting the 57 water resources indicators in the annual data collection.

### 3.3 TBL performance reports and action plans

As indicated on page 3, the NSW Office of Water provides each utility with an annual TBL Performance Report and a template for its Action Plan to Council for its water supply business and for its sewerage business. The TBL reports disclose the LWU's compliance with the requirements of the NSW Best-Practice Framework and its performance for over 50 key performance indicators together with the Statewide medians and the LWU's relative performance against similar sized LWUs. TBL reports and action plans are discussed in section 5.3 on page 19. Example TBL reports are provided on pages 28, 232 and 234 and an example action plan is provided on page 26.

LWUs that comply with the 19 requirements of the *Best-Practice Management of Water Supply and Sewerage Framework*. will have demonstrated effective, sustainable and safe water supply and sewerage businesses and compliance with National Competition Policy and the National Water Initiative (refer to section 4 on page 5).

To assist each LWU to gain a quick appreciation of its performance relative to similar sized LWUs, the LWU TBL Performance Report provides a ranking of each LWU's performance for each performance indicator (second shaded column). These rankings are based on the top 20 per cent of LWUs for each indicator being ranked 1 and the bottom 20 per cent being ranked 5 (LWUs in the range 40 per cent to 60 per cent are ranked 3). In addition, rankings are provided for each LWU's performance relative to all LWUs (third shaded column).

LWUs will appreciate that **each performance indicator is a 'partial' indicator only and therefore cannot be interpreted in isolation**. In addition, the rankings are indicative only and do not take into account the wide range of factors that can impact on an LWU's performance, as discussed in section 5.2 on page 15. The aim of ranking each LWU's performance is to assist the LWU in identifying any areas of under-performance in comparison with similar sized LWUs. It should also be noted that a low ranking for some performance indicators does not necessarily mean an LWU is not performing well as there are a number of factors that can impact performance as shown in section 5.2. For example, the rankings take no account of the impact of utility characteristics (eg. whether the water supply is fully filtered, whether the utility provides a bulk storage dam, whether the supply is a good quality groundwater etc.).

The second page of the TBL reports provide graphs with the LWU's performance over the past 10 years for 15 key indicators (pages 233 and 235). These graphs enable the LWU to review trends over time for each indicator, which provide the most meaningful assessment of performance. The graphs have been updated to include:

- Water usage charge (per kL)
- Residential revenue from usage charges (%)
- Revenue (per property)
- Effluent recycled (%)
- Biosolids reuse (%)
- Sewage that complied with licence (%)
- Net greenhouse gas emissions for water and sewerage (per property)

Each LWU needs to review its performance using its annual TBL performance reports for water supply and sewerage (pages 232 to 235) and to provide an Action Plan to Council (pages 26 and 27) which addresses any emerging issues or areas of under-performance, as indicated in section 5.3 on page 19.

## 4. Best-practice management

### 4.1 Regulatory framework

Through the NSW Government's Country Towns Water Supply and Sewerage Program, the *Local Government Act 1993* and the *Water Management Act 2000*, the Minister for Primary Industries is responsible for overseeing and monitoring the performance of NSW country LWUs in the sustainable provision of water supply and sewerage services to the community. The aim of NSW Government policy is for NSW country LWUs is to achieve effective, sustainable and safe water supply and sewerage services.

The State Government provides assistance to country towns in NSW through the Country Towns Water Supply and Sewerage Program, which is administered by the NSW Office of Water. This major reform program provides leadership, guidance and technical assistance in best-practice management, operation and maintenance for LWUs, as well as financial assistance towards the capital cost of backlog water and sewerage infrastructure (as at 1996).

The program was revised in 1996 to foster the development of best-practice management by LWUs in the strategic and operational management of water supply and sewerage systems. The role of Government and the Government's expectations of LWUs in the revised program were as follows:

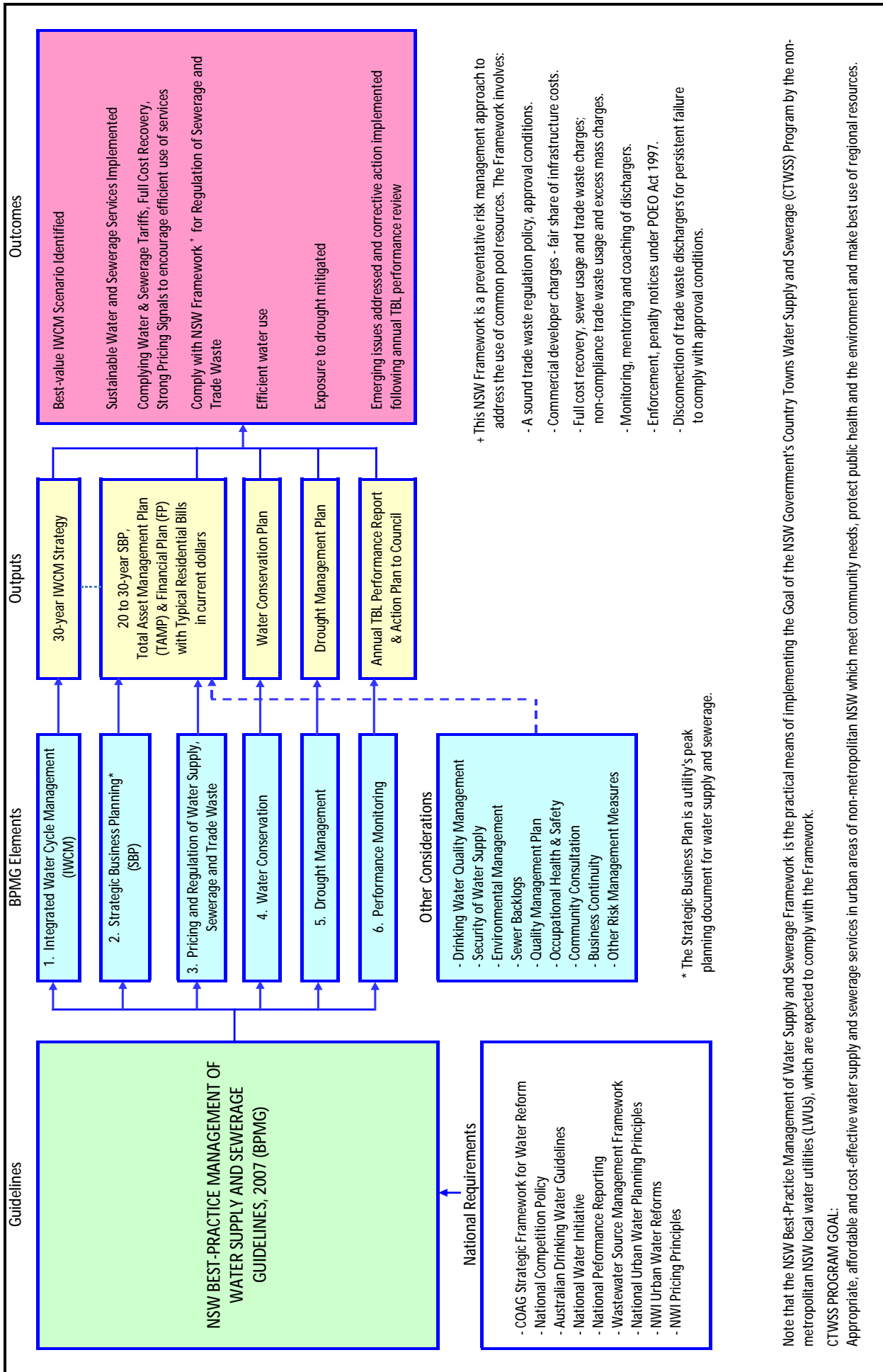
- government will place increased emphasis on initiatives aimed at assisting LWUs improve their planning and operational management
- compliance with best practice management is a pre-requisite for financial assistance
- financial assistance will be directed towards the capital cost of backlog infrastructure
- government requires LWU strategic business plans and financial plans to ensure sound planning of services and that capital works needed to meet growth or renewals are self funded.

Subsequently, the Minister published the '*Best-Practice Management of Water Supply and Sewerage Guidelines*' in 2004. These guidelines consolidated a number of earlier initiatives and are the key driver for reform of planning and management and for continuing performance improvement by each utility. Compliance with the 19 requirements of the guidelines (page 105) is necessary for the eligibility of LWUs for:

1. the payment of a dividend from the surplus of their water and sewerage businesses to the Council's general revenue
2. financial assistance towards the capital cost of backlog infrastructure.

The Minister published revised *Best-Practice Management Guidelines* in August 2007 in order to update the Guidelines and address the requirements of the National Water Initiative. The resulting *NSW Best-Practice Management of Water Supply and Sewerage Framework* is shown on page 6.

Utilities which have met all of the requirements of the *Best-Practice Management Framework* are encouraged to pay an 'efficiency dividend' from the surplus of their water supply and sewage businesses to the Council's general revenue. Refer also to the box on page 19.



The NSW Best-Practice Management of Water Supply and Sewerage Framework

## 4.2 Best-practice management framework

The *NSW Best-Practice Management of Water supply and Sewerage Framework* (page 6) drives reform of planning and management and continuing improvement in productivity and performance of water and sewerage businesses in NSW. The Framework identifies the key elements in the delivery of water supply and sewerage services to the community and is available on the NSW Office of Water website ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

The *Best-Practice Management Framework* shows that utilities which comply with the Framework also comply with the 9 national urban water requirements, including:

- *The National Water Initiative (NWI)*;
- *National Urban Water Planning Principles*;
- *NWI Urban Water Reforms*; and
- *The NWI Pricing Principles*.

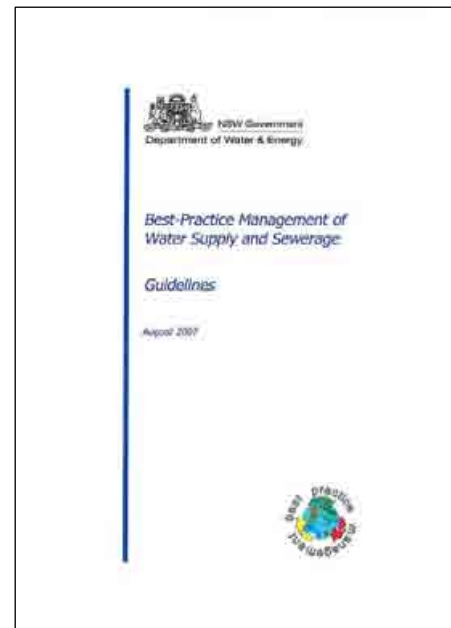
In summary, the Framework requires an LWU to prepare strategic business plans and financial plans setting out how it plans to manage these businesses over the next 20 to 30 years. This requires negotiation of appropriate levels of service with the community and development of the utility's 30-year asset management plan. This involves a cost-effective capital works program which discloses each of the growth, improved standards and renewals components, together with a sound operation plan and maintenance plan. The strategic business plan must include both the above asset management plan and a sound 20 to 30 year financial plan which identifies the resulting Typical Residential Bill (current dollars) over this period. 91 per cent of the NSW LWUs have now prepared such sound strategic business plans and financial plans, and implementation of these plans should ensure the long term sustainability of these services (Table 5 on page 110).

All utilities are expected to comply with the 19 requirements of the Framework (Table 3 on page 105), which involve the following six elements:

- integrated water cycle management
- strategic business planning
- pricing and regulation of water supply, sewerage and trade waste
- water conservation and demand management
- drought management
- performance monitoring.

The reported LWU compliance against each requirement of the Framework is shown in Table 3 on page 105 of this report. A summary of LWU compliance is provided on page 18 and Figures 21, 22 and 23 of the *2010-11 NSW Performance Monitoring Report*. Particular attention is required for strategic business planning and financial planning (column 1 of Table 3 on page 105), full cost recovery (column 14a of Table 6 on page 120, column 11a of Table 7 on page 132, page 19), residential water supply revenue from usage charges (column 13 of Table 6 on page 120), non-residential sewer usage charges (column 3a of Table 7 on page 132), liquid trade waste fees and charges (column 2 of Table 7C on page 139), trade waste regulation policy and approvals (columns (1) and (3) of Table 7C on page 139), and an IWCM evaluation (column 20 of Table 8C on page 149).

As noted on page 19 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*, future IWCM Strategies will need to include assessment of the secure yield of the utility's water supply in accordance with new climate change guidelines to be released in mid 2012.





The *Local Government Integrated Planning and Reporting Framework, 2010* has been designed to complement and avoid duplication with the *Best-Practice Management of Water Supply and Sewerage Guidelines*. The inter-relationship of this Framework with the Best-Practice Management Guidelines is shown on pages 4, 95 and 99 of the *NSW Water and Sewerage Strategic Business Planning Guidelines, 2011* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

#### Software, guidelines and training

Comprehensive software and guidelines to assist LWUs in developing appropriate water supply and sewerage strategic business plans, financial plans, water supply tariffs, sewerage tariffs, liquid trade waste fees and charges, developer charges, asset management plans (capital works plan, operation plan and maintenance plan), asset valuation, greenhouse gas calculation and trade waste regulation policies continue to be available from the NSW Office of Water (Dilip Dutta on tel: (02) 8281 7372, fax: (02) 8281 7351, email: [Dilip.Dutta@water.nsw.gov.au](mailto:Dilip.Dutta@water.nsw.gov.au)).

An IWCM 'Generic Scope of Work' document and seven IWCM information sheets are now available on the NSW Office of Water website ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)) to provide guidance for LWUs and the requirements for developing a sound IWCM evaluation and IWCM strategy.

In addition, the NSW Government provides accredited training for water utility operators in water treatment, wastewater treatment, fluoridation, dam safety inspection and trade waste regulation. (Haddie Man on tel: (02) 8281 7380, fax: (02) 8281 7351, email: [Haddie.Man@water.nsw.gov.au](mailto:Haddie.Man@water.nsw.gov.au)).

### 4.3 Managing drinking water quality

#### Australian Drinking Water Guidelines (ADWG) 2004

A **high priority** for each NSW local water utility is to provide a drinking water supply which:

1. Complies with ADWG for microbiological quality (health related).
2. Complies with ADWG for chemical quality (health related).
3. Minimises the incidence<sup>4</sup> of 'boil water alerts' through providing appropriate water supply and treatment infrastructure and carrying out the necessary maintenance activities. These include adjusting treatment processes in response to changes in raw water quality and regular inspections of service reservoirs in order to detect and repair any breakdown in the bird and vermin proofing of the reservoir roof.
4. Maintains effective disinfection of the utility's water supply distribution system (including a minimum free chlorine residual of about 0.2 mg/L throughout the distribution system).

Guidance on items 3 and 4 above is available on pages 10 and 248 of this report.

In view of their importance for ensuring public health protection, any failures to achieve microbiological compliance in the last 2 financial years or any 'boil water alerts' in the last 18 months, the corrective action implemented and whether it was successful must be reported in your LWU's annual Action Plan to Council. Refer also to page 19.

In addition, utilities responsible for drinking water supplies are required to prepare implement a risk-based drinking water quality management plan in accordance with ADWG (*Public Health Act 2010*).

Assistance is available from your NSW Office of Water Regional Water and Sewerage Inspector (refer to page 34). Tools are being developed by NSW Health and the NSW Office of Water to assist LWUs and assistance is available from the Office of Water (Bill Ho on tel: (02) 8281 7326, fax: (02) 8281 7351, email: [Bill.Ho@water.nsw.gov.au](mailto:Bill.Ho@water.nsw.gov.au)).



## Risk based drinking water quality management plan

A safe and reliable drinking water supply is the most essential and critical public health service provided by a Local Water Utility (LWU) to its community. Although 99 per cent of the 21,100 non-metropolitan NSW samples tested for *E. coli* in 2010-11 complied with the *Australian Drinking Water Guidelines 2004* (ADWG), it remains a matter of concern that 7 per cent of LWUs did not comply with the guidelines (column 71 of Table 12 on page 161 and Figure 14 on page 50). **Achievement of microbiological compliance is a high priority for each LWU.** As noted on page 21, assistance is available from your NSW Office of Water Regional Water and Sewerage Inspector [contact details on page 34].

The risk of contamination of water supplies due to system failures therefore remains significant, as can be seen in the table overleaf, which indicates 22 boil water alerts were issued by LWUs over the period May 2006 to June 2008.

ADWG recommends a preventative risk management approach for assuring drinking water quality and protecting public health. This approach encompasses all steps in water production from catchments to the consumer and is set out in the Framework for Management of Drinking Water Quality, which includes development of a risk based drinking water quality management plan (refer to page 2-1 of the Guidelines). **Developing a risk based drinking water quality management plan is a high priority for each LWU** and is recommended in the *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007*. NWI Indicator H6 reports on whether the utility has such a plan. It is disappointing to note that only forty-one LWUs have developed such a plan (column 69a of Table 12 on page 161). It is therefore strongly recommended that all LWUs develop a risk based drinking water quality management plan as a matter of priority. Such a plan is required under the *Public Health Act, 2010*, and will need to be independently audited. Only 2 LWUs have third party accreditation of their plan (NWI Indicator H5 in column 69b of Table 12 on page 161).

## Developing a risk based drinking water quality management plan

Chapter 3 of ADWG sets out *the Framework for Management of Drinking Water Quality*. The Framework involves 12 elements, based on a preventative risk management approach containing elements of ISO 9001 (Quality Management), AS/NZS 4360 (Risk Management) and the HACCP (Hazard Analysis & Critical Control Point) systems, which is applied in a drinking water supply context.

For small water supplies, Chapter 4 of ADWG sets out how a range of basic measures can be implemented by the water utility to provide reasonable assurance of safety.

The National Health and Medical Research Council has developed a tool (software), called '*Community Water Planner- A tool for small communities to develop drinking water management plans*'. A risk based management plan for small water supplies can be prepared by using this tool. This tool can also be used to quickly produce a "first cut" risk management plan for larger water supplies.

This tool and user assistance is available from the web link:

<http://www.nhmrc.gov.au/publications/synopses/eh39.htm> - The management plan produced using this tool identifies potential hazards associated with each element of the water supply that can represent public health risk; preventative measures to protect water quality; and operational monitoring and verification monitoring requirements.

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<sup>6</sup> While a boil water alert will be necessary to protect the community, for example if a LWU's raw water sources become highly turbid due to major flooding, over 80% of recent boil water alerts in non-metropolitan NSW were found to be avoidable through appropriate maintenance and chlorine residuals (page 10). LWUs need to follow the NSW Health response protocol if *E. coli* bacteria is found, or if there is failure of the disinfection system, or disinfection is otherwise ineffective eg. due to poor treated water quality. ([http://www.health.nsw.gov.au/publichealth/environment/water/nswhrp\\_microbiological.asp](http://www.health.nsw.gov.au/publichealth/environment/water/nswhrp_microbiological.asp)).

## Boil water alerts and lessons learnt

Information provided by the Water Unit of NSW Health has revealed that 22 boil water alerts were issued by LWUs over the period May 2006 to June 2008 (refer to the table below). These alerts were imposed due to the failure of the water utility to meet the microbiological water quality requirements of ADWG. The alerts were issued by LWUs of all sizes, with ten alerts issued by LWUs with over 10,000 connected properties, three by utilities with 3,001 to 10,000 properties and nine by utilities with under 3,000 properties. A total of 24,500 people (1.4 per cent of the 1.8 million people served) were affected by these boil water alerts.

### Summary of boil water alerts in non-metropolitan NSW – May 2006 to June 2008

No. of alerts	Reason for alert
9	<b>Inadequate chlorine residual</b> in the distribution system.
8	<b>Failure of bird proofing</b> which allowed bird entry through gap in reservoir roof contaminating the treated water.
3	Highly turbid raw water, no filtration plant, ineffective disinfection. <sup>7</sup>
1	Failure to properly clean and disinfect the main after replacement of valves and fittings.
1	Backflow in the mains due to inadequate backflow prevention device.

#### Notes:

- The information in the above table was provided by NSW Health's Water Unit or obtained by the NSW Office of Water from the relevant LWU.
- Duration of boil water alerts generally ranged from two days to 25 days with a median of nine days.
- Total population affected by the 22 boil water alerts was 24,500.

These incidents highlight that almost 80% of the alerts were due to an **inadequate chlorine residual** in the water supply distribution system or bird entry through **failure of the bird proofing** of a reservoir roof. They also show that a number of LWUs have been using reactive measures to protect public health. Preventive management on the basis of a sound risk management plan, with associated work procedures and process controls would have avoided the need for 86% of these boil water alerts.

A number of important lessons have been learnt from the above boil water alerts as tabulated below:

### Lessons learnt from the boil water alerts

Practices	Lessons
Management	<ul style="list-style-type: none"> <li>Carry out regular preventative maintenance and calibration of chlorinators and associated equipment.</li> </ul>
Disinfection	<ul style="list-style-type: none"> <li><b>Maintain a minimum free chlorine residual of about 0.2 mg/L</b> throughout the water supply system<sup>8</sup> (including extremities).</li> <li>Continuous monitoring<sup>9</sup> of the chlorination system to warn of any interruptions/failures of the chlorinator.</li> <li>Chlorine demand tests should be carried out on a regular basis.</li> </ul>
Storage (service reservoirs/tanks)	<ul style="list-style-type: none"> <li>Ensure entry hatches to service reservoirs are secure and that hatches are not left open; particular care is required if third parties (e.g. telephone companies) have been given access to your LWU's reservoirs.</li> <li>Regular inspection is essential to ensure the roof and the bird and vermin proofing of each service reservoir is effective and has not been damaged; early repairs must be effected to ensure integrity of the bird-proofing.</li> </ul>
Backflow prevention	<ul style="list-style-type: none"> <li>Ensure appropriate backflow prevention devices are installed and are properly maintained (including any rain water tanks used for toilet flushing).</li> </ul>
Source monitoring	<ul style="list-style-type: none"> <li>Monitor the raw water regularly and after storm events for evidence of changes in colour or turbidity.</li> <li>Chlorine demand tests should be carried out on a regular basis.</li> <li>Adjust chlorine dosing as necessary.</li> </ul>

<sup>7</sup> Guidance on maintaining effective disinfection of a water supply distribution system is provided in Appendix E on page 248.

<sup>8</sup> Maintaining such a **chlorine residual** is a key element in the recommended **multi-barrier approach** for assuring drinking water quality. Refer to the example in Table A10 on page A-21 of ADWG.

<sup>9</sup> Monitoring requirements must be clearly documented by each LWU with appropriate responsibility and authority assigned to suitably **trained officers**.

However, it is important to acknowledge that 14% of the alerts were due to highly turbid raw water during flooding, which was beyond the control of the LWU.

Each LWU should learn from the above valuable lessons in order to minimise the risk of contamination of its drinking water supply. In addition, each LWU should develop and implement a sound risk based drinking water quality management plan.

## 4.4 Achieving efficient water use

Achieving efficient water use is a key responsibility for each water utility. As shown on page 9 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* (available at [www.water.nsw.gov.au](http://www.water.nsw.gov.au)) and Figure 25 on page 62, the non-metropolitan NSW utilities have reduced the average annual residential water supplied per property by 52 per cent over the past 20 years.

Many LWUs have reduced their average annual residential water supplied per property by over 50 per cent over this period through community education, water conservation, water efficient appliances and providing appropriate pricing signals to encourage efficient water use. In particular, as shown on graph 3 on page 183 and Figure 10 on page 46, the median water usage charge for the first step has risen to 180 c/kL. This provides a strong pricing signal and is among the highest of all the other Australian utilities.

LWUs are reminded that Circular LWU 11 of March 2011 (refer also to the box on page 19) has removed the need for use of inclining block tariffs by LWUs. **The NSW Government encourages<sup>10</sup> LWUs to use a 2-part tariff with a uniform water usage charge per kL for all water use.** IPART has implemented such tariffs for Sydney, Hunter, Gosford and Wyong.

The median revenue from residential water usage charges was 70 per cent (Figure 29 on page 65). However, affordability has been maintained through the \$450 (Jan 2012\$) Typical Residential Bill for water supply, which has reduced slightly over the past 16 years (graph 4 on page 183).

The **strong pricing signals** provided by the NSW LWUs have enabled them to avoid over \$1B in capital expenditure over the last decade for augmenting water supply headworks and treatment capacity and the associated increases in their typical residential bills. The strategic benefits of the strong pricing signals implemented by the NSW water utilities are highlighted on page 5 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* (available at [www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

Any LWU which is not achieving the required revenue from residential water usage charges (column 13 of Table 6 on page 120) or full cost recovery (refer to page 19) should develop complying tariffs in order to provide the necessary pricing signals to its customers and achieve the above benefits of efficient water use in its area. Assistance is available from the NSW Office of Water (Dilip Dutta on tel: (02) 8281 7372, fax: (02) 8281 7351, email: [Dilip.Dutta@water.nsw.gov.au](mailto:Dilip.Dutta@water.nsw.gov.au)). Guidance is provided in the box on page 19.

The peak day water supplied per property is shown in Figure 7 on page 43. This affects the sizing of water treatment works, service reservoirs and trunk mains.

## 4.5 Asset management

### Infrastructure Renewals

As noted on page 7, assessment of infrastructure renewals requirements is a critical element of a utility's asset management plan, which must be documented in each utility's 20 to 30-year strategic

<sup>10</sup> Refer to page 15 of the NSW Government's submission of May 2011 on the Productivity Commission Draft Report 'Australia's Urban Water Sector, April 2011' (available at [www.pc.gov.au](http://www.pc.gov.au) and [www.water.nsw.gov.au/urban-water/default.aspx#draft](http://www.water.nsw.gov.au/urban-water/default.aspx#draft)).

business plan and financial plan. Details of each LWU's asset rehabilitation activities and renewals expenditure are provided in Tables 10 and 15 on pages 155 and 170 respectively.

Renewals programs for LWUs vary in complexity from a reactive approach (no renewals, repairs (maintenance) undertaken as required) to development of a comprehensive asset management plan. An asset management plan is essential as it forms the foundation for an LWU's strategic business plan. LWUs are therefore strongly encouraged to continue to develop and update such a plan.

The asset management plan comprises an operation plan, maintenance plan and a capital works plan (involving works for improved levels of service, works to service growth and works for renewals of existing assets).

For a water supply distribution system, for example, an operation plan would be required as part of the LWU's risk management. The operations review would include:

- **An economic analysis** – identifies pipelines where renewal is more economic than continuing with repairs. Takes into account the impact of pipe failure (eg. failure of a pipeline in the CBD has more impact than failure of a pipeline on the outer edge of the system).
- **A reliability analysis** – identifies pipelines where renewal is required for reliability (to ensure performance requirements with regard to supply interruptions can be achieved).
- **A capacity review** – identifies pipelines where augmentation or replacement is required (to maintain the required pressure or flow).
- **A leakage analysis** – identifies whether leakage reduction is economically warranted.

The driver of renewals expenditure is the ability to meet the LWU's performance requirements, i.e. the levels of service and the associated Typical Residential Bill (TRB) negotiated with the community. Other relevant considerations are the condition and age of the assets.

For water supply and sewerage, it is misleading to measure annual renewals expenditure on the basis of a percentage (say one or two per cent) of the current replacement cost of assets. Rather, the bulk of renewals expenditure will be required towards the end of the economic life of an asset (e.g. a new water main with an economic life of 80 years would be expected to have minimal renewal expenditure before year 80). Therefore, LWUs should ensure that their 30-year financial plan includes capital expenditure, including renewals, identified in a soundly based asset management plan<sup>11</sup>. They should also annually monitor income and expenditure and update the financial plan to enable the LWU to address any new developments. Funding in the financial plan involves an appropriate mix of the utility's annual income, accumulated cash and investments and borrowings. As noted on page 21, your LWU's Action Plan must report on whether the Typical Residential Bill (TRB) is consistent with the projection in your LWU's 20 to 30-year strategic business plan and on any warranted corrective action.

As shown in Figure 20 on page 57 and graph 9 on page 184, water main breaks for NSW LWUs have remained much lower than all the other states and the capital city utilities, indicating good water main asset condition.

Further information on the development of a cost-effective asset renewal program can be obtained from the NSW Office of Water (Dilip Dutta, tel: (02) 8281 7372, fax: (02) 8281 7351, email: [Dilip.Dutta@water.nsw.gov.au](mailto:Dilip.Dutta@water.nsw.gov.au)). Information on asset valuation and economic life can be obtained from the 'NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets', updated in 2011 and broad guidance on asset management is provided in section 10 of the *NSW Water and Sewerage Strategic Business Planning Guidelines*, NSW Office of Water, July 2011 ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

<sup>11</sup> Refer to pages 84 and 85 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

## Leakage

Water leakage and apparent losses are often poorly defined and poorly understood and, in general, water utilities have a relatively limited awareness of the true value of these two parameters within their water supply systems. The International Water Association (IWA) has adopted the following terminology:

- Real losses are physical water losses from the distribution system up to the point of customer metering. They can occur through leaks, bursts and reservoir overflows. Recent LWU results are shown in column 41e of Table 10 on page 155.
- Apparent losses reflect errors in measurement and/or the documentation process. They generally consist of customer use which is not recorded due to metering error (mostly under-registration of worn customer meters), incorrect assumptions of unmeasured use or unauthorised consumption (illegal use), (Refer to columns 4 to 6 of Table 8A on page 145).
- Water losses are the sum of Real Losses (mostly leakage) and Apparent Losses (meter errors, illegal uses).
- Non-revenue water consists of Water Losses plus unbilled authorised consumption. Unbilled authorised consumption may or may not be metered and may include fire fighting and mains flushing. Any watering of parks and gardens should be metered and billed by each LWU.

Leakage management is an essential element of asset management. Leakage cannot be totally avoided due to the large number of connections in a water supply network. Small 'weeps' in connections result in unavoidable losses and these losses increase with higher system pressure.

Leakage and water losses have historically been reported as a percentage of water supplied. Although this identifies the significance of these parameters in relation to the total water supplied, it is not helpful in monitoring the effectiveness of a utility's performance in reducing losses and is perversely affected by reductions in water consumption and water restrictions due to drought. In addition, these indicators do not measure the efficient management of leakage in a distribution system because they take no account of multiple properties, density of service connections, length of mains, customer meter location in relation to the property boundary or the operating pressure. Water loss in L/d per connection is recommended by IWA as the best traditional basic technical indicator for real losses, although it does not account for other factors such as length of main or operating pressure. In particular, reductions in operating pressure have been shown to greatly reduce system leakage.

The Infrastructure Leakage Index (ILI) has been proposed as an indicator which measures how effectively real losses are being managed at current operating pressure while accounting for other influential factors such as length of mains, number of service connections and customer meter location. The ILI is calculated from the ratio of the Current Annual Real Losses (CARL) to the Un-Avoidable Real Losses (UARL). CARL is the annual real losses divided by the number of service connections and percent of time that the system is under pressure, while UARL is a function derived from the length of mains, number of service connections and the average system pressure.

An ILI of 1.0 indicates that only unavoidable losses are occurring and that optimum leakage management is in place. There is of course a significant cost associated with operating a system with an ILI of 1.0 and this may not be warranted. An ILI of less than 1.0 is meaningless while an ILI greater than 1.0 can identify areas where there may be leakage problems. For example, it has been suggested that an ILI in the range 1.0 to 2.9 indicates that substantial efforts are being made to manage and maintain infrastructure and that active leakage control on a continuous or semi continuous basis is being undertaken, while an ILI greater than 2.9 suggests that there may be poor or old infrastructure or a relatively relaxed active leakage control policy.

When interpreting ILI data it should be noted that many of the inputs are imprecise and therefore, while an ILI of 2.2 appears to be better than one of 2.5, in practice it is likely that they both represent similarly well managed systems.

The ILI is recommended by the International Water Association for international comparisons of water utilities. The National Performance Framework has adopted the ILI as a measure of leakage and the NSW Office of Water has reported the ILI for each LWU since 2005-06 (column 41b of Table 10 on page 155). The NSW Office of Water will also continue to report **leakage as L/d per connection** (the relevant measure for utilities with over 20 connections/km, which is the vast majority of NSW LWUs) and kL/km of water main/d (columns 41 and 41a of Table 10 on page 155, Figure 26 on page 63), which are **better measures for tracking an LWU's leakage performance over time**. These indicators are also preferred in the National Performance Framework.

Analysis by the International Water Association has demonstrated that the Australian urban water utilities (based on results reported in the National Performance Report 2007-08 for urban water utilities) are by far<sup>12</sup> the best performing urban water utilities in the world for minimising leakage and real losses.

Previous leakage studies for over 40 NSW water utilities found an average leakage of 17 per cent of annual consumption (range of 6 to 35 per cent). It is suggested that at present, most water utilities do not have sufficient data to determine the true extent of leakage in their system. The best means of assessing leakage is to undertake a reservoir drop test, detailed waste metering or night flow analysis of district meter areas. It is encouraging that Table 10 on page 155 shows that 62 NSW utilities have reported they have recently undertaken a reservoir drop test or night flow analysis in order to determine their present real losses and opportunities for leakage reduction. Refer also to note 10 on page 31.

## Greenhouse gases

The National Water Initiative requires LWUs to report both direct and some indirect greenhouse gas (GHG) emission estimates (columns 35a to 35d of Table 5B on page 117). A greenhouse gas calculator has been developed by the NSW Office of Water to assist LWUs. The calculator has been provided to all LWUs and is included in Appendix G on page 273. Direct emissions are produced from sources within the boundary of an organisation and as a result of that organisation's activities. Direct emissions mainly arise from the following activities:

- Generation of energy, heat, steam and electricity.
- Manufacturing processes.
- Transportation of materials, products, waste and people.
- Fugitive emissions (eg. Intentional or unintentional emissions from natural gas leaks, joints & seals).
- On-site waste management such as emissions from landfill sites.

For example, LWUs with a car fleet should report gas emissions from combustion of petrol in those motor vehicles as direct emissions.

Emission factors for calculating direct emissions are generally expressed in the form of mass of GHG emitted per unit of energy (kg CO<sub>2</sub>/GJ). Emission factors are used to calculate GHG emissions by multiplying the factor (eg. kg CO<sub>2</sub>/GJ energy in petrol) with activity data (eg. kL x energy density of petrol used).

Indirect emissions are emissions generated in the wider economy as a consequence of the LWU's activities, but which are physically produced by the activities of another organisation. For example, off-site waste disposal.

Emission factors and examples of the calculation of GHG emissions are provided by the Department of Climate Change and Energy Efficiency – National Greenhouse Accounts (NGA) Factors (<http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx>).

It is noted that many opportunities for reducing greenhouse gas emissions are often missed because their financial attractiveness is masked by not considering their full costs and benefits.

<sup>12</sup> Alan Lambert "The Future of Leakage Indicators" presentation to the National Performance Report 2008-09 Definitions Review and Planning Workshop, 11 February 2010.

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## 5. Improving performance

### 5.1 Performance review

A utility's **overall aim** for its water supply and sewerage businesses should be to provide value for money for its community by delivering the levels of service negotiated with the community at the lowest sustainable Typical Residential Bill (TRB). This is done through efficient operation and sound planning, setting cost-reflective developer charges, non residential charges and liquid trade waste fees and charges and then minimising its TRB in current dollars on a sustainable basis. As noted on pages 5 and 19, utilities which have complied with the *Best-Practice Management Framework (BPMF)* are encouraged to pay an 'efficiency dividend' to the Council's general revenue and should also include the dividend amount.

In practice this means reviewing whether your performance indicators under 'Social', 'Environmental' and 'Economic' are satisfactory. If they are not, you need to develop options to raise your levels of service and consult the community to establish the option which provides the best value for money.

In undertaking a review of indicators and trends in performance, each LWU should prepare an Action Plan based on its TBL Performance Report and accompanying Action Plan template provided by the NSW Office of Water (see section 5.3 on page 19).

**The typical residential bill is the principal indicator of the overall cost** of a water supply or sewerage system (column 13b of Table 5 on page 110, Figure 1 on page 36, column 8 of Table 6 on page 120, Figure 8 on page 44, column 8 of Table 7 on page 132, Figure 40 on page 76) and is the annual bill paid by a residential customer using the utility's average annual residential water supplied (column 14 of Table 6 on page 120, Figure 25 on page 62). A critical element in minimising the typical residential bill and providing value for money for the community is to ensure each utility's operating cost (OMA – operation, maintenance and administration) (column 67 of Table 11 on page 158, Figures 31, 32, 33 on pages 67, 68, 69) is efficient.

LWUs should take note of section 5.2, which identifies the many factors that may contribute to apparent under-performance.

### 5.2 Factors impacting on performance

When comparing reported performance, utilities should take account of the wide range of factors which can impact on their performance and typical residential bill, which is the principal indicator of the overall cost of a water or sewerage system. Such factors can produce a fundamental difference in performance.

For example, in the case of water supply, a utility which provides full water treatment and has its own bulk storage dam will have a much higher capital and operating cost structure than a utility which has a good quality groundwater supply. Each utility can improve its performance by taking account of such factors and comparing its performance with utilities having similar characteristics.

Other factors include the extent of the services provided by each utility, geography, climate etc. An understanding of these factors is vital for valid interpretation of performance data. Each utility can improve its performance by taking account of such factors and comparing its performance with utilities having similar characteristics (refer to pages 16 and 17).



**The most meaningful performance indicators are the trends over time for each utility.** This involves identifying any trends in the indicators on page 2 of your TBL Performance Report and comparing your results with the Statewide median values and the top 20%. For the indicators on page 1 of your TBL Report, particular note should be taken of indicators that appear to be less than satisfactory, ie. with a ranking of 4 or 5. However, even with such analysis, care needs to be exercised due to changes in the factors over time. For comparison between utilities, each utility should benchmark its performance with utilities having similar characteristics.

Some of the factors which can affect the performance of a water supply system are outlined below.

### Utility characteristics

1. **Climate** – the variability of rainfall is a key driver of water supply costs in relation to water demand and drought security. This will affect both capital and operation and maintenance costs. For example, the average annual residential water supplied in inland NSW is over 40% higher than coastal NSW
2. **Geography** – Geology, geography and topography can significantly affect water transportation costs.
3. **Asset life cycle** – Recently constructed systems have much lower maintenance and renewals costs compared to older systems. They also have higher Typical Residential Bills and loan payments. Refer also to page 11.
4. **Development density**– Distribution networks are a major investment component of a water supply system. The density of urban development has a large effect on the infrastructure cost (e.g. the number of properties served per km of main has a Statewide median of 33, but has a range of 5 to 90 (column 26 of Table 9 on page 152, Figure 5 on page 40)). A further key factor is the number of small discrete urban water supply systems operated by the utility which tend to greatly increase both the capital cost<sup>13</sup> and the operating cost per property.
5. **Water resources availability and proximity** – can incur significant capital and operating costs. Such costs would not apply for utilities relying on groundwater or those receiving a regulated supply from a State Water dam (Note 12 on page 32).
6. **Size of LWU** – there are significant economies of scale for large utilities, particularly the capital cost of infrastructure and the operation and maintenance costs of water treatment works (Figure 35 on page 71). Refer also to footnote 13 below.

### Social – levels of service

7. **Service standards** – Increasingly stringent standards for water quality and environmental health may result in additional capital and operation and maintenance costs to the utility. Similarly, requirements for minimum pressures or rates of flow can also affect costs.
8. **Filtered supply** – will incur both a high capital cost and a high treatment cost per property for small water supply systems (utilities without ‘unfiltered’ or ‘groundwater’ after their name in Tables 3, 5 and 6 have water treatment involving at least filtration and disinfection for over 50 per cent of their water supply) (Note 13 on page 32).

<sup>13</sup> The lack of economy of scale and the lower development density in small towns result in a **capital cost per property** for providing water supply trunk mains to a town of 300 properties being typically over **3 times** that required for servicing a contiguous city of 15,000 properties. The capital cost per property for other structures such as water treatment works, service reservoirs, pumping stations and dams is similarly affected. This highlights the importance of Government financial assistance towards the capital cost of servicing backlog areas and why appropriate standards should be used, such as those in the *National Handbook on Affordable Water Supply and Sewerage for Small Communities*, ARMCANZ/WSAA, 1999.



## Environmental

9. **High average annual residential water supplied per property** (column 56a of Table 10 on page 155, Figure 25 on page 62) – such utilities should examine opportunities for reducing the water supplied through water conservation and implementation of best-practice water pricing. Achieving efficient water use is a key responsibility for a water utility. As shown on Figure 25, the non-metropolitan NSW utilities have reduced the average annual residential water supplied per property by 52 per cent over the past 20 years. Many utilities with 3,000 to 10,000 connected properties are providing relatively weak pricing signals to their residential customers through their water usage charges. These utilities should review their tariff structure to provide appropriate pricing signals. Assistance is available from the NSW Office of Water in this regard (page 8). Refer also to section 4.4 on page 11.

## Economic

10. **High loan payment per property** – indicates a relatively high capital cost per property, recent construction of significant capital works or use of short-term loans. Twenty-year loan terms are recommended in order to minimise the required Typical Residential Bill (TRB), which avoids unfairly burdening existing customers and facilitates inter-generational equity.
11. **High pumping cost** (columns 94 to 99 of Table 13 on page 164, Figure 36 on page 72) – is influenced mainly by topography and geography. As noted on page 25, the LWU may be able to achieve significant savings in energy cost.

Similar considerations to those listed in this section apply to sewerage. In addition, a significant cost impactor is whether the LWU is operating nutrient removal facilities at its treatment works or providing filtration and disinfection of its treated sewage effluent.

## Median economic efficiency indicators for four sizes of LWUs – Water Supply 2010-11

Size of LWU	Over 10,000 connected properties	3,001 to 10,000 connected properties	1,501 to 3,000 connected properties	200 to 1,500 connected properties
Performance indicator	(27 LWUs)	(28 LWUs)	(19 LWUs)	(22 LWUs)
Operating cost/property (\$)	333	452	421	514
Operating cost (c/kL)	132	124	128	118
Operating cost/100 km (\$'000)	1,263	1,059	1,020	895
Management cost/property (\$)	129	145	129	137
Treatment cost <sup>1</sup> /property (\$)	37	97	129	121
Pumping cost/property (\$)	24	31	53	66
Energy cost <sup>2</sup> /property (\$)	17	17	28	36
Water Main cost/property (\$)	51	59	69	77
No. of employees/1,000 properties	1.4	1.7	1.9	2.5
Economic Real Rate of Return	0.5	-0.1	0.1	-0.1
Capital expenditure (\$ per property)	361	183	164	114
Properties served/km of main	38	26	28	22

### Notes:

1. Only LWUs with a treatment works with at least filtration and disinfection for over 50 per cent of supply have been considered.
2. A component of pumping cost.

## Median economic efficiency indicators for four sizes of LWUs – Sewerage 2010-11

Size of LWU	Over 10,000 connected properties	3,001 to 10,000 connected properties	1,501 to 3,000 connected properties	200 to 1,500 connected properties
Performance indicator	(24 LWUs)	(24 LWUs)	(24 LWUs)	(27 LWUs)
Operating cost/property (\$)	380	380	314	314
Operating cost (c/kL)	131	143	143	148
Operating cost/100 km (\$'000)	1,554	1,370	1,021	876
Management cost/property (\$)	103	123	123	80
Treatment cost/property (\$)	126	117	117	120
Pumping cost/property (\$)	46	55	46	48
Energy cost <sup>1</sup> /property (\$)	32	28	26	26
Sewer main cost/property (\$)	39	55	36	34
No. of employees/1,000 properties	1.6	1.6	1.6	2.3
Economic Real Rate of Return	1.2	0.9	0.3	-0.2
Capital expenditure (\$ per property)	302	203	89	76
Properties served/km of main	42	36	34	31

### Notes:

1. A component of pumping and treatment costs.
2. As a LWU's capital expenditure in any particular year will depend on its overall capital works programming, it is not possible to draw conclusions by comparing your LWU's 2010-11 capital expenditure with the above medians.

### 5.3 Action plan

Each LWU is required to prepare an annual Action Plan to Council, based on its review of the LWU's TBL Performance Report for its water supply business and for its sewerage business. The Action Plan should address any emerging issues or areas of under-performance and should also document any target dates for remedial actions. It should also report results for the financial year for the key actions set out in the utility's Strategic Business Plan.

The **steps** each LWU should follow in **reviewing its performance** and **preparing its Action Plan** to Council are shown in the box on page 22 of the *2010-11 NSW Performance Monitoring Report*. In addition to reviewing its performance and identifying remedial actions, the LWU needs to update its asset management plan and financial plan and address any 'emerging issues', such as 'liveability', water security and climate change in its IWCM strategy.

A key role for the Action Plan is to '**close the planning loop**' with the utility's strategic business plan. The utility's TRB must therefore be compared with the projection in its strategic business plan and any necessary corrective action documented in the Action Plan (indicator 14 on page 26).

In order to assist LWUs, the NSW Office of Water will continue to provide a template for each LWU's Action Plan (example on pages 26 and 27) together with the annual TBL reports for each LWU.

#### ACHIEVING FULL COST RECOVERY FOR WATER SUPPLY

Some NSW utilities have been using a long-term financial model where they input water supply access and usage charges and projected volumes of water supplied to determine the required future revenue. A number of these utilities have experienced significant revenue shortfalls in recent years as a result of reduced water sales due to more efficient water use by residents, above average rainfall and/or drought water restrictions.

Accordingly, it is recommended that utilities do not use models involving access and usage charges in order to avoid such revenue shortfalls as well as potentially misleading customers on the required future access and usage charges. Rather, utilities should use a model such as the NSW Financial Planning Model (FINMOD) – refer to pages 84 and 85 of the *2010-11 NSW Performance Monitoring Report* which determines the required future typical residential bill and annual revenue in current dollars.

Your utility can then set each year's water supply tariff in accordance with Circular LWU 11 of March 2011 using an evidence based estimate of the residential water to be supplied in the next financial year, together with the access and usage charges required to yield the Typical Residential Bill and annual revenue in accordance with your 20 to 30-year financial plan.

Such an approach is transparent as the financial modelling discloses the required Typical Residential Bill (and annual revenue) in current dollars as required by Items 1 and 16 of the Check List in Appendix F of the *NSW Water and Sewerage Strategic Business Planning Guidelines, July 2011*. In addition, annually setting your water supply tariff in accordance with Circular LWU 11 will minimise the risk of revenue shortfalls while maintaining Typical Residential Bills in accordance with your LWU's financial plan. Assistance is available from the Office of Water (Dilip Dutta on tel: (02) 8281 7372, fax: (02) 8281 7351, email: [Dilip.Dutta@water.nsw.gov.au](mailto:Dilip.Dutta@water.nsw.gov.au)).

Each LWU which meets all the requirements of the *NSW Best-Practice Management Framework* (page 6) is encouraged to pay a dividend from the surplus of its water and sewerage businesses to the council's general revenue. A LWU which pays such an 'efficiency dividend' will be moving towards **upper bound pricing**, which is required under the National Water Initiative, where practicable.

Refer also to section 4.4 on page 11 and to the box on page 5 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* which highlights the strategic benefits of the strong NSW pricing signals, the resulting efficient water use and reduced typical residential bills.

The template shows your LWU's results, the drivers for each indicator and your LWU's ranking relative to similar sized LWUs followed by the ranking relative to all LWUs. Space is provided for you to indicate proposed actions and findings (the right hand column on pages 26 and 27).

In order to prepare an Action Plan, it will be necessary for each LWU to review its performance. In practice this means reviewing whether the performance indicators under 'Health', 'Levels of Service', 'Environmental' and 'Economic' are satisfactory, taking into account factors that may affect performance outlined below. If the indicators are unsatisfactory, the LWU will need to develop suitable options to improve performance.

Guidance for councillors on quickly understanding and using your TBL Performance Report and Action Plan is provided in Appendix G of the *NSW Water and Sewerage Strategic Business Planning Guidelines, July 2011* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). This appendix will also assist the water and sewerage manager in preparing a sound Action Plan to Council.

### **Compliance with best practice management framework**

Compliance with each of the key requirements (Table 3 on page 105) of the Framework is shown on the TBL Report (page 28). LWUs should address any areas of non-compliance, which are shown on the Action Plan template (page 26). For each instance of non compliance, the Action Plan should briefly outline the strategy and target date for achieving compliance. LWUs that achieve the outcomes required by the Framework will have effective, sustainable and safe water supply and sewerage businesses and will comply with the National Water Initiative. As noted on page 6 compliance with the 19 requirements of the Framework is also a prerequisite for payment of a dividend from the surplus of the LWU's water supply or sewerage business and for financial assistance towards the capital cost of backlog infrastructure under the Country Towns Water Supply and Sewerage Program.

### **Performance based on triple bottom line**

LWUs should review the Performance indicators shown in the TBL Report and investigate those indicators where performance is below the median. In particular, for those indicators with a ranking of 4 or 5, LWUs should investigate the reasons for the ranking and if appropriate, develop a strategy for improvement. It should be noted that a low ranking does not necessarily imply poor performance as there are a number of factors that can impact performance as shown in section 5.2 on page 15. For example, the rankings take no account of the impact of utility characteristics (e.g. whether the water supply is fully filtered or whether it is a good quality groundwater, whether the LWU provides bulk storage etc). The Action Plan should take account of these characteristics.

As noted above, the rankings are based on statewide medians. While all LWUs should strive to raise their performance to at least the statewide 80 percentile (Tables 1 and 2 on pages 103 and 104), it is also useful to compare your LWU's performance with LWUs of a similar size. To assist LWUs in such comparisons, the medians for the relevant indicators have been shown in Tables 5 to 18 for each LWU size grouping. In addition, LWUs may benchmark their performance against LWUs with similar characteristics (section 3.3 on page 4).

Further factors that may assist LWUs in their assessment of performance are listed below.

### **Utility characteristics**

- **Renewals** – LWUs should ensure that their TRB in current dollars (i.e. adjusted for inflation) is consistent with the projection in its 20 to 30-year financial plan in order to ensure it is raising sufficient revenue for the required infrastructure. LWUs should also examine their asset

management plan and ensure that the necessary funds are directed to maintenance and renewals. Refer to page 11.

- **Employees** – the number of employees per 1,000 properties is a good indicator of operating and management costs (column 32 of Table 9 on page 152, Figure 8 on page 44, column 14 of Table 14 on page 167, Figure 39 on page 75). If the number of employees per 1,000 properties is significantly higher than the median shown in the tables on page 18 for the size of LWU, you should examine the management structure and identify the reasons for the difference and provide a brief explanation or your proposed remedial action in the Action Plan. It is important to note that a higher number of employees per 1,000 properties is needed for small non-contiguous water supply systems and for small water or sewage treatment works (refer to final dot point on page 24 and to page 18).
- **Properties served per km** – the density of urban development has a large effect on the infrastructure cost. For LWUs with >10,000 properties the median is 39 properties per km (range 17 to 69), while for LWUs with 200 to 1,500 properties the median is 20 (range 2 to 36) (column 26 of Table 9 on page 152, Figure 5 on page 40, column 9 of Table 14 on page 167, Figure 38 on page 74).

## Social factors

### Affordability

- **Typical residential bill (TRB)** – as noted on page 15, this is the principal indicator of the overall cost of a water supply or sewerage system (it is the annual bill paid by a residential customer using the utility's average annual residential water supplied). A critical element of the TRB is the operating cost (OMA – operation, maintenance and administration) (column 67 of Table 11 on page 158, Figures 31, 32, 33 on pages 67, 68, 69) as noted on page 24 under Economic Factors – Efficiency. As noted on page 19, your LWU's Action Plan must report on whether the TRB is consistent with the projection in your LWU's 20 to 30-year strategic business plan and on any warranted corrective action.
- **Residential water usage charge (c/kL)** – Higher usage charges have been ranked '1' because they provide a strong pricing signal, while lower charges have been ranked '5'. However, this indicator should be viewed in conjunction with the TRB and whether the LWU is achieving full cost recovery, in which case a lower water usage charge may be a good result. The **strategic benefits of the strong NSW pricing signals** and the resulting efficient water use are highlighted on page 5 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*.

### Health

- **Microbiological water quality compliance (per cent)** – This is the most important water supply health indicator and **achievement of microbiological compliance is a high priority for each LWU**. Microbiological non-compliance and boil water alerts must be reported in the annual Action Plan to Council in accordance with the box on page 8. As shown in Figure 14 on page 50, 93 per cent of LWUs complied with the microbiological water quality requirements in 2010-11 (also refer to column 8 of Table 5 on page 110). The 7 LWUs with less than 98 per cent do not comply with the Australian Drinking Water Guidelines, 2004. These LWUs, which each serve less than 4,700 connected properties should identify the reasons for non-compliance. This and the remedial action implemented must be reported in your LWU's Action Plan to Council (refer to pages 8 to 11 and to Appendix E on page 248). Assistance is available from your NSW Office of Water Regional Water and Sewerage Inspector (refer to page 34 for the contact details of each inspector).

As indicated in section 4.3 on pages 8 and 9, each LWU should develop and implement a sound risk-based drinking water quality management plan as a matter of priority. Assistance is available from the NSW Office of Water (Bill Ho on tel: (02) 8281 7326).

- **Public health incidents** – Where this indicator is significantly higher than the statewide median, your LWU's Action Plan should provide a brief explanation together with proposed remedial action if appropriate.
- **Capital investment on improving public health** – If a LWU reported zero for this indicator, investigate to ensure that this indicator is not under reported.

### Customer service

- **Water quality complaints** – LWUs with a high number of complaints (in the bottom 20 per cent of LWUs) should investigate the reasons for the complaints, including past performance and trends indicated in page two of the TBL Report. Provide a brief explanation together with proposed remedial action in your LWU's Action Plan. Note that the result for this indicator will be influenced by the type of business (e.g. Unfiltered supply, groundwater etc) (column 8b of Table 5 on page 110, Figure 18 on page 54).
- **Odour complaints** – This is a critical indicator for providing appropriate sewerage levels of service. LWUs with a high number of complaints (in the bottom 20 per cent of LWUs) should investigate the reasons for the complaints; including past performance and trends indicated in page two of the TBL Report. Provide a brief explanation together with proposed remedial action in your LWU's Action Plan (column 11 of Table 5 on page 110, Figure 45 on page 82).
- **Number of main breaks** – LWUs should annually monitor their breaks/100km of main, paying close attention to any sections of main with a high incidence of breaks (say treble the statewide median of nine breaks per 100 km). LWUs with a high incidence of breaks should investigate the likely reasons for the breaks, including the past performance and trends indicated in page two of the TBL Report. Provide a brief explanation together with proposed remedial action in your LWU's Action Plan (column 3a of Table 5 on page 110, Figure 20 on page 57). Refer also to section 4.5 on page 11.
- **Average duration of unplanned interruptions (water)** – where this indicator is significantly higher than the statewide median, your LWU's Action Plan should provide a brief explanation together with proposed remedial action if appropriate (column 3b of Table 5 on page 110).
- **Average break/choke repair time (sewerage)** – where this indicator is significantly higher than the statewide median of 120 minutes, your LWU's Action Plan should provide a brief explanation together with proposed remedial action if appropriate (column 65 of Table 17 on page 176).

### Environmental factors

- **Average annual residential water supplied** – This indicator is heavily influenced by the location and type of LWU (e.g. an inland LWU would expect to have high residential water supplied while an LWU with a dual supply would expect to have a very high value) and any applied water restrictions. Inland LWUs have significantly higher residential water supplied due to their hotter and drier climate and the use of evaporative coolers. Note that the median residential water supplied for inland LWUs in 2010-11 was 215 kL/property compared to 150 kL/property for coastal LWUs (column 14 of Table 6 on page 120, Figure 25 on page 62). Refer also to Item 9 on page 17.
- **Real Losses** – LWUs should monitor their Real Losses (column 41 of Table 10 on page 155) in L/d/connection. These should be minimised if the LWU is facing drought water restrictions or the need for augmenting the capacity of its water supply headworks system or its water treatment works. Such reduction of Real Losses will provide major economic benefits through deferral of the need for capital investment for upgrading of infrastructure. As noted on page 14, for almost all LWUs, monitoring your leakage in "L/d per connection" is the relevant measure for tracking your LWU's leakage performance.
- **Water Losses (ILI)** – The real losses above are the principal indicators of leakage performance. The ILI may provide some additional information. ILI values of less than about 1.5 indicate excellent

management of real losses, while an ILI close to 1.0 means that the real losses are close to the unavoidable or technical minimum losses. Such low ILI values are only likely to be economically justified where marginal costs of water supply are relatively high (e.g. desalination) or where water is scarce. An ILI of less than 1.0 is meaningless and may indicate errors in the input data. An ILI greater than three may indicate old or poor infrastructure or a relatively relaxed active leakage control policy (column 41b of Table 10 on page 155).

- **Recycled water** – The volume of recycled water use includes effluent reuse for town water and for agricultural uses. The volume reported for town water should equal the recycled volume shown in the water supply report. In 2010-11 25 per cent of LWUs reused over 50 per cent of their effluent (columns 13 to 14b of Table 8 on page 141 and Figures 54 and 55 on pages 91 and 92). As shown on Figure 54 on page 91, the highest volume recycled by a utility was 5,200 ML and a further six utilities each recycled over 1,000 ML.
- **Compliance with BOD in licence** – where compliance is low (e.g. below 90 per cent), provide a brief explanation together with proposed remedial action in the Action Plan (column 55 of Table 17 on page 176, Figure 47 on page 84).
- **Compliance with SS in licence** – where compliance is low (e.g. in the bottom 20 per cent of LWUs), provide a brief explanation together with proposed remedial action in the Action Plan if appropriate (column 57 of Table 17 on page 176, Figure 48 on page 85).
- **Sewer main breaks and chokes** – sections of sewer main with a high incidence of breaks and chokes (say treble the statewide median of 44 per 1,000 connected properties) warrant close attention. Provide a brief explanation together with proposed remedial action in the Action Plan (column 59 of Table 17 on page 176, Figure 51 on page 88).
- **Sewer overflows to the environment** – where this indicator is significantly higher than the statewide median, provide a brief explanation together with proposed remedial action in the Action Plan (column 60 of Table 17 on page 176, Figure 53 on page 90).
- **Environmental incidents** – where this indicator is significantly higher than the statewide median, provide a brief explanation together with proposed remedial action in the Action Plan.

## Economic factors

### Financial

- **Residential revenue from usage charges (per cent)** – The revised Best Practice Management Guidelines require LWUs with 4,000 or more properties to have at least 75 per cent of residential revenue generated through usage charges, while LWUs with under 4,000 properties, including LWUs with a dual supply must have at least 50 per cent of residential revenue generated through usage charges. This is a key demand management measure to ensure customers receive a sufficiently high pricing signal to encourage careful water use (column 13 of Table 6 on page 120, Figure 29 on page 65). As noted in Section 4.4 on page 11, the statewide median residential revenue from water usage charges was 70 per cent. Refer also to item 9 on page 17 and the residential water usage charge on page 21.
- **Economic real rate of return (ERRR)** – this reflects the rate of return generated from operating activities (i.e. excluding interest income, grants for acquisition of assets and gain/loss on disposal of assets). Water and sewerage charges should be sufficiently high to ensure continuing financial viability and provide for asset renewals and a positive rate of return, but not so high that they generate excessive monopoly profits. The ERRR is a good indicator of the financial health of a business (column 12 of Table 6 on page 120, Figure 30 on page 66, column 11 of Table 7 on page 132, Figure 59 on page 95). Both the very high rainfall in 2010-11 and the recent decade-long drought have had a significant effect on the rate of return for many LWUs, as a reduced volume of

water supplied has reduced their income from water usage charges and these LWUs have not set their tariff taking in to account this reduced volume. LWUs should set each year's tariff to raise the required revenue on the basis of its careful estimate of the water to be supplied in the next financial year as indicated in the box on page 19. This is particularly important during drought periods. Refer also to Figures 13 and 14 and Appendix G of the *2010-11 NSW Performance Monitoring Report*.

- **Return on assets** – this ratio is similar to the ERRR. It indicates the earnings generated before interest and tax (EBIT) for the assets controlled by the business. It is calculated as the operating profit before dividends divided by the difference between total assets and total liabilities. All LWUs should aim to achieve a positive value for ERRR or for return on assets (column 11 of Table 6 on page 120, column 9 of Table 7 on page 132, column 24c of Table 5A on page 114).
- **Net Debt to equity**<sup>14</sup> – net debt is the sum of long and short term borrowings less cash and investments. Equity is the total assets less total liabilities. In 2010-11 the NSW median net debt to equity for water supply and sewerage was 2% (column 19a of Table 5 on page 110). LWUs facing significant capital investment are encouraged to make greater use of borrowings to reduce their required TRB. Twenty year loan terms are recommended in order to avoid an unfair financial burden on existing customers and to facilitate inter-generational equity.
- **Loan payment (\$/property)** – this indicator shows the component of the TRB applied to meet debt payments. A high loan payment per property indicates a relatively high capital cost per property, recent construction of significant capital works or use of short-term loans (column 66a of Table 11 on page 158 and column 51a of Table 16 on page 173). The median loan payment in 2010-11 for water supply was \$61 per connected property (Table 1 on page 103).
- **Interest cover** – this ratio is an indicator of the LWU's ability to meet interest commitments. It is calculated as the earnings before interest and tax (EBIT) divided by net interest (interest expense less interest income). The interest cover is nil for a loss making business (column 27 of Table 5A on page 114). As a general guide, an interest cover >2 is a good interest cover position. For 2010-11, the median interest cover for water supply was 1.

## Efficiency

The operating cost (OMA – operation, maintenance and administration) per property is a prime indicator of the performance of an LWU and should be reviewed carefully by each LWU to ensure it has an efficient operating cost (column 67 of Table 11 on page 158, Figure 31 on page 67). The components of operating cost are:

- **Management cost** – this includes administration, engineering and supervision and is typically almost 40 per cent of the total operating cost (column 68a of Table 11 on page 158, Figure 34 on page 70). The number of employees per 1,000 properties can be a good indicator of the operating and management costs and hence the efficiency of an LWU. However, LWUs with a number of non-contiguous (i.e. separate) water supply systems and those with small water treatment works or small sewage treatment works will need a higher level of employees/1000 properties in order to effectively manage their systems (refer also to page 20). Similarly, LWUs with a low development density, under about 20 properties served / km of water main (column 26 of Table 9 on page 152) will need a higher level of employees.

<sup>14</sup> It is important to note that most NSW LWUs have relatively little borrowings at present. In **2010-11** the Statewide median net debt to equity for LWU water and sewerage was 2% (range -43% to 30%). The **2010-11** debt to equity for major Australian utilities include 123% for Sydney Water, 101% for ACT Electricity and Water, 81% for Melbourne Water, 102% for Yarra Valley Water, 66% for Queensland Urban Utilities, 45% for Water Corporation (WA) and 40% for Hunter Water (National Performance Report 2010-2011 for Urban Water Utilities). Refer also to graph 21 on page 187. Providing your utility has a soundly based asset management plan and financial plan (including sensitivity analysis), net debt to equity of up to 50% when financing a major capital works program for growth and/or improved levels of service, would be satisfactory for NSW LWUs.



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- **Treatment cost (water)** – (columns 104 to 107 of Table 13 on page 164, Figure 35 on page 71) this is dependent on the type and quality of the water source and the extent of treatment provided. In addition, as shown in the Table on page 18, there are great economies of scale for the operation of water treatment works (ie. facilities involving at least filtration and disinfection).
  - **Treatment cost (sewage)** – (columns 90 to 92 of Table 18 on page 179, Figure 64 on page 100) this is dependent on the type of treatment and the discharge requirements. Where the discharge licence conditions are stringent, involving for example a low level of phosphorus, treatment costs will be high.
  - **Pumping cost (water)** – (columns 94 to 99 of Table 13 on page 164, Figure 36 on page 72) this is dependent on topography and, for water supply, the location of the water source. For example, Essential Energy has a high pumping cost due to the distance required to pump from the water source, while Fish River is almost a fully gravitational supply, with negligible pumping costs. For water supply, there are significant economies of scale in pumping cost per property.
  - **Energy cost** – (columns 98 and 99 of Table 13 on page 164) this is mainly a consequence of pumping requirements and is a component of pumping cost for water supply. Energy cost may be reduced by maximising pumping in off peak periods or by obtaining a competitive energy rate from the energy supplier (e.g. maximising off peak pumping has provided annual savings in energy costs of over \$200,000 for a number of large water supplies).

For sewerage, energy cost is a component of pumping and treatment costs (columns 83 and 84 of Table 18 on page 179). Significant cost savings may be available by optimising energy use in the treatment process (e.g. such optimising of energy use has provided annual savings of over \$100,000 for a number of large sewage treatment works).

- **Water and Sewerage mains cost** – (column 84 of Table 13 on page 164, Figure 37 on page 73, column 70 of Table 18 on page 179, Figure 66 on page 102) this is dependent on the age and condition of the mains, the ground conditions and the number of connected properties per km of main.

## 5.4 Example TBL report and action plan – Tamworth Council

An example TBL Performance Report is shown on pages 28 and 29 for Tamworth Regional Council. An example analysis and Action Plan is shown below.

### Tamworth Regional Council Sewerage – Action Plan Page 1

#### Summary

In 2010-11, Tamworth Regional Council complied with all the sewerage requirements of the *NSW Best-Practice Management Framework* and its performance has continued to be very good.

Key actions from Council's Strategic Business Plan:

- Commissioning of the upgraded Westdale sewage treatment works and the new effluent transfer and storage system have been successfully completed.

INDICATOR		RESULT <sup>2</sup>		DRIVER	ACTION
	<b>Best-Practice Management Guidelines</b>	Complied with all the Best Practice Requirements <sup>1</sup>	Very good	Compliance demonstrates effectiveness and sustainability of water supply and sewerage business. 100% compliance is required for eligibility to pay an 'efficiency dividend'.	Continue the periodic review and update of Strategic Business Plan (SBP) and Financial Plan (FP), Integrated Water Cycle Management (IWCM) Strategy, Trade Regulation Waste Policy and Development Servicing Plan (DSP).
<b>CHARACTERISTICS</b>					
5	Connected property density	36 per km of main	Similar to the statewide median of 40	A connected property density below about 30 can significantly increase the cost per property of providing services.	
7	Renewals expenditure	0% Lowest ranking (5, 3)	May require review	Adequate funds must be programmed for works outlined in the Asset Management Plan – page 2 of Performance Monitoring Report.	Council has reviewed its asset management plan and increased funds are proposed for maintenance and renewals over the next 15 years.
8	Employees	1.9 per 1,000 props Low ranking (4, 3)	May require review	The employee ratio has only increased by 0.2 over the past 5 years.	Refer to Indicator 50 below.
<b>SOCIAL – CHARGES</b>					
12	Typical residential bill <sup>3</sup> (TRB)	\$716 per assessment Low ranking (4, 5)	May require review	TRB should be consistent with projection in the financial plan. Drivers – OMA Management Cost and Capital Expenditure.	A good outcome as the TRB is identical to the projection in Council's Strategic Business Plan. [After adjustment for CPI]
13	Typical Developer Charges	\$1780 per assessment Lowest ranking (5, 4)	May require review	The developer charge is 11% of the CRC of \$15800.	Council will continue to review and update its DSP after 5 years.
14	Non-residential sewer usage charge	109c/kL Low ranking (4, 3)	May require review	Marginally lower than the statewide median. Lower than Tamworth's operating cost of 122c/kL.	Council is progressively increasing this charge to ensure that appropriate pricing signals are provided to non-residential customers. This will address the present disparity where the non-residential sewage and trade waste volume was 45% of total sewage collected, but provided only 24% of the total revenue.
<b>SOCIAL - HEALTH</b>					
16	Urban Properties without reticulated sewerage service	6.3% Low ranking (4, 3)	May require review	Statewide median 3.4%.	Council's backlog sewerage program includes servicing Nundle by 2017/18 and Attunga by 2020/21.
17	Percent sewage treated to tertiary level		Not reported		
18	Percent of sewage volume that complied	99% Median ranking (3, 3)	Satisfactory	Equal to statewide median.	
19	Sewage treatment works compliant at all times	4 of 5			Satisfactory, refer to Indicator 18 above.
<b>SOCIAL – LEVELS OF SERVICE</b>					
21	Odour Complaints	1.1 per 1,000 props Low ranking (4, 5)	May require review	Results over the last 2 years are generally higher than the statewide median of 0.6.	
22	Service complaints	26 per 1,000 props Low ranking (4, 4)	May require review	Higher than the statewide median of 12.	
23a	Average Duration of Interruption		Not reported	Statewide median 106 minutes.	Strategy is being developed to enable monitoring and reporting of system interruptions.
25	Total Days Lost	2.8% Median ranking (3, 4)	Satisfactory	This has generally been higher than the statewide median of 1.9% over the last 5 years.	

1. Review of Council's TBL Performance Report and Preparation of an **Action Plan** to Council required annually.

**Strategic Business Plan** review and update required after 4 years. **Financial Plan** update required annually.

**IWCM Strategy** review and update required after 8 years. **Liquid Trade Waste Regulation Policy** in accordance with the 'NSW Liquid Trade Waste Regulation Guidelines, 2009'. **Development Servicing Plan** review and updating is required after 5 years.

2. The ranking relative to similar size LWUs is shown first (Col. 2 of TBL Report) followed by the ranking relative to all LWUs (Col. 3 of TBL Report).

3. Review and comparison of the 2011-12 **Typical Residential Bill (Indicator 12)** with the projection in your Strategic Business Plan is **mandatory**. In addition, if both indicators 46 and 46a are negative, you must report your proposed 2012-13 typical residential bill to achieve full cost recovery.

## Tamworth Regional Council Sewerage – Action Plan Page 2

INDICATOR		RESULT		DRIVER		ACTION	
<b>ENVIRONMENTAL</b>							
26	Volume of sewage collected per property	278 kL Highest ranking (1, 1)		Volume of sewage collected per property is much higher than average annual residential water supplied per property of 216 kL.		Council will continue to identify further options for recycling effluent.	
27	Percentage effluent recycled	100% Highest ranking (1, 1)	Very good	Treated effluent is made available for the irrigation of grain and green feed crops.			
28	Biosolids reuse	100% Median ranking (3, 2)	Satisfactory				
32	Net Greenhouse gas emissions (WS & Sge)	370 t CO2/1000 props Median ranking (3, 4)	Satisfactory	Slightly less than the statewide median.		Council will continue to examine options for improvement.	
34	Compliance with BOD in licence	100% Highest ranking (1, 1)	Very good				
35	Compliance with SS in licence	99% Low ranking (4, 4)	May require review	Result just below statewide median of 100%. Drivers – algae in maturation ponds, impact of floods.		Refer to Indicator 18 above.	
36	Sewer main breaks and chokes	89 per 100km of main Lowest ranking (5, 5)	May require review	Significantly higher than the statewide median of 41%. Drivers – condition and age of assets, ground conditions.		Refer to Indicator 7 above.	
37	Sewer overflows to the environment	17 per 100km of main Median ranking (3, 4)	Satisfactory	Drivers – condition of assets, wet weather and flooding.			
<b>ECONOMIC</b>							
39	Non-residential percentage of sewage collected	45% Highest ranking (1, 1)					
43	Non-residential revenue	24% High ranking (2, 2)	Good			Refer to Indicator 14 above.	
46	Economic Real Rate of Return (ERRR)	5.2% Highest ranking (1, 1)	Very good	ERRR is much higher than the statewide median of 0.9% and has been near or above 5% for the past 7 years.		Council is achieving 'upper bound pricing' as required by the National Water Initiative, where practicable..	
46 a	Return on assets	5.5% Highest ranking (1, 1)	Very good	Return on assets is much higher than the statewide median of 0.8%.			
47	Net debt to equity	14% Highest ranking (1, 1)	Very good				
48	Interest cover	>100 Highest ranking (1, 1)	Very good	Drivers – in general, an interest cover of > 2 is satisfactory.			
48 a	Loan payment	\$162 per prop High ranking (2, 1)	Good	The component of TRB required to meet debt payments. Drivers – expenditure on capital works, short term loans.			
50	Operating cost (OMA)	\$339 per prop Highest ranking (1, 2)	Very good	Prime indicator of the financial performance of an LWU. Drivers – development density, level of treatment, management cost, topography, number of discrete schemes and economies of scale.		Operating cost continues to be efficient.	
52	Management cost	\$101 per prop High ranking (2, 3)	Good	Drivers –number of discrete schemes, number of employees. 30% of OMA.			
53	Treatment cost	\$131 per prop Median ranking (3, 3)	Satisfactory	Drivers – type and level of treatment, economies of scale.			
54	Pumping cost	\$25 per prop Highest ranking (1, 2)	Very good	Drivers – topography, development density, effluent recycling.			
56	Sewer main cost	\$81 per prop Lowest ranking (5, 5)	May require review	Significantly higher than the statewide median of \$45. Drivers – topography, development density, effluent recycling.		Refer to Indicator 50 above.	
57	Capital expenditure	\$1380 per prop Highest ranking (1, 1)	Very good	Significantly higher than the statewide median of \$252. Drivers – age and condition of assets, asset life cycle.			

# Tamworth Regional Council sewerage (TBL performance report pg 1)

## Tamworth Regional Council TBL Sewerage Performance 2010-11

SEWERAGE SYSTEM - Tamworth Regional Council has 5 sewage treatment works providing secondary and advanced secondary treatment. The system comprises 82,350 EP treatment capacity (Intermittent Extended Aeration (Activated Sludge) and Trickling Filter), 24 pumping stations (70 ML/d), 24 km of rising mains and 495 km of gravity trunk mains and reticulation. 100% of effluent is recycled and treated effluent is discharged to land and river.

PERFORMANCE - Residential growth for 2010-11 was 1.6% which is higher than the statewide median. Tamworth Regional Council achieved 100% compliance with Best Practice requirements. The typical residential bill was \$716 which was above the statewide median of \$570 (Indicator 12). The economic real rate of return was 5.2% which was greater than the statewide median (Indicator 46). The operating cost per property (OMA) was \$339 which was less than the statewide median of \$380 (Indicator 50). Sewage odour complaints were above the statewide median of 0.6 (Indicator 21). Council did not comply with the SS requirements of the environmental regulator for effluent discharge. The current replacement cost of system assets was \$296M (\$15,800 per assessment), cash and investments were \$26M, debt was \$52M and revenue was \$20.5M (excluding capital works grants). Council paid a dividend of \$0.5M.

### COMPLIANCE WITH REQUIREMENTS OF BEST-PRACTICE MANAGEMENT FRAMEWORK

(1) Complete current strategic business plan & financial plan	YES	(2e) Pricing - DSP with commercial developer charges	Yes <sup>b</sup>
(2) (2a) Pricing - Full Cost Recovery without significant cross subsidies	Yes	(2f) Pricing - Liquid trade waste approvals & policy	Yes
(2b) Pricing - Complying Residential Charges	Yes	(3) Complete performance reporting (by 15 September)	YES
(2c) Pricing - Complying Non-Residential Charges	Yes	(4) Integrated water cycle management strategy	YES
(2d) Pricing - Complying Trade Waste Fees and Charges	Yes	COMPLIANCE WITH ALL REQUIREMENTS	100%

### TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

Category	Indicator	Description	NW1 No.	Value	Unit	LWU RESULT		RANKING		STATEWIDE MEDIAN
						Col 1	Col 2	Col 3	Col 4	
UTILITY	C5	1 Population served: 43,500		Number of assessments: 18,730						
	C8	2 Number of connected properties:		18,730						
	C6	3 Number of residential connected properties:		17,100						
		4 New residences connected to sewerage (%)								
	A6	5 Properties served per kilometre of main								
	W18	6 Volume of sewage collected (ML)								
		7 Renewals expenditure (% of current replacement cost of system assets)								
		8 Employees per 1000 properties								
SOCIAL	P4	Description of residential tariff structure:		access charge/prop: independent of land value (Note 6)						
	P4.1	11 Residential access charge / assessment (\$)		\$ 716						
	P6	12 Typical residential bill / assessment (\$)		\$ 716						
		13 Typical developer charge / equivalent tenement (\$)		\$ 1,780						
		14 Non-residential sewer usage charge (c/kL)		c/kL 109						
	F6	15 Revenue per property - Sge (\$)		\$ 1090						
		16 Urban properties without reticulated sewerage service (%)		6.2	%					
	E3	17 Percent of sewage treated to a tertiary level (%)		99	%					
	E4	18 Percent of sewage volume treated that complied (%)		4 of 5						
	E5	19 Sewage treatment works compliant at all times								
		21 Odour complaints per 1000 properties		1.1	per 1,000 prop					
	C11	22 Service complaints per 1000 properties		26	per 1,000 prop					
	C16	23a Average sewerage interruption (minutes)		2.8	min					
		25 Total days lost (%)								
	ENVIRONMENTAL	W19	26 Volume of sewage collected per property (kL)		278	kL				
W26		26a Total recycled water supplied (ML)		5,250	ML					
W27		27 Recycled water (% of effluent recycled)		100	%					
E8		28 Biosolids reuse (%)		100	%					
		30 Energy consumption per Megalitre (kiloWatt hours)		467	kwh					
		31 Renewable energy consumption (% of total energy consumption)			%					
E12		32 Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 properties)		370						
		33 90 Percentile licence limits for effluent discharge: BOD 30 mg/L; SS 25 mg/L; Total P 2 mg/L								
		34 Compliance with BOD in licence (%)		100	%					
		35 Compliance with SS in licence (%)		99	%					
ECONOMIC	A12	36 Sewer main breaks and chokes per 100 km of main		89	per 100km main					
		37 Sewer overflows per 100 km of main		17	per 100km main					
		39 Non res & trade waste % of total sge volume		45	%					
		43 Revenue from non-residential plus trade waste charges (% of total revenue)		24	%					
		44 Revenue from trade waste charges (% of total revenue)		5.5	%					
	F18	46 Economic real rate of return - Sge (%)		5.2	%					
		46a Return on assets - Sge (%)		5.5	%					
	[F22]	47 Net Debt to equity - Sge (%)		14	%					
	[F23]	48 Interest cover - Sge		>100						
		48a Loan payment per property - Sge (\$)		\$ 162						
	F24	48c Net profit after tax - WS & Sge (\$'000)		\$'000 14,360						
		49 Operating cost (OMA) per 100 km of main (\$'000)		\$'000 1,220						
F12	50 Operating cost (OMA) per property (\$) Note 9		\$ 339							
	51 Operating cost (OMA) per kilolitre (cents)		c/kL 122							
	52 Management cost per property (\$)		\$ 101							
	53 Treatment cost per property (\$)		\$ 131							
	54 Pumping cost per property (\$)		\$ 25							
	55 Energy cost per property (\$)		\$ 24							
	56 Sewer main cost per property (\$)		\$ 81							
F15	57 Capital Expenditure per property - Sewerage (\$)		\$ 1,380							

### NOTES :

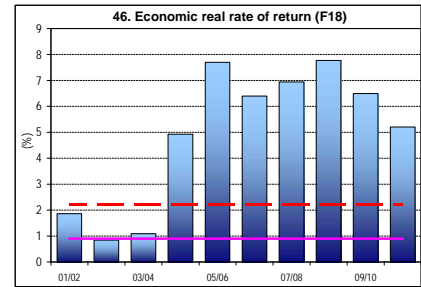
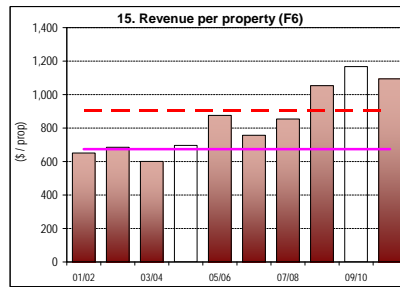
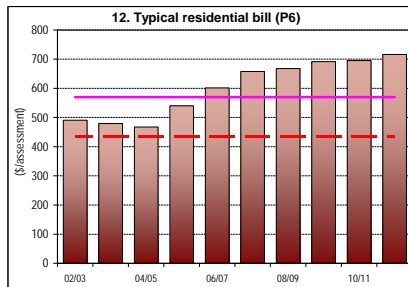
- Col 2 rankings are on a % of LWUs basis - best reveals performance compared to similar sized LWUs (ie. Col 1 is compared with LWUs with >10,000 properties). - see attachment.
- Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs). - see attachment.
- Col 4 (Statewide Median) is on a % of connected properties basis - best reveals statewide performance (gives due weight to larger LWUs & reduces the effect of smaller LWUs)- see attachment.
- LWUs are required to annually review key projections & actions in their Strategic Business Plan and annually update their financial plan. The SBP should be updated after 4 years.
- Tamworth Regional Council has commercial developer charges in place but needs to review/update its sewerage DSP.
- Non-residential access charge based on square of meter size. Sewer usage charge - 109 c/kL.
- Non-residential & trade waste volume was 45% of total sewage collected; Non-residential customers provided 24% of the revenue from annual charges, usage and trade waste charges.
- Compliance with Total N in Licence was 100%. Compliance with Total P in Licence was 100%.
- The operating cost (OMA)/property was \$339. Components were: management (\$101), operation (\$92), maintenance (\$99), energy (\$24), chemical (\$9) and effluent/biosolids (\$14).
- Tamworth Regional Council rehabilitations included 0.1% of its sewerage mains and 0.6% of its service connections.

# Tamworth Regional Council sewerage (TBL performance report pg 2)

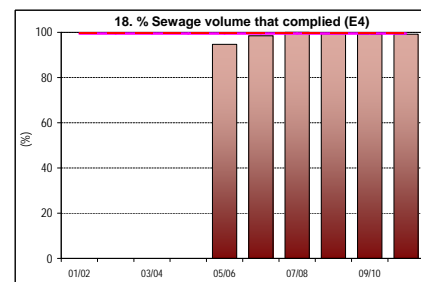
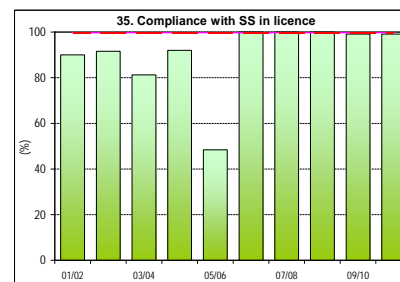
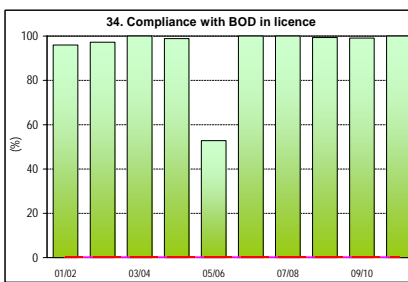
**Tamworth Regional Council**      **TBL Sewerage Performance**      (page 2)      **2010-11**

(Results shown for 10 years together with 2010/11 Statewide Median and Top 20%)

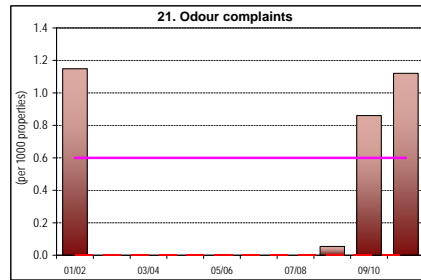
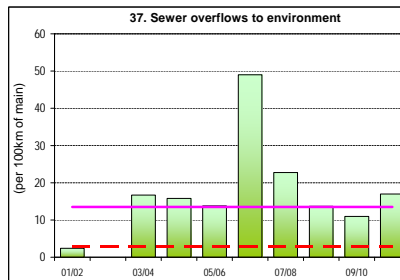
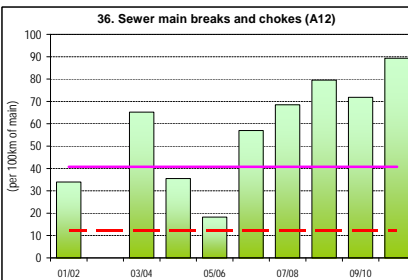
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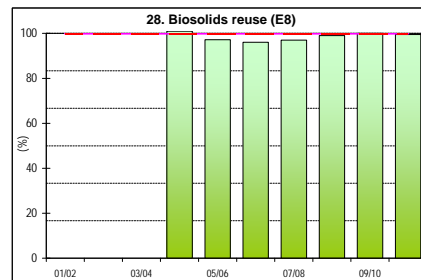
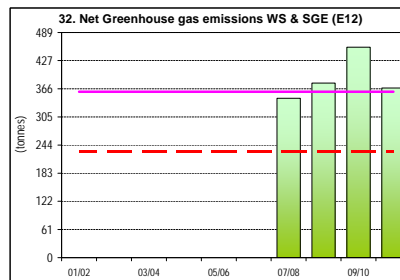
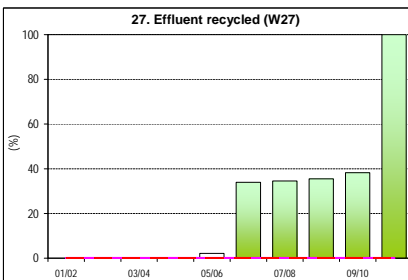
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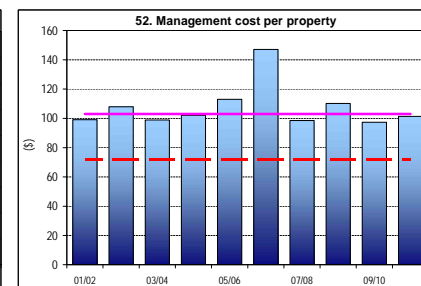
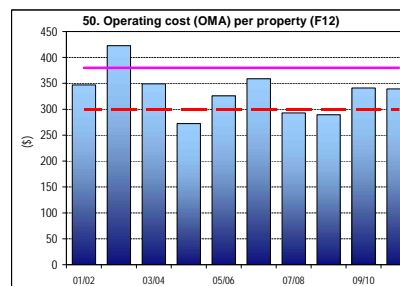
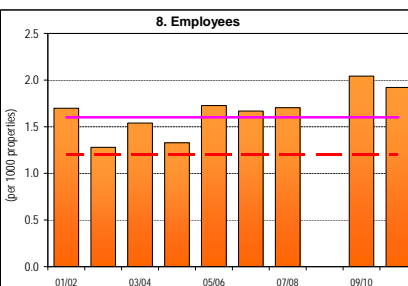
**CUSTOMER SERVICE/RELIABILITY**



**ENVIRONMENT**



**EFFICIENCY**



**NOTES:**

1. Costs are in Jan 2011\$ except for graph 12, which is in Jan 2012\$.

**LEGEND**  
 2010-11 State Median (dashed red line)  
 2010-11 Top 20% (solid magenta line)

## 6. General notes

This *2010-11 NSW Water Supply and Sewerage Benchmarking Report* provides the full suite of performance indicators and benchmarking data to enable each LWU to improve its productivity and performance through benchmarking its performance against that of similar LWUs. The benchmarking report is available on the NSW Office of Water website ([www.water.nsw.gov.au](http://www.water.nsw.gov.au))

1. **Triple bottom line (TBL) focus** – to provide a balanced view of the long-term sustainability of NSW LWUs, a triple bottom line accounting focus has been adopted, with performance reported on the basis of **social, environmental** and **economic** performance indicators.
2. **Data validation** – independent auditing and data validation (Appendix H on page 285) assure data reliability for the NSW Performance Monitoring System. The data validation procedures include matters such as:
  - Aggregated businesses (section H4.1 on page 287)
  - Assessments (section H4.2 on page 288)
  - Connected properties (section H4.2 on page 288)
  - Charges, bills and cost recovery (section H4.3 on page 288)
  - Urban water supplied (section H4.4 on page 288)
  - Operating cost and management cost (section H4.5 on page 289)
  - Drinking water quality compliance (section H4.6 on page 289)
  - Sewage treatment works compliance (section H4.7 on page 290)
  - Compliance with Best-Practice Management Framework (section H5 on page 290)
3. **Figures and tables** – Most of the figures in this report show performance indicators for each of the last six years to enable review of trends and to facilitate benchmarking and 'yardstick' comparisons. The figures show ranked results for LWUs grouped into four size ranges in order to enable each LWU to compare its performance against similar sized LWUs. The better performing LWUs are shown at the left of each group.

Table 5 and Tables 6 to 18 show water supply and sewerage performance indicators for each of the 109 NSW water utilities (105 LWUs plus Sydney Water Corporation and Hunter Water Corporation, Sydney Catchment Authority and Hawkesbury Council).

As noted on page 2, these tables are sorted in order of the number of connected properties served in order to facilitate comparisons with similar size LWUs. The table on page 2 shows each LWU's ranking in terms of water supply connected properties. For example, the table shows '11 Albury City', indicating that Albury City is the 11th LWU in the water supply tables. To facilitate comparisons, the tables are also grouped into the same four size ranges as for the figures. Also, the median for many of the indicators are shown for each size grouping.

4. **Statewide medians** – This report refers to statewide medians which are calculated on a 'percentage of connected properties' basis rather than a 'percentage of LWUs' basis. This is a weighted median on the basis of connected properties, which best reveals statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs. LWU rankings on a

'percentage of LWUs' basis are also provided where appropriate (e.g. for comparison of LWUs in the 'Ranking' columns of the two page TBL Performance Report for each utility (example on page 28 and in Appendix C on page 232). The statewide medians are shown in Tables 1 and 2 on pages 103 and 104.

5. **Typical residential bill (TRB)** – The typical residential bill per assessment is the annual bill paid by a residential customer using the LWU's average annual residential water supplied and is the **principal indicator of the overall cost** of a water or sewerage system. Pensioners pay a lower amount due to the \$87.50 pensioner rebate as do owners of vacant lots as they pay no water usage charges. Refer also to page 15.

**Calculation of TRB** – The 2011-12 typical residential bill is based on a customer of the LWU's principal water supply or sewerage system using the LWU's 2010-11 average annual residential water supplied (see Tables 6 and 7 on pages 120 and 132). The typical residential bill for 2010-11 and previous years is based on the reported average annual residential water supplied for that year (2010-11 residential water supplied is shown in column 3 of Table 5 on page 110).

6. **Total water supplied** – Total annual water supplied comprises the sum of the potable water supplied plus the non potable water supplied. Recycled water is a component of the non-potable supply which also includes raw water.
7. **Average annual residential water supplied** – The average annual residential water supplied per connected property (col 3 of Table 5) includes both potable and non-potable water supplied. Where an LWU has not separately reported its residential water supplied, it has been estimated using the Statewide average of 57 per cent of the LWU's total potable water supplied. The potable water supplied and the total water supplied (potable + non-potable) have been separately reported for the 11 LWUs with a dual water supply (see Note 8 below).
8. **Dual supplies** – Eleven LWUs had a dual water supply to over 50 per cent of their residential customers in June 2008 (ie. with a potable supply for indoor use and a non potable supply for outdoor use).

The total annual residential water supplied (i.e. potable + non-potable) kilolitres per property for those LWUs with a dual water supply is shown below, together with their potable residential water supplied in brackets. These volumes were: Balranald 958 (241), Berrigan 292 (173), Bourke 3,169 (539), Central Darling 526 (145), Hay 1,140 (184), Jerilderie 1,033 (245), Murray 260 (156), Wakool 839 (153), Walgett 938 (195), Warren 352 (164) and Wentworth 376 (119).

The typical residential bill (TRB) has been calculated for those LWUs with a dual supply using the above volumes. The TRB for Brewarrina, Carrathool, Deniliquin and Moree Plains has also taken into account the significant volumes of non-potable supply provided by these LWUs.

9. **Water losses** – For consistency with national performance reporting, water losses comprise real losses (mostly leakage) plus apparent losses (unauthorised consumption and under-registration of customer meters). Unbilled water supplied (fire fighting and mains flushing) is not a water loss but is a component of non revenue water.
10. **Minimum real losses** – Leakage studies for over 40 NSW LWUs indicate an average leakage from water supply distribution systems of 17 per cent of annual consumption (range six per cent to 35 per cent). Therefore, a minimum real loss (i.e. leakage) of six per cent of the potable water supplied has been adopted for this report. Reported real losses of less than six per cent have only



been accepted where the utility has provided evidence to support the adoption of a lower value. Table 10 on page 155 discloses that 62 of the 94 LWUs responsible for providing a reticulated public water supply have recently carried out a reservoir drop test, waste metering or night flow analysis in order to determine their present real losses and opportunities for leakage reduction.

**Minimum non-revenue water** – Similarly, statewide analysis of non revenue water (water losses plus unbilled water supplied) for NSW water utilities other than bulk water suppliers, indicates a minimum of 10 per cent of annual water supplied. Reported non revenue water of less than 10 per cent of total water supplied has only been accepted where the utility has provided evidence to support the adoption of a lesser value. Where the reported non revenue water has not been accepted, the reported values of total potable town water supplied have been increased as a result of increasing the reported non revenue water component to 10 per cent. These adjusted values are shown in *italics bold* in column 10 of Table 8 on page 141.

11. **Sydney Water, Hunter Water and Sydney Catchment Authority** – The performance indicators for Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority were obtained from the *National Performance Report 2010-11 for Urban Water Utilities*.
12. **Bulk storage** – Utilities that provide bulk storage dams for their water supply incur significant capital and operating costs for these facilities, resulting in a higher typical residential bill and operating cost per property (refer to item 5 on page 16). The following 45 non-metropolitan utilities provided such bulk storage: Armidale, Ballina, Bathurst, Bega Valley, Bourke, Brewarrina, Byron (Mullumbimby), Cabonne, Central Tablelands, Clarence Valley, Cobar, Coffs Harbour, Essential Energy, Eurobodalla, Fish River, Glen Innes-Severn, Gosford, Goulburn Mulwaree, Guyra, Inverell, Kempsey, Kyogle, Lachlan, Leeton, Lithgow, MidCoast, Mid Western Regional, Moree Plains, Orange, Palerang, Parkes, Port Macquarie-Hastings, Richmond Valley, Rous, Shoalhaven, Tamworth, Tenterfield, Tweed, Upper Hunter, Upper Lachlan, Uralla, Warrumbungle, Wingecarribee, Wyong, Yass Valley.
13. **Unfiltered** – A utility with over 50 per cent of its supply comprising an unfiltered surface water supply ie. the utility does not have a water treatment works providing filtration and disinfection for >50 per cent of its supply.
  - Groundwater** – A utility with >50 per cent of its supply comprising good quality unfiltered groundwater.
  - Reticulator** – A utility which purchases >70 per cent of its source water from a bulk supplier and reticulates water to householders in its area.
  - Bulk supplier** – A utility which provides a bulk water supply to other utilities, rather than reticulating water to householders.
  - Dual supply** – A utility with a potable reticulated water supply for indoor uses and a separate non-potable supply reticulated for outdoor uses to over 50 per cent of its residential customers (refer to Note 8 on page 31).
14. **National Water Initiative (NWI) Indicators** – There are 32 NSW water utilities with >10,000 connected properties including three metropolitan utilities and 29 non-metropolitan utilities. These utilities have reported their performance in the *National Performance Report 2010-11* based on a nationally agreed framework of indicator definitions. The reported NWI performance indicators (including key financial performance indicators) have been independently audited. The results that have met the rigorous NWI auditing requirements have been published in the *National Performance Report 2010-11* and are shown in Appendix F. Appendix F discloses the NSW results for all the approximately 150 NWI performance indicators. Some of the reported non-financial performance indicators failed to meet the NWI auditing requirements. These results have been excluded from



both the *National Performance Report 2010-11* and Appendix F. However they have been included in the Figures and in Tables 5 to 18 of this report.

In addition, the reported values for the 30 NWI financial performance indicators have been independently audited for all the NSW utilities.

15. **Reported NWI Indicators** – This report discloses the performance of each of the 105 NSW Local Water Utilities (LWUs) for each of the approximately 150 NWI performance indicators on the following basis:

**Table 5** on page 110 reports results for NWI indicators C4, W11, W12, A8, C15, F1, H4, H2, H3, C9, F2, E4, W27, W26, F24, P8, F13 F19, F22, F16 and the sum of F28 and F29.

**Table 5A** on page 114 reports the results for NWI indicators F13, F7, F3, F19, F22, F23, F20, F21, F25, F8, F24 and F30.

**Table 5B** on page 117 reports the results for NWI indicators C12, C14, E9, E10, E11, E12, W6, W13 and W15.

**Table 6** on page 120 reports indicators P1, P1.2, P1.12, P1.3, P1.4, P3, F17, F4, W12 and C4.

**Table 7** on page 132 reports indicators P4.1, P6, F18 and C8.

**Table 8** on page 141 reports the results for NWI indicators W8, W10, W11, W20, W21, W26, W27, W14, W1, W2, W3, W4, W5, W6 and W7.

**Table 9** on page 152 reports the results for NWI indicators C4, C2, C1, A2, A3, A1, F14 and F26.

**Table 10** on page 155 reports the results for NWI indicators A10, A11, A9, A8, C17, W11 and W12.

**Table 11** on page 158 reports the results for NWI indicators F1, F5, F4, F9, F22, F17 and F11.

**Table 12** on page 161 reports the results for NWI indicators H6, H5, H4, H2, H3, C9, C10, C18, C19, C14, C17 and C15.

**Table 14** on page 167 reports the results for NWI indicators C8, C6, C5, A5, A6, A4, F15 and F27.

**Table 15** on page 170 reports the results for NWI indicators A12, E13, W18, W17, E4, E5, E1, E2, E3, W19, E8, W26 and W27.

**Table 16** on page 173 reports the results for NWI indicators F2, F6, F10, F22, F18 and F12.

**Table 17** on page 176 reports the results for NWI indicators E7, C11, C13 and C16.

The results for NWI indicators P8; F3, F16 and F19; A3 and A5 and A2; W11; P3; C9; A8; W12; A10; F17; F12; F11; A6; P4; A12; E10; F18 and F12 are shown on Figures 1, 2, 5, 7, 9, 18, 20, 25, 26, 29, 30, 31, 38, 40, 45, 51, 53, 59 and 60 respectively.

The following NWI indicators have not been shown in the tables but can be determined as follows: W16 from (W18–W17), C3 from (C4–C2), C7 from (C8–C6). Indicator A7 is nil for all LWUs and indicator H1 refers to the 2004 ADWG for all LWUs.

All the NSW LWUs have complied with indicators E6, H1 and H7. Results for indicators H5 and H6 are reported in Table 12 on page 161.

## 6.1 Regional Water and Sewerage Inspectors - NSW Office of Water

Area	Name	Mobile	Email
Albury	Patrick Freeman	0429 308 954	<a href="mailto:Patrick.Freeman@water.nsw.gov.au">Patrick.Freeman@water.nsw.gov.au</a>
Alstonville	Terry Call	0412 283 768	<a href="mailto:Terry.Call@water.nsw.gov.au">Terry.Call@water.nsw.gov.au</a>
Cootamundra	Bernie Barnes	0429 604 409	<a href="mailto:Bernie.Barnes@water.nsw.gov.au">Bernie.Barnes@water.nsw.gov.au</a>
Dubbo	Bruce Lamont	0458 268 453	<a href="mailto:Bruce.Lamont@water.nsw.gov.au">Bruce.Lamont@water.nsw.gov.au</a>
Newcastle	Graham Campbell	0419 620 990	<a href="mailto:Graham.Campbell@water.nsw.gov.au">Graham.Campbell@water.nsw.gov.au</a>
Orange	Paul Beed	0419 624 576	<a href="mailto:Paul.Beed@water.nsw.gov.au">Paul.Beed@water.nsw.gov.au</a>
Tamworth	Trent Betts	0417 458 247	<a href="mailto:Trent.Betts@water.nsw.gov.au">Trent.Betts@water.nsw.gov.au</a>
Wollongong	Geoff Parish	0427 248 007	<a href="mailto:Geoff.Parish@water.nsw.gov.au">Geoff.Parish@water.nsw.gov.au</a>

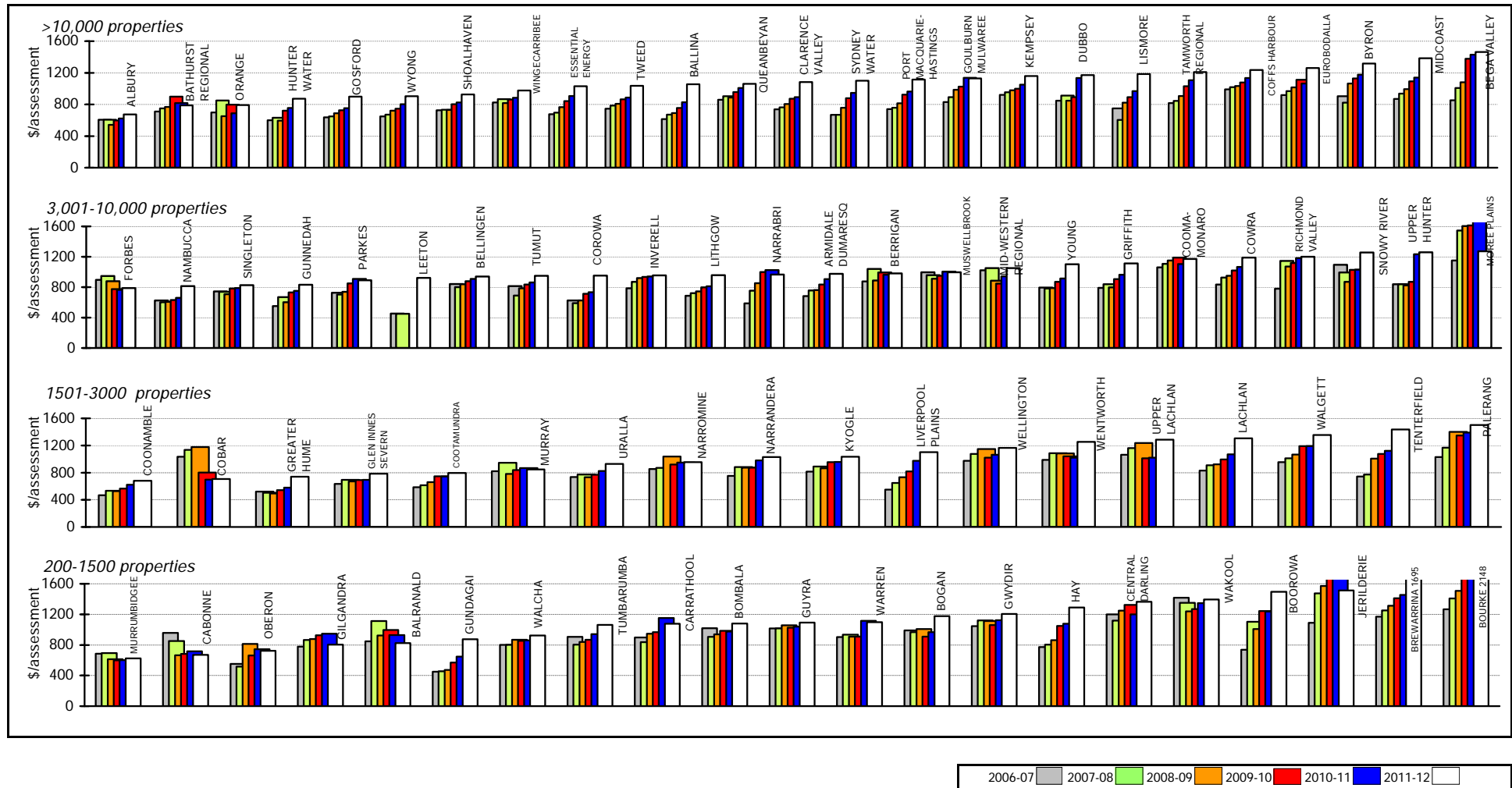
As noted on pages 8 and 21, assistance is available from your NSW Office of Water Regional Water and Sewerage Inspector for achieving microbiological water quality compliance and for addressing other water and sewage treatment issues.

## 6.2 Contents of tables 5 to 18

Table 5	<b>2010-11 NSW water utility performance summary</b> – Overview of each water utility's key water supply and sewerage performance indicators.
Table 5A	<b>Water supply and sewerage – financial</b> – Combined water supply and sewerage indicators.
Table 5B	<b>Water supply and sewerage – levels of service, environmental, main sources of water</b> – Combined water supply and sewerage indicators.
Table 6	<b>Water supply – residential charges, bills, cost recovery</b> – Type of tariff, residential charges, bills, cost recovery, average annual residential water supplied and number of connected properties
Tables 6A to 6B	<b>Water supply – 2010-11 residential inclining block or multiple tariffs, non-residential tariffs</b>
Table 7	<b>Sewerage – residential charges, bills, cost recovery</b> – Residential charges, bills, non-residential sewer usage charge, cost recovery and number of connected properties for each water utility's sewerage business
Tables 7A to 7C	<b>Sewerage – 2010-11 residential multiple tariffs, non-residential tariffs, liquid trade waste fees and charges</b>
Table 8	<b>2010-11 NSW urban water supplied</b> – Water supplied by customer category, water losses, leakage, total potable and non-potable water supplied, recycled water use and surface and groundwater use
Table 8A	<b>2010-11 Water losses and non-revenue water</b>
Table 8B	<b>2010-11 Water consumptions from source catchments in non-metropolitan NSW</b> – Shows details of water consumptions by customer category for each source catchment
Table 8C	<b>2010-11 Water conservation initiatives</b>
Table 9	<b>Water supply – utility characteristics</b> – Population, no. of assessments, connected properties, new residential dwellings connected, assets employed, capital investment, workforce employed, outsourcing, days lost
Table 10	<b>Water supply – asset management, water resource management</b> – Leakage, main breaks, interruptions to supply, rehabilitations, renewals and maintenance expenditure, total annual and average residential water supplied, recycled water use, drought and demand management policies
Table 11	<b>Water supply – financial, efficiency</b> – Revenue, residential revenue and water supplied, current replacement cost, debt to equity, cross subsidies, operating result, externalities, loan payment, operating cost (OMA) and management cost
Table 12	<b>Water supply – health, levels of service</b> – Physical, chemical and e. coli water quality compliance, water quality complaints, Water Service Complaints, Customer Interruption Frequency and Drought Water Restrictions
Table 13	<b>Water Supply – benchmarking cost data</b> – Disaggregated benchmarking cost data including operating cost, management cost, retail/wholesale cost, pumping cost, treatment cost and water main cost
Table 14	<b>Sewerage – utility characteristics</b> – Population, no. of assessments, connected properties, new residential dwellings connected, assets employed, capital investment, workforce employed, outsourcing, days lost
Table 15	<b>Sewerage – asset management, resource management</b> – Infiltration, interruptions to service, rehabilitations, renewals, maintenance expenditures, volume of sewerage collected, treated, biosolids reused, per cent effluent reclaimed
Table 16	<b>Sewerage – financial, efficiency</b> – Revenue, current replacement cost, debt to equity, cross subsidies, operating result, externalities, loan payment, operating cost (OMA) and management cost
Table 17	<b>Sewerage – environmental, levels of service</b> – BOD and SS compliance, sewer main chokes and collapses, sewer overflows to the environment, odour complaints, service complaints, total complaints and average sewerage interruption
Table 18	<b>Sewerage – benchmarking cost data</b> – Disaggregated benchmarking cost data including operating cost, management cost, retail / wholesale cost, pumping cost, treatment cost and sewer main cost

# 7. Water supply and sewerage figures

Figure 1: Typical residential bill – water supply and sewerage



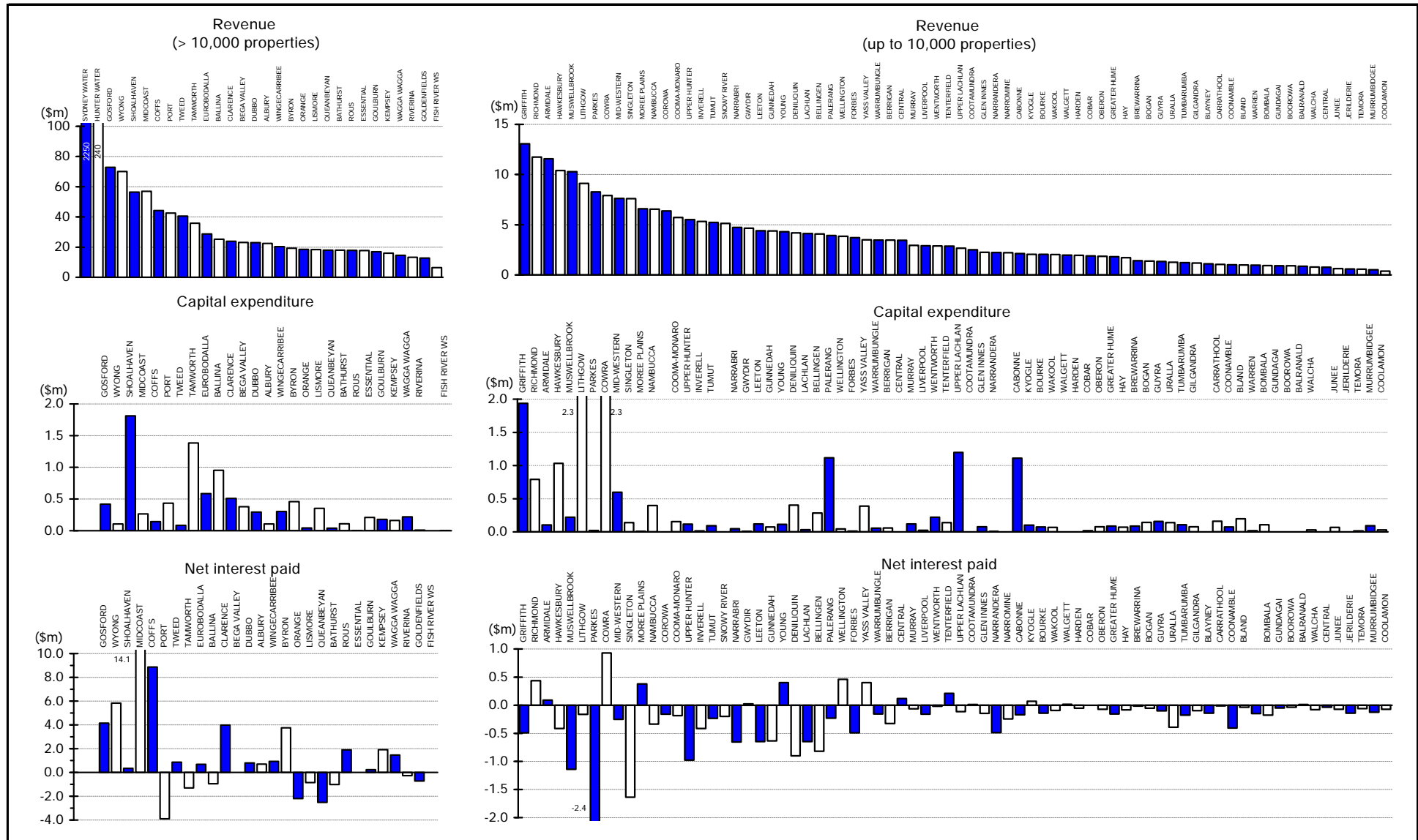
Parameter:

$$(2010-11 \text{ Average Residential Water Supplied} \times 2011-12 \text{ Water Usage Charge}) + 2011-12 \text{ Water and Sewerage Access Charges}$$

Notes:

1. This figure shows ranked values of the 2011-12 typical residential water bill for water supply and sewerage for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2011-12 typical residential water bill for water supply and sewerage for the 24 LWUs shown ranges from \$788 to \$1270. Results for the previous 5 years are also shown in Jan 2012\$.
2. The 2011-12 Statewide median typical residential bill for water supply and sewerage is \$1020 per assessment.
3. Refer also to pages 6 and 27 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*.
4. For general notes see page 30.

Figure 2: Revenue, capital expenditure, net interest paid – water supply and sewerage



Parameter: [Total revenue (W13 + S14) - grants for acquisition of assets (W11a + S12a)] ÷ 1,000,000

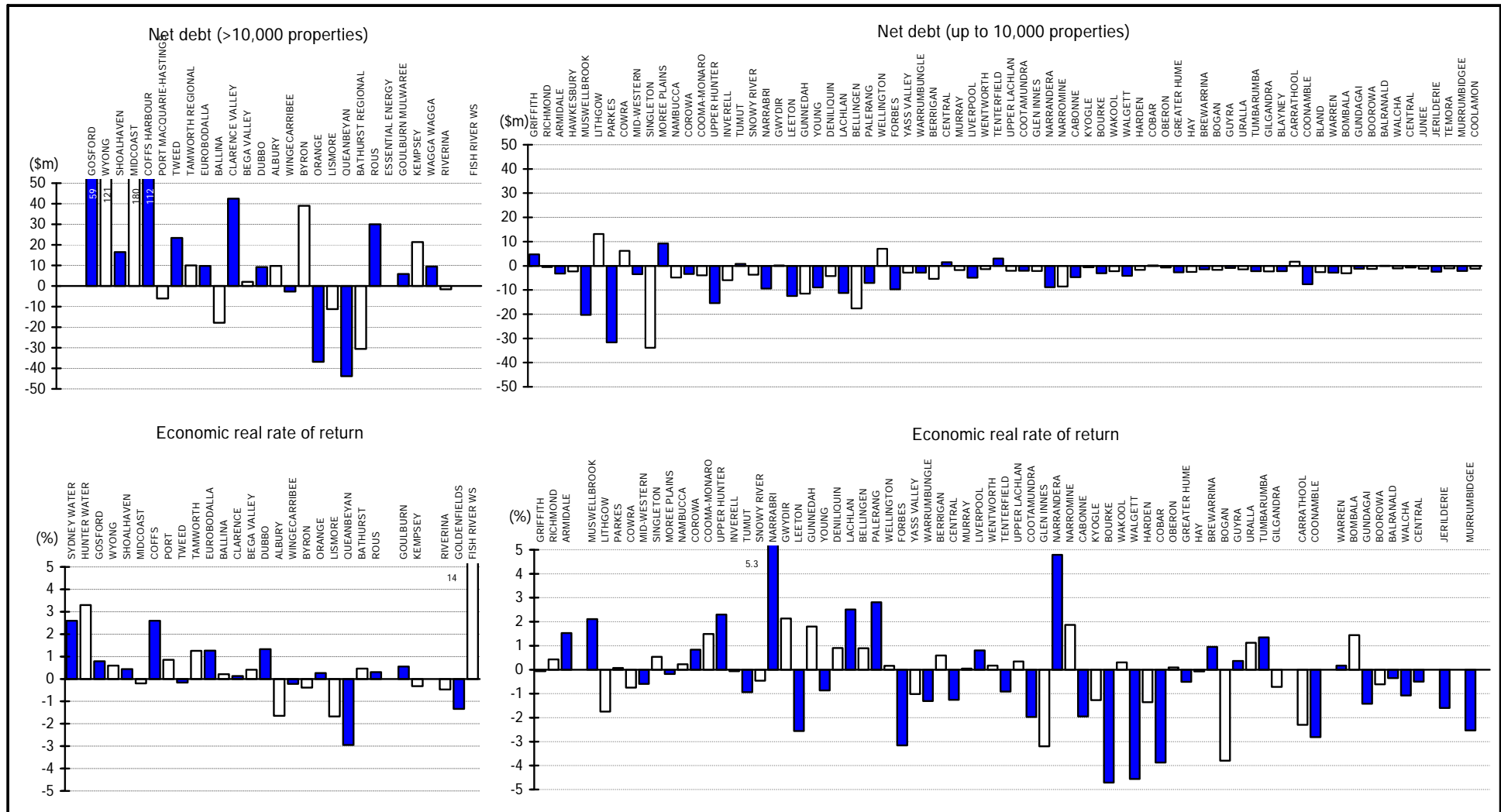
Parameter: Acquisition of fixed assets (W16 + S17)

Parameter: Interest expense (W4a + S4a) - interest income (W9 + S10)

Notes:

1. Utilities are ranked on the basis of revenue (see the top graph). Revenue for Sydney Water was \$2,250M and Hunter Water's revenue was \$240M.
2. For general notes see page 30.

Figure 3: Net debt, economic real rate of return – water supply and sewerage

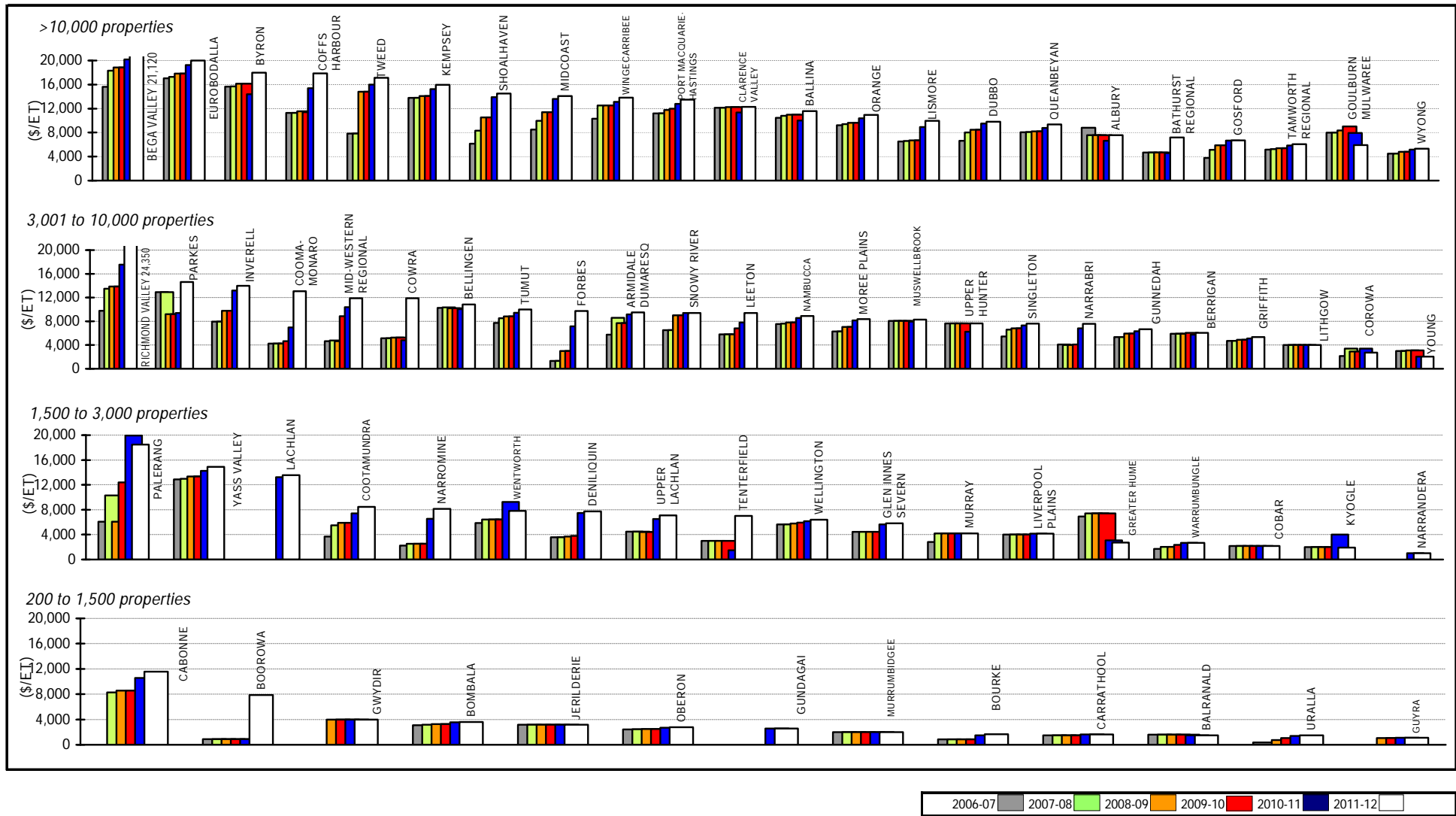


Parameter:  $[\text{Borrowings (W39 + S40)} + \text{bank overdraft (W37 + S38)}] - \text{cash and investments (W30 + S31)}$   
 Parameter:  $[\text{Operating result (W15)} + \text{interest expense (W4a)} - \text{interest income (W9)} - \text{grants for acquisition of assets (W11a)}] \times 100$   
 Written down replacement cost of system assets, plant & equipment (W33)

Notes:

1. Utilities are ranked on the basis of revenue (see the top graph). Revenue for Sydney Water was \$2,250M and Hunter Water's revenue was \$240M.
2. An economic real rate of return of 14% was reported by Fish River whose written down replacement cost of system assets is only 9% of the current replacement cost [ $\$21\text{M} / \$226\text{M} = 9\%$ ].
3. For general notes see page 30.

Figure 4: Typical developer charge – water supply and sewerage



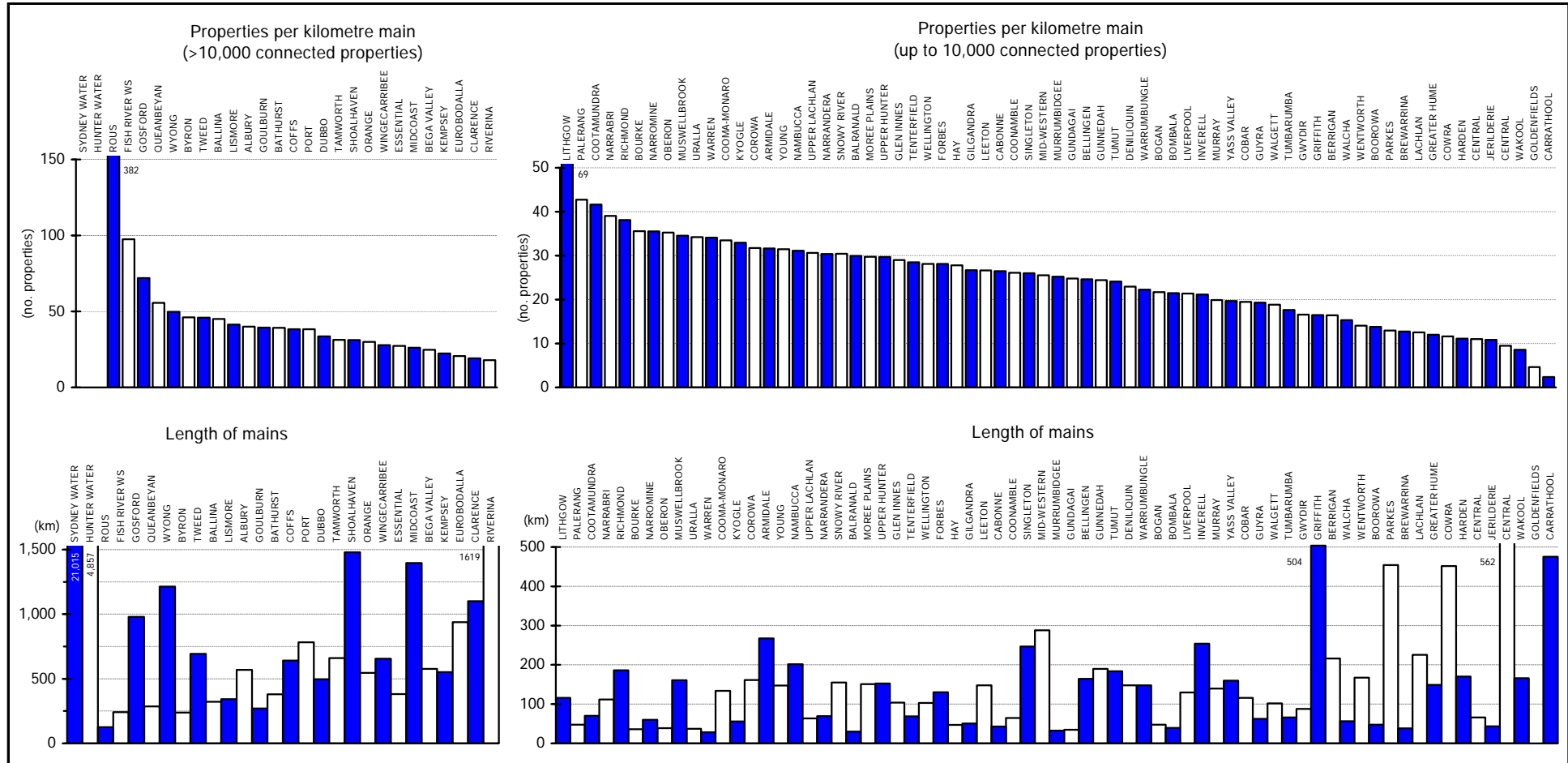
Parameter: Typical Water Supply Developer Charge (Q36) + Typical Sewerage Developer Charge (Q36)

Notes:

1. This figure shows ranked values of the 2011-12 typical developer charge for water supply and sewerage for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the typical developer charge for water supply and sewerage for the 24 LWUs shown ranges from \$24350 to \$2100. Results for the previous 5 years are also shown in Jan 2012\$.
2. The Statewide median typical developer charge for water supply and sewerage is \$9300 per Equivalent Tenement (ET).
3. For general notes see page 30.

## 8. Water supply figures

Figure 5: Properties served per km of main, length of mains – water supply



Parameter:  $\frac{\text{No. of residential assessments (Q34)} + \text{No. of non-residential assessments (Q35)} \times \text{No. of connected properties per assessment}}{\text{Length of headworks transfer mains (Q20a)} + \text{length of trunk mains (Q20)} + \text{length of reticulation mains (Q21)}}$

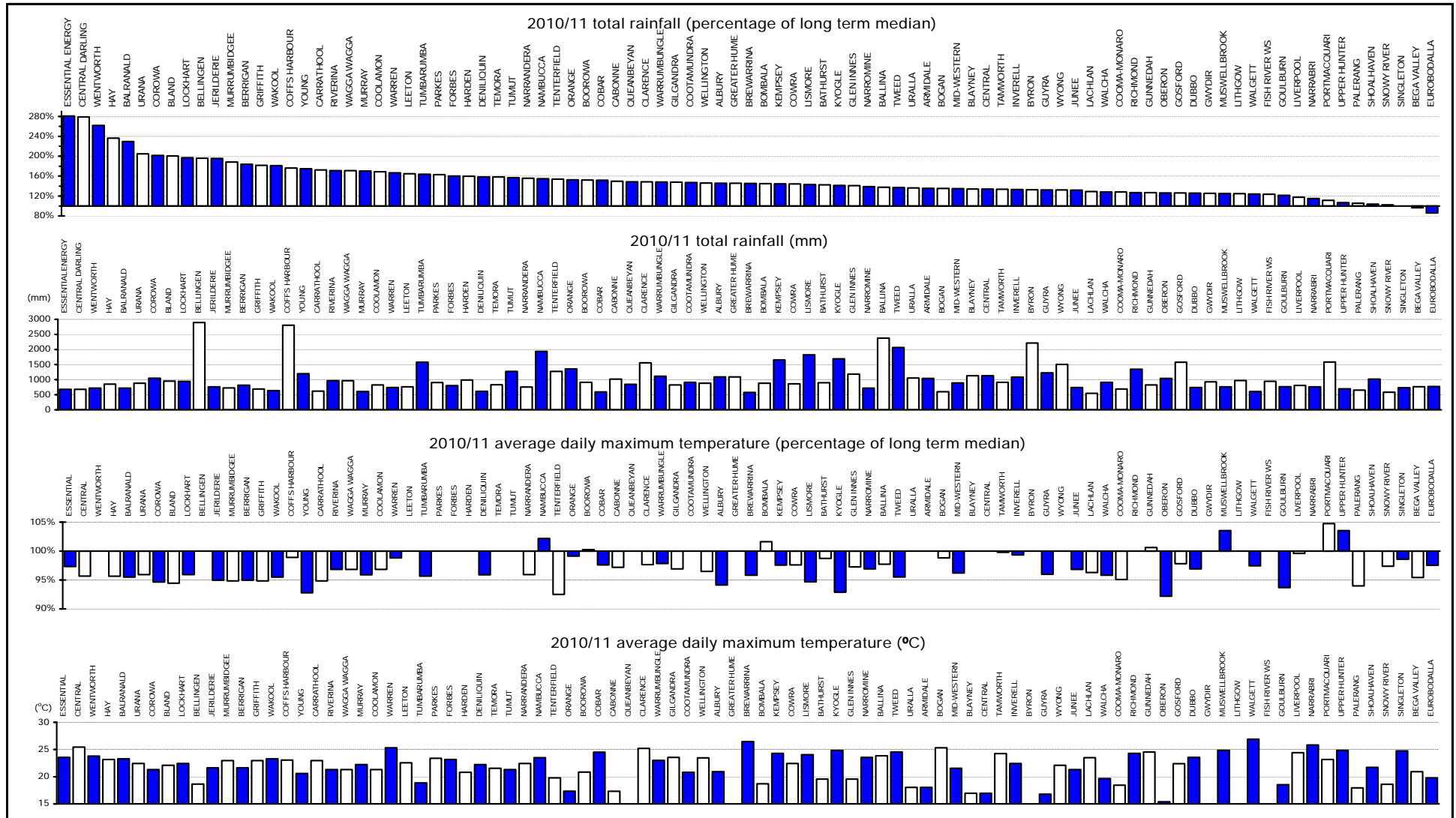
Parameter: Length of headworks transfer mains (Q20a) + length of trunk mains (Q20) + length of reticulation mains (Q21)

Notes:

1. The top graph shows the ranked values of number of connected properties per km of water main for each Local Water Utility (LWU). Each bar represents one LWU. The bottom graph of this figure shows the total length of mains for the corresponding LWUs.
2. The Statewide median water supply connected properties per km of main is 32.
3. For general notes see page 30.



Figure 6: Rainfall, temperature – water supply



Parameter:  $[2010/11 \text{ total rainfall} \times 100] \div \text{Long term median annual rainfall}$

Parameter: 2010/11 total rainfall (mm)

Parameter:  $[2010/11 \text{ average daily maximum temperature} \times 100] \div \text{Long term median of daily maximum temperature}$

Parameter: 2010/11 average daily maximum temperature (°C)

Notes:

1. Rainfall, temperature and medians are sourced from the Bureau of Meteorology. Long term medians are not available for some localities.
2. The total rainfall for the 2010/11 financial year and the average daily maximum temperature are only shown if weather stations returned complete records.
3. Weather stations are selected on the basis of proximity to a utility's major population centre and the length and reliability of records.
4. For general notes see page 30.

Figure 7: Total water supplied – water supply

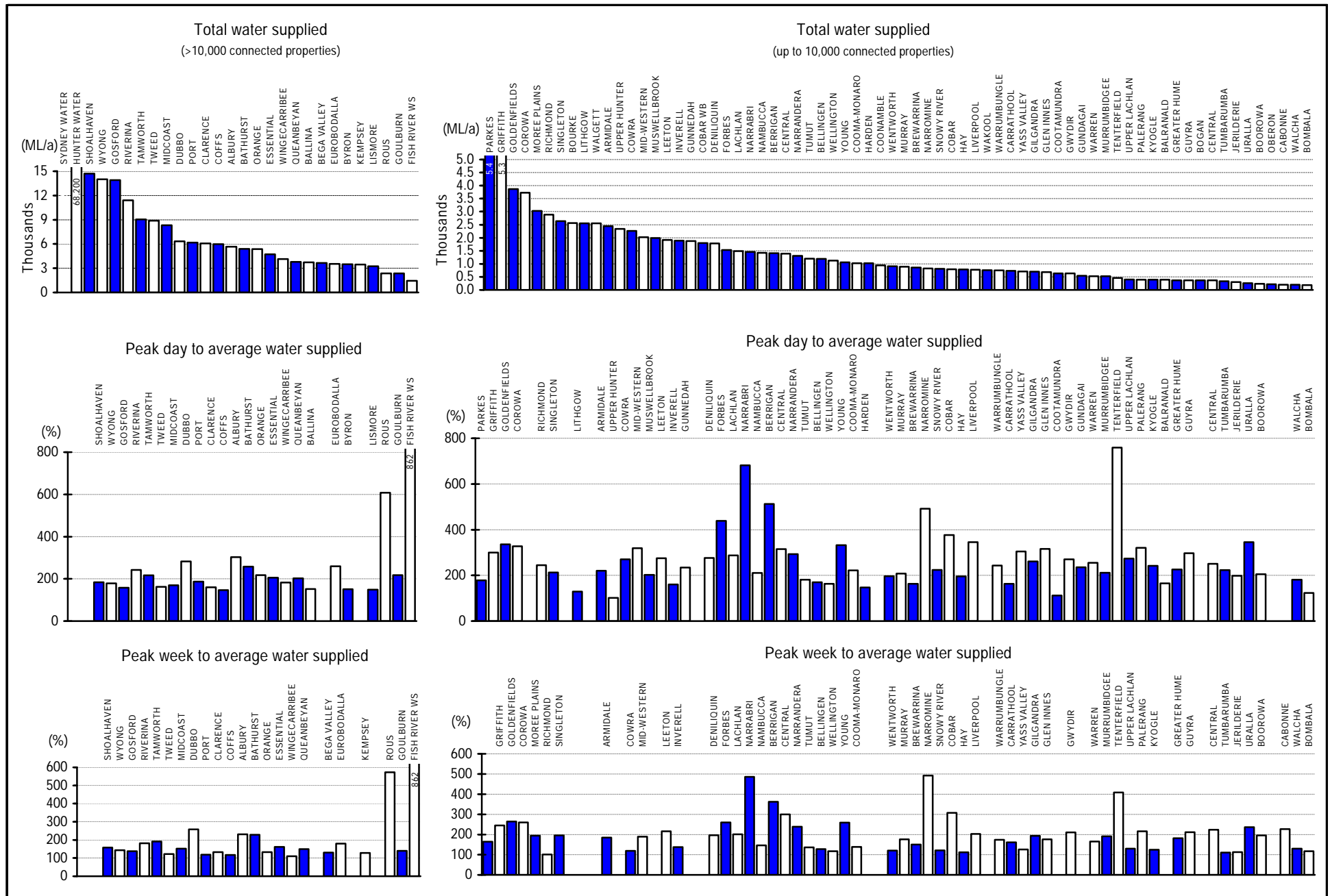


Figure 7: Total water supplied – water supply (continued)

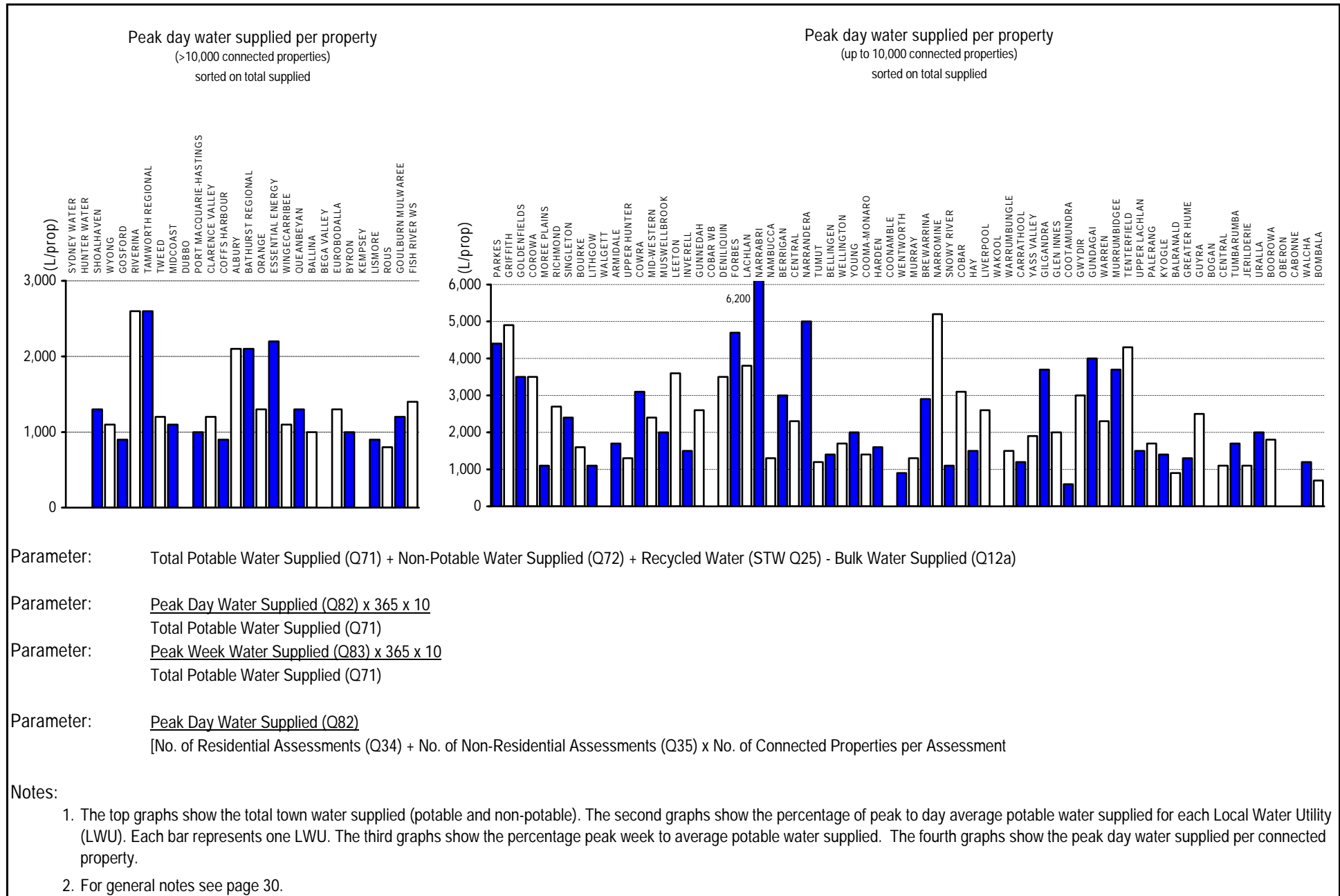
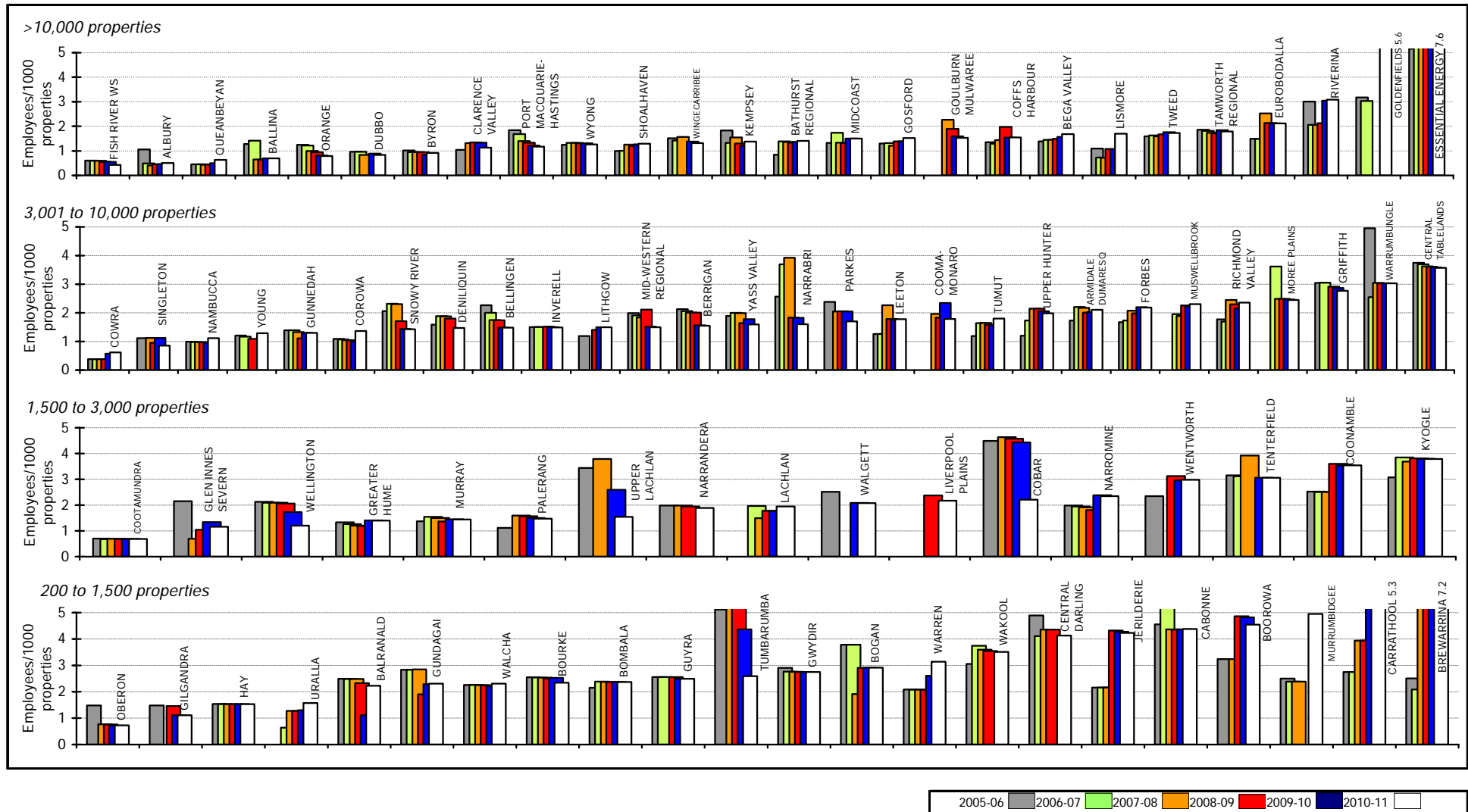


Figure 8: Employees per 1,000 properties – water supply



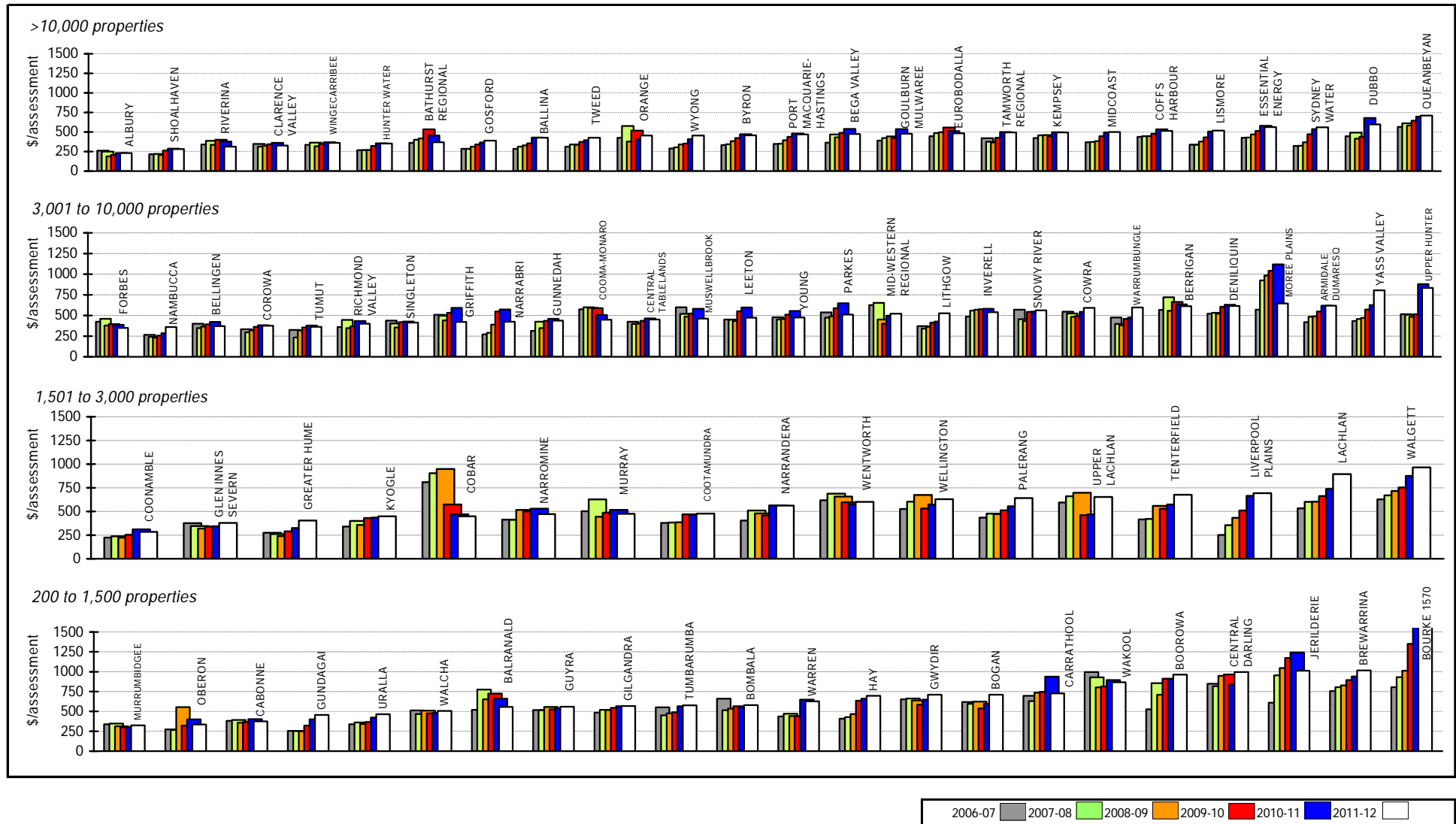
Parameter: Equivalent Full-time Employees (Q120) x 1000

[No. of Residential Assessments (Q34) + No. of Non-Residential Assessments (Q35) x No. of Connected Properties per Assessment]

Notes:

1. This figure shows ranked values of the 2010-11 number of water supply employees per 1000 properties for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the water supply employees per 1000 connected properties for the 28 LWUs shown ranges from 0.6 to 3.6. The 1 LWU on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown.
2. The Statewide median number of water supply employees is 1.5 per 1000 connected properties.
3. For general notes see page 30.

Figure 9: Typical residential bill – water supply

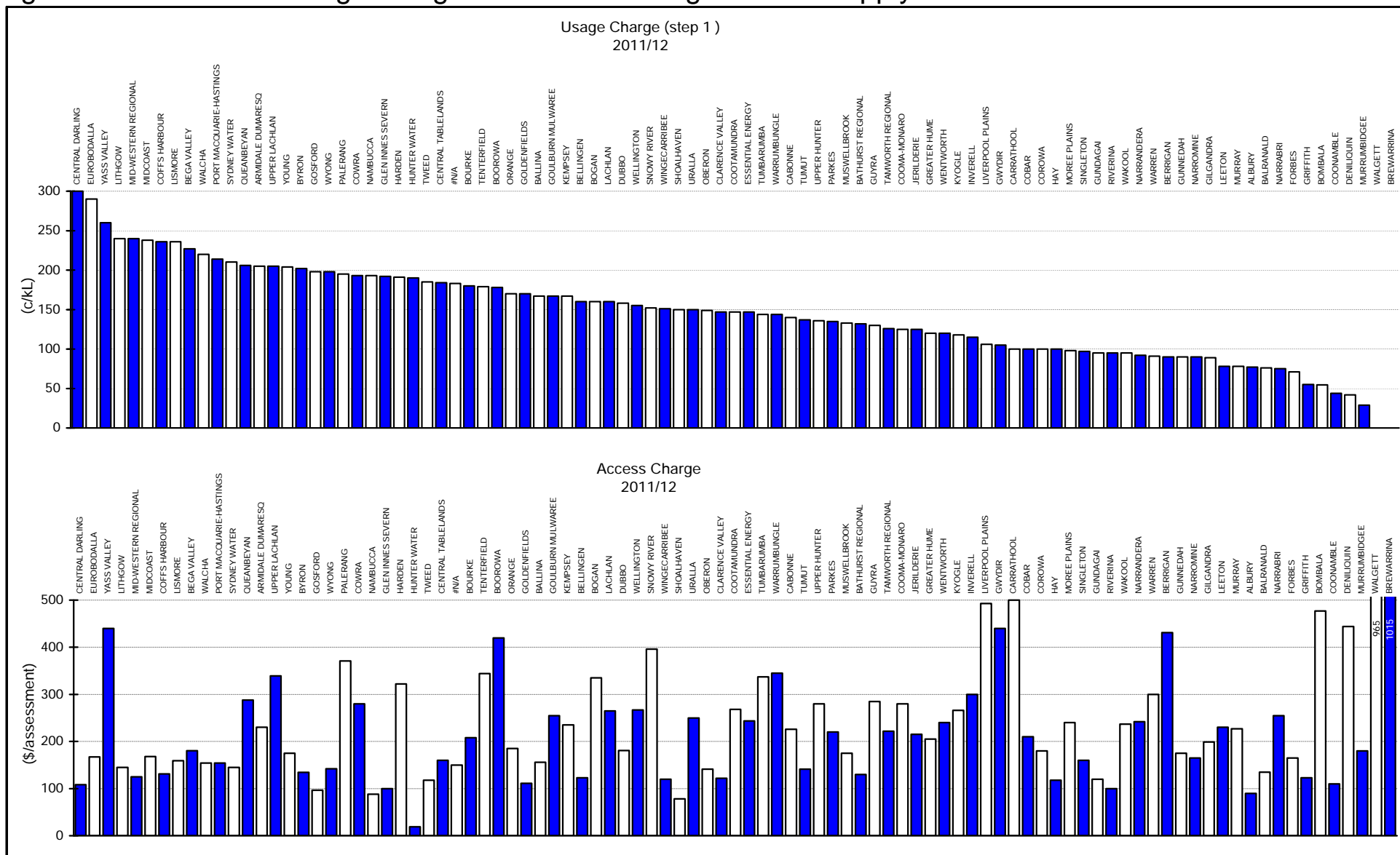


Parameter: (2010-11 Average Residential Water Supplied x 2011-12 Water Usage Charges) + 2011-12 Access Charge

Notes:

1. This figure shows ranked values of the 2011-12 typical residential bill for water supply for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the typical residential bill in 2011-12 for the 28 LWUs shown ranges from \$350 to \$830 per assessment. Results for the previous 5 years are also shown in Jan 2012\$.
2. The 2011-12 Statewide median typical residential bill for water supply is \$450 per assessment.
3. For general notes see page 30.

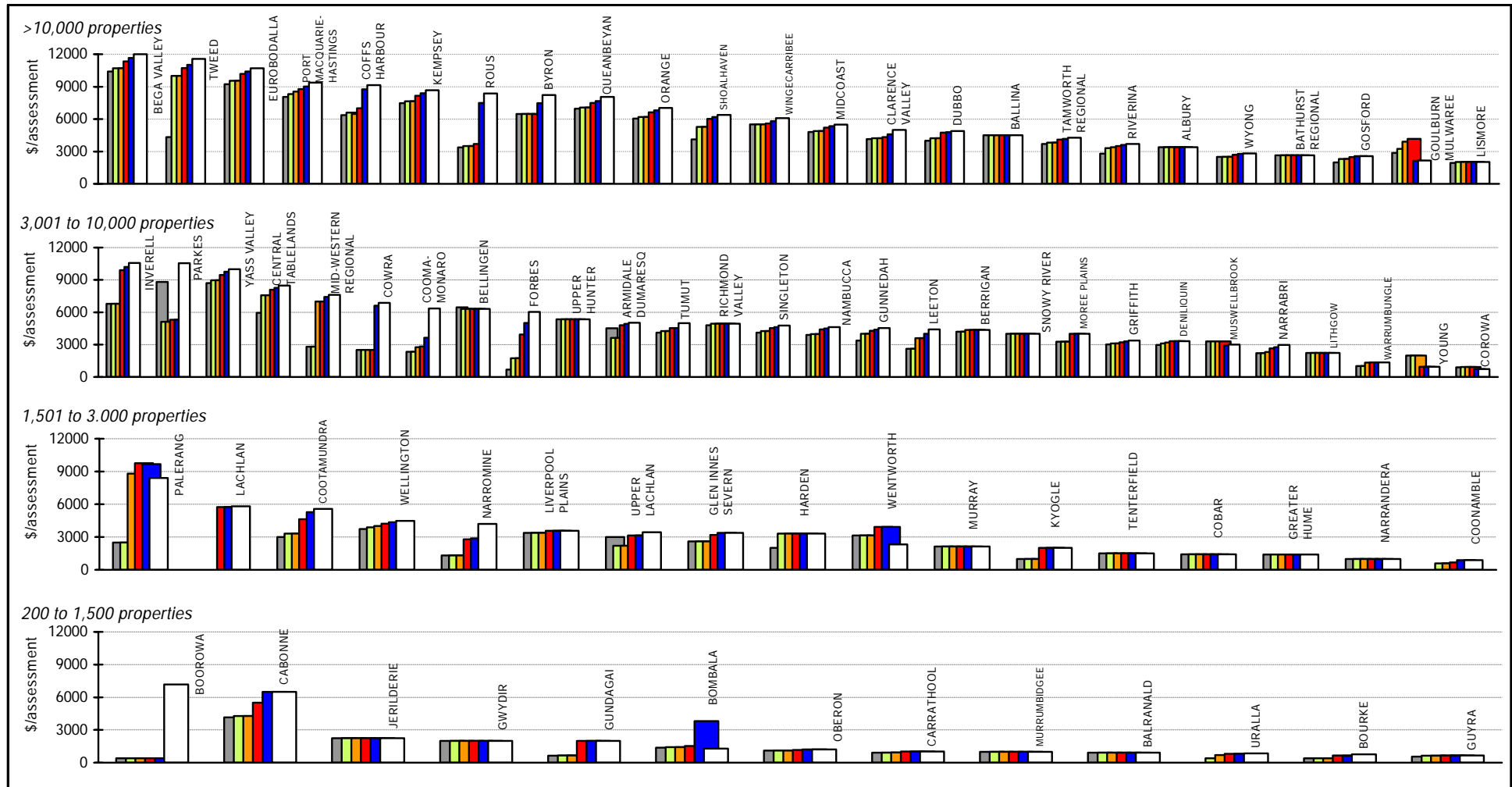
Figure 10: Residential usage charge and access charge – water supply



Notes:

1. ALL LWUs have now abolished their free water allowance for potable water supply. 1 LWU did not have domestic water metering.
2. The first step residential water usage charge is shown above. Further information on water supply tariff structures is shown in Tables 6, 6A and 6B.
3. The Statewide median water usage charge for the first step was 180 c/kL. 20% of LWUs had a usage charge greater than 214 c/kL. 80% of LWUs had a usage charge greater than 130 c/kL.
4. For general notes see page 30. Refer also to page 11.

Figure 11: Typical developer charge – water supply



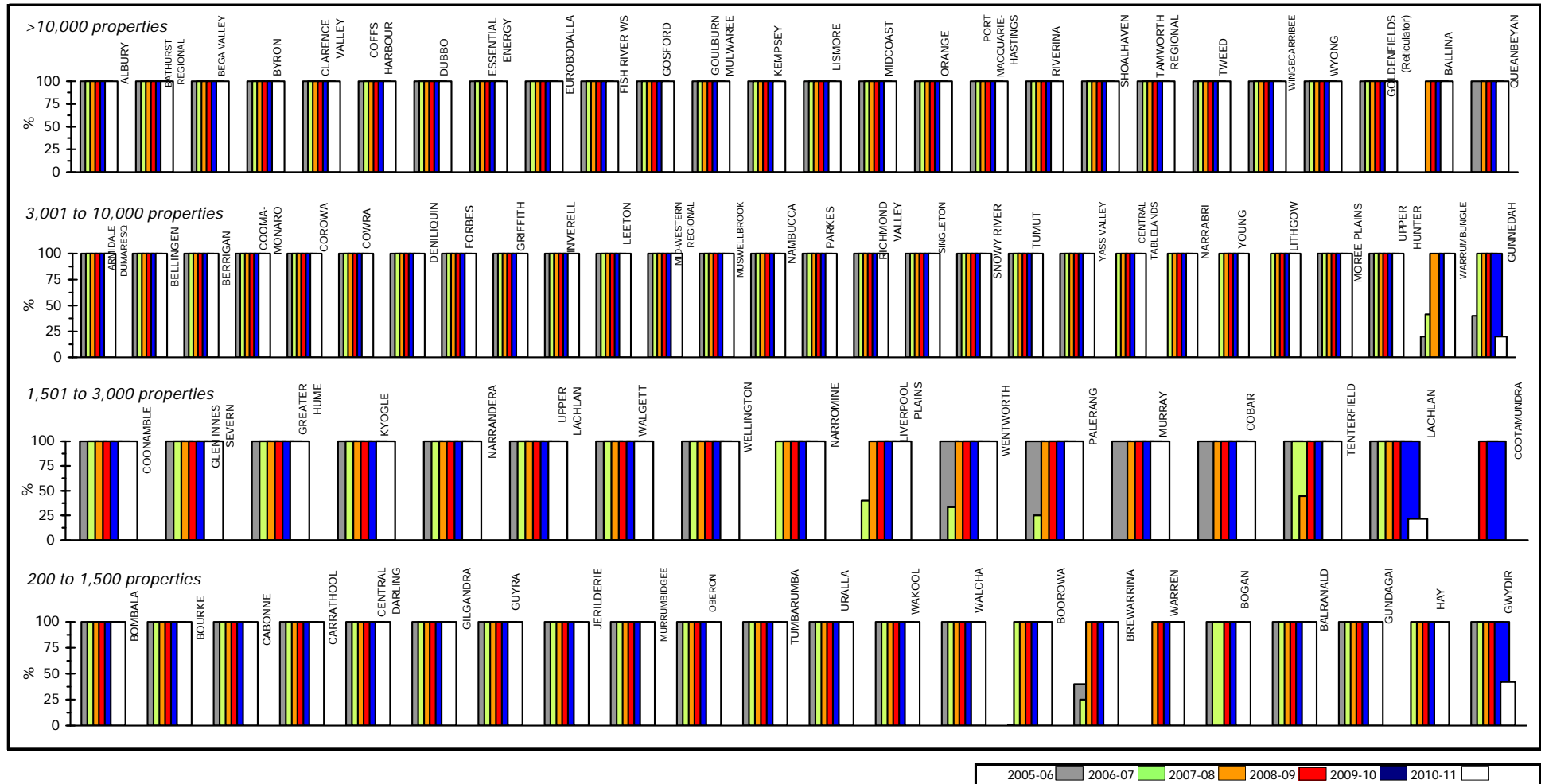
Parameter: Typical Water Supply Developer Charge (Q136)



Notes:

1. This figure shows ranked values of the 2011-12 typical developer charge for water supply for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the typical developer charge for water supply for the 28 LWUs shown ranges from \$10600 to \$700. Results for the previous 5 years are also shown in Jan 2012\$.
2. The Statewide median typical developer charge for water supply is \$5000 per equivalent tenement (ET), which is 38% of the median current replacement cost of water supply system assets of \$13000 per assessment.
3. 82 LWUs levied water supply developer charges.
4. For general notes see page 30.

Figure 12: Physical water quality compliance – water supply



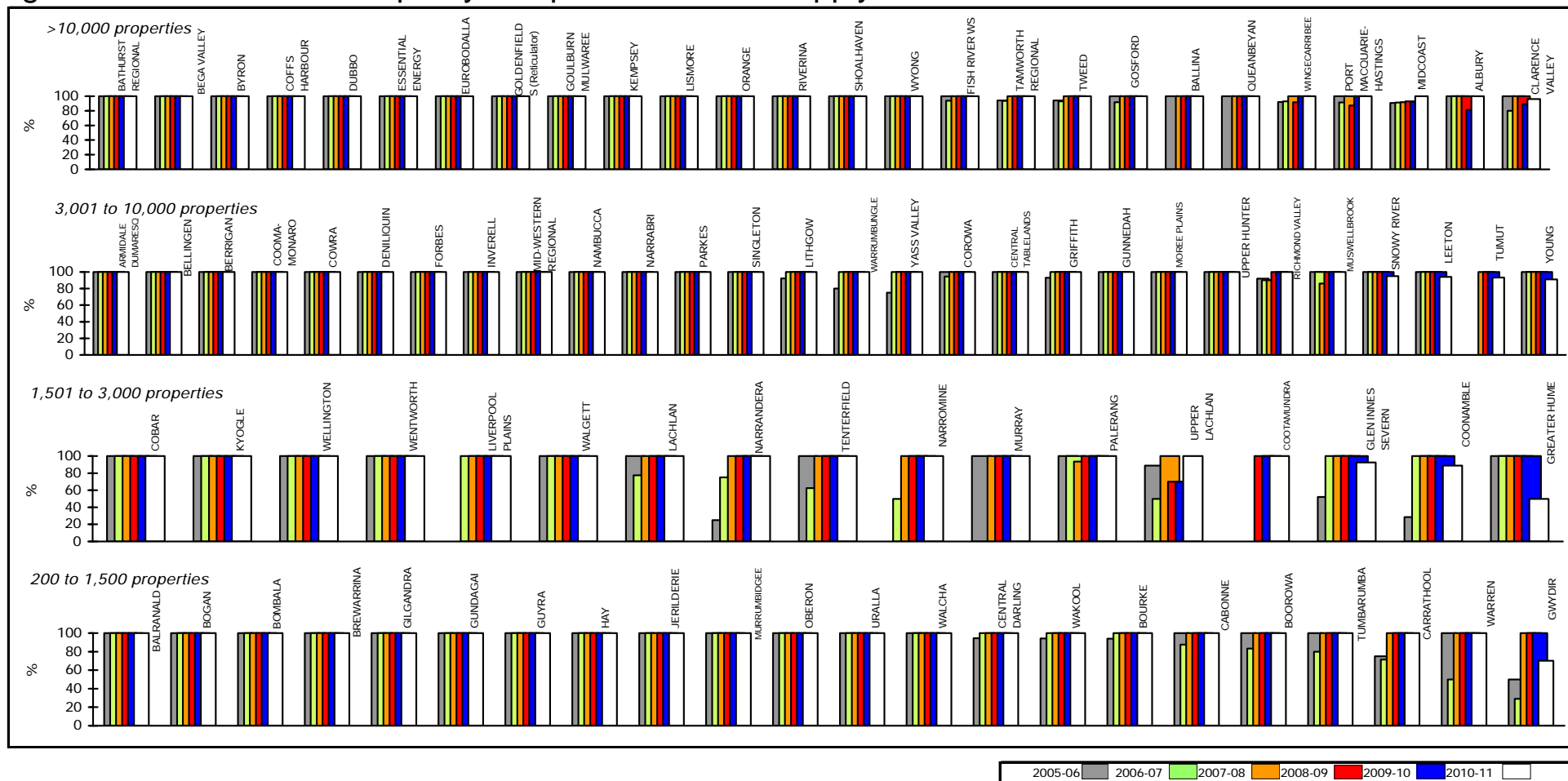
Parameter: Percentage of distribution system water samples complying with physical criteria of the NHMRC/NRMMC Australian Drinking Water Guidelines 2004.

Notes:

1. This figure shows ranked values of the 2010-11 distribution system compliance with the NHRMC/NRMMC Australian Drinking Water Guidelines 2004 for physical water quality for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the physical water quality compliance for the 28 LWUs shown are all 100%. Results for the previous 5 years are also shown.
2. For an LWU to comply with the 2004 Australian Drinking Water Guidelines for physical water quality, the required number of samples must be tested (refer to page 206) and at least 50% of samples (not health related) must comply with the guideline limits. Non-potable water supplies are excluded.
3. 93% of the 26,600 samples tested in 2010-11 achieved 100% compliance with these guidelines. 97% of LWUs complied with the guidelines in 2010-11.
4. For LWUs with more than one water treatment works, the reported compliance has been pro-rated on the basis of the number of samples tested at each treatment works. Appendix D1 provides the 2010-11 results for each treatment works.
5. The Statewide median physical water quality compliance is 100%.
6. For general notes see page 30.



Figure 13: Chemical water quality compliance – water supply

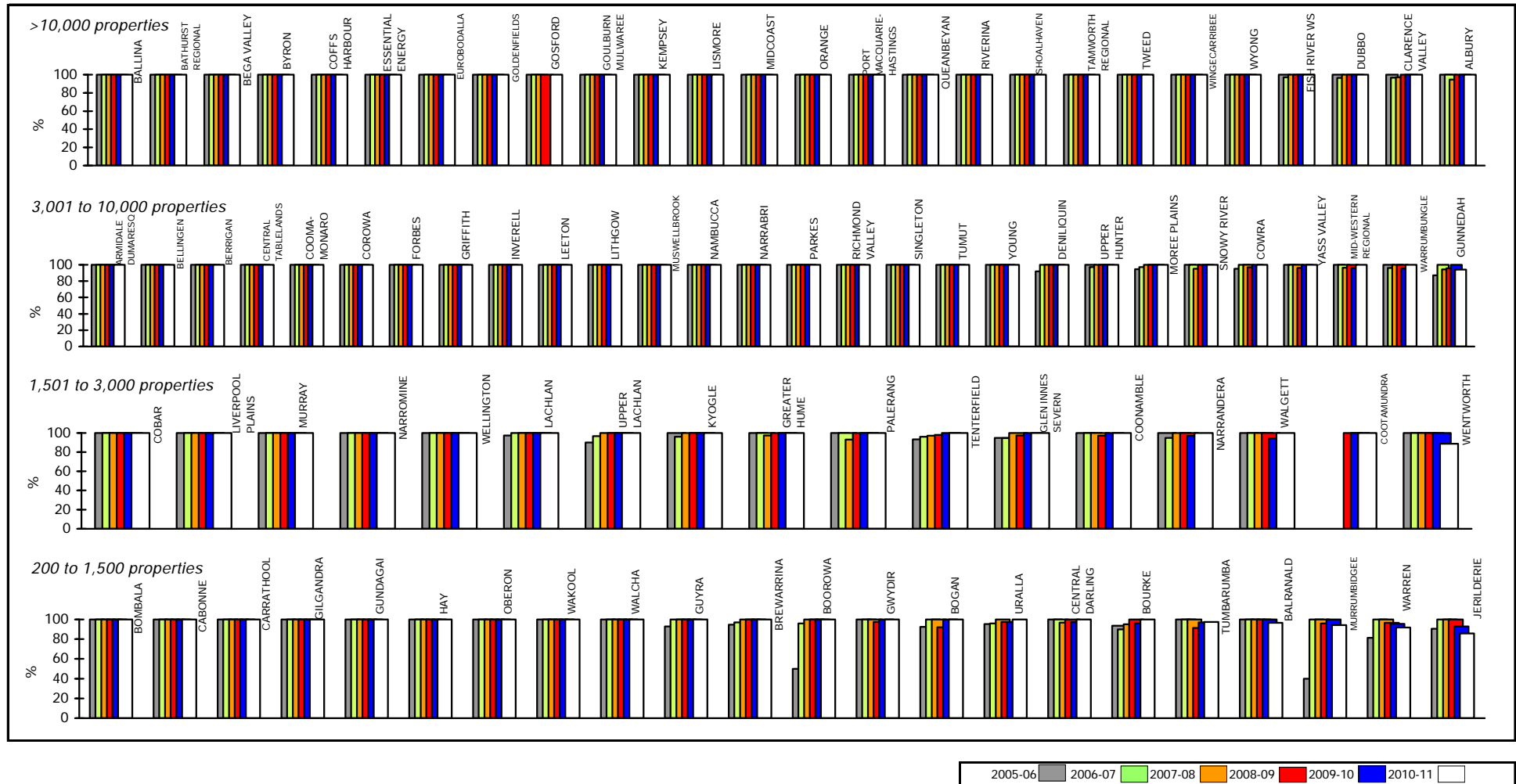


Parameter: Percentage of distribution system water samples complying with chemical criteria of the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines.

Notes:

1. This figure shows ranked values of the 2010-11 distribution system compliance with the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines for chemical water quality for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the chemical water quality compliance for the 28 LWUs shown ranges from 100% to 91%. Results for the previous 5 years are also shown.
2. 98% of the 27,600 samples tested in 2010-11 achieved 100% compliance with 2004 Guidelines. 93% of the LWUs complied with the Guidelines in 2010-11.
3. For an LWU to comply with the 2004 Australian Drinking Water Guidelines for chemical water quality, the required number of samples must be tested (refer to page 206) and at least 95% of samples (health related) must comply with the guideline limits. Non-potable water supplies are excluded. For LWUs with more than one water treatment works, the reported compliance has been pro-rated on the basis of the number of samples tested at each treatment works. Appendix D1 provides the 2010-11 results for each treatment works.
4. Most of the non-compliances above are not health-related and involve parameters such as hardness, iron and manganese.
5. The Statewide median chemical water quality compliance is 100%.
6. For general notes see page 30.

Figure 14: Microbiological water quality compliance – water supply

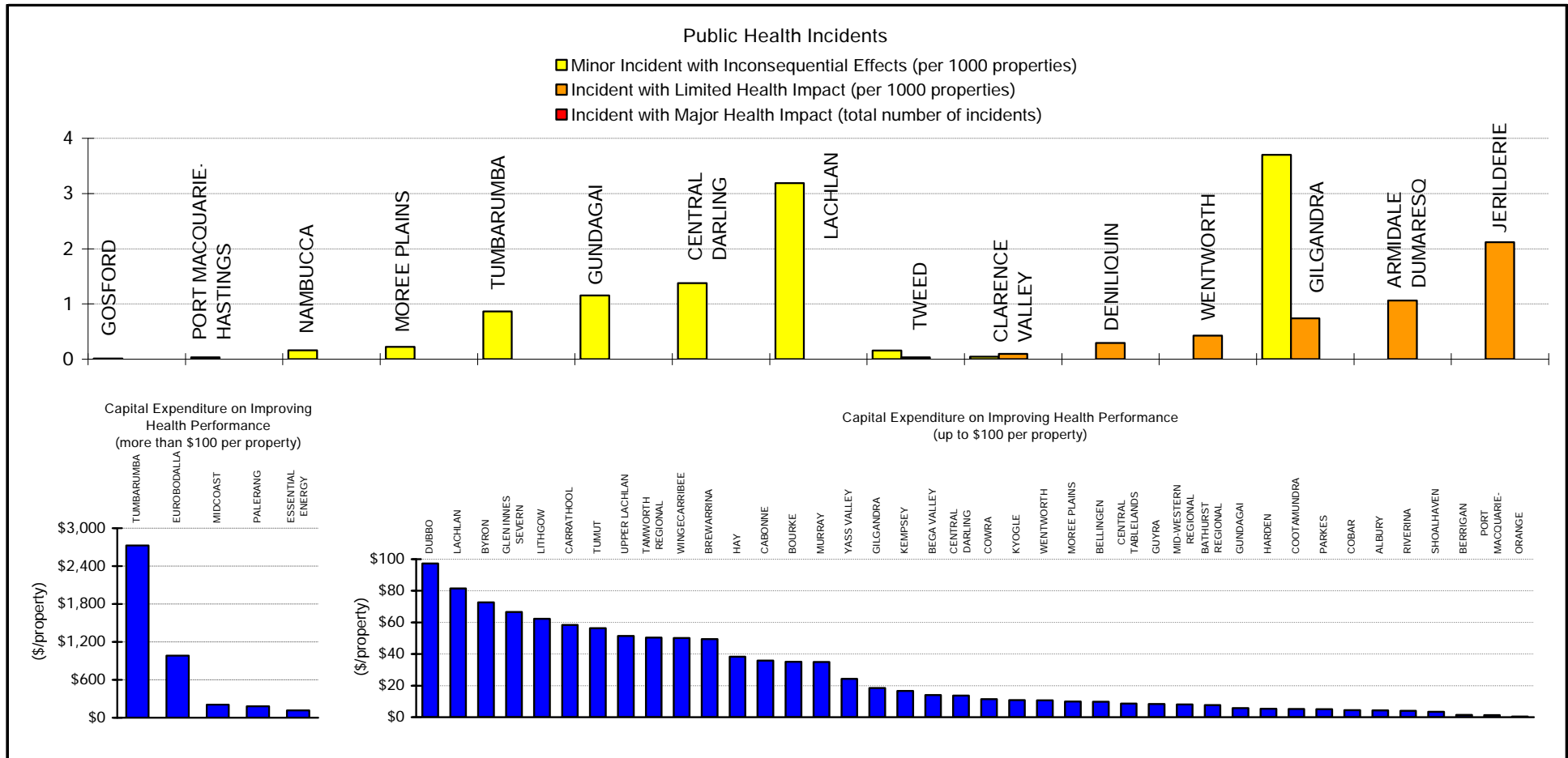


Parameter: Percentage of distribution system water samples complying with E. coli criteria of the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines

Notes:

1. This figure shows ranked values of the 2010-11 distribution system compliance with the 2004 NHRMC/NRMMC Australian Drinking Water Guidelines for E. coli for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the microbiological water quality compliance for the 28 LWUs shown ranges from 100% to 94%. Results for the previous 5 years are also shown.
2. For an LWU to comply with the 2004 Australian Drinking Water Guidelines for microbiological water quality, the required number of samples must be tested (refer to page 206) and at least 98% of the samples must contain no E.coli. Non-potable water supplies are excluded. 99% of the 21,100 samples tested in 2010-11 contained no E. coli. 93% of the LWUs complied with the 2004 Guidelines for E. coli in 2010-11. The 7 non-complying LWUs each served less than 4,700 connected properties. Refer also to page 20.
3. For LWUs with more than one water treatment works, the reported compliance has been pro-rated on the basis of the number of samples tested at each treatment works.
4. The Statewide median microbiological water quality compliance is 100%.
5. For general notes see page 30.

Figure 15: Public health incidents, capital investment – water supply



Parameter:  $\frac{\text{Total No. of Minor Incidents with Inconsequential Effects (Q115)}}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Parameter:  $\frac{\text{Total No. of Minor Incidents with Limited Health Impacts (Q116)}}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

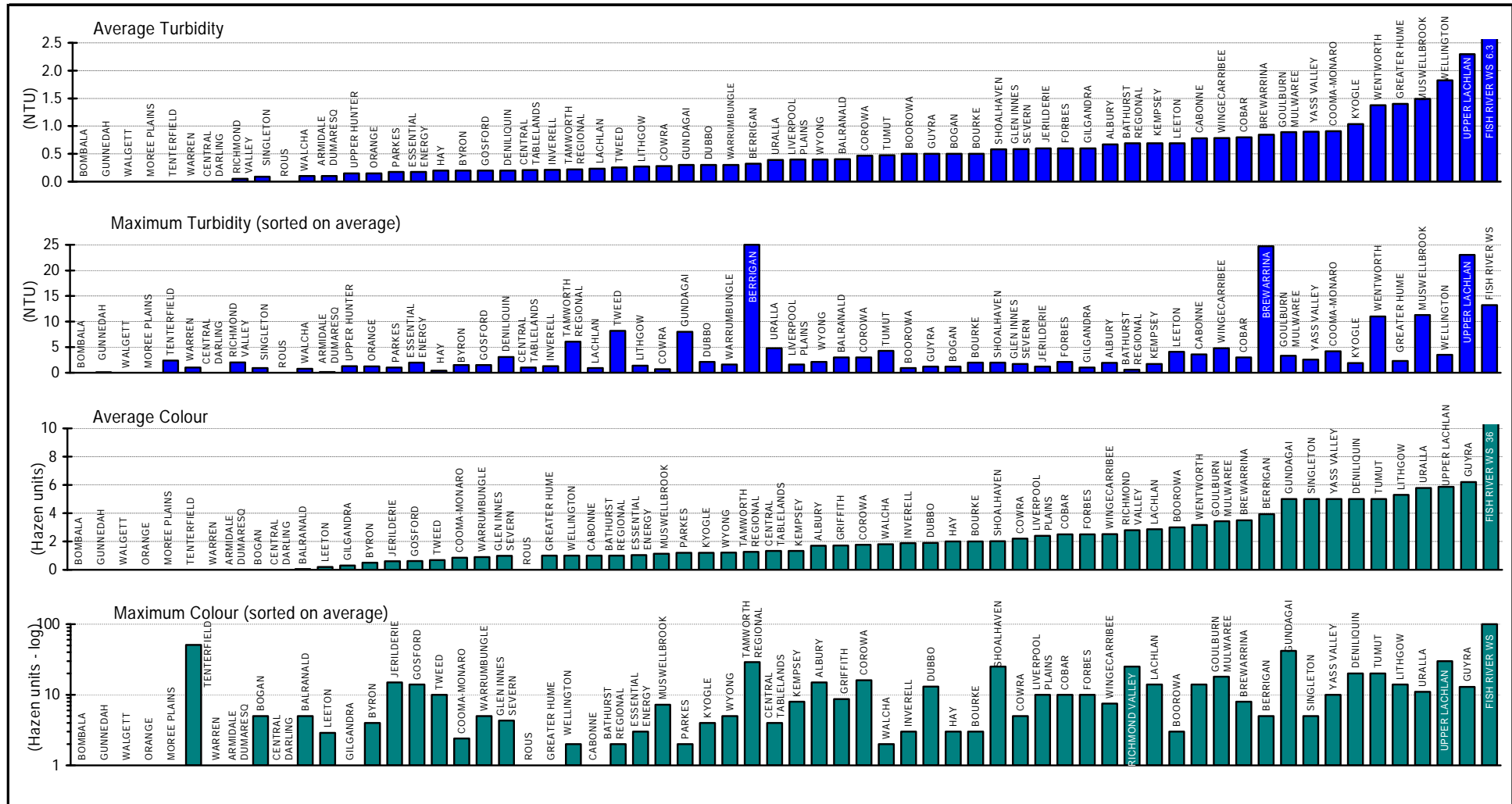
Parameter:  $\frac{\text{Total No. of Major Incidents with Major Health Impacts (Q117)}}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Parameter:  $\frac{\text{Capital Expenditure on Improving Health Performance (\$) x (Q119)}}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Note:

- The following 3 utilities did not report for public health incidents: Boorowa, Cooma-Monaro and Wakool. 15 Utilities are shown in the figure above, while 78 utilities reported zero public health incidents.
- For general notes see page 30.

Figure 16: Turbidity and colour for filtered supplies – water supply

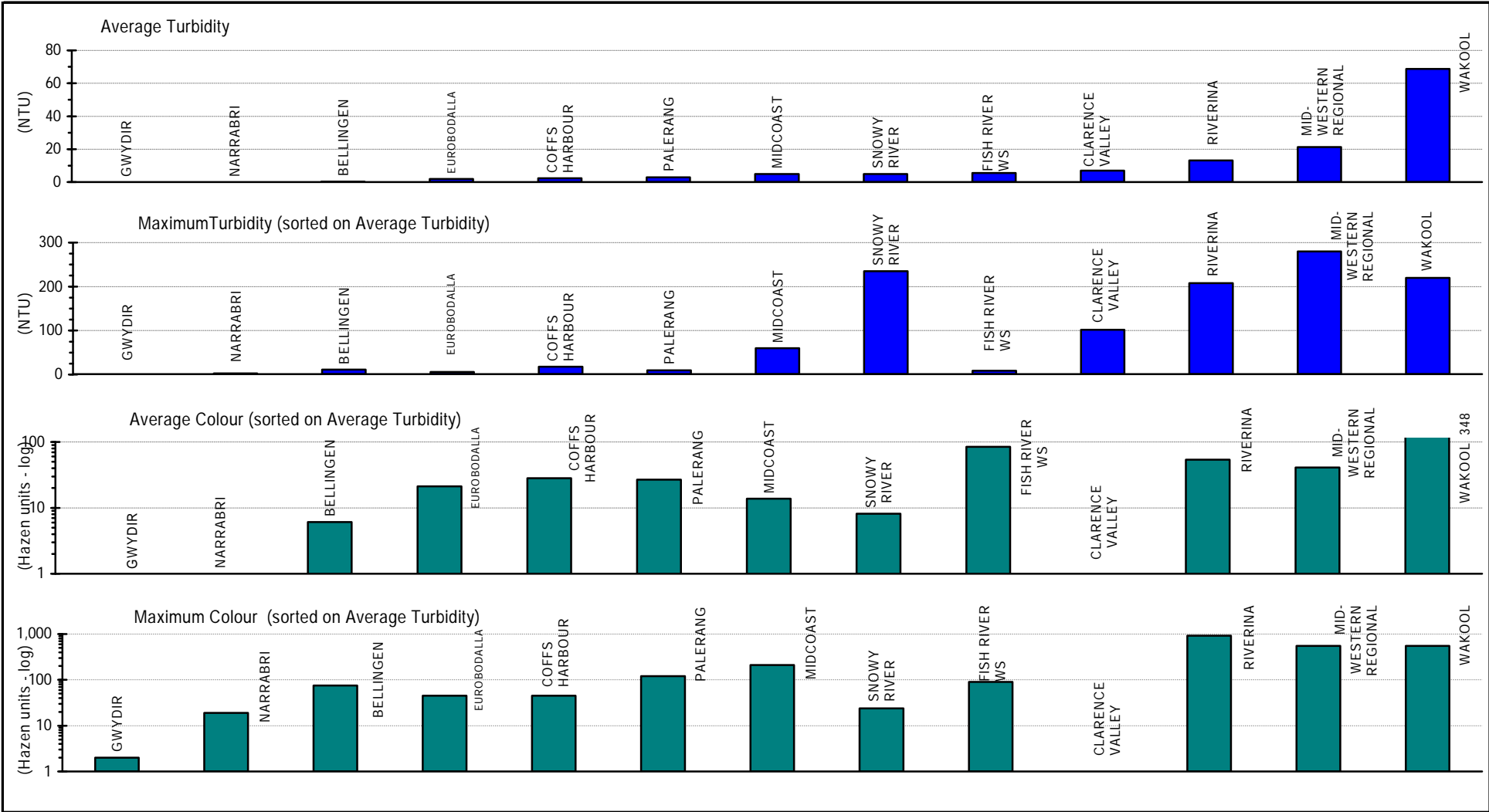


Parameter: Treated Water Average Turbidity (WTW Q15), Maximum Turbidity (WTW Q14), Treated Water Average Colour (WTW Q11), Maximum Colour (WTW Q10)

Notes:

1. Only Local Water Utilities (LWUs) with at least filtration and disinfection for over 50% of their supply have been considered. The reported results are the weighted average on the basis of volume treated for each LWU's water treatment work. A number of LWUs have some unfiltered supplies (<50% of their total supply) which increases the reported colour and turbidity values.
2. 62 of the 64 reporting LWUs had average turbidity not exceeding 2 turbidity units. 89% of these LWUs had average turbidity not exceeding 1 turbidity unit.
3. 98% of the 63 reporting LWUs had average colour not exceeding 8 colour units. 92% of these LWUs had average colour not exceeding 5 colour units.
4. For general notes see page 30.

Figure 17: Turbidity and colour for unfiltered supplies – water supply

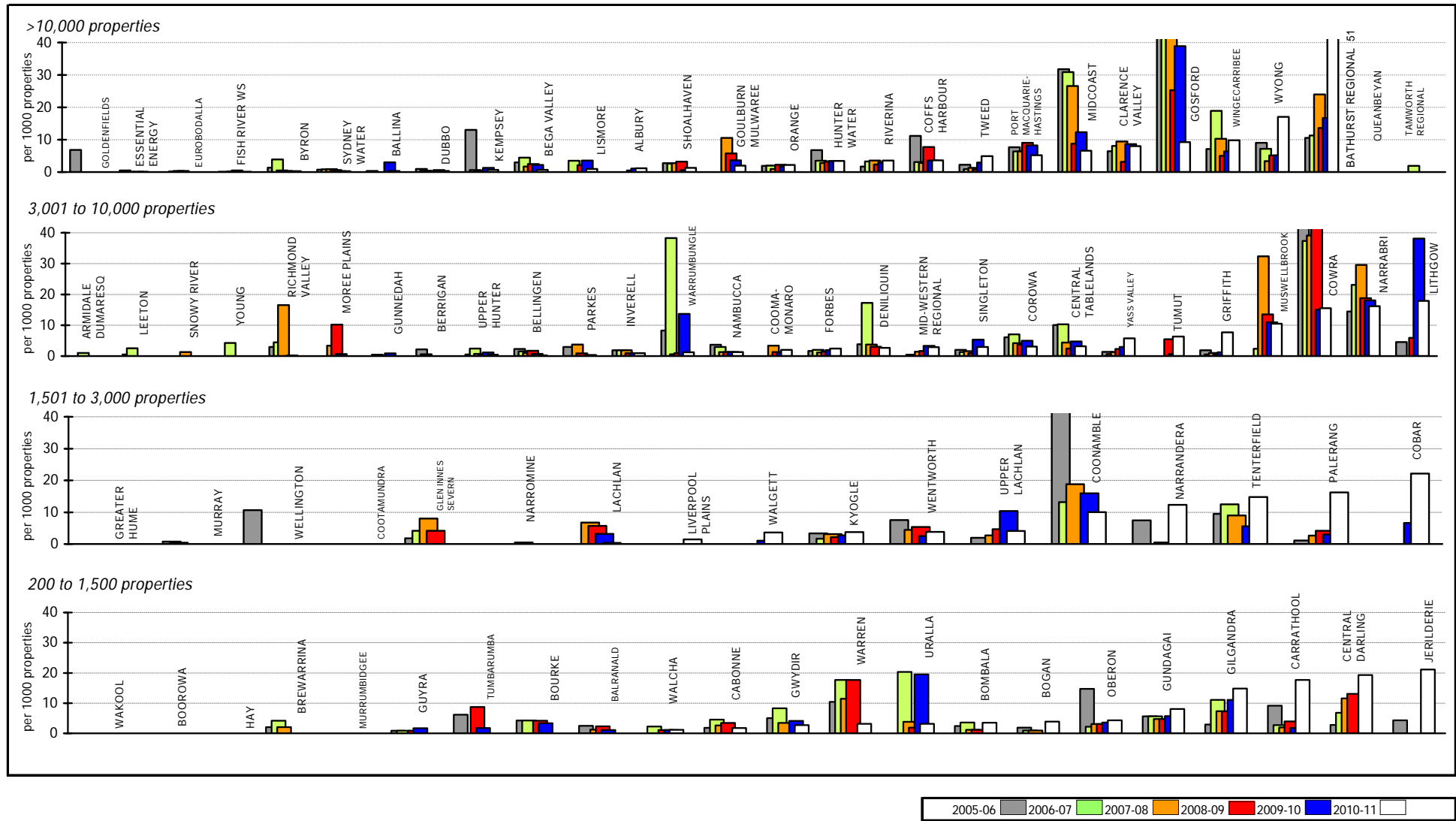


Parameter: Raw Water Average Turbidity (WTW Q13), Maximum Turbidity (WTW Q12), Raw Water Average Colour (WTW Q9), Maximum Colour (WTW Q8)

Notes:

1. Only unfiltered reporting supplies have been considered
2. 31% of the 13 reporting LWUs had average turbidity not exceeding 2 turbidity units.
3. 46% of reporting LWUs had average colour not exceeding 15 colour units.
4. For general notes see page 30.

Figure 18: Water quality complaints – water supply

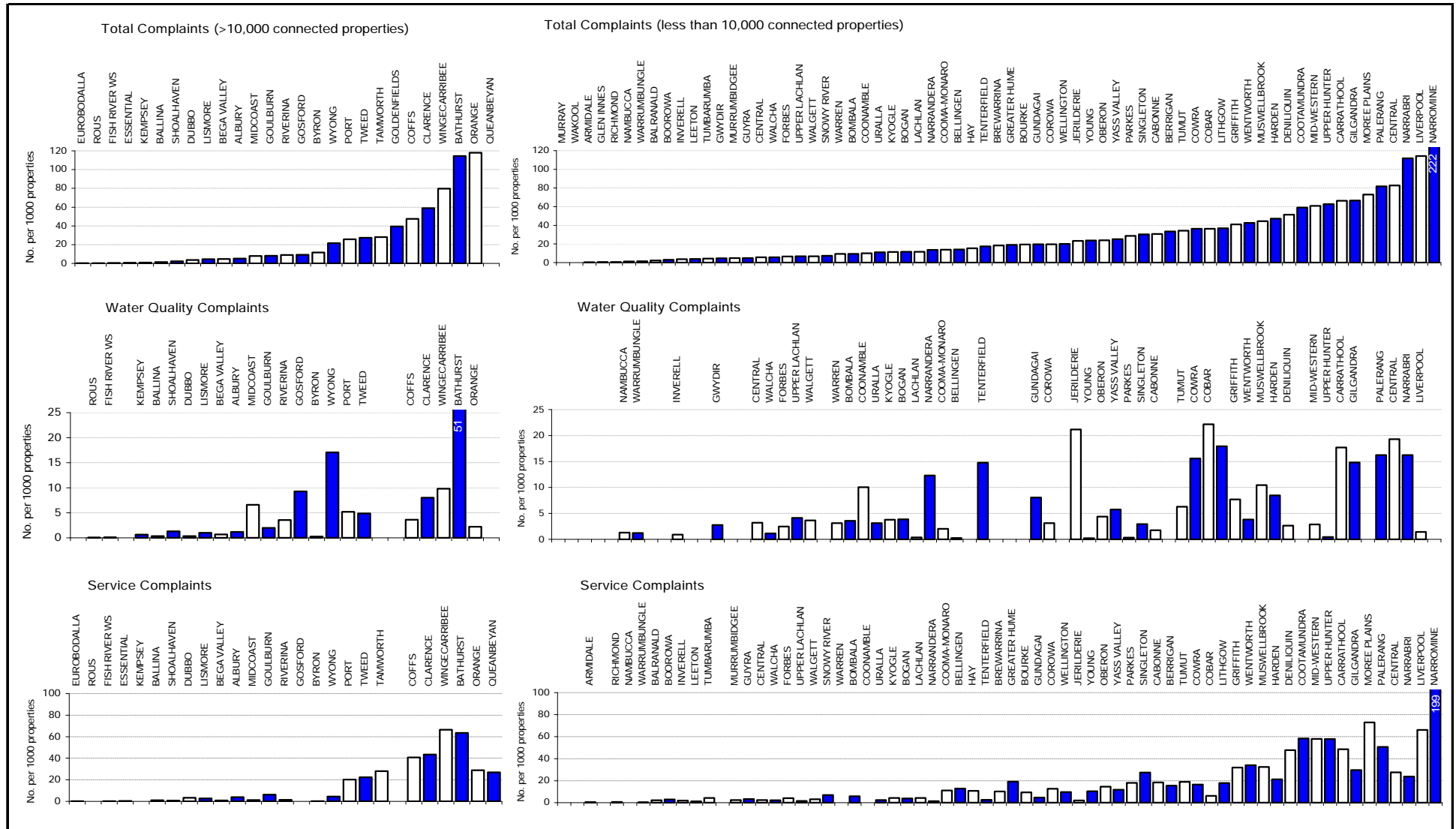


Parameter:  $\frac{\text{No. of Water Quality Complaints (Q101)} \times 1000}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 number of water quality complaints per 1000 connected properties for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the water quality complaints for the 26 LWUs shown ranges from nil to 18 per 1000 connected properties.
2. The Statewide median number of water quality complaints is 4 per 1000 properties.
3. For general notes see page 30.

Figure 19: Complaints (per 1,000 properties) – water supply



Parameter: 
$$\frac{\text{Total No. of Complaints } [(Q96)+(Q99)+(Q100)+(Q101)] \times 1000}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$$

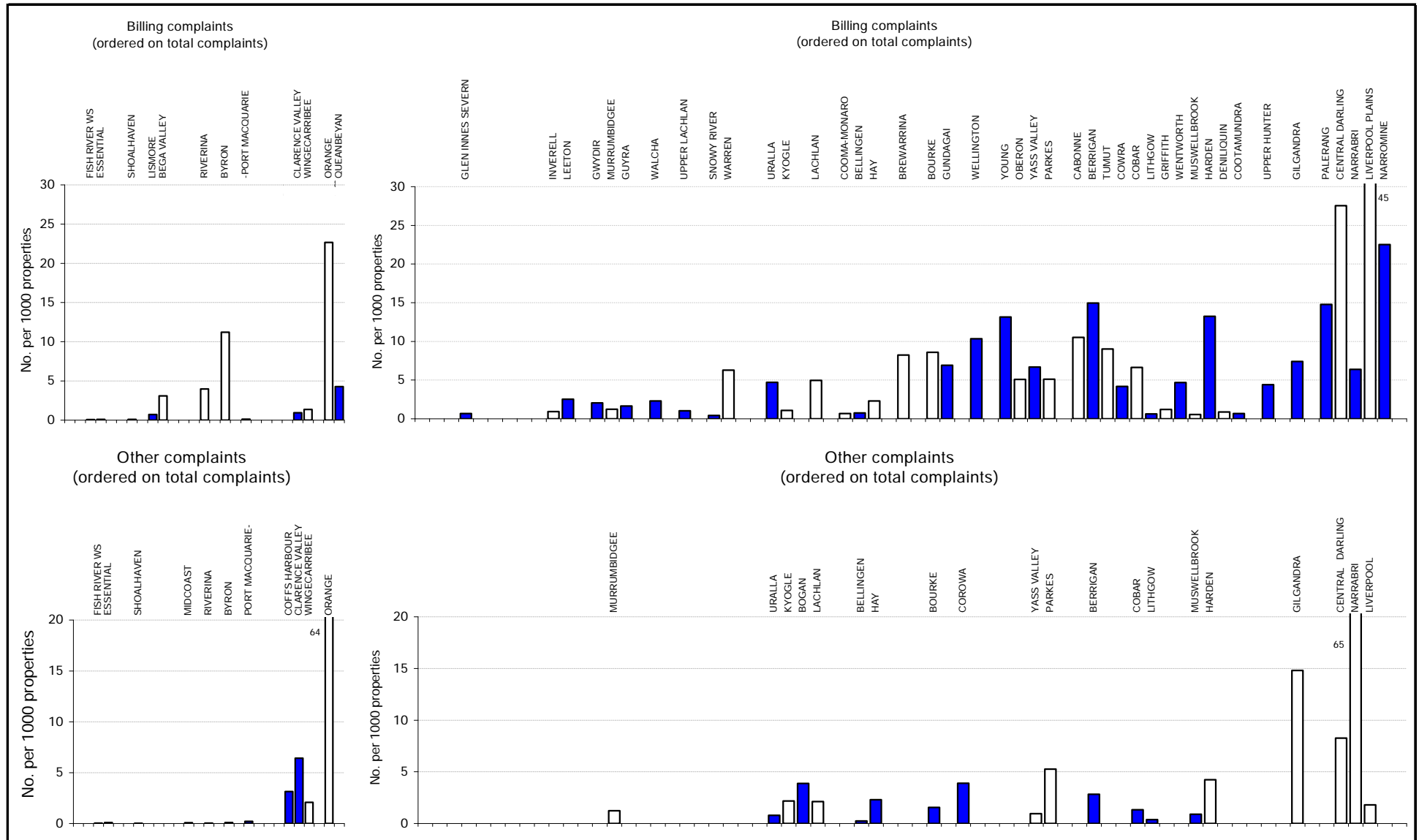
Parameter: 
$$\frac{\text{No. of Water Quality Complaints (Q42a)} \times 1000}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$$

Parameter: 
$$\frac{\text{No. of Water Service Complaints (Q19a)} \times 1000}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$$

Note:

1. For general notes see page 30.

Figure 19: Complaints (per 1,000 properties) – water supply (continued)



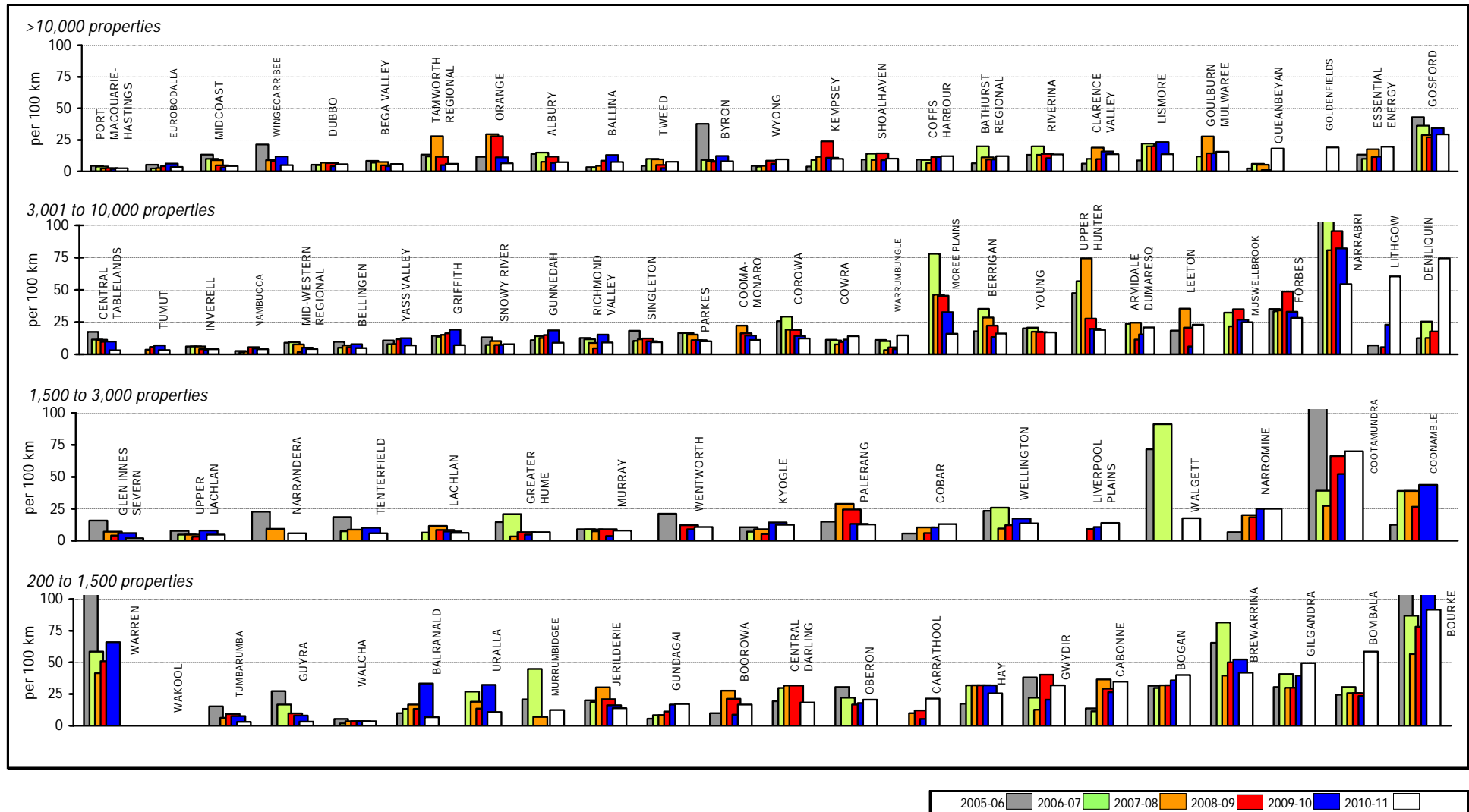
Parameter: 
$$\frac{\text{No. of Billing Complaints (Q99)} \times 1000}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$$

Parameter: 
$$\frac{\text{No. of Other Complaints (Q100)} \times 1000}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$$

Note: 1. For general notes see page 30.



Figure 20: Number of water main breaks – water supply

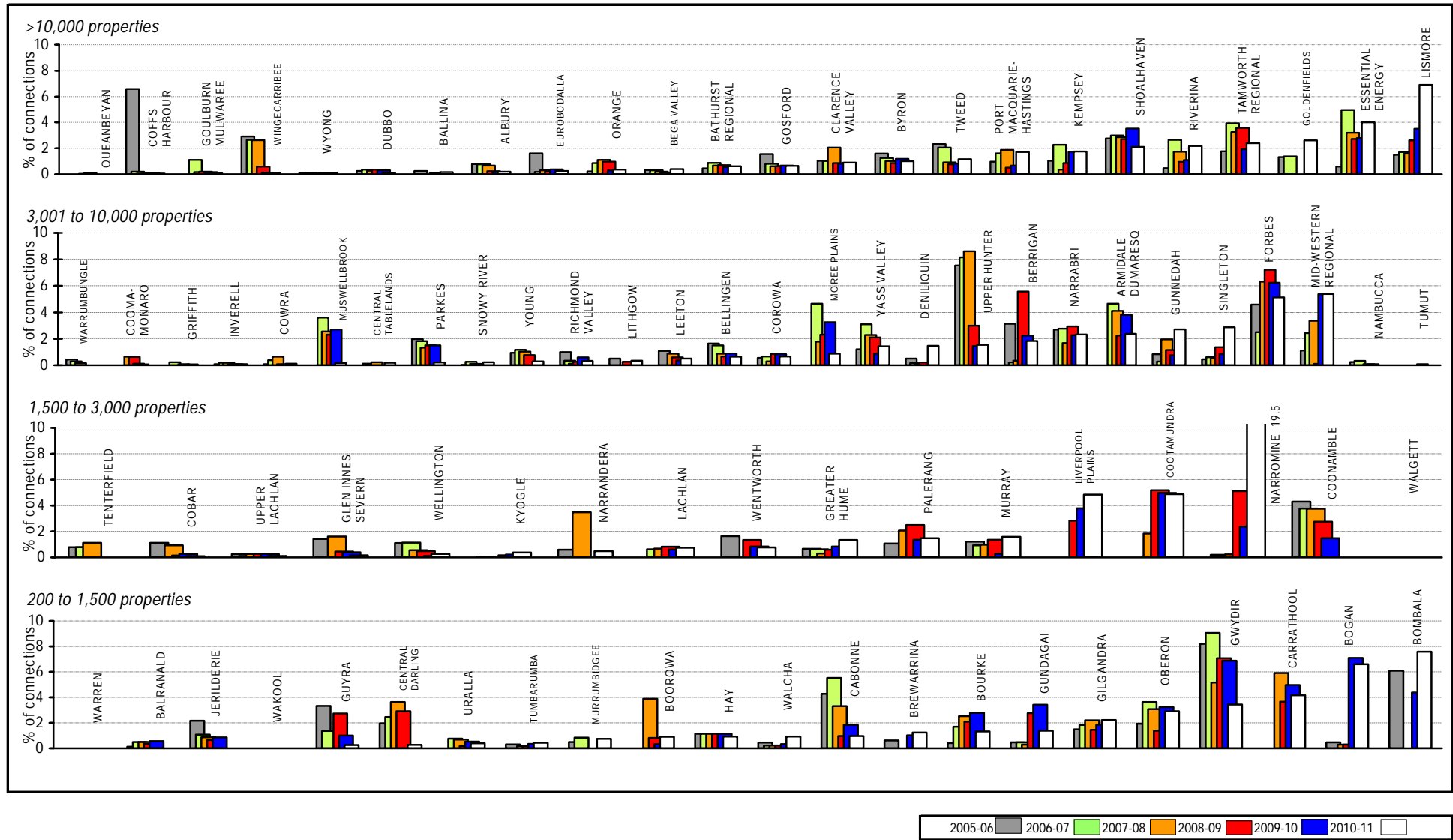


Parameter:  $\frac{\text{No. of Pipeline Breaks (Q104)} \times 100}{\text{Length of Distribution and Trunk Mains (Q22)}}$

Notes:

1. This figure shows ranked values of the 2010-11 water supply main breaks for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the number of main breaks for the 28 LWUs shown ranges from 3 to 70 per 100km of water mains. Results for the previous 5 years are also shown.
2. The Statewide median number of water supply main breaks is 9 per 100km of water main. This has remained much lower than all the other states and capital city utilities, indicating good water main asset condition (graph 9 on page 184 of Appendix A).
3. For general notes see page 30.

Figure 21: Service connection failures – water supply

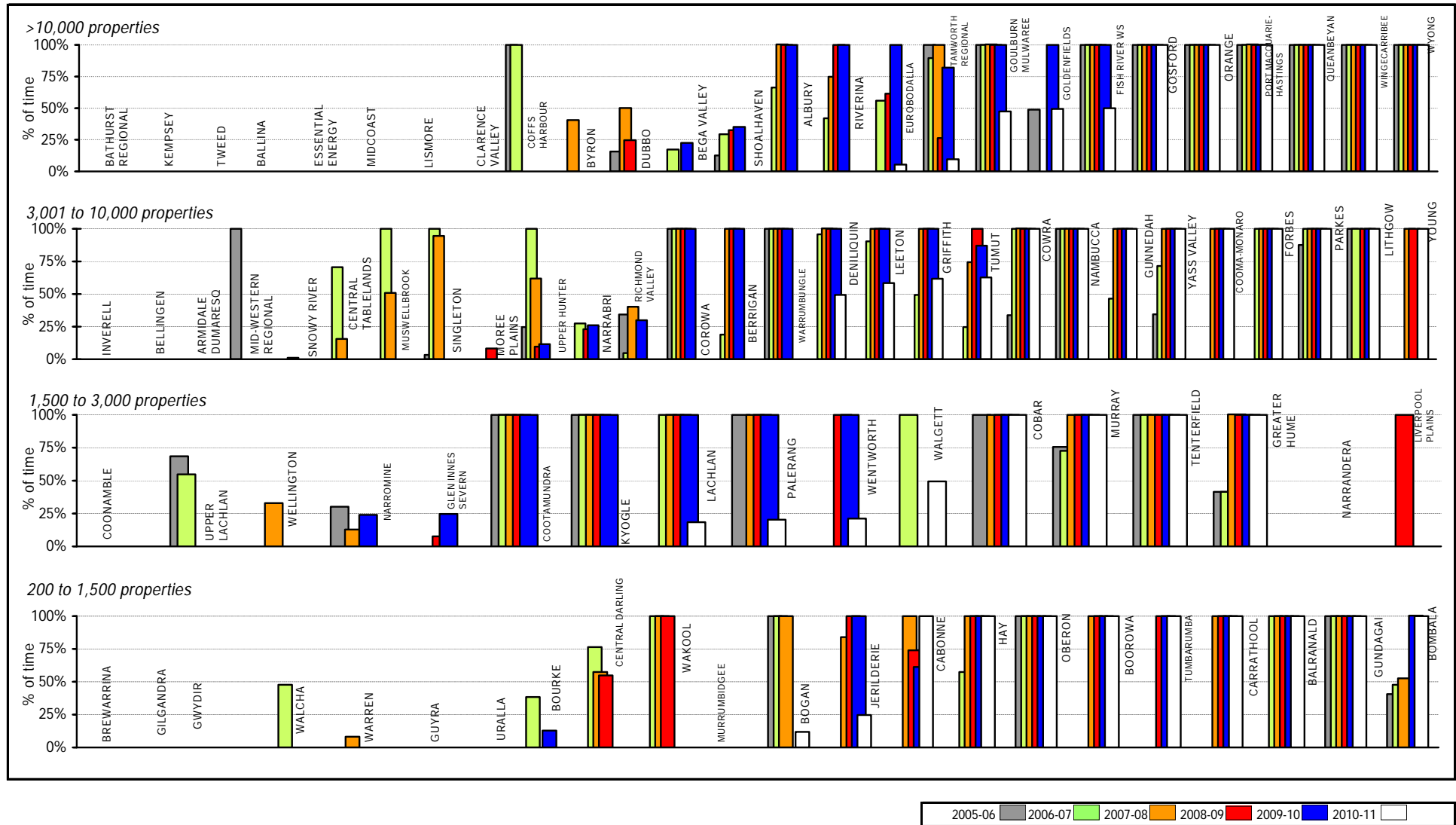


Parameter:  $\frac{\text{No. of Service Connection Failures (Q105)} \times 100}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 water supply service connection failures for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the number of service connection failures for the 25 LWUs shown ranges from nil to 5%. The 2 LWUs on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown.
2. For general notes see page 30.

Figure 22: Drought water restrictions – water supply

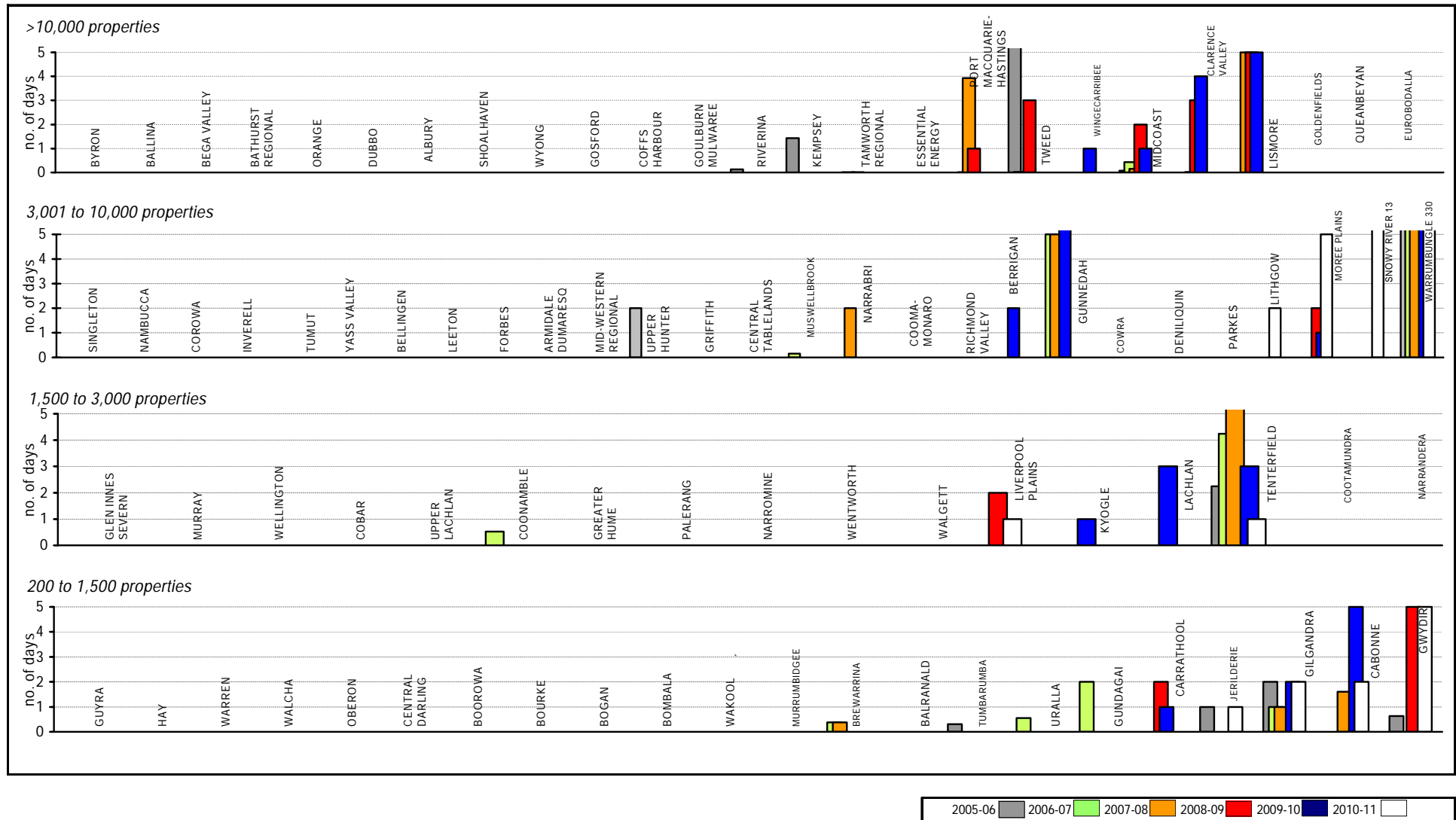


Parameter: No. of Days of Water Restrictions Due to Drought (Q95) x 100  
365 Days

Notes:

1. This figure shows ranked values of the 2010-11 drought water restrictions due to drought for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), 13 of the 28 reporting LWUs reported restrictions ranging from 12% of the time to 100% of the time. 15 LWUs reported no drought water restrictions. Results for the previous 5 years are also shown.
2. Refer also to page 3 of the 2010-11 NSW Water Supply and Sewerage Performance Monitoring Report.
3. For general notes see page 30.

Figure 23: Chlorination system malfunction – water supply

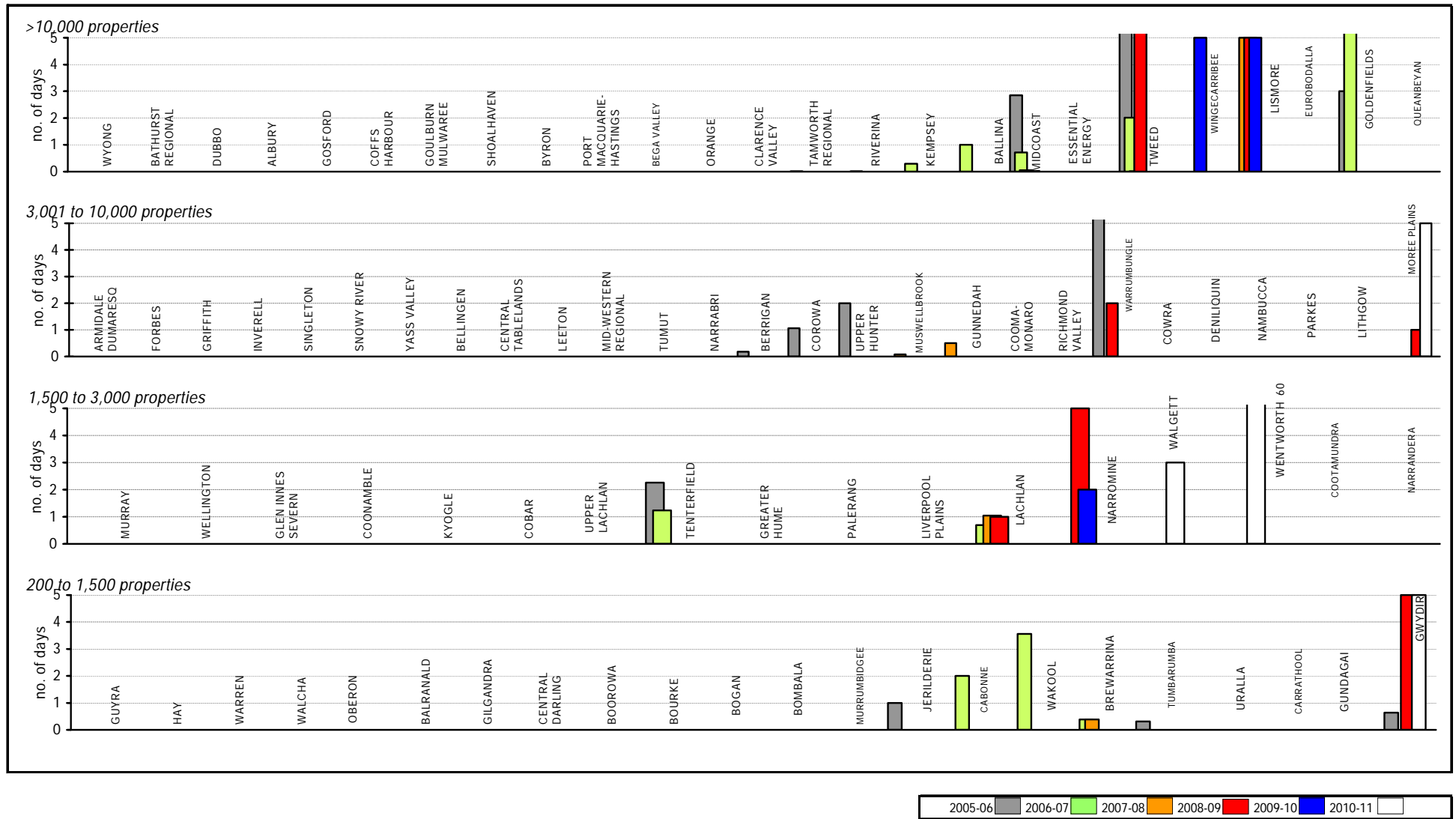


Parameter: Number of Days Chlorination System failed to Operate (Q44)

Notes:

1. The figure shows the 2010-11 ranked number of days a chlorination system for potable water did not operate for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the number of days the chlorination system did not operate for the 27 LWUs shown ranges from nil to 330 days. Results for the previous 5 years are also shown.
2. For LWUs with more than one chlorination system, the weighted average (based on capacity) of days was used.
3. For general notes see page 30.

Figure 24: Treatment works malfunction – water supply

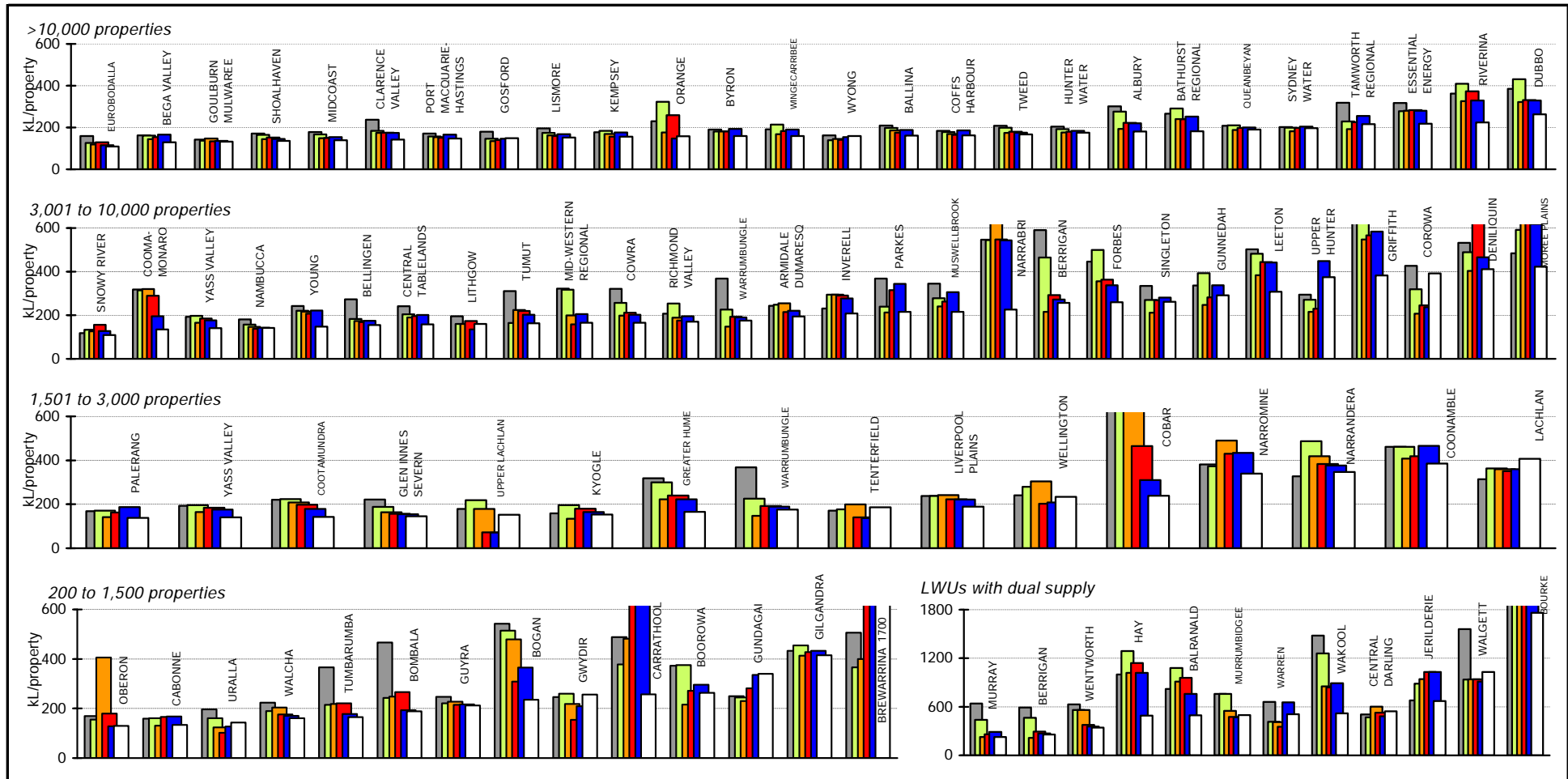


Parameter: Number of Days of major Malfunction of Treatment Processes (Q45)

Notes:

1. The figure shows the 2009-10 ranked number of days of treatment works malfunction for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the number of days of treatment works malfunction for 26 of the 27 LWUs shown was nil. Results for the previous 5 years are also shown.
2. For LWUs with more than one treatment works, the weighted average days of malfunction (based on treatment works capacity) was used.
3. For general notes see page 30.

Figure 25: Average annual residential water supplied – water supply



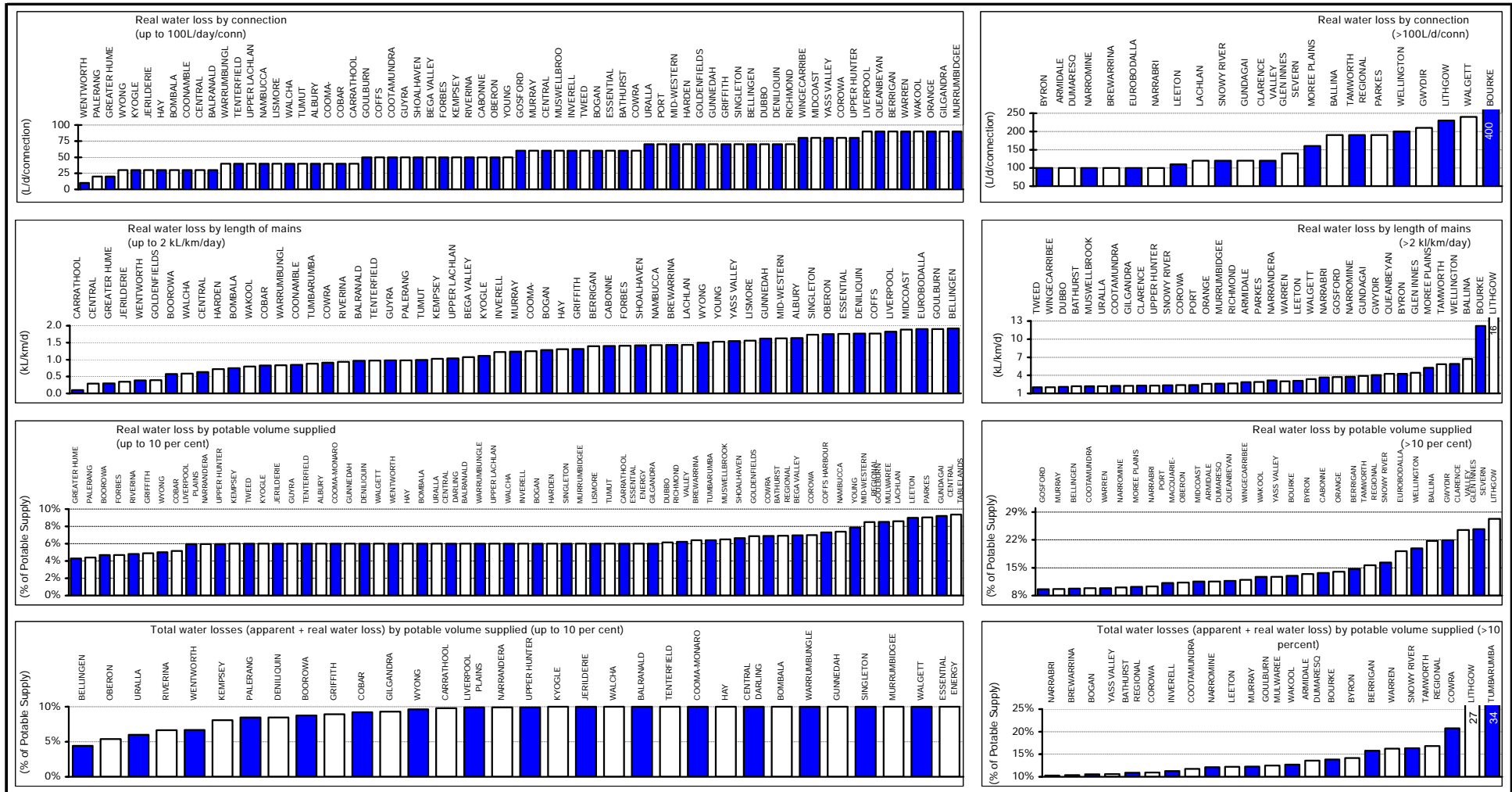
Parameter: Annual Residential Potable Supplied (Q54) x 1000  
 No. of Residential Assessments (Q34) x No. of Connected Residential Properties per Residential Assessment

2005-06 2006-07 2007-08 2008-09 2009-10 2010-11

Notes:

1. This figure shows ranked values of the 2010-11 average annual residential water supplied per connected property for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 annual residential water supplied for the 28 LWUs shown ranges from 110 to 423 kL/a per connected property. Results for the previous 5 years are also shown.
2. Results for the 11 LWUs with a dual water supply (ie. A potable supply for indoor use and a non-potable supply for outdoor use) are shown as a separate group in the bottom right hand corner. All these LWUs have fewer than 3,600 properties. Refer to Note 12 on page 32 for further information.
3. The Statewide median annual residential water supplied is 159 kL/a per connected property. The median residential water supplied for coastal and inland LWUs is 150 and 215kL per connected property respectively.
4. Refer also to pages 9, 5 and 37 of the 2010-11 NSW Water Supply and Sewerage Performance Monitoring Report.
5. 47% of the LWUs needed to apply drought water restrictions in 2010-11.
6. For general notes see page 30.

Figure 26: Water losses (real loss (leakage) and apparent loss) – water supply



Parameter:  $\frac{\text{Real water losses (Q68)} \times 1000}{[\text{No. of residential assessments (Q34)} + \text{No. of non-residential assessments (Q35)} \times \text{No. of connected properties per assessment}]}$

Parameter:  $\frac{\text{Real water losses (Q68)} \times 100}{\text{Length of mains (Q22)}}$

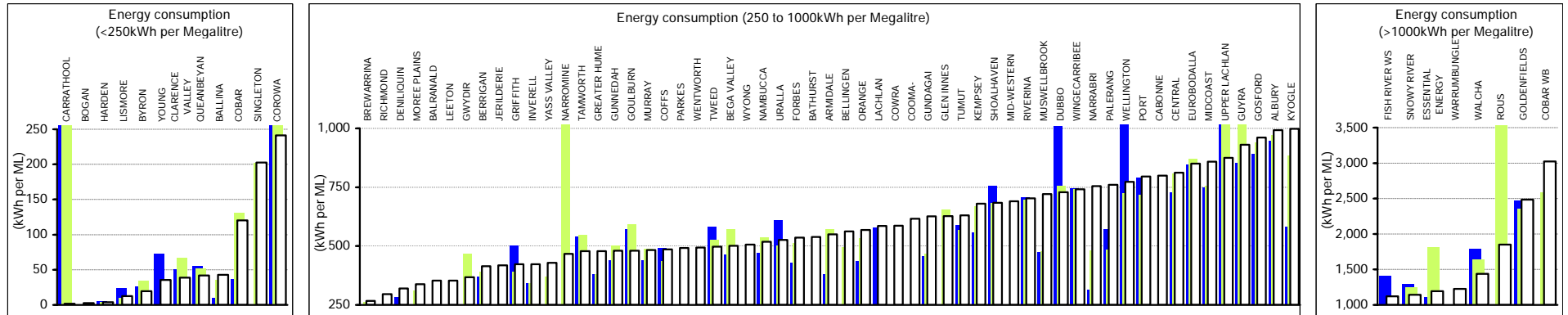
Parameter:  $\frac{\text{Real water losses (Q68)} \times 100}{\text{Total potable water supplied (Q12i)}}$

Parameter:  $\frac{\text{Apparent \& real water losses (Q69)} \times 100}{\text{Total potable water supplied (Q62)}}$

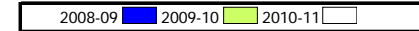
Notes:

1. Refer to Note 9 of General Notes on page 31 for water losses.
2. For general notes see page 30.

### Figure 27: Energy consumption per ML – water supply



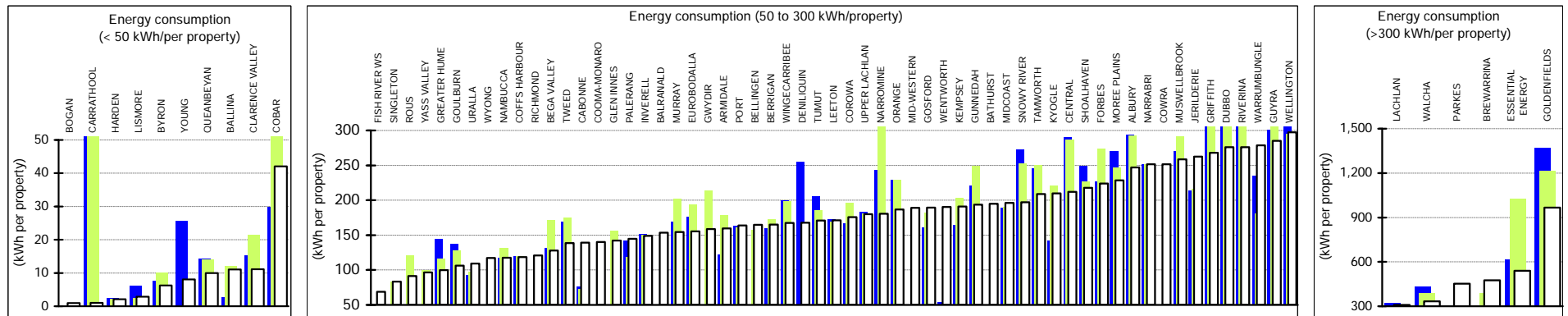
Parameter:  $\frac{\text{Total energy usage (Q145)} \times 1000}{\text{Total potable water consumption ((Q62))}$



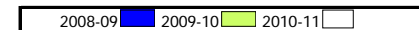
Notes:

1. This figure shows ranked values of the 2010-11 total energy consumption per ML. The energy consumption per ML for the 60 Local Water Utilities (LWUs) shown range from about 40 to 1440kWh per ML. Results for the previous 2 years are also shown.
2. For general notes see page 30.

### Figure 28: Energy consumption per property – water supply



Parameter:  $\frac{\text{Total energy usage (Q145)} \times 1000}{[\text{No. of residential assessments (Q34)} + \text{No. of non-residential assessments (Q35)}] \times \text{No. of connected properties per assessment}}$

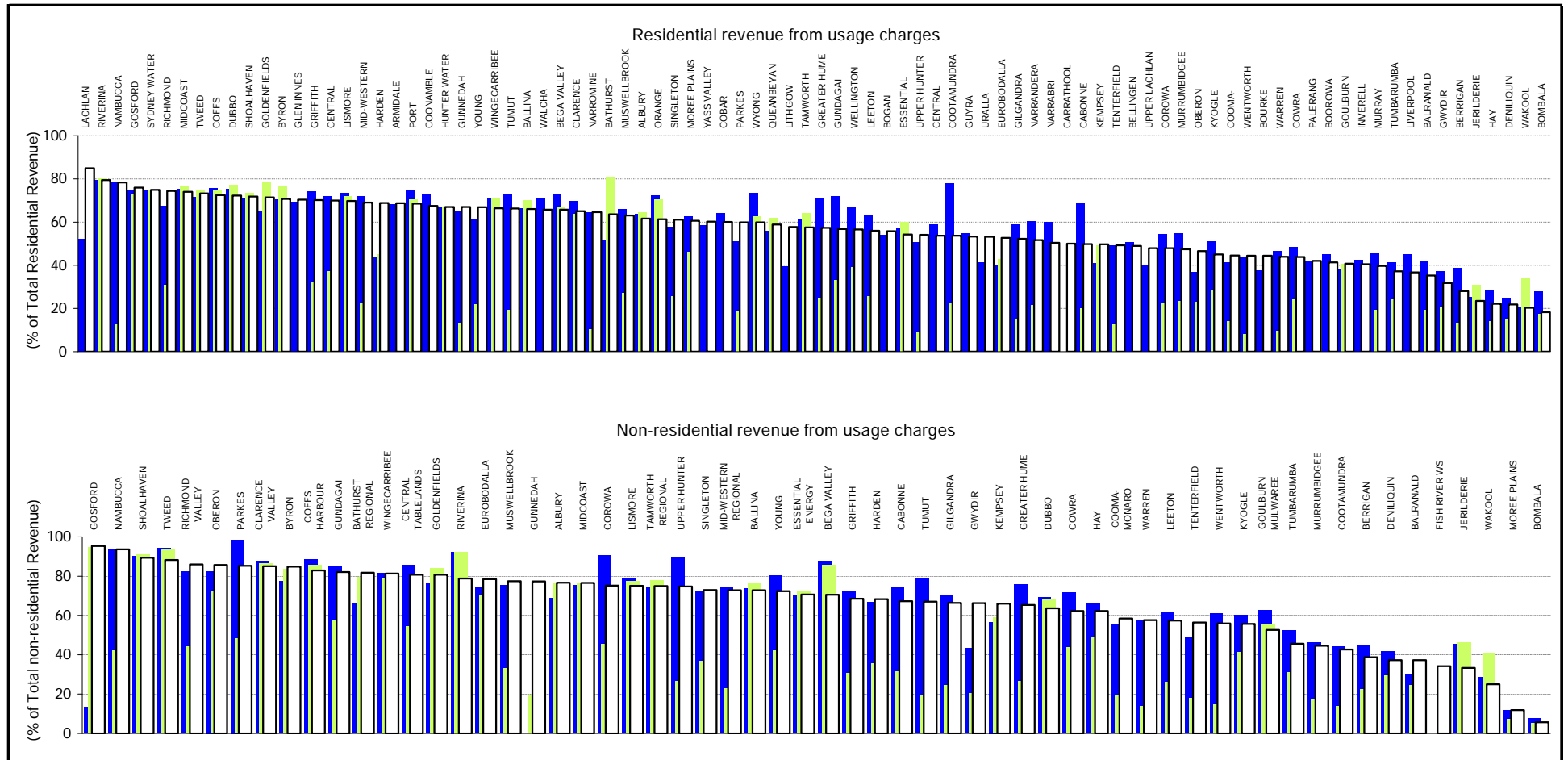


Notes:

1. This figure shows ranked values of the 2010-11 total energy consumption per connected property. The energy usage per connected property for the 78 Local Water Utilities (LWUs) shown range from 0 to 1800kWh per connected property. Results for the previous 2 years are also shown.
2. For general notes see page 30.



Figure 29: Revenue from usage – water supply



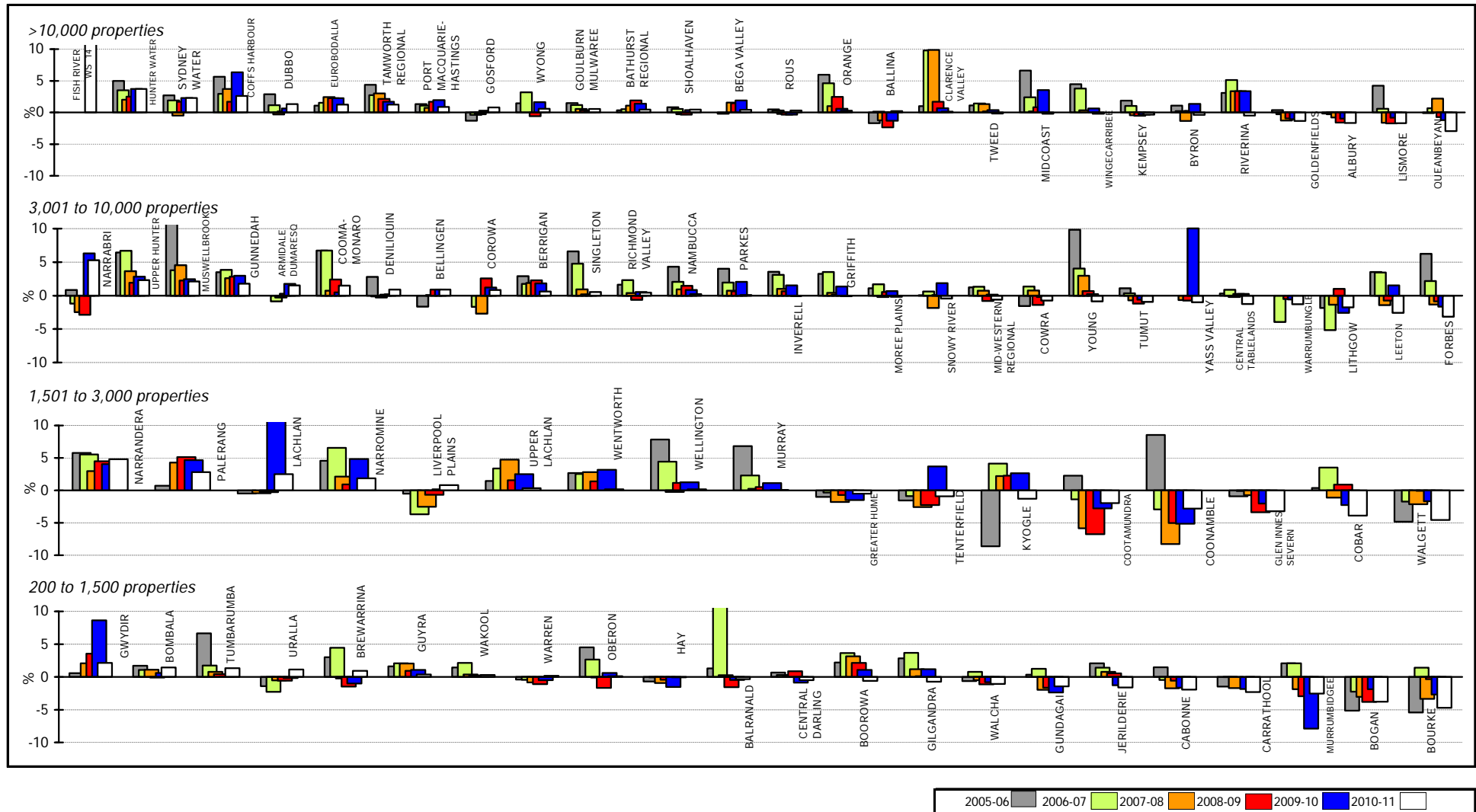
Parameter: 
$$\frac{\text{Revenue from residential user charges (W6b)} \times 100}{\text{Revenue from residential access charges (W6a)} + \text{Revenue from residential user charges (W6b)}}$$

Parameter: 
$$\frac{\text{Revenue from non-residential user charges (W7b)} \times 100}{\text{Revenue from non-residential access charges (W7a)} + \text{revenue from non-residential user charges (W7b)}}$$

Notes:

1. Many LWUs did not separately report their revenue from usage and access charges for each of residential and non-residential customers in Special Schedule No. 3 of their annual financial statements. All LWUs should do so in future.
2. The Statewide median residential revenue from water usage charges was 70%.
3. Refer also to page 5 of the 2010-11 Water Supply and Sewerage Performance Monitoring Report.
4. For general notes see page 30.

Figure 30: Economic real rate of return – water supply

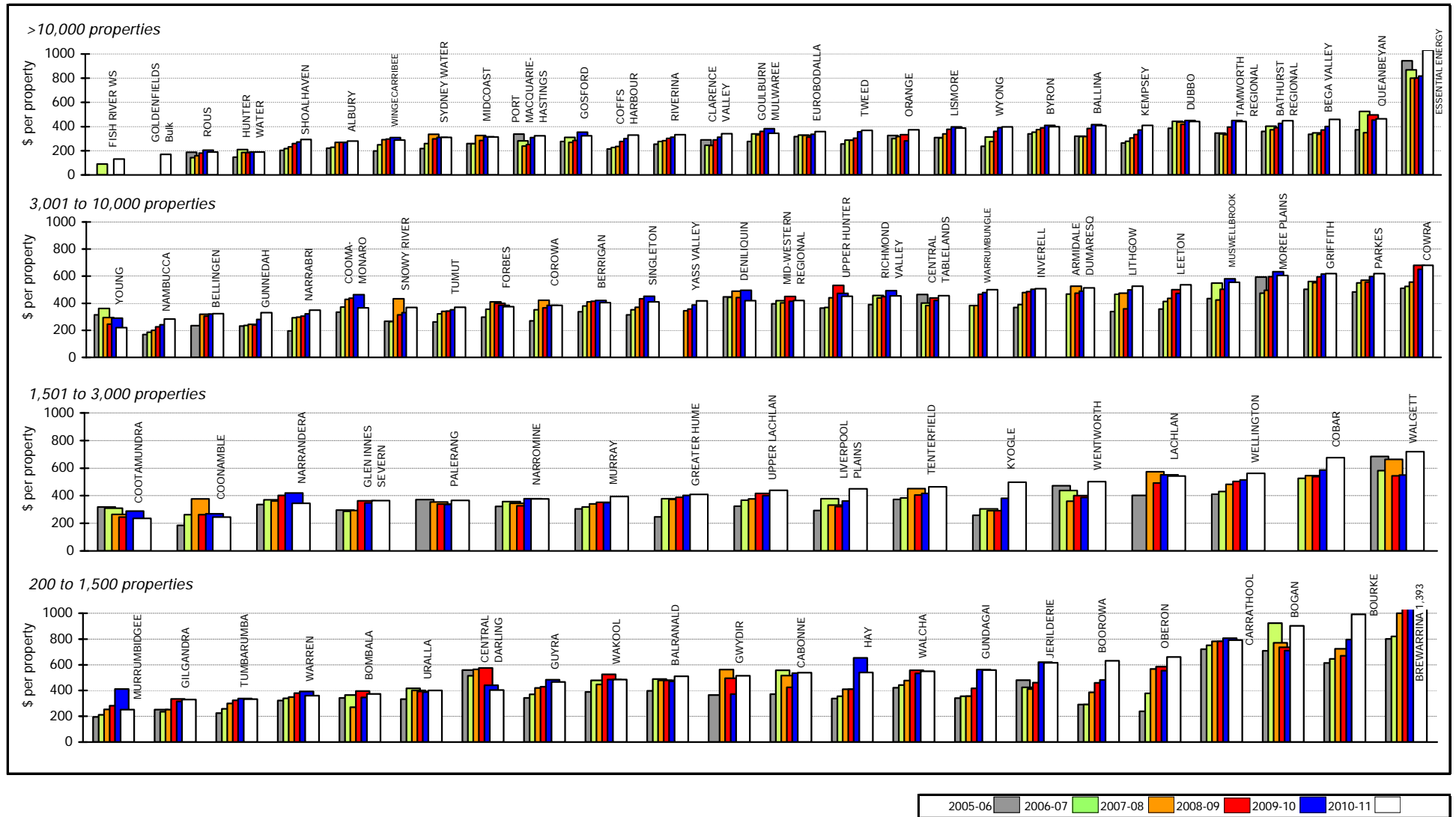


Parameter: 
$$\frac{(\text{Operating result (W15)} + \text{interest expense (W4a)} - \text{interest income (W9)} - \text{grants for acquisition of assets (W11a)}) \times 100}{\text{Written down replacement cost of system assets, plant \& equipment (W33)}}$$

Notes:

1. This figure shows ranked values of the 2010-11 water supply economic real rate of return (ERRR) for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 water supply real rate of return for the 28 LWUs shown ranges from 5% to -3%. Results for the previous 5 years are also shown.
2. The statewide median water supply ERRR is 0.4%.
4. The ERRR includes developer provided assets and capital contributions from other LWUs.
5. For general notes see page 30.

Figure 31: Operating cost (OMA) per property – water supply

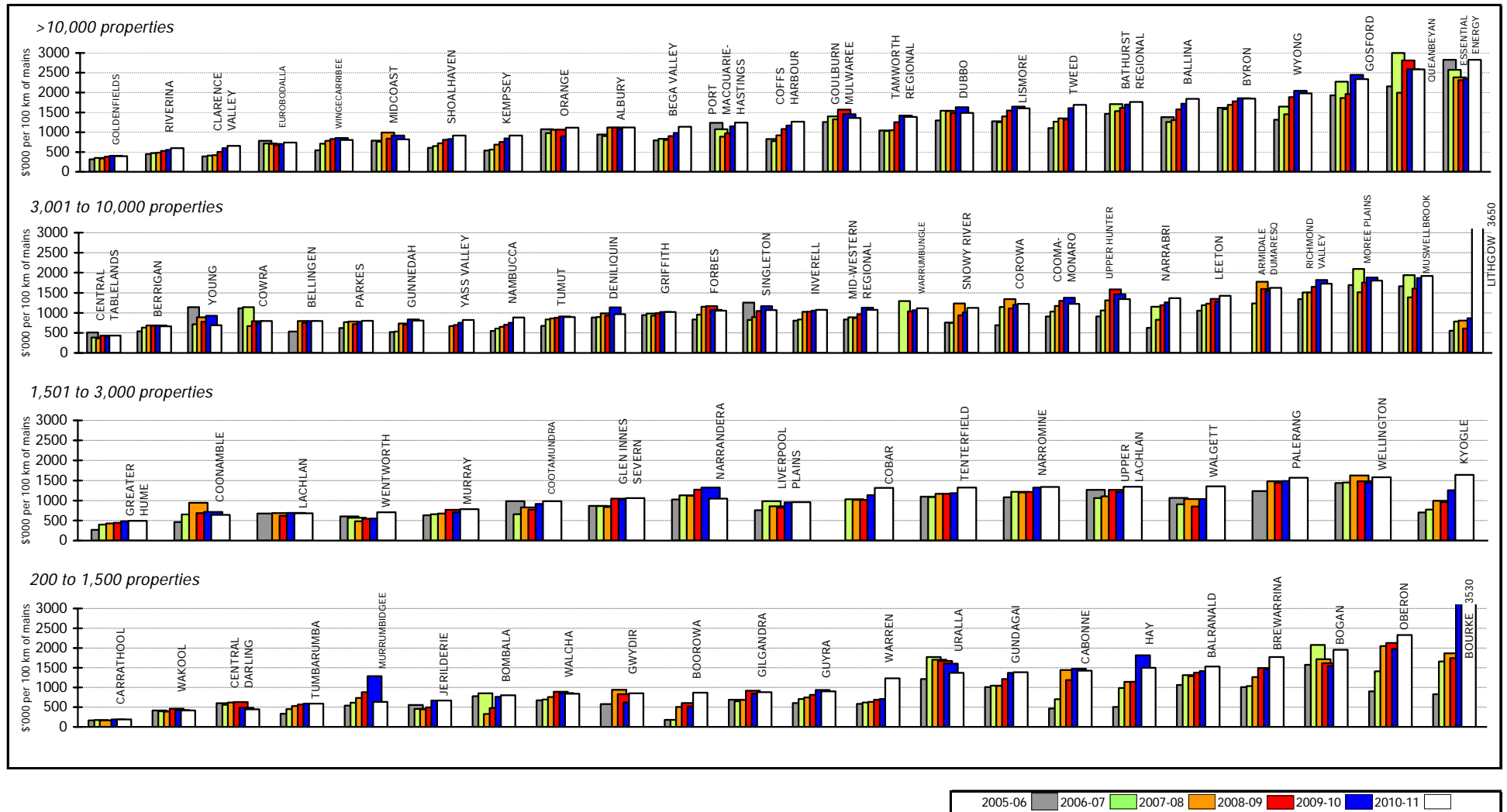


Parameter: Management Expenses (W1) + Total Operations Expenses (W2) - Purchase of Water + prorata Bulk Supplier's OMA  
 [No. of Residential Assessments (Q34) + No. of Non-Residential Assessments (Q35)] x No. of Connected Properties per Assessment

Notes:

1. This figure shows ranked values of the 2010-11 water supply operating cost (OMA - operation, maintenance and administration) per property for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 water supply operating costs for the 28 LWUs shown ranges from \$219 to \$680 per connected property. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median operating cost per connected property is \$370.
3. For general notes see page 30.

Figure 32: Operating cost (OMA) per 100 km of main – water supply

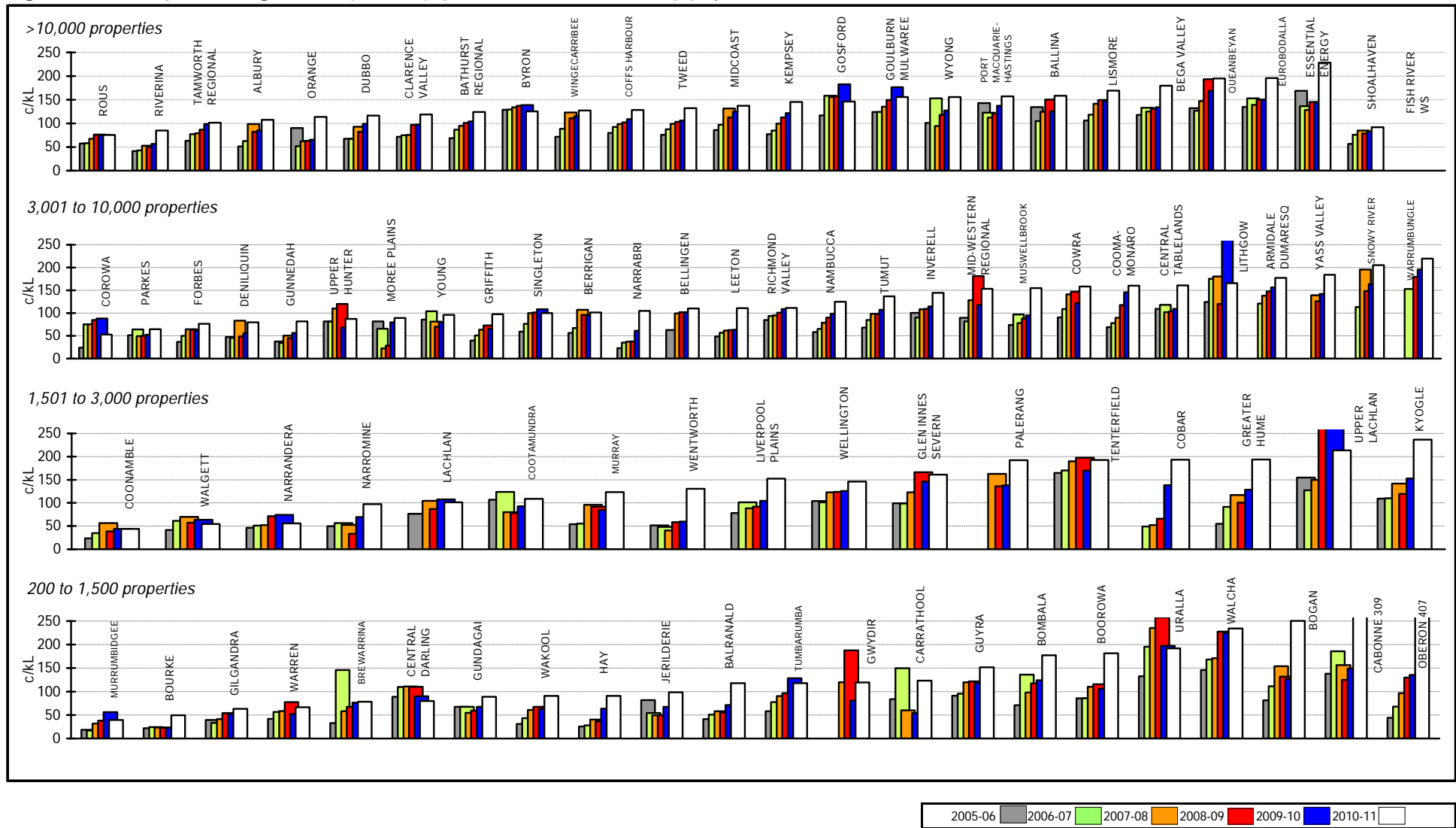


Parameter: 
$$\frac{\text{Water Main Operation Expenses (W2c) + Water Main Maintenance Costs (W2d)}}{\text{Length of Distribution Mains (Q22) x 100}}$$

Notes:

1. This figure shows ranked values of the 2010-11 water supply operating cost (OMA - operation, maintenance and administration) per 100 km of main for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 operating costs for the 28 LWUs shown ranges from \$455,000 to \$3,650,000 per 100km of main. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median operating cost is \$1.24M per 100 km of Water Main.
3. For general notes see page 30.

Figure 33: Operating cost (OMA) per kL – water supply

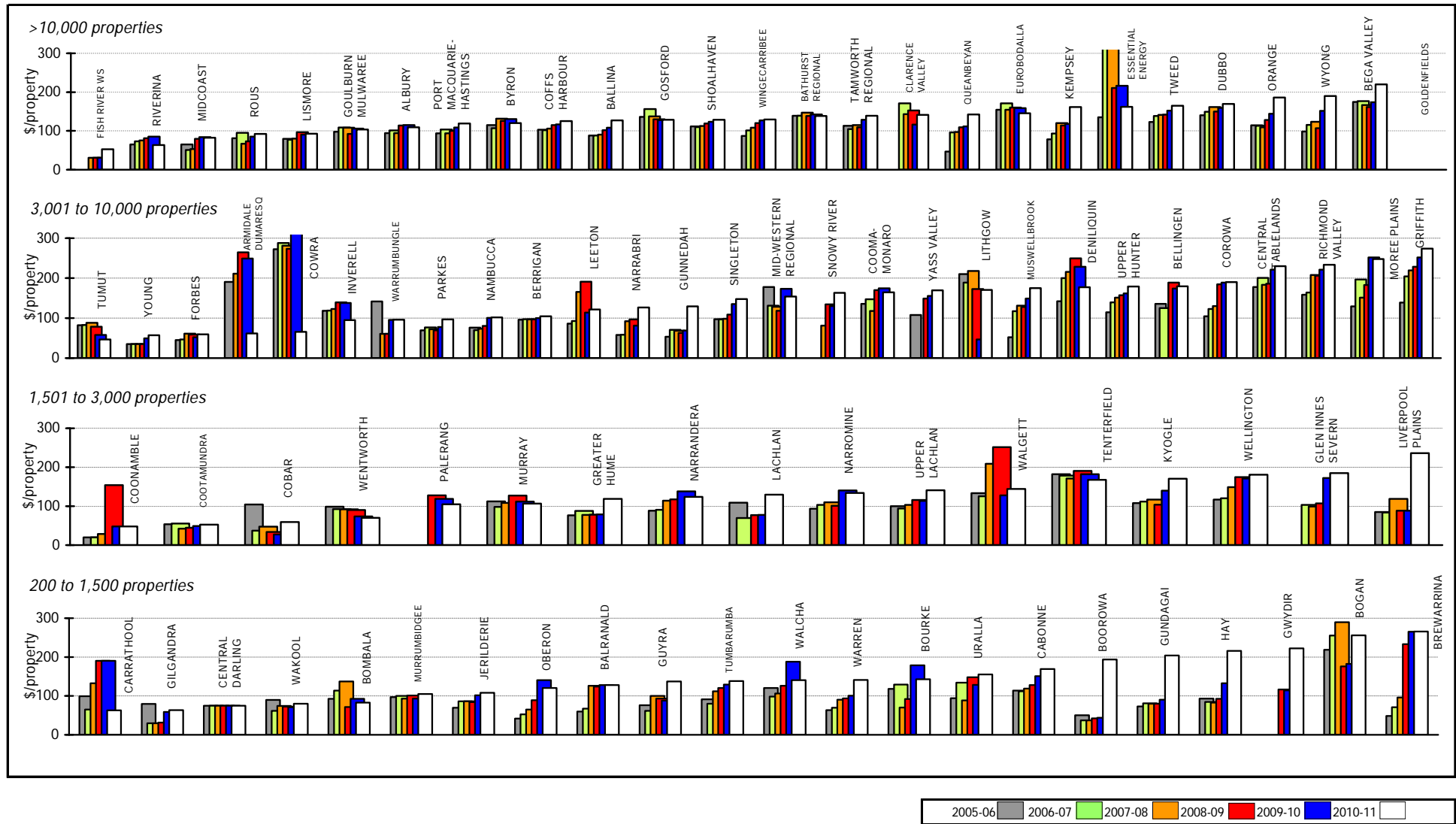


Parameter:  $\frac{\text{Management Expenses (W1)} + \text{Total Operations Expenses (W2)} - \text{Purchase of Water (W2o)}}{\text{Total Potable Water Supplied (Q62)}}$

Notes:

1. This figure shows ranked values of the 2010-11 water supply operating cost (OMA - operation, maintenance and administration) per kL for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 operating costs per kL for the 28 LWUs shown ranges from 53 to 219 c/kL. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median operating cost is 134c/kL.
3. For general notes see page 30.

Figure 34: Management cost per property – water supply

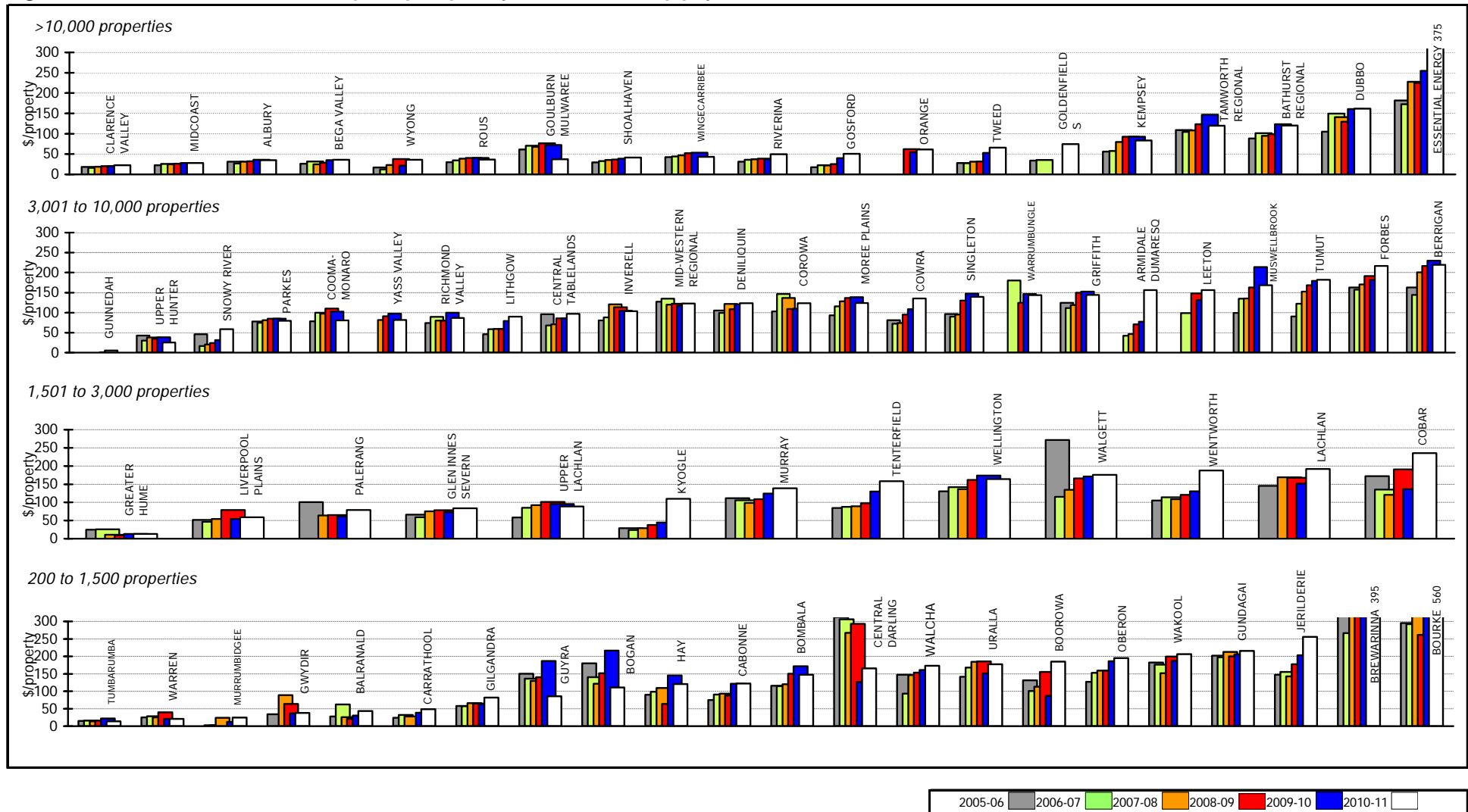


Parameter: Administration Cost (W1a) + Engineering Cost (W1b)  
 [No. of Residential Assessments (Q34) + No. of Non-Residential Assessments (Q35)] x No. of Connected Properties per Assessment

Notes:

1. This figure shows ranked values of the 2010-11 water supply management cost per property for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 management costs per property for the 28 LWUs shown ranges from \$47 to \$274. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median management cost is \$129 per connected property.
3. For general notes see page 30.

Figure 35: Treatment cost per property – water supply

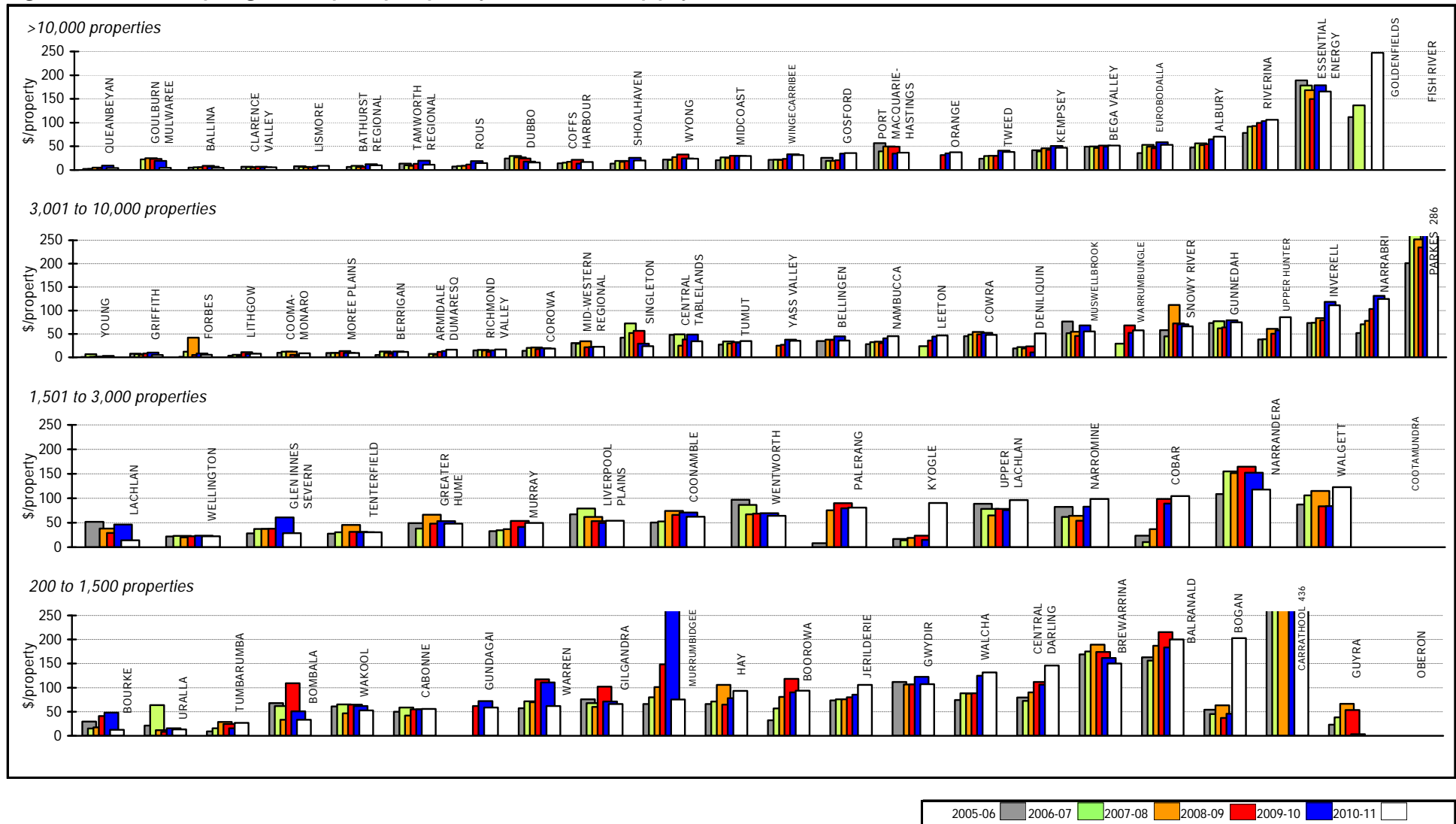


Parameter:  $\frac{\text{Treatment Operation Expenses (W2j)} + \text{Treatment Chemical Cost (W2k)} + \text{Treatment Maintenance Expenses (W2l)}}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 water treatment cost for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 treatment costs for the 24 LWUs shown ranges from \$10 to \$220 per connected property. Results for the previous 5 years are also shown in Jan 2011\$.
2. Only LWUs with a water treatment works involving at least filtration and disinfection for over 50% of their supply have been shown.
3. The Statewide median water treatment cost is \$49 per connected property.
4. For general notes see page 30.

Figure 36: Pumping cost per property – water supply



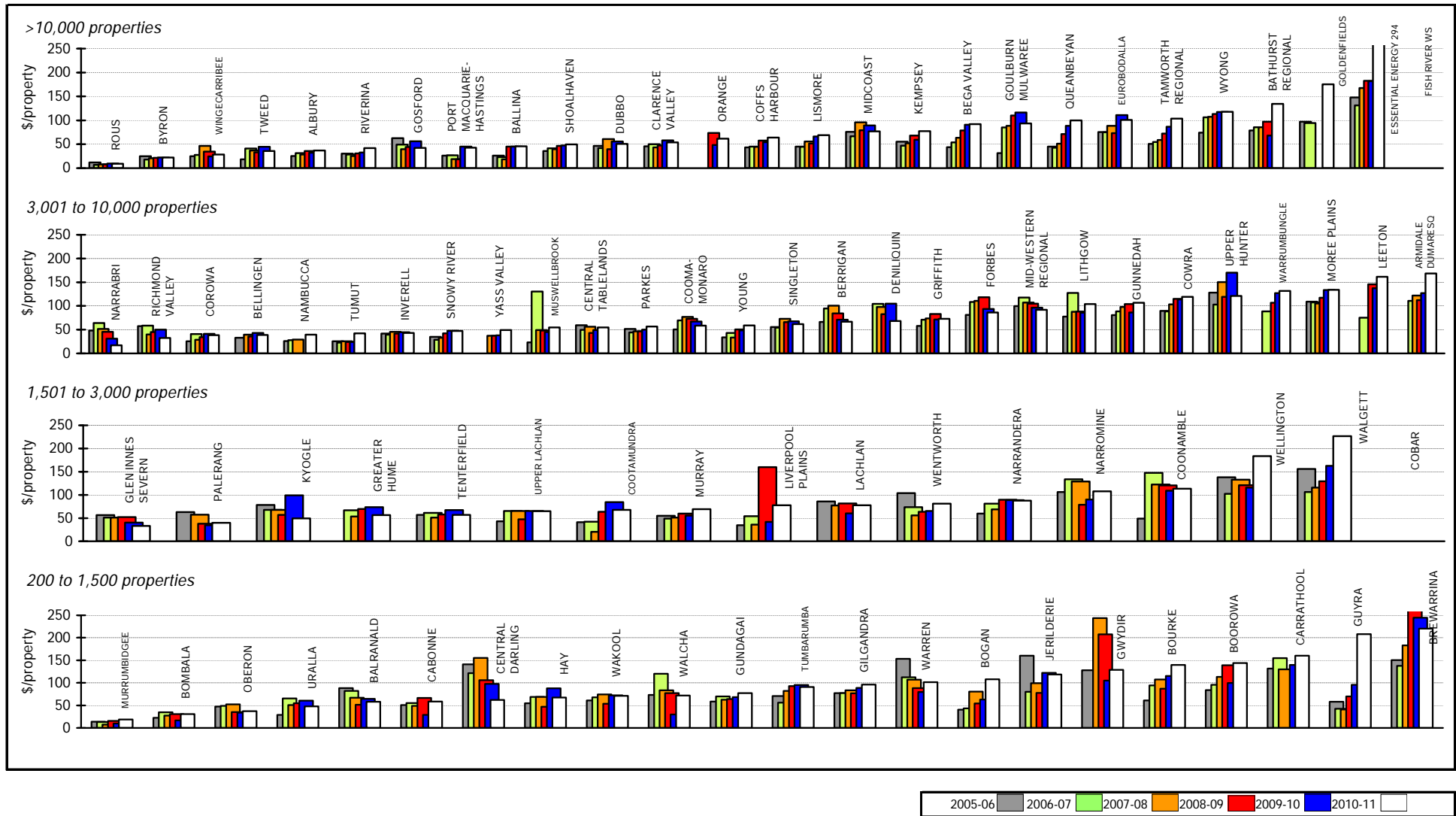
Parameter:  $\frac{\text{Pumping Station Operation Expenses (W2g)} + \text{Pumping Station Energy Cost (W2h)} + \text{Pumping Station Maintenance Costs (W2i)}}{[\text{No. of Residential Assessments (Q34)} + \text{No. of Non-Residential Assessments (Q35)}] \times \text{No. of Connected Properties per Assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 water pumping cost for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 water pumping costs for the 28 LWUs shown ranges from \$3 to \$286 per connected property. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median water pumping cost (including energy costs) is \$31 per connected property.
3. For general notes see page 30.



Figure 37: Water main cost per property – water supply



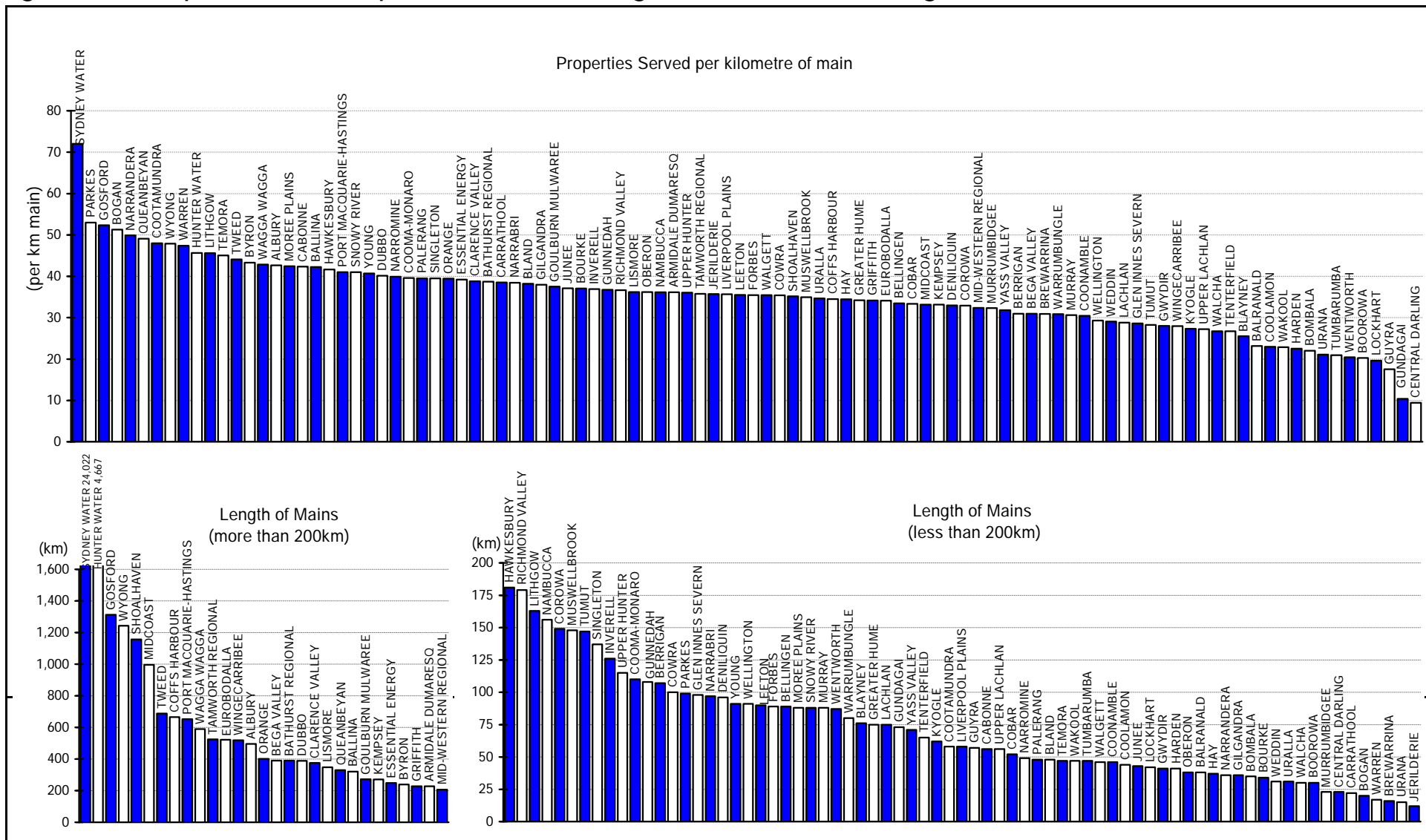
Parameter: Water main operation expenses (W2c) + water main maintenance costs (W2d)  
 [No. of residential assessments (Q34) + No. of non-residential assessments (Q35) x No. of connected properties per assessment

Notes:

1. This figure shows ranked values of the 2010-11 water main operating cost for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 water main costs for the 28 LWUs shown ranges from \$17 to \$168 per property. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median water main cost is \$59 per property.
3. For general notes see page 30.

# 9. Sewerage figures

Figure 38: Properties served per km of main, length of mains – sewerage

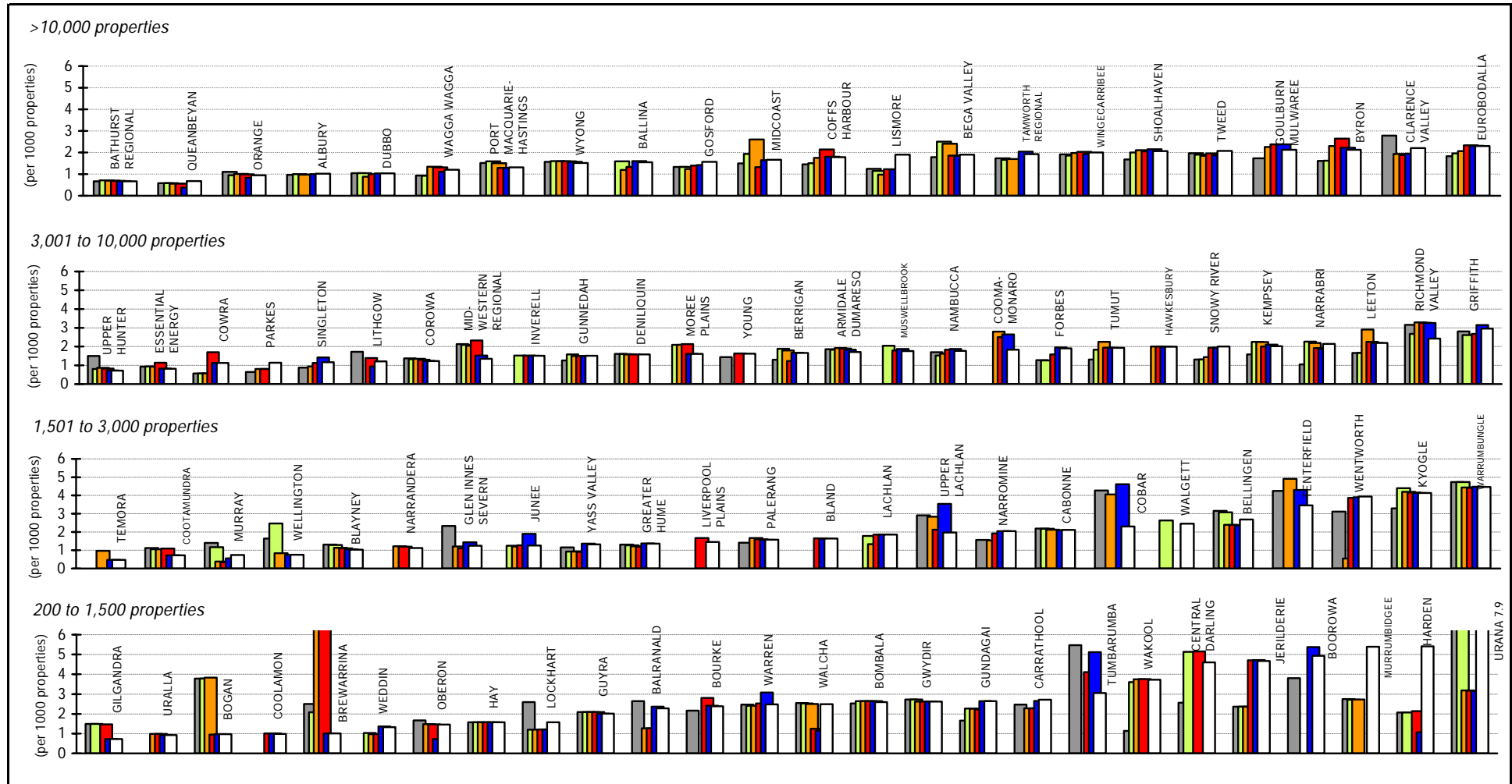


Parameter:  $\frac{[\text{No. of Residential Assessments (Q15)} + \text{No. of Non-Residential Assessments (Q16)}] \times \text{No. of Connected Properties per Assessment}}{\text{Length of Reticulation/Gravity Mains (Q7)} + \text{Length of Rising Mains (Q8)}}$

Note:

- For general notes see page 30.

Figure 39: Employees – sewerage

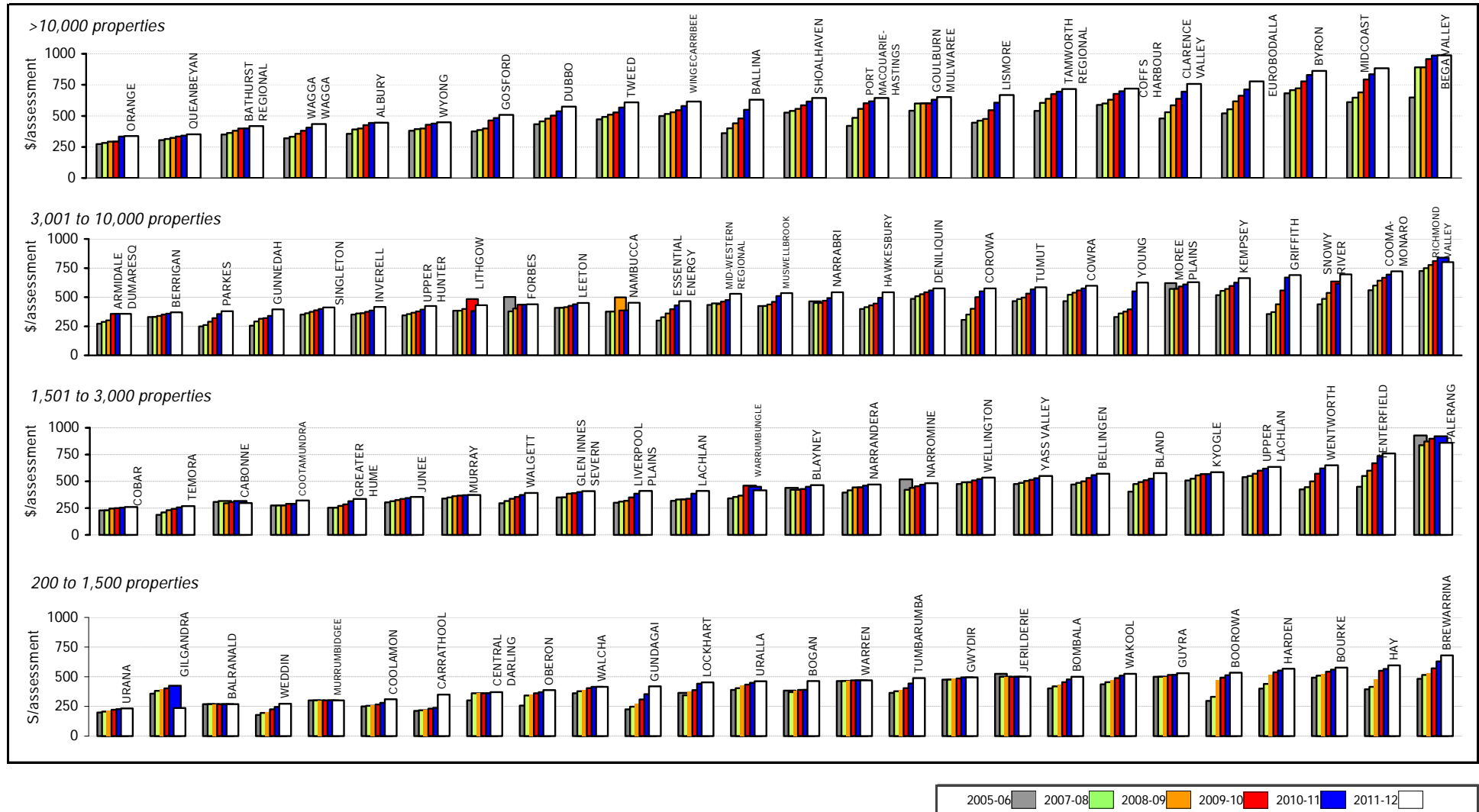


Parameter: 
$$\frac{\text{Full-time Equivalent Employees (Q49)} \times 1000}{[\text{No. of Residential Assessments (Q15)} + \text{No. of Non-Residential Assessments (Q16)}] \times \text{No. of Connected Properties per Assessment}}$$

Notes:

1. This figure shows ranked values of the 2010-11 sewerage employees for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewerage employees for the 27 LWUs shown ranges from about 1 to 3 per 1000 connected properties. Results for the previous 5 years are also shown.
2. The 2010-11 Statewide median number of sewerage employees is 1.6 per 1000 connected properties.
3. For general notes see page 30.

Figure 40: Typical residential bill – sewerage

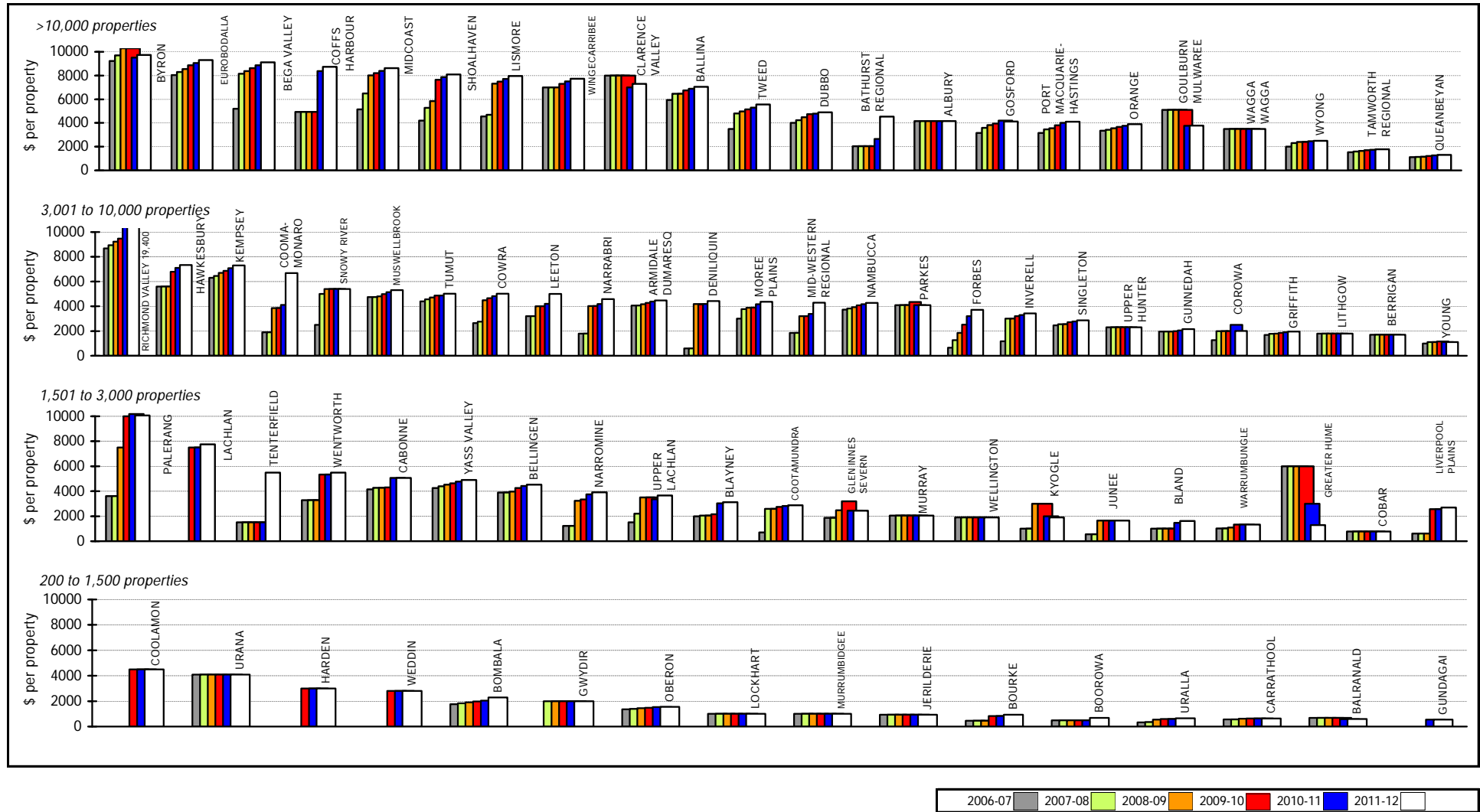


Parameter: Residential Access Charge

Notes:

1. This figure shows ranked values of the 2011-12 typical residential bill for sewerage for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2011-12 typical residential bill for sewerage for the 27 LWUs shown ranges from about \$357 to \$800. Results for the previous 5 years are also shown in Jan 2012\$.
2. The 2011-12 Statewide median typical residential bill for sewerage supply is \$570 per assessment.
3. For general notes see page 30.

Figure 41: Typical developer charge – sewerage

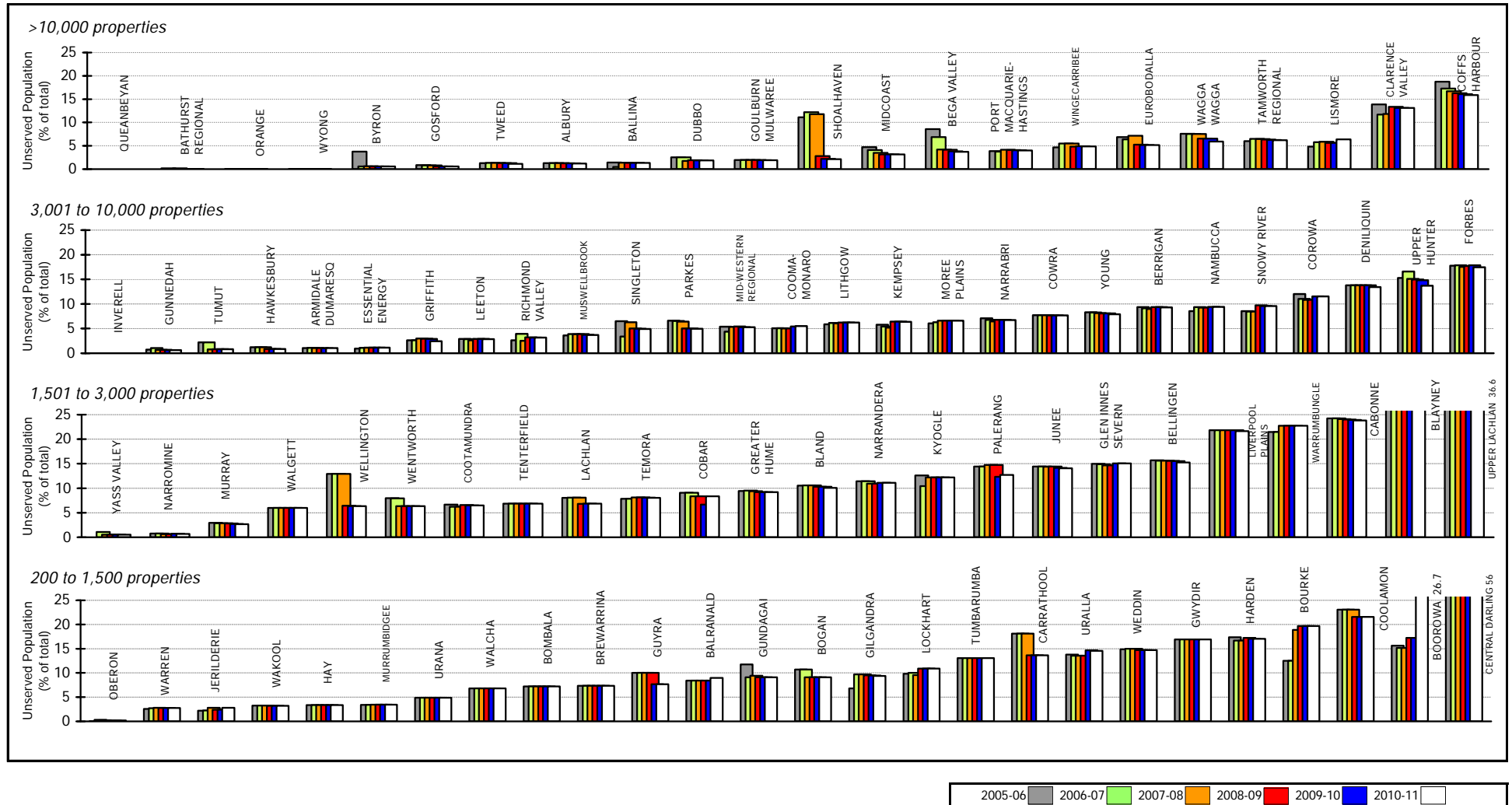


Parameter: Typical Sewerage Developer Charge (Q62)

Notes:

1. This figure shows ranked values of the 2011-12 typical developer charge for sewerage for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the typical developer charge for sewerage for the 26 LWUs shown ranges from \$19400 to \$1100 per equivalent tenement (ET). Results for the previous 5 years are also shown in Jan 2012\$.
2. The 2011-12 Statewide median typical sewerage developer charge was \$4,300 per ET.
3. 85 LWUs levied sewerage developer charges.
4. For general notes see page 30.

Figure 42: Urban population without sewerage – sewerage

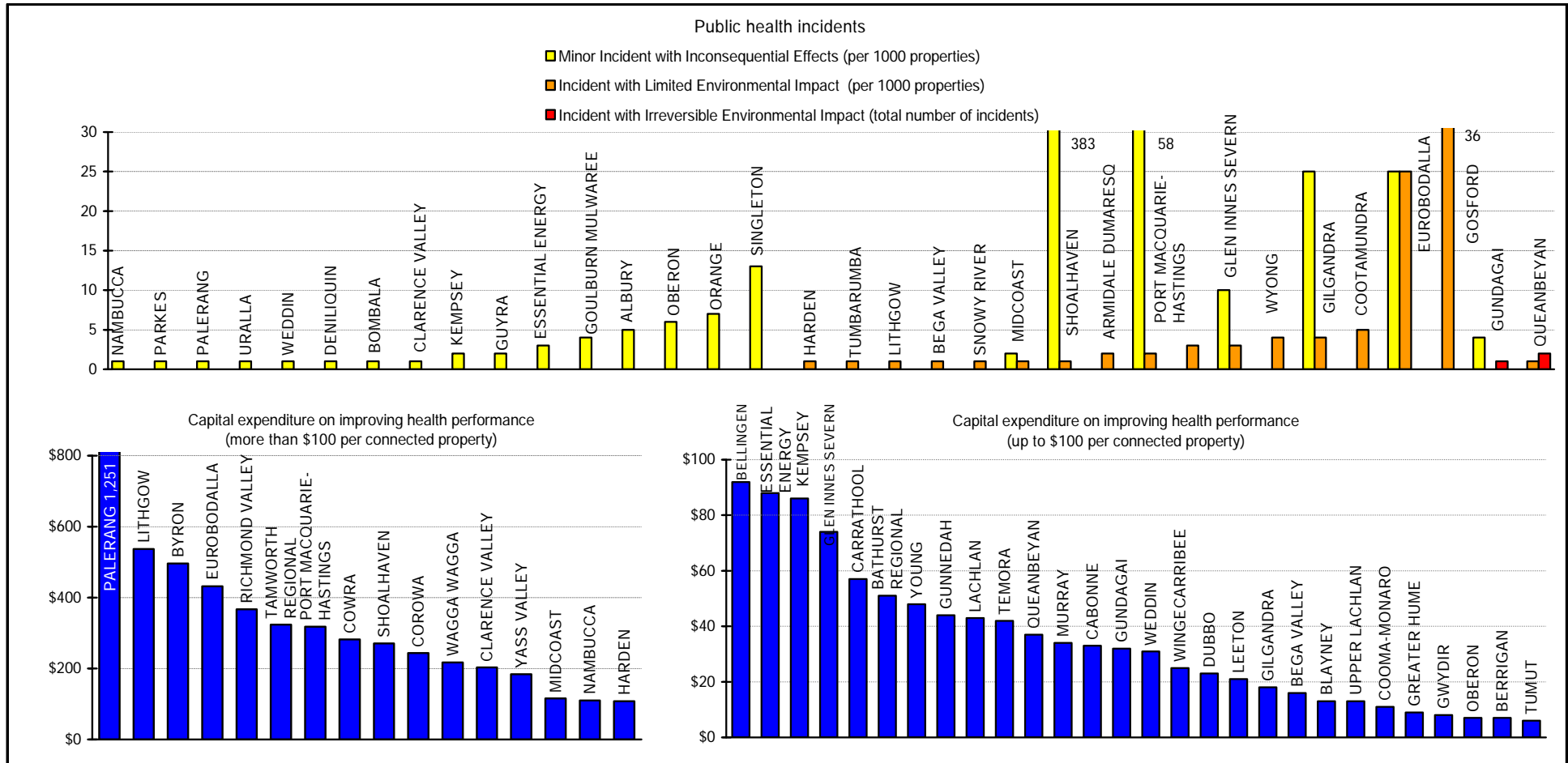


Parameter:  $\frac{\text{Unservd urban population (Q21)}}{\text{Population served (Q1) + unservd urban population (Q21)}}$

Notes:

1. This figure shows ranked values of the percentage of urban population without a reticulated sewerage service for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the urban population without a reticulated sewerage service for the 27 LWUs shown ranges from nil to 17%. Results for the previous 5 years are also shown.
2. The 2010-11 Statewide median urban population without a reticulated sewerage service was 3.4%.
3. The percentage of urban population without a reticulated sewerage service for the median LWU was 6%.
4. Overall, 95.4% of the urban population in non-metropolitan NSW (ie. 1.72 million people) received a reticulated sewerage service.
5. For general notes see page 30.

Figure 43: Public health incidents, capital expenditure – sewerage



Parameter: \_\_\_\_\_ Total No. of minor incidents with inconsequential effects ( Q44)  
 [No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] x No. of connected properties per assessment

Parameter: \_\_\_\_\_ Total No. of minor incidents with limited health impacts (Q45)  
 [No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] x No. of connected properties per assessment

Parameter: \_\_\_\_\_ Total No. of major incidents with major health impacts (Q46)  
 [No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] x No. of connected properties per assessment

Parameter: \_\_\_\_\_ Capital expenditure on improving health performance (S) x (Q48)  
 [No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] x No. of connected properties per assessment

Notes:

- The following 2 utilities did not report public health incidents: Tumut and Walgett. 34 Utilities reported incidents and are shown in the figure above, while 63 utilities reported zero health incidents.
- For general notes see page 30.

Figure 44: Complaints (per 1,000 properties) – sewerage

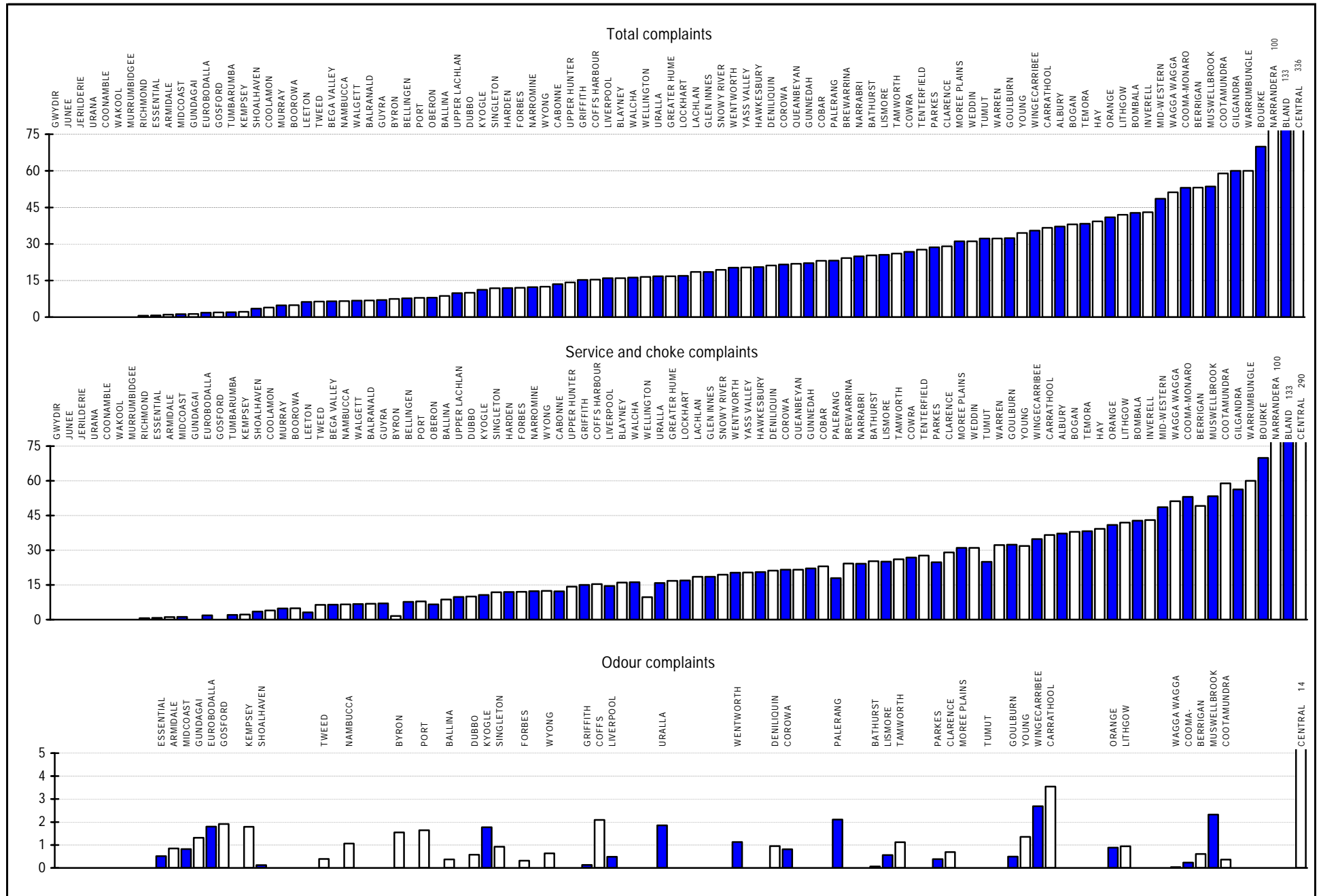
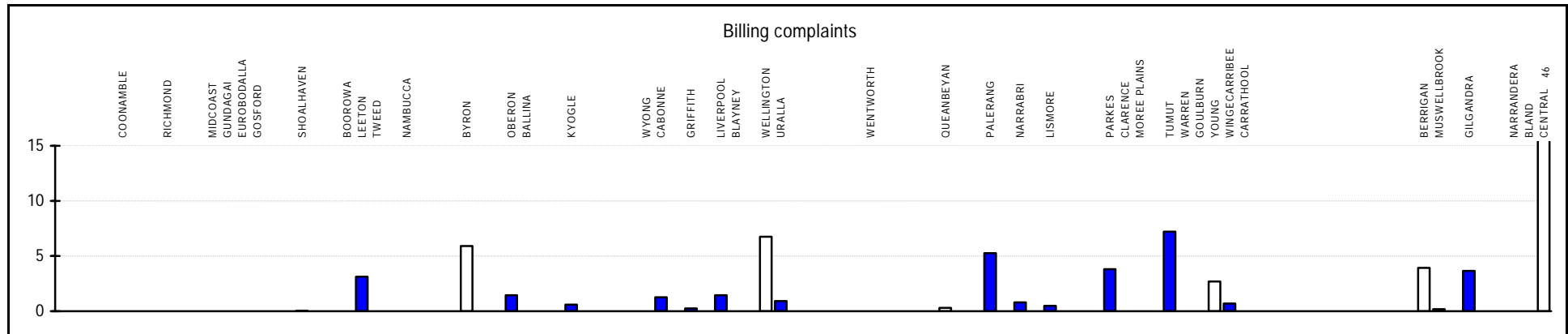




Figure 44: Complaints (per 1,000 properties) – sewerage (continued)



Parameter: 
$$\frac{[\text{Total no. of complaints (Q34) + (Q37) + (Q38) + (Q39)] \times 1000}{[\text{No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] \times \text{No. of connected properties per assessment}}$$

Parameter: 
$$\frac{\text{No of service or choke complaints reported (Q34)}}{[\text{No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] \times \text{No. of connected properties per assessment}}$$

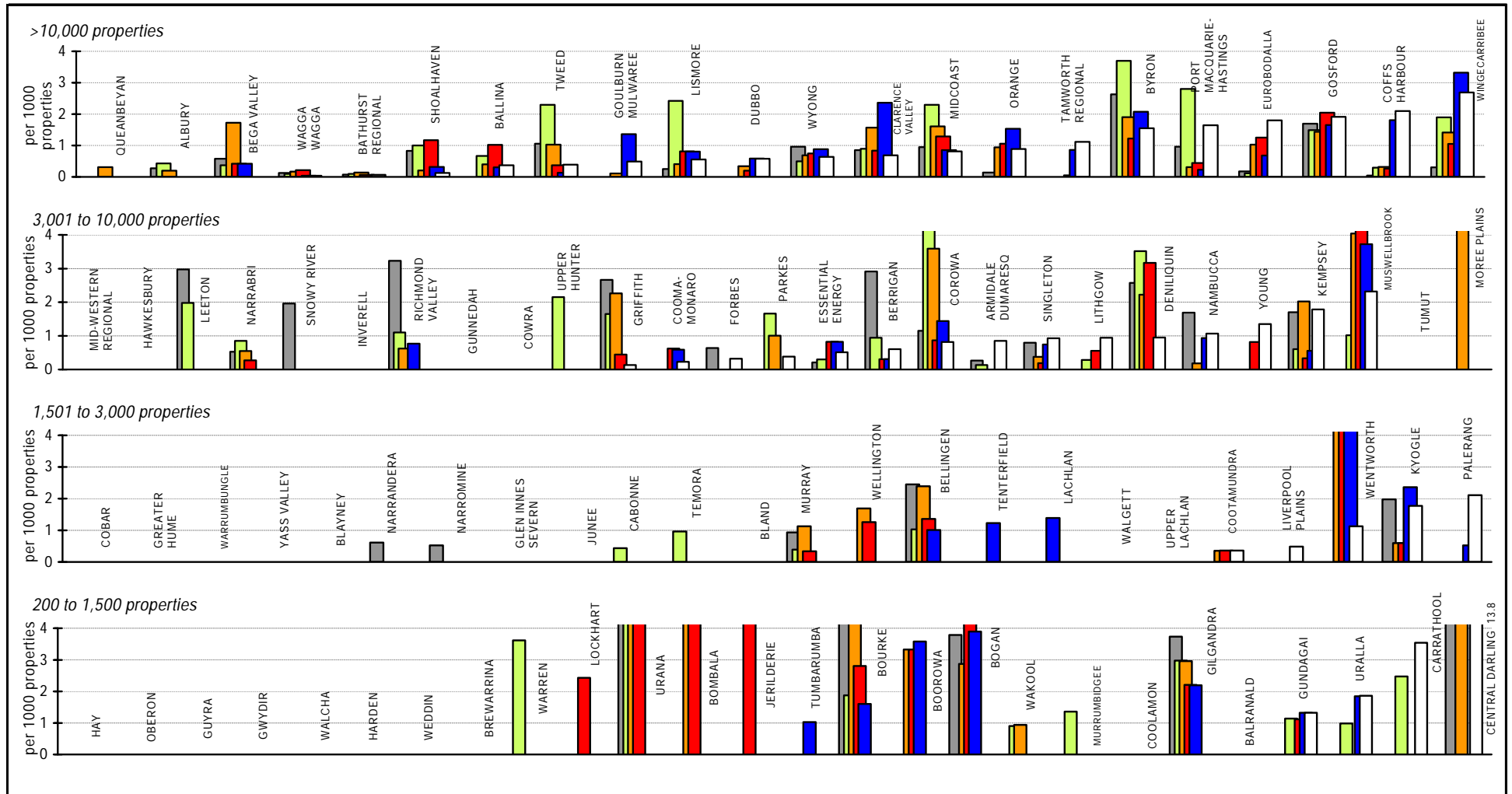
Parameter: 
$$\frac{\text{No. of odour complaints reported (Q39)}}{[\text{No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] \times \text{No. of connected properties per assessment}}$$

Parameter: 
$$\frac{\text{No of billings complaints reported (Q37)}}{[\text{No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] \times \text{No. of connected properties per assessment}}$$

Parameter: 
$$\frac{\text{No. of other complaints reported (Q38)}}{[\text{No. of residential assessments (Q15) + No. of non-residential assessments (Q16)] \times \text{No. of connected properties per assessment}}$$

Note:  
1. For general notes see page 30.

Figure 45: Odour complaints – sewerage

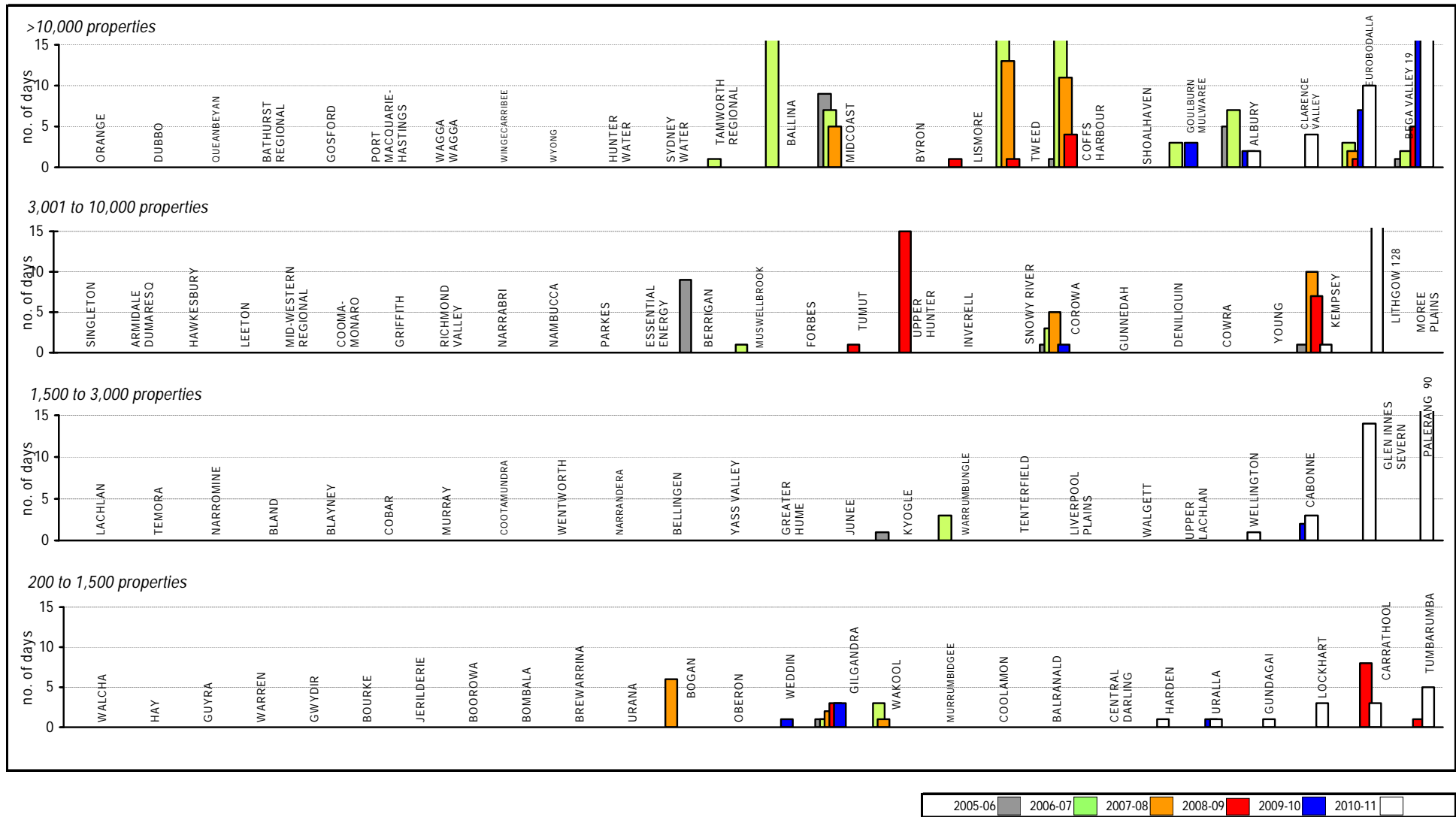


Parameter:  $\frac{\text{[No. of Odour Complaints from Treatment Works and Pumping Stations (Q39) x 1000]}}{\text{[No. of Residential Assessments (Q15) + No. of Non-Residential Assessments (Q16)] x No. of Connected Properties per Assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 number of sewage odour complaints for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the number of odour complaints for the 27 LWUs shown ranges from 0 to 2.3 complaints per thousand connected properties. The 2 LWUs on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown.
2. The 2010-11 Statewide median number of odour complaints is 0.6 per 1000 properties.
3. For general notes see page 30.

Figure 46: Treatment works malfunction – sewerage

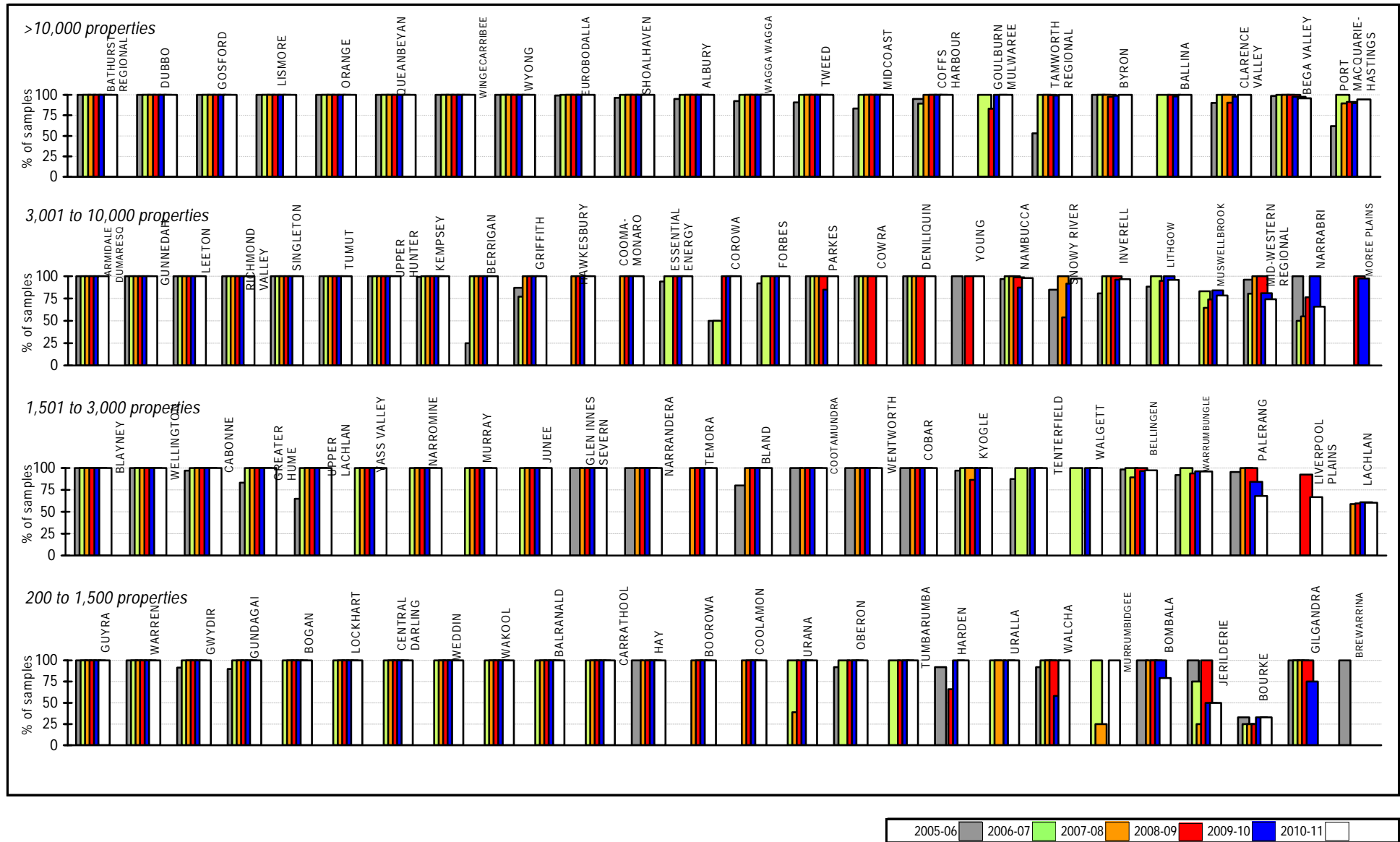


Parameter: Number of Days of Major Malfunction of Treatment Processes (STW Q67)

Notes:

1. The figure shows the 2010-11 ranked number of days of treatment works malfunction for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the number of days of malfunction for the 27 LWUs shown ranges from nil to 128 days.
2. For LWUs with more than one treatment works, the weighted average (based on capacity) of days was used.
3. For general notes see page 30.

Figure 47: Compliance with BOD in licence – sewerage

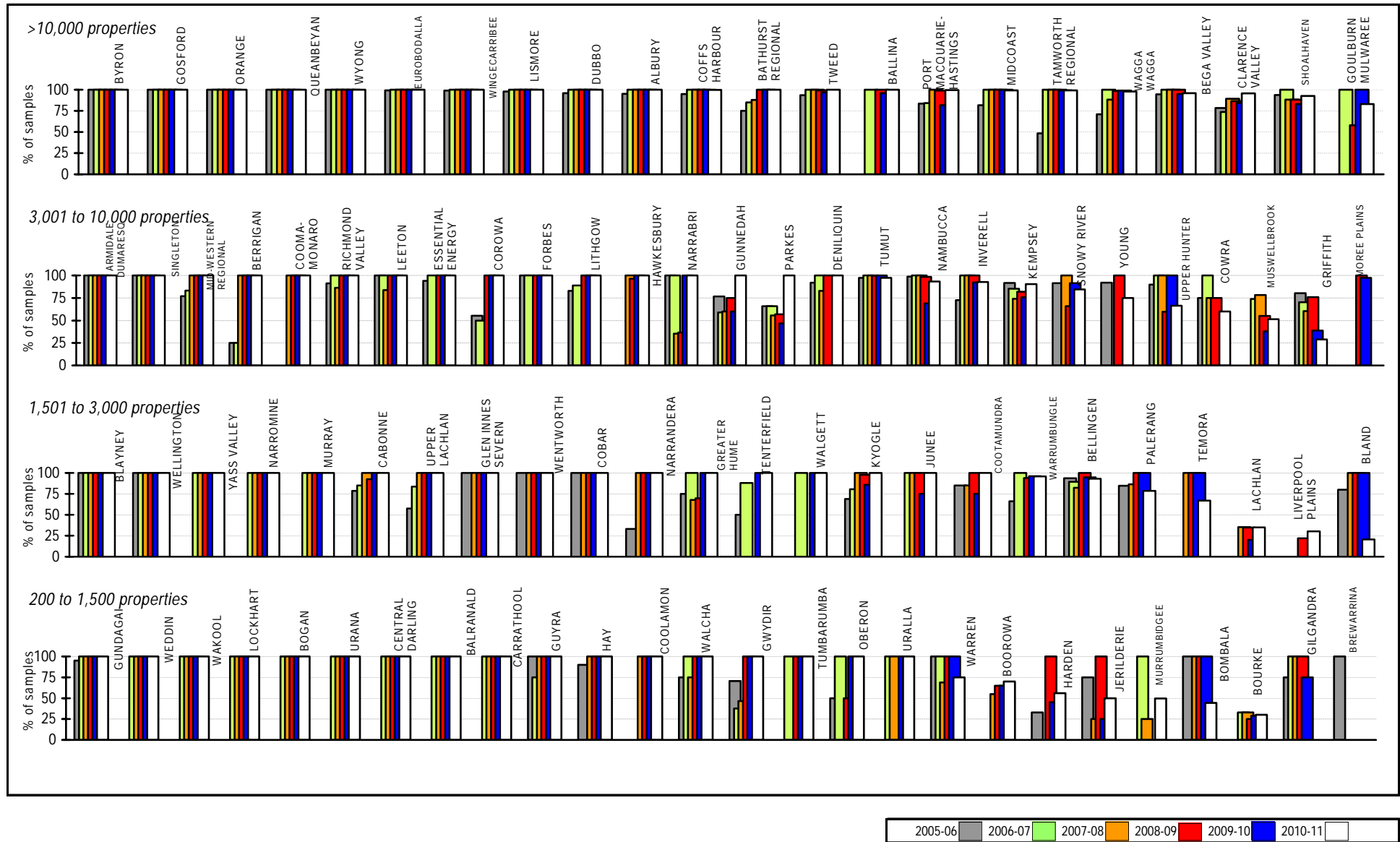


Parameter: Percentage of samples complying with 90 percentile Department of Environment and Conservation (DEC) licence limits for Biochemical Oxygen Demand (BOD) (STW Q50)

Note:

1. For general notes see page 30.

Figure 48: Compliance with SS in licence – sewerage

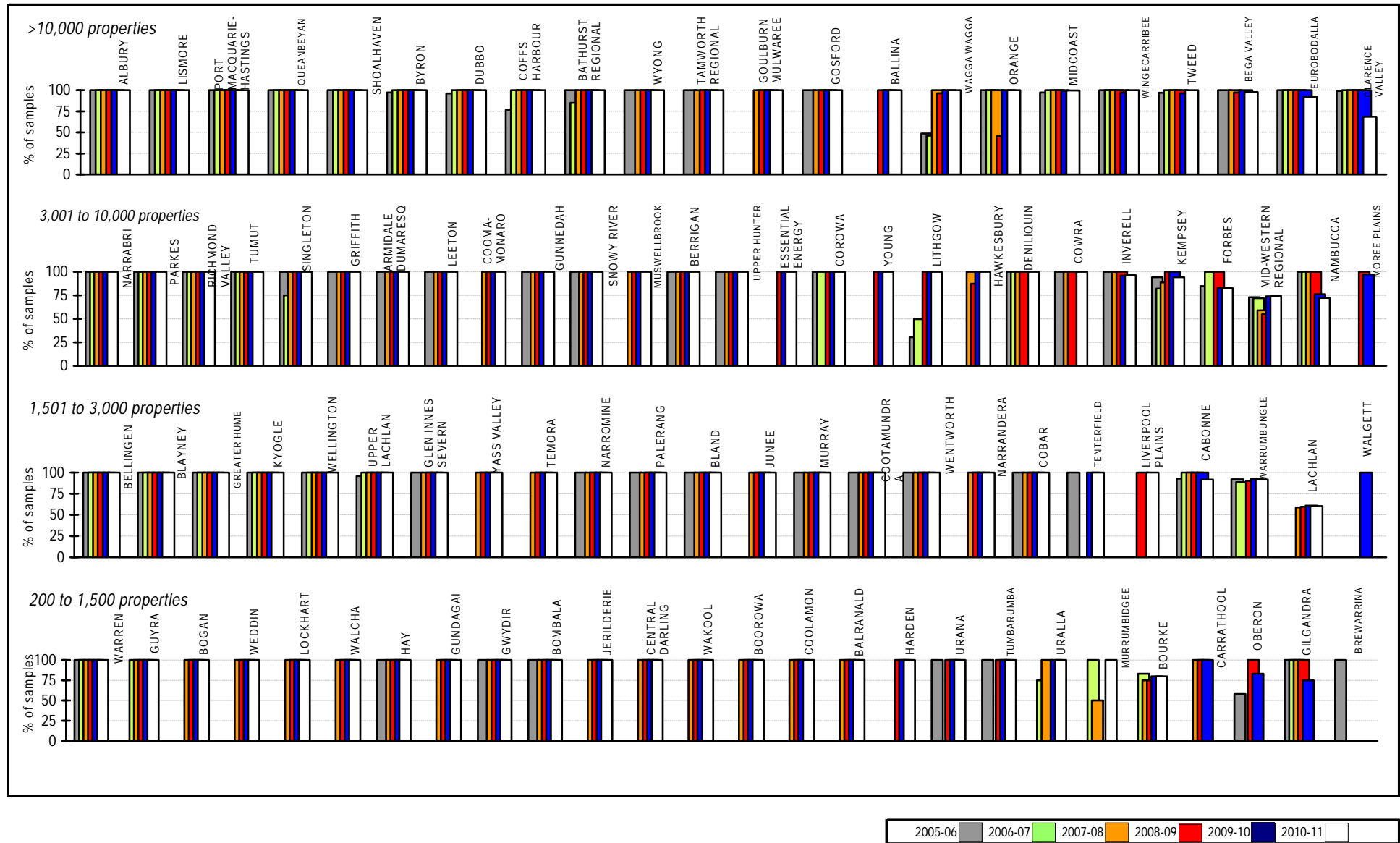


Parameter: Percentage of samples complying with 90 percentile Department of Environment and Conservation (DEC) licence limits for Suspended Solids (SS) (STW Q52)

Note:

1. For general notes see page 30.

Figure 49: Compliance with N in licence – sewerage

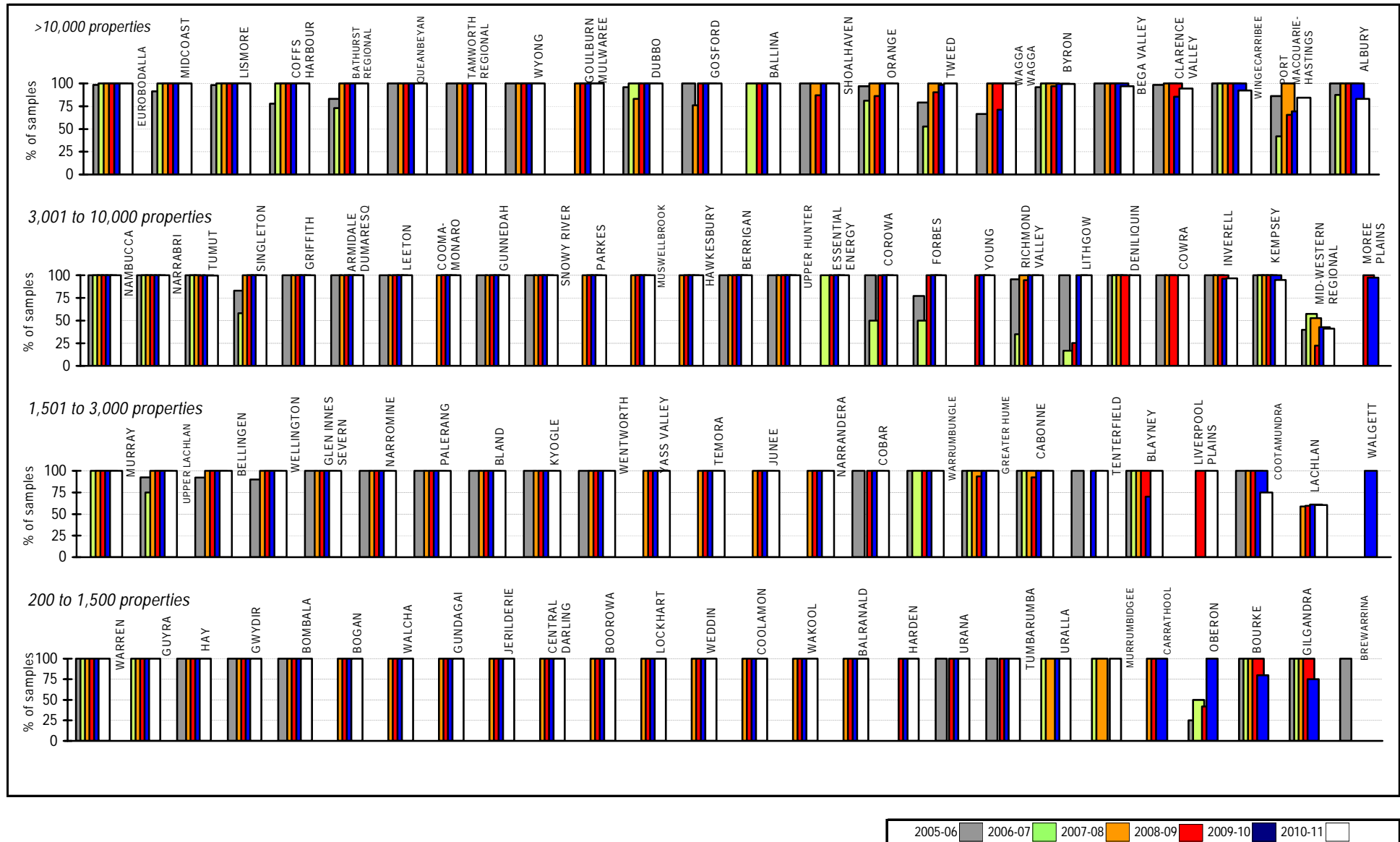


Parameter: Percentage of samples complying with 90 percentile Department of Environment and Conservation (DEC) licence limits for Total Nitrogen (STW Q54)

Note:

1. For general notes see page 30.

Figure 50: Compliance with P in licence – sewerage

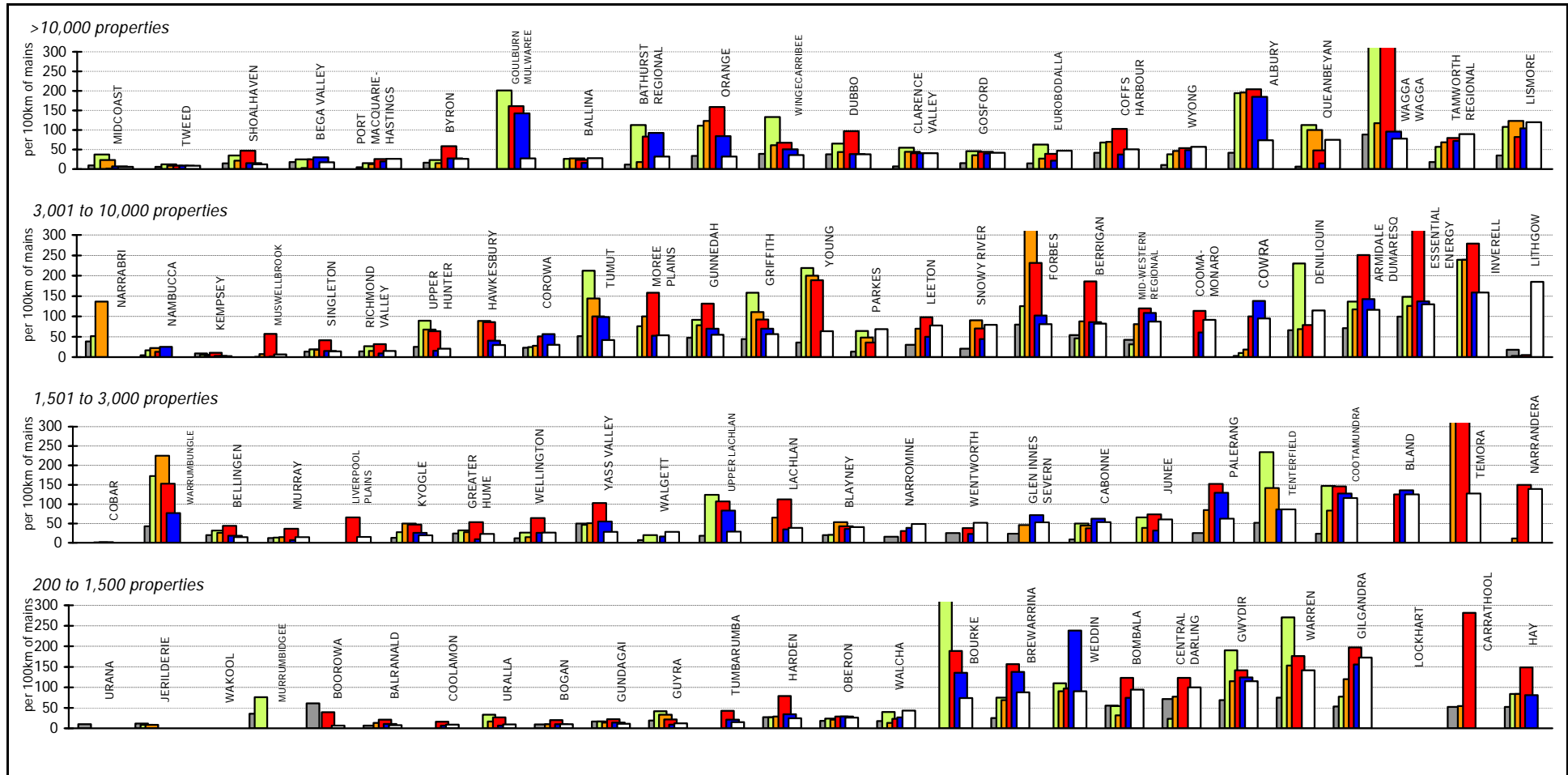


Parameter: Percentage of samples complying with 90 percentile Department of Environment and Conservation (DEC) licence limits for Total Phosphorus (STW Q60)

Note:

1. For general notes see page 30.

Figure 51: Sewerage main breaks and chokes – sewerage



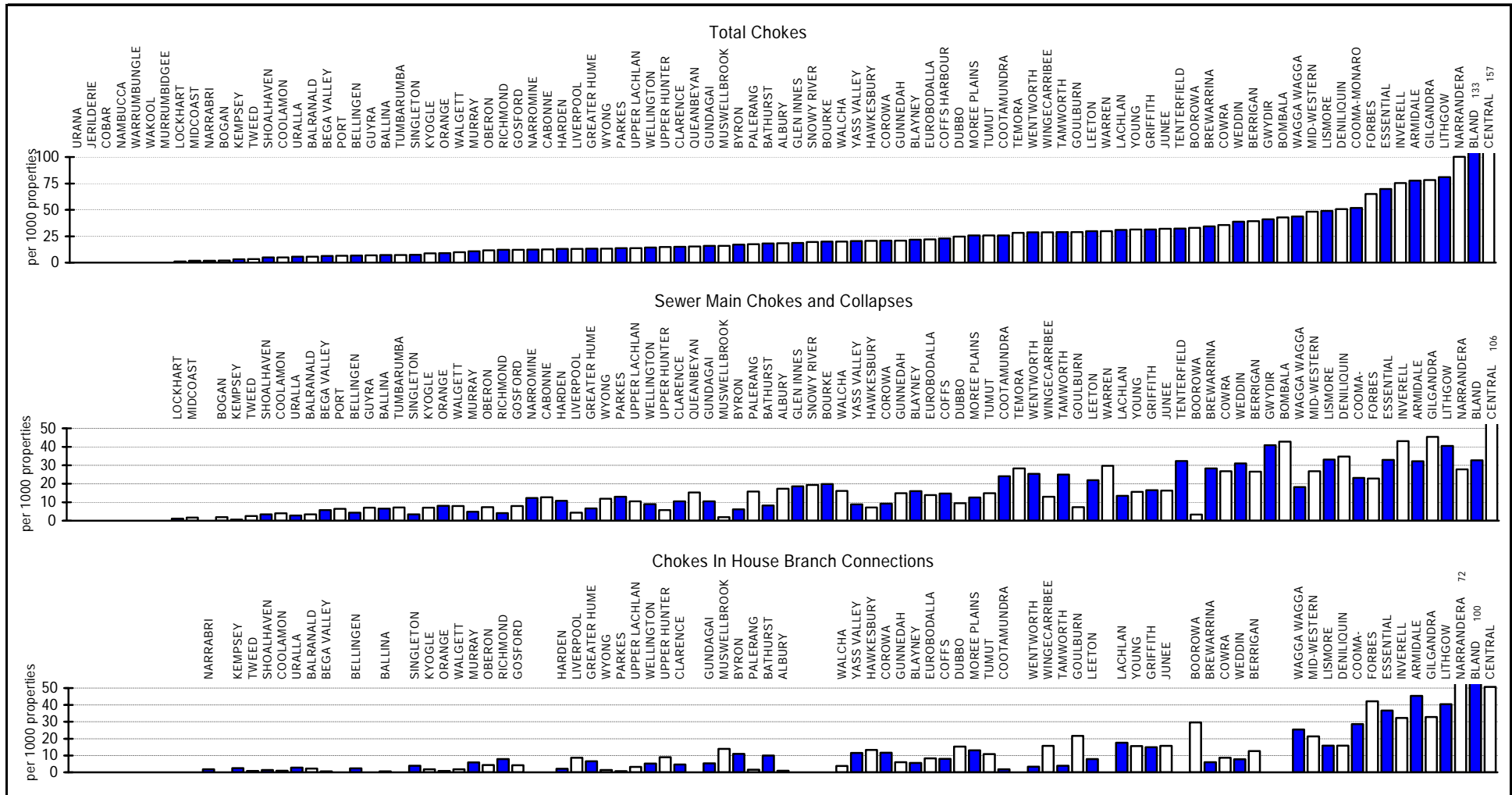
Parameter:  $\frac{\text{Total No. of Sewerage Main Breaks and Chokes (Q64)} \times 100}{\text{Length of Reticulation/Gravity Mains (Q7)} + \text{Length of Rising Mains (Q8)}}$

Notes:

1. This figure shows ranked values of the 2010-11 sewerage main breaks and chokes for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewerage main breaks and chokes for the 27 LWUs shown ranges from nil to 185 chokes per 100 km of sewer mains. Results for the previous 5 years are also shown.
2. Note NWI Indicator A14 (sewerage main breaks and chokes) was revised in 2009/10 to exclude property connection sewer breaks and chokes which were previously included in this indicator. The results shown for 2004/05 to 2008/09 are based on the previous definition which includes property connections sewer breaks and chokes.
3. The Statewide median sewerage main breaks and chokes is 41 per 100 km of sewer mains.
4. 13% of LWUs were unable to report on this item and those LWUs should institute a system to record and report such occurrences.
5. For general notes see page 30.



Figure 52: Total chokes (per 1,000 properties) – sewerage



Parameter:  $\frac{[\text{No. of Confirmed Sewer Chokes (Q64)} + \text{No. of Chokes in House Branch Connections (Q67)} + \text{No. of Chokes in House Drains (Q68)}] \times 1000}{[\text{No. of Residential Assessments (Q15)} + \text{No. of Non-Residential Assessments (Q16)}] \times \text{No. of Connected Properties per Assessment}}$

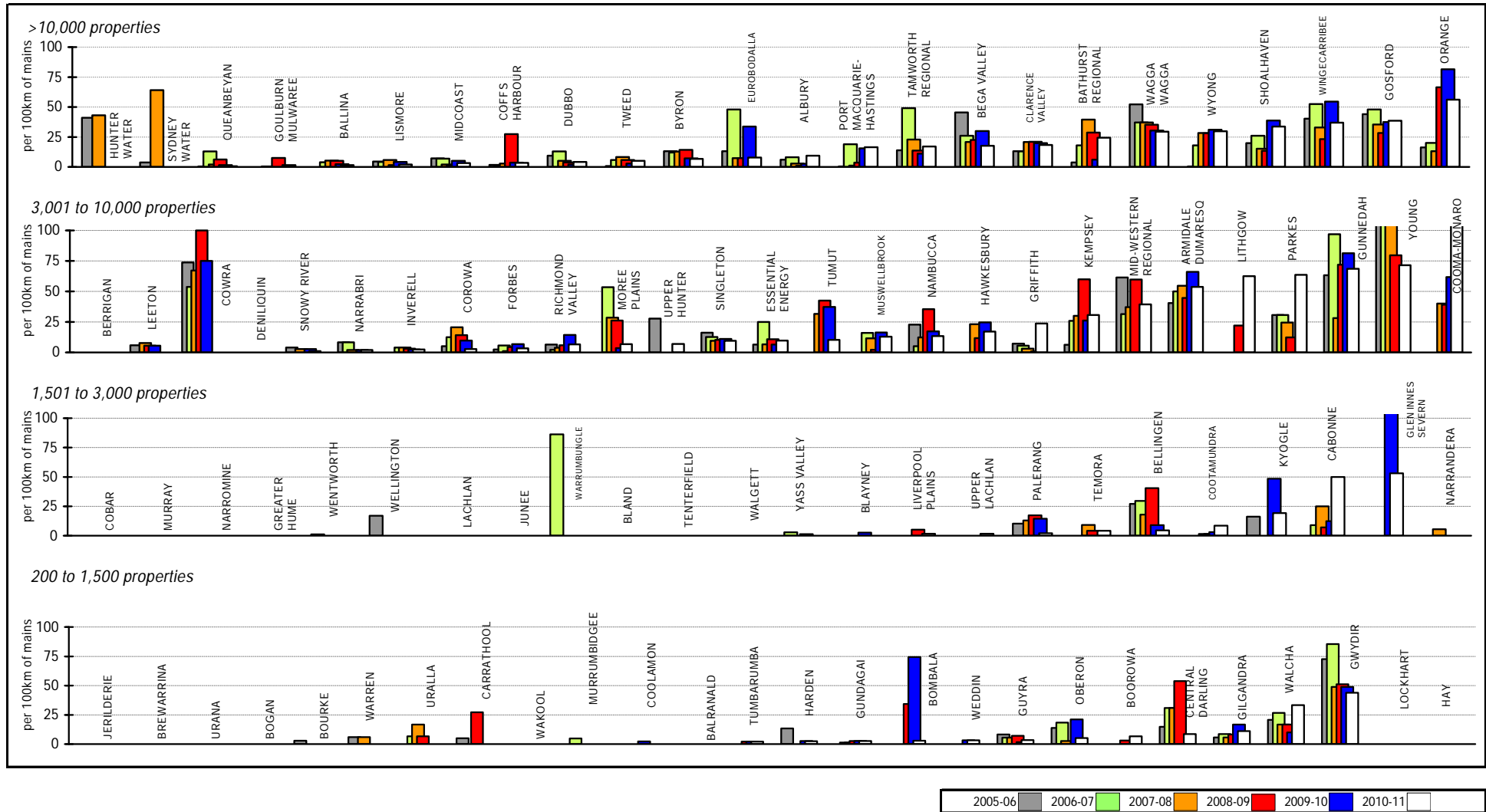
Parameter:  $\frac{\text{No. of Confirmed Sewer Chokes (Q64)} \times 1000}{[\text{No. of Residential Assessments (Q15)} + \text{No. of Non-Residential Assessments (Q16)}] \times \text{No. of Connected Properties per Assessment}}$

Parameter:  $\frac{\text{No. of Chokes in House Branch Connections (Q67)} \times 1000}{[\text{No. of Residential Assessments (Q15)} + \text{No. of Non-Residential Assessments (Q16)}] \times \text{No. of Connected Properties per Assessment}}$

Note:

1. For general notes see page 30.

Figure 53: Sewer overflows to the environment – sewerage

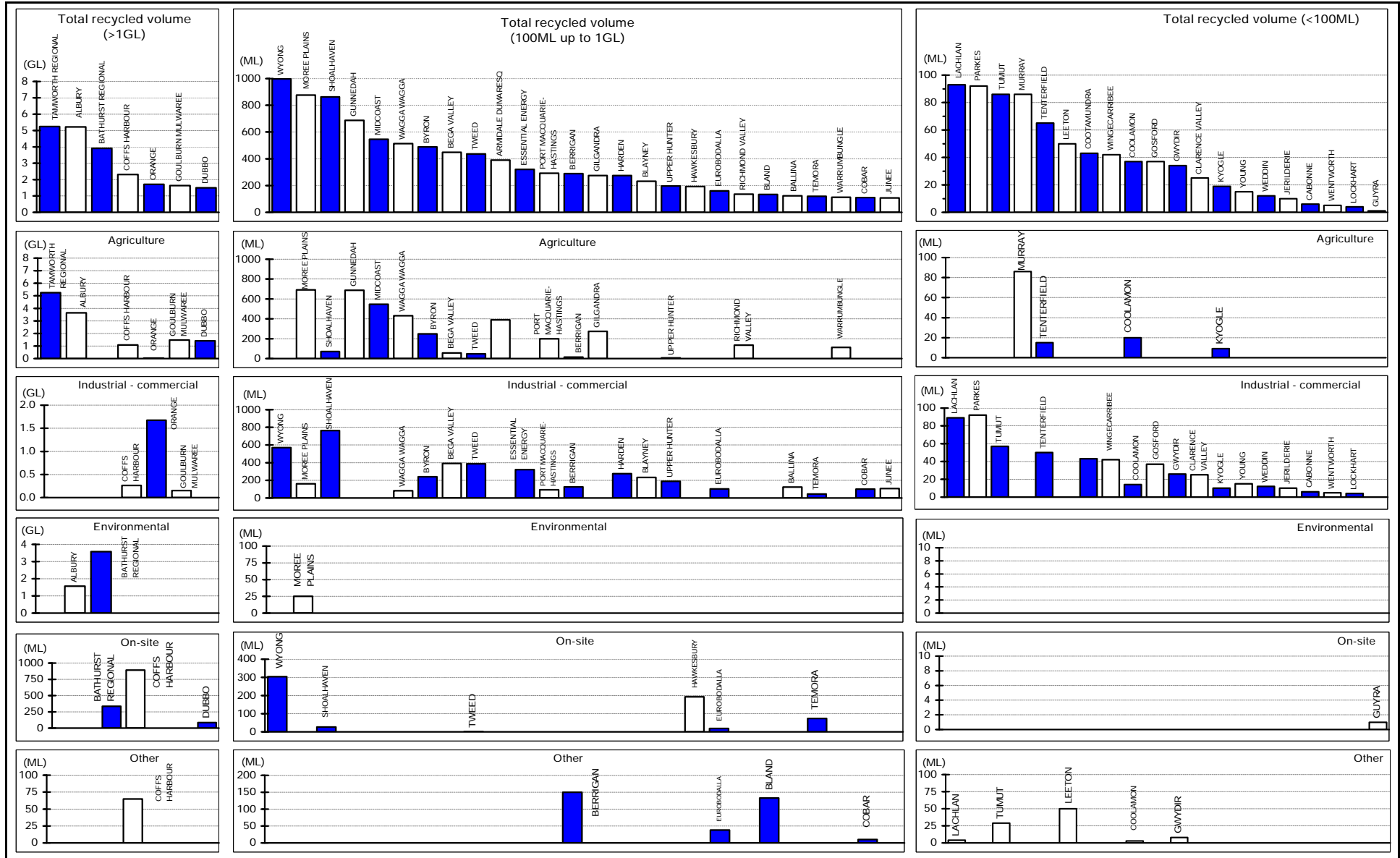


Parameter:  $\frac{\text{Total No. of Sewage Overflows (Q63)} \times 100}{\text{Length of Reticulation/Gravity Mains (Q7)} + \text{Length of Rising Mains (Q8)}}$

Notes:

1. This figure shows ranked values of the 2010-11 sewer overflows to the environment for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewer overflows to the environment for the 27 LWUs shown ranges from nil to 214 overflows per 100 km of sewer mains. Results for the previous 5 years are also shown.
2. The Statewide median sewer overflows to the environment is 14 per 100 km of sewer mains.
3. 35% of reporting LWUs reported no sewer overflows.
4. For general notes see page 30.

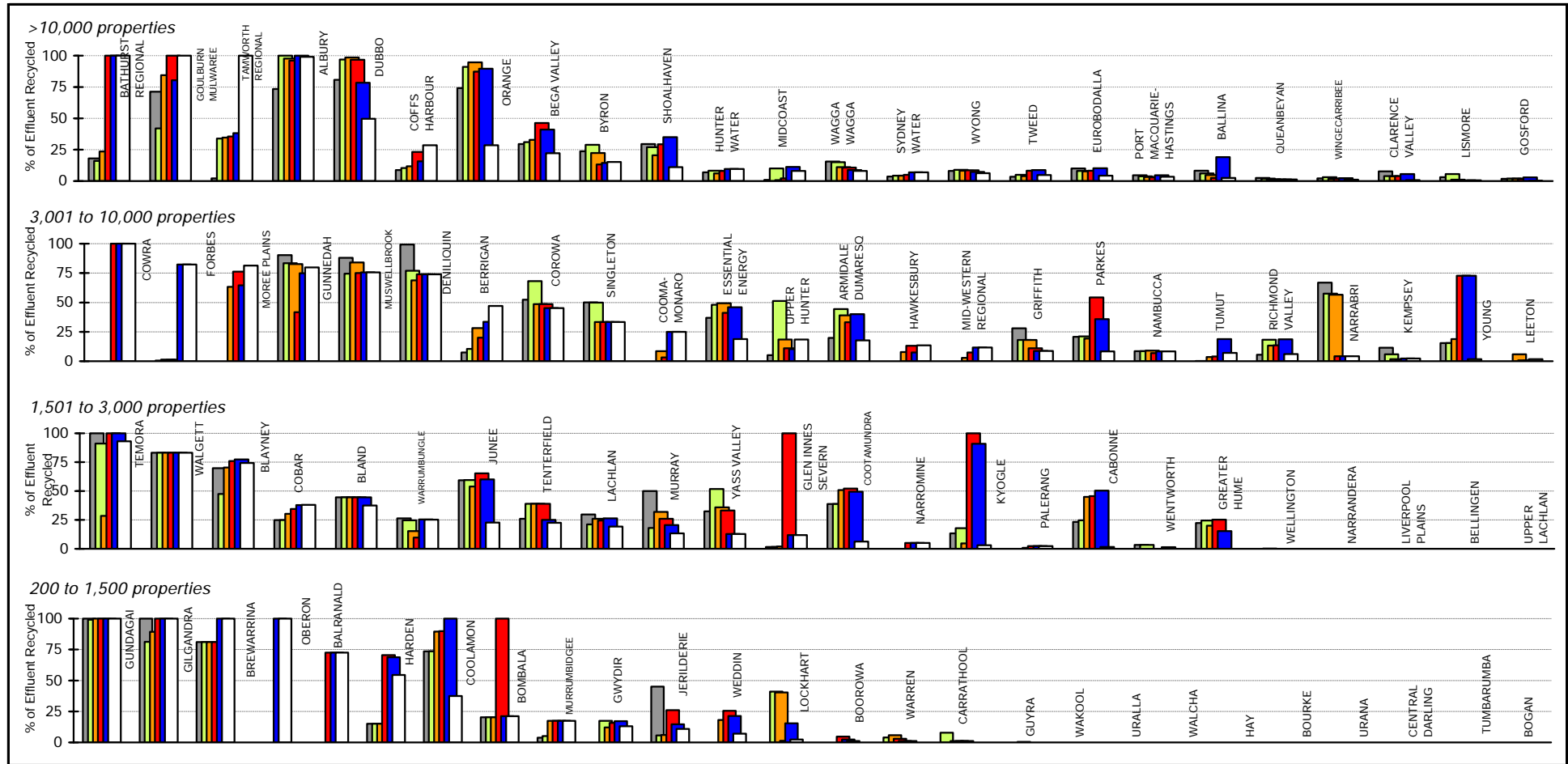
Figure 54: Recycled water – sewerage



Notes:

1. The total volume of recycled water for non-metropolitan NSW was 37,000 ML, which was 20% of the total volume of sewage collected. Re-use was carried out by 81% of LWUs. 25% of LWUs recycled over 50% of their effluent.
2. Refer also to page 9 of the 2010-11 NSW Water Supply and Sewerage Performance Monitoring Report.
3. For general notes see page 30.

Figure 55: Recycled water (% of effluent recycled) – sewerage



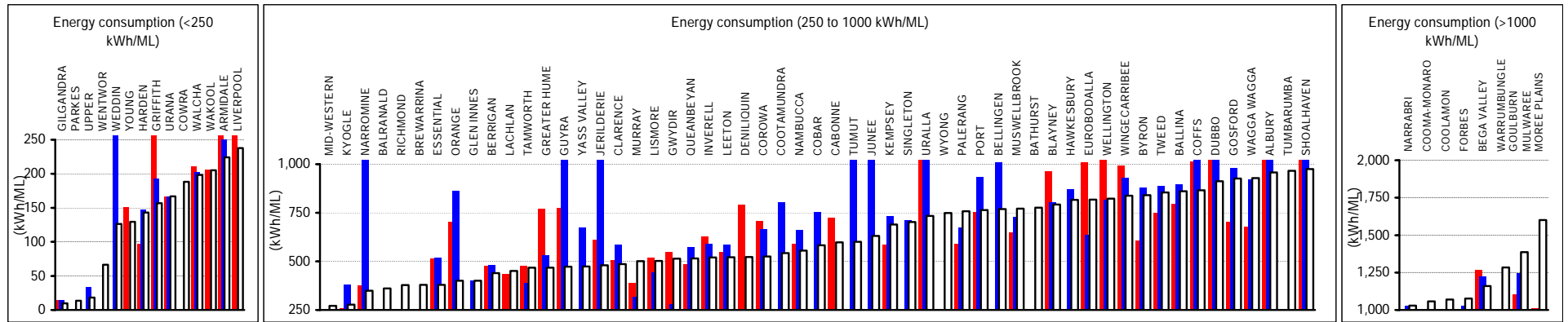
Parameter:  $\frac{\text{Total Volume Recycled (STW Q25)} \times 100}{\text{Volume of Sewage Receiving Secondary Treatment (STW Q18)}}$



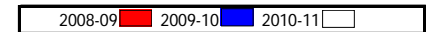
Notes:

1. This figure shows ranked values of the 2010-11 recycled water (% of sewage effluent recycled) for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 recycled water (% of sewage effluent recycled) for the 27 LWUs shown ranges from 100% to 0%. Results for the previous 5 years are also shown.
2. The 2009-10 result has been adopted for the 7 LWUs that did not report but historically report consistent effluent reuse (generally >25%). These LWUs are shown in **italics bold** in Table 15 on page 170.
3. The Statewide median reuse of recycled water is 8% of effluent recycled.
4. The total volume of recycled water for non-metropolitan NSW was 37,000 ML, which was 20% of the total volume of sewage collected. Re-use was carried out by 81% of LWUs. 25% of LWUs recycled over 50% of their effluent.
5. Refer also to page 9 of the 2010-11 NSW Water Supply and Sewerage Performance Monitoring Report.
6. For general notes see page 30.

Figure 56: Energy consumption per ML – sewerage



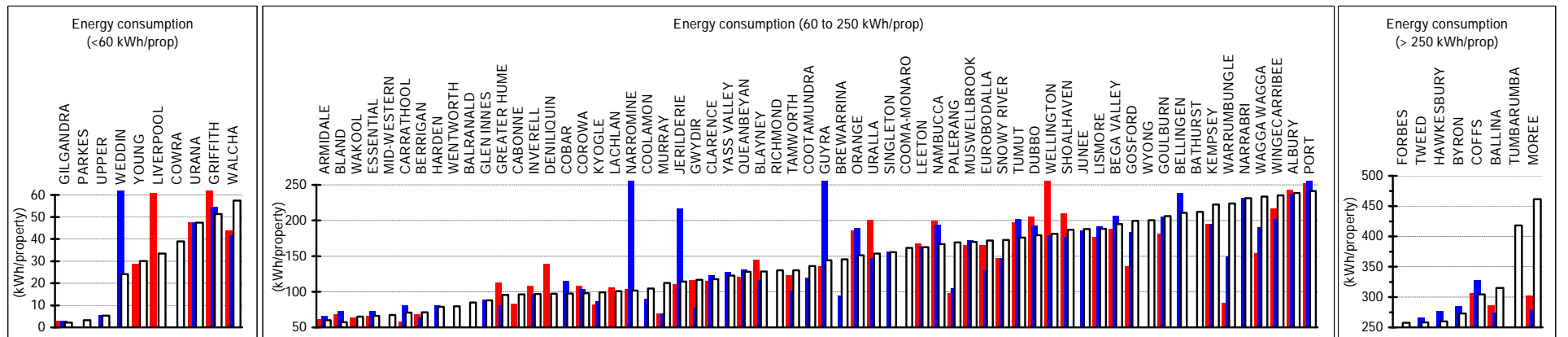
Parameter:  $\frac{\text{Total Energy Usage (S Q77)} \times 1000}{\text{Total Volume of Sewage Collected ((Q26))}$



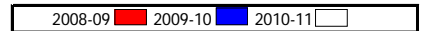
Notes:

1. This figure shows ranked values of the 2010-11 total energy consumption per ML. The energy consumption per ML for the 65 Local Water Utilities (LWUs) shown range from about 10 to 1600kWh per connected property.
2. For general notes see page 30.

Figure 57: Energy consumption per property – sewerage



Parameter:  $\frac{\text{Total Energy Usage (Q77)} \times 1000}{[\text{No. of Residential Assessments (Q15)} + \text{No. of Non-Residential Assessments (Q16)}] \times \text{No. of Connected Properties per Assessment}}$

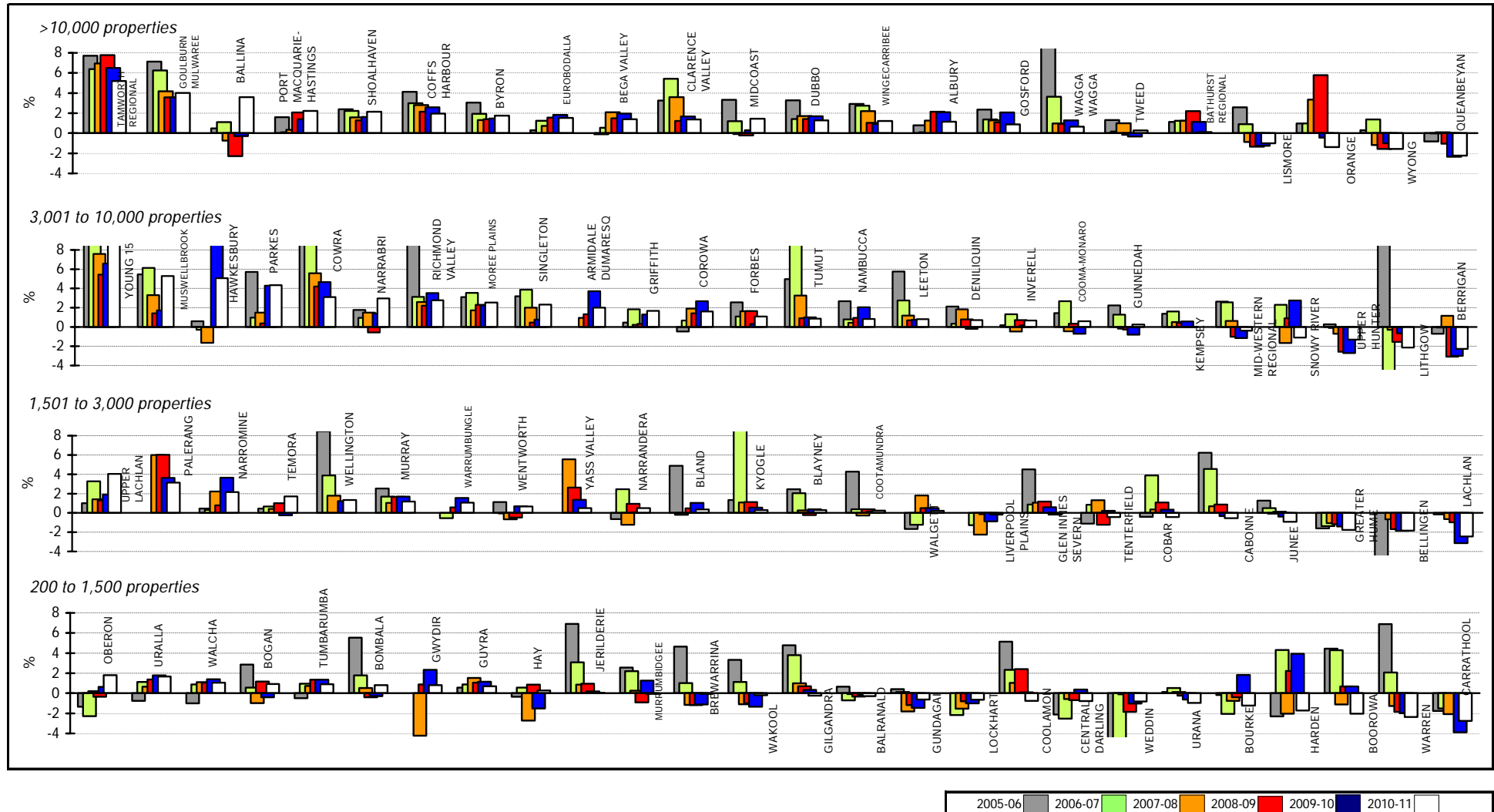


Notes:

1. This figure shows ranked values of the 2010-11 total energy consumption per connected property. The energy usage per connected property for the 58 Local Water Utilities (LWUs) shown range from about 2 to 460kWh per connected property.
2. For general notes see page 30.



Figure 59: Economic real rate of return – sewerage

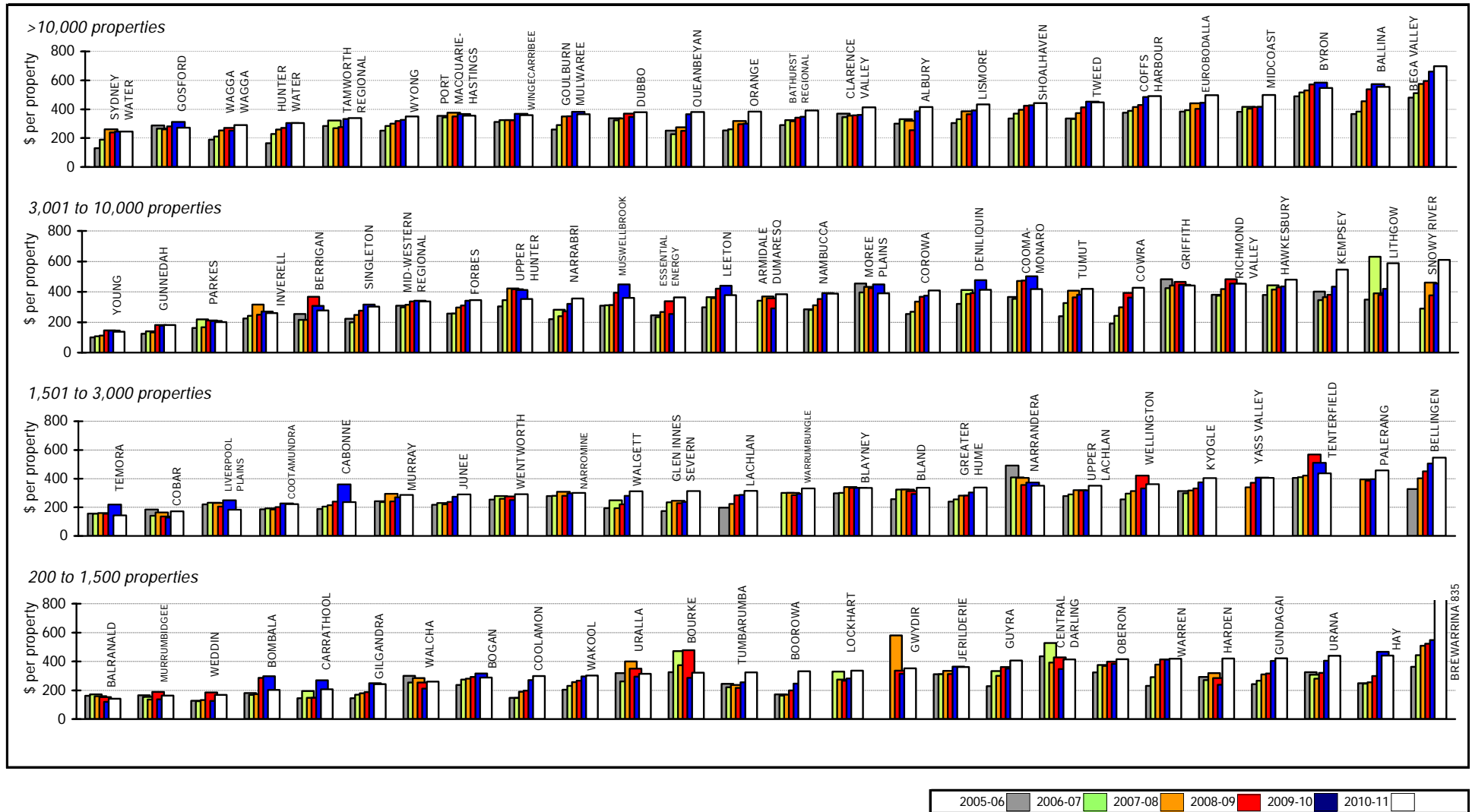


Parameter: 
$$\frac{[\text{Operating Result (S16)} + \text{Interest Expense (S4a)} - \text{Interest Income (S10)} - \text{Grants for Acquisition of Assets (S12a)}] \times 100}{\text{Written Down Replacement Cost of System Assets, Plant \& Equipment (S34)}}$$

Notes:

1. This figure shows ranked values of the 2010-11 sewerage economic real rate of return (ERRR) for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewerage real rate of return for the 27 LWUs shown ranges from 15% to -2.3%. The 1 LWU on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown.
2. The Statewide median sewerage ERRR is 0.9%.
3. The ERRR includes developer provided assets and capital contributions from other LWUs.
4. For general notes see page 30.

Figure 60: Operating cost (OMA) per property – sewerage



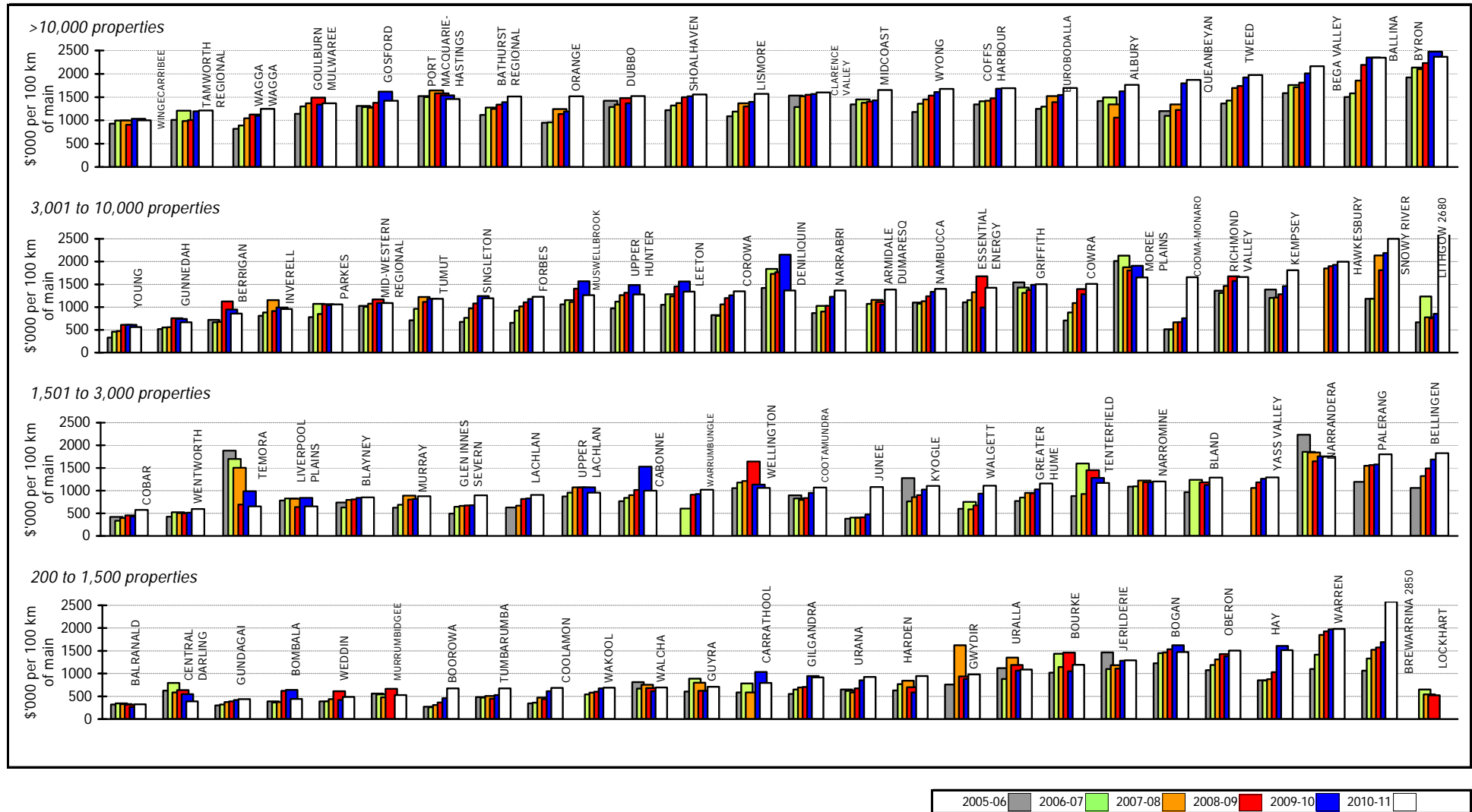
Parameter:  $\frac{\text{Management Expenses (S1)} + \text{Total Operations Expenses (S2)} - \text{Purchase of Water} + \text{Bulk Supplier's OMA}}{[\text{No. of residential assessments (Q15)} + \text{No. of non-residential assessments (Q16)}] \times \text{No. of connected properties per assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 water supply operating cost (OMA - operation, maintenance and administration) per property for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the operating costs for the 27 LWUs shown ranges from \$138 to \$610 per connected property. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median operating cost per connected property is \$380.
3. For general notes see page 30.



Figure 61: Operating cost (OMA) per 100 km of main – sewerage

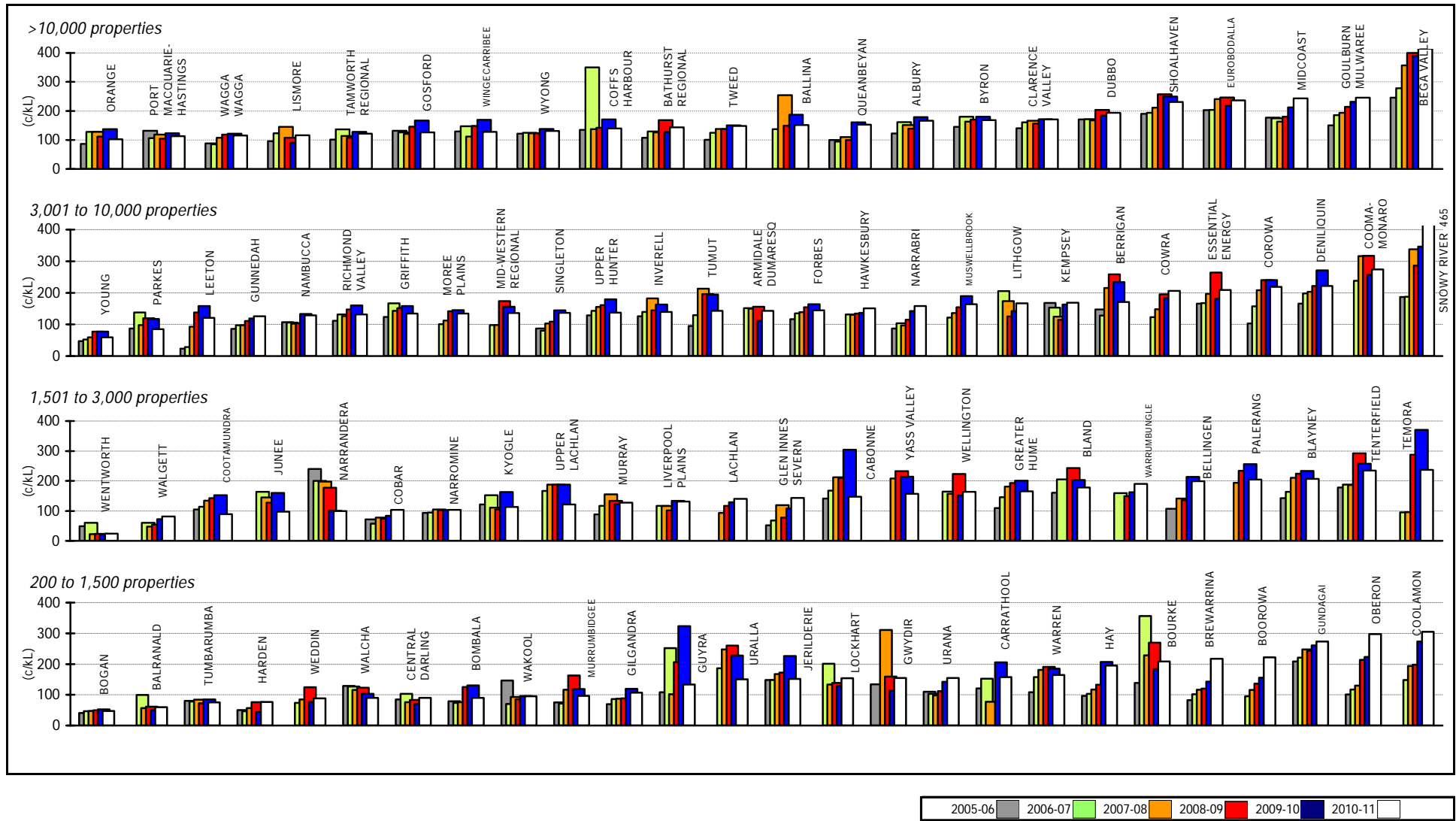


Parameter:  $\frac{\text{Management Expenses (S1)} + \text{Total Operations and Maintenance Expenses (S2)}}{[\text{Length of Reticulation Mains (Q7)} + \text{Length of Rising Mains (Q8)}] \times 10}$

Notes:

1. This figure shows ranked values of the 2010-11 sewerage operating cost (OMA - operation, maintenance and administration) per 100 km of main for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the sewerage operating costs for the 27 LWUs shown ranges from \$0.56M to \$2.68M per 100 km of sewer main. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median operating cost is \$1.52M per 100 km of sewer main.
3. For general notes see page 30.

Figure 62: Operating cost (OMA) per kL – sewerage

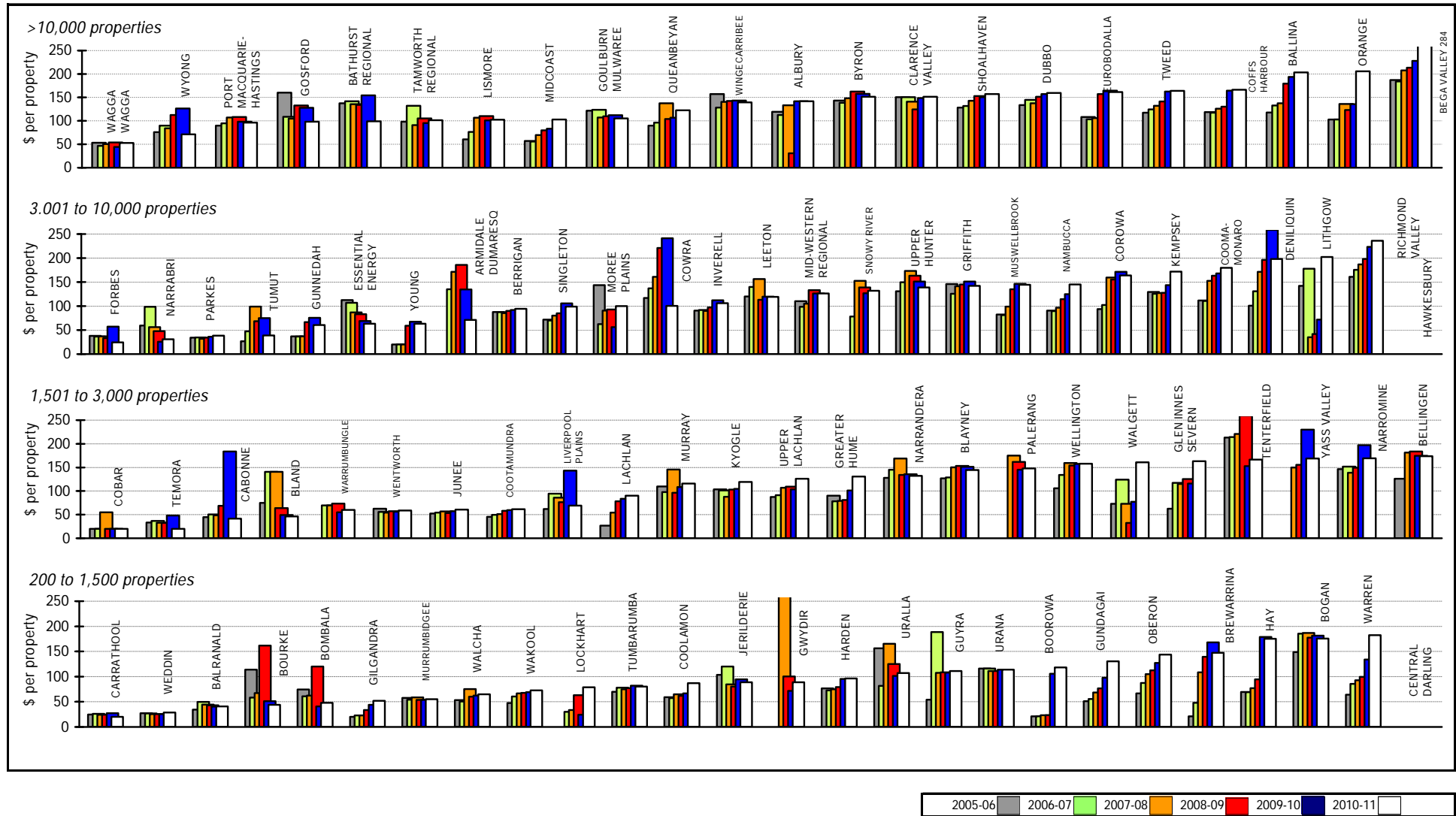


Parameter:  $\frac{\text{Management Expenses (S1)} + \text{Total Operations and Maintenance Expenses (S2)}}{\text{Volume of Sewerage Receiving Secondary Treatment (Q26)} \times 10}$

Notes:

1. This figure shows ranked values of the 2010-11 sewerage operating cost (OMA - operation, maintenance and administration) per 100 km of main for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the sewerage operating costs for the 27 LWUs shown ranges from 59c/kL to 464c/kL. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median operating cost is 140c/kL.
3. For general notes see page 30.

Figure 63: Management cost per property – sewerage

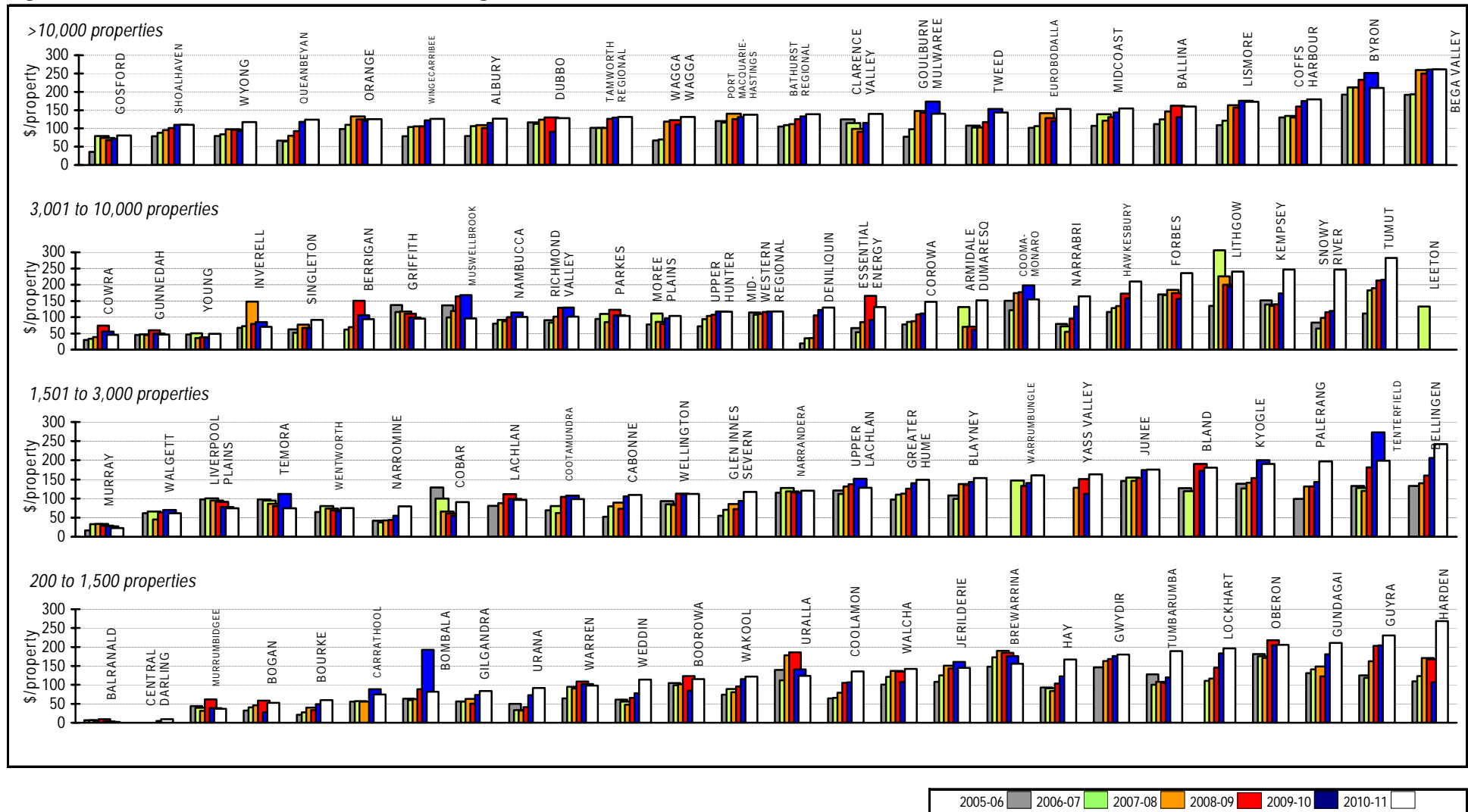


Parameter: Administration cost (S1a) + engineering cost (S1b)  
 [No. of residential assessments (Q15) + No. of non-residential assessments (Q16) x No. of connected properties per assessment

Notes:

1. This figure shows ranked values of the 2010-11 water supply management cost per property for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 management costs for the 27 LWUs shown ranges from \$24 to \$236. The 1 LWU on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median management cost is \$103 per connected property.
3. For general notes see page 30.

Figure 64: Treatment cost – sewerage



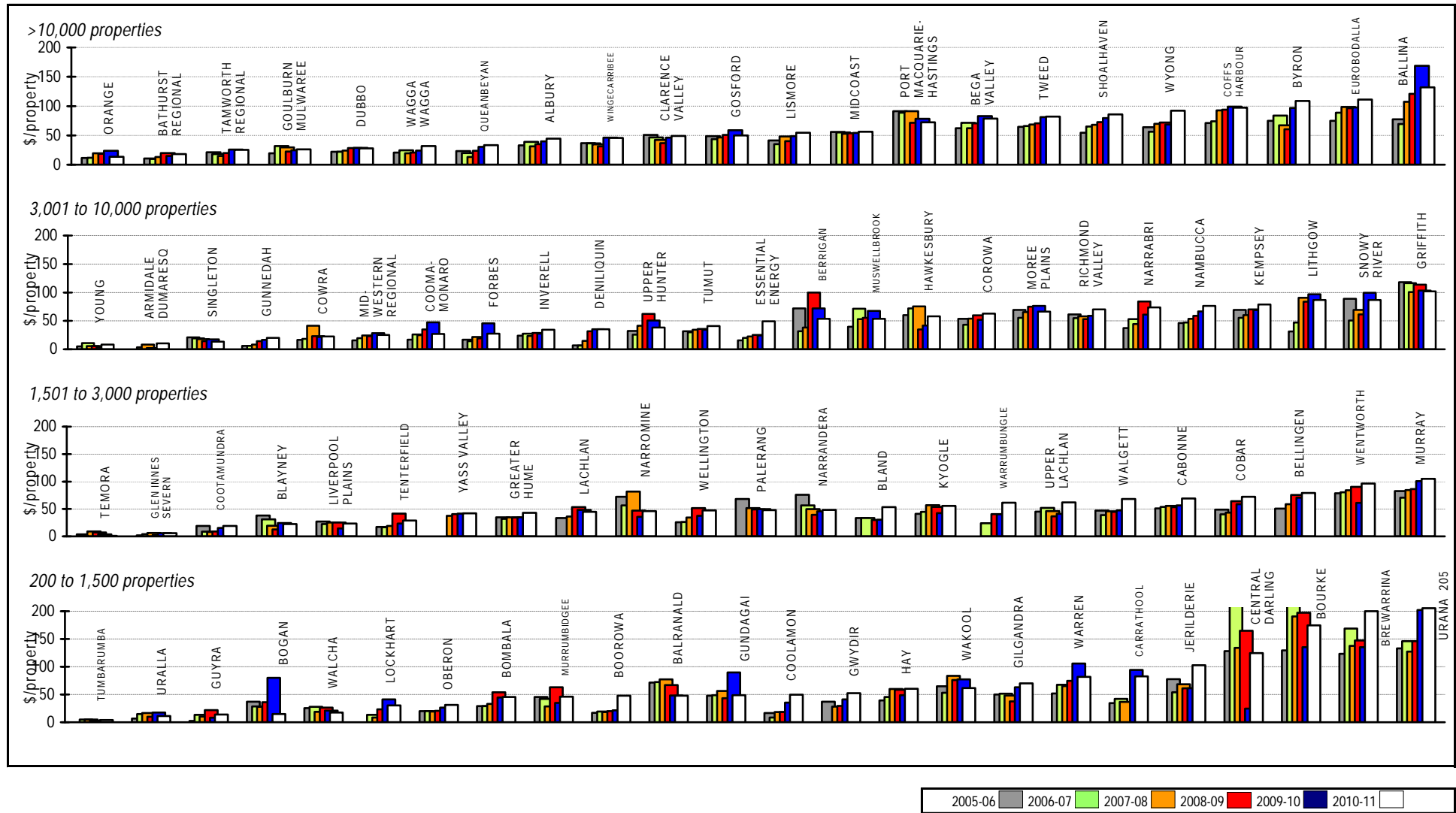
Parameter: Treatment Operation Expenses (S2f) + Treatment Chemical Cost (S2g) + Energy Cost (S2h) + Treatment Maintenance Expenses (S2k)

[No. of residential assessments (Q15) + No. of non-residential assessments (Q16) x No. of connected properties per assessment

Notes:

1. This figure shows ranked values of the 2010-11 sewerage treatment cost for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewerage treatment cost for the 27 LWUs shown ranges from \$50 to \$283 per connected property. The 1 LWU on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median sewerage treatment cost is \$126 per connected property.
3. For general notes see page 30.

Figure 65: Pumping cost – sewerage

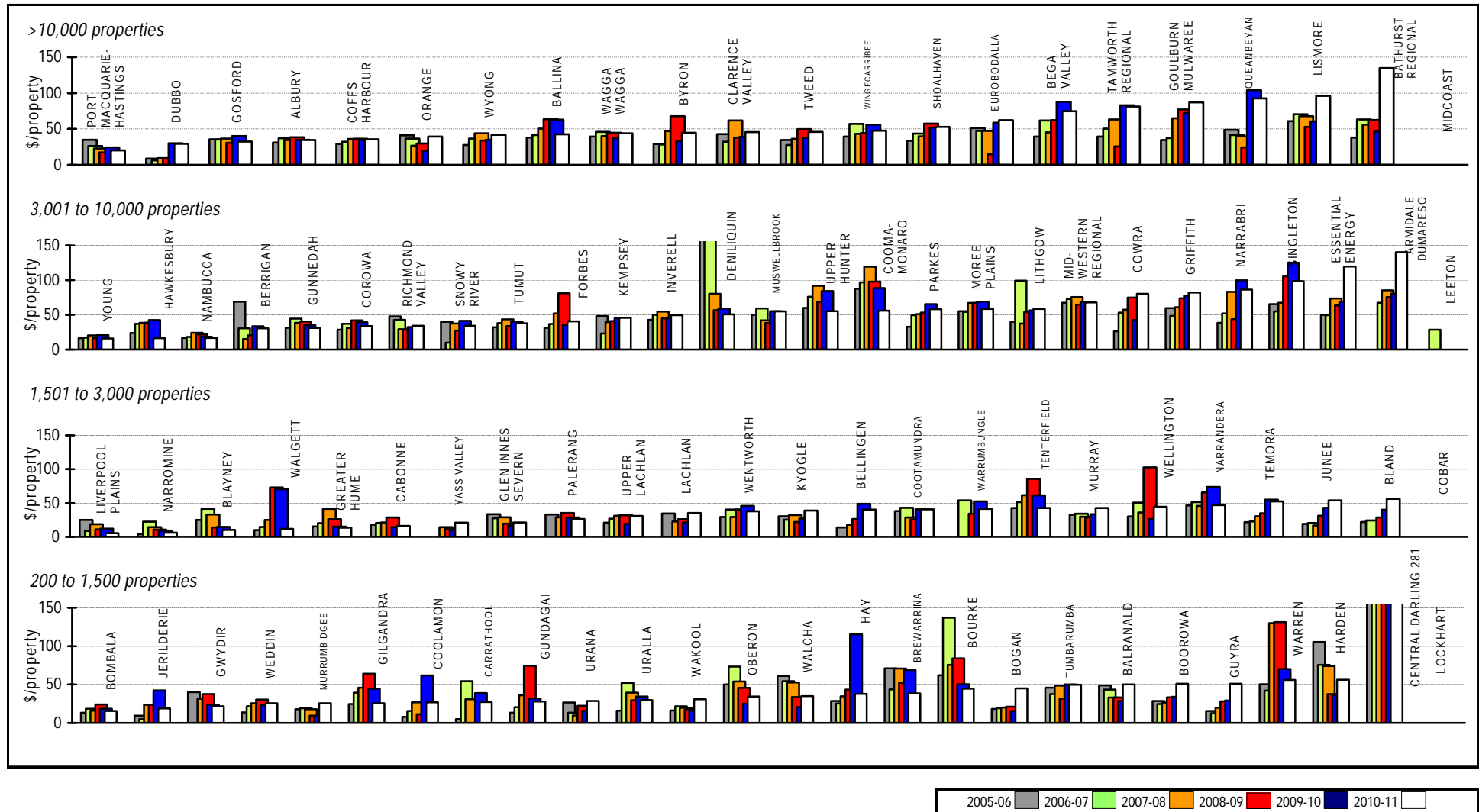


Parameter: Pumping station operation expenses (S2c) + energy cost (S2d) + treatment cost (S2e)  
 [No. of residential assessments (Q15) + No. of non-residential assessments (Q16) x No. of connected properties per assessment]

Notes:

1. This figure shows ranked values of the 2010-11 sewerage pumping cost for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewerage pumping cost for the 27 LWUs shown ranges from \$8 to \$102 per connected property. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median pumping cost is \$50 per connected property.
3. For general notes see page 30.

Figure 66: Sewer main cost – sewerage



Parameter:  $\frac{\text{Serwer main operation cost (S2a)} + \text{sewer main maintenance cost (S2b)}}{[\text{No. of residential assessments (Q15)} + \text{No. of non-residential assessments (Q16)}] \times \text{No. of connected properties per assessment}}$

Notes:

1. This figure shows ranked values of the 2010-11 sewer main cost for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served - over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the 2010-11 sewer main cost for the 27 LWUs shown ranges from \$16 to \$140 per connected property. The 1 LWU on the right did not report this indicator for 2010-11. Results for the previous 5 years are also shown in Jan 2011\$.
2. The Statewide median sewer main cost is \$45 per connected property.
3. For general notes see page 30.

# 10. Tables

Table 1: NSW water supply performance indicators 2010-11

STATEWIDE PERCENTILES (% of properties) <sup>1,2</sup>			20%	Median (50%)	80%
NWVI No.	NSW No.	UTILITY CHARACTERISTICS			
C2	3	Residential connected properties (% of total)	95	91	88
	4	New Residential Dwellings Connected to Water Supply (%)	1.4	1.0	0.5
A3	5	Properties Served per km of Main	50	32	23
	6	Rainfall (% of median annual rainfall)	150	134	80
W11	7	Total Urban Water Supplied (at Master Meters - ML)	14,000	6,000	2,500
	8	Peak Week to Average Consumption (%)	130	140	190
	9	Renewals Expenditure (% of current replacement cost of system assets)	0.9	0.3	0.2
	10	Employees (employees per 1000 properties)	1.2	1.5	1.8
SOCIAL - Charges/Bills (2011/12)					
P1.3	12	Residential Water Usage Charge (c/kL)	214	180	130
P1.2	13	Residential Access Charge (\$/assessment)	100	140	220
P3	14	Typical Residential Bill (\$/assessment)	360	450	510
	15	Typical Developer Charge (\$/equivalent tenement)	8,400	5,000	2,900
F4	16	Residential Revenue from Usage Charges (% of residential revenue)	74	70	60
F5	17	Revenue per property - Water (\$)	477	657	725
SOCIAL - Health					
	18	Urban Population without Reticulated Water Supply (%)	0	0.8	2.4
	19	Physical Water Quality Compliance (%)	100	100	100
	19a	Chemical Water Quality Compliance (%)	100	100	100
	20	Microbiological (E. coli) Water Quality Compliance (%)	100	100	100
H3	20a	Percent Population with Microbiological Compliance	100	100	100
SOCIAL - Levels of Service					
C9	25	Water Quality Complaints (per 1000 properties)	0	4	8.5
C10	26	Water Service Complaints (per 1000 properties)	1	4	28
C17	27	Average Frequency of unplanned interruptions (per 1000 properties)	7	42	88
C15	28	Average Duration of Interruption (minutes)	100	125	220
A8	30	Number of Main Breaks (per 100 km of main)	5	9	18
	31	Drought Water Restrictions (% of time)	0	0	100
	32	Total Days Lost (%)	0.1	2.0	3.5
ENVIRONMENTAL					
W12	33	Average Annual Residential Supplied (kL/property)	142	159	220
	33a	Average Annual Residential Supplied COASTAL (kL/property)	140	150	160
	33b	Average Annual Residential Supplied INLAND (kL/property)	166	215	260
A10	34	Real Loss (leakage) (L/service connection/day)	45	60	90
	35	Energy Consumption (kWh/ML)	470	590	850
	36	Renewable Energy Consumption (% of Total Energy)	9	0	0
E12	36a	Net Greenhouse Gas Emissions - WS & Sge (net tonnes CO2 - equivalents/1000 pr)	230	360	480
ECONOMIC - Financial					
	42	Current Replacement Cost per Assessment - Water (\$)	16,390	13,000	11,100
F17	43	Economic Real Rate of Return - Water (%)	0.9	0.4	-0.5
F9	44	Return on Assets - Water (%)	1.1	0.0	-0.9
F22	45	Net Debt to Equity - Water (%)	20	1	-8
F23	46	Interest Cover - Water	>100	1	0
	47	Loan Payment - Water (\$/property)	180	61	0
F30	47a	Net Profit After Tax Ratio - WS & Sge (%)	17	1	-17
F24	47b	Net Profit After Tax - WS & Sge (\$)	841	300	125
ECONOMIC - Efficiency					
	48	Operating Cost (OMA) per 100 km of Main (\$'000)	810	1,240	1,960
F11	49	Operating Cost (OMA) per property (\$/property)	320	370	450
	50	Operating Cost (OMA) per kL (c/kL)	105	134	159
	51	Management Cost (\$/property)	105	129	170
	52	Treatment Cost (\$/property)	28	49	111
	53	Pumping Cost (\$/property)	14	31	53
	54	Energy Cost (\$/property)	6	17	33
	55	Water Main Cost (\$/property)	42	59	102
F14	56	Capital Expenditure - Water Supply (\$/property)	598	239	124

- Notes:
1. The above non-metropolitan NSW performance indicators are on a *percentage of connected properties* basis which is the most appropriate basis for judging Statewide performance by giving due weight to larger councils and reducing the effect of smaller LWUs.
  2. The Table on page 236 of Appendix C shows percentiles on a *percentage of LWUs* basis as this is the most appropriate basis for comparing the performance of one LWU with other LWUs.



## Table 2: NSW sewerage performance indicators 2010-11

### STATEWIDE PERCENTILES (% of properties)<sup>1,2</sup>

NWI No.	NSW No.	UTILITY CHARACTERISTICS	20%	Median (50%)	80%
	3	Residential connected properties (% of total)	90	93	95
	4	New Residential Dwellings Connected to Sewerage (%)	1.3	0.8	0.5
A6	5	Properties Served per km of Main	49	40	35
W18	6	Volume of Sewage Collected (ML)	14,900	5,300	1,700
	7	Renewals Expenditure (% of current replacement cost of system assets)	1.0	0.2	0.0
	8	Employees (per 1000 properties)	1.2	1.6	2
SOCIAL - Charges/Bills (2011/12)					
P4.1	11	Residential Access Charge (\$/assessment)	435	570	680
P6	12	Typical Residential Bill (\$/assessment)	435	570	690
	13	Typical Developer Charge (\$/equivalent tenement)	8,620	4,300	2,800
	14	Non-residential sewer usage charge (c/kL)	190	115	90
F6	15	Revenue per property - Sge (\$)	903	674	510
SOCIAL - Health					
	16	Urban Properties without Reticulated Sewerage Service (%)	0.8	3.4	9.1
E3	17	Percent of sewage treated to a tertiary level (%)	100	97	6
E4	18	Percent of sewage volume treated that was compliant (%)	100	99	83
SOCIAL - Levels of Service					
	21	Odour Complaints (per 1000 properties)	0.0	0.6	1.6
C11	22	Service Complaints (per 1000 properties)	2	12	29
C16	23a	Average Duration of Interruptions (min)	60	106	136
	25	Total Days Lost	0.0	1.9	3.2
ENVIRONMENTAL					
W19	26	Volume of Sewage Collected per property (kL)	320	255	210
W26	26a	Total recycled water supplied (ML)	1,500	450	80
W27	27	Effluent Reclaimed for Recycling (% of total effluent)	33	8	1
E8	28	Biosolids Reuse (%)	100	100	0
	30	Energy Consumption (kWh/ML)	490	800	930
	31	Renewable Energy Consumption (% of total energy consumption)	6	0	0
E12	32	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 properties)	230	360	480
	33	90 Percentile Licence Limits for Effluent Discharge: BOD 35 mg/L; SS 40 mg/L; Total N 25 mg/L; Total P 5 mg/L			
	34	Compliance with BOD in Licence (%)	100	100	100
	35	Compliance with SS in Licence (%)	100	100	98
A12	36	Sewerage Main Breaks and Chokes (per 100 km of main)	12	41	74
	37	Sewer Overflows to the Environment (per 100 km of main)	3	14	34
E4	38	Sewage treated that was compliant (%)	100	100	83
ECONOMIC - Financial					
	43	Revenue from Non-residential and Trade Waste Charges (% of total rates & charges)	25	17	13
	44	Revenue from Trade Waste Charges (% of total rates & charges)	4	2	0
[F10]	45	Current Replacement Cost per assessment (\$)	18,900	14,100	11,200
F18	46	Economic Real Rate of Return (%)	2.2	0.9	-0.4
	46a	Return on Assets (%)	1.7	0.8	-0.1
[F22]	47	Net Debt to Equity (%)	10	-1	-8
[F23]	48	Interest Cover	>100	5	0
	48a	Loan Payment (\$/property)	193	87	16
F24	48c	Net Profit After Tax WS & Sge (\$)	841	300	125
ECONOMIC - Efficiency					
	49	Operating Cost (OMA) per 100 km of Main (\$'000)	1,230	1,520	1,700
F12	50	Operating Cost (OMA) per property (\$/property)	300	380	440
	51	Operating Cost (OMA) per kL (c/kL)	126	140	208
	52	Management Cost (\$/property)	72	103	161
	53	Treatment Cost (\$/property)	91	126	152
	54	Pumping Cost (\$/property)	25	50	80
	55	Energy Cost (\$/property)	22	31	47
	56	Sewer Main Cost (\$/property)	35	45	55
F15	57	Capital Expenditure (\$/property)	578	252	74

Notes: 1. The above non-metropolitan NSW performance indicators are on a percentage of connected properties basis which is the most appropriate basis for judging Statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs.  
2. The Table on page 237 of Appendix C show percentiles on a *percentage of LWUs* basis as this is the most appropriate basis for comparing the performance of one LWU with other LWUs.



Table 3: 2010-11 best-practice management compliance

WATER UTILITY (sorted on connected properties)		WATER SUPPLY & SEWERAGE REVENUE (\$M)	WATER SUPPLY											SEWERAGE														
			COMPLIANCE WITH BPM REQUIREMENTS (see Note 1)											COMPLIANCE WITH BPM REQUIREMENTS (see Note 1)														
			(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3) Sound Water Conservation Plan implemented (Yes/No)	(4) Sound Drought Management Plan implemented (Yes/No)	(5) Complete performance Reporting by 15 September each year (Yes/No)	(6) Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall compliance with all 10 required Criteria (Note 2) (%)	Proposed Dividend from Surplus \$'000	(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3) Complete performance Reporting by 15 September each year (Yes/No)	(4) Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall compliance with all 9 required Criteria (Note 3) (%)	Proposed Dividend from Surplus \$'000				
Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Complying Residential Charges	(2c) Revenue from Residential Usage Charges >=75% (Note 8)	(2d) Complying Non-Residential Charges	(2e) DSP with Commercial Developer Charges							Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Complying Residential Charges	(2c) Complying Non-Residential Charges	(2d) Complying Trade Waste Fees & Charges	(2e) DSP with commercial developer charges	(2f) Liquid trade waste regulation policy and approvals implemented										
<b>LWUs with &gt;10,000 Properties</b>																												
1	Gosford	72.9	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	1,776
2	Wyang	70.1	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	89
3	Shoalhaven	56.4	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	1,086	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	1,234
4	Rous (Bulk Supplier) (NO SGE)	17.8	Yes*	Yes				Yes	Yes	Yes	Yes	Yes	Yes	Yes	100													
5	MidCoast (Unfiltered)	56.9	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
6	Tweed	40.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
7	Port Macquarie-Hastings (Unfiltered)	42.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	851	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
8	Riverina (Groundwater) (NO SGE)	13.3	Yes*	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90													
9	Wagga Wagga (NO WS)	14.6															Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
10	Coffs Harbour (Unfiltered)	44.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
11	Albury City	22.5	Yes*		Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80		Yes*	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
12	Fish River WS (Bulk Supplier, No Sge)	6.5	Yes*	Yes				Yes	Yes	Yes	Yes	Yes	Yes	Yes	71													
13	Tamworth Regional	35.8	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	560	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	506
14	Clarence Valley	23.9	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
15	Eurobodalla (Unfiltered)	28.7	Yes	Yes	Yes	Yes**	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	300	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	300
16	Wingecarribee	20.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
17	Queanbeyan (Reticulator)	18.0	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
18	Dubbo	23.0	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
19	Orange	18.5	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
20	Goulburn Mulwaree	16.9	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
21	Bathurst Regional	18.0	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
22	Lismore (Reticulator)	18.4	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	89	
23	Bega Valley (Unfiltered)	23.2	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
24	Ballina (Reticulator)	25.2	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
25	Kempsey (Groundwater)	16.1	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
26	Essential Energy	17.7	Yes	Yes	Yes		Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	100	
27	Byron (Reticulator)	19.3	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
28A	Goldenfields (Reticulator) (NO SGE)	7.6	Yes	Yes	Yes		Yes	Yes				Yes			60													
28B	Goldenfields (Bulk) (NO SGE)	3.3	Yes					Yes				Yes			43													
%		LWUs 'Yes' (>10,000 connected properties)																										
		96%	93%	89%	39%	86%	96%	93%	89%	100%	89%	100%	87%	Overall	100%	92%	100%	92%	100%	100%	100%	100%	100%	100%	100%	98%	Overall	
<b>LWUs with 3,001 - 10,000 Properties</b>																												
29	Armidale Dumaresq	11.6	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	89	
30	Griffith	13.1	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
30A	Hawkesbury (NO WS)	10.4	Yes*	Yes	Yes											Yes*	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes	78	
31	Lithgow	9.1	Yes	Yes	Yes	Yes*	Yes		Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	89	
32	Mid-Western Regional	7.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78	
33	Richmond Valley	11.8	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	
34	Nambucca (Groundwater)	6.6	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
35	Singleton	7.6	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
36	Parkes	8.3	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	
37	Inverell	5.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	67	
38	Moree Plains (Groundwater)	6.6	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	193
39	Cowra	7.9	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	89	
40	Central Tablelands (NO SGE)	3.5	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100														
41	Muswellbrook	10.3	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
42	Corowa	6.4	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
43	Tumut	5.2	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	
44	Gunnedah (Groundwater)	4.4	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	
45	Upper Hunter	5.5	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
46	Narrabri (Groundwater)	4.7	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	80		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	78	
47	Bellingen (Unfiltered)	4.1	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
48	Leeton	4.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	

Table 3: 2010-11 best-practice management compliance (continued)

WATER UTILITY (sorted on connected properties)	WATER SUPPLY & SEWERAGE REVENUE (\$M)	WATER SUPPLY											SEWERAGE											
		COMPLIANCE WITH BPM REQUIREMENTS (see Note 1)											COMPLIANCE WITH BPM REQUIREMENTS (see Note 1)											
		(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3) Sound Water Conservation Plan implemented (Yes/No)	(4) Sound Drought Management Plan implemented (Yes/No)	(5) Complete performance Reporting by 15 September each year (Yes/No)	(6) Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall compliance with all 10 required Criteria (Note 2) (%)	Proposed Dividend from Surplus \$'000	(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3) Complete performance Reporting by 15 September each year (Yes/No)	(4) Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall compliance with all 9 required Criteria (Note 3) (%)	Proposed Dividend from Surplus \$'000	
Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Complying Residential Charges	(2c) Revenue from Residential Usage Charges >=75% (Note 8)	(2d) Complying Non-Residential Charges	(2e) DSP with Commercial Developer Charges							Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Complying Residential Charges	(2c) Complying Non-Residential Charges	(2d) Complying Trade Waste Fees & Charges	(2e) DSP with commercial developer charges	(2f) Liquid trade waste regulation policy and approvals implemented						
49 Young (Reticulator)	4.3	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
50 Cooma-Monaro	5.7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
51 Forbes	3.7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
52 Snowy River (Unfiltered)	5.1	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
53 Berrigan (Dual Supply)	3.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	44	
54 Deniliquin	4.2	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
55 Warrumbungle	3.5	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78	
56 Yass Valley	3.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
% of LWUs 'Yes' (3,001 - 10,000 connected properties)		100%	100%	100%	39%	100%	96%	100%	100%	100%	89%	93%	Overall	96%	96%	100%	74%	85%	93%	89%	100%	85%	91%	Overall
<i>LWUs with 1,501 - 3,000 Properties</i>																								
57 Wellington	3.8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
58 Cootamundra (Reticulator)	2.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
59 Lachlan	4.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	89	
60 Glen Innes Severn	2.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
61 Liverpool Plains	2.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	89	
62 Narramine (Groundwater)	2.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	
63 Narrandera (Groundwater)	2.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	70	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	44	
65 Murray (Dual Supply)	2.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
67 Cobar	1.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78	
66 Cobar WB	1.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78	
68 Tenterfield	2.9	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
69 Temora (NO WS)	0.6												Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	56	
70 Kyogle	2.1	Yes*	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	100	
71 Palerang	3.9	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	80	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
72 Bland (NO WS)	1.0												Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	56	
73 Upper Lachlan	2.7	Yes*	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
74 Wentworth (Dual Supply)	2.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78	
75 Coonamble (Groundwater)	1.0	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	70	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	56	
76 Harden (Reticulator)	2.0	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	78	
79 Walgett (Dual Supply)	2.0	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	50	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	56	
80 Greater Hume	1.8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89	
% of LWUs 'Yes' (1,501 - 3,000 connected properties)		84%	95%	89%	79%	89%	79%	84%	89%	89%	68%	85%	Overall	94%	100%	100%	83%	72%	72%	72%	89%	61%	83%	Overall
<i>LWUs with 200 - 1,500 Properties</i>																								
77 Junee (NO WS)	0.6												Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	56
78 Blayney (NO WS)	1.1												Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	89
81 Gwydir	4.7	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	80	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	89
83 Oberon (Reticulator)	1.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	89
84 Gilgandra (Groundwater)	1.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes	89
85 Uralla	1.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78
86 Hay (Dual Supply)	1.7	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	80	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78
87 Bourke (Dual Supply)	2.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	78
88 Wakool (Dual Supply)	2.0	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	56
89 Bogan	1.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	100
90 Guyra	1.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	70	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes	67
91 Cabonne	2.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
92 Carrathool (Groundwater)	1.0	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	70	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	33
93 Tumbarumba	1.2	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	90	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes	100
94 Gundagai	0.9	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	90	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	67
95 Weddin (NO WS)	0.3												Yes*	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes	78
96 Warren (Dual Supply)	1.0	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	78
97 Bombala	0.9	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	60	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	67
98 Walcha	0.8	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	70	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes	89
99 Coolamon (NO WS)	0.4												Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	56

Table 3: 2010-11 best-practice management compliance (continued)

WATER UTILITY (sorted on connected properties)	WATER SUPPLY & SEWERAGE REVENUE (\$M)	WATER SUPPLY											SEWERAGE											
		COMPLIANCE WITH BPM REQUIREMENTS (see Note 1)											COMPLIANCE WITH BPM REQUIREMENTS (see Note 1)											
		(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3) Sound Water Conservation Plan implemented (Yes/No)	(4) Sound Drought Management Plan implemented (Yes/No)	(5) Complete performance Reporting by 15 September each year (Yes/No)	(6) Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall compliance with all 10 required Criteria (Note 2) (%)	Proposed Dividend from Surplus \$'000	(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3) Complete performance Reporting by 15 September each year (Yes/No)	(4) Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall compliance with all 9 required Criteria (Note 3) (%)	Proposed Dividend from Surplus \$'000	
Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Complying Residential Charges	(2c) Revenue from Residential Usage Charges >=75% (Note 8)	(2d) Complying Non-Residential Charges	(2e) DSP with Commercial Developer Charges							Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Complying Residential Charges	(2c) Complying Non-Residential Charges	(2d) Complying Trade Waste Fees & Charges	(2e) DSP with commercial developer charges	(2f) Liquid trade waste regulation policy and approvals implemented						
100 Balranald (Dual Supply)	0.9	Yes*	Yes	Yes	Yes	Yes		Yes	Yes	Yes		80	Yes*	Yes	Yes	Yes		Yes	Yes			67		
101 Murrumbidgee (Groundwater)	0.5	Yes*	Yes	Yes	Yes*	Yes				Yes		60	Yes*	Yes	Yes	Yes		Yes*	Yes			33		
102 Lockhart (NO WS)	0.4												Yes	Yes	Yes	Yes			Yes	Yes		78		
103 Central Darling (Dual Supply)	0.8		Yes	Yes	Yes	Yes	Yes <sup>e</sup>	Yes	Yes	Yes		80		Yes			Yes <sup>e</sup>		Yes	Yes		33		
104 Boorowa	0.9		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	80	0	Yes	Yes		Yes <sup>e</sup>	Yes*	Yes	Yes	Yes	67		
105 Brewarrina	1.4	Yes					Yes	Yes	Yes	Yes	Yes	60	Yes				Yes <sup>e</sup>	Yes	Yes	Yes	Yes	56		
106 Jerilderie (Dual Supply)	0.6	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes		Yes		80	Yes*	Yes		Yes						33		
107 Urana (NO WS)	0.1												Yes*	Yes	Yes		Yes		Yes	Yes		67		
% of LWUs 'Yes' (200 - 1,500 connected properties)		73%	91%	95%	77%	86%	73%	82%	86%	100%	55%	82%	Overall	79%	89%	89%	54%	43%	68%	61%	96%	57%	71%	Overall
TOTAL 'YES' for large LWUs (>\$10M Revenue) <sup>b</sup>		30	30	29	13	28	30	30	29	31	29	13		27	25	27	25	27	27	27	27	27	23	
% of Large LWUs (31 WS LWUs and 28 SGE LWUs)		97%	97%	94%	42%	90%	97%	97%	94%	100%	94%	42%		96%	89%	96%	89%	96%	96%	96%	96%	96%	82%	
TOTAL 'YES' for remainder of LWUs (<\$10M Revenue) <sup>b</sup>		56	62	62	41	60	53	58	60	63	46	18		63	68	69	49	46	53	53	69	50	22	
% of Small LWUs (65 WS LWUs and 71 SGE LWUs)		86%	95%	95%	63%	92%	82%	89%	92%	97%	71%	28%		89%	96%	97%	69%	65%	75%	75%	97%	70%	31%	
TOTAL 'YES' for all LWUs		86	92	91	54	88	83	88	89	94	75	31		90	93	96	74	73	80	80	96	77	45	
% all LWUs		90%	96%	98%	58%	95%	86%	92%	93%	98%	78%	32%		91%	94%	97%	75%	74%	81%	81%	97%	78%	45%	

Overall Compliance for all WS Businesses 86%

Overall Compliance for all SGE Businesses 85%

Notes:

- Best Practice Management requirements are set out in "Best Practice Management of Water Supply and Sewerage Guidelines August 2007" (BPMG).
- There are 10 requirements which must be satisfied for an LWU to achieve compliance for water supply. These are (1), (2a), (2b), (2c), (2d), (2e), (3), (4), (5) and (6) shown in the table above for water supply.
- There are 9 requirements which must be satisfied for an LWU to achieve compliance for sewerage. These are (1), (2a), (2b), (2c), (2d), (2e), (2f), (3) and (4) shown in the table above for sewerage.
- Compliances shown in the table above are from Notes 2 or 3 of the Special Purpose Financial Reports reported by each LWU in their Annual Financial Statements, supplemented by other data provided to the NSW Office of Water by the LWU. Complying documents (including strategic business plans and IWCM evaluations and strategies) provided by LWUs to the NSW Office of Water by February 2012 are included in the results reported.
- As shown in Table 8C of the 2010-11 NSW Water Supply and Sewerage Benchmarking Report, 57 LWUs have completed an IWCM Evaluation, 30 of which have also completed an IWCM Strategy. These IWCM Evaluations and Strategies have been reviewed by the NSW Office of Water and found to be soundly based. Similarly, the strategic business plans and trade waste policies shown as Yes above have been found to be soundly based. However, the water conservation and drought management plans have only been briefly examined to confirm that they address the required issues.
- The revenue for LWUs with water supply only or sewerage only is shown left justified above. For these LWUs, the relevant revenue to be classified as a "large LWU" is \$5M.
- Where an LWU has not yet reported its revenue for 2010-11, the revenue reported for 2009-10 is shown instead. This is shown in italics bold.
- For criterion (2c) utilities with over 4,000 connected properties which obtained 70% to 74% of residential revenue from usage charges are shown as Yes\*. Yes\*\* is shown for Eurobodalla which obtained 65% of its residential revenue from usage charges as the Minister has approved replacement of the 75% requirement with 70% (due to the high incidence of holiday houses, which are unoccupied for most of the year). Utilities with 4,000 or fewer connected properties are only required to achieve 50% for criterion (2c). Such utilities which have obtained 45% to 49% residential revenue from water usage charges are shown as Yes\*. Bulk water suppliers are not required to comply with criteria (2b), (2c) or (2d) which refer to residential water tariffs.
- Yes\* for criterion (1) indicates that the LWU's strategic business plan and financial plan need to be updated.
- Yes\* for criterion (2e) for water supply or for sewerage indicates that the LWU has commercial developer charges in place but is yet to complete its complying Development Servicing Plan (DSP). Yes<sup>e</sup> for these criteria indicates the LWU is exempt from the requirement to prepare a DSP due to low growth (under 5 lots/a).
- Yes\* for criterion (2f) for sewerage indicates that the LWU has a year 2006 or earlier trade waste policy, which needs to be updated.
- As shown above, the overall levels of compliance with the outcomes of the Best-Practice Management Criteria for water supply (for all 10 criteria) were: 87% for LWUs with >10,000 properties; 93% for LWUs with 3,001 - 10,000 properties; 85% for LWUs with 1,501 - 3,000 properties and 82% for LWUs with 200 - 1,500 properties respectively. The overall level of compliance for water supply for all LWUs was 86%.
- As shown above, the overall levels of compliance with the outcomes of the Best-Practice Management Criteria for sewerage (for all 9 criteria) were: 98% for LWUs with >10,000 properties; 91% for LWUs with 3,001 - 10,000 properties; 83% for LWUs with 1,501 - 3,000 properties and 71% for LWUs with 200 - 1,500 properties respectively. The overall level of compliance for sewerage for all LWUs was 85%.
- The overall compliance for water supply and sewerage was 86%.

**Table 4: Trends in Water Supply statewide performance indicators 1991 to 2010-11**

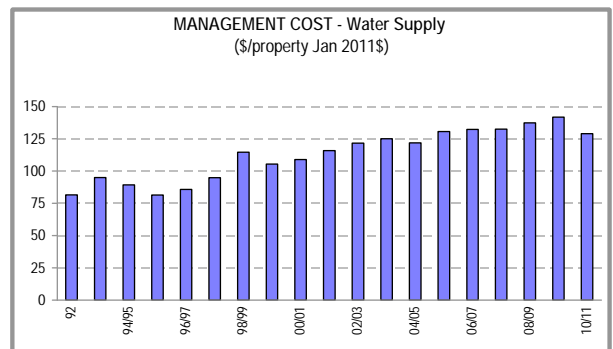
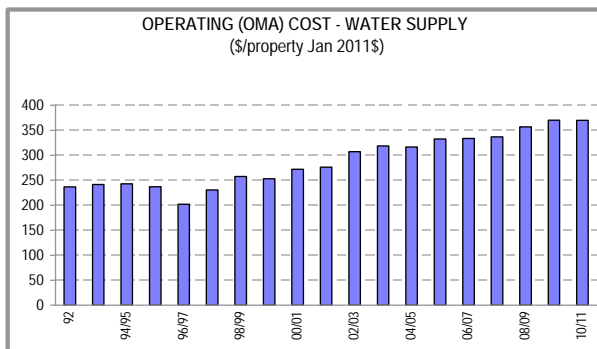
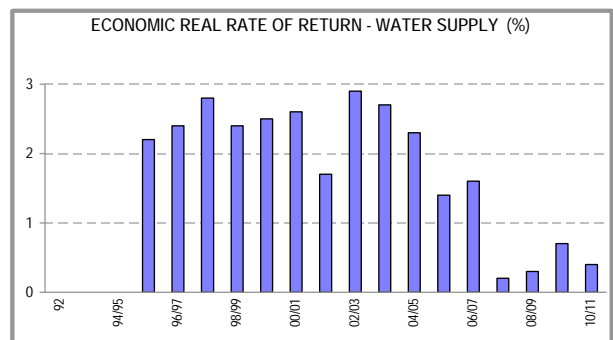
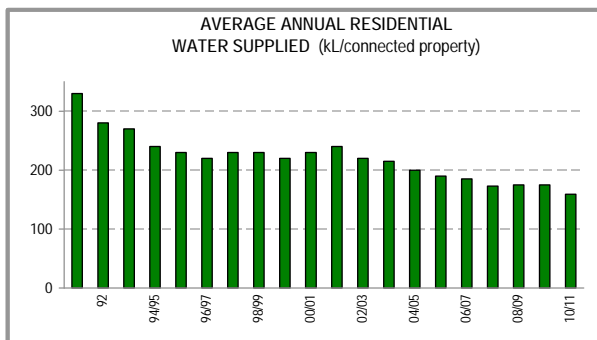
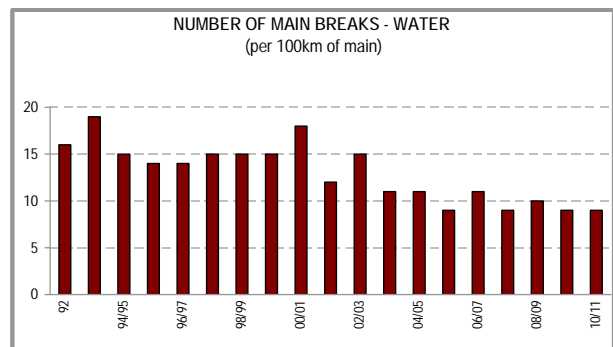
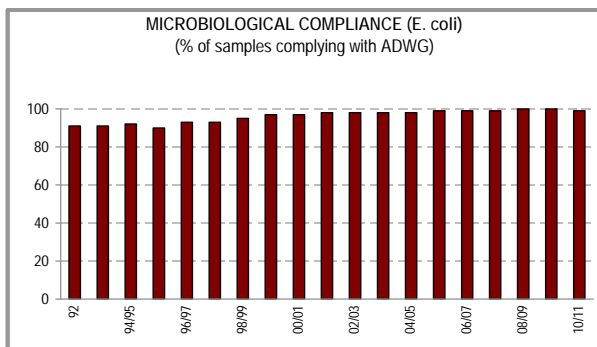
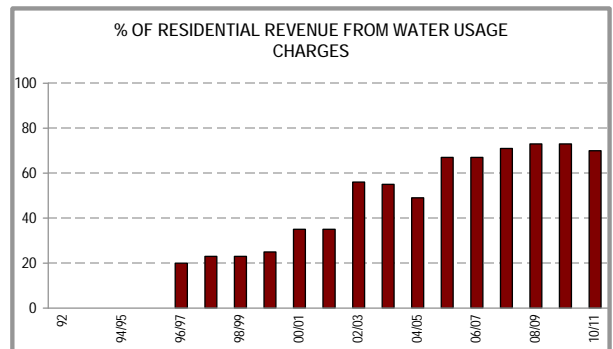
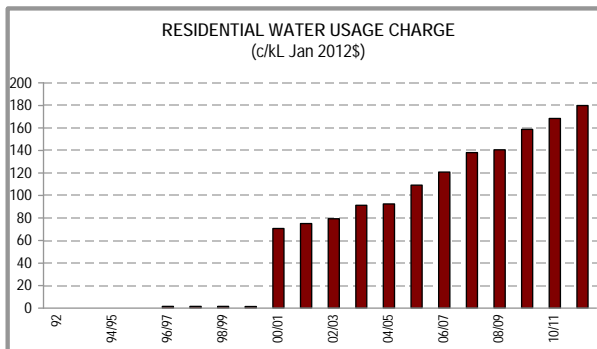
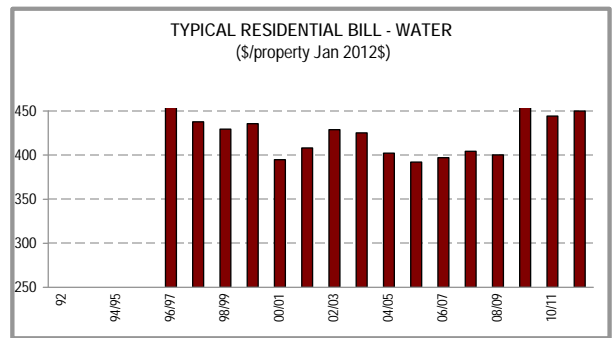
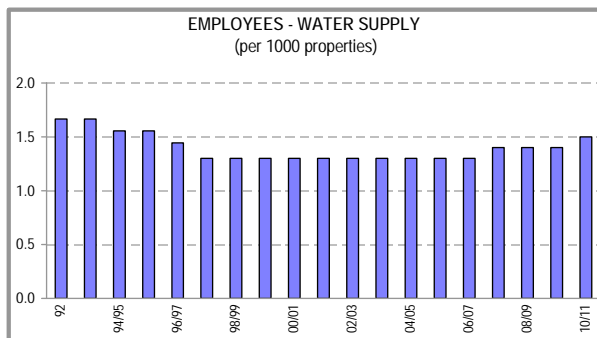
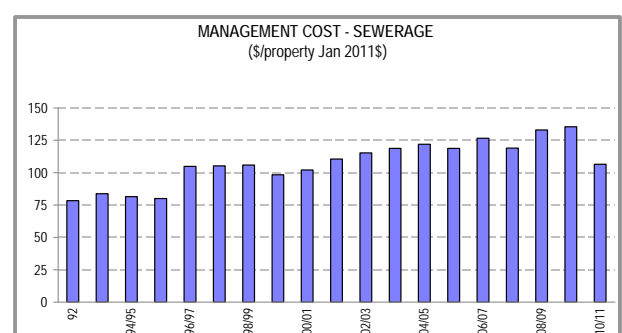
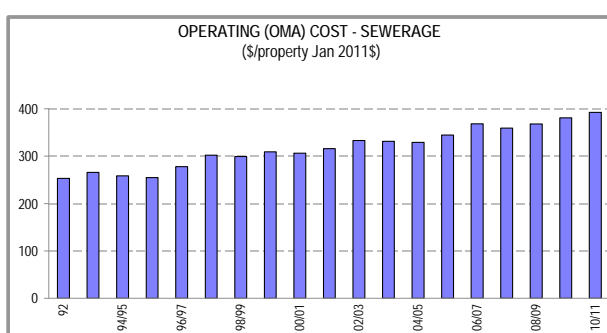
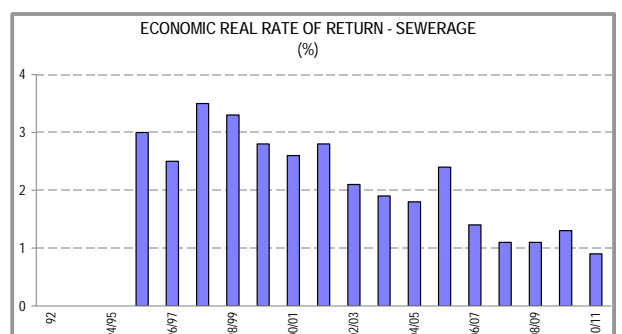
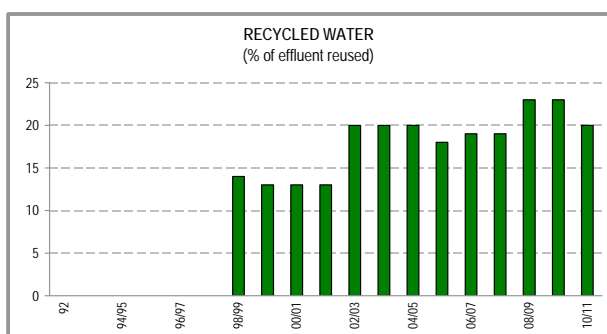
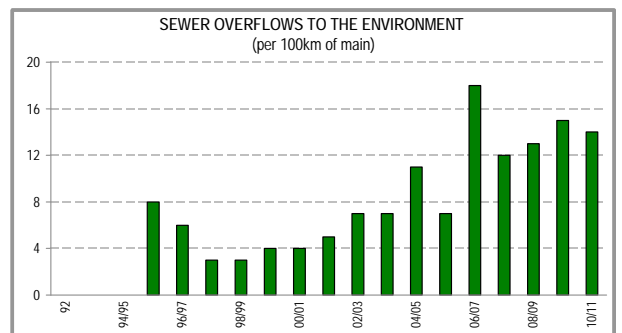
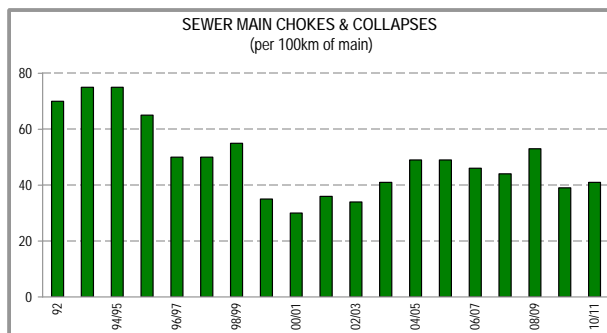
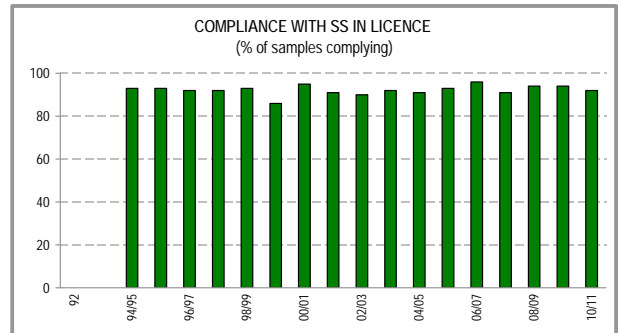
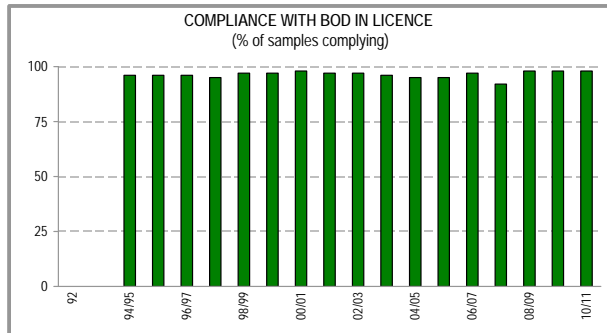
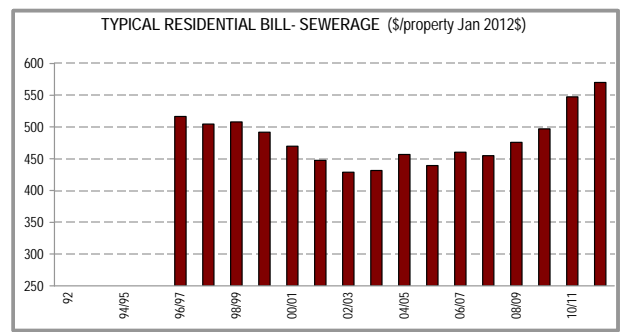
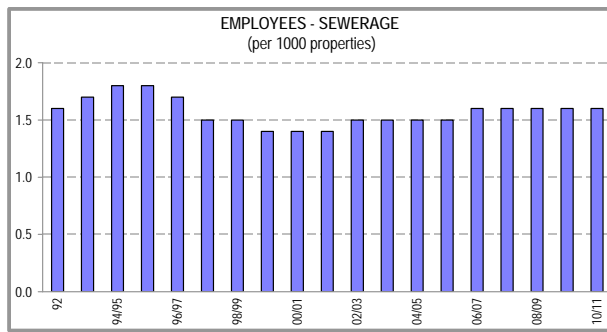


Table 4: Trends in Sge statewide performance indicators 1991 to 2010-11



Notes:

- The values shown are Statewide medians on a percentage of connected properties basis from 1992 to 2009/10, except for microbiological, BOD and SS compliance which are the percentage of samples complying, and % of effluent recycled, which is the Statewide total for non-metropolitan NSW.
- From 1998/99, results are on the basis of E. coli in the 1996/2004 NHMRC/NRMMC Australian Drinking Water Guidelines. 1991 to 1997/98 results are on the basis of the 1987 NHMRC/AWRC Drinking Water Guidelines for Total Coliforms.

Table 5: 2010-11 NSW water utility performance summary

WATER UTILITY	Water Supply											Sewerage											Water Supply & Sewerage - Current (2010-11) unless noted as 2011-12										
	Water Supply Connected Properties (No) <sup>2</sup>	Total Water Supplied Potable + Non-potable + Recycled Excl Bulk Supply (ML) <sup>2,3</sup>	Average Annual Residential Water Supplied Potable + Non-potable (kL/connected property)	Water Main Breaks (per 100km of Main)	Revenue (\$M) <sup>3,8</sup>	Water Quality Compliance (2004 NHMRC/NRMMC Guidelines)					Water Quality Complaints (per 1000 props)	Revenue (\$M) <sup>2,3,8</sup>	% Sge Treated that was Compliant (%)	Sewer Overflows (reported + unreported to regulator) (per 100km of main)	Sewage Odour Complaints (per 1000 properties)	Recycled Water		Avg Duration of Unplanned Interruption (mins)		Net Profit After Tax (\$M)	2011/12 Typical Residential Bill (\$/assessment)	2011/12 Typical Developer Charge (\$/ET)	Current Replacement Cost per Assessment (\$)	OMA Cost (\$/connected property)	Mngmnt Cost (\$/connected property)	ERRR (%)	Net Debt to Equity (%)	Capital Expenditure		Strategic Business Plans Completed? Note 14 (Yes/No)			
						Chemical Note 11 (%)	Zones (7a) H4	E. coli Note 12 (%)	Zones (8a) H2	% Pop'n with E. coli Compliance (8b) H3						(% of effluent recycled)	(Total ML)	WS (13a) C15	SQE (13b) C16									(13c) F24	(13d) P8		(17) F13	(18)	(19) F19
	(1) C4	(2) W11	(3) W12	(3a) A8	(4) F1	(7)	(7a) H4	(8)	(8a) H2	(8b) H3	(8c) C9	(9) F2	(10) E4	(10a) See also E13 in Table 15	(11)	(12) W27	(12a) W26	(13a) C15	(13b) C16	(13c) F24	(13d) P8	(14)	(15)	(17) F13	(18)	(19) F19	(19a) F22	(19b)	(19c) F16	(21)			
Sydney Water	1,793,000	544,216	197	28	1,160	100	13 of 13	100	13 of 13	100	0.6	1,100	100			10	47,521	147		274	1099		579		2.0	123	402	710					
Hunter Water	228,000	72,368	175	31	109	100	5 of 5	100	5 of 5	100	2.8	130	100			7	4,674	141		24	872		514		2.3	40	735	160.0					
Sydney Catchment Authority		433,363			191							NO SGE								37								28.0					

LWUs with > 10,000 Properties

1 Gosford	70,460	13,880	148	29	34.6	100	2 of 2	100	2 of 2	100	9	38.3	100	39	1.9	0	37	222		8.8	898	6,700	38,665	596	227	0.9	3	980	68.4	Yes	
2 Wyong	60,330	13,980	160	10	41.4	100	1 of 1	100	1 of 1	100	17.1	28.7	100	30	0.6	6	997	195		-11.8	903	5,320	22,177	748	262	-0.3	11	598	36.0	Yes	
3 Shoalhaven	46,080	14,680	136	10	21.1	100	4 of 4	100	3 of 4	99	1.3	35.3	93	34	0.1	11	863	84		9.5	927	14,490	22,461	735	286	1.5	2	2,188	91.1	Yes	
4 Rous (Bulk Supplier) (NO SGE)	47,730	2,360		53	17.8	100	1 of 1	100	1 of 1	100	0.0	NO SGE						180		-3.2		8,380	9,693	190	92	0.3	10	98	4.7	Yes	
5 MidCoast (Unfiltered)	36,490	8,330	139	4	23.9	100	4 of 4	100	4 of 4	100	7	33.0	99	3	0.8	8	546			-6.9	1,383	14,100	32,532	811	186	0.6	30	732	21.5	Yes*	
6 Tweed	31,840	8,870	167	8	17.5	100	3 of 3	100	3 of 3	100	4.9	23.0	100	5	0.4	5	436	42	20	-4.4	1,036	17,130	34,603	816	329	0.1	2	253	8.0	Yes*	
7 Port Macquarie-Hastings (Unfiltered)	29,950	6,170	147	3	21.3	100	5 of 5	100	5 of 5	100	5	21.2	78	17	1.6	3	292	198	60	6.3	1,114	13,480	28,847	680	215	1.4	-1	641	17.8	Yes	
8 Riverina (Groundwater) (NO SGE)	29,150	11,450	225	14	13.3	100	14 of 14	100	14 of 14	100	3.6	NO SGE						260		-2.2	314	3,700	10,450	333	64	-0.5	-1	294	8.6	Yes*	
10 Coffs Harbour (Unfiltered)	24,570	5,990	162	12	20.4	100	3 of 3	100	3 of 3	100	3.6	23.8	100	3	2.1	29	2,307	120	95	3.6	1,234	17,860	29,815	820	292	2.3	21	368	8.8	Yes	
11 Albury	22,770	5,670	180	7	8.4	100	1 of 1	100	1 of 1	100	1.2	14.1	83	9	0.0	99	5,222	213	136	-2.2	675	7,560	29,294	694	251	-0.4	3	199	4.4	Yes*	
12 Fish River WS (Unfiltered, Bulk Supplier)	23,500	1,440		3	6.5	100	1 of 1	100	1 of 1	100	0.1	NO SGE									3,045		9,896	132	52	14.0	0	94	2.2	Yes*	
13 Tamworth Regional	20,730	9,050	216	6	15.3	100	6 of 7	100	6 of 7	99	-	20.5	99	17	1.1	100	5,250			-14.4	1,210	6,050	30,568	781	241	3.4	3	1,595	30.3	Yes	
14 Clarence Valley	21,170	6,070	142	14	11.8	100	4 of 5	100	4 of 5	99	8	12.1	78	18	0.7	1	25	120	120	-3.5	1,084	12,300	34,644	753	293	0.6	8	722	11.9	Yes	
15 Eurobodalla (Unfiltered)	19,360	3,540	109	4	12.8	100	1 of 1	100	1 of 1	100	0	15.9	100	8	1.8	4	160	587		-4.0	1,261	19,990	29,034	855	307	1.4	3	1,001	18.5	Yes	
16 Wingecarribee	18,260	4,130	159	5	9.0	100	3 of 3	100	3 of 3	100	10	11.3	92	37	2.7	1	42	105	120	-1.1	976	13,810	33,751	647	269	0.6	-1	434	6.8	Yes	
17 Queanbeyan (Reticulator)	15,930	3,790	191	18	11.4	100	1 of 1	100	1 of 1	100	-	6.6	100	1	0.0	1		180	240	-5.5	1,062	9,360	25,681	845	265	-2.6	-16	63	1.0	Yes*	
18 Dubbo	16,690	6,320	263	6	12.5	100	1 of 1	100	1 of 1	100	0.4	10.5	44	4	0.6	50	1,496	147	95	3.2	1,172	9,800	28,625	821	329	1.3	3	366	5.8	Yes	
19 Orange	16,330	5,370	158	6	10.7	100	2 of 2	100	2 of 2	100	2.2	7.8	60	56	0.9	29	1,714	240	180	-0.8	791	10,920	27,996	757	392	-0.5	-13	308	5.0	Yes*	
20 Goulburn Mulwaree	10,630	2,350	133	16	7.8	100	2 of 2	100	2 of 2	100	2.0	9.1	83	1	0.5	100	1,635	180	90	3.4	1,129	5,930	38,325	709	209	1.7	2	3,091	32.8	Yes*	
21 Bathurst Regional	14,900	5,390	182	12	10.0	100	1 of 1	100	1 of 1	100	5.1	8.0	100	24	0.1	100	3,911	120	120	0.1	789	7,190	25,667	839	238	0.4	-12	228	3.4	Yes	
22 Lismore (Reticulator)	14,110	3,240	152	14	8.6	100	1 of 1	100	1 of 1	100	1.0	9.8	100	2	0.6	1		300	60	-6.0	1,184	9,970	39,460	822	195	-1.2	-4	470	6.1	Yes	
23 Bega Valley (Unfiltered)	14,250	3,640	129	6	9.4	100	6 of 6	100	5 of 6	99	0.7	13.8	93	18	0.0	22	448	120	120	2.2	1,462	21,120	28,014	1,158	504	0.9	1	1,598	22.0	Yes	
24 Ballina (Reticulator)	14,490	3,730	162	7	10.0	100	1 of 1	100	1 of 1	100	0.3	15.2	84	2	0.4	2	123	120	120	4.8	1,056	11,560	24,507	963	330	2.1	-8	1,126	15.4	Yes	
25 Kempsey (Groundwater)	12,290	3,460	156	10	8.7	100	7 of 7	100	7 of 7	100	0.7	7.4	88	31	1.8	2		114	130	-3.1	1,159	15,960	53,192	955	333	-0.2	6	556	6.3	Yes	
26 Essential Energy	10,470	4,730	219	20	12.3	100	2 of 2	100	2 of 2	100	0.0	5.4	100	10	0.5	19	320			-0.4	1,029			1,395	225			693	7.1	Yes	
27 Byron (Reticulator)	10,950	3,480	159	8	6.3	100	1 of 1	100	1 of 1	100	0.3	13.0	99	7	1.5	15	489	120	60	-2.4	1,318	17,960	31,727	947	272	1.3	19	552	5.8	Yes	
28A Goldenfields (Reticulator) (NO SGE)	9,950	3,870	176	19	7.6	100	1 of 1	100	1 of 1	100	6.6	NO SGE								0.0	469	7,920	10,407	677	137	-1.3				Yes	
28B Goldenfields (Bulk Supplier) (NO SGE)	18,690			0	3.3	100	3 of 3	100	3 of 3	100		NO SGE								0.0			5,464	171	51	-2.8					Yes
Totals or Medians (% of LWUs basis excl NO SGE suppliers) for >10,000 Properties	592,000	164,980	159	10	393							384			0.6	8	26,300	164	120		1,084	11,930	29,554	816	268.9	0.8	2	598	450		

LWUs with 3,001 - 10,000 Properties

29 Armidale Dumaresq	8,460	2,450	193	21	6.6	100	1 of 1	100	1 of 1	100	0.0	5.0	100	54	1	18	390	73	95	2.9	976	9,510	21,806	898	133	1.7	-2	181	1.5	Yes
30 Griffith	8,310	5,270	382	7	6.2	100	2 of 2	100	2 of 2	100	7.7	6.9	27	24	0.1	9	224	90	60	2.4	1,112	5,350	28,667	1,059	416	0.9	2	2,181	17.1	Yes
31 Lithgow	8,040	2,550	160	60	4.4	100	1 of 1	100	1 of 1	100	18	4.7	64	63	0.9	0		180	90	-1.4	959	4,020	19,186	1,115	373	-2.0	20	2,601	19.5	Yes
32 Mid-Western Regional	7,360	2,020	165	4	4.2	100	3 of 3	100	2 of 3	87	3	3.4	41	39	0	12	191	120	120	-1.0	1,050	11,910	27,128	757	280	-0.5	-3	907	6.3	Yes
33 Richmond Valley	7,090	2,890	171	9	5.2	100	1 of 1	100	1 of 1	100	0.0	6.6	100	7	0.0	6	136			-1.4	1,201	24,350	29,726	906	469	1.8	0	1,009	6.7	Yes
34 Nambucca (Groundwater)	6,270	1,420	142	4	2.9	100	1 of 1	100	1 of 1	100	1.3	3.7	93	13	1.1	8	142	120	60	1.0	813	8,890	29,979	671	246	0.6	-4	466	2.7	Yes*
35 Singleton	6,420	2,640	262	9	4.4	100	1 of 1	100	1 of 1	100	3.0	3.2	100	9	0.9	33	400	90	60	2.4	825	7,620	22,644	713	247	1.2	-30	271	1.6	Yes
36 Parkes	5,880	5,410	215	10	5.7	100	1 of 1	100	1 of 1	100	0.3	2.6	100	64	0.4	8	92	120	60	2.6	890	14,640	31,947	819	135	1.2	-24	25	0.1	Yes

Table 5: 2010-11 NSW water utility performance summary (continued)

WATER UTILITY	Water Supply											Sewerage											Water Supply & Sewerage - Current (2010-11) unless noted as 2011-12															
	Water Supply Connected Properties (No) <sup>5</sup>	Total Water Supplied Potable + Non-potable + Recycled Excl Bulk Supply (ML) <sup>2,3</sup>	Average Annual Residential Water Supplied Potable + Non-potable (&Unconnected property)	Water Main Breaks (per 100km of Main)	Revenue (\$M) <sup>3,9</sup>	Water Quality Compliance (2004 NHMRC/NRMCM Guidelines)					Water Quality Complaints (per 1000 props)	Revenue (\$M) <sup>2,3,8</sup>	% Sge Treated that was Compliant (%)	Sewer Overflows (reported + unreported to regulator) (per 100km of main)	Sewage Odour Complaints (per 1000 properties)	Recycled Water		Avg Duration of Unplanned Interruption (mins)		Net Profit After Tax (\$M)	2011/12 Typical Residential Bill (\$/assessment)	2011/12 Typical Developer Charge (\$/ET)	Current Replacement Cost per Assessment (\$)	OMA Cost (\$/connected property)	Mngmnt Cost (\$/connected property)	ERRR (%)	Net Debt to Equity (%)	Capital Expenditure		Strategic Business Plans Completed ? Note 14 (Yes/No)								
						Chemical Note 11 (%)	Zones (7a) H4	E. coli Note 12 (%)	Zones (8a) H2	% Pop'n with E. coli Compliance (8b) H3						(% of effluent recycled)	(Total ML)	WS (13a) C15	SGE (13b) C16									Net Profit After Tax (13c) F24	2011/12 Typical Residential Bill (13a) P8		2011/12 Typical Developer Charge (14)	Current Replacement Cost per Assessment (15)	OMA Cost (\$/connected property) (17) F13	Mngmnt Cost (\$/connected property) (18)	ERRR (%) (19) F19	Net Debt to Equity (%) (19a) F22	(\$/prop) (19b)	(\$M) (19c) F16
37 Inverell	5,380	1,890	209	4	3.4	100	2 of 3	100	3 of 3	100	0.9	1.9	93	2	0	0	60	50	0.4	955	13,990	24,750	768	201	0.2	-7	108	0.6	Yes									
38 Moree Plains (Groundwater)	4,490	3,030	423	16	3.6	100	4 of 4	100	4 of 4	100	0	3.0		7	-	81	876	48	180	0.2	1,273	8,370	27,225	995	348	0.9	14	50	0.2	Yes								
39 Cowra	5,270	2,260	166	14	4.7	100	1 of 1	100	1 of 1	100	16	3.2	25	0	0	100	733	180	240	-0.3	1,188	11,880	31,520	1,107	166	1.0	8	2,647	10.0	Yes								
40 Central Tablelands (NO SGE)	5,320	1,390	158	3	3.5	100	2 of 2	100	2 of 2	100	3	NO SGE					180		-1.1	451	8,480	20,604	455	230	-1.3	3	148	0.8	Yes									
41 Muswellbrook	5,540	1,990	215	25	5.2	100	2 of 3	100	3 of 3	100	10	5.1	51	13	2.3	76	863	110	106	4.4	996	8,290	26,025	916	320	3.6	-18	371	2.0	Yes								
42 Corowa	5,120	3,730	392	12	3.0	100	4 of 4	100	3 of 4	76	3	3.4	100	3	0.8	45	414	120	120	0.5	951	2,740	18,887	794	353	1.2	-4			Yes								
43 Tumut	4,440	1,200	163	3	2.3	93	4 of 5	100	5 of 5	100	6	2.9	97	10	-	7	86	120	90	0.0	948	10,010	22,644	789	85	-0.2	1	984	4.3	Yes								
44 Gunnedah (Groundwater)	4,640	1,870	292	9	2.9	100	4 of 4	94	2 of 4	96	0.0	1.5	100	69	0	80	688	120	60	1.1	832	6,680	26,112	512	190	1.2	-17	250	1.1	Yes								
45 Upper Hunter	4,530	2,340	375	19	3.5	100	3 of 4	100	4 of 4	100	0.4	2.0	66	7	0	18	197	45	120	1.2	1,258	7,640	20,872	805	317	0.5	-21	443	2.0	Yes								
46 Narrabri (Groundwater)	4,380	1,460	226	54	2.4	100	6 of 6	100	5 of 6		16	2.3	66	2	0.0	4		120	20	1.6	966	7,570	18,267	705	158	3.8	-23	150	0.6	Yes								
47 Bellingen (Unfiltered)	4,050	1,190	155	5	2.3	100	2 of 2	100	2 of 2	100	0	1.8	93	4	0.0	0		120	60	0.4	941	10,830	29,351	870	353	-0.4	-22	474	1.6	Yes								
48 Leeton	3,940	1,910	308	23	2.4	94	3 of 4	100	2 of 3	4	0.0	2.0	100	0	0	2	50	120	120	0.0	923	9,400	27,126	915	241	-1.0	-22	366	1.4	Yes								
49 Young (Reticulator)	4,640	1,060	148	17	2.2	91	0 of 1	100	1 of 1	100	0.0	2.1	75	71	1	2	15	140	100	0.6	1,102	2,050	14,266	357	121	4.9	-26	127	0.5	Yes								
50 Cooma-Monaro	4,480	1,020	135	11	2.7	100	3 of 3	100	3 of 3	100	2.0	3.0	77	214	0	25	166	150	90	-0.5	1,171	13,050	20,058	783	344	1.0	-7	752	3.3	Yes								
51 Forbes	3,660	1,530	260	28	1.8	100	1 of 1	100	1 of 1	100	2.5	1.9	83	3	0	82	620	138	60	0.1	788	9,750	27,837	721	84	-0.7	-17		0.4	Yes								
52 Snowy River (Unfiltered)	4,720	814	108	8	2.4	100	4 of 5	100	5 of 5	100	0.0	2.7	84	1	0	0		120	120	-0.2	1,257	9,400	29,627	980	295	-0.8	-6			Yes								
53 Berrigan (Dual Supply)	3,540	1,410	256	16	2.2	100	4 of 4	100	3 of 4	88	0.0	1.3	100	0	1	47	290	120	120	-0.2	982	6,070	23,339	682	199	-0.4	-11	175	0.6	Yes								
54 Deniliquin	3,390	1,780	412	74	2.3	100	1 of 1	100	1 of 1	100	3	1.9	100	0	0.9	74	435	120	120	0.5	1,190	7,730	26,308	834	375	0.8	-9	631	2.0	Yes*								
55 Warrumbungle	3,300	750	176	15	2.2	100	7 of 8	100	7 of 8	100	1.2	1.3	92	0	0	25	113	120	120	-0.1	1,015	2,670	28,822	830	156	-0.3	-6		0.6	Yes*								
56 Yass Valley	3,140	707	140	7	2.0	100	1 of 1	100	1 of 1	100	6	1.5	100	0	0	13	74	220	150	-2.1	1,355	14,900	29,123	822	339	-0.5	-6	1,515	4.4	Yes								
Totals or Medians (% of LWUs basis) for 3,001 - 10,000 Properties	146,000	57,980	201	12	96	25 of 28 complied with chemical guidelines 27 of 28 complied with E. coli guidelines					87			0	13	7,196	120	98		979	8,685	26,210	812	247	1	-7	407	92										
LWUs with 1,501 - 3,000 Properties																																						
57 Wellington	2,900	1,120	234	14	2.1	100	2 of 2	100	2 of 2	100	0.0	1.7	100	0	0	0		115	50	-0.3	1,164	6,390	22,066	923	339	0.8	21	169	0.5	Yes								
58 Cootamundra (Reticulator)	2,910	631	142	70	1.5	100	1 of 1	100	1 of 1	100		1.0	75	9	0	6	43	120	120	-0.1	797	8,450	15,261	459	114	-0.1	-9	10	0.0	Yes								
59 Lachlan	2,820	1,490	407	6	3.2	100	3 of 3	100	2 of 3	89	0	0.9	35	0	0	19	93	90	50	1.1	1,305	13,550	36,371	856	220	1.0	-21	729	2.0	Yes								
60 Glen Innes Severn	3,000	681	145	2	1.1	92	1 of 2	100	1 of 2	98	0	1.2	100	53	0	12	73	180	40	-0.5	787	5,830	20,352	679	348	-1.6	-5	259	0.8	Yes								
61 Liverpool Plains	2,770	771	189	14	2.1	100	2 of 2	100	2 of 2	100	1.4	0.8	30	2	0	0		45	45	0.4	1,103	9,830	30,405	634	305	0.5	-11	228	0.6									
62 Narromine (Groundwater)	2,130	824	340	25	1.1	100	2 of 2	100	2 of 2	100	0.0	1.1	100	0	0	5	29	180	90	0.5	954	8,130	16,659	678	303	2.0	-43			Yes								
63 Narrandera (Groundwater)	2,110	1,310	347	6	1.3	100	1 of 1	100	1 of 1		12.3	1.0	100	0	0	0		120	90	0.8	1,031		12,369	696	256	3.0	-37	51	0.1	Yes								
65 Murray (Dual Supply)	2,770	886	228	8	1.5	100	2 of 2	100	2 of 2	100	0.0	1.4	100	0	0	13	86	90	50	0.3	849	4,180	24,281	680	223	0.5	-3	285	0.8	Yes								
67 Cobar	2,260	789	238	13	1.4	100	1 of 1	100	1 of 1	100	22.2	0.5	100	0	0	38	110	60	120	-0.5	708	2,180	19,584	848	79	-2.4	1	110	0.2	Yes								
66 Cobar Water Board		1,800			2.0							NO SGE																										
68 Tenterfield	1,960	459	186	6	1.5	100	2 of 2	100	2 of 2	100	14.8	1.4	100	0	0	22	65	125	125	-0.6	1,437	7,000	36,433	901	334	-0.6	8	305	0.6	Yes								
70 Kyogle	1,850	388	154	13	1.0	100	2 of 2	100	2 of 2	100	4	1.1	100	19	2	3	19	90	90	-0.3	1,034	3,900	26,563	901	290	-0.3	-2	167	0.3	Yes*								
71 Palerang	2,030	387	138	13	1.6	100	3 of 3	100	3 of 3	100	16	2.3	63	2	2	2		100	60	-1.4	1,502	18,480	32,039	823	253	3.0	-14	1,923	3.8	Yes								
73 Upper Lachlan	1,940	400	153	5	1.3	100	4 of 4	100	4 of 4	100	4	1.4	100	2	0	0		120	40	0.4	1,287	7,100	27,069	790	267	2.2	-7	1,310	2.0	Yes*								
74 Wentworth (Dual Supply)	2,350	905	343	11	1.7	100	3 of 3	89	1 of 3	1	4	1.2	100	0	1	1	5	45	-	-0.1	1,252	7,810	25,344	794	129	0.4	-3	435	0.9	Yes								
76 Harden (Reticulator)	1,890	1,020	330	7	1.4	100	1 of 1	100	1 of 1	100	8	0.6	56	2	0	54	275	60	60	-0.2	1,521	6,310	27,840	802	188	-1.4	-8	87	0.2	Yes*								
75 Coonamble (Groundwater)	1,690	944	386	-	0.5	89	2 of 3	100	2 of 3	96	10.0	0.5	-	-	0	24	76	-	60	0.0	679		22,788	536	92	-4.6	-42	192	0.3	Yes*								
79 Walgett (Dual Supply)	1,920	2,550	1,030	18	1.3	100	2 of 2	100	1 of 2	65	3.6	0.7	100	0	0.0	83	517	-	-	-1.0	1,356		21,651	1,031	305	-2.4	-15	152	0.3									
80 Greater Hume	1,790</																																					



Table 5: 2010-11 NSW water utility performance summary (continued)

WATER UTILITY	Water Supply										Sewerage						Water Supply & Sewerage - Current (2010-11) unless noted as 2011-12															
	Water Supply Connected Properties (No) <sup>5</sup>	Total Water Supplied Potable + Non-potable + Recycled Excl Bulk Supply (ML) <sup>2,3</sup>	Average Annual Residential Water Supplied Potable + Non-potable (kL/connected property)	Water Main Breaks (per 100km of Main)	Revenue (\$M) <sup>3,9</sup>	Water Quality Compliance (2004 NHMRC/NRMMC Guidelines)				Water Quality Complaints (per 1000 props)	Revenue (\$M) <sup>2,3,9</sup>	% Sge Treated that was Compliant (%)	Sewer Overflows (reported + unreported to regulator) (per 100km of main)	Sewage Odour Complaints (per 1000 properties)	Recycled Water		Avg Duration of Unplanned Interruption (mins)		Net Profit After Tax (\$M)	2011/12 Typical Residential Bill (\$/assessment)	2011/12 Typical Developer Charge (\$/ET)	Current Replacement Cost per Assessment (\$)	OMA Cost (\$/connected property)	Mngmnt Cost (\$/connected property)	ERRR (%)	Net Debt to Equity (%)	Capital Expenditure		Strategic Business Plans Completed? Note 14 (Yes/No)			
						Chemical Note 11 (%)	Zones (7a) H4	E. coli Note 12 (%)	Zones (8a) H2						% Pop'n with E. coli Compliance (8b) H3	(% of effluent recycled)	(Total ML)	WS (13a) C15									SGE (13b) C16	(\$/prop)		(\$M)		
																															(1) C4	(2) W11
<b>LWUs with 200 - 1,500 Properties</b>																																
81	Gwydir	1,460	628	257	32	1.3	70	2 of 3	100	3 of 4	94	2.7	0.7	100	44	0	13	34	180	-	2.7	1,204	4,000	23,875	865	311	1.8	1	2,280	3.3	Yes	
83	Oberon (Reticulator)	1,370	222	130	21	1.1	100	1 of 1	100	1 of 1	100	4	0.8	100	5	0	100	192	90	120	0.2	723	2,760	10,905	1,076	265	0.9	-5	178	0.2	Yes	
84	Gilgandra (Groundwater)	1,350	699	415	49	0.6	100	1 of 1	100	1 of 1	100	15	0.6	-	11	0.0	100	275	100	100	-0.1	806		22,248	572	116	-0.5	-11	106	0.1	Yes	
85	Uralla	1,270	264	143	11	0.8	100	2 of 2	100	2 of 2	100	3	0.5	100	0	2	0		90	120	0.7	928	1,500	22,355	714	263	1.3	-5	213	0.2	Yes	
86	Hay (Dual Supply)	1,310	775	493	26	0.9	100	1 of 1	100	1 of 1	100	0.0	0.8	100	-	0	0		300	300	0.0	1,291		27,657	980	391	0.1	-15	234	0.3	Yes	
87	Bourke (Dual Supply)	1,280	2,560	1,760	92	1.5	100	1 of 1	100	1 of 1	100	0	0.5	30	0	0.0	0		60	60	-0.2	2,148	1,690	27,320	1,315	187	-2.9	-20	313	0.4	Yes	
88	Wakool (Dual Supply)	1,430	764	520	0	1.3	100	5 of 5	100	5 of 5	100	0.0	0.7	100	0	0.0	0			-	0.1	1,393		46,090	787	153	0.0	-5	107	0.1	Yes*	
89	Bogan	1,030	371	235	40	0.9	100	1 of 1	100	1 of 1	100	3.9	0.5	100	0	0.0	0		120	180	-0.3	1,176		36,067	1,189	432	-1.8	-9	0	0.1	Yes	
90	Guyra	1,200	369	212	3	0.8	100	1 of 1	100	1 of 1	100	0.0	0.5	100	4	0	0	1	80	120	0.2	1,091	1,100	28,248	872	248	0.5	-3	304	0.3	Yes	
91	Cabonne	1,140	199	134	35	0.7	100	4 of 4	100	2 of 3	86	2	1.4	84	50	0	2	6	150	240	-0.6	672	11,550	52,037	774	210	-1.1	-8	1,467	3.0	Yes	
92	Carrathool (Groundwater)	1,130	728	257	21	0.9	100	3 of 3	100	3 of 3	80	18	0.2	100	0	4	1		120	120	-1.2	1,077	1,650	73,504	999	83	-2.4	3	442	0.5	Yes	
93	Tumbarumba	1,160	328	165	3	0.7	100	2 of 2	97	1 of 2	27	0	0.5	100	2	0	0		120	120	0.3	1,063	920	30,415	657	218	1.2	-10	722	3.1	Yes*	
94	Gundagai	870	543	340	17	0.5	100	1 of 1	100	1 of 1	100	8	0.4	100	3	1	100	117	60	-	-0.2	875	2,550	29,644	981	335	-1.1	-8	779	0.1	Yes	
96	Warren (Dual Supply)	960	518	508	0	0.5	100	3 of 3	92	0 of 3		3	0.5	75	0	0	1		120	120	0.0	1,097		25,479	779	324	-0.8	-23	26	0.0	Yes	
97	Bombala	840	178	189	59	0.6	100	2 of 2	100	2 of 2	100	3.6	0.4	44	3	0.0	21	36	-	120	0.3	1,080	3,600	31,006	576	131	1.1	-18	147	0.1	Yes	
98	Walcha	870	201	161	4	0.4	100	1 of 1	100	1 of 1	100	1.2	0.4	100	33	0	0		120	90	0.0	924		30,433	809	206	-0.4	-5	62	0.1	Yes*	
100	Bairnald (Dual Supply)	900	391	494	7	0.6	100	2 of 2	97	1 of 2	24	0	0.2	100	0	0	73	147	60	50	-0.1	825	1,510	30,784	653	169	-0.3	0	57	0.1	Yes*	
101	Murrumbidgee (Groundwater)	810	517	497	12	0.3	100	2 of 2	94	1 of 2	39	0.0	0.2	100	0	0	17	22	60	120	0.1	624	2,000	14,003	414	160	-1.5	-34	298	0.2	Yes*	
103	Central Darling (Dual Supply)	730	367	545	18	0.7	100	1 of 2	100	2 of 2	100	19	0.1	100	9	14	0		120	120	-0.3	1,365		63,430	818		-0.5	-2	0		Yes	
104	Boorowa	660	230	263	17	0.6	100	1 of 1	100	1 of 1	100	0.0	0.4	70	7	0.0	1	1	90	60	0.0	1,496	7,870	32,173	963	312	-1.0	-14	112	0.1	Yes	
105	Brewarrina	490	865	1,700	42	0.9	100	2 of 2	100	2 of 2	100	0.0	0.5		0	0	100	190	30	120	0.0	1,695		40,202	2,228	413	0.4	-11	377	0.2	Yes	
106	Jerilderie (Dual Supply)	470	296	671	14	0.4	100	1 of 1	86	0 of 1		21.2	0.2	50	0	0	11	10	120	300	0.1	1,513	3,180	30,678	978	197	-0.6	-24	19	0.0	Yes*	
<i>Totals or Medians (% of LWUs basis) for 200 - 1,500 Properties</i>		23,000	12,013	302	18	16.9	21 of 22 complied with chemical guidelines 17 of 22 complied with E. coli guidelines					11.0			0	1	1,031	110	120			1,085	2,275	30,424	842	218	0	-8	163	12.7		
<b>LWUs without Water Supply</b>																																
9	Wagga Wagga (NO WS)	25,272	82										14.6	98	29	0.0	8	514		47	-0.2	434	3,500	12,770	291	53	0.6	2	218	5.5	Yes	
30A	Hawkesbury	7,537											10.4	85	17	0	14	193		60	4.7	543	7,330	19,349	480		5.0	14	1,034	7.8	Yes*	
69	Temora	2,117	46										0.6	67	4	0	93	120		60	0.2	269		7,212	145	20	1.7	0	14	0.0	Yes*	
72	Bland	1,833	133										1.0	21	0	0	37	133		120	0.1	578	1,620	11,049	337	46	0.3	2	197	0.4	Yes*	
77	Junee	1,596	108										0.6	100	0	0	23	108		30	0.0	355	1,650	12,495	290	61	-0.9	0	69	0.1	Yes	
78	Blayney	1,939	233										1.1	80	0	0	74	233		60	0.2	465	3,120	12,347	335	144	0.3	0			Yes	
95	Weddin	901	12										0.3	100	3	0	7	12		158	0.0	272	2,800	11,750	169	29	-0.8	-1	44	0.0	Yes*	
99	Coolamon	1,012	17										0.4	100	0	0	37	37		120	-0.1	310	4,500	10,090	298	87	-0.7	1	31	0.0	Yes	
102	Lockhart	825	4										0.4	100	0	0	2	4		60	0.0	453	1,000	12,986	336	79	-0.7	0			Yes	
107	Urana	316											0.1	100	0	0.0	0			60	0.0	234	4,100	21,270	439	114	-1.0	0	22	0.0	Yes*	
<i>Totals or Medians (% of LWUs basis) for LWUs without WS</i>		36,000	635										19.0			0	18	1,354		60		394	3,120	12,421	317	61	-0.2	0	57	13.9		
<b>Statewide Totals &amp; Medians</b> <sup>6</sup>		802,000 WS Connected Properties	253,000 ML (note 6)	Median 159kL per connected property (note 7)	Median 9 Breaks per 100km (note 7)	Total \$526M (note 6)	88 of 95 LWUs (93%) complied with the chemical guidelines. 88 of 95 LWUs (93%) complied with E.coli guidelines				Median 4 Quality Complaints per 1000 props	Total \$514M (note 6)	87% of LWUs and 98% of samples complied with BOD licences	Median 14 Overflows per 100km	Reuse of effluent was carried out by 82% of LWUs 20% of effluent collected was recycled	Total 37,000 ML (note 7)	Median 125 min (note 7)	Median 106 min		Median \$1020 per assessment (note 7)	Median \$9,300 per ET (note 7)	Median \$27,100 per assessment (note 7)	Median \$750 per connected property (note 7)	Median \$232 per connected property (note 7)	Median 0.6% (note 7)	Median 2% (note 7)	Median \$491 per assmnt (note 7)	Total \$580M (note 7)	71 Yes 25 Yes* (note 14)			



## Notes

- This table shows the key 2010-11 performance indicators/characteristics for NSW water utilities.  
A more detailed breakdown is provided in Tables 6 to 18 and Figures 1 to 65 of the *2010-11 NSW Water Supply and Sewerage Benchmarking Report*.
- No WS means not responsible for water supply;  
No SGE means not responsible for sewerage. For LWUs with water supply only or sewerage only, the results are shown left justified and are not included in the median calculation for water supply and sewerage.
- Where an LWU has not reported an item for 2010-11, the value previously reported has been used where available.  
Such values are shown in this table in *italics bold*.
- The number of connected properties for LWUs responsible for sewerage only (column (1)) is sewerage properties.
- NSW Water Utilities**  
In NSW there are 109 water utilities comprising:
  - 4 metropolitan water utilities (Sydney and Hunter Water Corporations, Sydney Catchment Authority (SCA) and Hawkesbury Council), and
  - 105 non-metropolitan Local Water Utilities (LWUs).The 105 LWUs comprise:
  - 100 local government councils (under *Local Government Act 1993*),
  - 5 LWUs (Gosford Council, Wyong Council, Cobar WB, Fish River WS, Essential Energy) under the *Water Management Act 2000*.Of the 105 LWUs,
  - 96 were responsible for water supply (including 3 for bulk supply - Cobar WB, Fish River WS & Rous Water)
  - 99 were responsible for sewerage.
  - 90 were responsible for both water supply and sewerage, 6 for water supply only and 9 for sewerage only.
- Totals for Non-metropolitan NSW**  
The totals shown below are for non-metropolitan NSW & therefore exclude Sydney & Hunter Water Corporations, the SCA and Hawkesbury Council. The totals exclude double-counting where bulk water suppliers are involved.
  - Total number of water supply connected properties** in non-metropolitan NSW was 802,000 (col (1)).
  - Total annual water supplied** was 253,000 ML (column (2)).
  - Total revenue** for water supply and sewerage was \$1040M (columns (4) and (9)) and the current replacement cost of assets was \$23,200M.
- Statewide medians (non-metropolitan) were:**
  - Average annual residential water supplied** - 159kL/connected property (column (3)).
  - Typical residential bill (TRB)** for water and sewerage - \$1020/assessment (column(13b)). The 2011-12 TRB for water supply has been calculated on the basis of each LWU's 2011-12 tariff using the 2010-11 average annual residential water supplied (column (3)). The TRB for sewerage is based on the LWU's access charge (col(1)) of Table 7 except for 3 LWUs where account was also taken of the usage charges. The TRB in col (13b) is for 2011-12. However, NWI indicator P8 is defined as the TRB for 2010-11 and will therefore differ from those shown in column (13b). The 2010-11 TRBs are shown in column 8 of Tables 6 & 7 on pages 120 and 132.
  - Typical developer charge** for water and sewerage - \$9,300/ET for 2011-12 (col (14) and Tables 6 & 7).
  - Economic real rate of return (ERRR)** for water and sewerage - 0.6% (column (19)). As shown in Figures 17 and 18 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*, 98% of LWUs are achieving full cost recovery for water supply and 96% are achieving full cost recovery for sewerage. The remaining 2 water utilities and 4 sewerage utilities which are not achieving full cost recovery need to do so. Refer also to Tables 6 and 7.
  - Net debt/equity** for water and sewerage was 2% (column (19a)).
  - Water main breaks** - 9 breaks per 100km of main (column (3a)).
  - Average duration of unplanned interruptions (water supply)** - 125 minutes (column (13a)).
- cont'd **Statewide medians (non-metropolitan):**
  - Water quality complaints** - 4 per 1000 properties (column (8b)).
  - Operation, maintenance and administration (OMA) cost** (water & sewerage) - \$750/connected property (column (17)). OMA cost includes part of the OMA cost of the bulk water supplier but excludes the purchase cost of water. However, NWI indicator F13 includes the purchase cost of water and therefore may differ from column (17).
  - Management cost** for water supply and sewerage - \$232/connected property (column (18)).
  - Current replacement cost** for water supply and sewerage - \$27,100/assessment (column (15)).
  - Capital expenditure** for water supply and sewerage - \$491/property (column (19b)). The total capital expenditure for water supply and sewerage was \$580M (column (19c)).
- Category 1 Businesses** - Category 1 businesses are defined as having an annual revenue of over \$2M (*NSW Government's Policy Statement on Application of National Competition Policy to Local Government, June 1996*). 72 LWUs are Category 1 businesses (shown in bold in Cols (4) & (9)). Column (4) shows there were 56 LWUs responsible for water supply with a revenue of over \$2M; and 42 such utilities responsible for sewerage (column (9)).
- Pay-for-use water supply tariff** - 91 of the 93 LWUs providing reticulated water have a pay-for-use water supply tariff in 2011-12 (ie. a two-part tariff or an inclining block tariff). Such tariffs comply with IPART recommendations and the *COAG Strategic Framework for Water Reform*.
- Pay-for-Use Pricing & Full Cost Recovery** - For water supply, 96% of LWUs have pay-for-use pricing in 2010-11, residential tariffs independent of land value together with full cost recovery (col 2 of Table 3 on page 102). For sewerage, 94% of LWUs have tariffs independent of land value and full cost recovery (col 2 of Table 3). Such LWUs comply with the *COAG Strategic Framework for Water Reform* and the *National Water Initiative*.
- Physical and chemical water quality** - 93% of the 26,600 physical samples and 98% of the 27,600 chemical samples tested for NSW LWUs achieved 100% compliance with the 2004 NHMRC/NRMMC Guidelines. Col (7) shows that 93% of LWUs complied with chemical water quality (health related). 97% of LWUs complied for physical water quality.
- Microbiological water quality** - E.coli contamination is the primary health-related indicator.
  - E.coli** - 99% of the 21,100 samples tested for NSW LWUs achieved 100% compliance with the 2004 NHMRC/NRMMC Guidelines. 93% of LWUs complied with these guidelines (column 8). Refer also to page 8.
- Compliance with EPA Discharge Licence for Sewerage**
  - BOD** - 98% of the 3,984 sampling days for NSW LWUs achieved 100% compliance with the 90-percentile limit of their EPA licence for BOD (Biochemical Oxygen Demand). 87% of LWUs complied with the EPA licence (col 10).
  - SS** - 92% of the 3,984 sampling days for NSW LWUs achieved 100% compliance with the 90-percentile limit of their EPA licence for SS (Suspended Solids). 77% of LWUs complied with their EPA licence for SS (Table 17 on p173). (17 LWUs had no EPA discharge licence limit and 7 did not report BOD or SS).
- Strategic Business Plans** - 96 LWUs have completed a sound water &/or sewerage Strategic Business Plan (col 21) and have demonstrated long term financial sustainability of their water and sewerage businesses to comply with National Competition Policy. The plans of 25 of these LWUs now need updating (these are shown as "Yes\*" in column 21).
- Total Urban Water Supplied** (col (2)) includes non-potable and recycled water (see Table 8 on page 141). Similarly, the average annual residential water supplied (col (3)) includes non-potable and recycled water.
- Reuse of recycled water** comprised 37,000ML which is 20% of the volume of sewage collected and was carried out by 81% of utilities, mostly for agriculture. Refer also to graph 13 on page 185 and Figure 55 on page 92.
- National Water Initiative (NWI) Indicators** - The 32 NSW water utilities with over 10,000 connected properties (3 metropolitan utilities and 29 non-metropolitan utilities) are required to report their performance under the NWI. The results that have met the rigorous NWI auditing requirements have been published in the *National Performance Report 2010-11*. Refer also to Notes 14 and 15 on pages 32 and 33. These results are shown in Appendix F on page 250.
- The performance indicators for Sydney and Hunter Water Corporations and Sydney Catchment Authority are from the *National Performance Report 2010-11 for Urban Water Utilities*.

Table 5A: Water supply and sewerage indicators – financial

WATER UTILITY	FINANCIAL																																									
	Operating Cost (OMA)			Income per Property			Total Income			Capital Expenditure (Assets, Renewals, Plant/Equip)			Return on Assets			Economic Real Rate of Return			Net Debt to Equity			Interest Cover			Dividend Payable			Dividend Payout Ratio			CSOs			% Revenue from CSOs			Net Profit after Tax NPAT			NPAT Ratio		
	WS & SGE (\$/property)			(\$/property) WS & SGE			WS & Sge (\$M)			WS & Sge (\$ per prop)			WS & Sge (%)			WS & Sge (%)			WS & Sge (%)			WS & Sge (\$'000)			WS & Sge (%)			WS & Sge (\$'000)			WS & Sge (%)											
	(23) F13			(24) F7			(24a) F3			(24b) F28 + F29			(24c)			(25) F19			(26) F22			(27) F23			(28) F20			(29) F21			(30) F25			(31) F8			(32) F24			(32a) F30		
08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	
Sydney Water Corporation	551	556	579	1,091	1,203	1,256	1,910	2,130	2,252	1,084	716	402			1.2	1.9	2.0	103	120	123	2	3	2	205,000	232,000	230,000	52	84	112736	130,607	146,902	6	7	445,854	273,768	21	12					
Hunter Water Corporation	466	496	514	929	1,044	1,051	202	210	240	658	737	735			2.2	2.5	2.3	32	39	40	3	2	2	30,400	34,100	16,600	76	69	9278	11,328	11,852	5	5	44,974	24,004	19	10					
Sydney Catchment Authority																																										
<b>LWUs with &gt; 10,000 Properties</b>																																										
1 Gosford	566	666	596	839	994	1034	59	69.8	72.9	502	836	980	0.7	0.6	0.6	0.6	1.0	0.9	1	3.2	3.3	>100	2	4	1694	3,849	1,776	180	20	1162	591	594	0.8	0.8	2,134	8,790	3	12				
2 Wyong	883	718	748	952	1260	1162	57	75.3	70.1	330	1031	598	-2.6	-0.1	-0.9	-1.0	0.5	-0.3	10	10.7	11.2	0	1	0						1270	677	1,344	0.9	1.9	-4,915	-11,789	-7	-17				
3 Shoalhaven	685	701	735	1233	1140	1218	47	52.3	56.1	563	999	2188	0.2	1.0	1.4	0.7	1.1	1.5	4	3.0	2.2	1	9	31	1173	940	2,321	13	25	925	974	992	1.9	1.8	7,322	9,464	14	17				
5 MidCoast	700	732	811	1248	1513	1538	45	54.9	56.1	1713	1167	732	-1.0	0.4	-0.7	0.2	1.7	0.6	25	30.0	29.5	0	1	0						825	875	916	1.6	1.6	1,862	-10,095	3	-18				
6 Tweed	716	807	816	1410	1417	1216	45	44.2	38.7	2061	2974	253	-0.2	0.3	0.0	0.0	0.0	0.1	1	1.6	2.4	0	0	1						718	727	754	1.6	2.0	-1,809	-4,385	-4	-11				
7 Port Macquarie-Hastings	600	675	680	1349	1486	1355	40	43.0	40.6	1098	778	641	0.0	2.3	2.0	1.9	1.7	1.4	2	0.4	-1.0	1	0	0			851	14	679	538	841	1.3	2.1	10,204	6,253	24	15					
10 Coffs Harbour	706	785	820	1540	2348	1801	37	56.5	44.3	2849	844	368	-0.8	3.3	0.7	1.9	4.5	2.3	26	23.8	21.1	1	4	1						451	476	482	0.8	1.1	19,862	3,647	35	8				
11 Albury City	524	654	694	899	1065	984	20	24.0	22.4	423	0	199	-0.3	0.3	-0.6	0.1	0.4	-0.4	4	3.6	2.8	0	3	0						294	303	293	1.3	1.3	1,008	-2,195	4	-10				
13 Tamworth Regional	673	784	781	1648	1791	1729	34	36.9	35.8	1426	2789	1595	5.4	4.8	3.7	4.7	4.2	3.4	-9	-0.9	2.6	>100	0	0	1051	1,059	1,066	6	7	380	380	380	1.0	1.1	16,991	14,364	46	40				
14 Clarence Valley	647	673	753	1233	1134	1007	26	23.8	21.3	3391	1742	722	0.7	0.3	-0.1	1.5	1.0	0.6	6	8.3	7.6	2	1	1						423	421	428	1.8	2.0	1,294	-3,459	5	-16				
15 Eurobodalla	714	781	855	1287	1453	1450	25	28.1	28.1	974	1275	1001	1.8	2.7	1.2	1.9	2.0	1.4	0	1.5	2.5	12	0	8	345	600	4	15	373	381	376	1.4	1.3	9,286	4,020	33	14					
16 Wingecarribee	620	676	647	1039	1194	1111	19	21.7	20.3	1279	1070	434	0.5	0.6	0.3	0.5	0.8	0.6	-2	0.6	-0.7	>100	5	2						369	300	300	1.4	1.5	-585	-1,124	-3	-6				
17 Queanbeyan	746	819	845	968	1126	1028	15	17.9	16.4	249	106	63	-0.5	-0.7	-1.5	-0.9	-1.8	-2.6	-16	-15.4	-15.9	0	0	0						156	201	162	1.1	1.0	-2,533	-5,523	-14	-34				
18 Dubbo	789	797	821	1131	1232	1353	18	20.8	22.6	397	421	366	0.3	1.1	1.1	0.7	1.1	1.3	3	2.6	2.7	2	29	6						180	178	188	0.9	0.8	3,281	3,167	16	14				
19 Orange	629	581	757	1647	1060	1136	26	17.1	18.5	410	279	308	4.4	0.7	0.4	4.0	0.1	-0.5	-11	-11.5	-12.5	>100	0	0						244	246	247	1.4	1.3	-1,321	-775	-8	-4				
20 Goulburn Mulwaree	712	765	709	1449	1554	1584	15	15.9	16.8	417	590	3091	0.4	1.2	1.6	1.6	1.5	1.7	7	5.1	2.3	1	7	20						173	176	178	1.1	1.1	3,094	3,370	19	20				
21 Bathurst Regional	732	775	839	1237	1277	1203	18	18.7	17.9	373	213	228	2.4	1.6	0.8	2.0	1.3	0.4	-10	-11.3	-11.9	>100	0	0						199	202	207	1.1	1.2	2,514	140	13	1				
22 Lismore	744	789	822	1043	1175	1045	15	16.5	14.7	236	564	470	-1.8	0.1	-0.9	-1.5	-1.1	-1.2	-4	-4.5	-4.1	0	0	0						285	248	247	1.5	1.7	-236	-5,973	-1	-41				
23 Bega Valley	967	1061	1158	1483	1672	1627	21	23.5	23.2	874	362	1598	1.3	1.7	0.9	1.5	1.9	0.9	0	-3.6	0.8	8	10	0						252	254	266	1.1	1.2	3,803	2,166	16	9				
24 Ballina	922	990	963	1034	1276	1739	14	18.3	25.2	442	613	1126	-1.4	1.5	2.6	-2.3	-0.8	2.1	-11	-9.7	-7.9	0	0	0						284	295	290	1.6	1.2	2,591	4,814	14	19				
25 Kempsey	716	806	955	1075	1169	1297	13	14.5	15.9	1122	1078	556	-0.6	-0.6	-0.7	-0.2	0.0	-0.2	4	5.6	6.2	0	0	0						241	250	253	1.7	1.6	-2,686	-3,120	-19	-20				
26 Essential Energy	1137	1071	1395	1629	1677	1689	17	17.6	17.7	1893	2613	693				0.0			0	0.0		>100	0	>100						273	266	315	1.5	1.8	2,958	-355	17	-2				
27 Byron	962	993	947	1559	1738	1760	17	18.7	19.3	842	2798	552	0.3	0.5	-0.3	1.1	1.4	1.3	6	18.2	19.4	1	2	1						149	149	153	0.8	0.8	-1,086	-2,439	-6	-13				
<b>Totals for &gt;10,000 Properties</b>										\$715M										5 LWUs paid a dividend										11 of 23 LWUs had a +ve NPAT												
<b>LWUs with 3,001 - 10,000 Properties</b>																																										
29 Armidale Dumaresq	831	779	898	1038	1369	1366	9	11.5	11.6	493	71	181	0.5	2.4	1.7	0.7	2.5	1.7	2	-3.9	-1.7	3	38	36						59	202	122	1.8	1.1	3,786	2,883	33	25				
30 Griffith	1058	1062	1059	1318	1657	1569	11	13.7	13.0	626	505	2181	0.0	1.8	1.1	0.2	1.3	0.9	-3	-4.0	2.1	1	>100	>100						35	127	88	0.9	0.7	3,735	2,397	27	18				
31 Lithgow	730	917	1115	893	995	1129	7	8.0	9.1	258	1060	2601	1.3	1.4	-1.8	-0.1	-1.6	-2.0	-6	-23.9	20.3	0	0	0						177	180	217	2.3	2.4	811	-1,373	10	-15				
32 Mid-Western Regional	786	756	757	1006	1010	943	7	7.3	6.9	334	339	907	-0.6	0.0	-0.3	-0.9	-0.3	-0.5	-6	-19.5	-3.2	0	0	0						124	130	126	1.8	1.8	-360	-1,046	-5	-15				
33 Richmond Valley	930	947	906	1271	1613	1218	9	11.3	8.6	781	457	1009	0.4	2.2	1.4	1.0	2.2	1.8	0	-8.1	-0.4	2	44	5						166	155	158	1.4	1.8	1,754	-1,397	16	-16				
34 Nambucca	578	632	671	1018	1153	1055	6	7.2	6.6	208	106	466	0.8	4.8	0.9	1.2	0.6	0.6	-9	-72.5	-3.7	3	>100	>100						134	137	154	1.9	2.3	5,303	1,042	73	16				
35 Singleton	708	767	713	1065	1137	1183																																				

Table 5A: Water supply and sewerage indicators – financial (continued)

WATER UTILITY	FINANCIAL																																																		
	Operating Cost (OMA)			Income per Property			Total Income			Capital Expenditure (Assets, Renewals, Plant/Equip)			Return on Assets			Economic Real Rate of Return			Net Debt to Equity			Interest Cover			Dividend Payable			Dividend Payout Ratio		CSOs			% Revenue from CSOs		Net Profit after Tax NPAT		NPAT Ratio														
	WS & Sge (\$/property)			(\$/property) WS & Sge			WS & Sge (\$M)			WS & Sge (\$ per prop)			WS & Sge (%)			WS & Sge (%)			WS & Sge (%)			WS & Sge (\$'000)			WS & Sge (%)		WS & Sge (\$'000)			WS & Sge (%)																					
	(23) F13	08/09	09/10	10/11	(24) F7	08/09	09/10	10/11	(24a) F3	08/09	09/10	10/11	(24b) F28 + F29	08/09	09/10	10/11	(24c) (24c)	08/09	09/10	10/11	(25) F19	08/09	09/10	10/11	(26) F22	08/09	09/10	10/11	(27) F23	08/09	09/10	10/11	(28) F20	08/09	09/10	10/11	(29) F21	09/10	10/11	(30) F25	08/09	09/10	10/11	(31) F8	09/10	10/11	(32) F24	09/10	10/11	(32a) F30	09/10
44 Gunnedah	421	457	512	895	923	947	4	4.3	4.4	365	351	250	1.7	2.9	2.3	1.6	1.4	1.2	0	-0.6	-16.9	>100	>100	>100				82	88	86	2.1	2.0	1,427	1,093	33	25															
46 Narrabri	576	642	705	733	947	1084	3	4.1	4.7	154	99	150	-1.4	5.8	6.0	-1.4	3.3	3.8	-17	-21.1	-23.1	0	>100	>100				69	69	70	1.7	1.5	1,606	1,639	39	35															
43 Tumut	706	733	789	1035	1158	1187	5	5.1	5.3	2800	488	984	-0.2	0.2	0.1	-0.3	0.0	-0.2	0	-2.6	1.0	0	>100	0				83	89	85	1.7	1.6	16	-12	0	0															
49 Young	392	279	357	848	819	936	4	3.8	4.3	172	20	127	2.6	2.5	3.3	2.5	2.5	4.9	-23	0.0	-26.4	>100	>100	3			80	76	76	2.0	1.7	59	625	2	14																
39 Cowra	1073	1012	1107	1320	1422	1505	7	7.5	7.9	453	1615	2647	0.2	1.2	-0.2	0.6	1.6	1.0	-2	-8.9	8.2	1	4	1				103	104	106	1.4	1.3	572	-321	8	-4															
45 Upper Hunter	948	885	805	1216	1224	1211	5	5.4	5.5	540	301	443	1.5	1.3	2.2	-0.5	0.0	0.5	0	-57.1	-21.5	0	0	>100			77	77	79	1.4	1.4	592	1,204	11	22																
52 Snowy River	691	785	980	1045	1352	1088	4	5.7	5.1	397	966		0.9	2.6	-0.4	0.5	2.3	-0.8	-8	-1.5	-6.4	>100	>100	0			21	21	21	0.4	0.4	1,266	-208	22	-4																
51 Forbes	710	726	721	1114	1155	1004	4	4.2	3.7	176	351	104	1.4	-0.1	0.3	0.6	-0.5	-0.7	-12	-18.3	-16.6	>100	0	>100				64	64	64	1.5	1.7	-28	133	-1	4															
50 Cooma-Monaro	912	966	783	1329	1312	1009	5	5.0	4.5	432	1025	752	1.7	0.2	1.4	1.3	-0.1	1.0	-11	-5.0	-6.8	>100	0	>100				65	68	66	1.3	1.5	11	-502	0	-11															
53 Berrigan	783	727	682	1147	1100	977	4	3.9	3.5	432	407	175	0.9	0.6	0.3	0.3	0.1	-0.4	-8	-10.8	-10.7	>100	>100	0			81	83	85	2.1	2.5	-34	-211	-1	-6																
Totals for 3,001 - 10,000 Props			\$149M															No. of LWUs paying dividend is 1						14 of 22 LWUs had a +ve NPAT																											
LWUs with 1,501 - 3,000 Properties																																																			
48 Leeton	920	911	915	1211	1338	1130	5	5.3	4.5	345	317	366	1.0	2.0	0.5	0.2	1.2	-1.0	-21	-3.6	-21.7	>100	>100	0			63	65	64	1.2	1.4	659	-11	12	0																
54 Deniliquin	833	973	834	990	1189	1176	3	4.0	4.0	358	623	631	1.4	2.0	3.0	0.3	0.0	0.8	-14	-8.0	-9.3	>100	>100	>100				69	70	73	1.7	1.8	228	486	6	12															
47 Bellingen	755	826	870	929	976	1009	4	3.9	4.1	366	463	474	1.8	1.1	0.9	-0.2	-0.4	-0.4	-25	-25.1	-21.9	0	0	0				91	90	91	2.3	2.2	360	367	9	9															
60 Glen Innes Severn	580	586	679	743	780	746	2	2.3	2.2	74	49	259	-1.1	0.0	-1.2	-0.9	-0.6	-1.6	-5	-11.5	-5.3	0	0	0				56	56	57	2.4	2.5	-79	-539	-3	-24															
58 Cootamundra	446	516	459	775	837	862	2	2.4	2.5	30		10	-0.7	-0.5	-0.1	-0.7	-0.3	-0.1	-6	-7.6	-9.3	0	0	0				80	79	79	3.2	3.2	-254	-60	-10	-2															
57 Wellington	924	846	923	1190	1251	1313	3	3.6	3.8	1092	661	169	-0.8	-0.1	-0.4	0.5	1.2	0.8	24	-0.1	21.4	0	1	1				63	62	59	1.7	1.5	-226	-260	-6	-7															
91 Cabonne	664	895	774	1957	1955	1908	2	2.2	2.2	1716	1545	1467	0.8	-0.5	-0.8	0.3	-0.9	-1.1	-10	-9.4	-8.2	>100	0	0				42	44	43	2.0	2.0	-436	-568	-19	-26															
80 Greater Hume	671	705	748	991	931	1013	2	1.7	1.8	172	133	160	-0.5	-1.0	-0.8	-1.0	-1.4	-1.2	-7	-7.5	-6.9	0	0	0				42	42	44	2.5	2.4	-371	-318	-22	-18															
59 Lachlan	775	838	856	993	2610	1461	3	7.4	4.1	175		729	-0.1	9.8	2.6	-0.5	8.9	1.0	0	-17.0	-20.7	0	>100	>100				45	45	44	0.6	1.1	3,954	1,091	54	26															
65 Murray	594	619	680	1048	1177	1065	3	3.2	3.0	174	213	285	0.8	1.3	0.6	1.0	1.3	0.5	-1	-39.9	-3.3	7	65	>100				53	53	55	1.6	1.9	644	307	20	10															
62 Narromine	608	675	678	968	1040	1034	2	2.2	2.2	73			1.1	5.8	4.4	0.8	4.1	2.0	0	-60.6	-42.9	>100	>100	>100				36	37	37	1.7	1.7	615	456	28	21															
56 Yass Valley	727	794	822	1037	1959	1099	3	6.1	3.5	2928	1197	1515	0.5	7.1	-1.3	0.5	6.8	-0.5	0	-5.6		>100	>100	0				45	43	45	0.7	1.3	2,756	-2,105	46	-61															
61 Liverpool Plains	527	610	634	746	906	1047	2	2.4	2.9	401	1116	228	-0.2	0.1	0.9	-0.5	-0.1	0.5	-10	-38.8	-11.2	0	0	>100				60	59	61	2.4	2.1	37	391	2	13															
55 Warrumbungle	751	772	830	967	1035	1055	3	3.4	3.5	759	421	189	0.0	0.7	0.1	0.0	0.3	-0.3	-12	-22.8	-6.4	0	>100	0				72	68	43	2.0	1.2	191	-64	6	-2															
71 Palerang	725	733	823	2072	1978	1957	4	4.0	4.0	1715	3700	1923	6.3	6.9	3.5	5.6	4.0	3.0	-18	-13.5	-14.4	>100	>100	>100				29	28	28	0.7	0.7	2,557	1,354	65	34															
63 Narrandera	757	792	696	1134	1102	1056	2	2.3	2.2	343	27	51	3.2	4.8	6.3	3.0	2.4	3.0	0	-40.0	-36.7	>100	>100	>100				47	47	44	2.1	2.0	535	790	23	35															
67 Cobar	674	714	848	1014	823	836	2	1.9	1.9	261	189	110	1.0	-1.1	-2.4	0.9	-1.2	-2.4	0	-1.4	0.7	>100	0	0				22	22	24	1.2	1.3	-234	-521	-13	-28															
74 Wentworth	677	638	794	1191	1302	1237	3	3.1	2.9	100	123	435	0.1	1.7	0.5	0.3	1.7	0.4	-1	-0.3	-3.1	1	>100	>100				33	35	35	1.1	1.2	641	107	21	4															
75 Coonamble	538	569	536	529	546	592	1	0.9	1.0		176	192	-1.2	-2.7	-0.2	-6.1	-6.3	-4.6	-37	-39.2	-41.5	0	0	0				24	24	25	2.6	2.5	-286	-49	-31	-5															
Totals for 1,501 - 3,000 Props			\$56M															No. of LWUs paying dividend is 0						9 of 19 LWUs had a +ve NPAT																											
LWUs with 200 - 1,500 Properties																																																			
70 Kyogle	624	756	901	1048	1099	988	2	2.0	1.8	1181	713	167	1.4	1.0	-0.5	1.5	1.3	-0.3	-1	-3.2	-2.3	91	5	0				53	53	53	2.6	2.9	54	-347	3	-19															
79 Walgett	766	831	1031	1199	1010	1030	2	1.9	2.0		218	152	0.1	-0.6	-2.5	0.1	-0.7	-2.4	-19	-11.3	-15.4	>100	0	0				23	23	24	1.2	1.2	-136	-953	-7	-48															
68 Tenterfield	974	927	901	1168	1769	1402	2	3.5	2.7	3801	1910	305	-2.5	1.7	-1.2	-1.6	1.6	-0.6	5	0.9	8.3	0	>100	0				41	43	44	1.2	1.6	579	-584	17	-21															
84 Gilgandra	521	565	572	882	1001	881	1	1.4	1.2	643	684	106	1.1	1.2	0.0	0.4	0.8	-0.5	-11	-7.2	-11.0	>100	>100	0				25	26	25	1.9	2.1	146	-134	11	-11															
73 Upper Lachlan	735	718	790	1615	1224	1377	3	2.4	2.7	1355	2892	1310	5.4	17.8	2.8	6.4	2.2	2.3	-1	-44.3	-7.0	6	>100	>100				31	33	34	1.4	1.3	4,415	386	187	14															
87 Bourke	1147	1082	1315	1557	1675	1625	2	2.0	2.1	389	222	313	-0.1	0.3	-1.7	-0.3	-0.3	-2.9	-10	-18.4	-19.7	0	0	0				10	10	11	0.5	0.5	41	-202	2	-10															

Table 5A: Water supply and sewerage indicators – financial (continued)

WATER UTILITY	FINANCIAL																																									
	Operating Cost (OMA)			Income per Property			Total Income			Capital Expenditure (Assets, Renewals, Plant/Equip)			Return on Assets			Economic Real Rate of Return			Net Debt to Equity			Interest Cover			Dividend Payable			Dividend Payout Ratio			CSOs			% Revenue from CSOs			Net Profit after Tax NPAT			NPAT Ratio		
	WS & SGE (\$/property)			(\$/property) WS & SGE			WS & Sge (\$M)			WS & Sge (\$ per prop)			WS & Sge (%)			WS & Sge (%)			WS & Sge (%)			WS & Sge (%)			WS & Sge (\$'000)			WS & Sge (%)			WS & Sge (\$'000)			WS & Sge (%)			WS & Sge (\$'000)			WS & Sge (%)		
	(23) F13	(24) F13	(25) F13	(26) F7	(27) F7	(28) F7	(29a) F3	(30a) F3	(31a) F3	(32b) F28 + F29	(33) F24c	(34) F25	(35) F19	(36) F22	(37) F23	(38) F20	(39) F21	(40) F25	(41) F8	(42) F24	(43) F30																					
08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11				
86	Hay	709	1120	980	1052	1311	1315	1	1.7	1.7	378	578	234	1.1	-0.9	0.7	0.0	-1.5	0.1	-19	-15.5	-15.4	>100	0	>100				24	25	24	1.5	1.4	-124	-26	-7	-2					
83	Oberon	984	938	1076	1060	1169	1372	1	1.6	1.9	170	148	178	-0.6	1.1	1.4	-1.1	0.6	0.9	-3	-0.1	-5.4	0	>100	>100				17	19	19	1.2	1.0	136	211	8	11					
81	Gwydir	831	687	865	1218	1572	1333	2	2.3	1.9	119		2280	1.9	6.2	1.6	2.2	6.5	1.8	0	-15.1	0.9	7	17	13				46	47	76	2.0	3.9	605	2,738	26	141					
85	Uralla	743	683	714	771	707	985	1	1.1	1.3	69	73	213	0.1	-0.5	2.8	0.0	0.4	1.3	-4	-0.6	-5.5	>100	0	>100				32	30		2.8		-137	717	-13	57					
89	Bogan	1028	1026	1189	1135	1298	1332	1	1.3	1.4	181	138		-1.4	-1.0	-1.5	-1.8	-1.3	-1.8	-6	-9.4	-8.6	0	0	0				17	17	16	1.3	1.2	-175	-271	-13	-20					
76	Harden	671	709	802	1150	1153	1039	2	2.2	2.0			87	0.2	0.1	-1.1	0.1	0.0	-1.4	-5	-9.4	-8.3	>100	>100	0			34	36	38	1.7	1.9	15	-193	1	-10						
88	Wakool	791	781	787	1239	1238	1418	2	1.8	2.0	171	78	107	-0.2	-0.4	0.2	-0.2	-0.4	0.0	-2	-6.6	-5.3	0	0	>100			26	27	28	1.5	1.4	-219	82	-12	4						
93	Tumbarumba	540	594	657	957	935	1053	1	1.1	1.2	384	219	2722	0.9	1.9	2.1	0.8	0.6	1.2	-13	-0.3	-10.2	>100	>100	>100				19	18	19	1.7	1.6	234	327	22	27					
94	Gundagai	733	966	981	878	1045	1054	1	0.9	0.9	88	130	79	-1.0	-1.7	-0.9	-1.4	-2.0	-1.1	0	-6.9	-7.8	0	0	0				21	21	21	2.3	2.3	-230	-249	-25	-27					
92	Carrathool	929	1076	999		1135	932		1.3	1.1	365	442		-1.4	-2.1	-2.3		-2.1	-2.4	0	2.1	3.4	>100	0	0				13	13	10	1.2		-1,073	-1,233	-84	-117					
96	Warren	793	805	779	947	1013	1011	1	1.0	1.0		26		-0.2	0.2	0.8	-1.4	-1.0	-0.8	-20	-74.6	-23.2	0	0	0				16	18	19	1.9	2.0	-68			-7					
98	Walcha	812	745	809	921	926	913	1	0.8	0.8	162	62		-0.3	0.1	0.0	-0.4	-0.1	-0.4	-4	-7.3	-4.7	0	0	0				18	18	18	2.1	2.3	36	-11	4	-1					
100	Balranald	631	592	653	800	923	969	1	0.8	0.9	143	57		-1.1	-0.5	-0.4	-1.0	-0.3	-0.3	1	-6.3	0.3	0	0	0																	
97	Bombala	683	643	576	980	992	1106	1	0.8	0.9		147		0.2	1.0	2.4	-0.3	0.1	1.1	-13	-15.6	-17.8	0	>100	>100				18	19	19	2.3	2.0	82	275	10	30					
101	Murrumbidgee	470	549	414	604	619	623	1	0.6	0.5	147	339	298	1.0	-1.3	1.6	-2.0	-3.9	-1.5	0	-2.0	-33.6	0	0	0				14	14	9	2.5	1.8	-56	65	-10	13					
90	Guyra	792	833	872	1130	1212	1108	1	1.5	1.3	113	139	304	0.8	1.1	0.9	1.0	1.1	0.5	-1	-5.6	-2.9	5	22	>100				28	28	29	1.9	2.2	280	231	19	17					
104	Boorowa	624	728	963	1287	1377	1377	1	0.9	0.9	257	112		1.9	1.4	-0.5	1.7	1.0	-1.0	-9	-13.9	-14.4	>100	>100	0			15	15	16	1.8	1.8	23	-36	3	-4						
105	Brewarrina	1696	1674	2228	1988	2022	2920	1	1.0	1.4	152	377		-1.2	-0.9	0.5	-1.3	-1.1	0.4	-8	-9.9	-10.7	0	0	>100			4	4	4	0.4	0.3	-179	15	-18	1						
106	Jerilderie	775	983	978	1280	1260	1268	1	0.6	0.6		19		2.4	0.9	0.7	0.7	-0.6	-0.6	0	-16.9	-23.7	>100	0	0				10	10	12	1.7	2.0	32	51	5	9					
103	Central Darling	1003	787	818	1110	942	1056	1	0.7	0.8				0.9	-0.7	-0.4	0.6	-0.8	-0.5	0	-1.6	-2.2	>100	0	0																	
<i>Totals for 200 - 1,500 Props</i>											\$37M											<i>No. of LWUs paying dividend is 0</i>						<i>11 of 25 LWUs had a +ve NPAT</i>														
<i>LWUs with a single service (WS or Sge)</i>																																										
4	Rous (Bulk Supplier) (NO SGE)	182	204	190	294	326	370	13	14.9	17.7	80	109	98	-1.1	-1.1	-0.3	-0.3	-0.4	0.3	11	10.4	10.3	0	0	1				7	12	10	0.1	0.1	-6,293	-3,186	-42	-18					
8	Riverina (Groundwater) (NO SGE)	303	312	333	626	648	458	18	18.6	13.3	306	233	294	3.7	3.6	-0.3	3.4	3.4	-0.5	0	-5.0	-0.8	>100	0	0				190	192	191	1.0	1.4	2,545	-2,229	14	-17					
12	Fish River WS (Bulk Supplier, NO SGE)									6.5						14.0			14.0			0.0			>100																	
28A	Goldenfields (Reticulator) (NO SGE)	657	694	677	612	631	758	6	6.3	7.5	134	116		-0.1	-0.6	-0.9	-0.9	-1.1	-1.3	0	-9.4	0.0	0	0	0				96	97	100	1.5	1.3	-725			-11					
28B	Goldenfields (Bulk) (NO SGE)	216	252	171	306	354	174	6	6.7	3.3				-0.5	0.0	-1.7	-0.8	-0.4	-2.8	0	-8.1	0.0	0	0	0				0	0	0	0.0	0.0	-9			0					
40	Central Tablelands (NO SGE)	439	421	455	766	732	651	4	3.9	3.5			148	-0.7	0.0	-1.5	0.3	0.3	-1.3	5	-4.1	2.6	0	1	0				56	56	57	1.4	1.6	-318	-1,121	-8	-32					
9	Wagga Wagga (NO WS)	270	251	291	574	442	580	14	11.1	14.6			218	1.9	0.0		1.0	1.3	0.6	4	4.8	4.5	9	0	1				153	159	168	1.4	1.1	417	-153	4	-1					
30A	Hawkesbury (NO WS)		435	480		2216	1385			10.4			1034			14.4	5.5		14.1	5.0		-4.0	-2.6		>100	>100				35	37		0.4		11,087	4,657	68	45				
69	Temora (NO WS)	155	219	145	254	266	271	1	0.6	0.6		14		1.5	0.2	2.4	1.0	-0.3	1.7	0	-4.1	-11.0	>100	0	>100				25	25	25	4.4	4.4	18	219	3	38					
72	Bland (NO WS)	312	292	337	537	539	543	1	1.0	1.0		197		0.1	2.0	0.7	0.5	1.0	0.3	0	-18.9	-18.8	1	>100	>100					22	21		2.2	2.1	250	86	25	9				
77	Junee (NO WS)	238	275	290	4382	396	395	1	0.6	0.6		69		0.7	0.0	-0.3	0.1	-0.4	-0.9	0	-0.3	-8.8	>100	0	0				19	20	20	3.2	3.2	1	-40	0	-6					
78	Blayney (NO WS)	335	335	335	518	560	554	1	1.1	1.1		0		-0.4	0.2	1.2	-0.2	0.4	0.3	-11	-16.1	-12.6	0	2	>100			16	24	16	2.3	1.5	30	184	3	17						
95	Weddin (NO WS)	185	127	169	208	227	290	0	0.2	0.3		44		-1.6	-0.6	-0.3	-1.9	-1.0	-0.8	0	-0.8	-13.0	0	0	0				14	16	15	6.9	5.7	-31	-20	-13	-8					
99	Coolamon (NO WS)	197	271	298	600	425	363	1	0.4	0.4		31		3.0	0.6	-0.1	2.4	0.1	-0.7	0	-10.0	-10.7	>100	>100	0			12	13	13	3.1	3.5	18	-52	4	-14						
102	Lockhart (NO WS)	266	281	336	3245	406	466	0	0.3	0.4		0		0.2	-0.2	0.4	-0.8	-1.0	-0.7	0	-0.3	-22.8	0	0	0				10	10		2.6		-9	7	-3	2					
107	Urana (NO WS)	320	405	439		506	465			0.1		22			-0.5	-0.6		-0.6	-1.0		-7.7	-7.7		0	0				4	4		2.5	2.7	-27	-33	-17	-22					
<i>Totals for all LWUs</i>											<i>Total Income for single service LWUs is \$81 M</i>											<i>No single service LWUs paid a dividend</i>						<i>5 of 13 single service LWUs had a +ve NPAT</i>														
											<i>Total Income is \$1040 M including single service LWUs</i>											<i>Total No. of LWUs paying dividend is 6</i>						<i>Total No. of LWUs with +ve NPAT is 50</i>														
<i>Median ERRR (% LWU basis excluding single service LWUs) 0.4</i>																																										
<i>Median Net Debt to Equity (% LWU basis excluding single service LWUs) -5.6</i>																																										

Table 5B: Water supply and sewerage – levels of service, environmental, main sources of water supply

WATER UTILITY	LEVELS OF SERVICE						ENVIRONMENTAL						MAIN SOURCES OF WATER SUPPLY							
	Billing Complaints WS & Sge (per 1000 properties)			% of calls Answered by Operator within 30 seconds (seconds)			Greenhouse Gas Emissions						Surface Water Supply			Groundwater		Bulk Supplier (potable water)		
							Water	Sewerage	Other	Total	Major Sources of Water			Storage Dams	Bulk Raw Water Supplier	>50% of Supply from Grnd Water	No. Bores			
	(33) C12	(34) C14	(35a) E9	(35b) E10	(35c) E11	(35d) E12	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(36)	(37)	(38)	(39)	(40)	(41)				
08/09	09/10	10/11	08/09	09/10	10/11	09/10	10/11	09/10	10/11	09/10	10/11	09/10	10/11							
Sydney Water	4	1	2	85	89	79	71	67	184	200	-87	-119	164	143						
Hunter Water	2	2	2	72	70	60	144	140	294	303	26	27	448	455						
Sydney Catchment Authority																				
<b>LWUs with &gt; 10,000 Properties</b>																				
1	Gosford	-	-	-	-	-	-	147	170	312	343	24	23	482	536	Wyong R, Ourimbah Ck, Mooney Mooney Ck and Mangrove Ck.	Mangrove Ck (190GL), Mooney Ck (4.6GL)	GW JWA	22	
2	Wyong	0	0	-	92	65	59	-	99	-	342	-	7	-	449	Wyong R, Ourimbah Ck, Mooney Mooney Ck, Mangrove Ck and two-way transfers from/to Hunter Water.	Mardi (7.4GL)	GW JWA	12	
3	Shoalhaven	0	0	0	100	100	100	205	198	164	203	8	6	377	408	Porters Ck, Kangaroo R & Shoalhaven R to supply Berry & Kangaroo Valley down to Lake Tabourie.	Danjera (7.8GL), Porters Ck (1.9GL), Bamarang (3.8GL), Flat Rock Ck (570ML)			
5	MidCoast	0	0	-	-	-	-	117	116	129	172	80	19	326	306	Manning R to Bootawa Dam to supply Manning, from Crawford & Karuah R to supply Bulahdelah & Stroud.	Bootawa (2.28GL)		15	
6	Tweed	0	0	-	-	-	-	161	135	266	291	0	4	427	429	Tweed R to supply Murwillumbah, Tweed Heads & the Tweed Coast villages including Bogangar & Mooball.	Clarrie Hall (16GL)			
7	Port Macquarie-Hastings	0	0	0	81	85	74	148						103	202	Hastings R to supply Port Macquarie, Wauchope and the Camden Haven areas.	Cowarra (10GL), Port Macquarie (2.5GL)		1	
10	Coffs Harbour	0	0	0	-	85	99	113	111	322	335	19	5	453	450	Nymboida R (via Shannon Ck Dam) & Orara R to Karangi Dam to supply Coffs Harbour.	Karangi (5.6GL), Woolgoolga (270ML)			Clarence Valley
11	Albury City	0	0	0	-	49	48	308	260	233	234			540	494	Murray River to supply Albury.		State Water		
13	Tamworth Regional	0	0	0	-	-	-	223	186	233	182			457	368	Peel R & Dungowan Ck to supply Tamworth; Manilla R, Barraba Ck & Connors Ck Dam to supply Barraba; Namoi R & Manilla R to supply Manilla.	Dungowan (5.7GL), Connors Ck (360ML)	State Water	10	
14	Clarence Valley	1	1	1	-	-	-	23	12	90	86	-	-	113	98	Nymboida R to supply Grafton, Maclean, Yamba, Iluka, and other villages	Shannon Creek (30GL)			
15	Eurobodalla	0	0	-	-	100	-	192	138	139	183	-	20	331	341	Tuross R, Buckenboursa R & Moruya R to supply Batemans Bay, Moruya, Narooma & Tuross Hd.	Deep Creek (4.9GL)		7	
16	Wingecarribee	3	16	1	75	75	-	177	149	143	216	17	16	338	382	Wingecarribee Dam & Bundanoon Ck to supply Mittagong, Berrima, Bowral, Moss Vale, Exeter, Bundanoon, Burrawang, Robertson & other villages.	Bundanoon, Medway (3.3GL)	SCA		
17	Queanbeyan	9	5	4	-	-	100	15	9	224	74	43	27	281	110	Queanbeyan is a reticulator. 98% of supply is a fully treated bulk water supply.				ACTEW
18	Dubbo	1	1	0	87	88	86	280	256	396	216	12	11	689	482	Macquarie R and groundwater (21ML/d) to supply Dubbo.		State Water	7	
19	Orange	7	8	23	-	80	80	242	200	193	250			435	449	Spring Ck, Suma Pk, Gosling Ck to supply Orange. Blackmans Swamp Ck and Ploughmans Ck emergency stormwater harvesting (1,300ML/a).	Suma Pk (18.1GL), Spring Ck (4.43GL), Gosling Ck (650ML)		2	
20	Goulburn Mulwaree	0	0	-	-	-	-	114	113	169	175	2	2	285	289	Wollondilly R to supply Goulburn and Marulan.	Pejar (9GL), Sooley (6.25GL)		2	
21	Bathurst Regional	0	0	0	-	-	-	-	178	-	438	-	-	-	616	Macquarie R and Campbell R to supply Bathurst.	Ben Chifley (30.4GL), Winburndale (1.8GL)		2	
22	Lismore	0	0	1	75	75	75	14	14	185	55	-	-	198	69	Lismore Council is a reticulator with a fully treated bulk water supply.	Nimbin (25ML)			Rous
23	Bega Valley	2	2	3	72	71	79	8		69	32	-	40	77	72	Towamba R (aquifer), Tantawanglo Ck, Bega R (aquifer), Bemboka R, Rogo R, Illawamba Ck, Couria Ck.	Yellow Pinch (3GL), Ben Boyd (800ML), Tilba (135ML)		Yes	11
24	Ballina	0	0	-	99	99	99	13	12	267	339	-	-	280	351	Council is a reticulator. 93% of supply is fully treated bulk supply. 7% from Richmond R & g/water (1.2ML/d).	Marom (66ML)		2	Rous
25	Kempsey	0	0	0	0	51	59	214	157	149	151	39	31	401	340	Macleay R and g/water (71ML/d) to supply Kempsey, South West Rocks, Crescent Head & Hat Head.	Steuart McIntyre (2.5GL), other (400ML)		Yes	38
26	Essential Energy	0	0	0	-	80	79	906	480	77	55	15	15	998	550	Water is drawn from local sources at Broken Hill and from Menindee Lakes.	Stevens Ck (24GL), Imperial Lk (700ML), Umberberka (13GL)			
27	Byron	7	5	11	-	-	-	14	7	457	276	-	-	471	283	Council is a reticulator for 85% of supply (fully treated bulk water). 15% of the supply, including Mullumbimby is provided by Byron.	Wilson R (136ML)			Rous
<b>LWUs with 3,001 - 10,000 Properties</b>																				
29	Armidale Dumaresq	-	0	0	-	-	-	177	157	61	55	22	21	259	233	Macleay River to supply Armidale.	Malpas (13GL), Oaky R (2.7GL), Puddledock Ck (930ML)			
30	Griffith	0	0	1	-	-	-	386	253	51	52	2	2	440	308	Murrumbidgee Irrigation Area Main Canal to supply Griffith.	Griffith (360ML)	State Water		
31	Lithgow	0	0	1	100	100	100	-	87	-	165	-	-	-	252	Council is a reticulator for 39% of supply, remaining from Farmers Ck Dam to supply Lithgow.	Farmers Creek (1.5GL)			Fish River WS
32	Mid-Western Regional	0	0	0	-	80	80	-	169	-	56	-	5	-	230	Cudgegong R to supply Rylstone and Kandos and groundwater (13ML/d) to supply Mudgee and Gulgong.	Rylstone (3.32GL)		37	
33	Richmond Valley	0	0	-	-	-	-	-	-	-	-	-	-	-	-	Casino has run-of-river supply from Richmond R. Supply for Lower River (20% of total) from Rous.		State Water		Rous
34	Nambucca	0	0	-	100	100	100	-	105	-	184	-	6	-	295	Groundwater to supply Nambucca Heads, Macksville, Bowraville, South Head and Valla Beach.			Yes	9
35	Singleton	0	0	0	-	-	-	73	187	308	203	9	390	391	Hunter River and Glennies Creek to supply Singleton.		State Water			
36	Parkes	0	0	5	-	100	100	-	-	-	-	-	-	-	-	Billabong Ck, Beargamil Ck & g/water (26ML/d) to supply Parkes & Peak Hill. 8% of supply is from Forbes.	Lk Endeavour (2.4GL), Beargamil (480ML)	State Water	5	Forbes
37	Inverell	1	1	1	100	100	100	144	132	103	112	19	17	266	261	Gwydir R and groundwater (1ML/d) to supply Inverell, Yetman and Ashford.	Lk Inverell (1.5GL)	State Water	1	

Table 5B: Water supply and sewerage – levels of service, environmental, main sources of water supply (cont'd)

WATER UTILITY	LEVELS OF SERVICE						ENVIRONMENTAL						MAIN SOURCES OF WATER SUPPLY									
	Billing Complaints WS & Sge			% of calls Answered by Operator within 30 seconds			Greenhouse Gas Emissions						Surface Water Supply			Groundwater		Bulk Supplier (potable water)				
	(per 1000 properties)			(seconds)			Water		Sewerage		Other		Total		Major Sources of Water	Storage Dams	Bulk Raw Water Supplier		>50% of Supply from Grnd Water	No. Bores		
	(33)	(34)		(35a)	(35b)	(35c)	(35d)							(36)				(37)			(38)	(39)
08/09	09/10	10/11	08/09	09/10	10/11	09/10	10/11	09/10	10/11	09/10	10/11	09/10	10/11	09/10	10/11							
38	Moree Plains	9	15	-	90	80	80	45	-	56	-	-	-	101	-	Groundwater (18ML/d) to supply Moree, Mungindi and Bogabilla.	2 dams (150ML)		Yes	14		
39	Cowra	1	3	4	100	100	100	374	224	29	23	-	-	402	247	Lachlan River and 2 bores to supply Cowra.	Koorawatha (200ML)	State Water		2		
41	Muswellbrook	0	1	1	-	-	-	-	-	-	-	-	-	-	-	Hunter River and groundwater (0.5ML/d) to supply Muswellbrook and Denman.		State Water		3		
42	Corowa	0	0	0	100	100	100	-	-	-	-	-	-	-	-	Murray River and Mulwala Lake to supply Corowa and Mulwala.		State Water				
43	Tumut	7	7	9	-	99	99	169	156	216	210	11	5	397	371	Tumut R to supply Tumut, Little Gilmore Ck to supply Batlow, Nimbo Ck to supply Brungle, Jounama Ck to supply Talbingo & Adelong Ck.	Batlow (82ML)	State Water		4		
44	Gunnedah	8	0	0	95	96	95	239	186	-	-	-	-	239	186	Groundwater (26ML/d) & Namoi R to supply Gunnedah, Curlewis, Mullaley and Tambar Springs.			Yes	17		
45	Upper Hunter	6	5	4	-	99	99	-	-	-	-	-	-	-	-	Hunter River & groundwater (5ML/d) to supply Scone, Aberdeen, Merriwa, Cassilis, Murrurundi & Willow Tree	Murrurundi (170ML)	State Water		8		
46	Narrabri	5	6	6	-	100	100	-	-	-	-	-	-	-	-	Namoi R & groundwater (34.5ML/d) to supply Narrabri, Wee Waa, Boggabri, Pilliga, Bellata & Gwabegar.			Yes	11		
47	Bellingen	1	0	1	95	95	95	-	155	-	199	-	-	-	354	Bellinger R to supply Dorrigo & groundwater (4ML/d) to supply Bellingen.	1 dam (54ML)		Yes	4		
48	Leeton	3	3	3	100	100	100	-	-	-	-	-	-	-	-	Murrumbidgee Irrigation Area Main Northern Canal to supply Leeton, Yanco, Murrumbidgee & Whitton.	Leeton, 2 others (270ML)	State Water				
49	Young	5	1	13	95	-	95	-	-	-	-	-	-	-	-	Council is a reticulor with a fully treated bulk water supply.						Goldenfields
50	Cooma-Monaro	16	10	1	95	98	98	221	133	176	176	-	14	397	323	Murrumbidgee River & groundwater (0.7ML/d) to supply Cooma, Bredbo & Nimmitabel.	1 dam for Nimmitabel (100ML)				4	
51	Forbes	0	0	0	100	100	100	231	228	176	225	23	24	430	477	Lachlan River & groundwater (7.3ML/d) to supply Forbes & Ootha.		State Water		2		
52	Snowy River	2	2	0	95	95	95	270	175	135	113	-	25	406	314	Snowy River to supply Jindabyne, Berridale, Adaminaby, Dalgety & Kalkite.		State Water				
53	Berrigan	19	18	15	-	-	95	-	-	-	-	-	-	-	-	Mulwala Canal, DWR Channel & Murray River to supply Berrigan, Finley & Tocumwal.	4 dams (260ML)	State Water				
54	Deniliquin	3	0	1	-	-	-	-	149	-	132	-	18	-	300	Edward River to supply Deniliquin.		State Water			1	
55	Warrumbungle	0	0	0	-	-	-	192	127	61	115	-	-	252	242	Castlereagh R & groundwater (18.3ML/d) to supply Dunedoo, Coolah, Mendooran, Coonabarabran, Baradine, Binnaway, Bugaldie & Kenerbi.	Timor (1.14GL)				6	
56	Yass Valley	4	6	7	95	95	95	115	86	123	113	16	12	255	211	Yass River and groundwater (0.3ML/d) to supply Yass. Raising of dam is underway to a capacity of 2.47GL.	Yass (1.13GL)				5	
<b>LWUs with 1,501 - 3,000 Properties</b>																						
57	Wellington	36	45	10	-	-	95	265	342	-	-	-	-	460	551	Macquarie River to supply Wellington.		State Water		2		
58	Cootamundra	2	2	1	80	80	90	-	9	68	118	-	3	68	130	Council is a reticulor with a fully treated bulk water supply.						Goldenfields
59	Lachlan	-	1	5	100	100	100	-	329	-	82	-	11	-	422	Lachlan River and groundwater (2ML/d) to supply Lachlan, Tottenham and Lake Cargelligo.	5 dams (112ML)	State Water		1		
60	Glen Innes Severn	-	3	1	100	100	100	139	129	99	99	9	9	247	237	Beardy Waters and Mann River to supply Glen Innes and by a weir on the Mole River to supply Deepwater.	Beardy Waters (500ML)				1	
61	Liverpool Plains	8	19	45	-	-	90	-	140	-	52	-	-	-	192	Groundwater (12ML/d) to supply Quirindi; Hunter R to supply Murrurundi & Willow Tree; Coepolly Ck, Cockburn R & 7 wells to supply Werris Ck, Kootingal, Moonbi, Attunga & Bendemeer.	Quipolly (5.4GL)		Yes	11		
62	Narramine	4	11	23	87	87	87	288	161	1265	83	10	7	1563	251	Groundwater (18ML/d) to supply Narramine, Trangie and Tomingley.	2 dams (52ML)		Yes	15		
63	Narrandera	-	-	-	-	-	99	-	-	-	-	-	-	-	-	G/water (18ML/d) to supply Narrandera. A bulk water supply from Goldenfields is provided to part of Narrandera.			Yes	2		Goldenfields
65	Murray	0	0	0	98	99	100	180	146	140	209	-	13	319	369	Murray River and Galpa Creek to supply Moama and Mathoura.		State Water				
67	Cobar	5	4	7	100	100	100	51	39	120	102	-	4	171	145	Bulk water supply. Bogan River to supply Cobar.	Cobar (1.82GL), 4 others	Cobar WB		1		
68	Tenterfield	-	-	0	-	90	95	-	-	-	-	-	-	-	-	Tenterfield Creek and groundwater (1ML/d) to supply Tenterfield, Urbenville and Jennings.	Tenterfield Ck (1.15GL)				1	
70	Kyogle	1	1	1	100	100	100	233	220	84	96	18	24	335	340	Clarence River to supply Kyogle, Bonalbo and Woodenbong.	Bonalbo (47ML)				3	
71	Palerang	16	23	15	90	90	-	128	171	107	170	-	-	235	341	Shoalhaven R to supply Braidwood, Molonglo R to dam to supply Captain's Flat & groundwater (4.8ML/d) to supply Bungendore.	Captains Flat (820ML), Braidwood (80ML)				4	
73	Upper Lachlan	2	5	1	90	90	90	130	129	-	-	-	-	130	129	Kentgrove Creek to supply Crookwell and groundwater (2ML/d) to supply Gunning and Dalton.	Crookwell (450ML), other (25ML)				6	
74	Wentworth	1	0	5	-	100	100	-	-	-	-	-	-	-	-	Murray R & Darling R to provide a dual supply for Wentworth, Buronga, Gol Gol, Dareton and Pooncarie.		State Water				
75	Coonamble	0	3	-	90	90	90	150	-	178	-	8	-	337	-	Groundwater (11.7ML/d) to supply Coonamble.			Yes	6		
76	Harden	6	23	13	90	95	98	11	11	48	477	3	3	63	491	Council is a reticulor with a fully treated bulk water supply.						Goldenfields
79	Walgett	-	-	0	-	-	-	-	-	-	-	-	-	-	-	Namoi River and groundwater (5ML/d) to supply Walgett, Collarembri and Lightning Ridge.		State Water			6	
80	Greater Hume	0	0	0	100	100	100	133	106	159	148	15	15	306	269	Council is mostly a reticulor serving Hume Villages with a fully treated bulk supply. G/water (4ML/d) to Culcairn.					2	Albury, Riverina



Table 5B: Water supply and sewerage – levels of service, environmental, main sources of water supply (cont'd)

WATER UTILITY	LEVELS OF SERVICE			ENVIRONMENTAL				MAIN SOURCES OF WATER SUPPLY										
	Billing Complaints WS & Sge  (per 1000 properties)  (33) C12  08/09 09/10 10/11	% of calls Answered by Operator within 30 seconds  (seconds)  (34) C14  08/09 09/10 10/11	Greenhouse Gas Emissions				Surface Water Supply											
			Water	Sewerage	Other	Total	Major Sources of Water			Storage Dams	Bulk Raw Water Supplier	Groundwater	Bulk Supplier (potable water)					
			(tonnes CO2 per 1000 properties)  (35a) E9  09/10 10/11	(tonnes CO2 per 1000 properties)  (35b) E10  09/10 10/11	(tonnes CO2 per 1000 properties)  (35c) E11  09/10 10/11	(tonnes CO2 per 1000 properties)  (35d) E12  09/10 10/11	(36)			(37)	(38)	>50% of Supply from Grnd Water  No. Bores  (39) (40)	(41)					
<b>LWUs with 200 - 1,500 Properties</b>																		
81	Gwydir	1 4 2	- - -	- 141	- 115	- -	- 256	Gwydir R to supply Bingara & g/water (5ML/d) to supply Warialda, Gravesend & North Star. System is non-potable.						State Water	Yes	9		
83	Oberon	2 6 5	95 95 95	142 -	51 -	- -	193 -	Council is a reticulator with a full filtered (chlorinated) bulk water supply.									Fish River WS	
84	Gilgandra	6 7 7	75 75 75	- -	- -	- -	- -	Groundwater (8.5ML/d) to supply Gilgandra							Yes	5		
85	Uralla	3 14 5	85 95 95	104 117	111 138	5 11	221 266	Kentucky Creek and Gwydir River to supply Uralla and Bundarra.						Kentucky Ck (500ML)				
86	Hay	2 2 2	- - 50	- -	- -	- -	- -	Murrumbidgee River to supply Hay.						State Water				
87	Bourke	6 9 9	80 80 80	- -	- -	- -	- -	A weir on the Darling River to supply Bourke.								1		
88	Wakool	0 0 0	100 - 100	- -	- -	- -	- -	Murray River to supply Barham and Murray Downs.						1 dam (130ML)	State Water			
89	Bogan	1 1 0	97 97 95	- -	- -	- -	- -	Bogan River to supply Nyngan.						State Water				
90	Guyra	4 2 2	100 100 100	447 211	120 129	10 10	577 350	Gara River to supply Guyra.						Guyra (375ML), Tingha (90ML)				
91	Cabonne	9 8 11	- - -	- -	- -	- -	- -	Molong Creek, Buckinbah River, the Bell River and groundwater (0.4ML/d) to supply Molong, Cumnock and Yeoval.						Borenore Ck (230ML), Molong Ck (1GL), other (20ML)		6		
92	Carrathool	2 0 -	- 100 100	1058 915	65 48	- -	1124 963	Murrumbidgee Irrig. Area Canal & g/water (15ML/d) to supply Hillston, Goolgowi, Rankins Springs & Carrathool						3 dams (184ML)	Yes	9		
93	Tumbarumba	6 5 0	100 - 100	- 2	- 322	- 37	- 361	Murray River and groundwater (0.4ML/d) to supply Tumbarumba and Khancoban.						Tumbarumba (70ML)		1		
94	Gundagai	8 13 7	98 98 98	407 411	171 -	- -	578 411	Murrumbidgee River to supply Gundagai.						State Water				
96	Warren	85 84 6	95 96 95	- -	- 42	- -	- 42	Macquarie River and groundwater (3.5ML/d).						State Water		5		
97	Bombala	0 0 0	100 100 100	184 184	47 97	- -	231 281	Coolumbooka River, Delegate River and Snowy River to supply Bombala and Delegate.						Coolumbooka (215ML)				
98	Walcha	2 2 2	- 100 100	342 338	25 154	17 4	384 496	MacDonald River to supply Walcha.						Walcha (80ML)				
100	Balranald	0 0 0	100 100 100	- 137	- 74	- -	- 211	Murrumbidgee R to supply Balranald & Euston.						State Water				
101	Murrumbidgee	- - 1	- - -	- -	- -	- -	- -	Groundwater (13ML/d) to supply Darlington Point and Coleambally.							Yes	4		
103	Central Darling	35 6 28	- - 95	- -	- -	- -	- -	Groundwater (1ML/d), Wallandra Creek and Darling River to supply Wilcannia, Ivanhoe and Whitecliffs.						4 dams (575ML)		3		
104	Boorowa	0 0 0	99 99 99	83	113	2	198	Boorowa River to supply Boorowa.						Boorowa (335ML)		2		
105	Brewarrina	0 0 8	- 95 100	495 493	135 186	- 9	631 688	Barwon River and groundwater (0.9ML/d) to supply Brewarrina and Goodooga.						1 dam (73ML)		1		
106	Jerilderie	0 0 0	95 95 95	15 233	34 91	6 9	56 333	Billabong Creek to supply Jerilderie.						State Water				
<b>LWUs without Sewerage</b>																		
4	Rous (Bulk Supplier) (NO SGE)		95 95 95					Rocky Ck, Duck Ck & Emigrant Ck to provide fully treated bulk water supply to Byron, Richmond Valley, Lismore & Ballina.						Rocky Ck (14GL), Emigrant Ck (820ML)		3		
8	Riverina (Groundwater) (NO SGE)	1 2 4	99 98 98	407 307	- -	0 0	407 307	Murrumbidgee River and groundwater (117ML/d) to supply Wagga Wagga, Holbrook, Lockhart and Henty.						3 dams (30ML)	State Water	Yes	28	
12	Fish River WS (Bulk Supplier)		98 98 98					Oberon R & Duckmaloi R to provide a bulk water supply to Oberon & Lithgow councils, Pacific Power & Sydney Water.						Oberon (45GL), Duckmaloi Weir				
28A	Goldenfields (Reticulator) (NO SGE)		- - -					Council reticulates water to Bland, Coolamon, Junee, Temora and part of Narrandera.								2	Goldenfields	
28B	Goldenfields (Bulk) (NO SGE)		- - -					Murrumbidgee R & g/water (42.5ML/d) to supply Coolamundra, Harden, Young & Goldenfields Reticulation area.						State Water	Yes	6		
40	Central Tablelands (NO SGE)	0 0 0	- 98 98	297 216	- -	5 4	302 221	Lake Rowlands and groundwater (7ML/d) to Blayney, Canowindra, Grenfell, Eugowra, Millthorpe, Mandurama, Lyndhurst, Carcoar, Manildra, Cargo, Cudal, Woodstock & Gooloogong.						Lk Rowlands (4.5GL), Bogolong (360ML)		7		
66	Cobar Water Board (Bulk) (NO SGE)							Bulk raw water is supplied to Cobar and the mines.						4 dams (1.1GL) Nyngan, Cobar				
<b>LWUs without Water Supply</b>																		
9	Wagga Wagga (NO WS)		- 100 -	- -	199 245	- -	199 245											
30A	Hawkesbury (NO WS)	0 0 0	- - -	- -	73	- -	73											
69	Temora (NO WS)	0 0 0	- - -	- -	22 33	- 0	22 33											
72	Bland (NO WS)	0 0 -	- - -	- -	- 68	- -	- 68											
77	Junee (NO WS)	0 0 0	- - -	- -	300 341	- -	300 341											
78	Blayney (NO WS)	0 0 -	- - -	- -	121 308	6 -	128 308											
95	Weddin (NO WS)	0 0 0	- - -	- -	19 65	- -	19 65											
99	Coolamon (NO WS)	0 0 0	- - -	- -	221 52	- -	221 52											
102	Lockhart (NO WS)	0 0 0	- - -	- -	122 119	144 141	267 260											
107	Urana (NO WS)	0 0 0	- - -	- -														









Table 6A: Water supply – 2010-11 residential multiple tariffs

WATER UTILITY	Town	Tariff Type	Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	
		(1)	(\$) (2)	(3)	(kL) (4)	(kL) (5)	(c/kL) (6)	
29	Armidale Dumaresq	Armidale	Inclining Block	230	Y	Nil	up to 400 kL 401 kL to 1000 kL >1000 kL	205 272 316
		Armidale, untreated	Inclining Block	230	Y	Nil	up to 400 kL 401 kL to 1000 kL >1000 kL	100 177 218
100	Balranald (Dual Supply)	Balranald & Euston, Filtered	Inclining Block	135	Y	Nil	up to 600 kL >600 kL	76 114
		Balranald & Euston, Raw	Inclining Block	143	Y	Nil	up to 600 kL >600 kL	42 63
21	Bathurst Regional	Filtered	Inclining Block	130	Y	Nil	up to 250 kL >250 kL	132 198
		Raw Water	Inclining Block	130	Y	Nil	up to 250 kL >250 kL	60 99
		Hillview Water	Inclining Block	130	Y	Nil	up to 250 kL >250 kL	152 320
53	Berrigan (Dual Supply)	Berrigan,Barooga,Finley(Potable)	Two Part	431	Y	Nil	All	90
		Berrigan,Barooga,Finley(Non-Potable)	Two Part	431	Y	Nil	All	45
		Tocumwal (Filtered)	Two Part	431	Y	Nil	All	60
89	Bogan	Nyngan	Two Part	335	Y	Nil	All	160
		Nyngan, Raw Water	Inclining Block	330			up to 600 kL >600 kL	55 80
97	Bombala	Bombala	Inclining Block	477	Y	Nil	up to 350 kL >350 kL	55 119
		Delegate	Unmetered	365	Y			
87	Bourke (Dual Supply)	Bourke, Filtered	Two Part	208	Y	Nil	All	180
		Bourke, Raw	Unmetered	382	Y			
105	Brewarrina	Brewarrina	Unmetered	1015				
		Goodooga	Unmetered	832				
91	Cabonne	Molong, Cumnock, Yeoval	Inclining Block	226	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	140 324 443
		North Yeoval Wellington	Inclining Block	153	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	206 268 433
92	Carrathool	Carrathool	Inclining Block	500	Y	Nil	up to 350 kL >350 kL	100 110
		Hillston	Inclining Block	265	Y	Nil	up to 350 kL >350 kL	65 85
		Melbergen	Inclining Block	550	Y	Nil	up to 400 kL >400 kL	140 150
		Goolgowi Potable Water	Inclining Block	350	Y	Nil	up to 200 kL >200 kL	70 90
		Goolgowi Raw Water	Inclining Block	350	Y	Nil	up to 250 kL >250 kL	50 75
		Merriwaga Town Water	Inclining Block	650	Y	Nil	up to 450 kL >450 kL	70 85
		Rankins Springs Town Water	Inclining Block	800	Y	Nil	up to 350 kL >350 kL	80 90

Table 6A: Water supply – 2010-11 residential multiple tariffs (continued)

WATER UTILITY	Town	Tariff Type	Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	
		(1)	(\$) (2)	(3)	(kL) (4)	(kL) (5)	(c/kL) (6)	
103	Central Darling	Wilcannia (Filtered)	Two Part	108	Y	Nil	All	300
		Wilcannia (Raw)	Unmetered	437	Y			
		White Cliffs, Raw	Two Part	411	Y	Nil	All	330
		Ivanhoe (Raw)	Two Part	206	Y	Nil	All	145
		Ivanhoe (Filtered)	Two Part	124	Y	Nil	All	340
40	Central Tablelands	Central Tablelands	Inclining Block	160	Y	Nil	up to 450 kL	184
		Quandialla	Inclining Block	464	Y	Nil	>450 kL up to 200 kL/quarter after 200 kL/quarter	276 138 228
75	Coonamble Shire	Coonamble	Inclining Block	110	Y	Nil	up to 370 kL	44
		Gulargambone	Inclining Block	160	Y	Nil	>370 kL up to 430 kL	67 60
		Quambone	Inclining Block	175			>430 kL up to 430 kL >430 kL	89 62 92
26	Essential Energy	Broken Hill, Sunset Strp, Menindi, Silverton (filtered)	Inclining Block	244	Y	Nil	up to 400 kL > 400 kL	147 268
		Broken Hill, Sunset Strp, Menindi, Silverton (filtered) Summer Use Pipeline Customers or Unfiltered Water	Inclining Block	244	Y	Nil	extra 0.549kL/day for summer up to 400 kL > 400 kL	147 102 199
		Pipeline Customers or Unfiltered Water Summer Use					extra 0.549kL/day for summer	102
51	Forbes	Filtered	Inclining Block	165	Y	Nil	up to 600 kL > 600 kL	71 105
		Raw Ootha	Two Part Inclining Block	195			All up to 600 kL > 600 kL	32 71 105
84	Gilgandra (Groundwater)	Gilgandra	Two Part	199	Y	Nil	All	89
		Tooraweenah	Two Part	103	Y	Nil	All	123
60	Glen Innes Severn	Glen Innes	Inclining Block	100	Y	Nil	up to 450 kL >450 kL	192 288
		Deep water	Inclining Block	100	Y	Nil	up to 450 kL >450 kL	72 123
20	Goulburn Mulwaree Council	Goulburn	Inclining Block	255	Y	Nil	up to 292 kL >292 kL	167 225
		Marulan	Inclining Block	365	Y	Nil	up to 292 kL >292 kL	167 225
30	Griffith	Griffith (Filtered)	Inclining Block	123	Y	Nil	up to 200 kL >200 kL	55 108
		Yenda (Dual), Filtered	Inclining Block	192	Y	Nil	up to 200 kL >200 kL	55 108
		Yenda (Dual), Raw	Two Part		Y	Nil	All	29
44	Gunnedah (Groundwater)	Gunnedah	Inclining Block	175	Y	Nil	up to 400 kL >400 kL	90 135
		Curlewis	Inclining Block	190	Y	Nil	up to 400 kL >400 kL	96 144
		Mullaley	Inclining Block	310	Y	Nil	up to 400 kL >400 kL	143 186
		Tambar Springs	Inclining Block	356	Y	Nil	up to 400 kL >400 kL	231 264

Table 6A: Water supply – 2010-11 residential multiple tariffs (continued)

WATER UTILITY		Town	Tariff Type (1)	Access Charge (\$) (2)	Access Charge Independent of Land Value ? (3)	Allowance (kL) (4)	Usage Range (kL) (5)	Usage Charge (c/kL) (6)
90	Guyra	Guyra	Inclining Block	285	Y	Nil	up to 400 kL 401 to 1000 kL	130 160
		Tingha	Inclining Block	285	Y	Nil	> 1000 kL up to 400 kL 401 to 1000 kL	165 140 165
86	Hay (Dual Supply)	Hay (Filtered)	Inclining Block	118	Y	Nil	> 1000 kL up to 300 kL	170 100
		Hay (Unfiltered)	Unmetered	300			>300 kL	150
106	Jerilderie (Dual Supply)	Jerilderie, Filtered	Inclining Block	215	Y	Nil	up to 250 kL >250 kL	125 150
		Jerilderie, Raw	Two Part	307	Y	Nil	all	59
61	Liverpool Plains Shire Council	Quirindi, Werris Creek	Inclining Block	493	Y	Nil	up to 300 kL >300 kL	106 174
		Villages	Inclining Block	365	Y	Nil	up to 300 kL >300 kL	106 174
38	Moree Plains Shire	Moree, Mungindi, Boggabilla, Pallamallawa	Inclining Block, Potable	240	Y	Nil	up to 750 kL >750 kL	98 138
		Garah, Boomi, Boggabilla, Gurley, Weemalah	Inclining Block, Non-Potable	240	Y	Nil	up to 750 kL >750 kL	67 121
65	Murray	Murray, Filt	Two Part	227	Y	Nil	All	78
		Murray, Raw	Two Part	84	Y	Nil	All	59
46	Narrabri (Groundwater)	Narrabri	Two Part	255	Y	Nil	All	75
		Narrabri, unmetered	Unmetered	370	Y			
		Gwabegar, Bellata, Pilliga	Two Part	405	Y	Nil	All	100
		Wee Wa	Two Part	249	Y	Nil	All	75
		Boggabri	Two Part	272	Y	Nil	All	86
8	Riverina (Groundwater) (No Sge)	WaggaWagga	Inclining Block	100	Y	Nil	up to 500 kL >500 kL	95 142
		Rural Towns & Villages	Inclining Block	120	Y	Nil	up to 500 kL >500 kL	105 158
35	Singleton	Singleton	Inclining Block	160	Y	Nil	up to 450 kL >450 kL	97 179
		Mt Thorley	Two Part	494	Y	Nil	All	166
		Jerry's Plains /Broke Water	Inclining Block	160	Y	Nil	up to 450 kL >450 kL	130 179
13	Tamworth	Tamworth	Inclining Block	222	Y	Nil	up to 400 kL 401 to 800 kL	126 189
		Calala Backwash Water	Inclining Block		Y	Nil	>800 kL	284
		Raw Water			Y		All up to 400 kL	29 87
		Dungowan Dam (if main crosses property) Raw Water	Inclining Block	111	Y	Nil	401 to 800 kL >800 kL	96 106 44
93	Tumbarumba (Unfiltered)	Tumbarumba	Inclining Block	337	Y	Nil	up to 200 kL >200 kL	144 242
		Khancoban, metered	Inclining Block	330	Y	Nil	up to 200 kL >200 kL	124 219

Table 6A: Water supply – 2010-11 residential multiple tariffs (continued)

WATER UTILITY	Town	Tariff Type	Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge
		(1)	(\$) (2)	(3)	(kL) (4)	(kL) (5)	(c/kL) (6)
43 Tumut	Tumut	Inclining Block	141	Y	Nil	up to 300 kL	137
	Tumut Raw Water	Inclining Block	111	Y	Nil	>300 kL	211
45 Upper Hunter Shire Council	Murrurundi	Inclining Block	348	Y	Nil	up to 300 kL	165
	Merriwa/Cassilis, Aberdeen/Scone	Inclining Block	280	Y	Nil	>300 kL	195
88 Wakool (Dual Supply)	Barham, Tooleybuc, Moulamein (Filtered + Raw Water)	Inclining Block, Raw Water is unmetered	237+487	Y	Nil	up to 300 kL	136
	Wakool, Murray Downs, Koraleigh (Filtered)	Inclining Block	237	Y	Nil	>300 kL	195
79 Walgett	Walgett Shire	Unmetered	946	Y		up to 600 kL	95
	Lightening Ridge	Unmetered	376			>600 kL	149
	Collarenebri	Unmetered	903			up to 600 kL	95
	Carinda Bore	Unmetered	380	Y		>600 kL	149
	Rowena	Unmetered	446	Y			
96 Warren (Dual Supply)	Cumborah	Unmetered	405				
	Warren Bore Water	Inclining Block	300	Y	Nil	up to 450 kL	91
	Warren River Water	Inclining Block	300		Nil	>450 kL	137
	Nevertire	Inclining Block	415	Y	Nil	up to 450 kL	51
55 Warrumbungle	Collie	Inclining Block	305	Y	Nil	>450 kL	76
	Coonabarabran, Timore Dam (Raw), Baradine, Binnaway, Villages: Bugaldie & Kenebri, Southern, Coolah, Dunedoo, Village	Two Part	345	Y	Nil	up to 400 kL	112
	Mendooran	Inclining Block	816	Y	Nil	>400 kL	171
	Filtered	Inclining Block	240	Y	Nil	All	144
74 Wentworth (Dual Supply)	Raw	Inclining Block	125	Y	Nil	up to 250 kL	120
						>250 kL	280
56 Yass Valley	Yass, Bowning, Binalong & Rural Areas	Two Part	440	Y	Nil	up to 700 kL	40
	Murrumbateman	Two Part	330	Y	Nil	>700 kL	110

Table 6B: Water supply – 2010-11 non-residential tariffs

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	Compliance with 2(d) of BPMG	
			(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	(8)	
11	Albury City	Albury	Inclining Block	90	Meter Size* (eg 40mm:\$360)	Y	Nil	up to 225 kL 226 kL to 19999kL >19999	77 157 109	Y
29	Armidale Dumaresq	Armidale	Inclining Block	230	Uniform Access Charge	Y	Nil	up to 400 kL 401 kL to 1000 kL >1000 kL	205 272 316	Y
		Armidale, Untreated Water	Inclining Block	230	Uniform Access Charge	Y	Nil	up to 400 kL 401 kL to 1000 kL >1000 kL	100 177 218	
24	Ballina (Reticulator)	Ballina	Inclining Block	156	Service Connection Size* (eg. 40mm \$623)	Y	Nil	up to 350 kL >350 kL	167 251	Y
100	Balranald (Dual Supply)	Balranald & Euston, Filtered	Inclining Block	135	Service Connection Size* (eg. 40mm \$540)	Y	Nil	up to 600 kL >600 kL	76 114	Y
		Balranald & Euston, Raw	Inclining Block	143	Service Connection Size* (eg. 40mm \$572)	Y	Nil	up to 600 kL >600 kL	42 63	
21	Bathurst Regional	Bathurst (Filtered)	Inclining Block	130	Service Connection Size* (eg. 40mm \$520)	Y	Nil	up to 250kL >250 kL	132 198	Y
23	Bega Valley (Unfiltered)	Bega Valley	Two Part	180	Service Connection Size* (eg. 40mm \$721)	Y	Nil	All	227	Y
47	Bellingen (Unfiltered)	Bellingen	Two Part	123	Service Connection Size* (eg 40mm \$492)	Y	Nil	All	160	Y
53	Berrigan (Dual Supply)	Berrigan, Barooga, Finley (Potable)	Two Part	431	Uniform Access Charge	Y	Nil	All	90	Y
		Berrigan, Barooga, Finley (Non-Potable)	Two Part	431	Uniform Access Charge	Y	Nil	All	45	
		Tocumwal (Filtered)	Two Part	431	Uniform Access Charge	Y	Nil	All	60	
89	Bogan	Nyngan	Two Part	260	Service Connection Size* (eg. 40mm \$1340)	Y	Nil	All	160	Y
		Nyngan, Raw Water	Inclining Block	330			Nil	up to 600 kL >600 kL	55 80	
		Hermidale Girilambone & Coolabah	Annual Charge Annual Charge	480 330						
97	Bombala	Bombala	Inclining Block	477	Uniform Access Charge	Y	Nil	up to 350 kL >350 kL	55 119	N
		Delegate	Unmetered	365	Uniform Access Charge	Y				
104	Boorowa	Boorowa	Inclining Block	420	Uniform Access Charge	Y	Nil	up to 200 kL >200 kL	178 303	Y
87	Bourke (Dual Supply)	Bourke, Filtered	Two Part	208	Service Connection Size (eg. 40mm \$710)	Y	Nil	All	180	Y
		Bourke, Raw	Unmetered	382	Service Connection Size (eg. 40mm \$1205)					
105	Brewarrina	Brewarrina	Unmetered	1015						N
		Goodooga	Unmetered	832						
27	Byron (Reticulator)	Byron	Two Part	135	Service Connection* (40mm: \$538.80)	Y	Nil	All	220	Y
91	Cabonne	Molong, Cumnock, Yeoval	Inclining Block	226	Service Connection (40mm: \$452)	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	140 324 443	Y
		North Yeoval Wellington	Inclining Block	153	Service Connection (40mm: \$306.20)	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	206 268 433	
92	Carrathool	Carrathool	Inclining Block	500	Service Connection (40mm \$900)	Y	Nil	up to 350kL >350kL	100 110	Y
		Hillston	Inclining Block	265	Meter Size (40mm \$397.50)	Y	Nil	up to 350kL >350kL	65 85	
		Melbergen	Inclining Block	550	Uniform Access Charge	Y	Nil	up to 400 kL >400 kL	140 150	
		Merriwagga Town Water	Inclining Block	650	Uniform Access Charge	Y	Nil	up to 450 kL >450 kL	70 85	
		Goolgowi Potable Water	Inclining block	350	Meter Size (40mm \$525)	Y	Nil	up to 200 kL >200 kL	70 90	
		Goolgowi Raw Water	Inclining Block	350	Meter Size (40mm \$525)	Y	Nil	up to 250kL >250kL	50 75	
		Rankins Springs	Inclining Block	800	Meter Size (40mm \$1200)	Y	Nil	up to 350kL >350kL	80 90	
103	Central Darling	Wilcannia (Filtered)	Two Part	108	Uniform Access Charge	Y	Nil	All	300	Y
		Wilcannia (Raw)	Unmetered	437	Uniform Access Charge	Y	Nil			
		White Cliffs (Raw)	Two Part	411	Uniform Access Charge	Y	Nil	All	330	
		Ivanhoe (Raw)	Two Part	206	Uniform Access Charge	Y	Nil	All	145	
		Ivanhoe (Filtered)	Two Part	124	Uniform Access Charge	Y	Nil	All	340	



Table 6B: Water supply – 2010-11 non-residential tariffs (continued)

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	Compliance with 2(d) of BPMG
			(\$) (2)		(3)	(4)	(kL) (5)	(kL) (6)	
40	Central Tablelands	Central Tablelands	160	Meter Size*(40mm:\$640)	Y	Nil	All up to 200 kL/quarter after 200 kL/quarter	184	Y
		Quandialla	464		Y	Nil		138	
14	Clarence Valley	Treated	136	Service Connection Size (40mm:\$544)	Y	Nil	All	147	Y
		Raw Water	68	Service Connection Size (40mm:\$272)	Y	Nil	All	74	
67	Cobar (Dual Supply)	Cobar	300	Service Connection Size (40mm:\$650)	Y	Nil	up to 450 kL 451 - 550 kL >551 kL	100 170 230	Y
10	Coffs Harbour (Unfiltered)	Coffs Harbour, Nana Glen, Coramba	131	Meter Size: 40mm \$524	Y	Nil	All	236	Y
50	Cooma-Monaro	Cooma, Bredbo, Nimmitabel	225	Service Connection Size (40mm:\$900)	Y	Nil	All	125	Y
75	Coonamble Shire	Coonamble	110	Meter Size 40mm :\$442	Y	Nil	up to 370 kL >370 kL	44 67	Y
		Gulargambone	160	Meter Size 40mm :\$643	Y	Nil	up to 430 kL >430 kL	60 89	
		Quambone	175	Meter Size 40mm :\$704	Y	Nil	up to 430 kL >430 kL	62 92	
58	Cootamundra (Reticulator)	Cootamundra	310	Meter Size*: 40 mm \$1240	Y	Nil	All	170	Y
42	Corowa	Corowa, Mulwala, Howlong	180	Service Connection (eg.40mm \$720)	Y	Nil	All	100	Y
26	Essential Energy	Broken Hill, Sunset Strip, Menindi, Silvertown, Filtered	244	Service Connection (eg.40mm \$974.72)	Y	Nil	up to 400 kL	147	Y
							> 400 kL extra 0.549kL/day for summer	268 147	
		Chlorinated	244	Service Connection (eg.40mm \$974.72)	Y	Nil	up to 400 kL > 400 kL extra 0.549kL/day for summer	102 199 102	
39	Cowra	Cowra, Rural, Commercial, Government	280	Meter Size: 40 mm \$1120	Y	Nil	up to 400 kL > 400 kL	193 140	Y
		Cowra, Industrial	283	Meter Size: 40 mm \$1132	Y	Nil	All	74	
		Raw Water	280	Meter Size: 40 mm \$1120	Y	Nil	All	110	
54	Deniliquin	Deniliquin, Filtered	444	Service connection(40mm \$887)	Y	Nil	All	84	Y
		Deniliquin, Raw	213		Y	Nil	All	23	
18	Dubbo	Dubbo	181	Meter Size* (eg.40mm \$724)	Y	Nil	All	158	Y
15	Eurobodalla (Unfiltered)	Eurobodalla	167	Meter Size*: 40mm: \$668	Y	Nil	All	290	Y
51	Forbes	Forbes	165	Service Connection Size* (40mm:\$660)	Y	Nil	up to 600 kL >600 kL	71 105	Y
84	Gilgandra (Groundwater)	Gilgandra	199	Service Connection Size* (40mm:\$800)	Y	Nil	All	89	Y
		Tooraweenah	103	Uniform Access Charge	Y	Nil	All	123	
60	Glen Innes Severn	Glen Innes	100	Service Connection Size* (40mm:\$400)	Y	Nil	All	192	Y
		Deepwater	100	Service Connection Size* (40mm:\$400)	Y	Nil	All	72	
28A	Goldenfields (Reticulator)	Retail	206	Meter Size*(40mm: \$824)	Y	Nil	All	174	Y
1	Gosford	Gosford	96	Service Connection Size* (40mm:\$385.74)	Y	Nil	All	198	Y
20	Goulburn	Goulburn	330	Meter Size*(40mm: \$1315)	Y	Nil	up to 292 kL (for 20mm meter) >292 kL (for 20mm meter)	167 225	Y
		Marulan	365	Meter Size*(40mm: \$1456)	Y	Nil	up to 292 kL (for 20mm meter) >292 kL (for 20mm meter)	167 225	



Table 6B: Water supply – 2010-11 non-residential tariffs (continued)

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	Compliance with 2(d) of BPMG	
			(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	(8)	
80	Greater Hume	Culcairn + Villages	Inclining Block	205	Service Connection Size (40mm: \$295)	Y	Nil	up to 200kL >200kL	120 190	Y
30	Griffith	Griffith (Filtered)	Inclining Block	123	Meter Size*(40mm: \$492)	Y	Nil	up to 200 kL >200 kL	55 108	Y
		Yenda (Dual, Filtered)	Inclining Block	192	Uniform Access Charge	Y	Nil	up to 200 kL >200 kL	55 108	
		Yenda (Dual, Raw)	Two Part				Nil	All	29	
94	Gundagai	Gundagai	Two Part	120	Service Connection Size*: 40mm:\$480	Y	Nil	All	125	Y
44	Gunnedah (Groundwater)	Gunnedah	Inclining Block	175	Service Connection Size: 20 to 40 mm:\$175	Y	Nil	up to 400 kL >400 kL	90 135	Y
		Curlewis	Inclining Block	190	Service Connection Size: 20 to 40 mm:\$190, 50mm: \$450	Y	Nil	up to 400 kL >400 kL	96 144	
		Mullaley	Inclining Block	310	Service Connection Size: 20 to 40 mm:\$310, 50mm: \$500	Y	Nil	up to 400 kL >400 kL	143 186	
		Tambar Springs	Inclining Block	356	Service Connection Size: 20 to 40 mm:\$356	Y	Nil	up to 400 kL >400 kL	231 264	
90	Guyra	Guyra	Inclining Block	285	Uniform Access Charge	Y	Nil	up to 400 kL 401 to 1000 kL	130 160	N
		Tingha	Inclining Block	285	Uniform Access Charge	Y	Nil	> 1000 kL up to 400 kL 401 to 1000 kL > 1000 kL	165 140 165 170	
81	Gwydir	Gwydir	Inclining Block	440	Meter Size*(40mm:\$1760)	Y	Nil	up to 600 kL >600 kL	105 195	Y
76	Harden (Reticulator)	Harden	Two Part	322	Service Connection Size*:40 mm:\$1288.40	Y	Nil	All	191	Y
7	Port Macquarie-Hastings (Unfiltered)	Hastings	Inclining Block	154	Meter Size* (eg. 40mm \$615)	Y	Nil	up to 270 kL >270 kL	214 428	Y
86	Hay (Dual Supply)	Hay (Filtered)	Inclining Block	118	Service Connection Size*:40 mm:\$472	Y	Nil	up to 300 kL >300 kL	100 150	Y
		Hay (Unfiltered) - commercial users	Inclining Block	300	Service Connection Size*:40 mm:\$1200	Y	Nil	All	30	
37	Inverell	Inverell/Ashford/Yetman, Filtered	Inclining Block	300	Uniform Access Charge	Y	Nil	up to 500 kL > 500 kL	115 135	Y
106	Jerilderie (Dual Supply)	Jerilderie, Filtered	Inclining Block	215	Service Connection Size*(32mm:\$550)	Y	Nil	up to 250 kL >250 kL	125 150	Y
		Jerilderie, Raw	Two Part	307	Uniform Access Charge	Y	Nil	All	59	
25	Kempsey (Groundwater)	Kempsey	Two Part	235	Meter Size: 40 mm: \$940	Y	Nil	All	167	Y
70	Kyogle	Kyogle, Bonalbo, Muli-Muli, Woodenbong	Inclining Block	266	Service Connection Size*:40 mm:\$1064	Y	Nil	up to 200 kL > 200 kL	118 180	Y
59	Lachlan	Condoblin	Two Part	265	Service Connection Size*:40 mm:\$1060	Y	Nil	All	160	Y
48	Leeton	Leeton, Whitton, Murrumbidgee	Inclining Block	230	Meter Size*(40mm:\$820)	Y	Nil	up to 300 kL > 300 kL	78 115	Y
22	Lismore (Reticulator)	Lismore, Nimbin	Two Part	159	Service Connection Size*(40mm: \$636)	Y	Nil	All	236	Y
31	Lithgow	Lithgow	Inclining Block	585	Service Connection Size (50mm:\$775)	Y	Nil	All	276	Y
61	Liverpool Plains Shire Council	Quirindi	Inclining Block	493	Service Connection Size (eg. 40mm \$1222)	Y	Nil	up to 300 kL >300 kL	106 174	Y
		Werris Creek	Inclining Block	493	Service Connection Size(eg. 40mm \$1737)			up to 300 kL >300 kL	106 174	
		Villages	Inclining Block	365	Service Connection Size(eg. 40mm \$779)			up to 300 kL >300 kL	106 174	
5	MidCoast		Inclining Block	168	Meter Size* (eg. 40mm \$672)	Y	Nil	up to 200 kL >200 kL	238 266	Y
32	Mid Western Regional Council	Mudgee, Gulgong & Rylstone	Two Part	125	Meter Size* (eg. 40mm \$500)	Y	Nil	All	240	Y
38	Moree Plains Shire	Moree, Mungindi, Boggabilla, Pallamallawa Potable	Inclining Block	240	Service Connection Size (eg. 40mm \$960)	Y	Nil	up to 750 kL >750 kL	98 138	Y
		Weemalah Non-Potable	Inclining Block	240	Service Connection Size (eg. 40mm \$960)	Y	Nil	up to 750 kL >750 kL	67 121	
65	Murray	Murray, Filt	Two Part	227	Service Connection Size (eg. 40mm \$906.61)	Y	Nil	All	78	Y
		Murray, Raw	Two Part	84	Service Connection Size (eg. 40mm \$334.05)	Y	Nil	All (\$75.60 for stage 2 and \$76.70 for stage 3 water restrictions)	59	

Table 6B: Water supply – 2010-11 non-residential tariffs (continued)

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	Compliance with 2(d) of BPMG	
			(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)		(8)
101	Murrumbidgee	Darlington Point, Coleambally	Inclining Block	180	Service Connection Size (eg. 40mm \$340)	Y	Nil	up to 500 kL 501 to 800 kL > 800 kL	29 34 40	Y
41	Muswellbrook	Muswellbrook, Denman, Sandy Hollow	Two Part	175	Service Connection Size* (eg. 40mm \$700)	Y	Nil	All	168	Y
34	Nambucca	Nambucca	Two Part	88	Service Connection Size (eg. 40mm \$352)	Y	Nil	All	193	Y
46	Narrabri (Groundwater)	Narrabri	Two Part	255	Service Connection Size (eg. 40mm \$296)	Y	Nil	All	75	Y
		Narrabri, non - metered	Unmetered	370	Service Connection Size (eg. 40mm \$887)					
		Gwabegar	Two Part	405	Service Connection Size* (eg. 40mm \$533)	Y	Nil	All	100	
		Wee Wa	Two Part	249	Service Connection Size* (eg. 40mm \$301)	Y	Nil	All	75	
		Boggabri	Two Part	272	Service Connection Size* (eg. 40mm \$666)	Y	Nil	All	86	
		Bellata	Two Part	405	Service Connection Size* (eg. 40mm \$887)	Y	Nil	All	100	
		Pilliga	Two Part	405	Service Connection Size* (eg. 40mm \$533)	Y	Nil	All	100	
63	Narrandera (Groundwater)	Narrandera	Two Part	242	Meter Size (eg. 40mm \$968)	Y	Nil	All	92	Y
62	Narromine (Groundwater)	Narromine, Trangie, Tomingley	Two Part	165	Service Connection Size* (eg. 40mm \$660)	Y	Nil	All	90	Y
83	Oberon (Unfiltered, Reticulator)	Oberon	Two Part	241	Service Connection Size* (eg. 38mm \$502)	Y	Nil	All	149	Y
19	Orange	Orange	Two Part	185	Service Connection Size* (eg. 40mm \$740.80)	Y	Nil	All	170	Y
71	Palerang	Bungendore, Braidwood, Captains Flat	Inclining Block	371	Service Connection Size* (eg. 40mm \$1484)	Y	Nil	up to 200 kL >200kL	195 307	Y
36	Parkes	Parkes	Inclining Block	220	Meter Size, eg : 40mm \$880	Y	Nil	All	170	Y
17	Queanbeyan (Reticulator)	Queanbeyan	Inclining Block	288	Meter Size, eg : 40mm \$1244	Y	Nil	up to 160 kL >160 kL	206 303	Y
33	Richmond Valley	All	Two Part	111	Service Connection Size* (eg. 40mm \$444)	Y	Nil	All	170	Y
8	Riverina	Wagga Wagga	Inclining Block	140	Uniform Access Charge (fire service connections are metered, so unfair for fee to be proportional to size)	Y	Nil	up to 500 kL >500 kL	95 142	N
		Rural Towns & Villages	Inclining Block	145	Uniform Access Charge (fire service connections are metered, so unfair for fee to be proportional to size)	Y	Nil	up to 500 kL >500 kL	105 158	
4	Rous County Council	Bulk Supplier	Two Part	128	Uniform Access Charge	Y	Nil	All	150	
3	Shoalhaven	Shoalhaven, treated	Inclining Block	78	Service Connection Size(40mm:\$312)	Y	Nil	up to 450 kL >450 kL	150 185	Y
35	Singleton	Singleton	Two Part	160	Meter Size* (eg. 40mm \$640)	Y	Nil	All	97	Y
		Mt Thorley	Two Part	494	Meter Size* (eg. 40mm \$974)	Y	Nil	All	166	
		Jerry's/Broke Plains	Inclining Block	160	Uniform Access Charge	Y	Nil	up to 450 kL >450 kL	130 179	
52	Snowy River (Unfiltered)	Snowy River	Inclining Block	297	Meter Size, eg : 40mm \$1188	Y	Nil	up to 250 kL >250 kL	152 200	Y
13	Tamworth	Tamworth	Inclining Block	222	Service Connection Size* (eg. 40mm \$896)	Y	Nil	up to 400 kL 401 to 800 kL >800 kL	126 139 153	Y
		Calala Backwash Water Raw Water	Two Part Inclining Block					All up to 400 kL 401 to 800 kL >800 kL	29 87 96 106	
		Dungowan Dam (if main crosses property) Raw Water	Inclining Block	111	Uniform Access Charge	Y	Nil	up to 400 kL 401 to 800 kL >800 kL	44 96 106	
68	Tenterfield	Tenterfield, Jenning, Urbenville	Inclining Block	129	Meter Size* (eg. 40mm \$516)	Y	Nil	up to 450 kL > 450 kL	179 206	Y
93	Tumbarumba (Unfiltered)	Tumbarumba	Inclining Block	337	Meter Size* (eg. 40mm \$1348)	Y	Nil	up to 200 kL >200 kL	144 242	Y
		Khancoban	Inclining Block	330	Meter Size* (eg. 40mm \$1320)	Y	Nil	up to 200 kL >200 kL	124 219	
43	Tumut	Tumut	Inclining Block	141	Meter Size* (eg. 40mm \$560)	Y	Nil	up to 300 kL >300 kL	137 211	Y
		Tumit Raw Water	Inclining Block	111	Meter Size (eg. 40mm \$282)			up to 300 kL >300 kL	58 93	

Table 6B: Water supply – 2010-11 non-residential tariffs (continued)

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	Compliance with 2(d) of BPMG	
			(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)		(8)
6	Tweed	Tweed	Two Part	118	Meter Size*(40mm:\$472)	Y	Nil	All	185	Y
45	Upper Hunter Shire Council	Murrurundi	Two Part	348	Meter Size(40mm:\$695)	Y	Nil	All	164	Y
		Merriwa/Cassilis, Aberdeen/Scone	Two Part	280	Meter Size(40mm:\$567)	Y	Nil	All	159	
73	Upper Lachlan Council	Crookwell, Taralga, Dalton, Gunning	Inclining Block	339	Uniform Access Charge	Y	Nil	up to 200 kL > 200 kL	205 273	Y
85	Uralla	Uralla, Bundarra	Two Part	250	Uniform Access Charge	Y	Nil	All	150	Y
88	Wakool (Dual Supply)	Barham, Tooleybuc, Moulamein (Filt + Raw)	Two Part	487	Service Connection Size*(40mm:\$1948)	Y	Nil	All potable	95	Y
		Filtered	Two Part	237	Service Connection Size*(40mm:\$948)	Y	Nil	All	95	
98	Walcha	Walcha	Two Part	154	Service Connection Size 38mm:\$556)	Y	Nil	All	220	Y
79	Walgett (Dual Supply)	Walgett Shire	Unmetered	946	Uniform Access Charge	Y	Unmetered			N
		Lightening Ridge	Unmetered	376	Uniform Access Charge	Y	Unmetered			
		Collarenebri	Unmetered	903	Uniform Access Charge	Y	Unmetered			
		Carinda Bore	Unmetered	380	Uniform Access Charge	Y	Unmetered			
		Rowena	Unmetered	446	Uniform Access Charge	Y	Unmetered			
		Cumborah	Unmetered	405	Uniform Access Charge	Y	Unmetered			
96	Warren (Dual Supply)	Warren Bore Water	Inclining Block	300	Uniform Access Charge	Y	Nil	up to 450 kL >450 kL	91 137	Y
		Warren River Water	Inclining Block	300			Nil	up to 450 kL >450 kL	34 58	
		Nevertire	Inclining Block	415	Uniform Access Charge	Y	Nil	up to 450 kL >450 kL	51 76	
		Collie	Inclining Block	305	Uniform Access Charge	Y	Nil	up to 400 kL >400 kL	112 171	
55	Warrumbungle	Coolah, Binalong, Southern, Coolah, Baradine, Binnaway, Southern, Coolah, Dunedoo, Village, Villages: Bugaldie, Kenebri	Two Part	345	Uniform Access Charge	Y	Nil	All	144	Y
		Mendooran	Two Part	816	Uniform Access Charge	Y	Nil	All	144	
		Wellington, Geurie	Inclining Block	333	Service Connection Size 40mm:\$1324.80)	Y	Nil	up to 300 kL 301 to 500 kL 500 to 10000kL >10000 kL	116 128 135 210	
74	Wentworth (Dual Supply)	Filtered	Inclining Block	240	Service Connection Size*(40mm:\$1020)	Y	Nil	up to 250 kL >250 kL	120 280	Y
		Raw	Inclining Block	125	Service Connection Size(40mm:\$515)	Y	Nil	up to 700 kL >700 kL	40 110	
16	Wingecarribee	Wingecarribee	Inclining Block	120	Meter Size*(40mm: \$480)		Nil	All	151	Y
2	Wyong	Wyong	Two Part	142	Service Connection Size (eg. 40mm: \$568.41)	Y	Nil	All	198	Y
56	Yass Valley	Yass, Bowning, Binalong & Rural Areas	Two Part	440	Meter Size (40mm:\$688)	Y	Nil	All	260	Y
		Murrumbateman	Two Part	330	Meter Size (40mm:\$688*0.6)	Y	Nil	All	260	
49	Young (Reticulator)	Young	Two Part	175	Meter Size* (40mm:\$700)	Y	Nil	All	204	Y

Table 7: Sewerage – residential charges, bills and cost recovery

WATER UTILITY	RESIDENTIAL CHARGES (Current & 2010/11)														BILLS			COST RECOVERY															
	Fixed Charge (or Minimum)			Operating Cost (OMA)			Access Charge Independent of Land Value ?		Non-residential Sewer Usage Charge (Not incl SDF) c/kL		Trade Waste Usage Charge c/kL		Complying Liquid Trade Waste Fees and Charges* ?		Non-Res & Trade Waste Charges (% of Annual rates & Charges)		Non-Res & Trade Waste Volume (% of Sewage Collected)		Typical Developer Charge (\$/Equivalent Tenement [ET])			Typical Residential Bill (\$/assessment)			Return on Assets (%)			Economic Real Rate of Return (Sewerage)			Full Cost Recovery? (FCR) (Y/Y*N)	Recycled Water Usage Charge in place? (c/kL)	Connected Properties (No.)
	(\$)			(c/kL)			Yes/No		(3a)		(3b)		(4)		(5)		(6)		(7)			(8) P6			(9)			(11) F18			(11a)	(11b)	(12) CB
	09/10	10/11	11/12	08/09	09/10	10/11	10/11	11/12	10/11	11/12	10/11	11/12	10/11	11/12	2010/11	2010/11	09/10	10/11	11/12	09/10	10/11	11/12	08/09	09/10	10/11	08/09	09/10	10/11	10/11	11/12	2010/11		
Sydney Water	501	517	540				Y	Y	145	149			Y	Y				501	517	540				0.9	1.7	1.6	Y		1,745,000				
Hunter Water	496	489	521				Y	Y	63	65			Y	Y				496	489	521				2.0	1.8	1.8	Y		216,000				
<i>LWUs with &gt; 10,000 Properties</i>																																	
1 Gosford	464	483	508	146	167	126	Y	Y	103	108	149	153	Y	Y	19	17	3,960	4,200	4,130	464	483	508	1.4	2.1	0.9	1.1	2.1	0.9	Y		68,658		
2 Wyong	429	437	450	124	138	131	Y	Y	78	81	54	66	Y	Y	14		2,400	2,460	2,500	429	437	450	-1.6	-1.0	-1.3	-1.6	-1.0	-1.6	N	69	59,546		
3 Shoalhaven	585	615	645	257	249	231	Y	Y	95	100	147	152	Y	Y	14	21	7,630	7,860	8,100	585	615	645	0.8	1.1	1.5	1.3	1.6	2.1	Y		40,655		
5 MidCoast (Combined)	794	834	884	180	212	244	Y	Y	214	227	220	231	Y	Y	12	18	8,210	8,390	8,620	794	834	884	-1.8	-1.1	-0.1	-0.2	0.3	1.3	Y		33,012		
6 Tweed	527	568	609	137	151	148	Y	Y	105	114	151	170	Y	Y	16	25	5,150	5,300	5,560	527	568	609	-0.2	0.7	0.8	-0.2	-0.3	0.3	Y		30,303		
7 Port Macquarie-Hastings	601	617	645	104	123	113	Y	Y	94	98	140	145	Y	Y	5		3,800	4,000	4,100	601	617	645	-0.7	1.8	4.0	2.1	1.4	2.2	Y	69	26,732		
9 Wagga Wagga	380	406	434	119	122	116	Y	Y			152	165	Y	Y	32	12	3,500	3,500	3,500	380	406	434	0.9	1.9	0.0	1.0	1.3	0.7	Y	52	25,272		
10 Coffs Harbour	676	698	720	142	171	140	Y	Y	178	185	120	138	Y	Y	22		4,930	8,380	8,730	676	698	720	-0.7	1.6	0.6	2.1	2.6	2.0	Y		22,932		
11 Albury City	426	444	446	138	178	166	Y	Y	218	235	140	145	Y	Y	26	4	4,160	4,160	4,160	426	444	446	1.2	1.7	0.6	2.1	2.1	1.1	Y		21,140		
13 Tamworth Regional	675	695	716	107	128	122	Y	Y	83	109	124	163	Y	Y	24	45	1,700	1,740	1,780	675	695	716	8.8	7.4	5.5	7.8	6.5	5.2	Y		18,734		
15 Eurobodalla	662	712	778	246	217	236	Y	Y	77	115	210	123	Y	Y	10	24	8,870	9,050	9,300	662	712	778	1.3	3.1	1.4	1.6	1.8	1.5	Y		17,799		
17 Queanbeyan	334	342	352	100	161	153	Y	Y	67	70	147	154	Y	Y	13	16	1,210	1,270	1,300	334	342	352	-0.5	-0.6	-0.6	-1.0	-2.3	-2.2	N		16,158		
19 Orange	292	334	337	112	137	102	Y	Y	142	142	142	146	Y	Y		11	3,660	3,770	3,890	292	334	337	6.8	0.3	-0.1	5.8	-0.4	-1.4	Y*		15,812		
18 Dubbo	502	537	575	204	184	193	Y	Y	154	165	154	150	Y	Y	28	29	4,740	4,780	4,900	502	537	575	1.2	2.2	1.6	1.4	1.7	1.3	Y		15,579		
16 Wingecarribee	546	579	615	148	169	128	Y	Y	97	114	200	156	Y	Y	13	15	7,300	7,500	7,730	546	579	615	0.7	0.5	0.6	1.0	0.9	1.2	Y		14,507		
14 Clarence Valley	637	694	757	157	172	171	Y	Y	210	229	199	217	Y	Y	17	10	8,000	7,000	7,300	637	694	757	-0.1	0.6	0.2	1.2	1.7	1.4	Y		14,544		
21 Bathurst Regional	399	399	419	168	127	143	Y	Y	100	105	170	180	Y	Y	35	43	2,050	2,650	4,540	399	399	419	2.7	1.5	0.7	2.2	1.1	0.1	Y		15,048		
24 Ballina	480	550	630	149	187	152	Y	Y	140	160	120	138	Y	Y	20		6,740	6,890	7,050	480	550	630	-1.2	3.4	3.9	-2.3	-0.3	3.6	Y		13,525		
22 Lismore	545	607	667	107	90	116	Y	Y					Y	Y	23		7,490	7,710	7,950	545	607	667	-1.8	0.5	-0.5	-1.3	-1.3	-1.0	Y*		12,594		
23 Bega Valley	957	986	988	400	390	415	Y	Y	356	290	100	100	Y	Y	16		8,620	8,860	9,120	957	986	988	0.4	0.8	0.5	1.5	1.9	1.4	Y		12,068		
27 Byron	603*	633*	680*	170	180	168	Y	Y	180	199	180	199	Y	Y	25	29	10,300	9,510	9,730	777	829	862	0.4	0.0	-0.5	1.4	1.5	1.8	Y	100	10,342		
26 Essential Energy	397	428	465	264	181	209	Y	Y	103	112	158	175	Y	Y	20	40				397	428	465							Y*		9,725		
20 Goulburn Mulwaree	600	630	652	214	231	246	Y	Y	245	255	212	220	Y	Y	27		5,100	3,770	3,780	600	630	652	1.8	3.3	4.0	3.6	3.6	4.6	Y		10,205		
25 Kempsey	595	625	663	115	163	169	Y	Y	154	163	155	164	Y	Y	24	14	6,870	7,080	7,300	595	625	663	0.0	-0.2	-0.7	0.4	0.6	0.0	Y		8,948		
<i>Medians (% of LWUs basis excl bulk suppliers) for &gt;10,000 Properties</i>																																	
	630			152					22 out of 24 have non-res sewer usage charges				24 out of 24 have trade waste charges		5,560			638			0.6			1.3			2 LWUs did not achieve FCR						
<i>LWUs with 3,001 - 10,000 Properties</i>																																	
29 Armidale Dumaresq	357	357	357	156	111	143	Y	Y			28	138	Y	Y	33	16	4,280	4,380	4,480	357	357	357	1.3	4.0	2.4	1.3	3.7	2.0	Y		8,210		
31 Lithgow	482	381	431	125	142	167	Y	Y	112	123	147	160	Y	Y	15		1,790	1,790	1,790	482	381	431	-1.4	5.1	-1.9	-1.6	-0.7	-2.1	Y*		7,435		
30A Hawkesbury	445	494	543	134	137	151	Y	Y			103	113	N	Y	27		6,800	7,110	7,330	445	494	543	0.1	14.4	5.5	0.0	14.1	5.1	Y		7,537		
30 Griffith	558	669	690	152	158	134	Y	Y	135	137	110	110	Y	Y	23	20	1,840	1,900	1,960	558	669	690	0.1	1.7	1.8	0.3	1.3	1.7	Y		7,786		
33 Richmond Valley	810	840	800	147	160	132	Y	Y	168	176	138	142	Y	Y	13		9,470	12,570	19,400	810	840	800	1.1	3.1	2.0	2.2	3.5	2.8	Y		6,564		
32 Mid Western Regional	462	476	528	174	156	136	Y	Y	44	127					13	25	3,200	3,390	4,300	462	476	528	0.1	-0.1	0.6	-1.0	-1.2	-0.4	Y		6,668		
34 Nambucca	385	385	452	104	133	129	Y	Y	220	323	152	156	Y	Y	38	7	4,080	4,160	4,280	385	385	452	0.5	7.0	0.8	0.9	2.0	0.8	Y		5,644		
35 Singleton	387	399	411	109	144	137	Y	Y	135	145	90	120	Y	Y	22		2,720	2,780	2,860	387	399	411	2.3	2.2	4.7	0.5	0.8	2.3	Y		5,412		
37 Inverell	374	385	415	145	163	139	Y	Y					N		7	11	3,200	3,300	3,420	374	385	415	-1.0	0.9	1.1	0.7	0.2	0.7	Y		4,648		
41 Muswellbrook	459	510	535	155	190	164	Y	Y	168	168	90	90	Y	Y	12		4,980	5,150	5,300	459	510	535	1.9	2.5	6.5	1.4	1.7	5.3	Y		5,174		
36 Parkes	320	355	380	120	118	85	Y	Y	104	110	150	160	Y	Y	25	33	4,350	4,100	4,100	320	355	380	-0.2	6.0	6.5	0.4	4.3	4.3	Y		5,244		
42 Corowa	500	550	575	240	240	219	Y	Y	103	106	138	138	Y	Y	15	7	2,000	2,500	2,010	500	550	575	0.5	2.8	1.5	1.4	2.7	1.6	Y		4,905		

Table 7: Sewerage – residential charges, bills and cost recovery (continued)

WATER UTILITY	RESIDENTIAL CHARGES (Current & 2010/11)														BILLS			COST RECOVERY														
	Fixed Charge (or Minimum)			Operating Cost (OMA)			Access Charge Independent of Land Value ?	Non-residential Sewer Usage Charge (Not incl SDF) c/kL		Trade Waste Usage Charge c/kL		Complying Liquid Trade Waste Fees and Charges* ?		Non-Res & Trade Waste Charges (% of Annual rates & Charges)	Non-Res & Trade Waste Volume (% of Sewage Collected)	Typical Developer Charge (\$/Equivalent Tenement [ET])			Typical Residential Bill (\$/assessment)			Return on Assets (%)			Economic Real Rate of Return (Sewerage)			Full Cost Recovery? (FCR) (Y/Y/N)	Recycled Water Usage Charge in place? (c/kL)	Connected Properties (No.)		
	(\$)			(c/kL)			Yes/No																									
	(1) P4.1			(2)			(3)	(3a)		(3b)		(4)		(5)	(6)	(7)			(8) P6			(9)			(11) F18			(11a)	(11b)	(12) C8		
09/10	10/11	11/12	08/09	09/10	10/11	10/11	11/12	10/11	11/12	10/11	11/12	10/11	11/12	2010/11	2010/11	09/10	10/11	11/12	09/10	10/11	11/12	08/09	09/10	10/11	08/09	09/10	10/11	10/11	11/12	2010/11		
38	Moree Plains	591	610	628	142	145	135	Y	Y	110	115	138	138	Y	Y	25		3,900	4,160	4,370	591	610	628	1.8	2.4	2.6	2.3	2.2	2.5	Y	10	3,736
44	Gunnedah	320	340	395	111	119	126	Y	Y	24	83	125	125	Y	Y	22	16	2,000	2,050	2,150	320	340	395	-0.2	0.9	1.5	-0.3	-0.8	0.3	Y		3,969
46	Narrabri	469	492	542	115	142	158	Y	Y			200	200	Y	Y	5		4,020	4,180	4,590	469	492	542	-1.0	2.2	3.7	-0.6	1.4	3.0	Y		3,730
43	Tumut	531	568	585	196	194	143	Y	Y	166	171			Y	Y	24		4,880	4,880	5,020	531	568	585	1.1	1.4	1.5	0.9	1.0	0.9	Y		4,157
49	Young	395	550	625	77	77	59	Y	Y					Y	Y	34		1,160	1,100	1,100	395	550	625	5.8	6.9	13.6	5.4	6.6	14.5	Y		3,706
39	Cowra	557	574	597	196	184	206	Y	Y			143	146	Y	Y	19		4,650	4,810	5,010	557	574	597	4.0	4.3	0.9	4.2	4.7	3.1	Y		3,543
45	Upper Hunter	378	393	424	161	180	137	Y	Y	73	79			Y	Y	17	7	2,300	2,300	2,300	378	393	424	-1.2	-1.7	0.1	-2.6	-2.7	-1.3	Y		4,148
52	Snowy River	525*	615	696	286	346	464	Y	Y	202	207	152	160	Y	Y	21		5,400	5,400	5,400	634	615	696	1.8	3.3	-0.6	0.9	2.7	-1.1	Y*		3,606
51	Forbes	435	435	439	154	164	145	Y	Y	127	131	57	6	Y	Y	14	10	2,520	3,210	3,710	435	435	439	1.4	0.1	1.2	1.6	0.3	1.1	Y		3,155
50	Cooma-Monaro	667	694	722	317	257	274	Y	Y				156	N	Y	16		3,850	4,120	6,690	667	694	722	0.4	-0.7	0.8	0.3	-0.7	0.6	Y		4,358
53	Berrigan	350	359	369	258	234	171	Y	Y					N		18		1,700	1,700	1,710	350	359	369	-1.9	-1.8	-0.8	-3.1	-3.0	-2.3	N		3,312
48	Leeton	426	438	450	138	158	121	Y	Y	70	72	156	160	Y	Y	39	15	4,000	4,200	5,000	426	438	450	1.4	1.6	2.6	0.7	0.7	0.8	Y		3,196
54	Deniliquin	543	557	574	222	271	222	Y	Y	38	65	15	77	Y	Y	2	7	4,140	4,190	4,420	543	557	574	2.0	3.8	1.5	0.8	-0.2	0.7	Y		3,164
<i>Medians (% of LWUs basis excl bulk suppliers) for 3,000 to 10,000 Properties</i>		532			141			17 out of 24 have non-res sewer usage charges				21 out of 24 have trade waste charges				4,290			532			1.5			1.0			1 LWU did not achieve FCR				
<i>LWUs with 1,501 - 3,000 Properties</i>																																
47	Bellingen	531	558	570	136	213	199	Y	Y	120	80	120	120	Y	Y	4	7	4,250	4,420	4,530	531	558	570	0.3	-0.6	-0.8	-1.7	-1.8	-1.8	Y*		2,979
60	Glen Innes Severn	390	399	408	78	108	143	Y	Y	90	90		150	Y	Y			3,190	2,440	2,440	390	399	408	-0.1	1.1	-0.1	1.2	0.6	-0.2	Y*		2,802
58	Cootamundra	290	290	320	143	152	89	Y	Y	161	177		125	N	Y	24	11	2,750	2,810	2,880	290	290	320	0.3	-0.1	0.2	0.4	0.1	0.2	Y		2,784
57	Wellington	508	521	535	223	152	164	Y	Y	74	76	134	138	Y	Y	22	8	1,910	1,910	1,910	508	521	535	-1.1	0.3	0.6	0.0	1.2	1.3	Y		2,669
91	Cabonne	196*	203*	209*	210	304	147	Y	Y	120	120	140	140	Y	Y	17	10	4,300	5,060	5,060	306	316	298	1.2	-0.1	-0.4	0.9	-0.3	-0.6	Y*		2,373
80	Greater Hume	285	315	336	193	201	166	Y	Y	90	90		150	N	Y	20	10	3,000	3,000	1,300	285	315	336	-0.6	-0.9	-1.3	-1.2	-1.4	-1.8	Y*	60	2,567
59	Lachlan	338	386	410	117	129	140	Y	Y	105	110	120	125	Y	Y	21	23	7,500	7,500	7,750	338	386	410	-0.4	-1.4	-0.2	-1.0	-3.1	-2.4	Y*		2,160
65	Murray	366	370	374	134	123	128	Y	Y	51	51	125	154	Y	Y	12	31	2,050	2,050	2,050	366	370	374	1.7	1.9	1.6	1.7	1.7	1.2	Y		2,695
62	Narromine	455	469	483	102	102	103	Y	Y	170	175	170	175	Y	Y	24		3,340	3,750	3,920	455	469	483	1.0	4.8	3.9	0.8	3.6	2.2	Y		1,956
56	Yass Valley	515	530	550	232	214	157	Y	Y	160	180	125	138	Y	Y			4,640	4,770	4,900	515	530	550	2.7	1.8	0.9	2.6	1.4	0.5	Y		2,260
61	Liverpool Plains	350	385	410	102	134	131	Y	Y	145	155	300	300	Y	Y	8	27	2,570	2,570	2,700	350	385	410	0.0	-0.2	0.8	-0.1	-0.9	-0.2	Y		2,068
55	Warrumbungle	461	450	417	149	162	190	Y	Y	119	70	119		N		22	31	1,320	1,320	1,320	461	450	417	0.4	2.1	1.9	0.6	1.6	1.1	Y		2,467
69	Temora	244	256	269	288	370	237	Y	Y	25	25			N		20	8				244	256	269	1.5	0.2	2.4	1.0	-0.3	1.7	Y	35	2,117
71	Palerang	897	920	861	234	256	204	Y	Y	278	245		160	Y	Y	5		10,000	10,180	10,080	897	920	861	6.6	4.0	3.5	6.0	3.6	3.1	Y		1,897
72	Bland	510	525	578	243	203	178	Y	Y			10		N				1,000	1,470	1,620	510	525	578	0.1	2.0	0.7	0.5	1.0	0.3	Y		1,833
63	Narrandera	443	460	470	177	100	100	Y	Y	117	120			N		9					443	460	470	0.8	2.1	3.3	0.9	0.0	0.5	Y		1,796
67	Cobar	250	255	260	74	84	103	Y	Y					Y	Y	3		770	770	770	250	255	260	1.2	0.4	-0.4	1.1	0.3	-0.4	Y*	35	1,735
74	Wentworth	570	620	650	24	21	24	Y	Y					N	Y	10		5,340	5,340	5,490	570	620	650	-0.9	0.5	0.4	-0.5	0.7	0.6	Y		1,777
75	Coonamble	337	346	396	163	133	128	Y	Y	81	82			N		16			360		337	346	396	-2.5	-3.9	-3.3	-7.5	-8.1	-7.4	Y*		1,401
70	Kyogle	569	569	586	105	163	113	Y	Y	91	91	100	100	Y	Y	21	15	3,000	2,000	1,900	569	569	586	0.9	0.2	0.0	1.1	0.6	0.3	Y		1,694
77	Junee	335	344	355	128	160	97	Y	Y					N		13	15	1,650	1,650	1,650	335	344	355	0.7	0.0	-0.3	0.1	-0.4	-0.9	Y*	15	1,596
78	Blayney	430	450	465	224	233	207	Y	Y	110	110	115	138	Y	Y	8	10	2,160	3,030	3,120	430	450	465	-0.4	0.2	1.2	-0.2	0.4	0.3	Y		1,939
79	Walgett	355	372	391	54	72	82	Y	Y												355	372	391	0.5	0.6	0.3	0.5	0.5	0.2	Y		1,630
68	Tenterfield	669	738	760	292	258	235	Y	Y	90	93	125	129	Y	Y	19		1,500	1,500	5,500	669	738	760	-2.4	0.1	-1.3	-1.2	0.2	-0.4	Y*		1,736
<i>Medians (% of LWUs basis excl bulk suppliers) for 1,500 to 3,000 Properties</i>		417			142			19 out of 24 have non-res sewer usage charges				17 out of 24 have trade waste charges				2,790			414			0.4			0.3			0 LWU did not achieve FCR				



Table 7A: Sewerage – 2010-11 residential multiple tariffs

WATER UTILITY		Town	Access Charge (or Minimum) (\$) (1)	Access Charge Independent of Land Value ? (2)
78	Blayney	Blayney	465	Y
		Millthorpe	740	Y
87	Bombala	Bombala	500	Y
		Delegate	406	Y
105	Brewarrina	Brewarrina	680	
		Goodooga	295	
91	Cabonne	Molong	209	Y
		Canowindra, Cudal, Manildra, Cumnock, Yeoval	429	Y
		Eugowra	364	Y
92	Carrathool	Hilston	350	Y
		Goolgowi	300	Y
75	Coonamble	Coonamble	396	Y
		Gulargambone	540	Y
20	Goulburn Mulwaree Council	Goulburn	652	Y
		Marulan	785	Y
44	Gunnedah	Gunnedah	395	Y
		Curlewis	600	Y
90	Guyra	Guyra	530	Y
		Tingha	370	Y
102	Lockhart	Lockhart	453	Y
		The Rock	398	Y
		Yerong Creek	385	Y
101	Murrumbidgee	Darlington Point	300	N
		Coleambally	250	N
46	Narrabri	Narrabri	542	Y
		Wee Waa	553	Y
		Boggabri	421	Y
93	Tumbarumba	Tumbarumba	488	Y
		Khancoban	520	Y
88	Wakool	Wakool, Barham, Moulamein, Murray Downs	524	Y
		Tooleybuc	486	Y
79	Walgett	Walgett	391	Y
		Lightening Ridge	370	Y
		Collarenebri	423	Y
96	Warren	Warren	470	Y
		Nevertire	495	Y
57	Wellington	Wellington, Geurie	535	Y
		Mumbil	495	Y

NOTE: This Table only lists LWUs with multiple tariffs for residential customers.  
Residential tariffs for all LWUs are shown in Table 7.



Table 7B: Sewerage – 2010-11 non-residential tariffs

WATER UTILITY		Town	Access Charge (or Minimum) (\$) (1)	Access Charge Independent of Land Value? (2)	Basis for Access Charge *Proportional to square of size of service connection or water meter (3)	Sewer Usage Charge (for estimated volume discharged to sewerage system = water usage x sewer discharge factor) (4)	Substantial Compliance with 2(c) of BPMG Yes/No (5)
11	Albury	Albury	154	Y	Meter Size (40mm:\$648xSDF)	235 c/KL	Y
29	Armidale Dumaresq	Armidale	357	Y	Uniform Access Charge Multiple Units: \$318/WC; Hotels, Motels: \$117/WC, \$50/Urinals		N
24	Ballina	Ballina	475	Y	Service connection size* (40mm \$1902)	160 c/KL	Y
100	Balranald	Balranald	269	Y	Service connection size* (40mm \$1076)	15 c/KL	Y
21	Bathurst Regional	Bathurst	360	Y	Service Connection Size*(40mm: \$1440)	105 c/KL	Y
23	Bega Valley	Bega Valley	988	Y	Meter size* (eg. 40mm \$3952)	290 c/KL	Y
47	Bellingen	Bellingen, Urunga, Dorrigo	570	Y	Meter size* (eg. 40mm \$2280)	80 c/KL	Y
53	Berrigan	Berrigan, Finley, Tocumwal, Barooga	369	Y	Uniform Access Charge After two WCs \$80/WC		
72	Bland	Bland	578	Y	Uniform Access Charge \$118/WC, \$59/Urinal		Y
78	Blayney	Blayney	465	Y	Service connection size* (40mm \$1626)	110 c/KL	Y
		Millthorpe	695	Y	Service connection size* (40mm \$2779)	110 c/KL	
89	Bogan	Nyngan	103	Y	Service connection size* (40mm \$412)	190 c/KL	Y
97	Bombala	Bombala	480	Y	Uniform Access Charge	19 c/KL	Y
		Delegate	406	Y	Uniform Access Charge	82 c/KL	
104	Boorowa	Boorowa	533	Y	Uniform Access Charge	\$90.48/WC	N
87	Bourke	Bourke	577	Y	Uniform Access Charge		N
105	Brewarrina	Brewarrina	680	Y	Uniform Access Charge	\$57.75/Urinals, Additional WCs (2-5) \$171.70, additional WC \$57.75/WC	N
		Goodooga	295			\$57.75/Urinals, Additional WCs (2-5) \$171.70, additional WC \$57.75/WC	
27	Byron	Byron	680	Y	Service connection size* (40mm \$2720)	199 c/KL	Y
91	Cabonne	Molong	209	Y	Service connection size (40mm \$587)	120 c/KL	Y
		Canowindra	429	Y	Service connection size (40mm \$594.50)	120 c/KL	
		Eugowra	364	Y	Service connection size (40mm \$576.80)	120 c/KL	
		Manildra, Cudal	429	Y	Service connection size (40mm \$594.50)	120 c/KL	
		Cummock, Yeoval	500	N	Land Value		
92	Carrathool	Hillston	350+\$35/unit	Y	Uniform Access Charge Motels:Base+10% Base charge/unit; Service Station:1.5 Base Charge;laundromat, Clubs & Hotels:2xBase Charge	\$117.75/WC, \$58.95/Urinal	N
		Goolgowi	300+\$30/unit		Uniform Access Charge Motels:Base+10% Base charge/unit; Service Station:1.5 Base Charge;laundromat, Clubs & Hotels:2xBase Charge	\$117.75/WC, \$58.95/Urinal	
103	Central Darling	Wilcannia	370	Y	Uniform Access Charge After two fittings, \$123/additional fitting		N
14	Clarence Valley		437	Y	Service connection size* (40mm: \$1748)	229 c/KL	Y
67	Cobar		280	Y	Uniform Access Charge For 3 WCs, additional \$80/WC		N
10	Coffs Harbour	Coffs Harbour	705 x MF x SDF	Y	water meter and sewage discharge factors	185 c/KL	Y
99	Coolamon	Coolamon & Gainmain	310	Y	Uniform Access Charge	for >2 Pedestals, \$90/Pedestal	N
50	Cooma-Monaro	Cooma,Nimmitabel	768 for usage <100kL	Y	Uniform Access Charge \$768 for consumption < 100 kL, increasing to \$18240 for consumption > 8,000 kL		Y
75	Coonamble	Coonamble	396	Y	Uniform Access Charge	82 c/KL	Y
		Gulgambone	540	Y	Uniform Access Charge	98 c/KL	
58	Cootamundra	Cootamundra	185	Y	Meter Size* 40mm:\$741	177 c/KL	Y
42	Corowa	Corowa, Howlong & Mulwala	325	Y	Service connection size ( 40mm:\$1300)	106 c/KL	Y
26	Essential Energy	Broken Hill	652	Y	Service connection size* ( 40mm:\$2609)	112 c/KL	Y
39	Cowra	Cowra	597	Y	Uniform Access Charge	\$66/cistern (minimum \$132)	N
54	Deniliquin	Deniliquin	457	Y	Uniform Access Charge	65 c/KL	N
18	Dubbo	Dubbo	303	Y	Service connection size* ( 40mm: \$1214)	165 c/KL	Y
15	Eurobodalla	Eurobodalla	778	Y	Meter Size (Availability Factor based)* (eg. 40mm \$3112)	115 c/KL	Y
51	Forbes	Forbes	439	Y	Service Connection Size* 40mm:\$1756	131 c/KL	Y



Table 7B: Sewerage – 2010-11 non-residential tariffs (continued)

WATER UTILITY		Town	Access Charge (or Minimum)  (\$)  (1)	Access Charge Independent of Land Value?  (2)	Basis for Access Charge  *Proportional to square of size of service connection or water meter  (3)	Sewer Usage Charge  (for estimated volume discharged to sewerage system = water usage x sewer discharge factor)  (4)	Substantial Compliance with 2(c) of BPMG  Yes/No  (5)
84	Gilgandra	Gilgandra	212	Y	Service Connection Size*(40mm:\$841)	107 c/kL	Y
60	Glen Innes Severn	Glen Innes	163	Y	Service Connection Size*(40mm:\$652)	90 c/kL	Y
1	Gosford	Gosford	380	Y	Meter Size*(40mm \$1520)	108 c/kL	Y
20	Goulburn Mulwaree	Goulburn	357	Y	Meter Size* (40mm: \$1440)	255 c/kL	Y
		Marulan	580	Y	Meter Size* (40mm: \$2120)	255 c/kL	
80	Greater Hume	Burrumbuttock, Jindera, Holbrook, Culcairn, Henty, Walla Walla	169	Y	Service Connection Size(40mm:\$262)	90 c/kL	Y
30	Griffith	Griffith	390	Y	Service Connection Size* (40mm:\$1344)	137 c/kL	Y
94	Gundagai	Gundagai	120	Y	Service Connection(40mm:\$480)	180 c/kL	Y
44	Gunnedah	Gunnedah	175	Y	Service Connection Size (40mm:\$700)	83 c/kL	Y
		Curlewis	190	Y	Service Connection Size(40mm:\$760)	83 c/kL	
90	Guyra	Guyra	530	Y	Uniform Access Charge	1st WC/Urinal covered by rate, 2 to 6: \$225/WC or Urinal, All additional: \$115/WC or Urinal	N
		Tingha	370	Y	Uniform Access Charge		
81	Gwydir	Bingara, Warialda	410	Y	Meter Size(eg 40mm:\$1640)	245 c/kL	Y
76	Harden	Harden	212	Y	Service Connection*(eg 40mm:\$847)	160 c/kL	Y
7	Port Macquarie-Hastings 30A Hawkesbury	Hastings	645	Y	Uniform Access Charge	98 c/kL	N
		Category 1, Vol < 1kL/d	632	Y	Uniform Access Charge		
		Category 2, Vol : 1kL to 5 kL/d	3168	Y	Uniform Access Charge		
		Category 3, Vol < 5kL to 10 kL/d	6312	Y	Uniform Access Charge		
		Category 4, Vol : 10kL to 20 kL/d	12585	Y	Uniform Access Charge		
		Category 5, Vol > 20 kL/d	12585	Y	Uniform Access Charge		
86	Hay	Hay	486	Y	Uniform Access Charge	100 c/kL	Y
37	Inverell	Inverell, Ashford, Delungra, Gilgai	415	Y	Uniform Access Charge		N
106	Jerilderie	Jerilderie	500	Y	Service Connection*(eg 32mm:\$1280)	70 c/kL	Y
77	Juneec	Juneec	355	Y	Uniform Access Charge	\$89/WC, \$34.30/Urinal	N
25	Kempsey	Kempsey	597	Y	Meter Size(eg 40mm:\$2388)	163 c/kL	Y
70	Kyogle	Kyogle	230	Y	Service Connection Size*(40mm:\$920)	91 c/kL	Y
59	Lachlan	Lachlan	270	Y	Service Connection*(eg 40mm:\$1080)	110 c/kL	Y
48	Leeton	Leeton	450	Y	Uniform Access Charge	72 c/kL	Y
22	Lismore	Lismore, Nimbin & Perradenya	667	Y	Uniform Access Charge		Y
31	Lithgow	Lithgow,Wallerawang, Portland	585	Y	Service Connection Size(50mm:\$775)	123 c/kL	Y
61	Liverpool Plains	Quirindi, Werris Creek	248	Y	Service Connection Size*(40mm:\$999)	155 c/kL	Y
102	Lockhart	Lockhart	395	Y	Uniform Access Charge	176 c/kL	Y
		The Rock	680	Y	Uniform Access Charge	76 c/kL	
5	MidCoast		668	Y	Meter Size*(eg 40mm: \$2672)	227 c/kL	Y
32	Mid Western Regional	Mudgee, Gulgong & Rylstone	335	Y	Uniform Access Charge	127 c/kL	Y
38	Moree Plains Shire	Moree, Mungindi, Balone, Bogabilla and Gurly	628	Y	Service Connection Size (40mm:\$1540)	115 c/kL	Y
65	Murray	Moama, Mathoura	269	Y	Service Connection Size*(40mm:\$1075)	51 c/kL	Y
101	Murrumbidgee	Darlington Point	300	N	Land Value		N
		Coleambally	250	N	Land Value		
41	Muswellbrook	Muswellbrook, Denman	226	Y	Service Connection Size*(40mm:\$903)	168 c/kL	Y
34	Nambucca	Nambucca	182	Y	Service Connection Size (40mm:\$728)	323 c/kL	Y

Table 7B: Sewerage – 2010-11 non-residential tariffs (continued)

WATER UTILITY	Town	Access Charge (or Minimum)	Access Charge Independent of Land Value?	Basis for Access Charge *Proportional to square of size of service connection or water meter	Sewer Usage Charge (for estimated volume discharged to sewerage system = water usage x sewer discharge factor)	Substantial Compliance with 2(c) of BPMG  Yes/No
		(\$) (1)	(2)	(3)	(4)	(5)
46	Narrabri	Narrabri	Y	Uniform Access Charge	\$83/Pedestal, \$83/Cistern	N
		Wee Waa	Y	Uniform Access Charge	\$84/Pedestal, \$84/Cistern	
		Bogabri	Y	Uniform Access Charge	\$64/Pedestal, \$64/Cistern	
63	Narrandera	Narrandera	Y	Service Connection Size* (40mm:\$1360)	120 c/kL	Y
62	Narromine	Narromine, Trangie	Y	Service Connection Size*(40mm:\$693)	175 c/kL	Y
83	Oberon	Oberon	Y	Service Connection Size*(38mm:\$379)	128 c/kL	Y
19	Orange	Orange	Y	Service connection Size 40mm: \$421	142 c/kL	Y
71	Palerang	Bungendore, Braidwood, Captains Flat	Y	Service connection Size 40mm:\$3948	245 c/kL	Y
36	Parkes	Parkes	Y	Meter Size* (40mm:\$840)	110 c/kL	Y
17	Queanbeyan	Queanbeyan	Y	Service Connection Size (40mm: \$1244)	70 c/kL	Y
33	Richmond Valley	All	Y	Service Connection Size*(40mm:\$480)	176 c/kL	Y
3	Shoalhaven	Shoalhaven	Y	Meter Size (40mm: \$1829)	100 c/kL	Y
35	Singleton	Singleton	Y	Service connection Size* 40mm:\$780	145 c/kL	Y
52	Snowy River	Snowy River	Y	Meter Size (40mm: \$2200)	207 c/kL	Y
13	Tamworth	Tamworth	Y	Meter Size (40mm: \$1848)	109 c/kL	Y
69	Temora	Temora	Y	Meter Size* (40mm: \$848)	25 c/kL	Y
68	Tenterfield	Tenterfield, Urbenville	Y	Service Connection Size*(40mm:\$1540)	93 c/kL	Y
93	Tumbarumba	Tumbarumba, Khancoban	Y	Meter Size (40mm:\$1128)	100 c/kL	Y
43	Tumut	Tumut	Y	Meter Size* (40mm:\$2222)	171 c/kL	Y
6	Tweed	Tweed	Y	Service Connection Size*(40mm:\$2436)	114 c/kL for >180 kL/y	Y
45	Upper Hunter	Murrurundi, Merriwa, Aberdeen/Scone	Y	Meter Size (40mm \$1027)	79 c/kL	Y
73	Upper Lachlan	Crookwell, Gunning, Taralga	Y	Uniform Access Charge	205 c/kL	Y
85	Uralla	Uralla	Y	Uniform Access Charge	100 c/kL	Y
107	Urana	Urana	Y	Uniform Access Charge		
9	Wagga Wagga	Wagga Wagga	Y	Uniform Access Charge	Access charge includes first 4 pan equivalent fixtures. Additional \$108.50/ equivalent fixture	152 c/kL
88	Wakool	Wakool, Barham, Moulamein, Murray Downs	Y	Uniform Access Charge	Hotels: SC+20%SC/Cistern+10%SC/Room, Clubs: SC+20%SC/Cistern, Shops/Motels/Units: SC+10%SC	N
		Tooleybuc	Y		Hotels: SC+20%SC/Cistern+10%SC/Room, Clubs: SC+20%SC/Cistern, Shops/Motels/Units: SC+10%SC	
98	Walcha	Walcha	Y	Service Connection Size*(40mm:\$1604)	94 c/kL	Y
79	Walgett	Walgett	Y	Uniform Access Charge	Additional SC/Pedestal, \$61.25/Cistern	Y
		Lightening Ridge	Y	Uniform Access Charge	Additional SC/Pedestal, \$57.71/Cistern	
		Collarenebri	Y	Uniform Access Charge	Additional SC/Pedestal, \$66.39/Cistern	
96	Warren	Warren	Y	Uniform Access Charge	for multiple users:\$235/WC/Urinal	N
		Nevertire	Y	Uniform Access Charge		
55	Warrumbungle	Coolah, Dunedoo, Coonabarabran, Baradine	Y	Meter Size* (40mm \$1068)	70 c/kL	Y
95	Weddin	Grenfell	Y	Uniform Access Charge		N
57	Wellington	Wellington, Mumbil, Geurie	Y	Meter Size* (40mm \$1176)	74 c/kL	Y
74	Wentworth	Wentworth, Nimatjira	Y	Uniform Access Charge		N
16	Wingecarribee	Wingecarribee	Y	Meter Size* (40mm: \$2040)	113.50 c/kL	Y
2	Wyong	Wyong	Y	Meter Size* (40mm: \$647)	81 c/kL	Y
56	Yass Valley	Yass	Y	Uniform Access Charge	180 c/kL	Y
49	Young	Young	Y	Uniform Access Charge	after 2 WCs, \$312/WC	N

Table 7C: Sewerage – Liquid trade waste fees and charges (2010-11)

WATER UTILITY	Does LWU have complying Liquid Trade Waste Policy <sup>1,2</sup> ?  (1) <i>2010-11</i>	Complying Trade Waste Fees & Charges (Yes/No)  (2)	All liquid trade waste approvals (Yes/No)  (3)	ANNUAL TRADE WASTE FEE (\$)			Reinspection Fee \$/inspection Cat/11/2/3  (8)	Category 2 Trade Waste Usage Charge (c/kL)  (9)	Category 2 Non Compliance Trade Waste Usage Charge (\$/kL)  (9A)	Excess Mass Charge (c/kg)			Non Compliance Excess Mass Charge for BOD (Yes/No)  (13)
				Category 1  (4)	Category 2  (6)	Category 3  (7)				BOD  (10)	Suspended Solids  (11)	Oil & Grease  (12)	
11 Albury City	Yes*	Yes	Yes	68				145	6.7	29	19	46	
29 Armidale Dumaresq	Yes*	Yes	Yes	80	160	400	80	138	12.7				
24 Ballina	Yes*	Yes	Yes	74	148	496		138	12.7	62	80	112	
100 Balranald		Yes		110	110	495	75	125	12.5	62	79	111	
21 Bathurst Regional	Yes	Yes		84	84	564	79	180	14.7	73	93	130	
23 Bega Valley	Yes	Yes		100			50	100					
47 Bellingen	Yes	Yes		179			121	120	11.7				
53 Berrigan		No											
72 Bland		No											
78 Blayney	Yes*	Yes	Yes	74	74	283	69	138	14.0	62	80	112	Y
89 Bogan	Yes	Yes		80	160		80	152	14.2				Y
97 Bombala		No		88	88	578		19					
104 Boorowa	Yes*	No											
87 Bourke	Yes	No											
105 Brewarrina	Yes	No											
27 Byron	Yes	Yes	Yes	267	633	500		199	12.6	135	135	160	Y
91 Cabonne	Yes	Yes		82	164	553	77	140	14.1	60	80	110	
92 Carrathool		No											
103 Central Darling		No											
14 Clarence Valley	Yes	Yes		112	112	798	124	217	18.9				
67 Cobar	Yes	Yes	Yes	250	500	100*				10	25	25	
66 Cobar WB													N/A
10 Coffs Harbour	Yes*	Yes		175	350	700	115	138	12.7	62	80	112	
99 Coolamon		No											
50 Cooma-Monaro	Yes*	Yes		88	88	88	113	156	14.3	193	394	194	
75 Coonamble		No											
58 Cootlamundra	Yes	Yes		100	200	300	100	125	11.0	56	72	97	
42 Corowa	Yes*	Yes		74	148	496	69	138	12.7	62	80	112	
39 Cowra	Yes*	Yes		80	160	535	73	146	13.4	66	84	118	Y
54 Deniliquin	Yes	Yes		82	165	552	77	77	7.1	69	89	125	
18 Dubbo	Yes	Yes	Yes	81	161	541	135	150	13.8	68	87	122	Y
26 Essential Energy	Yes*	Yes		94	627		87	175	16.0	79	101	140	Y
15 Eurobodalla	Yes	Yes	Yes	83	83	458	82	123	11.3	70	90	120	
51 Forbes	Yes	Yes		118	304		118	6					
84 Gilgandra	Yes*	Yes	Yes	95	95	95	95	167		65	105		
60 Glen Innes Severn	Yes*	Yes		162	162	564	79	150	13.2				
1 Gosford	Yes*	Yes	Yes	198	372	480	148	153	13.1	153	153	793	
20 Goulburn Mulwaree	Yes*	Yes	Yes	85	85	310	69	220	19.9	69	89	124	Y
80 Greater Hume	Yes	Yes		82	165	554	77	150	13.8	67	90	125	
30 Griffith	Yes	Yes	Yes	75	180	486	65	110	6.7	130	126		
94 Gundagai		Yes		120	120	120		217					
44 Gunnedah	Yes	Yes		136	136	272	60	125	11.0	58	73	104	
90 Guyra	Yes*	No	Yes	177	177	177							
81 Gwydir	Yes*	Yes		77	77	430	60	120	11.0				
76 Harden		Yes		160	160	160	160						
7 Port Macquarie-Hastings	Yes*	Yes	Yes	175	175	541	93	145	13.4	65	80	120	
30A Hawkesbury	Yes*	Yes						113		242	210	296	Y
86 Hay	Yes	No	Yes										
37 Inverell	Yes*	No											
106 Jerilderie		No											
77 Junee	Yes	No											
25 Kempsey	Yes*	Yes	Yes	96	96	96	110	164	14.7	105	205	205	

Table 7C: Sewerage – Liquid trade waste fees and charges (2010-11) (continued)

WATER UTILITY	Does LWU have complying Liquid Trade Waste Policy <sup>1,2</sup> ?  (1) 2010-11	Complying Trade Waste Fees & Charges (Yes/No)  (2)	All liquid trade waste approvals (Yes/No)  (3)	ANNUAL TRADE WASTE FEE (\$)			Reinspection Fee \$/inspection Cat/1/2/3  (8)	Category 2 Trade Waste Usage Charge (c/kL)  (9)	Category 2 Non Compliance Trade Waste Usage Charge (\$/kL)  (9A)	Excess Mass Charge (c/kg)			Non Compliance Excess Mass Charge for BOD (Yes/No)  (13)
				Category 1  (4)	Category 2  (6)	Category 3  (7)				BOD  (10)	Suspended Solids  (11)	Oil & Grease  (12)	
70 Kyogle	Yes*	Yes	Yes	72	72	477	68	100	11.0	54	69	97	
59 Lachlan	Yes*	Yes	Yes	85	85	540	87	125	13.2				
48 Leeton	Yes*	Yes		142	142	545	79	160	14.6	60	93	129	
22 Lismore	Yes*	Yes	Yes	87	87	87	96			65	85	115	
31 Lithgow	Yes*	Yes	Yes	145	215	395	76	160	17.0				Y
61 Liverpool Plains	Yes*	Yes		79	79	527	75	300	14.0	200	200	300	
102 Lockhart		Yes		69	162	462	65	75	6.2	110	112		
5 MidCoast	Yes	Yes	Yes	113	140	498	93	231	11.0	49	49	68	Y
32 Mid Western Regional		No	Yes										
38 Moree Plains	Yes*	Yes		70	148	496	69	138	12.7				
65 Murray	Yes	Yes		82	165	552	77	154	14.1	69	89	125	
101 Murrumbidgee	Yes*	No											
41 Muswellbrook	Yes	Yes	Yes	78	78	78	93	90	14.4	59	76	104	
34 Nambucca	Yes	Yes	Yes	82	137	137	120	156	14.0	100	100		
46 Narrabri	Yes*	Yes	Yes	540	780	800	120	200					
63 Narrandera		No											
62 Narramine	Yes*	Yes		78	78	510	73	175					
83 Oberon	Yes	Yes						135					
19 Orange	Yes	Yes	Yes	70	70	472	66	146	12.1	82	136	172	Y
71 Palerang	Yes	Yes		82	165	552	77	160	15.5	70	90	130	
36 Parkes	Yes*	Yes	Yes	174	174	645	85	160	14.0				
17 Queanbeyan	Yes*	Yes	Yes	84	84	546	82	154	13.2	212	200	128	
33 Richmond Valley	Yes*	Yes		80	148	500	140	142	13.1	64	83	115	
3 Shoalhaven	Yes	Yes	Yes	109	136	525	68	152	14.2	68	85	122	
35 Singleton	Yes	Yes	Yes	81	81	81	96	120	14.4	59	76	104	
52 Snowy River	Yes	Yes	Yes	88	88	88	113	160	14.4	310	200	165	
13 Tamworth Regional	Yes	Yes	Yes	132	132	584	85	163	14.6	73	94	132	
69 Temora		No											
68 Tenterfield	Yes	Yes	Yes	113	113	510	75	129	12.9				
93 Tumbarumba	Yes*	Yes	Yes	67	67	67	63	130	11.5	72	102	170	
43 Tumut	Yes*	Yes	Yes	124	257	542	120		4.2	140	130	230	
6 Tweed	Yes	Yes	Yes	87	125	650	81	170	10.9	77	100	135	
45 Upper Hunter	Yes	Yes		337	337	337	101		14.0	67	86	117	
73 Upper Lachlan	Yes	No											
85 Uralla		Yes	Yes	68	68	68		120					
107 Urana		No											
9 Wagga Wagga	Yes	Yes	Yes	87	87	584	81	165	15.0	70	91	127	
88 Wakool		No											
98 Walcha	Draft	Yes		76	152		77	143	13.2				
79 Walgett	Yes*	No											
96 Warren	Yes	No											
55 Warrumbungle		No											
95 Weddin	Yes*	No											
57 Wellington	Yes	Yes	Yes	72	72	72	64	138	12.9				
74 Wentworth	Yes	Yes		100		640	100						
16 Wingecarribee	Yes*	Yes	Yes	78	150	508	72	156	13.8	65	80	120	
2 Wyong	Yes	Yes	Yes	82	327	540	77	66	14.0	87	123	68	Y
56 Yass Valley	Yes*	Yes	Yes	84	263	473		138					
49 Young	Yes	Yes		95	170	564	80	156	14.4	71	91	127	Y

Notes:

1. Yes\* in column 1 indicates that the LWU has adopted a trade waste policy before 2009, which needs to be updated.
2. Draft in column 1 indicates that the LWU has prepared a draft trade waste policy which needs to be finalised.
3. 81% of LWUs have a complying trade waste policy and 74% of LWUs have complying trade waste fees and charges.

Table 8: 2010-11 NSW urban water supplied

WATER UTILITY	POTABLE URBAN WATER SUPPLIED (ML) (Excludes bulk water)										NON-POTABLE URBAN WATER SUPPLIED (ML) (Excludes bulk water)				TOTAL URBAN WATER SUPPLIED (Potable + Non-potable including Recycled Urban)	BULK WATER EXPORTS (Potable + Non-potable)	RECYCLED URBAN + NON-URBAN		WATER SOURCES FOR URBAN WATER USE (ML)															
	REVENUE WATER (Potable)						NON REVENUE WATER (Potable) See Table 8A				Total Potable Urban Water Revenue + Non Revenue Water (7) + (9) W8.1+W9.1+W10.1	Recycled Urban Water <sup>11</sup>		Non-potable Urban Other than Recycled Res Non Res			TOTAL Non-Potable Urban Water (11)+(11a)+(12a)+(12b)	NON-URBAN See Table 8A <sup>11</sup>	TOTAL (11) + (11a) + (11b)	Surface Water (15) W1	Ground Water (16) W2	Recycled Water (16b) W4	Bulk Purchase (17) W5	Total Sourced Water Excluding Non Urban Recycled = Sum (15) to (17) (17b) W7										
	Residential	Industrial Commercial	Institutional Rural	Public Parks & Gardens	Total Revenue Water (Potable) Sum (1) to (6)	Real Loss (Leakage) (7) W8.1+W9.1	Apparent Loss (Illegal use, meter error) (8a) W10.1	Unbilled (Fire Fighting, Flushing, Public Amenities) (8b) W10.1	Total Non Rev Water Sum (8) to (8b) See Table 8A (9) W10.1	Urban Res (11) W8 W20		Urban Non Res (11a) W21, W25	Res (12a) W8.2												Non Res (12b) W9.2+W10.2	(12c) W11.2+W26 W11	(14) W14	(11b) W22, W23, W24	(11c) W26	(15) W1	(16) W2	(16b) W4	(17) W5	(17b) W7
	(1) W8.1	(2) W9.1	(3) W9.1	(4) W9.1	(5) W9.1	(6) W9.1	(7) W8.1+W9.1	(8) W10.1	(8a) W10.1	(8b) W10.1		(9) W10.1	(10) W11.1												(11) W8 W20	(11a) W21, W25	(12a) W8.2	(12b) W9.2+W10.2	(12c) W11.2+W26 W11	(14) W14	(11b) W22, W23, W24	(11c) W26	(15) W1	(16) W2
Sydney Water Corporation	324,003						437,762							2,250	7,687		4,579	52,100	544,216	0	37,584	47,521	5,589	10,606	414,004	507,301								
Hunter Water Corporation	37,087						58,155			9,539	437,762				2,006			4,674	72,368	315	2,668	4,674	65,676	2,333	2,186	70,195								
Sydney Catchment Authority																			416,740				736,650			736,874								
<b>LWUs with &gt; 10,000 Properties</b>																																		
1 Gosford	9,979	983	524	11	269	411	12,177	1,329	263	69	1,661	13,838			37		7	44	13,882	1,748			37			14,026	127	37	1,444	15,634				
2 Wyong	9,046	2,963					12,009	665	616		1,281	13,290			123	570		1	694	13,984	1,421			304	997		12,516	162	570	2,035	15,283			
3 Shoalhaven	5,840	1,707	1,916	576	127	108	10,274	765	409	51	1,225	11,499			764	5	2,412	3,181	14,680		99	863				14,230		764	70	15,064				
4 Rous (Bulk Supplier) (NO SGE)	893	6		667			1,566	429	311	52	792	2,358							2,358	9,677						11,142				11,142				
5 MidCoast (Unfiltered)	4,736	1,391	533		123	78	6,861	962	341	167	1,470	8,331							8,331		546	546				7,728	603			8,331				
6 Tweed	5,136	1,482	134	101	168	88	7,109	509	826	42	1,377	8,486			386			386	8,872		50	436				8,938		386	9	9,333				
7 Port Macquarie-Hastings (Unfiltered)	3,935	1,007	28	34	219	37	5,260	680	111	26	817	6,077			92			92	6,169		200	292				6,016		92		6,108				
8 Riverina (Groundwater) (NO SGE)	6,012	1,788	898	666	393	250	10,007	550	131	761	1,442	11,449							11,449							2,335	8,363		19	10,717				
10 Coffs Harbour (Unfiltered)	3,732	1,008			149	129	5,018	414	151	75	640	5,658			328		4	332	5,990	321	1,979	2,307				5,570		328		5,898				
11 Albury	3,733	533	251	26	382	171	5,096	340	198	28	566	5,662					5	5	5,667	255	5,222	5,222				5,542				5,542				
12 Fish River WS (Unfiltered, Bulk Supplier)							222	1,218			1,218	1,440							1,440	6,506						7,946				7,946				
13 Tamworth Regional	4,033	1,092	1,613	115	375	266	7,494	1,408	106		1,514	9,008					39	39	9,047		5,250	5,250				8,716	330			9,046				
14 Clarence Valley	2,638	880	541	388		77	4,524	926	510	40	1,476	6,000			25	43		68	6,068			25				5,893		25		5,918				
15 Eurobodalla (Unfiltered)	2,010	453	20	17	160	17	2,677	651	57	17	725	3,402			141			141	3,543		19	160				3,405		141		3,546				
16 Wingecarribee	2,680	551		123	114	32	3,500	489	74	20	583	4,083			42			42	4,125			42				868		42	3,518	4,428				
17 Queanbeyan (Reticulator)	2,845	259			44	131	3,279	443	49	20	512	3,791							3,791										3,442	3,442				
18 Dubbo	3,880	761	113	22	395	330	5,501	377	213	32	622	6,123					195	195	6,318		1,496	1,496				4,483	2,049			6,532				
19 Orange	2,312	366		56	366	10	3,110	517	62	2	581	3,691			1,674			1,674	5,365		40	1,714				3,878	50	1,674		5,602				
20 Goulburn Mulwaree	1,268	256	147	9	232	11	1,923	187	88		275	2,198			153			153	2,351	2	1,482	1,635				2,328		153		2,481				
21 Bathurst Regional	2,474	412	978		40		3,904	303	175		478	4,382					2	1,006	5,390	3	3,911	3,911				5,415				5,415				
22 Lismore (Reticulator)	1,942	807		95			2,844	194	184	14	392	3,236							3,236							176		3,129	3,305					
23 Bega Valley (Unfiltered)	1,679	437	108	160	103	86	2,573	226	426	23	675	3,248			391			391	3,639		57	448				1,560	1,665	391		3,616				
24 Ballina (Reticulator)	2,115	631					2,746	785	59	18	862	3,608			123			123	3,731			123				114		123	3,476	3,713				
25 Kempsey (Groundwater)	1,648	417	189	355	112	13	2,734	205	204	276	685	3,419					36	36	3,455	15						1,952	1,467			3,419				
26 Essential Energy	2,086	262	1,070	247	23		3,688	246	164		410	4,098			320	9	302	631	4,729			320				3,279		320	920	4,519				
27 Byron (Reticulator)	1,524	840					2,364	370	20		390	2,754			241		489	730	3,484		248	489				320		241	2,434	2,995				
28A Goldenfields (Reticulator) (NO SGE)	1,200	435	94	1,418	157	120	3,424	261	80	39	380	3,804					12	58	3,874										3,874	3,874				
28B Goldenfields (Bulk Supplier) (NO SGE)																				7,007							3,273	3,464		270	7,007			
<b>Totals (excluding bulk suppliers) for LWUs with &gt;10,000 Properties</b>																																		
							154,930					154,930			123	5,287	71	4,554	10,035	164,970	27,018		20,903	26,313		141,649	18,280	5,287	24,640	189,856				
<b>LWUs with 3,001 - 10,000 Properties</b>																																		
29 Armidale Dumaresq	1,484	238			350	21	2,093	280	49		329	2,422					30	30	2,452			390	390				2,661			2,661				
30 Griffith	2,617	1,125		571	34	137	4,484	241	199		440	4,924					51	293	5,268			224							5,368	5,368				
31 Lithgow	1,204	309	266	12	60		1,851	694			694	2,545					6	6	2,551							1,525			870	2,395				
32 Mid-Western Regional	1,099	255	12	1	35	238	1,640	171	195	10	376	2,016							2,016			191				2,017	173			2,190				
33 Richmond Valley	1,065	434	1,054	23		22	2,598	180	103	13	296	2,894							2,894		136	136				2,249		583		2,832				
34 Nambucca (Groundwater)	786	363	26	76	9	1	1,261	105	49	8	162	1,423							1,423			142					1,534			1,534				
35 Singleton	1,488	546	68	31	216		2,349	157	104		261	2,610					30	30	2,640			400				2,555				2,555				
36 Parkes	1,068	178	2,930	89	92	230	4,587	480	92	150	722	5,309			92		9	101	5,410		211	92				1,998	2,660	92	279	5,029				





**Table 8: 2010-11 NSW urban water supplied (continued)**

**Notes:**

1. Source: Data provided by the 105 non-metropolitan NSW water utilities for the *2010-11 NSW Water Supply and Sewerage Benchmarking Report*. 96 of these utilities are responsible for water supply. Columns (11) and (11a) report the volume of recycled water use and include a further 9 utilities which are responsible for sewerage only.
2. The volumes of water supplied by Sydney and Hunter Water Corporations and Sydney Catchment Authority were obtained from the *National Performance Report 2010-11* and have not been included in the totals shown above.
3. The total water supplied for all non-metropolitan water utilities shown in the bottom line of the above table excludes double counting where water is supplied by a bulk supplier. Similarly, the total water sourced shown in the bottom line of the table excludes double counting between bulk suppliers and reticulators.
4. **Incomplete Data:** Where a water utility has not reported its residential use (col 1), the residential use has been calculated based on the average percentage of 57% of the Total Potable Urban Water Supplied shown in Note 8. Where a water utility has not reported its total potable Urban Water Supplied (col (10)), the previous years' reported value has been used and is shown in *italics bold* (see also Note 6).
5. Where an LWU has only reported data for 'residential' use but not for 'commercial' or for 'industrial' use, the reported 'residential' value has been reduced and a 'commercial/industrial' component has been included. In this case, the 'residential' component has been calculated based on the average percentage of 57% of the Total Urban Water Supplied shown in Note 8.
6. **Non Revenue Water:** Non Revenue Water includes Unbilled Water (Unbilled Authorised Supply), Real Losses (mostly Leakage) and Apparent Losses (under registration of customer meters and illegal use). Leakage studies for over 40 NSW LWUs together with Statewide analysis of Non Revenue Water for NSW water utilities, indicate Leakage is a minimum of 6% of potable Urban Water Supplied (range 6% to 35%) while Non Revenue Water is a minimum of 10% (comprising Leakage [minimum 6%] and Apparent Loss plus Unbilled Water [minimum 4%]). Recent analysis of reported data for utilities with over 10,000 connected properties tends to corroborate these minimum values. Therefore, for those utilities reporting Non Revenue Water of less than 10% (col (9)), the Non-revenue Water has been increased to 10% of the Urban Water Supplied (col 10) (shown in *italics bold*), unless the LWU has provided evidence of a lower value of Leakage under Note 7. In such a case, the adopted value for Non Revenue Water is the reported Leakage plus 4%.
7. **Real Losses (mostly Leakage):** Leakage is a component of Non Revenue Water. As described in Note 6 above, a minimum of 6% of the Total Urban Water Supplied (potable) has been adopted for Leakage, unless evidence of a lower value has been provided by the LWU. Therefore, unless corroborated by evidence, (eg. a reservoir drop test, detailed waste metering or night flow analysis of district meter areas (see Table 10)), reported Leakage of less than 6% (column (8)) has been increased to 6% (shown in *italics bold*).
8. **Potable Water Supplied:** The above analysis shows that the total 2010-11 urban water supplied for non-metropolitan NSW was 254,000 ML (column (13)), of which 232,000 ML (column (10)) was potable water. The average uses as a percentage of the total potable water supply were:
  - w Residential - 57% (column (1))
  - w Commercial - 15% (column (2))
  - w Industrial - 7% (column (3))
  - w Non Revenue Water - 14% (column (9c))
9. **Non-Potable Water Supplied:** The total non-potable urban water supplied was 22,000 ML (column (12c)) which included 7,400 ML recycled urban water supply (column (11)+(11a)). The non-potable supply was mainly for outdoor uses in dual water supplies, but also includes supplies to industry and other outdoor uses.
10. The total urban water supplied (column (13)) comprises the sum of the potable water supplied (column (10)) and non-potable water supplied (column (12c)) which includes recycled urban water (columns (11) & (11a)).
11. Recycled water used for non-potable urban water supply is shown in columns (11) & (11a). Recycled water used for non-potable non-urban water supply (agriculture, environmental and on-site use) is shown in column (11b). The total volume of recycled water for NSW non-metropolitan water utilities is shown in column (11c). For the utilities that did not report this year but reported >10% recycled water in the previous year, the percentage recycled is assumed to be the same as that of the previous year (refer also to section H4.7 on page 289). This results in a volume of recycled water of 37,000 ML (see also Table 15) which is 20% of the total volume of sewage collected. Refer also to Figure 55 on page 92.
12. All LWUs recorded nil for Volume Sourced from Desalination (W3), Bulk Recycled Water Purchased (W6), Water Supplied for Environmental Flows (W13) and Bulk Recycled Water Exports (W15).



Table 8A: 2010-11 potable water losses and non-revenue water

WATER UTILITY		NON-REVENUE WATER <sup>2</sup> - Potable (ML)											REVENUE WATER <sup>1</sup> Potable (ML) Excl Bulk Sales  Metered and Unmetered (See Table 8)  (17)	TOTAL URBAN WATER SUPPLIED Potable (ML)		BULK WATER EXPORTS (ML)  Potable and Nonpotable (See Table 8)  (20) W14	NON URBAN RECYCLED WATER					
		REAL LOSS <sup>4</sup> (Leakage)			APPARENT LOSS			UNBILLED WATER <sup>2</sup>	APPARENT LOSS + UNBILLED					TOTAL NON-REVENUE WATER Potable (Real Loss + Apparent Loss + Unbilled)			Non Revenue Water + Revenue Water		Agricultural	Environmental	On-site	
		Reported	Adopted	% of Total Potable (2)/(19)	Reported	Under-registration of meters	Total (4)+(5)		Reported	Reported	Adopted	% of Total Potable (10)/(19)		Reported	Adopted		Reported	% of Total Potable (15)/(19)	Total Reported (14) + (17)	Total Adopted (Table 8 Col (10)) (15)+(17)	(ML)	(ML)
		(1)	See note 5 (2)	(3)	(4)	(5)	(6)	Fire Fighting, Mains Flushing (9)	(6) + (9)	(10)	% of Total Potable (10)/(19)	See note 5 (12)		% of Total Potable (12)/(19)	(11)		(13)	(1) + (10) (14)	(2) + (12) (15)	(16)	(21) W22	(22) W23
Sydney Water Corporation Hunter Water Corporation																	0 315	5,199 2,488	15,989 0	16,396 180		
<b>LWUs with &gt; 10,000 Properties</b>																						
1	Gosford City Council	1,329	1,329	10%	14	249	263	69	332	2%	332	2%	1,661	1,661	12%	12,177	13,838	13,838	1,748			
2	Wyong Shire Council	665	665	5%	616	-	616	-	616	5%	616	5%	1,281	1,281	10%	12,009	13,290	13,290	1,421		304	
3	Shoalhaven City Council	765	765	7%	13	206	219	51	270	2%	460	4%	1,035	1,225	11%	10,274	11,309	11,499		72	27	
4	Rous County Council	429	429		104	207	311	52	363	15%	363	15%	792	792		1,566	2,358	2,358	9,677			
5	MidCoast County Council	962	962	12%	174	167	341	167	508	6%	508	6%	1,470	1,470	18%	6,861	8,331	8,331		546		
6	Tweed Shire Council	509	509	6%	724	102	826	42	868	10%	868	10%	1,377	1,377	16%	7,109	8,486	8,486		48	2	
7	Port Macquarie-Hastings (Unfiltered)	680	680	11%	6	105	111	26	137	2%	137	2%	817	817	13%	5,260	6,077	6,077		200		
8	Riverina Water County Council	550	550	5%	11	120	131	761	892	8%	892	8%	1,442	1,442	13%	10,007	11,449	11,449				
10	Coffs Harbour City Council	414	414	7%	-	-	-	75	75	1%	226	4%	489	640	11%	5,018	5,507	5,658	321	1,087	892	
11	Albury City Council	51	340	6%	5	102	107	28	135	2%	226	4%	186	566	10%	5,096	5,282	5,662	255	3,652	1,570	
12	Fish River Water Supply	1,218	1,218										1,218	1,218		222	1,440	1,440	6,506			
13	Tamworth Regional Council	1,408	1,408	16%	6	100	106		106	1%	106	1%	1,514	1,514	17%	7,494	9,008	9,008		5,250		
14	Clarence Valley Council	926	926	15%	10	500	510	40	550	9%	550	9%	1,476	1,476	25%	4,524	6,000	6,000				
15	Eurobodalla Shire Council	651	651	19%	3	54	57	17	74	2%	74	2%	725	725	21%	2,677	3,402	3,402			19	
16	Wingecarribee Shire Council	489	489	12%	4	70	74	20	94	2%	94	2%	583	583	14%	3,500	4,083	4,083				
17	Queanbeyan City Council	443	443	12%	49		49	20	69	2%	69	2%	512	512	14%	3,279	3,791	3,791				
18	Dubbo City Council	377	377	6%	6	33	39	32	71	1%	245	4%	448	622	10%	5,501	5,949	6,123		1,411	85	
19	Orange City Council	517	517	14%		62	62	2	64	2%	64	2%	581	581	16%	3,110	3,691	3,691		40		
20	Goulburn Mulwaree Council	187	187	9%	-	-	-		88	4%	187	275	13%	1923	2,110	2,198	2	1,482				
21	Bathurst Regional Council	303	303	7%	-	-	-		175	4%	303	478	11%	3,904	4,207	4,382	3		3,575	336		
22	Lismore City Council	165	194	6%	124	60	184	14	198	6%	198	6%	363	392	12%	2,844	3,207	3,236				
23	Bega Valley Shire Council	226	226	7%	51	375	426	23	449	14%	449	14%	675	675	21%	2,573	3,248	3,248		57		
24	Ballina Shire Council	785	785	22%	4	55	59	18	77	2%	77	2%	862	862	24%	2,746	3,608	3,608				
25	Kempsey Shire Council	205	205	6%	68	136	204	276	480	14%	480	14%	685	685	20%	2,734	3,419	3,419	15			
26	Essential Energy	122	246	6%	4	74	78		78	2%	164	4%	200	410	10%	3,688	3,888	4,098				
27	Byron Shire Council	370	370	13%	10	10	20		20	1%	20	1%	390	390	14%	2,364	2,754	2,754		248		
28A	Goldenfields Water Reticulator	261	261	7%	6	74	80	39	119	3%	119	3%	380	380	10%	3,424	3,804	3,804	63			
28B	Goldenfields Water County Council	973	973															7,007				
<i>Medians (% of LWUs basis) for LWUs with &gt;10,000 Properties</i>		7%							4%				13%									
<b>LWUs with 3,001 - 10,000 Properties</b>																						
29	Armidale Dumaresq Council	280	280	12%		49	49		49	2%	49	2%	329	329	14%	2,093	2,422	2,422			390	
30	Griffith City Council	241	241	5%		97	97		97	2%	199	4%	338	440	9%	4,484	4,822	4,924				
31	Lithgow City Council	694	694	27%	-	-	-	-	-	-	-	-	694	694	27%	1,851	2,545	2,545				
32	Mid-Western Regional Council	171	171	8%	2	193	195	10	205	10%	205	10%	376	376	19%	1,640	2,016	2,016				
33	Richmond Valley Council	180	180	6%	3	52	55	13	68	2%	116	4%	248	296	10%	2,598	2,846	2,894		136		
34	Nambucca Shire Council	105	105	7%	2	10	12	8	20	1%	57	4%	125	162	11%	1,261	1,386	1,423				
35	Singleton Shire Council	81	157	6%	41	54	95		95	4%	104	4%	176	261	10%	2,349	2,525	2,610				
36	Parkes Shire Council	480	480	9%		92	92	150	242	5%	242	5%	722	722	14%	4,587	5,309	5,309	211			
37	Inverell Shire Council	100	113	6%		100	100		100	5%	100	5%	200	213	11%	1,677	1,877	1,890				
38	Moree Plains Shire Council	288	288	10%	50	70	120	25	145	5%	145	5%	433	433	15%	2,385	2,818	2,818	22	691	25	
39	Cowra Shire Council	150	150	7%				451	451	21%	451	21%	601	601	28%	1,574	2,175	2,175	5			
40	Central Tablelands Water	130	130	9%	7	-	7	27	34	2%	34	2%	164	164	12%	1,226	1,390	1,390	117			
41	Muswellbrook Shire Council	129	129	6%	2	21	23	8	31	2%	80	4%	160	209	10%	1,780	1,940	1,989				
42	Corowa Shire Council	140	140	7%	40	40	80		80	4%	80	4%	220	220	11%	1,787	2,007	2,007				

Table 8A: 2010-11 potable water losses and non-revenue water (continued)

WATER UTILITY		NON-REVENUE WATER <sup>2</sup> - Potable (ML)														REVENUE WATER <sup>1</sup> Potable (ML) Excl Bulk Sales  Metered and Unmetered (See Table 8)  999 1,683 1,937 1,308 987 1,632 926 917 1,300 681 630	TOTAL URBAN WATER SUPPLIED Potable (ML)		BULK WATER EXPORTS (ML)  Potable and Nonpotable (See Table 8)  (20) W14	NON URBAN RECYCLED WATER		
		REAL LOSS <sup>4</sup> (Leakage)			APPARENT LOSS			UNBILLED WATER <sup>2</sup>	APPARENT LOSS + UNBILLED				TOTAL NON-REVENUE WATER Potable (Real Loss + Apparent Loss + Unbilled)		Non Revenue Water + Revenue Water		Agricultural	Environmental		On-site		
		Reported	Adopted		Reported			Reported	Reported		Adopted		Reported	Adopted			Total Reported (14) + (17)	Total Adopted (Table 8 Col (10)) (15)+(17)				
		(1)	See note 5 (2)	% of Total Potable (2)/(19) (3)	Illegal Use (4)	Under-registration of meters (5)	Total (4)+(5) (6)	Fire Fighting, Mains Flushing (9)	(6) + (9) (10)	% of Total Potable (10)/(19) (11)	See note 5 (12)	% of Total Potable (12)/(19) (13)	(1) + (10) (14)	(2) + (12) (15)	% of Total Potable (15)/(19) (16)		(18)	(19)		(ML) (21) W22	(ML) (22) W23	(ML) (23) W24
43	Tumut Council	39	67	6%	-	-	5	5	0%	44	4%	44	111	10%	1,043	1,110						
44	Gunnedah Shire Council	50	712	6%	23	23	46	46	2%	75	4%	96	187	10%	1,779	1,870		688				
45	Upper Hunter Shire Council	-	129	6%	5	25	30	30	1%	86	4%	30	215	10%	1,967	2,152		7				
46	Narrabri Shire Council	150	150	10%								150	150	10%	1,458	1,458						
47	Bellingen Shire Council	115	115	10%	2	24	26	52		78	7%	78	193	16%	1,180	1,180	1					
48	Leeton Shire Council	167	167	9%	10	50	60	60	3%	60	3%	227	227	12%	1,859	1,859						
49	Young Shire Council	82	82	8%	10	12	22	15	37	4%	37	4%	119	119	11%	1,045	1,045					
50	Cooma-Monaro Council	-	61	6%	-	-	-	-		41	4%		102	10%	917	1,019						
51	Forbes Shire Council	67	67	5%	8	16	24	29	53	4%	58	4%	120	9%	1,420	1,425	272					
52	Snowy River Shire Council	133	133	16%								133	133	16%	814	814	35					
53	Berrigan Shire Council	110	110	15%	5	3	8	8	1%	8	1%	118	118	16%	748	748		15				
Medians (% of LWUs basis) for 3,000 to 10,000 Properties				7%						4%				11%								
LWUs with 1,501 - 3,000 Properties																						
54	Deniliquin Council	-	95	6%	-	-	-	24	24	2%	63	4%	24	159	10%	1,428	1,452	1,587				
55	Warrumbungle Shire Council	-	45	6%	-	-	-				30	4%		75	10%	675	675	750	113			
56	Yass Valley Council	90	90	13%	5	10	15	75	90	13%	90	13%	180	25%	527	707	707	2				
57	Wellington Council	222	222	20%	7	55	62	3	65	6%	65	6%	287	26%	830	1,117	1,117					
58	Coolamundra Shire Council	58	58	10%	1	10	11		11	2%	11	2%	69	12%	519	588	588					
59	Lachlan Shire Council	118	118	9%	3	31	34	7	41	3%	41	3%	159	12%	1,213	1,372	1,372	16				
60	Glen Innes Severn Shire Council	168	168	25%	1	8	9	1	10	1%	10	1%	178	26%	503	681	681					
61	Liverpool Plains Shire Council	86	86	11%	10	17	27	5	32	4%	32	4%	118	15%	653	771	771	47				
62	Narromine Shire Council	82	82	10%	1	16	17		17	2%	17	2%	99	12%	717	816	816					
63	Narrandera Shire Council	80	80	6%	10	4	14	200	214	16%	214	16%	294	22%	1,014	1,308	1,308					
65	Murray Shire Council	63	63	10%	1	16	17		17	3%	17	3%	80	12%	571	651	651	1	86			
66	Cobar Water Board																	836				
67	Cobar Shire Council	35	35	5%						27	4%	35	62	9%	616	651	678					
68	Tenterfield Shire Council	-	25	6%						16	4%		41	10%	368	368	409	15	15			
70	Kyogle Council	15	23	6%		15	15		15	4%	15	4%	30	10%	340	370	378		9			
71	Palerang Council	17	17	4%	1	1	2		2	1%	16	4%	19	8%	354	373	387					
73	Upper Lachlan Council	15	24	6%	5	25	30	15	45	11%	45	11%	60	17%	331	391	400					
74	Wentworth Shire Council	-	23	6%				13	13	3%	16	4%	13	10%	351	364	390					
75	Coonamble Shire Council	20	20		5	1	6	12	18	2%	18	2%	38	4%	906	944	944					
Medians (% of LWUs basis) for 1,500 to 3,000 Properties				6%						4%				12%								
LWUs with 200 - 1,500 Properties																						
76	Harden Shire Council	10	45	6%	4	2	6	6	12	2%	30	4%	22	75	10%	672	694	747				
79	Walgett Shire Council	-	126	6%				-			84	4%		210	10%	1,890	1,890	2,100				
80	Greater Hume Shire Council	16	16	4%	17	8	25	6	31	8%	31	8%	47	13%	325	372	372	6				
81	Gwydir Shire Council	130	130	22%	1	9	10	3	13	2%	13	2%	143	24%	451	594	594					
83	Oberon Council	25	25	11%	-	10	10	12	22	10%	22	10%	47	21%	175	222	222	1				
84	Gilgandra Shire Council	-	42	6%	-	-		5	5	1%	28	4%	5	10%	629	634	699	5	275			
85	Uralla Shire Council	30	30	11%	1	3	4	25	29	11%	29	11%	59	22%	205	264	264	1				
86	Hay Shire Council	3	22	6%					15	4%	3	10%	37		336	339	373					
87	Bourke Shire Council	160	160	13%	5	5	10		10	1%	10	1%	170	14%	1,060	1,230	1,230					

Table 8A: 2010-11 potable water losses and non-revenue water (continued)

WATER UTILITY		NON-REVENUE WATER <sup>2</sup> - Potable (ML)											REVENUE WATER <sup>1</sup> Potable (ML) Excl Bulk Sales  Metered and Unmetered (See Table 8)  (17)	TOTAL URBAN WATER SUPPLIED Potable (ML) Non Revenue Water + Revenue Water  Total Reported (14) + (17) Total Adopted (Table 8 Col (10)) (15)+(17)  (18) (19)		BULK WATER EXPORTS (ML)  Potable and Nonpotable (See Table 8)  (20) W14	NON URBAN RECYCLED WATER					
		REAL LOSS <sup>4</sup> (Leakage)			APPARENT LOSS			UNBILLED WATER <sup>2</sup>	APPARENT LOSS + UNBILLED								TOTAL NON-REVENUE WATER Potable (Real Loss + Apparent Loss + Unbilled)			Agricultural	Environmental	On-site
		Reported	Adopted		Reported				Reported	Reported		Adopted					Reported	Adopted				
		(1)	See note 5 (2)	% of Total Potable (2)/(19) (3)	Illegal Use (4)	Under-registration of meters (5)	Total (4)+(5) (6)	Fire Fighting, Mains Flushing (9)	(6) + (9) (10)	% of Total Potable (10)/(19) (11)	See note 5 (12)	% of Total Potable (12)/(19) (13)					(1) + (10) (14)	(2) + (12) (15)	% of Total Potable (15)/(19) (16)	(ML) (21) W22	(ML) (22) W23	(ML) (23) W24
88	Wakool Shire Council	48	48	13%			-					48	48	13%								
89	Bogan Shire Council	5	22	6%		17	17		17	5%	17	5%	22	39	11%							
90	Guyra Shire Council	8	22	6%	2	3	5	5	10	3%	15	4%	18	37	10%			1				
91	Cabonne Council	22	22	14%	1	3	4	1	5	3%	5	3%	27	27	17%							
92	Carrathool Shire Council	-	17	6%	1	10	11		11	4%	11	4%	11	28	10%							
93	Tumbarumba Shire Council	21	21	6%	-	-		112	112	34%	112	34%	133	133	41%							
94	Gundagai Shire Council	50	50	9%	10	40	50	5	55	10%	55	10%	105	105	19%							
96	Warren Shire Council	31	31	10%	1	19	20		20	6%	20	6%	51	51	16%							
97	Bombala Council	2	11	6%		1	1		1	1%	7	4%	3	18	10%							
98	Walcha Council		12	6%					8	4%			20	10%				2				
100	Balranald Council	1	11	6%		1	1		1	1%	7	4%	2	18	10%							
101	Murrumbidgee Shire Council		31	6%					21	4%			52	10%								
103	Central Darling Shire Council	2	7	6%	1	1	2		2	2%	5	4%	4	12	10%							
104	Boorowa Council	10	10	5%				-	9	4%			10	19	9%							
105	Brewarrina Shire Council	20	20	6%					13	4%			20	33	10%							
106	Jerilderie Shire Council		6	6%					4	4%			9	10%								
<i>Medians (% of LWUs basis) for 200 to 1,500 Properties</i>				6%						4%				10%								
<i>LWUs without Water Supply</i>																						
9	Wagga Wagga (NO WS)																		432			
30A	Hawkesbury																		193			
69	Temora																		74			
72	Bland																					
77	Junee																					
78	Blayney																					
95	Weddin																					
99	Coolamon																		20			
102	Lockhart																					
107	Urana																					
<i>Median All LWUs (% of LWUs basis)</i>		<i>Real Loss (leakage)</i>			7%							<i>Non-revenue Water</i>			12%							
<i>Median All LWUs (Statewide basis)</i>					6%										10%							

Notes:

- Revenue water (potable) = Billed, Authorised water supplied (metered and unmetered).
- Non-revenue water (potable) = Real Losses (mostly Leakage) + Apparent Losses (under registration of customer meters and illegal use) + Unbilled Water (authorised Unbilled consumption for firefighting and mains flushing)
- Real Losses (Leakage) in column (2) above are the same as those shown in column (8) of Table 8. They relate only to Total Urban Water Supplied (potable) and exclude bulk water exports.
- Total Urban Water Supplied (Revenue Water (potable) plus Non-Revenue Water (potable)) in column (18) above is the same as that shown in column (10) of Table 8.
- Minimum Losses: The minimum adopted in this report for Real Loss (Leakage) is 6% of the Total Urban Water Supplied (potable) and the minimum adopted for (Apparent Loss plus Unbilled Water) is 4%, unless the utility has provided evidence for the adoption of a lower Leakage (eg. a reservoir drop test, detailed waste metering or night flow analysis of district meter areas (see Table 10)). This results in a minimum Non Revenue Water of 10% of Urban Water Supplied (potable). Therefore, for those utilities reporting Non Revenue Water of less than 10% (col (14)), the Non-revenue Water has been increased to 10% of the Urban Water Supplied (col 15) (shown in italics bold), unless the LWU has provided evidence of a lower value of Leakage under Note 6. In such a case, the adopted value for Non Revenue Water is the reported Leakage plus 4%.
- Real Losses (Leakage): As described in Note 5 above, a minimum of 6% of the Total Urban Water Supplied (potable) has been adopted for Leakage. Therefore, unless corroborated by evidence (eg. a reservoir drop test, detailed waste metering or night flow analysis of district meter areas (see Table 10)), reported Leakage of less than 6% (column (8)) has been increased to 6% (shown in italics bold).
- Leakage Reduction Programs: As shown in column 7 of Table 8C, 49 of the 93 reticulating local water utilities have recently carried out a leakage reduction program. In addition, Table 10 indicates that 62 LWUs have reported carrying out recent leakage testing.

Table 8B: 2010-11 water supplied from source catchments in non-metropolitan NSW

SOURCE CATCHMENT	Source Catchment	POTABLE URBAN WATER SUPPLIED (ML)									RECYCLED WATER		Non-Potable Urban Water Supplied  (Excluding Bulk Exports & Recycled) (12)	Total Urban Water Supplied Excluding BULK Exports Including Recycled  =(10)+(11)+(12) (13)	BULK		WATER SOURCE (ML)					
		Residential	Commercial	Industrial	Rural	Institutional	Public Parks & Gardens	Unbilled Water	Water Losses	Potable Urban Water Supplied  = SUM (1) to (9) (10)	For Urban Water Supply (11)	For Non-urban Water Supply (11b)			Bulk Water Exports (14)	Surface Water W1 (15)	Ground Water W2 (16)	Desalination W3 (17)	Recycling W4 (18)	Bulk Purchases W5 (19)	Bulk Recycled Water Purchased W6 (20)	
		(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(11)	(11b)			(14)	(15)	(16)	(17)	(18)	(19)	(20)	
Bega	Bega	1,680	437	108	160	103	86	23	652	3,249	391	57	0	3,640		1,560	1,670	000	391	000		
Bellinger	Bellinger	565	374			24	24	52	141	1,180			5	1,185	1	159	1,020					
Castlereagh/Macquarie	Castlereagh/Macquarie	14,110	2,760	1,280	178	1,060	728	76	3,938	24,131	1,670	5,835	1,970	27,771	6,520	28,540	4,590	000	1,670	3,570		
Clarence	Clarence	6,600	1,930	566	403	169	211	115	2,039	12,033	363	1,988	47	12,443	321	11,780	2		363	48		
Clyde	Clyde	2,010	453	20	17	160	17	17	708	3,402	141	19	0	3,543		3,410	000	000	141	000		
Darling	Darling	3,510	487	1,090	215	449	68	13	680	6,512	435		2,410	9,357	836	9,690	140		435	1,700		
Gwydir	Gwydir	3,350	1,110	300		30	264	58	827	5,939	194	717	51	6,184	24	1,270	2,360	000	194	1,960		
Hastings	Hastings	3,940	1,010	28	34	219	37	26	791	6,085	92	200		6,177		6,020			92			
Hawkesbury (Country Towns only)	Hawkesbury	15,130	2,100	937	155	675	454	89	3,124	22,664	232	1,675	13	22,909	1,750	18,750	127	000	232	5,830		
Hunter (Country Towns only)	Hunter	4,110	1,290	96	43	345	183	8	677	6,752	190	7	30	6,972		6,270	448		190			
Lachlan	Lachlan	4,680	1,290	3,380	562	236	423	680	1,205	12,456	615	74	274	13,345	621	8,370	3,700	000	615	495		
Macleay	Macleay	3,130	655	189	355	462	34	276	738	5,839		390	66	5,905	15	4,610	1,470					
Manning	Manning	4,740	1,390	533		123	78	167	1,303	8,334	0	546	0	8,334		7,730	603	000	000	000		
Moonie/Macintyre	Moonie/Macintyre	697	142	2	2	23	5	1	218	1,090	50	15		1,140	15	964			50			
Murray	Murray	7,280	1,530	852	94	424	266	170	1,210	11,826	285	5,323	3,130	15,241	262	13,020	123	000	285	333		
Murrumbidgee	Murrumbidgee	19,660	5,160	1,710	1,730	729	1,280	1,126	3,098	34,493	680	452	1,470	36,643	7,080	12,040	13,200		680	15,800		
Nambucca	Nambucca	786	363	26	76	9	1	8	154	1,423	0	0	0	1,423		000	1,530	000	000	000		
Namoi	Namoi	7,900	2,830	1,650	130	401	303	5	2,194	15,413		5,938	489	15,902	49	9,730	4,780			614		
Shoalhaven	Shoalhaven	5,840	1,707	1,916	576	127	108	51	1,174	11,499	764	99	2,420	14,683		14,230	000	000	764	70		
Snowy	Snowy	595	90	82	9	63	2		151	992				992	35	1,180						
Tuggerah Lake	Tuggerah Lake	9,050	2,960					0	1,281	13,291	570	304	1	13,862	1,420	12,520	162	000	570	2,040		
Tweed/Richmond	Tweed/Richmond	12,680	4,200	1,190	886	168	110	139	3,970	23,343	750	434	489	24,582	9,680	22,940			750	9,630		
	<b>Totals</b>	132,000	34,300	16,000	5,600	6,000	4,700	3,100	30,300	232,000	7,400	24,100	12,900	252,000	29,000	195,000	36,000	0	7,000	42,000	0	

Note:  
For water utilities which did not report their residential consumption together with commercial and/or industrial consumption, the percentages tabulated in *Table 8* were applied to their total potable urban water supplied (column 10) and the consumptions for each category summed for each catchment to obtain the above values.

Table 8C: 2010-11 water conservation initiatives

WATER UTILITY	CUSTOMER FOCUSED MEASURES					BUSINESS FOCUSED		OTHER MEASURES					WATER SUPPLIED					IWC						
	Customer Education Program	Retrofit Program	Rebates for Water Efficient Appliances	Rebates for Water Tanks	Max Rainwater Tank Rebate	Effluent Reuse	Leakage Reduction Program	Other Demand Management Measures					Sound Water Conservation Implemented?	Sound Drought Management Implemented?	Water Usage Charge per kL		Residential Revenue from Usage Charges	Average Annual Residential Water Supplied	Total Urban Water Supplied	Total Non Revenue Water	Real Losses (Leakage)		Status of IWC	
	Yes/No (1)	Yes/No (2)	Yes/No (3)	Yes/No (4)	\$ (5)	Yes/No (6)	Yes/No (7)	(9)	(10)	(11)	Step 1 (c/kL) (12)	Step 2 (c/kL) (13)	(%) (14) F4 2010/11	(kL/property) (15) W12 2010/11	(ML) (16) W11 2010/11	(ML) (17) 2010/11	(ML) (18) 2010/11	(L/d/ connection) (19) A10 2010/11	(20) 2010/11	(21) 2010/11				
11 Albury City	Yes	Yes	No	No		Yes	Yes	Full pay-for-use pricing, public education program, customer billing 3 times/a, Waterwise program, water conservation and loss management strategy, leak reduction program, reservoir drop test, effluent reuse, separate metering (new & existing multi-unit developments), monitoring programs & customer surveys, free water audits (non-residential), review of conservation initiatives.	Yes	Yes	77	157	62	180	5,667	566	340	40	Y	Y				
29 Armidale Dumaresq	Yes	No	No	No		Yes	No	Full pay-for-use pricing, demand management plan, member of waterwise, public education program.	Yes	Yes	205	272	69	190	2,452	329	280	100						
24 Ballina (Reticulator)	Yes	Yes	Yes	Yes	670	Yes	Yes		Yes	Yes	167	251	66	162	3,731	862	785	190	Y	Y				
100 Balranald (Dual Supply)	Yes	No	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, restrictions.	Yes	Yes	76	114	75*	207	391	18	11	30						
21 Bathurst Regional	Yes	No	No	No		Yes	No	Member of waterwise, public education program.	Yes	Yes	132	198	65*	182	5,390	478	303	60	Y	Y				
23 Bega Valley (Unfiltered)	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, customer billing 3-times/a, member of waterwise, public education, water restrictions, effluent reuse, water demand management officer.	Yes		227		66	129	3,639	675	226	50						
47 Bellingen (Unfiltered)	Yes	No	No	No		No	No	Full pay-for-use pricing, member of waterwise, retrofit program, public education program.	Yes	Yes	160	240	67*	155	1,185	193	115	70	Y					
53 Berrigan (Dual Supply)	Yes	No	No	No		Yes	No	Public education.	Yes	Yes	90		33*	148	1,413	118	110	90						
72 Bland (No WS)						Yes									133	0	0							
78 Blayney (No WS)						Yes									233	0	0		Y					
89 Bogan	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	160		56	235	371	39	22	60						
97 Bombala	No	Yes	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, public education program.	Yes	Yes	55	119	18	189	178	18	11	30						
104 Boorowa	Yes	Yes		No		Yes	Yes	Full pay-for-use pricing, public education program.	Yes	Yes	178	303	56*	262	230	19	10							
87 Bourke (Dual Supply)	No	No	No	No		No	No	Full pay-for-use pricing, member of waterwise, public education program, waterwise program with local schools.	Yes	Yes	180		87*	545	2,563	170	160	400						
105 Brewarrina	Yes	No	No	No		Yes	No		Yes	Yes				414	865	33	20	100						
27 Byron (Reticulator)	Yes	Yes	Yes	Yes	1800	Yes	Yes	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, retrofit program, public education program, pressure reduction.	Yes	Yes	202	303	71	159	3,484	390	370	100	Y	Y				
91 Cabonne	Yes	No	No	No		Yes	Yes	Member of waterwise, public education program.	Yes	Yes	140	324	50	106	199	27	22	50	Y					
92 Carrathool (Groundwater)	Yes	No	No	Yes	500	No	No	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, restrictions, retrofit program, public education program, other.	Yes	Yes	100	110	50	227	728	28	17	40						
103 Central Darling (Dual Supply)	No	No	No	No		No	No	Full Pay-for-use pricing, customer billing 3 times/a, water restrictions.	Yes	Yes	300		89*	150	367	12	7	30						
40 Central Tablelands (No Sge)	Yes	No	No	No			No	Full pay-for-use pricing, member of waterwise, public education program, free showerhead exchange program.	Yes	Yes	184	276	70	158	1,390	164	130	60	Y					
14 Clarence Valley	Yes	Yes	Yes	Yes	1,100	Yes	No	Full pay-for-use pricing, restrictions, retrofit program, public education program.	Yes	Yes	147	221	65	140	6,068	1,476	926	120	Y	Y				
67 Cobar	Yes	Yes	No	No		Yes	Yes	Full Pay-for-use pricing, member of waterwise, restrictions, retrofit program, public education program.	Yes	Yes	100	170	60	238	789	62	35	40	Y					
66 Cobar WB (Bulk Supplier) (No Sg)															1,801	0								
10 Coffs Harbour (Unfiltered)	Yes	Yes	Yes	No		Yes	Yes	Full pay-for-use pricing, customer billing 3 times/a, member waterwise, building code program, restrictions, public education program, rebate for water efficient appliances, rebate for water audits, effluent reuse, separate metering of new and existing multi-unit developments, leakage reduction program, reservoir drop test, monitoring program, review of conservation measures.	Yes	Yes	236	354	75*	162	5,990	640	414	50	Y	Y				
99 Coolamon (No WS)															17	0	0							
50 Cooma-Monaro	Yes	Yes	No	No		Yes	Yes	Full pay-for-use pricing, member waterwise, public education program, restrictions, rainwater tank rebate, rebate for water efficient appliances, rebate for water audits, separate metering for new multi-unit developments, reservoir drop test, monitoring to review effectiveness of conservation measures.	Yes	Yes	125	197	45	135	1,019	102	61	40						
75 Coonamble (Groundwater)	No	Yes	No	No		Yes	No	Public education program.		Yes	44	67	68	386	944	38	20	30						
58 Cootamundra (Reticulator)	No	Yes	No	No		Yes	No	Member of waterwise, public education program.		Yes	147	294	54	142	631	69	58	50						
42 Corowa	No	No		Yes	500	Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	100		52*	196	3,728	220	140	80	Y	Y				
26 Essential Energy	Yes	Yes	Yes	No		Yes	No	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, public education program.	Yes	Yes	147	268	57*	218	4,729	410	246	60	Y	Y				
39 Cowra	Yes	Yes	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	193	283	53*	161	2,259	601	150	60						
54 Deniliquin	Yes	No	No	No		Yes	Yes	Member of waterwise, public education program, integrated water cycle management study.	Yes	Yes	42	84	28*	405	1,782	159	95	70	Y					
18 Dubbo	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, member waterwise, public education program, quarterly billing, effluent reuse schemes, stormwater reuse schemes, leakage reduction program, park irrigation controls, separate metering for new multi-unit developments, restrictions, reservoir drop test, draft drought management plan, demand management strategy, demonstration waterwise garden.	Yes	Yes	158		72	263	6,318	622	377	70	Y	Y				
15 Eurobodalla (Unfiltered)	Yes	Yes	Yes	Yes	1500	Yes	No	Member of waterwise, public education program, restrictions, integrated water cycle management study.	Yes	Yes	290		65*	109	3,543	725	651	100	Y	Y				
12 Fish River WS (Bulk Supplier) (No Sg)	Yes	No	No	No			No		Yes	Yes					1,440	1,218	1,218							
51 Forbes	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, customer billing 4 times/a, public education program, water restriction, free garden mulch, considering rebate for water efficient shower head, building code program, effluent reuse.	Yes	Yes	71	105	54*	260	1,530	125	67	50						
84 Gilgandra (Groundwater)	Yes	No	No	Yes	1020	Yes	Yes	Full pay-for-use pricing, member of waterwise, public education program.	Yes	Yes	89		65*	415	699	70	42	90						
60 Glen Innes Severn	Yes	No	No	Yes	500	Yes	Yes	Full pay-for-use pricing, rainwater tank subsidy, restrictions, ad hoc public education.	Yes	Yes	192	288	73*	145	681	178	168	140	Y	Y				
28B Goldenfields (Bulk Supplier) (No Sg)															0	973								
28A Goldenfields (Reticulator) (No Sg)	Yes	No	No	No			Yes	Full pay-for-use pricing, customer billing 3 times/a, member waterwise, public education program, restrictions, separate metering of new multi-unit developments, monitoring program, review conservation measures.			183		68*	174	3,874	380	261	70						

Table 8C: 2010-11 water conservation initiatives (continued)

WATER UTILITY	CUSTOMER FOCUSED MEASURES					BUSINESS FOCUSED		OTHER MEASURES						WATER SUPPLIED					IWCM				
	Customer Education Program	Retrofit Program	Rebates for Water Efficient Appliances	Rebates for Water Tanks	Max Rainwater Tank Rebate	Effluent Reuse	Leakage Reduction Program	Other Demand Management Measures						Sound Water Conservation Implemented?	Sound Drought Management Implemented?	Water Usage Charge per kL	Residential Revenue from Usage Charges	Average Annual Residential Water Supplied	Total Urban Water Supplied	Total Non Revenue Water	Real Losses (Leakage)	Status of IWCM	
	Yes/No	Yes/No	Yes/No	Yes/No	\$	Yes/No	Yes/No	(9)	(10)	(11)	Step 1 (c/kL)	Step 2 (c/kL)	(%) (14) F4 2010/11	(kL/property) (15) W12 2010/11	(ML) (16) W11 2010/11	(ML) (17) 2010/11	(ML) (18) 2010/11	(L/d/connection) (19) A10 2010/11	Evaluation (20) 2010/11	Strategy (21) 2010/11			
1 Gosford	Yes	No	No	Yes	500	Yes	Yes	Full pay-for-use pricing, rainwater tank subsidy, mandatory rain water tanks for new houses and extensions, restrictions, retrofit program, major water user audits, public education program, promoting effluent reuse schemes, leakage reduction program, main replacement program.	Yes	Yes	198		76	148	13,882	1,661	1,329	60	Y	Y			
20 Goulburn Mulwaree	Yes	Yes	Yes	No		Yes	No	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, restrictions, retrofit program, public education program, AAA washing machine rebates.	Yes	Yes	167	225	47*	133	2,351	275	187	50	Y	Y			
80 Greater Hume	Yes	Yes	No	No		Yes	Yes	Full pay-for-use pricing, restrictions, public education program.	Yes	Yes	120	190	57	166	372	47	16	20	Y				
30 Griffith	Yes	Yes	Yes	No		Yes	Yes	Full pay-for-use pricing, restriction policy in place, public education program.	Yes	Yes	55	108	71*	375	5,268	440	241	70	Y				
94 Gundagai	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	95	125	74*	340	543	105	50	120					
44 Gunnedah (Groundwater)	No	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	90	135	67	292	1,870	187	112	70	Y				
90 Guyra	No	No	No	No		Yes	Yes	Full pay-for-use pricing, restrictions, public education program.	Yes	Yes	130	160	53	212	369	37	22	50					
81 Gwydir	Yes	No	No	No		Yes	Yes		Yes	Yes	105	195	38*	257	628	143	130	210	Y	Y			
76 Harden (Reticulator)	Yes	Yes	No	No		Yes	Yes	Full pay-for-use pricing.	Yes		191	286	77*	330	1,022	75	45	70					
7 Port Macquarie-Hastings (Unfiltered)	Yes	No	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, public education program, water restrictions, encourage use of rainwater tank, water audit free of charge for large users, retrofit program, effluent reuse program, separate metering for new and encourage separate metering for existing multi-unit development, leakage reduction program, permanent water conservation measures, meter replacement program.	Yes	Yes	214	428	69	147	6,169	817	680	70	Y				
30A Hawkesbury (No WS)																							
86 Hay (Dual Supply)	Yes	No	No	No		No	Yes	Full pay-for-use pricing, public education program, other.	Yes	Yes	100	150	83*	186	775	37	22	30					
Hunter Water	Yes	Yes	Yes	Yes	1500	Yes	Yes	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, restrictions, retrofit program, public education program, leakage reduction, effluent reuse.	Yes	Yes	190		66	175	72,368			84					
37 Inverell	No	No	No	No		No	No	Full pay-for-use pricing, member of waterwise, public education program.	Yes	Yes	115	135	44*	209	1,890	213	113	60					
106 Jerilderie (Dual Supply)	Yes	No	No	No		Yes	No	Full pay-for-use pricing, customer billing 3 times/a, member waterwise, building code program, restrictions, public education, retrofit program, effluent reuse, reservoir drop test, review conservation measures.	Yes		125	150	79*	144	296	9	6	30					
77 Junee (No WS)						Yes									108	0	0						
25 Kempsey (Groundwater)	Yes	No	No	No		Yes	Yes	Subsidised water audits, public education, rainwater tank rebates, waterwise member, leakage reduction, retrofit rebates, dual flush toilet program, Integrated Water Cycle Management Strategy, reviewing drought policy.	Yes	Yes	167	235	53*	156	3,455	685	205	50	Y	Y			
70 Kyogle	Yes	Yes	No	Yes	670	Yes	No	Full pay-for-use pricing, member waterwise, investigating rainwater tank subsidies, restrictions, non-potable water supplies, quarterly billing (commercial), 90% effluent reuse at Bonalbo and Woodenbong.	Yes	Yes	118	180	45	154	388	38	23	30	Y	Y			
59 Lachlan	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, restrictions, retrofit program under investigation, public education program.	Yes	Yes	160	250	85	394	1,494	159	118	120					
48 Leeton	Yes	No	Yes	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program (waterweek), separate metering of new multi unit developments; converting town parks to raw water; restricting all new residential meters to 20mm.	Yes	Yes	78	115	56	308	1,909	227	167	110	Y				
22 Lismore (Reticulator)	Yes	Yes	Yes	Yes	670	Yes	No	Full pay-for-use pricing, customer billing 3 times/a, building code program, member of waterwise, water restrictions, public education program, rainwater tank rebate, rebate for water efficient appliance, rebate on water audits (special projects), retrofit program, effluent reuse, separate metering of new and some existing multi-unit developments, reservoir drop test, leakage reduction program, monitoring program, review water conservation measures every 2 years.	Yes	Yes	236		70	152	3,236	392	194	40	Y	Y			
31 Lithgow	Yes	Yes	Yes	Yes	800	No	No	Full pay-for-use pricing, member of waterwise, public education program, water restrictions implemented from Drought Management Plan.	Yes	Yes	240	360	73*	159	2,551	694	694	230					
61 Liverpool Plains	Yes	No	No	No		No	No		Yes	Yes	106	174	37	189	771	118	86	90	Y				
102 Lockhart (No WS)						Yes									4	0	0		Y				
5 MidCoast (Unfiltered)	Yes	Yes	Yes	Yes	1500	Yes	Yes	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, restrictions, retrofit program, public education program, other.	Yes	Yes	238	266	74	139	8,331	1,470	962	80	Y	Y			
32 Mid Western Regional	Yes	No	No	No		Yes	Yes		Yes	Yes	240	360	76*	165	2,016	376	171	70					
38 Moree Plains (Groundwater)	No	No	No	Yes	1500	Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program (media).	Yes	Yes	98	138	63*	413	3,029	433	288	160	Y				
65 Murray (Dual Supply)	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, restrictions, public education.	Yes	Yes	78		53*	161	886	80	63	60	Y				
101 Murrumbidgee (Groundwater)	No	No	No	No		Yes	No	Full pay-for-use pricing, rainwater tank guidelines, encouraging retrofit program.	Yes		29	34	47	497	517	52	31	90					
41 Muswellbrook	Yes	No	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	133	200	63	215	1,989	209	129	60	Y	Y			
34 Nambucca (Groundwater)	No	No	Yes	Yes	500	Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, retrofit program, public education program.	Yes	Yes	193		78	142	1,423	162	105	40	Y	Y			
46 Narrabri (Groundwater)	Yes	Yes	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, retrofit program, public education program.	Yes	Yes	75		50	226	1,458	150	150	100					
63 Narrandera (Groundwater)	No		No			Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	92		56*	347	1,308	294	80						
62 Narromine (Groundwater)	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	90		65	340	824	99	82	100					
83 Oberon (Reticulator)	Yes	No	No	No		Yes	No	Full pay-for-use pricing, restrictions.	Yes	Yes	149		58*	130	222	47	25	50					
19 Orange	Yes	Yes	Yes	Yes	650	Yes	Yes	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, restrictions, public education program.	Yes	Yes	170	255	61	158	5,365	581	517	90	Y				
71 Palerang	Yes	Yes	Yes	Yes	200	Yes	No		Yes	Yes	195	307	42	138	387	33	17	20					
36 Parkes	Yes	No	Yes	Yes	500	Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program, non-potable supply for stock, roadworks and swimming pools, IWCM Strategy.	Yes	Yes	135	270	60	215	5,410	722	480	190	Y	Y			



Table 8C: 2010-11 water conservation initiatives (continued)

WATER UTILITY	CUSTOMER FOCUSED MEASURES					BUSINESS FOCUSED		OTHER MEASURES										WATER SUPPLIED				IWCM	
	Customer Education Program	Retrofit Program	Rebates for Water Efficient Appliances	Rebates for Water Tanks	Max Rainwater Tank Rebate	Effluent Reuse	Leakage Reduction Program	Other Demand Management Measures	Sound Water Conservation Implemented?	Sound Drought Management Implemented?	Water Usage Charge per kL	Residential Revenue from Usage Charges	Average Annual Residential Water Supplied	Total Urban Water Supplied	Total Non Revenue Water	Real Losses (Leakage)		Status of IWCM					
	Yes/No	Yes/No	Yes/No	Yes/No	\$	Yes/No	Yes/No									(10)	(11)	Step 1 (c/kL)	Step 2 (c/kL)	(%)	(kL/property)	(ML)	(ML)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)	(12)	(13)	(14) F4	(15) W12	(16) W11	(17)	(18)	(19) A10	(20)	(21)						
17 Queanbeyan (Reticulator)	Yes	Yes	Yes	Yes	1100	Yes	Yes	Full pay-for-use pricing, quarterly billing, member waterwise, public education program, restrictions, rainwater tank rebate, rebate for water efficient appliances, subsidised garden mulch, free water audits, effluent reuse, retrofit program, review conservation measures, reservoir drop test.	Yes	Yes	206	303	59	191	3,791	512	443	90	Y				
33 Richmond Valley	Yes	Yes	Yes	Yes	670	Yes	No	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, restrictions, retrofit program, public education program.	Yes	Yes	170	255	74	171	2,894	296	180	70	Y	Y			
8 Riverina (Groundwater) (No Sge)	Yes	Yes	Yes	No			No	Full pay-for-use pricing, customer billing 3 times/a, member waterwise, building code program, restrictions, public education program, separate metering of new & existing multi-unit developments, reservoir drop test, leakage reduction program, monitoring program, review of conservation measures, meter replacement program.	Yes	Yes	95	142	79	225	11,449	1,442	550	50	Y				
4 Rous (Bulk Supplier) (No Sge)	Yes	Yes	Yes	Yes	1500		No	Full pay-for-use pricing, member of waterwise, restrictions, retrofit program, public education program, appliance rebates, residential tune up program, school grants.	Yes	Yes					2,358	792	429		Y	Y			
3 Shoalhaven	Yes	No	No	Yes	150	Yes	Yes	Full pay-for-use pricing, quarterly billing, member waterwise/AWA, rainwater tank subsidy, rainwater tank subsidy (toilet/washing machine), restrictions, public education program, Water conservation Tapstar Show, retrofitting of showerheads, leak reduction program, monitoring demand, effluent reuse for agriculture.	Yes	Yes	150	185	72	136	14,680	1,225	765	50	Y	Y			
35 Singleton	Yes	No	Yes	Yes	450	Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	97	179	61	262	2,640	261	157	70					
52 Snowy River (Unfiltered)	No	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, subsidy, restrictions, DCP rainwater tanks required in new developments.	Yes	Yes	152	200	29*	108	814	133	133	120					
Sydney Water	Yes	Yes	Yes	Yes	1500	Yes	Yes	Full pay-for-use pricing, member of waterwise, rainwater tank subsidy, 'Water Wise Rules', restrictions, retrofit program, public education program, leakage reduction, effluent reuse.	Yes	Yes	210		80	197	544,216			79					
13 Tamworth Regional	Yes	Yes	Yes	Yes	500	Yes	Yes	Full pay-for-use pricing, billing 4 times/a, member of waterwise, water restrictions, public education program, separate metering for new multi-unit developments, water management plan for premises. Under development - price control, community awareness, residential refit program, water loss management, water conservation including rainwater tank, outdoor watering, effluent reuse and stormwater harvesting.	Yes	Yes	126	189	58	216	9,047	1,514	1,408	190					
69 Temora (No WS)						Yes		Effluent reuse.							46	0	0						
68 Tenterfield	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, water restrictions, public education program, effluent reuse, leakage reduction program, retrofit program.	Yes	Yes	179	206	49	186	459	41	25	40					
93 Tumburumba	Yes	Yes	Yes	Yes	1500	No	No	Full pay-for-use pricing, restrictions, public education program.	Yes	Yes	144	242	41*	165	328	133	21		Y				
43 Tumut	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, restrictions, public education program, metering.	Yes	Yes	137	211	66	162	1,202	111	67	40	Y				
6 Tweed	Yes	No	No	No		Yes	No	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	185	280	73	167	8,872	1,377	509	60	Y	Y			
45 Upper Hunter	Yes	Yes		Yes	400	Yes	No		Yes	Yes	136	195	66*	375	2,342	215	129	80	Y				
73 Upper Lachlan	Yes	No	No	No		No	No		Yes	Yes	205	273	48	153	400	69	24	40					
85 Uralla	No	No	No	No		No	No	Full pay-for-use pricing, restrictions, considering retrofit program.		Yes	150		53	143	264	59	30	70	Y	Y			
107 Urana (No WS)						No									0	0	0		Y				
9 Wagga Wagga (No WS)						Yes								82	0	0			Y				
88 Wakool (Dual Supply)	Yes	Yes	Yes	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	95	149	72*	152	764	48	48	90					
98 Walcha	No	No	No	No		No	Yes	Full pay-for-use pricing, member of waterwise, restrictions.			220	320	70*	161	201	20	12	40	Y				
79 Walgett (Dual Supply)	No					Yes	No	Introducing full pay-for-use pricing, member of waterwise, considering rainwater tank subsidy, restrictions, public education program, proposing introduction of water meters.	Yes	Yes				748	2,550	210	126	240	Y				
96 Warren (Dual Supply)	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	91	137	53*	270	518	51	31	90					
55 Warrumbungle	No	No	No	No		Yes	No		Yes	Yes	144		42*	176	750	75	45	40	Y				
95 Weddin (No WS)						Yes								12	0	0	0		Y				
57 Wellington	Yes	Yes	No	No		Yes	Yes	Full Pay-for-use pricing, member of waterwise, restrictions, public education program.	Yes	Yes	155	180	62*	234	1,117	287	222	200	Y	Y			
74 Wentworth (Dual Supply)	No	No	No	No		Yes	No	Full pay-for-use pricing, restrictions.	Yes	Yes	120	280	59*	124	905	39	23	10					
16 Wingecarribee	Yes	No	No	No		Yes	Yes	Full pay-for-use pricing, customer billing 4 times/a, member of waterwise, restrictions, showerhead retrofit program, public education program.	Yes	Yes	151	225	67*	159	4,125	583	489	80	Y	Y			
2 Wyong	Yes	No	Yes	Yes	500	Yes	Yes	Full pay-for-use pricing, residential retrofit program, industrial/commercial water usage audits, retrofit of Council owned facilities, leak detection program, restrictions, improved operational procedures, promotion of effluent reuse schemes, development of groundwater schemes, rainwater tank retrofitting (residential, schools - both subsidised and Council properties), require rainwater tanks for new residential properties and public education programs.	Yes	Yes	198		71*	157	13,984	1,281	665	30	Y	Y			
56 Yass Valley	Yes	Yes	Yes	Yes	200	Yes	No	Full pay-for-use pricing, higher access charges for larger services, member of waterwise, rainwater tank rebate, water restrictions, free supply of water restrictors, customer billing 3 times/a, public education, compulsory rainwater tanks for new dwellings and encourages retrofitting etc.	Yes	Yes	260		60	140	707	180	90	80	Y	Y			
49 Young (Reticulator)	No	No	No	No		Yes	Yes	Full pay-for-use pricing, billing 4 times/a, building code program, member of waterwise, public education program, some stormwater reuse, separate metering of new and some existing multi-unit developments, leak reduction program.	Yes	Yes	204	306	67	148	1,060	119	82	50					
<b>Total LWUs</b>	<b>73</b>	<b>34</b>	<b>25</b>	<b>27</b>	<b>27</b>	<b>85</b>	<b>49</b>		<b>88</b>	<b>89</b>									<b>57</b>	<b>30</b>			
Percent "Yes" (Retail)	79%	37%	27%	29%	29%	86%	53%		Percent reporting "YES" (Including Bulk Suppliers)	92%	93%			Percent reporting completion of IWCM Evaluation Strategy	54%	29%							





Table 9: Water supply – utility characteristics (continued)

WATER UTILITY	ASSESSMENTS - CONNECTIONS - POPULATION													ASSETS										WORKFORCE													
	Total No of Assessments (18)			No. of Service Connections (18a)	Connected Properties - Total (19)		Connected Properties - Residential (20) x (19) (21) (22) (22a) C2			New Residential Dwellings Connected (%) (22b)			Population (Permanent) (23) C1 (Peak (% of Permanent) (24)			Transfer Mains (km) (25)	Trunk + Retic Mains (km) (25a) A 2	Properties Served per km of Main (20) / (25a) (26) A 3	Water Treatment Works (Providing Full Treatment) (No.) (27) A 1	Dams (No.) (28)	Bores (No.) (29)	Pumping Stations (No.) (30)	Pumping Stations / 100km of Main (30) / (25) / 100 (30a)	Capital Expenditure (Assets, Renewals, Plant/Equip) (31) F28 (31a) F14 (31b) F26		Capital Works Grants (31b) F26	Total Work Force properties (32)	% Undergoing Training (2 or more days per year) (34)	Out-sourcing (% of Maintenance Cost) (37)	Injuries No. (38)	Days Lost (Total (%) (39) Due to Injuries (%) (40a) (40b))						
																								\$/prop	Total \$M						Employees/1 000 properties	Total (%)	Due to Injuries (%)				
	2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11				
42	Corowa	5,150	5,400	5,500	4,940	0.93	5,120	0.90	0.93	4,610	0.5	1.1	1.3	10,200	9,600	9,600	200	2	161	32	3			8	5					1.4	57			6			
43	Tumut	4,640	4,670	4,670	4,900	0.95	4,440	0.88	0.95	3,890	1.8	0.2	0.6	11,700	8,600	8,600	140		184	24	5	1	4	12	7	895	4.0			1.8	100		1	0	3	0	
44	Gunnedah (Groundwater)	4,440	4,550	4,550	4,120	1.02	4,640	0.90	1.02	4,180	0.2	0.3	0.6	10,600	10,700	10,700	110	42	190	24	0		17	21	11	177	0.8			1.3	100	5					
45	Upper Hunter	4,560	4,760	4,920	4,320	0.92	4,530	0.90	0.93	4,130	1.7	1.9	10.3	9,100	9,200	10,100	100		153	30	1	1	8	11	7	328	1.5	364		2.0	100	5		9	185	9	
46	Narrabri (Groundwater)	4,460	4,470	4,470	3,980	0.98	4,380	0.84	0.98	3,680	0.2	0.6	0.4	10,700	10,700	10,800	100		112	39	0		11	12	11	101	0.4			1.6	86		1	0	1	0	
47	Bellingen (Unfiltered)	4,230	4,260	4,260	4,330	0.95	4,050	0.90	0.95	3,640	0.2	0.7	0.5	9,200	9,300	9,400	100	4	164	25	2	1	4	6	4	192	0.8			1.5	100	5		2			
48	Leeton	4,250	4,340	4,280	4,350	0.92	3,940	0.87	0.92	3,410	0.4		0.4	8,700	8,800	8,900	110	2	148	27	3	3		6	4	247	1.0	78		1.8	57		4				
49	Young (Reticulator)	4,410	4,450	4,460	4,110	1.04	4,640	0.84	1.04	3,890	0.6		2.2	9,200	9,200	9,400	110		147	31	0			3	2	15	0.1			1.3	100		3	1	12	1	
50	Cooma-Monaro	4,030	4,050	4,710	3,790	0.95	4,480	0.89	0.95	3,980		0.3	0.4	7,600	7,000	7,000	140		134	33	1		4	7	5	598	2.7	209		1.8	100						
51	Forbes	3,500	3,600	3,620	3,620	1.01	3,660	0.86	1.01	3,140	0.3	0.8	0.4	7,700	7,600	7,800	100	10	130	28	1		2	6	5	92	0.3			2.2	25	9		0			
52	Snowy River (Unfiltered)	2,860	2,930	3,300	2,960	1.43	4,720	0.89	1.43	4,200	2.9	2.0	1.5	4,000	4,100	4,100	380	15	155	30	7			19	12			38		1.4	59	30	2				
53	Berrigan (Dual Supply)	3,560	3,590	3,620	3,220	0.98	3,540	0.89	0.98	3,140	1.2	1.1		6,600	6,700	6,700	110	4	216	16	4	4			8	4	116	0.4	22		1.6	100	10	2	3	11	1
54	Deniliquin	3,480	3,520	3,530	3,560	0.96	3,390	0.86	0.95	2,870	0.1	0.0	0.8	8,000	8,000	8,000	100	1	148	23	1		1	4	3	229	0.8	30		1.5	60		1	0	29	3	
55	Warrumbungle	3,330	3,330	3,330	3,140	0.99	3,300	0.85	0.97	2,740	0.1	1.2	2.8	5,900	5,900	5,900	100		148	22	4	1	6	8	5	131	0.4	216		3.0	100			0			
56	Yass Valley	3,100	3,150	3,200	3,000	0.98	3,140	0.90	0.98	2,820	0.8	1.5	1.7	6,800	6,600	6,600	120	2	160	20	1	1	5	12	8	1,129	3.5			1.6	40	8		5			
Medians (% of LWUs basis) or totals 3,001 to 10,000 Properties		150,220			145,800						322,700			310			6,193			26					163			1.6		2		2					
LWUs with 1,501 - 3,000 Properties																																					
57	Wellington	2,970	2,960	2,960	3,030	0.98	2,900	0.89	0.98	2,590	0.2	0.4	0.1	6,500	6,500	6,500	100	5	103	28	2		2	7	7	124	0.4			1.2	29	2	1	0	4	0	
58	Cootamundra (Reticulator)	2,930	2,950	2,940	3,030	0.99	2,910	0.88	0.99	2,570	0.3	0.7	0.9	7,500	7,600	7,600	110		70	42	0			0		10	0.0			0.7	100						
59	Lachlan	2,760	2,770	2,770	2,700	1.02	2,820	0.78	1.02	2,200	0.4	0.4	0.3	5,500	5,400	5,400	110	3	225	13	3	5	1	8	4	699	2.0			2.0	100	18					
60	Glen Innes Severn	3,310	3,330	3,340	3,220	0.90	3,000	0.86	0.91	2,610	0.2	0.6	0.4	6,500	6,200	6,200	120	5	104	29	1		1	2	2	183	0.6	97		1.2	114		1	0	2	0	
61	Liverpool Plains		2,750	2,820	2,550	0.98	2,770	0.96	0.98	2,660		0.3	0.4	5,700	5,700	5,800	110	16	129	21	1	1	11	12	9	205	0.6	1,345		2.2	100		-		-		
62	Narromine (Groundwater)	2,330	2,210	2,240	2,230	0.95	2,130	0.88	0.95	1,870	0.2	0.5	0.5	4,800	4,900	4,900	130	5	60	36	3	2	15	3	5			328		2.3	80	13					
63	Narrandera (Groundwater)	2,240	2,250	2,300		0.92	2,110	0.85	0.92	1,800			0.2	4,800	4,800	4,800	110		70	30	0		2	3	4	46	0.1			1.9	100						
65	Murray (Dual Supply)	3,090	2,900	2,920	2,670	0.95	2,770	0.88	0.95	2,450	1.0	1.2	1.1	6,000	6,100	6,200	210	7	139	20	2			8	6	166	0.5			1.4	100		1	2			
67	Cobar	2,300	2,370	2,380	2,210	0.95	2,260	0.85	0.95	1,920		0.5	0.5	7,000	7,000	7,000	110	212	116	19	1	5	1	6	5	93	0.2			2.2	100						
66	Cobar WB																	336	0	0	4		3														
68	Tenterfield	2,090	2,070	2,070	1,920	0.95	1,960	0.87	0.95	1,710	0.4	0.9	0.5	3,600	3,600	3,600			69	28	1	1	1	2	3	164	0.3	81		3.1	100	3					
70	Kyogle	1,930	1,940	1,940	1,930	0.95	1,850	0.82	0.95	1,510	0.2	0.8	0.4	3,700	3,700	3,700	120	15	56	33	2	1	3	5	9	64	0.1	156		3.8	100	5		2			
71	Palerang	2,020	2,110	2,140	2,140	0.95	2,030	0.91	0.95	1,840		2.2	1.1	4,500	4,600	4,700	100	6	48	43	2	2	4	3	6	809	1.6	7		1.5	100						
73	Upper Lachlan	1,920	1,930	1,940	1,810	1.00	1,940	0.88	1.00	1,700	0.1	0.9	0.3	2,900	2,900	2,900	110	2	64	31	1	2	6	3	5	114	0.2	473		1.5	100	2					
74	Wentworth (Dual Supply)	2,360	2,490	2,470	4,580	0.95	2,350	0.93	0.95	2,180		0.9	1.1	4,000	4,000	4,000	130		167	14	3	-	-	8	5	214	0.5			3.0	86	30		9	142	9	
75	Coomamble (Groundwater)	1,640	1,660	1,660	1,640	1.02	1,690	0.87	1.02	1,470	0.2	0.1	0.0	3,200	3,100	3,000	180		65	26	0		6	0		118	0.2	370		3.5	100		-		-		
76	Harden (Reticulator)	1,820	1,940	1,970	1,850	0.96	1,890	0.66	0.95	1,240	0.4	0.2	0.2	3,900	3,900	3,900	100		170	11	0			3	2	87	0.2			3.2	100	1	1	1	4	0	
79	Walgett (Dual Supply)	1,870	2,260	2,260	1,460	0.85	1,920	0.83	0.85	1,600			0.8	6,600	6,300	6,000	100	6	102	19	2		6	7	7	152	0.3	256		2.1			-		-		
80	Greater Hume	1,780	1,870	1,880	1,770	0.95	1,790	0.81	0.95	1,460	0.6	2.8	1.6	4,500	4,500	4,600	100		149	12	1		2	2	1	72	0.1			1.4	100	20					
Medians (% of LWUs basis) or totals 1,501 to 3,000 Properties		43,000			41,090						90,800																										

Table 9: Water supply – utility characteristics (continued)

WATER UTILITY	ASSESSMENTS - CONNECTIONS - POPULATION													ASSETS										WORKFORCE												
	Total No of Assessments			No. of Service Connections		Connected Properties - Total		Connected Properties - Residential			New Residential Dwellings Connected			Population			Transfer Mains	Trunk + Retic Mains	Properties Served per km of Main	Water Treatment Works	Dams	Bores	Pumping Stations	Pumping Stations / 100km of Main	Capital Expenditure (Assets, Renewals, Plant/Equip)		Capital Works Grants	Total Work Force	% Undergoing Training	Out-sourcing	Injuries	Days Lost				
	(18)	(18a)	(18)	(19)	(20)	(21)	(22)	(22a)	(22b)	(23)	(24)	(25)	(25a)	(26)	(27)	(28)									(29)	(30)						(30a)	\$/prop	Total \$M	(31b)	(32)
	2008/09	2009/10	2010/11	2010/11	(Ratio of Connected Properties to Assessment)	(Ratio of Residential Assessments to Total Assessments)	(Ratio of Residential Connections to Residential Assessments)	(Ratio of Residential Properties to Residential Assessments)	(%)	(Permanent)	(Peak (% of Permanent))	(km)	(km)	(20) / (25a)	(Providing Full Treatment) (No.)	(No.)	(No.)	(No.)	(30) / (25) / 100	(31)	(31a)	(31b)	Employees/1 000 properties	(2 or more days per year)	(% of Maintenance Cost)	No.	Total (%)	Due to Injuries No. (%)								
<b>LWUs with 200 - 1,500 Properties</b>																																				
81	Gwydir	1,530	1,530	1,530	1,670	0.95	1,460	0.87	0.95	1,260	0.1	0.1	0.1	2,600	2,600	2,600	130	88	17	2	9	1	1	2,273	3.3	2,702	2.7	100	10							
83	Oberon (Reticulator)	1,300	1,300	1,360	1,300	1.01	1,370	0.83	1.02	1,150	0.2	0.2	0.4	3,000	3,000	3,100	130	39	35	1				100	0.1		0.7	400	8							
84	Gilgandra (Groundwater)	1,400	1,400	1,380	1,350	0.98	1,350	0.89	0.98	1,200	0.2	0.2		2,900	2,900	3,000	110	51	27	1	-	-	-	29	0.0		1.1	67	5	2	3	6	2			
85	Uralla	1,560	1,560	1,260	1,160	1.01	1,270	0.91	1.02	1,170	0.3	0.3	0.8	2,600	2,600	2,400	100	37	34	1	1		1	3	72	0.1		1.6	100	9						
86	Hay (Dual Supply)	1,330	1,330	1,330	2,430	0.98	1,310	0.88	0.98	1,150	0.2	0.2	0.2	2,900	2,900	2,900	100	2	47	28	1			3	6	162	0.2		1.5	100						
87	Bourke (Dual Supply)	1,200	1,200	1,280	1,100	1.00	1,280	0.86	1.00	1,100	0.2	0.2	1.0	2,000	2,000	2,000	100	36	36	1		1	2	6	239	0.3	361	2.3	100							
88	Wakool (Dual Supply)	1,480	1,480	1,500	1,390	0.95	1,430	0.74	0.95	1,050	0.0	0.0	2.9	2,500	2,500	2,500	130	166	9	5	1		8	5	39	0.1	9	3.5	80	10						
89	Bogan	1,020	1,020	1,020	1,080	1.01	1,030	0.87	1.01	900	0.0	0.0	0.4	2,500	2,500	2,500	140	3	48	22	1		1	2			2.9	100								
90	Guyra	1,230	1,230	1,270	1,120	0.95	1,200	0.88	0.95	1,060	0.3	0.3	0.3	3,000	3,000	3,000	100	62	19	1	-	-	-	147	0.2		2.5	67	3			1				
91	Cabonne	1,210	1,210	1,200	1,120	0.95	1,140	0.85	0.95	970	0.2	0.2	0.2	2,200	2,200	2,300	100	50	43	26	1	3	6	4	9	356	0.4	121	4.4	100			1			
92	Carrahooh (Groundwater)	1,190	1,190	1,190	1,070	0.95	1,130	0.81	0.95	910	0.4	0.4	0.5	2,000	2,000	2,000	110	10	476	2	4	3	9	20	4	282	0.3		5.3	100						
93	Tumbarumba	1,200	1,200	1,220		0.95	1,160	0.88	0.95	1,020			0.6	2,000	2,000	2,000	170	66	18	0	1	1	2	3	2,619	3.0	2,051	2.6	100							
94	Gundagai	1,030	1,030	1,020	1,120	0.85	870	0.86	0.84	740	0.7	0.7	1.1	2,400	2,400	2,400	210	35	25	1				2	6	77	0.1		2.3	100	5	1	1	5	1	
96	Warren (Dual Supply)	1,060	1,060	1,050	960	0.91	960	0.89	0.90	840	0.4	0.4	0.5	1,800	1,800	1,900	140	8	28	34	0		5	2	7	8	0.0		3.1	100			1	5	1	
97	Bombala	890	890	890	850	0.95	840	0.87	0.95	740	0.1	0.1	0.0	1,900	1,900	1,900	110	4	39	21	2			3	8	39	0.0		2.4	100						
98	Walcha	880	880	860	930	1.01	870	0.85	1.01	730	0.3	0.3	0.1	1,700	1,700	1,700	110	17	57	15	1	1		3	5	31	0.0		2.3	100						
100	Balranald (Dual Supply)	910	910	950	880	0.95	900	0.83	0.95	740	0.3	0.3	0.7	2,000	2,000	1,900	110	2	30	30	2			3	10	57	0.1		2.2	100						
101	Murrumbidgee (Groundwater)	880	880	790	990	1.03	810	0.88	1.03	710			0.1	1,700	1,700	1,700	110	32	25	1		4	3	9	205	0.2		4.9	0							
103	Central Darling (Dual Supply)	690	690	730	680	1.00	730	0.87	1.00	630	0.1	0.1	1.4	1,400	1,400	1,400	110	66	11	1	4	3	8	12				4.1	67			2	2	2	0	
104	Boorowa	720	720	710		0.94	660	0.98	0.94	650			1.7	700	700	690	580	48	14	1	1	2	1	2	112	0.1		4.5	67	3						
105	Brewarrina	560	560	570	540	0.86	490	0.88	0.86	430	0.1	0.1	0.5	1,500	1,500	1,500	110	7	38	13	2	1	1	2	5	290	0.1	97	7.2	0			2	31	250	31
106	Jerilderie (Dual Supply)	500	500	510	510	0.93	470	0.76	0.93	360	0.3	0.3	0.3	900	900	770	120	3	44	11	1			1	2	19	0.0		4.2	100						
Medians (% of LWUs basis) or totals 200 to 1,500 Properties		23,620			22,730						46,160			106	1,574	22									106			2.7			2	1				
Median All LWUs (% of LWUs basis)								New res dwellings 0.8 %						Properties served per km of main 27			Capital Expenditure/prop \$160									1.7										
Median All LWUs (Statewide basis)								1 %						32						\$239						1.5										
Totals (excluding bulk suppliers)					821,000 assessments						Total Population 1.82 M						180 water treatment works (Note 1)						Total WS Capital Expenditure \$280 M (including bulk suppliers)													
96 LWUs with WS services					802,000 connected properties																								Reported No. of WS employees 1,440							
					728,000 residential connected properties																											37,400 km of main (includes bulk suppliers)				

Notes: 1. In addition to these 180 water treatment works, the LWUs also have 105 chlorinators/aerators (see Appendix D1 on page 238).

Table 10: Water supply – asset management and water resource management

WATER UTILITY	ASSET MANAGEMENT															WATER RESOURCE MANAGEMENT																		
	Real Losses (Leakage) (see col (9) Table 8)						Main Breaks			Unplanned Interruptions to Supply			Rehabilitations			Renewals		Mains Maintenance Cost	Total Urban Water Supplied			Non-potable Urban Water Supplied		% Water Recycled (from Table 8)		Peak Week to Average Consumption		Average Annual Residential Water Supplied						
	(L/d per connection)		(kL/km/d)	(ILI)	Reservoir Drop Test (RDT) Waste Metering (WM) or Night Flow Metering (NFIZ) Z is No. of District Meter Areas			(per 100km of Main)			(per '000 properties)			Mains (km per 100 km)	Service Connections (%)	Water Meters (%)	(\$'000 per 100km of Main)	(% of CRC)	(\$'000 per 100km of Main)	Recycled (Excluding Bulk Water Exports) (ML) (from Table 8)	For outdoor uses of industry (Including Recycled) (ML) (from Table 8)	(Urban + Ag Use)/Total Urban Water Supplied (%)	(%)	(%)	From Tables 8 & 9 (1) + [(22a)] Potable (kL/property)		From Tables 8 & 9 [(1)+(11)+(12a)] + [(22a)] Potable-Nonpotable (kL/property)							
	(41) A 10	(41a) A 11	(41b) A 9	Type (41c)	Year (41d)	Result % (41e)	(42) A 8	(43) C 17	(44)	(45)	(45a)	(46)	(47)	(48)	(49) W 11	(50)	(51)	(53)	(56a)	(56)	(56b)	(56c)	(56d)	(56e)	(56f)	(56g)	(56h)	(56i)	(56j)					
2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	
Sydney Water	81	73	79	5.0	1.3			34	28	28	5	4	175					491,968	505,650	433,363										198	205	197		
Hunter Water	94	88	84	3.4	1.2			33	32	31	271	255	258					67,020	68,233	72,368										180	184	175		
Sydney Catchment Authority																																		
<b>LWUs with &gt; 10,000 Properties</b>																																		
1 Gosford	30	50	60	3.7	1.0	-	-	27	34	29	203	239	200	0.2	0.3	14.5		271	12,600	13,600	13,900	68	14	44	3	0	133	137	140	146	148	140	146	148
2 Wyong	30	30	30	1.5	1.0	2004	5.0	9	6	10	61	61	88	0.1	0.9	6.4		350	13,400	13,900	14,000	865	940	998	7	7	142	144	141	154	157	141	154	160
3 Shoalhaven	60	70	50	1.4	1.0	2010	8.0	14	9	10	-	39	64	0.1	0.0	3.3	83	58	15,000	15,200	14,700	2,012	2,332	3,280	35	6	126	158	152	145	136	152	145	136
4 Rous (Bulk Supplier) (NO SGE)				9.4		-	-	16	21	53	2	2	2	3.0	0.0	0.3	1330	343	430	1,570	2,360													
5 MidCoast (Unfiltered)	100	90	80	1.9	1.0	NF[34]	2008	11.0	5	3	4	-	-	0.2	-	-		168	9,170	9,160	8,330	4	546		11	7	144	152	150	154	139	150	154	139
6 Tweed	60	90	60	2.0	1.0	2011	6.0	5	3	8	9	14	7	0.6	0.8	1.8	270	165	9,210	10,500	8,870	645	778	436	9	5	147	122	180	176	167	180	176	167
7 Port Macquarie-Hastings (Unfiltered)	40	40	70	2.4	1.4	-	-	3	2	3	11	5	7	0.1	0.1	1.3	148	73	6,120	6,500	6,170	64	109	292	5	5	109	118	151	166	147	151	166	147
8 Riverina (Groundwater) (NO SGE)	60	50	50	0.9	1.0	-	-	14	10	14	34	39	69	0.5	0.1	16.5	214	65	17,100	15,900	11,400						186	182	374	330	225	374	330	225
10 Coffs Harbour (Unfiltered)	50	50	50	1.8	1.0	2008	-	11	11	12	24	20	42	0.1	0.0	3.7	4	206	5,690	6,620	5,990	346	2,311		16	39	121	117	165	186	162	165	186	162
11 Albury City	50	50	40	1.6	1.1	2006	-	12	7	7	-	-	-	0.5	0.1	4.7	199	147	6,890	6,800	5,670	6	8	5,227	100	92	212	231	222	220	180	222	220	180
12 Fish River WS (Unfiltered, Bulk Supplier)				13.8		-	-	5	2	3	0	1	-	-	-	0.0	918	0.9	680	1,460	1,440													
13 Tamworth Regional	190	140	190	5.8	6.7	2011	-	12	5	6	-	-	-	0.2	0.3	2.8		278	9,270	9,440	9,050	157	88	5,289	38	58	187	192	226	256	216	226	256	216
14 Clarence Valley	50	120	120	2.3	1.1	-	-	10	16	14	-	-	-	0.1	0.1	1.9	189	103	6,220	6,740	6,070	186	233	68	5	0	124	133	172	170	140	176	174	142
15 Eurobodalla (Unfiltered)	90	170	100	1.9	1.3	2010	10.0	4	6	4	2	3	49	0.3	-	4.3	73	74	4,000	4,320	3,540	171	281	160	10	5	145	179	129	116	109	129	116	109
16 Wingecarribee	110	90	80	2.0	1.0	-	-	8	12	5	46	61	15	0.3	0.0	2.6	49	80	4,830	4,860	4,130	64	73	42	2	1	173	110	183	190	159	183	190	159
17 Queanbeyan (Reticulator)	60	100	90	4.2	1.7	RDT	2007	1	0	18	6	5	5	0.3	6.5		128	128	4,050	4,280	3,790				1		133	150	198	200	191	198	200	191
18 Dubbo	180	160	70	2.1	1.4	2009	-	7	4	6	24	31	26	0.1	6.0		130	162	8,210	7,690	6,320		1,691		78	24	235	258	331	329	263	331	329	263
19 Orange			90	2.6		2009	10.0	28	11	6	175	-	43	0.1	0.0	2.4		92	8,350	6,930	5,370	3,291	3,033	1,714	90	32	130	133	259	148	158	259	148	158
20 Goulburn Mulwaree	40	40	50	1.9	1.0	-	-	14	14	16	-	-	-	0.7	0.8	5.6	188	338	2,480	2,210	2,350		1,635		80	70	137	140	134	136	133	134	136	133
21 Bathurst Regional		70	60	2.2	1.0	-	-	9	9	12	2	2	3	0.9	0.4	3.3	311	244	5,780	6,000	5,390	2	2	4,919	100	73	215	228	240	252	182	240	252	182
22 Lismore (Reticulator)	110	130	40	1.6	1.0	-	-	20	23	14	49	37	125	0.9	0.9	3.6	473	1.1	3,520	3,790	3,240				1				159	168	152	159	168	152
23 Bega Valley (Unfiltered)	60	60	50	1.1	1.0	2010	7.0	5	4	6	-	-	-	1.1	1.0	2.8	254	145	3,990	4,210	3,640	556	613	448	41	12	151	130	154	165	129	154	165	129
24 Ballina (Reticulator)	120	200	190	6.7	3.3	RDT	2005	19.0	9	13	7	-	-	-	-	2.1		113	3,570	4,770	3,730	119	717	123	19	3			175	188	162	175	188	162
25 Kempsey (Groundwater)	80	60	50	1.0	1.0	2008	11.0	24	11	10	114	23	31	0.1	0.1	6.6	668	170	3,630	3,770	3,460	32	40	36	2		147	128	156	177	156	156	177	156
26 Essential Energy	70	80	60	1.8	1.1	-	-	11	12	20	-	-	-	0.7	0.1	1.1	699	713	5,760	5,930	4,730	999	1,179	631	46	7	187	162	280	279	218	284	280	219
27 Byron (Reticulator)	50	100	100	4.3	2.7	2011	11.0	8	12	8	9	11	14	0.1	1.0	5.1		25	3,020	3,170	3,480	235	218	978	15	14			181	194	159	181	194	159
28A Goldenfields (Reticulator) (NO SGE)		90	70	0.4	1.0	2009	-	6	19	19	-	117	93	0.3	0.6	4.4		54	5,530	5,160	3,870	121	127	70			319	265	294	256	174	298	259	176
28B Goldenfields (Bulk Supplier) (NO SGE)				8.5				0	0	0							102																	
Medians (% of LWUs basis excl bulk suppliers) for >10,000 Properties	60	60		1.9	1.0	Note: ILI < 1.0 is meaningless & has been increased to 1.0		9	10	10	39	27	42				189	146							15	7			174	177	159	174	177	159
<b>LWUs with 3,001 - 10,000 Properties</b>																																		
29 Armidale Dumaresq	70	60	100	2.9	1.2	-	-	24	15	21	-	-	99	0.3	0.4	2.5	167	532	3,140	2,640	2,450	40	45	420	40	16	185	185	254	215	190	254	221	193
30 Griffith	110	120	70	1.3	1.0	2011	6.0	15	19	7	27	24	24	1.1	0.4	9.6	122	28	7,010	7,740	5,270	629	748	344	9	4	189	246	548	560	375	548	584	382
31 Lithgow		30	230	16.4	1.0	-	-	23	60		-	2		2.2	0.5	0.1		719	2,050	1,500	2,550	6	-				115		160	135	159	160	135	160
32 Mid-Western Regional	50	70	70	1.6	1.0	2011	8.0	8	5	4	34	56	70	0.1	0.1	7.8		234	2,210	2,540	2,020				12	9	206	189	199	205	165	199	205	165
33 Richmond Valley	110		70	2.7		2010	-	9	15	9	4	-	-	2.9	2.8	-	802	103	3,010	3,180	2,890		136		19	5	112	101	189	195	171	189	195	171
34 Nambucca (Groundwater)	40	50	40	1																														

Table 10: Water supply – asset management and water resource management (continued)

WATER UTILITY	ASSET MANAGEMENT															WATER RESOURCE MANAGEMENT																						
	Real Losses (Leakage) (see col (9) Table 8)						Main Breaks			Unplanned Interruptions to Supply			Rehabilitations			Renewals		Mains Maintenance Cost	Total Urban Water Supplied			Non-potable Urban Water Supplied		% Water Recycled (from Table 8)		Peak Week to Average Consumption		Average Annual Residential Water Supplied										
	(L/d per connection)		(kL/km/d)	(l/l)	Reservoir Drop Test (RDT) Waste Metering (W/M) or Night Flow Metering (NF/Z) Z is No. of District Meter Areas			(per 100km of Main)			(per '000 properties)			Mains (km per 100 km)	Service Connections (%)	Water Meters (%)	(\$'000 per 100km of Main)	(% of CRC)	(\$'000 per 100km of Main)	Potable + Non-potable + Recycled (Excluding Bulk Water Exports) (ML) (from Table 8)			For outdoor uses or industry (including Recycled) (ML) (from Table 8)		(Total Vol Recycled (Urban + Ag Use)/Total Urban Water Supplied (%)		%		From Tables 8 & 9 (1) + (22a)] Potable (kL/property)		From Tables 8 & 9 [(1)+(11)+(12a)] + (22a)] Potable-Nonpotable (kL/property)							
	(41) A 10	(41a) A 11	(41b) A 9	Type (41c)	Year (41d)	Result % (41e)	(42) A 8	(43) C 17	(44)	(45)	(45a)	(46)	(47)	(48)	(49) W 11	(50)	(51)	(53)	(56a)	(56) W12																		
2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11						
38 Moree Plains (Groundwater)	160	230	160	5.2	4.8		2011	6.0		46	33	16	453	659	602	1.0	1.0	1	0.0	399	9,720	3,530	3,030	4,944	348	927	65	29	180	194	936	946	413	936	619	423		
39 Cowra	90	150	60	0.9			2011	7.0		8	12	14	8	2	25	0.1	1.1	5.7	404	1.8	139	2,060	2,790	2,260		84	100	32	155	120	198	202	161	198	202	166		
40 Central Tablelands (NO SGE)	50	50	60	0.6	1.0		-	-		11	10	3	60	50	32	0.4	2.0	4.7	50	0.2	52	1,770	1,880	1,390					233	300	190	201	158	190	201	158		
41 Muswellbrook	60	70	60	2.2	1.2		2010	-		22	27	25	10	24	1	1.3	0.1	2.6	138	0.3	182	2,870	3,300	1,990	959	912			76	43	240	305	215	240	305	215		
42 Corowa	150	70	80	2.4	2.2		-	-		19	14	12	30	46	39	1.1	0.0	0.0			122	2,690	2,180	3,730	682	1,721			45	11	241	260	207	237	196	207	237	196
43 Tumut	50	40	40	1.0	1.0		2011	3.0		4	7	3									102	1,470	1,450	1,200	25	151	92	18.8	7	148	136	224	201	162	224	202	163	
44 Gunnedah (Groundwater)	100	80	70	1.6	1.0		2010	3.0		13	19	9	3	3	-	0.4	0.5	0.4	349	1.2	261	2,190	2,300	1,870		688			75	37			247	338	292	247	338	292
45 Upper Hunter	60	120	80	2.3	1.1		2010	-		74	20	19	17	27	26	0.7	0.7	6.6	544	2.0	228	1,680	3,050	2,340	167	135	197	10	8			216	448	375	216	448	375	
46 Narrabri (Groundwater)	130		100	3.7			-	-		81	82	54	90	16	16	6.3	0.4	1.1	76	0.3	68	3,480	2,290	1,460					4	309	486	773	544	226	773	544	226	
47 Bellington (Unfiltered)	120	50	70	1.9	1.0		2010	10.0		7	8	5				1.6	0.4	7.6	116	0.3	52	1,280	1,280	1,190		5			135	128	173	175	155	173	175	155		
48 Leeton	380	190	110	3.1	2.9		2011	10.0		35	6	23	40	11	25	1.2	2.5	5.1	476	1.3	430	2,790	2,960	1,910		50	1	3	168	216	384	442	308	384	442	308		
49 Young (Reticulator)	110	60	50	1.5			2011	7.0		17	-	17	25	-	17	0.5	0.9	6.9	46	0.3	166	1,570	1,520	1,060	129	15			1	259	217	222	148	217	222	148		
50 Cooma-Monaro	70	50	40	1.3			2011	2.0		22	15	11				0.3	0.7	1.7	818	2.2	177	1,700	1,230	1,020					25	16	179	138	320	195	135	320	195	135
51 Forbes	80	80	50	1.4	1.3		2009	15.0		34	33	28	123	118	113	0.2	5.1	3.6	235		235	1,890	1,950	1,530	166	156	105	82.2	40.5	230	260	356	338	260	356	338	260	
52 Snowy River (Unfiltered)	130	130	120	2.4	1.3		RDT	2007	6.0	10	7	8	1	4	4	0.7	0.8	0.8	14		14	860	850	810					468	122	126	127	108	126	127	108		
53 Berrigan (Dual Supply)	90	90	90	1.4	2.2		2008	28.0		29	13	16	11	57	44			0.1				1,330	1,560	1,410	626	750	680	34	21	366	362	131	158	148	215	272	256	
54 Deniliquin	70		70	1.8			2005	8.0		13	-	74	2	-	15	0.3		1.2	45	0.1	157	1,870	2,430	1,780	380	195			24	197	403	466	405	403	466	412		
55 Warrumbungle	30	40	40	0.8			-	-		3	4	15				0.7	0.6	4.0	163	0.4	270	590	810	750		113			25	15	162	174	148	190	176	148	190	176
56 Yass Valley	90	90	80	1.5	1.9		2010	-		8	13	7	27	42	43	0.4	1.0	6.2			97	740	840	710					13	10	137	125	165	176	140	165	176	140
Medians (% of LWUs basis) for 3,000 to 10,000 Properties	70		2	1	Note: ILI < 1.0 is meaningless & has been increased to 1.0										13	12	26	25		141	139	69,000	58,000		25	13			218	183	229	201						
LWUs with 1,501 - 3,000 Properties																																						
57 Wellington	270	220	200	5.9	3.2		RDT	2004	23	9	17	14	29	39	40		4.0	4.1	169	0.6	509	1,120	1,180	1,120					123	117	304	209	234	304	209	234		
58 Coolamundra (Reticulator)	70	70	50	2.3	1.0		2010	8.0		27	52	70	9	9	9	0.3	1.7	4.3	40	0.2	281	950	910	630	199	204	43	50	7	208	179	142	208	179	142			
59 Lachlan	170	130	120	1.4	1.6		2011	13.0		12	7	6	23	11	10	0.6	0.2	2.6			98	1,470	1,430	1,490	129	157	122	26	6	193	201	360	349	394	360	360	407	
60 Glen Innes Severn	30	90	140	4.4	1.5		2011	30.0		7	6	2	70	33	13	0.7	1.2	2.0	72	0.2	97	680	710	680		59			12	11	143	176	164	155	145	164	155	145
61 Liverpool Plains	60	70	90	1.8	1.0		2011	11.0			11	14			38	48		1.0	1.6	16	0.0	126	950	920	770					215	203	242	222	189	242	222	189	
62 Narromine (Groundwater)	250	90	100	3.7	2.5		2010	23.0		20	25	25	64	24	195	2.0	5.7	4.9	307		307	1,380	1,110	820	134	8			4	361	492	490	434	340	490	434	340	
63 Narrandera (Groundwater)				3.1			-	-		9	-	6	75	-	9		0.5	7.1			266	1,400	1,170	1,310						239	419	376	347	419	376	347		
65 Murray (Dual Supply)	80	80	60	1.2	1.4		-	6.0		7	4	8	50	8	27	0.4	3.2	0.4	267	0.9	80	930	1,140	890	220	431	321	21	10	176	176	179	174	161	225	289	228	
67 Cobar	120	50	40	0.8			2008	6.0		10	10	13	2	3	1	1.7	0.3	1.3				2,260	950	790	220	101	111	38	14	257	307	721	309	238	721	310	238	
66 Cobar WB																						1,540	1,800		1,543	1,801												
68 Tenterfield	30	30	40	1.0	1.0		2008	-		9	10	6	39	-		1.4	1.5	8.1	28	0.0		410	470	460		50	65	25	14	125	408	199	138	186	199	138	186	
70 Kyogle	40	40	30	1.1	1.0		-	-		9	14	13	3	7	14	0.5	0.5	1.2	91	0.3	163	390	460	390	13	26	19	91	5	108	124	134	164	154	134	164	154	
71 Palerang	60	40	20	1.0	1.0		2011	18.0		29	13	13	33	30	30	0.4	1.0	1.0	880	1.4	171	410	490	390					138	216	141	187	138	141	187	138		
73 Upper Lachlan	30	30	40	1.0	1.1		-	-		5	8	5	3	5	5	3.1	1.0	2.6	345	0.9	8	460	300	400					212	130	179	71	153	179	71	153		
74 Wentworth (Dual Supply)	80	80	10	0.4			-	-		9	11		6	511																								

Table 10: Water supply – asset management and water resource management (continued)

WATER UTILITY	ASSET MANAGEMENT															WATER RESOURCE MANAGEMENT																				
	Real Losses (Leakage) (see col (9) Table 8)							Main Breaks			Unplanned Interruptions to Supply			Rehabilitations			Renewals		Mains Maintenance Cost	Total Urban Water Supplied			Non-potable Urban Water Supplied			% Water Recycled (from Table 8)		Peak Week to Average Consumption		Average Annual Residential Water Supplied						
	(L/d per connection)	(kL/km/d)	(LI)	Reservoir Drop Test (RDT) Waste Metering (WM) or Night Flow Metering (NFZ) Z is No. of District Meter Areas				(per 100km of Main)	(per '000 properties)			Mains (km per 100 km)	Service Connections (%)	Water Meters (%)	(\$'000 per 100km of Main)	(% of CRC)	(\$'000 per 100km of Main)	Potable + Non-potable + Recycled (Excluding Bulk Water Exports) (ML) (from Table 8)	For outdoor uses of industry (Including Recycled) (ML) (from Table 8)	(Total Vol Recycled (Urban + Ag Use)/Total Urban Water Supplied (%))	(%)	(%)	From Tables 8 & 9 (1) = [(22a)] Potable (kL/property)		From Tables 8 & 9 [(1)+(11)+(12a)] = [(22a)] Potable-Nonpotable (kL/property)											
	(41) A 10	(41a) A 11	(41b) A 9	Type (41c)	Year (41d)	Result % (41e)	(42) A 8	(43) C 17	(44)	(45)	(45a)	(46)	(47)	(48)	(49) W 11	(50)	(51)	(53)	(56a)	(56) W12																
2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2008/09	2009/10	2010/11	2008/09	2009/10	2010/11						
<i>LWUs with 200 - 1,500 Properties</i>																																				
81	Gwydir	40	280	210	4.1	3.7	2011	12.0	13	21	32	11	10	4	0.6	1.2	5.6	51	0.2	163	680	670	630	24	43	34	17	5	283	211	219	209	257	219	209	257
83	Oberon (Reticulator)	70	100	50	1.8		-	-	18	21	31	32	33	2.8	0.5	1.1	354	1.6	131	760	570	220				100	87			175	128	130	175	128	130	
84	Gilgandra (Groundwater)			90	2.3		2000	-	30	40	49	37	37	37	-	-	-	77	0.3	257	820	810	700		275		100	39	167	194	413	433	415	413	433	415
85	Uralla	70	70	70	2.2	1.3	2011	-	19	32	11	29	78	11	0.1	0.2	0.6			164	270	300	260						209	237	123	127	143	123	127	143
86	Hay (Dual Supply)	30	30	30	1.3	1.0	2011		32	32	26	11	11	9	0.6	0.6	0.8			187	1,320	1,340	780	963	954	402			108	112	179	193	186	1,021	1,025	493
87	Bourke (Dual Supply)	110	110	400	12.2	11.8	-	-	57	167	92	823	844	787		0.6	4.3	50	0.1	497	3,670	4,050	2,560	2,999	3,366	1,333			160		383	569	545	3,350	3,755	1756
88	Wakool (Dual Supply)	100	40	90	0.8		2004	7.0	0	-	0	-	-	-				23	0.12	42	1,020	1,100	760	623	720	386	-			173	205	152	853	891	520	
89	Bogan	330	90	60	1.3	1.6	2011	10.0	32	36	40	19	71	66	0.8	0.5	3.5			234	520	580	370						479	365	235	479	365	235		
90	Guyra	60	70	50	1.0		2009	3.0		8	3		15	12	-	-	-	43	0.2		410	490	370			1	0	180	212	227	217	212	227	217	212	
91	Cabonne	130	110	50	1.4	1.2	2011	13.0	37	26	35	25	-	-	4.6	0.9	0.9			155	380	410	200	145	180	38	50	3	157	227	131	135	106	131	168	134
92	Carrathool (Groundwater)			40	0.1		-	-	10	5	21	394	221	50		4.2	4.2	67	0.4	38	1,320	1,680	730	618	649	438			112	162	482	641	227	482	1,351	257
93	Tumbarumba				0.9		2010		6	8	3	13	35	39	2.3	-	1.4	102	0.3	32	380	300	330						173	111	219	177	165	219	177	165
94	Gundagai	130	130	120	3.9	1.5	2011	7.0	8	17	17	28	34	35	5.7	2.1	4.0	186	0.4	131	680	730	540	111	117		100	22	196		230	336	340	230	336	340
96	Warren (Dual Supply)	180	170	90	3.0	3.6	2008	33.0	42	66	0	3	-			-	6.5			268	580	720	520	256	334	204	1		135	166	172	300	270	412	654	508
97	Bombala	90	40	30	0.7	1.0	-	-	26	23	59			27		1.2	2.0	83	0.2	61	230	240	180		35		21	20	156	117	249	193	189	249	193	189
98	Walcha	40	40	40	0.6	2.7	2010	-	4	4	4	6	6	9	0.4	0.1	6.8	48	0.2	110	250	210	200						196	130	204	171	161	204	171	161
100	Balranald (Dual Supply)	40	40	30	1.0		-	-	17	33	7					-	1.3			173	660	590	390	458	395	214		38	131		257	232	207	910	758	494
101	Murrumbidgee (Groundwater)			90	2.6		-	-	7	-	12				0.9	0.6	0.4			47	670	670	520	10			-	4	192		550	470	497	550	470	497
103	Central Darling (Dual Supply)			30	0.3		2010		32	-	18	87	-	62		0.3	0.6			68	350	360	370	270	241	250			223	140	103	150	601	484	545	
104	Boorowa				0.6		2010	4.0	28	9	17	44	3	9	0.1	0.6	1.8			198	220	280	230		1	16	2	0	195	216	295	262	216	296	263	
105	Brewarrina	70	70	100	1.4	2.2	2010	3.0	39	52	42		40	21	0.9	0.6				280	830	730	860	540	503	552	100	22	116	150	400	293	414	400	1,440	1698
106	Jerilderie (Dual Supply)	40	50	30	0.3		-	-	30	16	14	9	9	13		0.2	2.1			126	390	430	300	269	284	204	15	3	113	208	264	144	942	1,025	671	
<i>Medians (% of LWUs basis) for 200 to 1,500 Properties</i>		55	1	2	Note: LI < 1.0 is meaningless & has been increased to 1.0				22	18	33	27	1	67	155	17,700	12,000	36	13	217	209	365	302													
<i>Median All LWUs (% of LWUs basis)</i>		Leakage	70	1.7	1.1	<i>Main Breaks per 100km of main</i>				12	<i>Interruptions</i>				27	<i>Mains</i>		0.5	<i>Renewals 0.6% of CRC</i>		<i>Median % Water Recycled</i>				10%	<i>Av Annual Res Water Supplied</i>				190						
<i>Median All LWUs (Statewide basis)</i>		60									9					42	<i>Rehabilitations</i>				0.3%					159										
<i>Totals for all LWUs (excluding bulk suppliers)</i>		62 LWUs reported recent leakage testing															Total Urban Water Supplied 253,000 ML					Non-potable Urban Water Supplied (incl recycled) 46,300 ML														

+ There are 11 LWUs with a dual water supply in 2010-11; Balranald, Berrigan, Bourke, Central Darling, Hay, Jerilderie, Murray, Wakool, Walgett, Warren, Wentworth.

For these 11 LWUs, note 8 on page 31 reports the approximate total potable annual residential water supplied per property. This is lower than the value reported in Column 56 as it is calculated only for those towns with a dual supply.

- Note:
- The reported Real Losses shown above for NWI indicator A10 have been rounded in recognition of the significant inherent errors in the determination of distribution system leakage.
  - LWUs with >20 connections/km should use Real Losses (L/connection/day) (column (41)) for comparison purposes.  
LWUs with <20 connections/km should use Real Losses (L/km water main/day) (column (41a)) for comparison purposes.
  - Leakage relates only to Total Urban Water Supplied (potable) and excludes bulk water exports.
  - 62 LWUs have reported carrying out recent leakage testing. (columns (41c), (41d), (41e))

Table 11: Water supply – financial and efficiency

WATER UTILITY	WATER SUPPLY FINANCIAL (SEE ALSO COST RECOVERY TABLE 6)																EFFICIENCY (SEE ALSO COST RECOVERY TABLE 6)																						
	Total Revenue Water (excl. Capital Works Grants)		Revenue per property	Residential Revenue			Current Replacement Cost (CRC) of System Assets			Net Debt to Equity			ERRR			Return on Assets		Operating Result	Cross Subsidies		Externalities (Fees to State Water)	Loan Payment			Operating Cost (OMA)				Management Cost										
	(\$'000)			Res Revenue (% of rates & charges) (%)*	Res Water Supplied (% of water supplied excluding water)	Res Revenue (% of Usage Charges) (%)	Written Down Cost (\$M)	Current Replacement Cost (\$M)	Current Replacement Cost per Assessment (\$)	%			see also Table 6 Col (12)			(\$/property)			Annual Fees & Charges (\$/assessment)	Developer Charge (\$/assessment)		(\$/property)	(\$/property)			(\$/property)													
	(57) F 1	(57a) F 5	(58)							(59)	(58a) F 4	(60) F 9	(61)	(62)	(63) F 22	(63a) F 17	(63b)	(65)			(64a)		(64b)	(66)	(66a)	(67) F 11**	(68) +												
09/10	10/11	09/10	10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	09/10	10/11	09/10	10/11	08/09	09/10	10/11	07/08	08/09	09/10	10/11	07/08	08/09	09/10	10/11								
Sydney Water	1,072,500	1,163,680	649		80	12,014			103	120	123	1.7	2.3	2.6										354	306	311	323												
Hunter Water	112,479	108,880	478		66	1,642			32	39	40	2.5	3.7	3.3										196	189	190	191												
Sydney Catchment Authority	196,274	190,850																																					
<b>LWUs with &gt; 10,000 Properties</b>																																							
1	Gosford	32,900	34,600	492	87	75	76	506	824	12,167	8	11	16	0.3	0.1	0.8	0.2	-0.7	0.0	-87	-42				3.1	43	84	112	270	284	353	325	130	127	133	129			
2	Wyong	46,300	41,400	686	90	75	71*	557	778	12,498	18	18	20	-0.6	1.6	0.6	-1.8	0.6	-0.7	-16	-111				2.9	137	239	287	276	564	391	398	107	152	184	190			
3	Shoalhaven	19,700	21,100	458	65	57	72	290	482	9,623	-2	-4	-6	-0.3	0.4	0.4	-0.8	0.9	1.2	60	78				1.6	21	14	10	233	260	274	293	119	124	124	129			
4	Rous (Bulk Supplier) (NO SGE)	16,500	17,800		7			315	482	9,693	11	10	10	-0.4	-0.4	0.3	-1.1	-1.1	-0.3	-138	-67					89	89	85	159	182	204	190	73	85	94	92			
5	MidCoast (Unfiltered)	23,400	23,900	728	80	69	74	332	519	13,645	23	29	36	0.8	3.5	-0.2	-1.7	2.3	-1.5	186	-254				1.8	42	243	270	326	285	316	313	79	84	72	83			
6	Tweed	20,600	17,500	551	77	72	73	432	569	16,251	6	9	10	0.2	0.4	-0.2	-0.2	-0.1	-1.0	-135	-186				4.4	78	157	175	287	303	356	368	142	153	159	165			
7	Port Macquarie-Hastings (Unfiltered)	23,600	21,300	713	90	75	69	360	525	16,650	1	-2	-3	1.7	1.9	0.9	0.3	2.6	0.8	274	44				3.7	55	56	92	239	251	308	324	100	109	124	119			
8	Riverina (Groundwater) (NO SGE)	18,600	13,300	458	76	60	79	185	317	10,450	0	-5	-0.8	3.4	3.4	-0.5	3.7	3.6	-0.3	90	-76				31	0	0	0	283	303	312	333	81	85	94	64			
10	Coffs Harbour (Unfiltered)	32,300	20,400	832	77	74	75*	255	354	13,561	27	25	23	1.7	6.3	2.6	-0.9	4.9	0.8	641	81				67	1.8	579	585	539	236	277	300	330	115	117	134	125		
11	Albury City	9,160	8,350	367	65	73	62	197	349	15,802	0	-1	-0.5	-1.6	-1.0	-1.7	-1.5	-0.9	-1.6	-75	-136				2.2	0	0	0	270	270	269	280	114	115	105	109			
12	Fish River WS (Unfiltered, Bulk Supply)	7,154	6,460				0	21	247	9,896						14.0			14.0														132	31	31	31	52		
13	Tamworth Regional	15,700	15,300	738	63	54	58	168	306	14,761	-8	-9	-8	2.1	1.7	1.3	2.6	2.0	1.6	159	132				13.2	42	46	60	333	396	451	442	109	129	139	139			
14	Clarence Valley	12,100	11,800	556	65	58	65	366	405	18,743	7	5	5	1.7	0.7	0.1	1.1	0.1	-0.3	19	-65				0.1	171	168	158	244	290	313	341	153	116	145	142			
15	Eurobodalla (Unfiltered)	13,800	12,800	661	82	75	65*	202	285	13,854	-2	2	2	2.3	2.3	1.3	2.2	2.4	1.1	221	93				1.0	11	8	58	326	312	336	358	160	158	133	145			
16	Wingecarribee	10,900	9,000	493	78	75	67*	176	301	15,676	-7	-7	-7	0.0	0.6	-0.2	0.3	0.8	0.0	-16	-65				0.8	3	21	21	292	297	308	288	120	127	138	129			
17	Queanbeyan (Reticulator)	12,000	11,400	718	90	75	59	107	179	11,574	-11	-7	-7	-0.7	-1.2	-3.0	-0.5	-0.7	-2.5	-97	-198				0.04	0	0	0	349	497	453	464	110	112	118	142			
18	Dubbo	11,000	12,500	747	75	71	72	190	223	14,827	12	12	11	0.2	0.6	1.3	-0.5	0.1	0.7	-3	52				5.2	112	107	109	437	419	451	442	150	159	159	170			
19	Orange	9,710	10,700	658	90	74	61	141	268	16,390	-7	-7	-8	2.5	0.6	0.3	2.5	1.0	0.8	-34	-41				1.3	61	60	61	317	333	281	373	128	144	118	186			
20	Goulburn Mulwaree	7,180	7,820	735	72	66	47*	168	264	25,607	3	3	2	0.3	0.1	0.6	-0.5	0.0	0.4	-1	5				1.4	172	174	173	330	360	383	344	92	106	116	104			
21	Bathurst Regional	10,800	9,950	668	65	63	65*	132	217	15,298	-7	-8	-9	1.9	1.4	0.5	2.3	1.7	0.9	107	-24				4.7	15	16	21	373	390	427	448	138	143	169	139			
22	Lismore (Reticulator)	8,400	8,620	611	74	68	70	76	149	11,100	0	-1	0.8	-1.7	-0.8	-1.7	-1.8	-0.8	-1.7	-63	-110				0.1	4	6	19	340	378	397	388	97	91	84	92			
23	Bega Valley (Unfiltered)	9,840	9,360	657	74	65	66	103	176	12,069	-15	-18	-10	1.5	1.9	0.4	2.4	2.7	1.3	203	114				2.1	1	1	1	336	371	402	459	162	174	188	220			
24	Ballina (Reticulator)	7,730	9,990	689	74	75	66	87	153	9,805	-11	-11	-11	-2.4	-1.3	0.2	-1.6	-0.7	0.8	-44	49				0.4	0	0	0	317	385	417	408	102	108	106	127			
25	Kempsey (Groundwater)	7,880	8,660	704	64	60	53*	239	345	29,173	4	5	6	-0.5	-0.4	-0.3	-0.9	-0.8	-0.8	-170	-152				5.1	164	160	180	305	334	372	410	114	118	139	161			
26	Essential Energy	12,700	12,300	1,176	50	57	57*													144	-115				3.9				800	800	817	1032	210	216	181	162			
27	Byron (Reticulator)	6,660	6,310	576	65	64	71	51	80	7,025	-16	-16	-16	0.2	1.3	-0.4	0.0	2.2	0.4	29	1				0.3	2	2	2	375	391	409	400	126	130	122	120			
28A	Goldenfields (Reticulator) (NO SGE)	6,350	7,550	758	20	35	68*	168	110	10,407	0	-9		-0.9	-1.1	-1.3	-0.1	-0.6	-0.9	-72	-160						0	0	657	657	694	677	107	107	165	137			
28B	Goldenfields (Bulk Supplier) (NO SGE)	6,670	3,260		25			51	109	5,464	0	-8		-0.8	-0.4	-2.8	-0.5	0.0	-1.7	0	-46						0	0	216	216	252	171	49	49	62	51			
<b>Medians (% of LWUs basis excl bulk suppliers) for &gt;10,000 Properties</b>											0	-1	-1	0.3	0.6	0.3				9	-41											317	334	364	371	117	125	133	134
<b>LWUs with 3,001 - 10,000 Properties</b>																																							
29	Armidale Dumaresq	6,450	6,570	777	90	71	69	109	116	13,454	6	-2	3	0.3	1.8	1.5	-0.1	1.5	1.2	164	142				4.3	58	61	71	526	474	489	514	264	249	217	62			
30	Griffith	7,550	6,170	742	69	58	71*	105	124	12,640	0	-6	-6	0.1	1.4	-0.1	-0.2	2.0	0.3	245	25				0.0	0	0	0	551	594	616	619	228	252	269	274			
31	Lithgow	3,980	4,410	549	87	65	73*	32	63	7,689	-9	-12	-2	1.0	-2.6	-1.7	1.5	-2.2	-1.6	-77	-64				0.4	8	60	19	473	351	498	527	173	46	174	171			
32	Mid-Western Regional	4,530	4,210	572	76	67	76*	67	110	15,213	0	-7	2	-0.8	0.1	-0.6	-0.9	0.0	-0.7	-34	-161				45	5.5	84	86	83	403	450	415	421	118	173	151	154		
33	Richmond Valley	5,170	5,150	725	56	41	74																																

Table 11: Water supply – financial and efficiency (continued)

WATER UTILITY	WATER SUPPLY FINANCIAL (SEE ALSO COST RECOVERY TABLE 6)																			EFFICIENCY (SEE ALSO COST RECOVERY TABLE 6)																			
	Total Revenue Water (excl. Capital Works Grants)		Revenue per property	Residential Revenue			Current Replacement Cost (CRC) of System Assets			Net Debt to Equity			ERRR			Return on Assets			Operating Result		Cross Subsidies		Externalities (Fees to State Water)	Loan Payment			Operating Cost (OMA)				Management Cost								
	(\$'000)			Res Revenue (% of rates & charges) (%)	Res Water Supplied (% of water supplied excluding water) (%)	Res Revenue (% of Usage Charges) (%)	Written Down Cost (\$M)	Current Replacement Cost (\$M)	Current Replacement Cost per Assessment (\$)	%			see also Table 6 Col (12)			(\$/property)			Annual Fees & Charges (\$/assessment)	Developer Charge (\$/assessment)	(\$/property)	(\$/property)		(\$/property)				(\$/property)											
	(57) F1	(57a) F5	(58)							(59)	(58a) F4	(60) F9	(61)	(62)	(63) F22	(63a) F17	(63b)	(65)					(64a)	(64b)	(66)	(66a)	(67) F11**	(68) <sup>+</sup>											
09/10	10/11	09/10	10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	09/10	10/11	10/11	10/11	08/09	09/10	10/11	07/08	08/09	09/10	10/11	07/08	08/09	09/10	10/11								
36 Parkes	6,650	5,660	964	67	23	60	70	148	23,875	0	-22	-25	0.6	2.1	0.1	-0.2	4.1	2.5	464	295		9.3	0	0	0	570	557	598	619	70	78	78	97						
37 Inverell	4,040	3,430	639	87	61	44*	46	78	14,307	-4	-5	-7	0.6	1.5	-0.1	1.4	1.9	0.5	159	42	6	6.1	52	52	51	479	486	503	508	140	138	102	95						
38 Moree Plains (Groundwater)	3,970	3,600	802	81	67	63*	42	67	14,540	16	-1	15	0.6	0.7	-0.2	-0.3	-0.3	-1.1	-46	-116		4.6	120	124	123	496	596	632	606	183	252	241	248						
39 Cowra	4,730	4,710	895	65	49	53*	42	102	18,409	4	-4	3	-1.4	-0.2	-0.7	-1.9	-0.7	-1.1	-91	-123		9.5	60	84	52	557	679	651	680	273	366	309	65						
40 Central Tablelands (NO SGE)	4,070	3,450	648	52	51	70	56	115	20,604	5	-4	3	0.3	0.3	-1.3	-0.7	0.0	-1.5	-60	-211			110	110	109	383	439	421	455	186	221	211	230						
41 Muswellbrook	5,250	5,180	935	63	60	63	47	75	12,854	-16	-3	-18	2.3	2.4	2.1	2.6	3.4	3.4	204	287		18.7	78	76	77	424	503	581	555	128	149	157	175						
42 Corowa	3,010	2,980	582	62	50	52*	42	56	10,172	-5	-7	-8	2.6	1.2	0.8	0.8	2.9	1.3	174	49		3.4	0	0	0	422	366	384	384	185	189	198	190						
43 Tumut	2,370	2,340	527	76	63	66	40	59	12,678	0	-1	9	-1.2	-0.6	-0.9	-1.1	-0.7	-0.8	-55	-93		2.7	0	9	32	340	342	352	371	78	58	61	47						
44 Gunnedah (Groundwater)	2,960	2,880	620	82	72	67	33	54	11,864	0	0	-16	2.8	3.0	1.8	2.9	4.3	2.9	271	164		3.4	7	0	0	244	240	280	331	63	69	105	129						
45 Upper Hunter	3,520	3,500	772	75	75	66*	27	42	8,492	0	-26	-25	1.9	2.8	2.3	4.6	4.6	4.5	242	263		12.8	0	0	0	441	532	473	452	157	162	163	179						
46 Narrabri (Groundwater)	2,340	2,430	554	90	64	50	11	27	6,039	-33	-19	-38	-2.9	6.3	5.3	-2.1	11.8	9.7	286	221		4.4	4	2	1	297	304	322	349	97	81	102	127						
47 Bellingen (Unfiltered)	2,210	2,290	565	90	57	67*	33	54	12,790	0	-29	-26	0.9	0.9	0.9	3.0	2.7	2.5	153	179		1.9	0	0	0	319	304	321	324	189	174	177	179						
48 Leeton	3,100	2,410	612	74	64	56	23	56	12,974	-18	-16	-18	-0.7	1.5	-2.6	0.3	2.2	-1.4	110	-107		0.0	4	4	5	436	500	472	536	191	114	117	122						
49 Young (Reticulator)	2,690	2,210	477	67	62	67	15	27	6,037	-18	-1	-17	0.7	0.2	-0.9	0.6	0.1	-2.9	-44	-115		0.1	8	8	8	294	246	290	219	35	49	60	57						
50 Cooma-Monaro	2,570	2,730	610	81	59	45	27	50	10,518	0	-7	-7	2.4	0.5	1.5	3.2	1.1	2.0	59	-154		2.4	0	0	0	428	438	464	365	170	175	213	164						
51 Forbes	2,150	1,810	496	74	63	54*	21	55	15,120	-25	-26	-27	-0.9	-1.6	-3.2	1.3	-0.3	-1.0	-16	-55		14.1	29	24	0	410	400	384	375	59	52	76	60						
52 Snowy River (Unfiltered)	2,650	2,430	515	66	67	29*	26	42	12,648	-3	-9	-5	0.1	1.9	-0.5	0.1	1.9	-0.2	117	-14		0.9	34	33	16	432	314	330	370	134	130	138	163						
53 Berrigan (Dual Supply)	2,560	2,170	611	85	74	33*	28	42	11,570	-5	-8	-7	2.3	1.8	0.6	2.5	2.0	0.9	108	22		2.9	57	55	14	411	415	421	405	97	100	102	104						
54 Deniliquin	2,240	2,290	676	82	75	28*	27	47	13,212	-13	-11	-11	0.2	0.2	0.9	1.2	1.0	3.9	-4	139		6.6	21	21	0	489	443	496	420	249	228	260	177						
55 Warrumbungle	2,150	2,180	660	80	71	42*	23	55	16,639	-5	-12	0	-0.5	-0.6	-1.3	-0.3	-0.4	-1.3	-39	-114		2.9	5	25	25	383	466	478	499	60	96	88	96						
56 Yass Valley	4,590	2,000	638	90	75	60	29	58	18,096	0	-34	-6	-0.7	10.0	-1.0	-0.7	10.2	-2.6	819	-480		2.8	1	0	299	345	356	388	417	149	156	177	170						
Medians (% of LWUs basis) for 3,000 to 10,000 Properties										0	-7	-7	0	1	0																								
LWUs with 1,501 - 3,000 Properties																																							
57 Wellington	2,190	2,140	737	69	73	62*	18	29	9,955	33	1	36	1.1	1.2	0.2	-0.5	-0.6	-1.5	-79	-122		7.6	167	168	168	483	503	513	562	175	171	187	181						
58 Coolamundra (Reticulator)	1,590	1,510	518	82	70	54	3	14	4,726	0	-21	-23	-6.8	-2.8	-2.0	-6.5	-2.8	-2.0	-34	-25		0.04	0	0	0	265	245	289	236	45	49	50	52						
59 Lachlan	6,610	3,230	1,143	87	71	85	30	62	22,587	0	-17	-17	-0.3	14.3	2.5	0.0	14.9	3.7	1465	394		8.5	0	0	0	574	491	551	542	77	77	142	129						
60 Glen Innes Severn	1,200	1,050	350	90	75	73*	17	36	10,707	-12	-12	-10	-3.4	-2.0	-3.2	-2.4	-1.4	-2.4	-92	-166		0.4	1	1	1	293	351	348	365	107	166	142	185						
61 Liverpool Plains	1,700	2,120	765	90	75	37	28	48	17,172	-6	-2	-7	-0.7	0.2	0.8	-0.4	0.2	1.0	22	110		3.2	32	57	38	331	322	362	450	88	88	137	236						
62 Narramine (Groundwater)	1,130	1,120	527	89	75	65	4	17	7,639	0	-45	-44	0.9	4.8	1.9	1.3	7.2	4.9	152	105		5.7	0	0	0	345	328	378	377	101	140	149	134						
63 Narrandera (Groundwater)	1,340	1,270	599	78	61	56*	8	15	6,584	0	-36	-39	4.5	4.1	4.8	4.9	6.8	8.5	215	287		5.5	0	0	0	362	402	420	345	118	138	142	124						
65 Murray (Dual Supply)	1,810	1,540	555	90	69	53*	30	42	14,235	2	-3	0	0.5	1.1	0.0	0.3	1.0	0.0	102	1		3.1	63	117	70	340	353	350	394	127	112	105	106						
67 Cobar	1,340	1,370	606	90	74	60	12	25	10,670	0	-2	2	0.9	-2.3	-3.9	1.0	-2.2	-3.9	-122	-213		7.0	0	0	0	546	538	586	676	34	27	36	59						
66 Cobar WB (Bulk Supplier)	2,020	2,020								0			0.7			0.7																							
68 Tenterfield	1,980	1,460	744	85	75	49	14	40	19,534	-3	1	3	-2.3	3.7	-0.9	-2.6	4.0	-1.1	291	-80		1.3	5	15	15	451	406	417	464	191	182	155	168						
70 Kyogle	1,030	960	518	66	68	45	9	20	10,478	0	-7	-5	2.3	2.6	-1.3	2.6	2.5	-1.5	22	-80		0.4	0	10	18	292	292	382	497	104	140	134	171						
71 Palerang	1,770	1,630	801	90	72	42	18	31	14,353	-19	-42	-19	5.1	4.7	2.8	5.9	11.1	3.6	829	265		1.4	10	58	234	354	339	337	366	128	118	108	105						
73 Upper Lachlan	1,410	1,260	649	90	75	48	13	24	12,569	-2	-6	-6	1.6	2.5	0.3	1.0	2.9	0.7	172	43		2.4	62	62	61	376	417	400	439	116	113	117	141						
74 Wentworth (Dual Supply)	1,930	1,680	716	90	75	59*	18	22	9,092	-6	-12	-9	1.4	3.2	0.2	1.5	3.5	0.6	235	14		7.4	161	30	161	360	401	387	503	90	74	69	70						
75 Coonamble (Groundwater)	440	490	291	90	63	68																																	



Table 11: Water supply – financial and efficiency (continued)

WATER UTILITY	WATER SUPPLY FINANCIAL (SEE ALSO COST RECOVERY TABLE 6)																		EFFICIENCY (SEE ALSO COST RECOVERY TABLE 6)																																													
	Total Revenue Water (excl. Capital Works Grants) (\$'000)	Revenue per property (\$)	Residential Revenue			Current Replacement Cost (CRC) of System Assets			Net Debt to Equity			ERRR			Return on Assets			Operating Result		Cross Subsidies		Externalities (Fees to State Water) (\$/property)	Loan Payment			Operating Cost (OMA)				Management Cost																																		
			Res Revenue (% of rates & charges) (%) <sup>*</sup>	Res Water Supplied (% of water supplied excluding water)	Res Revenue (% of Usage Charges) (%)	Written Down Cost (\$M)	Current Replacement Cost (\$M)	Current Replacement Cost per Assessment (\$)	Net Debt to Equity (%)	ERRR			Return on Assets			Operating Result		Annual Fees & Charges (\$/assessment)	Developer Charge (\$/assessment)	Loan Payment			Operating Cost (OMA)				Management Cost																																					
										see also Table 6 Col (12)			Return on Assets			Operating Result				Loan Payment			Operating Cost (OMA)				Management Cost																																					
(57) F 1	(57a) F 5	(58)	(59)	(58a) F 4	(60) F 9	(61)	(62)	(63) F 22	(63a) F 17	(63b)	(65)	(66)	(66a)	(67) F 11**	(68) <sup>+</sup>																																																	
09/10	10/11	10/11	10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	09/10	10/11	07/08	08/09	09/10	10/11	07/08	08/09	09/10	10/11																																						
<i>LWUs with 200 - 1,500 Properties</i>																																																																
81	Gwydir	1,590	1,260	862	84	72	38*	13	19	12,158	12	-11	14	3.6	8.6	2.1	1.9	7.6	1.4	338	1,799		7.0	181	214	354	562	496	372	514	116	114	90	222																														
83	Oberon (Reticulator)	980	1,090	790	41	75	58*	7	9	6,432	2	-2	1	-1.7	0.6	0.1	-1.7	0.5	0.1	30	17		0.0	86	81	82	567	586	555	661	89	141	91	121																														
84	Gilgandra (Groundwater)	750	620	461	80	75	65*	10	15	11,034	0	-8	-15	0.1	1.2	-0.7	1.0	1.8	0.0	124	-33		11.5	0	0	0	251	335	315	330	31	59	75	64																														
85	Uralla	630	770	603	90	75	53	17	18	14,524	0	-3	-3	-0.6	-0.2	1.1	-0.5	-0.8	2.2	-87	314		0.9	0	0	0	401	393	389	400	148	129	135	156																														
86	Hay (Dual Supply)	950	920	706	75	63	83*	9	17	13,080	-16	-10	-9	-0.5	-1.5	-0.1	0.5	-1.1	0.3	-74	-35		7.7	0	0	0	410	410	654	540	93	132	211	216																														
87	Bourke (Dual Supply)	1,330	1,540	1,203	90	57	87*	6	23	18,279	-1	-16	-16	-0.3	-2.7	-4.7	-0.2	-2.5	-3.9	-122	-169		1.1	154	156	109	725	670	796	992	92	179	138	143																														
88	Wakool (Dual Supply)	1,190	1,280	898	65	48	72*	39	31	20,969	1	-2	-3	0.2	0.2	0.3	0.1	0.2	0.4	-15	79		6.8	182	155	128	448	525	485	485	73	71	76	80																														
89	Bogan	880	900	869	90	64	56	10	26	25,691	0	-6	-4	-3.8	-1.9	-3.8	-3.6	-1.8	-3.7	-183	-373		25.8	0	0	0	771	735	711	902	176	182	192	256																														
90	Guyra	910	790	654	90	68	53	14	17	13,356	-5	-8	-7	0.9	1.1	0.4	1.0	1.2	1.1	155	146		2.5	2	2	18	420	430	484	466	93	88	139	137																														
91	Cabonne	790	740	652	75	75	50	20	43	36,032	0	-15	-14	-0.6	-1.7	-2.0	0.2	-1.0	-1.4	-212	-291		3.3	0	0	0	515	424	536	538	128	151	216	169																														
92	Carrathool (Groundwater)	1,130	890	791	90	75	50	44	73	61,775		1	2	-1.9	-2.3		-1.9	-2.3		-731	-934		12.1	9	34	782	782	807	792	190	190	143	63																															
93	Tumbarumba	610	710	615	75	75	41*	13	21	17,308	-4	-5	2	0.4	0.1	1.3	0.4	0.6	1.6	21	143		6.7	54	6	13	300	323	338	334	121	129	141	138																														
94	Gundagai	550	510	593	46	57	74*	8	15	14,656	0	-11	-12	-1.6	-2.4	-1.4	-0.9	-1.9	-1.1	-170	-208		5.5	0	0	0	355	416	563	559	80	90	215	204																														
96	Warren (Dual Supply)	510	510	536	88	75	53*	6	12	11,847	-5	-6	-8	-1.1	-0.5	0.2	-0.9	-0.2	0.6	-67	-20		10.7	19	3	4	349	379	393	361	93	101	112	141																														
97	Bombala	480	560	660	87	75	18	6	13	14,963	0	-18	-21	-0.1	0.6	1.4	0.5	1.6	3.1	83	190		2.3	0	0	0	271	396	346	373	71	92	84	83																														
98	Walcha	490	440	510	90	65	70*	15	17	19,624	0	-2	-2	-1.1	-0.8	-1.1	-0.9	-0.6	-0.9	-103	-156		0.9	0	0	0	478	558	533	549	126	188	173	141																														
100	Balranald (Dual Supply)	600	630	700	81	75	75*	11	15	15,332	13	-2	14	-1.6	-0.5	-0.3	-2.3	-1.2	-1.1	-140	-127		7.5	145	140	139	479	479	471	512	124	128	122	128																														
101	Murrumbidgee (Groundwater)	340	290	356	77	75	47	2	6	7,092	0	-26	-25	-2.9	-7.9	-2.5	-0.6	-5.9	-0.4	-149	-12		6.3	0	0	0	254	282	412	251	101	93	92	105																														
103	Central Darling (Dual Supply)	590	680	930	90	75	89*	29	39	53,758	0	-1	-2	0.9	-0.9	-0.5	0.0	-0.8	-0.4	-664	-442		4.4				565	575	441	404	75	75	75	75																														
104	Boorowa	510	550	831	90	75	56*	5	12	17,553	-3	-5	-5	2.1	1.1	-0.6	2.1	1.1	-0.5	11	-38		0.9	88	87	76	385	424	482	631	42	40	196	194																														
105	Brewarrina	660	880	1,815	74	64	0	5	12	20,634	0	-14	-15	-1.5	-1.0	0.9	-1.2	-0.8	1.2	-158	74	460	6.7	0	0	0	1001	1173	1126	1393	233	265	313	265																														
106	Jerilderie (Dual Supply)	350	350	739	68	63	79*	4	8	16,146	0	-17	-18	0.5	-1.3	-1.6	1.6	-0.3	-0.4	-68	-70		3.7	0	0	0	412	462	620	616	84	101	109	108																														
<i>Medians (% of LWUs basis) for 200 to 1,500 Properties</i>											0			-6			-6			0			0			0			-74		-34		434				446				484				526				93				121				135				139			
<i>Median All LWUs (% of LWUs basis)</i>											<i>Current Replacement Cost \$/Assessment</i>			13,340			<i>Net D/E</i>			-6.5			<i>ERRR</i>			0.0			<i>Loan payment \$/prop</i>						<i>OMA \$ per property</i>				\$420				<i>Management Cost</i>				\$140																	
<i>Median All LWUs (Statewide basis)</i>														13,000						1.0						0.4													\$61								\$370								\$129									
<i>Totals for all LWUs (including bulk suppliers)</i>											\$526 M Total Water Supply Revenue						Total CRC \$12,000 M																																															

\* Where the residential revenue is reported to be greater than 90% of the revenue from rates and charges, a maximum value of 90% has been adopted. This is shown in *italics bold* in column (58).

\*\* The Operating Cost and Total Cost shown in the table exclude the purchase cost of water but include part of the operating cost of the bulk water provider, apportioned according to the ratio of water purchased to total water supplied to all customers. This differs from the NWI definition, as indicated in section H4.5 on page 289.

+ If the reported management cost is less than \$20/property or not reported, the previous year's management cost has been adopted in column (68) and is shown in *italics bold*. In such cases, the OMA cost per property has not been increased to include this adopted management cost.



Table 12: Water supply – health and levels of service

WATER UTILITY	HEALTH											LEVELS OF SERVICE																			
	Risk Based Drinking Water Quality Plan		Water Quality Compliance (%)									Water Quality Complaints (per 1000 properties)			Water Service Complaints (per 1000 properties)			Customers with Restrictions or Legal Action for non-payment of Bills per 1000 props		Average Frequency of Unplanned Interruptions (No./1000 properties)			Average Duration of Interruptions (Minutes)			Drought Water Restrictions (% of time)					
			Physical			Chemical			Microbiological (E. coli)																						
	Basis? (69a)	External Assessmt (69b)	1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			No. zones compliant	1996 NHMRC/ARMCAMZ Guidelines			No. zones compliant	% Pop'n with compliance	(73) C 9	(74) C 10			Restrictions (75a) C18		Legal Action (75b) C19	(77) C 17			(78) C 15			(78a)			
H6	H5	08/09	09/10	10/11	08/09	09/10	10/11	10/11	08/09	09/10	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	
Sydney Water	ADWG	Yes				100	100	100	13 of 13	100	100	100	13 of 13	100	1	0	1	0.4	0.1	0.3	3.4	0.5	5	4	175	141	140	147			
Hunter Water	ADWG	No				100	100	100	5 of 5	100	100	100	5 of 5	100	3	3	3	0.2	0.3	0.3	4.0	0.1	271	255	258	121	119	141			
Sydney Catchment Authority																															
<b>LWUs with &gt; 10,000 Properties</b>																															
1	Gosford	ADWG				100	100	100	2 of 2	100	100	100	2 of 2	100	25	39	9	-	-	-	0	8.5	203	239	200	238	230	222	100	100	100
2	Wyong	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	5	5	17	4	3	5	0	0.0	61	61	88	210	204	195	100	100	100
3	Shoalhaven	HACCP				100	100	100	4 of 4	100	100	100	3 of 4	99	3	1	1	1	0	1	1	0	-	39	64	-	112	84	33	35	0
4	Rous (Bulk Supplier) (NO SGE)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	0	0.4	0.0	0	0	0.1	0	0	2	2	2	180	180	180	0	0	0
5	MidCoast (Unfiltered)	ADWG	Yes			93	92	100	4 of 4	100	100	100	4 of 4	100	9	12	7	2	2	1	1	4.3	-	-	-	-	-	-	0	0	0
6	Tweed	ADWG				100	100	100	3 of 3	100	100	100	3 of 3	100	1	3	4.9	20	3	22	0	2	9	14	7	120	120	42	0	0	0
7	Port Macquarie-Hastings (Unfiltered)	ADWG				87	100	100	5 of 5	100	100	100	5 of 5	100	9	8	5	18	22	20	0.5	0.3	11	5	7	178	236	198	100	100	100
8	Riverina (Groundwater) (NO SGE)	HACCP	Yes			100	100	100	14 of 14	100	100	100	14 of 14	100	2	3	4	13	3	1	0	0	34	39	69	334	206	260	100	100	0
10	Coffs Harbour (Unfiltered)	ADWG				100	100	100	3 of 3	100	100	100	3 of 3	100	8	4	4	40	10	41	4	0	24	20	42	120	120	120	0	0	0
11	Albury City	ADWG				100	81	100	1 of 1	100	100	100	1 of 1	100	0	1	1.2	5	4	4	0	15	-	-	-	180	200	213	100	100	0
12	Fish River WS (Unfiltered, Bulk Supplier)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	1	0	0.1	0	0	0	0	0	0	0.6	-	2160	1440	3045	100	100	50
13	Tamworth Regional	ADWG				100	100	100	6 of 7	100	100	100	6 of 7	99	-	-	-	43	48	28	0	0	-	-	-	-	-	-	26	82	10
14	Clarence Valley	ADWG				100	89	100	4 of 5	100	100	100	4 of 5	99	3	9	8	12	41	43	0	6	-	-	-	120	-	120	0	0	0
15	Eurobodalla (Unfiltered)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	-	-	0	0	0	0.1	0	0	2	3	49	-	-	587	61	100	5
16	Wingecarribee	ADWG				92	100	100	3 of 3	100	100	100	3 of 3	100	5	6	10	36	64	66	8	4	46	61	15	120	-	105	100	100	100
17	Queanbeyan (Reticulator)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	0	-	-	5	9	27	0	12	6	5	5	240	180	180	100	100	100
18	Dubbo	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	0	1	0.4	2	2	3	0	0	24	31	26	138	138	147	25	0	0
19	Orange	ADWG				100	100	100	2 of 2	100	100	100	2 of 2	100	2	2	2	62	77	29	0.4	0	175	-	43	180	180	240	100	100	100
20	Goulburn Mulwaree	ADWG				100	100	100	2 of 2	100	100	100	2 of 2	100	6	4	2	35	38	6	5	0	-	-	-	180	180	180	100	100	47
21	Bathurst Regional	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	14	17	51	74	63	64	0	0	2	2	3	120	120	120	0	0	0
22	Lismore (Reticulator)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	2	4	1	72	4	3	0	1	49	37	125	351	271	300	0	0	0
23	Bega Valley (Unfiltered)	ADWG				100	100	100	6 of 6	100	100	100	5 of 6	99	2	2	1	3	3	1	0	7	-	-	-	180	180	120	0	22	0
24	Ballina (Reticulator)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	0	3.0	0	1	3	1	0	0	-	-	-	120	120	120	0	0	0
25	Kempsey (Groundwater)	NHMRC				100	100	100	7 of 7	100	100	100	7 of 7	100	0	1	0.7	0	0	0.1	1	0	114	23	31	100	159	114	0	0	0
26	Essential Energy	ADWG				100	100	100	2 of 2	100	100	100	2 of 2	100	0	0	0.0	0	0	0.4	13	0	-	-	-	60	-	-	0	0	0
27	Byron (Reticulator)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	0	0	0.3	0	0	0	1.0	0	9	11	14	120	120	120	0	0	0
28A	Goldenfields (Reticulator) (NO SGE)	ADWG				100	100	100	1 of 1	100	100	100	1 of 1	100	7	7	7	49	39	6	0	0	117	93	191	272	184	100	100	49	
28B	Goldenfields (Bulk Supplier) (NO SGE)	ADWG				100	100	100	3 of 3	100	100	100	3 of 3	100				0	0										0	0	0
<i>Medians (% of LWUs basis excl bulk suppliers) for &gt;10,000 Properties</i>						100	100	100		100	100	100			2	3	2	5	5	5			24	23	36	158	180	147	25	29	0
<b>LWUs with 3,001 - 10,000 Properties</b>																															
29	Armidale Dumaresq					100	100	100	1 of 1	100	100	100	1 of 1	100	0	0	0	0	1	0	0	6	-	-	99	-	-	73	0	0	0
30	Griffith	ADWG				100	100	100	2 of 2	100	100	100	2 of 2	100	1	1	7.7	39	48	32	3.6	167	24	24	24	180	120	90	100	100	62
31	Lithgow					100	100	100	1 of 1	100	100	100	1 of 1	100	6	38	18	2	-	18	0	9	13	-	2	120	120	180	100	100	100
32	Mid-Western Regional					100	100	100	3 of 3	100	96	100	2 of 3	87	2	3	3	49	54	58	7	1	49	56	70	120	120	120	0	0	0
33	Richmond Valley					100	100	100	1 of 1	100	100	100	1 of 1	100	0	0	0	1	1	1	-	-	-	-	-	-	-	-	0	30	0
34	Nambucca (Groundwater)					100	100	100	1 of 1	100	100	100	1 of 1	100	1	1	1.3	10	4	-	4	0	-	-	-	120	120	120	100	100	100
35	Singleton					100	100	100	1 of 1	100	100	100	1 of 1	100	1	5	3.0	6	25	27	0	2	318	219	93	120	120	90	0	0	0
36	Parkes					100	100	100	1 of 1	100	100	100	1 of 1	100	1	-	0.3	7	3	18	0	0				120	120	120	100	100	100
37	Inverell	ADWG				100	100	100	2 of 3	100	100	100	3 of 3	100	1	1	0.9	3	2	2	4	0	2	2	3	50	60	60	0	0	0
38	Moree Plains (Groundwater)	ADWG				100	100	100	4 of 4	100	100	100	4 of 4	100	10	1	0	56	78	73	-	-	739	659	602	60	180	48	8	0	0
39	Cowra					100	100	100	1 of 1	97	100	100	1 of 1	100	80	15	16	25	-	17	9	0	1	2	25	180	180	180	100	100	100
40	Central Tablelands (NO SGE)					100	100	100	2 of 2	100	100	100	2 of 2	100	2	5	3	9	2	2	3	0	49	50	32	240	240	180	0	0	0
41	Muswellbrook	ADWG				100	100	100	2 of 3	100	100	100	3 of 3	100	14	11	10	47	40	32	0	0	11	24	1	167	40	110	0	0	0

Table 12: Water supply – health and levels of service (continued)

WATER UTILITY		HEALTH										LEVELS OF SERVICE																							
		Risk Based Drinking Water Quality Plan		Water Quality Compliance (%)							Water Quality Complaints (per 1000 properties)		Water Service Complaints (per 1000 properties)			Customers with Restrictions or Legal Action for non-payment of Bills per 1000 props		Average Frequency of Unplanned Interruptions (No./1000 properties)			Average Duration of Interruptions (Minutes)			Drought Water Restrictions (% of time)											
				Physical		Chemical		Microbiological (E. coli)																											
				Basis? (69a)	External Assessmt (69b)	1996 NHMRC/ARMCAMZ Guidelines (69)			1996 NHMRC/ARMCAMZ Guidelines (70)		No. Zones compliant (70a) H 4	1996 NHMRC/ARMCAMZ Guidelines (71)		No. Zones compliant (71a) H 2	% Pop'n with compliance (71b) H 3	(73) C 9	(74) C 10	Restrictions (75a) C18	Legal Action (75b) C19	(77) C 17	(78) C 15	(78a)													
H6	H5	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11													
42	Corowa			100	100	100	100	100	100	100	100	100	100	3	4	76	4	5	3	2	13	13	0	20	15	46	39	120	120	120	100	100	0		
43	Tumut	ADWG		100	100	100	100	100	93	4	of 5	100	100	100	5	of 5	100	5	1	6	2	3	19	0	1	-	3	3	120	120	120	100	87	63	
44	Gunnedah (Groundwater)	ADWG		100	100	20	100	100	100	4	of 4	96	100	94	2	of 4	96	0	1	0.0	8	-	-	0	0	3	3	-	120	120	120	100	100	100	
45	Upper Hunter			100	100	100	100	100	100	3	of 4	100	100	100	4	of 4	100	0	1	0.4	71	65	58	0	0	33	27	26	45	45	45	10	12	0	
46	Narrabri (Groundwater)			100	100	100	100	100	100	6	of 6	100	100	100	5	of 6	100	19	18	16	30	34	24	0	0	23	16	16	120	120	120	23	26	0	
47	Bellingen (Unfiltered)			100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	2	1	0	23	9	13	0	1	-	-	-	120	120	120	0	0	0	
48	Leeton			100	100	100	100	100	94	3	of 4	100	100	100	2	of 3	4	0	0	0	0	0	1	0	0	26	11	25	120	120	120	100	100	58	
49	Young (Reticulator)			100	100	100	100	100	91	0	of 1	100	100	100	1	of 1	100	0	0	0	9	-	10	10	1	26	-	17	120	-	140	100	-	100	
50	Cooma-Monaro			100	100	100	100	100	100	3	of 3	100	100	100	3	of 3	100	1	1	2	22	20	11	1	-	-	-	-	180	180	150	100	100	100	
51	Forbes	ADWG		100	100	100	100	100	100	1	of 1	100	100	100	1	of 1	100	1	2	2	7	11	4	1	1	88	118	113	135	113	138	100	100	100	
52	Snowy River (Unfiltered)			100	100	100	100	100	100	4	of 5	100	100	100	5	of 5	100	0	0	0	0	3	7	0	0	4	4	-	120	120	120	0	0	0	
53	Berrigan (Dual Supply)			100	100	100	100	100	100	4	of 4	100	100	100	3	of 4	88	0	0	0	22	17	16	0	1	59	57	44	120	120	120	100	100	0	
54	Deniliquin			100	100	100	100	100	100	1	of 1	100	100	100	1	of 1	100	3	-	3	33	-	48	0	0	15	-	15	60	-	120	100	100	49	
55	Warrumbungle			100	100	100	100	100	100	7	of 8	100	95	100	7	of 8	100	1	14	1	0	0	0	0	0	-	-	-	120	120	120	100	100	0	
56	Yass Valley			100	100	100	100	100	100	1	of 1	96	100	100	1	of 1	100	2	3	6	11	17	12	3	0	36	42	43	240	220	220	100	100	100	
<i>Medians (% of LWUs basis) for 3,000 to 10,000 Properties</i>				100	100	100	100	100	100									1	1	2						26	26	25	120	120	120	100	100	0	
<i>LWUs with 1,501 - 3,000 Properties</i>																																			
57	Wellington			100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	0	0	0	18	12	10	5	1	45	39	40	120	120	115	0	0	0	
58	Coolamundra (Reticulator)			100	100	100	100	100	100	1	of 1	100	100	100	1	of 1	100				65	57	58	0	17	9	9	9	120	120	120	100	100	0	
59	Lachlan	ADWG		100	100	21	100	100	100	3	of 3	100	100	100	2	of 3	89	6	3	0	6	5	4	30	1	16	11	10	85	90	90	100	100	18	
60	Glen Innes Severn			100	100	100	100	100	92	1	of 2	97	100	100	1	of 2	98	4	0	0	3	0	0	5	0	40	33	13	180	180	180	8	25	0	
61	Liverpool Plains			100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	0	0	1	42	48	66	0	0	28	38	48	85	85	45	100	0	0	
62	Narramine (Groundwater)	ADWG		100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	0	0	0	199	204	199	0	4	51	24	195	180	180	180	0	24	0	
63	Narrandera (Groundwater)			100	100	100	100	100	100	1	of 1	100	97	100	1	of 1	100	0	-	12	1	-	1	-	-	-	-	9	90	-	120	0	0	0	
65	Murray (Dual Supply)			100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	0	0	0	0	0	0	0	3	28	8	27	120	90	90	100	100	100	
67	Cobar			100	100	100	100	100	100	1	of 1	100	100	100	1	of 1	100	0	7	22	5	6	6	0	1	1	3	1	60	60	60	100	100	100	
66	Cobar WB (Bulk Supplier Raw Water only)																																		
68	Tenterfield			100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	0	6	15	-	3	3	4	0	-	-	-	-	120	120	125	100	100	100
70	Kyogle			100	100	100	100	100	100	2	of 2	100	100	100	2	of 2	100	2	3	4	19	21	4	-	-	4	7	14	120	120	90	100	100	0	
71	Palerang			100	100	100	100	100	100	3	of 3	100	100	100	3	of 3	100	4	3	16	59	55	51	0	0	31	30	30	100	60	100	100	100	20	
73	Upper Lachlan			100	100	100	70	70	100	4	of 4	100	100	100	4	of 4	100	5	10	4	2	3	2	0	0	3	5	5	100	120	120	0	0	0	
74	Wentworth (Dual Supply)	ADWG	Yes	100	100	100	100	100	100	3	of 3	100	100	89	1	of 3	1	5	3	4	11	8	34	0	-	9	6	511	60	60	45	100	100	21	
75	Coonamble (Groundwater)			100	100	100	100	100	89	2	of 3	97	100	100	2	of 3	96	0	16	10	91	73	-	2	-	60	35	-	60	60	-	0	0	0	
76	Harden (Reticulator)			100	100	100	100	100	100	1	of 1	100	100	100	1	of 1	100	14	-	8	18	48	21	2	3	6	11	6	60	60	60	100	100	50	
79	Walgett (Dual Supply)			100	100	100	100	100	100	2	of 2	100	95	100	1	of 2	65	0	1	4	-	-	3	-	-	-	-	-	-	-	-	-	-	49	
80	Greater Hume			100	100	100	100	100	50	1	of 2	100	100	100	2	of 2	100	0	0	0	6	6	19	0	1	30	28	28	90	120	120	100	100	100	
<i>Medians (% of LWUs basis) for 1,500 to 3,000 Properties</i>				100	100	100	100	100	100									0	3	4						28	11	14	95	105	108	100	100	9	

Table 12: Water supply – health and levels of service (continued)

WATER UTILITY	HEALTH												LEVELS OF SERVICE																		
	Risk Based Drinking Water Quality Plan		Water Quality Compliance (%)									Water Quality Complaints (per 1000 properties)			Water Service Complaints (per 1000 properties)			Customers with Restrictions or Legal Action for non-payment of Bills per 1000 props		Average Frequency of Unplanned Interruptions (No./1000 properties)			Average Duration of Interruptions (Minutes)			Drought Water Restrictions (% of time)					
			Physical			Chemical			Microbiological (E. coli)																						
	Basis? (69a)	External Assessmnt (69b)	1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines			1996 NHMRC/ARMCAMZ Guidelines				
H6	H5	08/09	09/10	10/11	08/09	09/10	10/11	10/11	08/09	09/10	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11
<b>LWUs with 200 - 1,500 Properties</b>																															
81	Gwydir	HACCP	100	100	42	100	100	70	2 of 3	97	100	100	3 of 4	94	0	4	3	0	0	0	0	3	13	10	4	180	180	180	0	0	0
83	Oberon (Reticulator)		100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	3	4	4	7	12	15	0	0	14	32	33	120	90	90	100	100	100
84	Gilgandra (Groundwater)	ADWG	100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	7	11	15	29	37	30	0	0	36	37	37	100	100	100	0	0	0
85	Uralla		100	100	100	100	100	100	2 of 2	97	97	100	2 of 2	100	2	20	3	1	8	2	0	0	17	78	11	120	120	90	0	0	0
86	Hay (Dual Supply)		100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	0	0	0	11	11	11	0	0	11	11	9	300	300	300	100	100	100
87	Bourke (Dual Supply)		100	100	100	100	100	100	1 of 1	100	96	100	1 of 1	100	4	3	0	29	34	9	0	12	815	844	787	120	60	60	0	13	0
88	Wakool (Dual Supply)		100	100	100	100	100	100	5 of 5	100	100	100	5 of 5	100	0	0	0	0	-	0	0	0	-	-	-	-	-	-	100	-	0
89	Bogan		100	100	100	100	100	100	1 of 1	92	100	100	1 of 1	100	0	-	4	48	49	4	0	0	10	71	66	180	120	120	0	0	12
90	Guyra		100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	1	2	0	4	3	3	0	0	19	15	12	180	120	80	0	0	0
91	Cabonne		100	100	100	100	100	100	4 of 4	100	100	100	2 of 3	86	3	0	2	32	38	18	0	0	-	-	-	240	180	150	74	61	100
92	Carrathool (Groundwater)		100	100	100	100	100	100	3 of 3	100	100	100	3 of 3	80	4	2	18	36	47	49	0	0	-	221	50	180	180	120	100	100	100
93	Tumbarumba		100	100	100	100	100	100	2 of 2	91	100	97	1 of 2	27	9	2	0	3	5	4	0	0	22	35	39	120	120	120	100	100	100
94	Gundagai		100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	5	6	8	5	9	5	0	5	29	34	35	60	60	60	100	100	100
96	Warren (Dual Supply)	HACCP	100	100	100	100	100	100	3 of 3	97	95	92	0 of 3		18	0	3	71	37	-	0	0	3	-	-	120	120	120	0	0	0
97	Bombala		100	100	100	100	100	100	2 of 2	100	100	100	2 of 2	100	1	0	4	2	7	6	0	0	-	27	-	20	56	-	-	100	100
98	Walcha		100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	1	1	1.2	4	2	2	0	0	7	6	9	70	60	120	0	0	0
100	Balranald (Dual Supply)		100	100	100	100	100	100	2 of 2	100	100	97	1 of 2	24	2	1	0	6	86	2	0	0	-	-	-	60	60	60	100	100	100
101	Murrumbidgee (Groundwater)		100	100	100	100	100	100	2 of 2	96	100	94	1 of 2	39	0	0	0	-	-	2	0	0	-	-	-	-	-	60	-	-	0
103	Central Darling (Dual Supply)		100	100	100	100	100	100	1 of 2	100	97	100	2 of 2	100	13	0	19	30	-	28	0	0	29	-	62	120	-	120	55	-	0
104	Boorowa		100	100	100	100	100	100	1 of 1	100	100	100	1 of 1	100	0	0	0	3	3	3	0	0	7	3	9	120	100	90	100	100	100
105	Brewarrina		100	100	100	100	100	100	2 of 2	100	100	100	2 of 2	100	0	0	0	2	51	10	0	0	40	21	-	30	60	30	0	0	0
106	Jerilderie (Dual Supply)	ADWG	100	100	100	100	100	100	1 of 1	100	93	86	0 of 1		0	0	21	0	0	2	0	0	9	13	-	120	120	120	100	100	25
<b>Medians (% of LWUs) for 200 to 1,500 Properties</b>			100	100	100	100	100	100		100	100	100			2	1	2						15	34	27	120	120	110	64	37	6
<b>Median All LWUs (% of LWUs basis)</b>			<b>Physical 100</b>			<b>Chemical 100</b>			<b>Microbiological 100</b>			<b>Quality Complaints 2</b>			<b>Service 8</b>			<b>Interruption Frequency 27</b>			<b>Duration 120</b>			<b>Restrictions 0</b>							
<b>Median All LWUs (Statewide basis)</b>			<b>100</b>			<b>100</b>			<b>100</b>			<b>4</b>			<b>Complaints 4</b>			<b>42</b>			<b>120</b>			<b>0</b>							
<b>Totals for all LWUs (including bulk suppliers)</b>		<b>Physical 92 LWUs complied (97% of 95 LWUs)</b>	<b>Chemical 88 LWUs complied (93% of 95 LWUs)</b>						<b>E. coli 88 LWUs complied (93% of 95 LWUs)</b>						<b>31 LWUs applied restrictions for non payment of bills</b>						<b>44 LWUs reported applying water restrictions (ie. 47% of LWUs reported water restrictions)</b>										
		<b>95% of 22300 samples complied</b>	<b>99% of 25300 samples complied</b>						<b>99% of 21100 samples complied</b>																						
<b>41 LWUs reported having a Water Quality Plan</b>																															

NOTES:

- Where the compliance for chemical water quality (health related) is equal to or greater than 95%, compliance is deemed to be 100%. Refer also to Note 8 on page 242.
- Where the compliance for microbiological water quality (health related) is equal to or greater than 98%, compliance is deemed to be 100%. Refer also to Note 8 on page 242.

Table 13: Water supply – benchmarking cost data (operation, maintenance and management)

WATER UTILITY	OPERATION & MAINTENANCE (O&M) COST <sup>2</sup>												MANAGEMENT COST			OMA <sup>1</sup>		O & M Cost Components for TYPE of ASSET														
	Total O&M Cost	Components (1) - Process						Components (2) - Type of Asset						Components			Total OMA Cost	Components		PUMPING STATION					WATER MAIN				TREATMENT			
		Maintenance	Operation	Energy	Chemicals	Bulk Purchase		Dams & Weirs	Mains	Reservoirs	Pumping Stations	Water Treatment	Other Excl Bulk Purchas	Admin	Engineering & Supervision	Total Management Cost		Head works	Distribution	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	Energy Cost	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	O&M Cost	Operation Cost	Maintenance Cost	Chemical
		(\$/prop (79a))	(\$/property (79))	(\$/property (80))	(\$/property (81))	(\$/property (82))	(\$/property (82a))	(\$/property (83))	(\$/property (84))	(\$/property (85))	(\$/property (86))	(\$/property (87))	(\$/property (88))	(\$/property (89))	(\$/property (90))	(\$/prop (91a))		(c/kL (91))	(\$/prop (91b))	(\$/property (92))	(c/kL (93))	(c/kL (94))	(c/kL (95))	(\$'000/pumping station (96))	(\$'000/pumping station (97))	(c/kL (98))	(c/kL (100))	(c/kL (101))	(\$'000/100km (102))	(c/kL (103))	(\$/ML (104))	(\$/property (105))
2010/11	2010/11						2010/11						2010/11			2010/11	2010/11		2010/11					2010/11								

LWUs with > 10,000 Properties

1	Gosford	196	80	82	17	12	4	31	42	12	35	51	20	118	11	129	58	325		16	104	39	15	50	19	306	35	271	228	30	9	12		
2	Wyong	208	104	99			4	18	118	5	24	36	3	132	58	190	75	398	99	298	9	62	37	25	46	586	236	350	142	28	8			
3	Shoalhaven	164	30	107	15	12	0	5	50	5	20	42	42	94	35	129	40	293	73	220	6	38	8	3	27	16	156	98	58	131	22	7	12	
4	Rous (Bulk Supplier) (NO SGE)	98	37	35	13	12		13	9	3	15	37	20	69	24	92	37	190	180	9	6	174	9	11	155	4	343		343	146	14	11	12	
5	MidCoast (Unfiltered)	231	83	116	23	8	0	1	77	10	29	28	85	60	23	83	36	313	125	188	13	41	2	7	33	34	201	34	168	122	15	5	8	
6	Tweed	203	80	74	28	20	1	9	36	5	38	66	49	116	49	165	59	368	180	188	14	45	2	9	33	13	165		165	236	40	6	20	
7	Port Macquarie-Hastings (Unfiltered)	205	84	94	17	6	5	23	43	8	37	32	58	83	36	119	58	324	113	210	18	58	2	29	26	21	163	90	73	156	18	8	6	
8	Riverina (Groundwater) (NO SGE)	269	102	87	58	22	0	42	12	106	50	59		34	30	64	16	333	266	67	27	84	18	20	46	11	76	10	65	126	23	5	22	
10	Coffs Harbour (Unfiltered)	204	82	95	8	17	2	26	64	14	17	57	24	82	43	125	49	330	201	129	7	60	25	5	30	25	245	38	206	223	32	8	17	
11	Albury City	171	59	41	60	6	5	37	10	70	35	13		101	8	109	42	280	87	193	27	73		11	62	14	147		147	135	19	10	6	
12	Fish River WS (Unfiltered, Bulk Supplier)	79	53	26				79						31	21	52	16	132	40	92														
13	Tamworth Regional	303	140	124	4	15	20	38	104	9	11	120	1	31	108	139	32	442	239	203	3	13	3	6	4	24	325	47	278	275	78	27	15	
14	Clarence Valley	199	73	117	2	10	-3	1	54	17	6	23	102	110	32	142	49	341	17	324	2	7	2	3	3	19	104	0	103	79	9	4	10	
15	Eurobodalla (Unfiltered)	213	54	124	29	6		3	101	22	53	12	22	145		145	79	358	75	283	29	79	20	16	43	55	208	134	74	65	6	0	6	
16	Wingecarribee	159	55	23	28	11	42	3	29	11	31	43	0	93	37	129	57	288	208	81	14	38	1	3	34	13	80		80	192	16	16	11	
17	Queanbeyan (Reticulator)	322	25	84	3		211	100	6	4		1		142		142	60	464		464	2	16	4	3	10	42	557	429	128					
18	Dubbo	272	68	128	13	62		51	5	16	162	38		146	24	170	45	442	296	146	4	29	4	2	24	13	171	9	162	427	81	19	62	
19	Orange	187	53	90	31	13		26	62		38	61		127	59	186	57	373	205	168	11	77	14		63	19	185	93	92	187	39	9	13	
20	Goulburn Mulwaree	241	128	88	4	18	3	50	93	4	5	37	48	87	17	104	47	344	127	217	2	7	0	1	5	42	368	30	338	169	14	5	18	
21	Bathurst Regional	309	98	157	9	46		31	134	6	10	120	8	122	17	139	38	448	229	220	3	15	0	1	13	37	529	285	244	333	53	22	46	
22	Lismore (Reticulator)	295	29	95	4		167	69	6	9		44		73	19	92	40	388		388	4	25	9	4	12	30	286	286						
23	Bega Valley (Unfiltered)	240	94	121	24	1		38	92	22	51	36		123	97	220	86	459	211	248	20	39	13	7	18	36	228	83	145	141	29	6	1	
24	Ballina (Reticulator)	281	56	42	2		181	46	4	5	5	41		112	15	127	49	408	4	404	2	18	9		9	18	206	93	113	19	5			
25	Kempsey (Groundwater)	248	125	76	37	11		7	77	24	47	84	9	74	88	161	57	410			17	26	1	5	21	27	172	3	170	297	58	16	11	
26	Essential Energy	869	481	323	27	39		294	34	166	375			102	60	162	36	1032	619	413	37	158	44	88	26	65	807	94	713	831	230	106	39	
27	Byron (Reticulator)	280	39	69			167	22	21		18	51		105	15	120	38	400	20	380						7	103	78	25	57	12	2	4	
28A	Goldenfields (Reticulator) (NO SGE)	540	231	55	96	3	154	133	25	158	12	58		69	68	137	35	677	345	332	40	43	1	16	26	34	72	18	54	29	6	2	3	
28B	Goldenfields (Bulk Supplier) (NO SGE)	120	40	28	37	14	1	23	3	48	33	12		26	26	51	12	171	169	2	11					5	135	33	102	78	15	4	14	

<i>Medians (% of LWUs basis excl bulk suppliers) for &gt;10,000 Properties</i>		235	80	95	17	12	4	20	63	10	29	43	38	104	33	134	49	371	154	218	11	39	6	6	26	22	204	83	147	163	26	8	12
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LWUs with 3,001 - 10,000 Properties

29	Armidale Dumaresq	452	429		6	17		54	168	17	16	156	41	17	45	62	21	514	231	283	6	12		8	5	58	532		532	539		139	17
30	Griffith	345	52	183	4	41	64	73	1	5	144	58		226	48	274	43	619	612	6	1	10	0	2	9	11	120	92	28	227	88	15	41
31	Lithgow	356	212		4	8	131	104	24	7	90			171		171	54	527	90	384	2	15		6	9	33	719		719	283		82	8
32	Mid-Western Regional	267	147	73	10	29	10	4	92	17	23	123		44	110	154	56	421	240	181	8	13	4	4	5	33	234		234	447	55	39	29
33	Richmond Valley	220	45	80	13	21	62	32	5	17	86	18		143	90	233	57	454	259	195	4	17	0	3	14	8	124	20	103	212	56	10	21
34	Nambucca (Groundwater)	182	79	70	33			39	10	45	14	73		63	38	102	45	283	113	170	20	141		37	104	17	122		122	63		14	
35	Singleton	263	61	178	9	9	6	62	1	24	139	31		70	77	148	36	410	234	176	6	17	2	8	7	15	160	103	57	339	104	26	9
36	Parkes	522	111	204	145	26	36	5	57	6	286	79	53	85	11	97	10	619	155	464	30	210	59	45	106	6	73	48	26	83	42	11	26
37	Inverell	413	77	207	94	36		43	16	111	103	139		82	13	95	27	508	407	102	32	85		14	72	12	91		91	294	68		36
38	Moree Plains (Groundwater)	358	194	136	4	24		60	134	4	9	124	28	229	19	248	36	606			1	10	1	5	4	20	399		399	182	75	25	24
39	Cowra	615	142	343	40	50	40	119	24	48	135	248		54	12	65	15	680			11	14	2		12	28	139		139	315	71	14	50

Table 13: Water supply – benchmarking cost data (operation, maintenance and management (continued))

WATER UTILITY	OPERATION & MAINTENANCE (O&M) COST <sup>2</sup>											MANAGEMENT COST			OMA <sup>1</sup>		O & M Cost Components for TYPE of ASSET														
	Total O&M Cost \$/(prop (79a)	Components (1) - Process					Components (2) - Type of Asset						Components			Total OMA Cost \$/(prop (91b)	Components		PUMPING STATION					WATER MAIN				TREATMENT			
		Maintenance	Operation	Energy	Chemicals	Bulk Purchase	Dams & Weirs	Mains	Reservoirs	Pumping Stations	Water Treatment	Other Excl Bulk Purchas	Admin	Engineering & Supervision	Total Management Cost		Head works	Distribution	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	Energy Cost	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	O&M Cost	Operation Cost	Maintenance Cost	Chemical
		(79)	(80)	(81)	(82)	(82a)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)	(\$/prop) (91a)		(c/kL) (91)	(\$/prop) (91b)	(\$/prop) (92)	(93)	(c/kL) (94)	O&M Cost (95)	Operation Cost (96)	Maintenance Cost (97)	Energy Cost (98)	O&M Cost (100)	O&M Cost (101)	Operation Cost (102)	Maintenance Cost (103)	O&M Cost (104)	Operation Cost (105)
2010/11	2010/11					2010/11						2010/11			2010/11		2010/11					2010/11									
40 Central Tablelands (NO SGE)	226	133	39	22	32	17	55	8	34	97	14	161	69	230	81	455	346	109	12	6	0	2	4	19	52		52	343	33	33	32
41 Muswellbrook	380	269	31	28	23	30	55	5	55	169	67	107	68	175	49	555	328	228	15	34	1	16	17	15	188	6	182	470	14	132	23
42 Corowa	195	111	51	10	14	8	38	1	19	124	4	66	124	190	26	384	288	96	3	12		6	6	5	122		122	170	47	62	14
43 Tumut	324	238	41	17	28		42	7	35	182	59	27	19	47	17	371	156	215	13	13	1	5	6	16	102		102	672	36	118	28
44 Gunnedah (Groundwater)	201	147	8	45	2		107	2	75	6	12	52	77	129	32	331	83	248	19	17		7	10	26	261		261	14		4	2
45 Upper Hunter	273	119	110	39	6		10	121	10	85	25	81	98	179	35	452	127	325	17	35	7	12	16	23	360	132	228	49	16	4	6
46 Narrabri (Groundwater)	223	186		37			17	1	125		79	88	39	127	38	349	192	140	37	46		32	13	5	68		68				
47 Bellingen (Unfiltered)	144	50	58	29	7		39	3	36	57	9	116	63	179	61	324	49	275	12	24	1	3	20	13	96	44	52	194	36	14	7
48 Leeton	415	178	122	37	35	43	161	6	47	156	2	64	58	122	25	536	322	215	10	31		6	25	33	430		430	323	122		35
49 Young (Reticulator)	162	60	19	2		80	59	4	3		15	40	17	57	25	219	18	202	1	4		1	3	26	186	20	166				
50 Cooma-Monaro	201	105	80	5	11		58	19	8	81	35	87	77	164	72	365			4	5	1	1	3	26	195	18	177	354	47	23	11
51 Forbes	316	92	179	0	42	2	86	3	5	216	3	39	20	60	12	375	236	139	1	3	1	2	0	18	243	8	235	440	172	2	42
52 Snowy River (Unfiltered)	206	33	127	38	9		47	7	66	59	28	59	104	163	91	370	92	277	37	16	5	2	9	26	145	130	14	326	39	11	9
53 Berrigan (Dual Supply)	300		300				67		11	219	3	42	63	104	26	405	170	267	3	5	5			17	110	110		551	219		
54 Deniliquin	243	68	124	51			68		51	124		121	56	177	34	420	269	151	10	43			43	13	157		157	235	124		
55 Warrumbungle	403	198	138	40	27		4	132	17	57	143	74	22	96	42	499			25	24	4	3	17	58	293	23	270	631	81	35	27
56 Yass Valley	247	79	127	15	27		3	49	20	35	82	101	68	170	75	417	229	188	16	9	5	0	4	22	97		97	361	50	5	27
<i>Medians (% of LWUs basis) for 3,000 to 10,000 Properties</i>	270	111	122	22	24	38	7	60	6	35	123	78	58	151	36	420	230	198	10	16	2	5	9	18	151	44	139	319	55	19	24
<i>LWUs with 1,501 - 3,000 Properties</i>																															
57 Wellington	381	193	126	17	38	8	184	3	22	164		100	81	181	47	562	337	225	6	9		2	7	48	516	8	509	427	123	3	38
58 Cootamundra (Reticulator)	184	71	33			80	68	4			32	17	35	52	24	236	59	177						31	281		281				
59 Lachlan	412	120	210		61	21	78	6	14	192	101	41	88	129	24	542	293	249	3	5		5		15	98		98	359	132		61
60 Glen Innes Severn	180	133		25	22		1	33	4	29	84	14	171	185	81	365	146	219	13	43		6	37	15	97		97	370		62	22
61 Liverpool Plains	214	102	79	29	5		19	78	3	54	59	94	142	236	80	450			18	13	0	6	7	26	166	40	126	199	54		5
62 Narromine (Groundwater)	243	103	98	42			108	22	99	4	11	67	67	134	35	377	192	185	25	70	31	9	30	28	383	77	307	10	4		
63 Narrandera (Groundwater)	221	99	48	70	4		88	9	118	4	2	53	71	124	20	345	200	145	19	83	34		49	14	266		266	7			4
64 Dungog (Reticulator)																															
65 Murray (Dual Supply)	288	132	106	25	19	6	69	8	49	139	16	62	44	106	33	394	248	146	15	17	3	5	9	22	138	58	80	434	58	62	19
67 Cobar	617	270	37	3	81	226		19	105	236	31	5	54	59	17	676	338	338	30	39	2	36	1					674		155	81
66 Cobar WB (Bulk Supplier)																															
68 Tenterfield	297		207	20	45	25	19	57	1	31	158	149	19	168	69	464	186	279	13	30	11		20	24	162	162		654	113		45
70 Kyogle	326	133	106	36	4	47	49	7	90	110	22	128	43	171	81	497			43	33		20	13	23	163		163	524	106		4
71 Palerang	262	55	152	38	16		9	40	4	81	79	57	48	105	55	366	242	125	42	55	27	2	26	21	171		171	416	59	4	16
73 Upper Lachlan	298	30	208	43	16		21	65	11	96	89	77	64	141	69	439	154	154	47	62	29	6	28	32	198	191	8	433	61	12	16
74 Wentworth (Dual Supply)	432	149	242	25		16	81	11	64	188	72	49	21	70	18	503	106	50	17	19	3	8	7	21	114		114	487	178	10	
75 Coonamble (Groundwater)	198	51	113	33			113	8	62		14	24	24	48	9	246	123	123	11					20	296	296					
76 Harden (Reticulator)	289	104	23	1	18	143	61	29	9	41	6	70	22	92	17	381	57	381	2	6		5	1	11	68		68	76	23		18
79 Walgett (Dual Supply)	575	308	170	58	39		227	18	123	176	32	78	66	144	11	719			9	34	8	9	16	17	427	106	322	133	48	89	39
80 Greater Hume	292	96	11	29	5	151	57	16	48	13	7	42	77	119	56	410	90	53	23	43		18	26	27	68	5	62	63		8	5
<i>Medians (% of LWUs basis) for 1,500 to 3,000 Properties</i>	291	104	106	29	19	36	19	69	8	62	99	60	59	127	34	425	186	177	17	34	9	6	16	22	166	77	126	393	60	12	19

Table 13: Water supply – benchmarking cost data (operation, maintenance and management) (continued)

WATER UTILITY	OPERATION & MAINTENANCE (O&M) COST <sup>2</sup>										MANAGEMENT COST			OMA <sup>1</sup>		O & M Cost Components for TYPE of ASSET															
	Total O&M Cost \$/prop (79a)	Components (1) - Process					Components (2) - Type of Asset					Components			Total OMA Cost (\$/prop) (91b)	Components		PUMPING STATION				WATER MAIN				TREATMENT					
		Maintenance	Operation	Energy	Chemicals	Bulk Purchase	Dams & Weirs	Mains	Reservoirs	Pumping Stations	Water Treatment	Other Excl Bulk Purchas	Admin	Engineering & Supervision		Total Management Cost	Head works	Distribution	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	Energy Cost	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	O&M Cost	Operation Cost	Maintenance Cost	Chemical
		(79)	(80)	(81)	(82)	(82a)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)		(\$/prop) (91a)	(c/kL) (91)	(\$/prop) (91b)	(\$/property) (92)	(93)	(c/kL) (94)	(95)	(96)	(97)	(98)	(c/kL) (100)	(101)	(102)	(103)	(\$/ML) (104)	(105)
2010/11	2010/11					2010/11					2010/11		2010/11	2010/11		2010/11				2010/11											

LWUs with 200 - 1,500 Properties

81	Gwydir	292	130	104	31	27		129	13	107	38	5	218	4	222	52	514	129	386	25	156	96	15	45	30	214	51	163	88	2	9	27	
83	Oberon (Reticulator)	540	69	111		52	308	37					195	39	82	121	74	661	390	264					23	131		131	1202	111	32	52	
84	Gilgandra (Groundwater)	267	161	76	20	10		96	4	66	81	19	44	20	64	12	330	116	215	13					18	257		257	156	48	23	10	
85	Uralla	244	168		6	71		4	48	2	13	178	111	45	156	75	400	300	92	6	17		10	7	23	164		164	853		107	71	
86	Hay (Dual Supply)	324	234	19	47	14	11	67	12	93	121	19	202	14	216	36	540	367	173	16	41		20	20	11	187		187	204		107	14	
87	Bourke (Dual Supply)	849	849					140	2	12	560	136	48	94	143	7	992	298	695	1	8		8		7	497		497	280		560		
88	Wakool (Dual Supply)	405	121	170	25	36	53	72	5	53	206	18	36	43	80	15	485	461	24	10	9	3	2	4	13	61	19	42	385	119	51	36	
89	Bogan	646	429	94	31	41	50	4	108	37	203	111	133	256		256	71	902			56	209	60	117	32	30	234		234	307	36	34	41
90	Guyra	328		314		12	2	33	208			86	137		137	45	466	256	210						68	402	402		278	73		12	
91	Cabonne	369	294	45	15	15		60	59	32	56	122	40	102	67	169	97	538	344	194	32	16		12	4	34	155		155	698	22	85	15
92	Carrathool (Groundwater)	729	189	242	243	9	47	160	24	436	49	13	29	34	63	10	792	238	555	68	25	11		14	25	38		38	76	40		9	
93	Tumbarumba	196	78	99	19			91	63	27	14	2	33	105	138	49	334	134	200	9	16	5		11	32	160	128	32	49		14		
94	Gundagai	355	121	143	54	37		77	2	59	216	1	122	82	204	32	559	252	308	9	26	2		24	12	191	60	131	342	114	65	37	
96	Warren (Dual Supply)	220	102	50	37	16	16	102	9	62	21	10	69	72	141	26	361	144	217	11	30	6	6	18	19	346	79	268	39	5		16	
97	Bombala	290	130	126		34		1	31	2	33	147	76	83		83	39	373			16	9	5	4	15	66	5	61	698	53	59	34	
98	Walcha	409	300		87	22		10	72	22	132	173	81	60	141	60	549	412	137	56	38		13	25	31	110		110	739		151	22	
100	Balranald (Dual Supply)	384	282		48	43	11	58	1	200	43	70	128		128	29	512	154	358	46	60		46	14	13	173		173	100			43	
101	Murrumbidgee (Groundwater)	146	79		67			19	27	75	25			105	105	16	251			12	20		2	18	3	47		47	39		25		
103	Central Darling (Dual Supply)	393	244	28	56	65		8	62	4	146	165	7	4	7	11	2	404	234	170	29	13	2	6	5	12	68		68	327		101	65
104	Boorowa	437	173	227	38			144	15	94	185		179	15	194	56	631			27	62	37		25	41	198		198	531	171	14		
105	Brewarrina	1128	574	389	68	97		10	220	49	150	395	303	142	123	265	15	1393	418	975	8	37	16	5	17	12	280		280	222	274	25	97
106	Jerilderie (Dual Supply)	508	370	15	64	53	6	119	2	106	256	19	66	42	108	17	616	216	400	17	50		20	30	19	128	2	126	408	6	197	53	
Medians (% of LWUs basis) for 200 to 1,500 Properties		376	173	104	42	35	16	9	84	11	84	134	19	83	52	139	34	526	254	216	16	26	6	10	18	19	169	56	155	294	51	55	35

NOTES:

- Operating cost is the OMA cost (operation, maintenance & administration (Col 91b)) which comprises the O & M Cost (operation & maintenance cost (Cols 79 to 82 or Cols 83 to 88)) PLUS Management Costs (Col 91a) which is made up of the Administration cost (Col 89) plus Engineering and Supervision cost (Col 90).
- O & M cost includes a proportion of the OMA cost of the bulk supplier if appropriate or the purchase cost of water if no bulk supplier (Col 82a).

Table 14: Sewerage – utility characteristics

WATER UTILITY	ASSESSMENTS - CONNECTIONS - POPULATION										ASSETS							WORKFORCE									
	Total No of Assessments			Connected Properties - Total		Connected Properties - Residential			Population		Sewer Mains	Properties Served per km of Main	Sewage Treatment Works	Pumping Stations	Pumping Stations per 100km of Main	Capital Expenditure (Assets, Renewals, Plant/Equip)		Capital Works Grants	Total Work Force	% Female	Outsourcing	Injuries	Days Lost				
																(\$/prop	\$M						(\$'000)	(Employees /1000 props)	(No.)	Total (%)	Due to Injury (No.) (%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(13a)	(13b)			(14)	(15)	(19)	(20)	(21)					
Sydney Water	2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	
Hunter Water																											
<b>LWUs with &gt; 10,000 Properties</b>																											
1	Gosford	65100	65,365	65,680	1.05	68,658	0.95	1.05	65,701	158,700	-	1,312	52	2	184	14	377	25.9	257	1.6	16	5	5	3	38	0	
2	Wyong	60450	60,674	61,070	0.98	59,546	0.96	0.97	56,635	148,300	170	1,243	48	6	142	11	74	4.4	39	1.5	4		9	1	113	1	
3	Shoalhaven	44480	45,720	45,890	0.89	40,655	0.94	0.90	38,847	81,800	390	1,157	35	12	228	20	1,796	73.0	197	2.1	10	2	3	3	23	0	
5	MidCoast	33910	34,209	34,390	0.96	33,012	0.92	0.96	30,433	76,900	120	996	33	12	198	20	252	8.3	404	1.7	18	-	3	3	67	1	
6	Tweed	32620	32,352	33,300	0.91	30,303	0.94	0.93	29,196	77,500	120	687	44	7	182	26	77	2.3		2.1	5	2	6	3	0	0	
7	Port Macquarie-Hastings	28620	27,798	28,140	0.95	26,732	0.93	0.95	24,823	72,000	130	652	41	5	153	23	428	11.4		1.3	3	2	2	0	6	0	
9	Wagga Wagga	22700	24,152	24,300	1.04	25,272	0.93	1.05	23,709	63,500	110	590	43	5	37	6	218	5.5		1.2	10	10	3	3	37	1	
10	Coffs Harbour	24160	24,398	24,660	0.93	22,932	0.94	0.93	21,504	65,900	120	665	34	4	115	17	140	3.2	205	1.8			5	6	136	1	
11	Albury	20830	21,165	21,350	0.99	21,140	0.92	0.99	19,365	51,000	110	496	43	4	67	14	105	2.2		1.0	12	41	4	0	2	0	
13	Tamworth Regional	18380	18,600	18,730	1.00	18,734	0.91	1.00	17,096	43,500	180	524	36	5	24	5	1,380	25.9		1.9	8		1	3	8	0	
15	Eurobodalla	18710	18,835	18,940	0.94	17,799	0.95	0.94	16,867	35,800	340	522	34	5	126	24	578	10.3		2.3	4		9	5	73	1	
17	Queanbeyan	15560	15,618	15,690	1.03	16,158	0.93	1.04	15,165	40,000	100	329	49	1	15	5	40	0.7		0.7	9		0	0	0	0	
19	Orange	15130	15,642	15,810	1.00	15,812	0.93	1.00	14,677	38,300	100	404	39	2	25	6	41	0.6		0.9	3	5	1	1	0	0	
18	Dubbo	13450	13,893	14,040	1.11	15,579	0.90	1.12	14,199	33,200	110	388	40	2	13	3	292	4.6		1.0	13		1	1	0	0	
16	Wingecarribee	15040	15,240	15,270	0.95	14,507	0.94	0.96	13,769	33,100	120	519	28	5	70	13	302	4.4	3,868	2.0	5	11	4	3	133	2	
14	Clarence Valley	15240	15,314	15,470	0.94	14,544	0.93	0.94	13,559	28,100	140	375	39	5	93	25	504	7.3	587	2.2	5		0	0	0	0	
21	Bathurst Regional	13450	13,709	13,930	1.08	15,048	0.90	1.08	13,473	34,600	170	389	39	1	16	4	106	1.6		0.7	10	4	1	0	1	0	
24	Ballina	13670	14,084	14,540	0.93	13,525	0.90	0.93	12,213	35,300	-	320	42	4	123	38	952	12.9		1.6	-		0	0	0	0	
22	Lismore	11710	11,805	11,990	1.05	12,594	0.91	1.06	11,542	29,700	100	348	36	3	33	9	351	4.4		1.9	25		0	0	0	0	
23	Bega Valley	12100	12,131	12,310	0.98	12,068	0.93	0.98	11,198	25,500	150	390	31	10	970	249	362	4.4		1.9	5		1	4	38	1	
27	Byron	10260	10,555	10,770	0.96	10,342	0.88	0.96	9,057	28,800	120	239	43	4	81	34	459	4.8	431	2.1	5	2	1	5	10	0	
26	Essential Energy	9700	9,708	9,730	1.00	9,725	0.93	1.00	9,039	18,700	110	248	39	2	11	4	203	2.0		0.8			0	0	0	0	
20	Goulburn Mulwaree	9820	9,274	9,910	1.03	10,205	0.91	1.03	9,289	21,600	100	272	38	2	26	10	146	1.5	183	2.1	7		2	0	0	0	
25	Kempsey	8630	8,675	8,600	1.04	8,948	0.93	1.04	8,293	19,100	120	270	33	7	79	29	157	1.4		2.0	11	50	2	6	237	6	
Medians (% of LWUs basis) and totals for >10,000 Properties		544,510								1,260,900		13,335	39				272	223		2	8		2	2			
<b>LWUs with 3,001 - 10,000 Properties</b>																											
29	Armidale Dumaresq	8110	8,350	8,380	0.98	8,210	0.93	0.98	7,622	20,300	110	227	36	1	1	0	104	0.9		1.7	0	3	1	3	10	0	
31	Lithgow	7380	7,577	7,590	0.98	7,435	0.94	0.98	6,984	19,800	100	163	46	3	36	22	2,302	17.1	6,106	1.2			0	0	0	0	
30A	Hawkesbury	7660	7,699	7,710	0.98	7,537	0.88	0.99	6,710	24,000	100	181	42	2	25	14	1,034	7.8		2.0			0	0	0	0	
30	Griffith	7920	8,900	9,160	0.85	7,786	0.91	0.84	7,033	25,800	100	228	34	3	29	13	1,934	15.1		3.0	4		0	0	1	0	
33	Richmond Valley	6780	6,831	6,910	0.95	6,564	0.90	0.95	5,907	15,300	110	179	37	4	31	17	791	5.2	687	2.4	13		1	3	1	0	
32	Mid-Western Regional	6470	6,562	6,670	1.00	6,668	0.90	1.00	5,995	13,500	150	206	32	4	12	6	595	4.0		1.3	6	1	4	5	107	5	
34	Nambucca	5740	5,628	5,940	0.95	5,644	0.88	0.95	4,965	12,500	140	156	36	4	52	33	397	2.2	2,173	1.8		15	3	1	32	1	
35	Singleton	5560	5,609	5,640	0.96	5,412	0.92	0.93	4,830	15,200	100	137	40	1	15	11	139	0.8		1.2		30	0	4	0	0	
37	Inverell	4750	4,772	4,790	0.97	4,648	0.96	0.97	4,462	11,400	110	126	37	4	21	17	15	0.1		1.5	14	10	0	0	0	0	
41	Muswellbrook	5270	5,340	5,420	0.96	5,174	0.93	0.96	4,840	16,700	-	148	35	2	12	8	221	1.1		1.8	19	12	0	5	0	0	



Table 14: Sewerage – utility characteristics (continued)

WATER UTILITY	ASSESSMENTS - CONNECTIONS - POPULATION										ASSETS							WORKFORCE								
	Total No of Assessments			Connected Properties - Total		Connected Properties - Residential			Population		Sewer Mains	Properties Served per km of Main	Sewage Treatment Works	Pumping Stations	Pumping Stations per 100km of Main	Capital Expenditure (Assets, Renewals, Plant/Equip)		Capital Works Grants	Total Work Force	% Female	Outsourcing	Injuries	Days Lost			
				(Ratio of Connected Properties to Assessments)	Connected Properties (1) x (2)	(Ratio of Residential Assessments to Total Assessments)	(Ratio of Residential Connections to Residential Assessments)	Connected Residential Properties (1)x(4)x(5)	Permanent	Peak (% of Permanent)	(km)	(3) / (8)	(No.)	(No.)	(11) / [(8) x 100]	\$/prop	\$M	(\$'000)	(Employees /1000 props)	(%)	(% of Maintenance Cost)	(No.)	Total (%)	Due to Injury (No.) (%)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(13a)	(13b)	(14)	(15)	(19)	(20)	(21)	(22)	(22a)				
2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11			
36	Parkes	5230	5,205	5,520	0.95	5,244	0.89	0.95	4,651	11,500	130	99	53	3	2	2	20	0.1	470	1.1	2	1	0	1	0	
42	Corowa	4870	5,125	5,160	0.95	4,905	0.91	0.95	4,457	9,600	200	149	33	3	67	45				1.2		0	8	0		
38	Moree Plains	3870	3,852	3,850	0.97	3,736	0.84	0.96	3,122	9,700	100	88	42	4	28	32	8	0.0		1.6	17	-	-	-		
44	Gunnedah	3890	3,883	3,850	1.03	3,969	0.90	1.03	3,577	10,700	110	108	37	2	2	2	73	0.3		1.5	5	0	0	0		
46	Narrabri	3740	3,806	3,810	0.98	3,730	0.95	0.98	3,531	10,800	100	97	38	3	22	23	49	0.2		2.1		1	0	1	0	
43	Tumut	4320	4,373	4,380	0.95	4,157	0.89	0.95	3,700	8,600	130	147	28	5	20	14	89	0.4		1.9	13	-	1	0	3	0
49	Young	3540	3,565	3,560	1.04	3,706	0.89	1.04	3,294	8,700	110	91	41	1	5	5	112	0.4		1.6	8	3	1	12	1	
39	Cowra	3740	3,739	3,730	0.95	3,543	0.88	0.95	3,108	8,700	120	100	35	2	9	9	2,300	8.1	2,944	1.1		3	2	3	0	
45	Upper Hunter	3950	4,496	4,510	0.92	4,148	0.91	0.92	3,783	10,100	100	115	36	4	13	11	115	0.5	247	0.7	5	0	10	0		
52	Snowy River	2520	2,522	2,520	1.43	3,606	0.91	1.43	3,272	4,100	390	88	41	4	18	20			162	2.0	14	30	1	0	0	
51	Forbes	3170	3,076	3,160	1.00	3,155	0.88	1.00	2,786	7,800	100	89	35	1	17	19	11	0.0		1.9	33	13	0	2	0	
50	Cooma-Monaro	3380	3,584	4,590	0.95	4,358	0.91	0.95	3,982	6,900	140	110	40	2	7	6	154	0.7	145	1.8		-	0	0	2	0
53	Berrigan	3340	3,364	3,380	0.98	3,312	0.89	0.98	2,935	6,700	110	107	31	4	47	44	59	0.2		1.7	15	0	4	6	0	
48	Leeton	3310	3,406	3,400	0.94	3,196	0.86	0.94	2,763	7,800	110	90	36	3	31	34	119	0.4		2.2		3	1	0	0	
54	Deniliquin	3290	3,290	3,300	0.96	3,164	0.88	0.95	2,759	7,700	100	96	33	1	23	24	402	1.3		1.6		1	0	8	1	
<i>Medians (% of LWUs basis) and totals for 3,000 to 10,000 Properties</i>		119,220						279,900			3,144	36				117	1	2			13	1		1		
<i>LWUs with 1,501 - 3,000 Properties</i>																										
47	Bellingen	3090	3,129	3,140	0.95	2,979	0.91	0.95	2,703	7,500	100	89	33	3	27	30	283	0.8		2.7	5	1	2	5	0	
60	Glen Innes Severn	2970	3,067	3,080	0.91	2,802	0.86	0.91	2,416	6,200	120	98	29	2	5	5	76	0.2		1.2		0	0	0	0	
58	Cootamundra	2800	2,818	2,840	0.98	2,784	0.88	0.98	2,442	7,600	110	58	48	1	4	7				0.7		1	0	0	22	5
57	Wellington	2430	2,719	2,720	0.98	2,669	0.87	0.98	2,328	5,900	110	91	29	2	13	14	45	0.1		0.7	5	0	0	1	0	
91	Cabonne	2570	2,591	2,580	0.92	2,373	0.87	0.92	2,067	3,700	99	56	42	3	10	18	1,111	2.6	1,402	2.1		0	2	0	0	
80	Greater Hume	2640	2,689	2,700	0.95	2,567	0.87	0.95	2,226	5,900	100	75	34	6	20	27	88	0.2		1.4	22	0	0	0	0	
59	Lachlan	2090	2,097	2,100	1.03	2,160	0.87	1.03	1,889	5,000	110	75	29	3	21	28	31	0.1		1.9	10	0	0	0	0	
65	Murray	3090	2,810	2,840	0.95	2,695	0.88	0.95	2,368	6,200	200	88	31	2	41	47	119	0.3		0.7		0	0	0	0	
62	Narromine	2190	2,055	2,060	0.95	1,956	0.87	0.95	1,698	5,000	140	49	40	2	13	27				2.0	38	5	0	0	0	
56	Yass Valley	2350	2,346	2,400	0.94	2,260	0.91	0.94	2,049	5,700	120	71	32	1	10	14	385	0.9	291	1.3	15	1	1	6	1	
61	Liverpool Plains	1850	2,001	2,110	0.98	2,068	0.91	0.98	1,874	4,900	110	58	36	2	9	16	23	0.0		1.5	-	-	-	-	-	
55	Warrumbungle	2520	2,484	2,490	0.99	2,467	0.85	0.92	1,950	4,900	99	80	31	4	9	11	58	0.1		4.5		0	0	0	0	
69	Temora	2100	2,111	2,120	1.00	2,117	0.86	1.00	1,813	4,600	150	47	45	1	4	9	14	0.0		0.5		0	0	0	0	
71	Palerang	1970	2,018	2,000	0.95	1,897	0.91	0.95	1,736	4,400	100	48	40	3	14	29	1,114	2.1	685	1.6		0	0	0	0	
72	Bland	1920	1,940	1,930	0.95	1,833	0.85	0.95	1,565	4,100	110	48	38	3	10	21	197	0.4		1.6	10	0	0	0	0	
63	Narrandera	1820	1,844	1,950	0.92	1,796	0.88	0.92	1,581	4,800	110	36	50	1	4	11	5	0.0	23	1.1	5	0	0	0	0	
67	Cobar	1820	1,826	1,830	0.95	1,735	0.91	0.95	1,581	5,500	140	52	33	2	5	10	18	0.0		2.3		0	0	0	0	
74	Wentworth	1910	1,886	1,870	0.95	1,777	0.90	0.95	1,606	5,100	120	87	20	5	27	31	221	0.4		3.9	30	0	9	142	9	
75	Coonamble	1430	1,382	1,370	1.02	1,401	0.90	1.02	1,266	3,000	-	46	30	2	12	26	73	0.1		4.3	17	-	-	-	-	
70	Kyogle	1770	1,782	1,780	0.95	1,694	0.89	0.95	1,508	3,600	120	62	27	3	9	15	103	0.2		4.1	14	0	2	0		
77	Junee	1660	1,671	1,680	0.95	1,596	0.93	0.95	1,481	4,100	120	43	37	1	1	2	69	0.1		1.3	20	1	1	4	1	
78	Blayney	1750	1,848	1,880	1.03	1,939	0.85	1.03	1,646	3,700	100	76	26	1	7	9				1.0		0	0	0	0	
79	Walgett	1790	1,888	1,920	0.85	1,630	0.89	0.85	1,454	6,300	170	46	35	3	9	20				2.5		-	-	-	-	
68	Tenterfield	1740	1,716	1,830	0.95	1,736	0.85	0.95	1,481	3,400	-	65	27	2	3	5	141	0.2		3.5	-	5	0	0	0	
<i>Medians (% of LWUs basis) and totals for 1,500 to 3,000 Properties</i>		53,220						121,100			1,544	33				82	9	2			17	0		0		



Table 14: Sewerage – utility characteristics (continued)

WATER UTILITY	ASSESSMENTS - CONNECTIONS - POPULATION										ASSETS						WORKFORCE								
	Total No of Assessments			Connected Properties - Total		Connected Properties - Residential			Population		Sewer Mains	Properties Served per km of Main	Sewage Treatment Works	Pumping Stations	Pumping Stations per 100km of Main	Capital Expenditure (Assets, Renewals, Plant/Equip)		Capital Works Grants	Total Work Force	% Female	Outsourcing	Injuries	Days Lost		
																\$/prop	\$M						(Employees /1000 props)	(No.)	Total (%)
	(1)	(2)	(3) C 8	(4)	(5)	(5a) C6	(6) C5	(7)	(8) A 5	(9) A 6	(10) A4	(11)	(11) / [(8) x 100]	(13) F29	(13a) F15	(13b) F 27	(14)	(15)	(19)	(20)	(21)	(22)	(22a)		
2008/09	2009/10	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11	2010/11		
<b>LWUs with 200 - 1,500 Properties</b>																									
84	Gilgandra	1390	1,395	1,400	0.98	1,367	0.89	0.98	1,220	2,900	110	36	38	1	-	-	77	0.1	1,782	0.7	15	1	2	3	1
73	Upper Lachlan	1420	1,417	1,530	1.00	1,525	0.86	1.00	1,305	2,800	110	56	27	2	8	14	1,195	1.8	1,782	2.0		0	0	0	
87	Bourke	1070	1,248	1,260	1.00	1,259	0.86	1.00	1,089	2,000	120	34	37	1	8	24	74	0.1		2.4		0	0	0	
86	Hay	1300	1,300	1,300	0.98	1,274	0.87	0.98	1,114	2,900	100	37	34	1	8	22	71	0.1		1.6	30	0	0	0	
83	Oberon	1340	1,341	1,350	1.02	1,375	0.82	1.02	1,121	3,100	130	38	36	1	3	8	78	0.1		1.5	10	0	0	0	
81	Gwydir	1210	1,207	1,210	0.95	1,148	0.90	0.95	1,031	2,600	140	41	28	2	8	20	7	0.0		2.6	17	15	0	0	0
85	Uralla	1020	1,084	1,080	1.00	1,075	0.92	1.01	1,000	2,400	100	31	35	1	6	19	140	0.2		0.9	12	0	0	0	
95	Weddin	1090	1,092	960	0.94	901	0.86	0.93	764	2,000	120	31	29	1	0		44	0.0		1.3		0	0	0	
89	Bogan	1040	1,016	1,020	1.01	1,026	0.88	1.01	907	2,500	140	20	51	1	4	20	142	0.1		1.0	300	0	0	0	
76	Harden	980	986	970	0.95	924	0.92	0.94	838	2,100	110	41	23	1	0				5.4		0	0	2	0	
88	Wakool	1120	1,131	1,130	0.95	1,074	0.78	0.95	836	2,100	120	47	23	4	14	30	69	0.1		3.7	15	0	0	0	
93	Tumbarumba	1030	1,027	1,040	0.95	983	0.86	0.95	844	2,000	170	47	21	2	3	6	104	0.1		3.1	33	0	0	0	
94	Gundagai	890	891	890	0.85	758	0.91	0.84	682	2,400	130	73	10	1	5	7	1	0.0		2.6		0	0	0	
92	Carrathool	920	892	890	0.95	847	0.87	0.95	734	1,900	120	22	39	3	12	55	160	0.1		2.7	9	-	0	0	0
96	Warren	860	883	880	0.92	806	0.90	0.92	724	1,800	140	17	47	2	8	47	17	0.0		2.5		0	11	0	
99	Coolamon	1040	1,042	1,070	0.95	1,012	0.87	0.95	877	2,400	100	44	23	2	8	18	31	0.0		1.0		0	0	0	
102	Lockhart	870	868	870	0.95	825	0.87	0.95	721	1,800	100	42	20	3	6	14			1.6		0	0	0	0	
98	Walcha	790	857	790	1.01	802	0.86	1.01	686	1,700	120	30	27	1	1	3	31	0.0		2.5	50	0	0	0	
100	Balranald	830	892	930	0.95	880	0.83	0.95	726	1,900	110	38	23	2	10	26			2.3		0	0	0	0	
97	Bombala	800	798	810	0.95	771	0.84	0.95	651	1,800	110	35	22	2	5	14	109	0.1		2.6		0	0	0	
101	Murrumbidgee	720	725	720	1.03	743	0.94	1.05	710	1,700	110	23	32	2	12	52	93	0.1		5.4		0	0	0	
90	Guyra	1010	1,051	1,050	0.95	998	0.77	0.95	768	3,600	110	57	18	2	2	4	157	0.2		2.0	5	0	1	0	
104	Boorowa	640	594	650	0.94	608	0.99	0.94	603	690	440	30	20	1	2	7			4.9	3	0	0	0	0	
105	Brewarrina	560	575	580	0.86	495	0.89	0.85	434	1,500	110	16	31	3	8	50	87	0.0		1.0		2	217	250	217
106	Jerilderie	450	446	450	0.95	428	0.77	0.95	330	770	120	12	36	1	5	42			4.7		0	0	0	0	
103	Central Darling	190	205	220	1.00	217	0.90	1.00	196	710	110	23	9	1	4	17			4.6		1	0	1	0	0
107	Urana	330	333	330	0.95	316	0.87	0.95	276	720	210	15	21	2	9	60	22	0.0		7.9	20	0	0	0	0
Medians (% of LWUs basis and totals for 200 to 1,500 Properties)		25,380						54,790			936	27				77	3	2		27	0		0		
Median All LWUs (% of LWUs basis)								Properties served per km of main			35				Capital Expenditure \$110 per property			1.8 employees per 1000 properties							
Median All LWUs (Statewide basis)											40				\$252 per property			1.6 employees per 1000 properties							
Totals for all LWUs		Connected properties			725,000			Total Sge populaton			1.72M	18,960 km of mains			Total Capital Expenditure			\$294M	Total Days Lost Due to Injury			1,544			
99 LWUs with Sge services		Total no. of Assessments			742,000			Reported No. of Sewage Treatment Works			287	Pumping Stations			3977	Reported No. of Sge Employees			1,207						

Table 15: Sewerage – asset management and resource management

WATER UTILITY	ASSET MANAGEMENT												RESOURCE MANAGEMENT																														
	Infiltration		Breaks & Chokes			Overflows see also Col (31a)		Rehabilitations		Renewals		Mains Maintenance Cost	Overflows Reported to Regulator		Total Vol of Sewage Collected			Volume of Trade Waste	% Sewage Treated	% Sge Treated that was compliant	STWS compliant at all times	Percentage of Total Sewage Collected					Level of Treatment (%)			Vol of Sewage Collected per Property			Biosolids Reused			Effluent Recycled							
	(ML per 100km of Main)		(No. per 100 km of Main)			(No. per 100 km of Main)		(% of Total Length) (Service Connections %)		(\$'000 per 100 km of Main) (% of CRC)		(\$'000 per 100 km of Main)	(No. per 100km of main)		(ML)			(ML)	(%)	(33a) E 4	(33b) E 5	Infiltration Inflow	Res	Non-Res	Trade Waste	Other	Primary Level	Secondary Level	Tertiary Level	(kL/property)			%			Total Volume Recycled (ML) (41a) W 26	Volume Recycled for Urban Water (ML) (41b)	% of Total Effluent that is Recycled					
	(23)		(24) A14			(25)		(27) (28)		(29) (30)		(31)	(31a) E13		(32) W18			(32a) W17	(33)	(33a) E 4	(33b) E 5	(34)	(35)	(36)	(37)	(38)	(39a) E 1	(39b) E 2	(39c) E 3	(39) W 19			(40) E 8			(41a) W 26	(41b)	(41c) W 27					
08/09 09/10 10/11		08/09 09/10 10/11			08/09 09/10 10/11		10/11 10/11		10/11 10/11		10/11	09/10 10/11		08/09 09/10 10/11			10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	08/09 09/10 10/11			08/09 09/10 10/11			10/11 10/11	10/11	08/09 09/10 10/11					
Sydney Water				51	56	57						0.2	0.2	475,692	464,237	509,435	24,167		100	26	29						75	4	21	279	269	306	100	100	100	33,683	47,521	5	7	10			
Hunter Water				88	58	60						0.1	0.1	64,815	55,481	67,869	3,898		100	7						0	54	46	307	260	314	88	104	95	5,348	4,674	8	10	7				
<b>LWUs with &gt; 10,000 Properties</b>																																											
1 Gosford	47	68		44	40	42	28	37	39	0.5	0.0	945	0.7	103	3.2	2.7	13,212	12,835	14,800	984	100	100	2	2	6	77	10	7	0.7	98.1	1	193	187	216	100	100	100	37	37	2	3	0	
2 Wyong				54	48	57	28	31	30	0.1	-	0	0.0	131	0.5	0.6	15,141	13,980	15,937	-	100	100	6	6	75	25	-	94	6	6	258	236	268	100	100	100	997	693	9	7	6		
3 Shoalhaven				47	15	12	13	39	34	0.2	0.4	21	0.0	16	2.6	0.5	6,507	6,943	7,792	110	100	93	11	12	79	19	1	1	38	62	62	165	171	192	100	100	100	863	764	29	35	11	
5 MidCoast	100	65	74	1	7	6	1	5	3	0.1	-	772	1.2	81	0.7	0.9	7,510	6,434	6,750	124	100	99	11	12	11	71	16	2	12	88	88	231	196	204	100	100	100	546		2	11	8	
6 Tweed	241	159	219	9	9	11	6	3	5	0.4	0.0	3	0.0	203	0.1	0.1	8,957	8,821	9,163	1,321	100	100	5	7	16	59	10	14	1.0	1	99	99	302	300	302	61	100	100	436	386	8	9	5
7 Port Macquarie-Haslings	283	197	205	26	20	26	4	16	17	0.2	0.1	607	1.2	62	0.5	0.6	9,082	7,857	8,443	-	100	78	2	5	16	77	7	-	0	100	100	334	298	316	100	100	100	292	92	3	5	3	
9 Wagga Wagga		28	60	317	96	78	35	30	29	0.8	0.1	0	0.0	87	0.0	0.2	5,374	5,174	6,357	738	100	98	4	5	6	83	12	3	97	97	228	206	252	100	96	96	514	82	11	9	8		
10 Coffs Harbour				103	37	51	27	4	3	-	0.2	89	0.1	77	1.4	0.8	6,794	6,436	8,064		100	100	3	4	100				100	302	284	352	100	100	100	2,307	328	23	16	29			
11 Albury				204	185	74	1	3	9	0.1	1.1	263	0.5	148	0.0	0.2	3,787	4,530	5,274	172	100	83	3	4	96	1	3	0	100	100	184	216	249			5,222		96	100	99			
13 Tamworth Regional				80	72	89	14	11	17	0.1	0.6	0	0.0	229	0.0	0.0	4,741	4,834	5,211	1,129	100	99	4	5	55	24	22	100			258	260	278	99	100	100	5,250		35	38	100		
15 Eurobodalla	9	49	58	39	21	47	7	34	8	0.0	0.0	649	1.2	46	19.1	3.6	2,875	3,627	3,743	81	100	100	5	5	8	67	22	2	1	6	94	94	163	205	210			29	160	141	8	10	4
17 Queanbeyan	113	99	119	48	14	75	6	2	1	2.1	0.0	191	0.3	171	0.0	0.6	3,991	3,661	4,015	281	100	100	1	1	10	74	9	7		100	100	249	228	248	100	100				1	1	7	
19 Orange	73	205	575	159	85	32	66	82	56	0.0	0.1	70	0.2	8	9.9	1.7	4,008	3,421	5,970	148	100	60	1	2	39	50	9	2	1	99	99	265	219	378	100		1,714	1,674	87	90	29		
18 Dubbo	31	86	112	97	38	38	4	2	4	0.0	0.0	47	0.1	97	0.0	0.5	2,715	2,906	3,064	154	98	44	1	2	14	57	24	5		100	100	182	188	197	100	100	68	1,496		97	78	50	
16 Wingecarribee	66	100	203	68	50	36	23	55	37	0.1	0.3	455	0.9	133	3.5	3.3	3,118	3,144	4,069	152	99	92	4	5	26	58	11	4	1		100	100	218	217	281			42	42	2	2	1	
14 Clarence Valley	95	89	93	41	40	41	21	20	18	0.2	0.1	868	1.3	172	0.0	0.0	3,262	3,024	3,521	69	100	78	2	5	10	80	8	2	1	99	99	228	210	242			37	25	25	4	5	1	
21 Bathurst Regional	19	19	19	83	93	32	29	6	24	-	-	343	0.9	201	0.0	0.3	2,949	4,062	4,108	532	87	100	1	1	2	55	30	13		100	100	203	274	273	96	95	100	3,911		100	100	100	
24 Ballina				24	16	28	5	2	2	0.0	0.0	0	0.0	180	1.9	0.6	4,579	4,006	4,955	-	100	84	3	4	100				100	360	306	366	100	100	100	123	123	3	19	2			
22 Lismore		598	59	82	104	120	1	4	2	1.0	0.0	1,074	1.1	320	4.0	2.0	4,189	5,383	4,720	-	99	100	3	3	4	96	-		5	95	95	341	434	375						0	1	7	
23 Bega Valley				25	30	18	23	30	18	1.7	0.3	376	0.7	164	0.0	0.3	1,764	2,010	2,030	-	100	93	8	10	64	35	-	1	59	41	41	149	169	168			448	391	46	41	22		
27 Byron	316	293	375	59	27	26	14	7	7	0.0	0.2	0	0.0	111	5.4	5.4	3,302	3,286	3,357	146	96	99	3	4	27	44	25	4		100	100	335	324	325	100	100	100	489	241	13	15	15	
26 Essential Energy				314	137	129	11	6	10	0.0	0.0	548		465	0.0	1.2	1,240	1,357	1,692		100	100	2	2	60	40			100	128	140	174			320	320	41	46	19				
20 Goulburn Mulwaree	32			161	143	28	8	0	1	2.2	0.0	480	1.0	318	0.0	1.5	1,660	1,576	1,517	-	100	83	1	2	100				100	164	165	149	100		1,635	153	100	80	100				
25 Kempsey	572	376	522	11	3	2	60	26	31	0.3	0.0	259	0.3	152	0.4	0.7	2,986	2,398	2,887	83	100	88	4	7	49	37	12	3	23	77	77	333	266	323			49	70			1	2	2
Medians (% of LWUs basis) for >10,000 Properties		112		39 37			9 13		0 0		261 0		141																		218 260			Total Vol 26,827			13 8						
<b>LWUs with 3,001 - 10,000 Properties</b>																																											
29 Armidale Dumaresq	193	373	287	251	142	116	45	66	54	2.1	0.3	151	0.5	508	0.9	0.0	1,819	2,134	2,195	104	100	100	1	1	30	54	11	5		100	100	229	261	267	-	100	100	390		33	40	18	
31 Lithgow			199	5	-	185	22	-	63	0.5	0.4	0	0.0	267	-	18.4	2,187	2,187	2,623	35	100	64	0	3	12	86		1	1		100	100	302	295	353	-					0	0	0
30A Hawkesbury				86	40	30	12	25	17	0.0	0.0	103	0.1	151	24.7	17.1	2,398	2,398	2,398		59	85	1	2						100	100	320	319	318			193		13	7	14		
30 Griffith				92	70	57	0	1	24	0.4	0.5	145	0.2	44	0.0	0.0	2,064	2,139	2,553	220	100	27	1	3	80	11	9	6	94	94	306	283	328			224		11	9	9			
33 Richmond Valley				32	9	15	6	14	7	0.1	0.7	411	0.6	31	1.1	0.0	2,141	1,842	2,253		100	100	4	4	100				100	332	284	343			136		13	19	6				
32 Mid-Western Regional		143	150	119	108	87	60	-	39	0.1	0.1	414	1.1	219	0.0	0.0	1,251	1,437	1,652		100	41	3	4	19	56	25																



Table 15: Sewerage – asset management and resource management (continued)

WATER UTILITY	ASSET MANAGEMENT											RESOURCE MANAGEMENT																																									
	Infiltration		Breaks & Chokes			Overflows see also Col (31a)		Rehabilitations		Renewals		Mains Maintenance Cost	Overflows Reported to Regulator	Total Vol of Sewage Collected			Volume of Trade Waste	% Sewage Treated	% Sge Treated that was compliant	STWS compliant at all times	Percentage of Total Sewage Collected					Level of Treatment (%)			Vol of Sewage Collected per Property	Biosolids Reused	Effluent Recycled																						
	(ML per 100km of Main)		(No. per 100 km of Main)			(No. per 100 km of Main)		(% of Total Length) (Service Connections %)		(\$'000 per 100 km of Main) (% of CRC)		(\$'000 per 100 km of Main)	(No. per 100km of main)	(ML)			(ML)	(%)			Infiltration/Inflow	Res	Non-Res	Trade Waste	Other	Primary Level	Secondary Level	Tertiary Level	(kL/property)	(%)	Total Volume Recycled (ML) (41a)	Volume Recycled for Urban Water (ML) (41b)	% of Total Effluent that is Recycled (41c)																				
	(23)	(24) A14	(25)	(27)	(28)	(29)	(30)	(31)	(31a) E13	(32) W18	(32a) W17	(33)	(33a) E 4	(33b) E 5	(34)	(35)	(36)	(37)	(38)	(39a) E 1	(39b) E 2	(39c) E 3	(39) W 19	(40) E 8	(41a) W 26	(41b)	(41c) W 27																										
08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	10/11	10/11	10/11	08/09	09/10	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	10/11	10/11	08/09	09/10	10/11																
<b>LWUs with 200 - 1,500 Properties</b>																																																					
84	Gilgandra	111	111	139	197	156	172	8	17	11	-	-	292	0.7	92	5.6	5.6	285	285	310	30	89	-	0	of 1	16	58	16	10			100	210	208	227		275	100	100	100													
73	Upper Lachlan	95	95	259	107	83	29	0	0	2	1.8	0.3	145	0.4	43	0.0	1.8	240	240	440		100	100	2	of 2	33	61	6			100	169	169	288			0	0	0														
87	Bourke				189	135	74	0	0	0	0.0	1.2	68	0.2	165	0.0	0.0	189	195	195		100	30	0	of 1	100					100	177	156	155			0	0	0														
86	Hay	54	54	54	149	81	-	0	0	-	0.0	0.6	0	0.0		0.0	-	287	287	287	5	97	100	1	of 1	7	88	3	2			100	225	225	225			0	0	0													
83	Oberon	53	39	39	29	29	26	0	21	5	0.3	0.7	0	0.0	124	0.0	0.0	254	235	192	-	100	100	1	of 1	8	87	5	-			187	172	140	-	-	192	0	100	100													
81	Gwydir	76	85	51	141	124	115	51	49	44	0.0	0.0	20	0.1	59	0.0	2.4	242	319	261		100	100	2	of 2	8	79	13			100	211	278	227	14	12	11	34	34	16	17	13											
85	Uralla	40	43	323	27	7	10	7	0	0	0.3	0.4	0	0.0	103	0.0	0.0	137	140	225	1	100	100	1	of 1	44	52	3	1			100	135	129	209			0	0	0													
95	Weddin	3	74	81	97	239	90	0	3	3	2.0	0.1	129	0.4		3.2	3.2	153	169	172		100	100	1	of 1	15	80	6		0	100	149	165	191			12	12	25	21	7												
89	Bogan	100	-	-	20	10	10	0	0	0	0.0	0.0	0	0.0	230	0.0	0.0	622	622	622		100	100	1	of 1			1	99		11	594	606	606			0	0	0														
76	Harden	-	211	195	79	34	24	0	3	2	0.0	0.2	0	0.0	127	2.6	2.4	352	510	570		99	56	0	of 1	16	84				100	377	544	552	100	80	90	275	275	70	69	54											
88	Wakool				0	-	0	0	-	0	2.1	-	151	0.2	43	-	0.0	331	331	341		100	100	4	of 4	91	9			43	6	51	311	308	317	-	6		0	0	0												
93	Tumbarumba				43	21	15	2	2	2	0.4	0.6	119	0.4		2.1	2.1	293	293	425	21	100	100	2	of 2	95	5			100	301	300	432	-	-		0	0	0														
94	Gundagai	3	3	3	22	14	11	3	3	3	0.0	0.1	1	0.0	29	0.0	0.0	117	117	117	-	100	100	1	of 1	2	73	26	-			100	130	154	154			117	100	100	100												
92	Carrathool				282	0	-	27	0	0	1.4	2.1	618	1.3	105	0.0	0.0	105	111	111		-	100	3	of 3	-	-	-	-			120	131	131	-			1	1	1													
96	Warren				6	176	-	141	0	0	0.0	0.0	0	0.0	200	0.0	0.0	172	181	205		97	75	1	of 2	100					100	217	223	254			3	1	1														
99	Coolamon	7	5	2	16	7	9	0	2	0	0.0	0.0	0	0.0	61	0.0	0.0	98	98	99		100	100	2	of 2	1	95	4		30	70	99	99	98			37	17	90	100	37												
102	Lockhart	-			0		2	0	0	0	0.0	0.0	0	0.0	52		0.0	158	180	180		97	100	3	of 3	100				43	57	192	218	218			4	4	1	15	2												
98	Walcha	50	50	250	23	27	43	17	10	33	0.2	0.1	83	0.3		0.0	33.3	166	178	232		100	100	1	of 1	32	50	18			100	207	206	289			0	0	0														
100	Bairnald	8	11	11	21	11	8	0	0	0	0.0	0.0	0	0.0	34	0.0	0.0	196	203	207		98	100	2	of 2	2	98				100	248	240	235			147	73	73	73													
97	Bombala				3	3	123	74	94	34	74	3	0.0	0.0	240	0.6	0.4	34	0.0	2.9	173	173	173		100	44	1	2	1	96		100	228	228	224			36	100	21	21												
101	Murrumbidgee	-	-	-	-	-	0	-	-	0	0.0	0.0	0	0.0	83	-	0.0	86	86	125		100	100	1	of 2	100				50	50	115	115	168	-	-	22	17	17	17													
90	Guyra	27	14	61	21	9	12	7	2	4	0.2	0.1	47	0.2		1.8	1.8	168	108	305		100	100	2	of 2	11	79	10		11	89	175	108	305	100	100	1		0	0	0												
104	Boorowa	6	7	7	39	0	7	3	0	7	0.0	0.3	0	0.0	103	0.0	6.7	88	88	91	-	98	70	0	of 1	2	98	-	-		100	147	158	150			1	1	4.7	2	1												
105	Brewarrina				69	69	156	138	88	0	0	0	0.0	0.0	119	0.0	0.0	210	190	190	-	100	100	2	of 3	6	94	-			436	384	384			190	81	100	100														
106	Jerilderie	83	83	83	0	0	0	0	0	0	0.0	0.0	0	0.0	67	0.0	0.0	77	68	102		90	50	0	of 1	10	90			100	181	160	238			10	10	26	15	11													
103	Central Darling				123	-	100	54	-	9	0.0	0.9	0	0.0	265	-	0.0	100	100	100		100	100	1	of 1	100				100	515	488	461	-			0	0	0														
107	Urana				0	0	0	0	0	0	0.0	-	0	0.0	60	0.0	0.0	90	90	90		100	100	2	of 2	100				100	285	284	284			0	0	0															
Medians (% of LWUs basis) for 200 to 1,500 Properties		58		15			1		1		0		0		0		0		87																	208			227			Total Vol			1,353			8			1		
Median All LWUs (% of LWUs basis)		Breaks & Chokes			41			Overflows			3			Renewals 0.1% of CRC			Median % sge treated that was compliant was 100%														Median % of Effluent Recycled			8																			
Median All LWUs (Statewide basis)		41			14			Renewals 0.2 % of CRC																	8																												
Totals for all LWUs											Total volume of sewage collected = 186,000 ML											No. of LWUs Reporting Biosolids Reuse 25 (ie. 25% of LWUs)					Total volume of effluent recycled = 37,000 ML																										
											No. of LWUs Reporting Recycling for Urban use 41 (ie. 41% of LWUs)					Effluent Recycled % of total volume collected = 20%																																					
											No. of LWUs Reporting Effluent Recycling 80 (ie. 81% of LWUs)																																										

NOTE: 1. For those councils that did not report the current year's volume of sewage collected (column (32)), either the previous year's value or the current year's volume of sewage treated has been adopted, whichever is the larger.

These adopted values are shown in bold italics in columns (32) and (39).

2 The number of LWUs reporting effluent recycling = 80 (ie. 81% of LWUs providing sewerage services)

The number of LWUs reporting effluent recycling for Urban Water Supply (ie. not for irrigation, environmental use or agriculture) = 41 (ie. 41% of LWUs providing sewerage services)

3 For the utilities that did not report the current year's volume of effluent recycled (column (41)), but reported >10% recycled water in the previous year, the percentage recycled is assumed to be the same as that of the previous year.

For such councils, the adopted value is shown in bold italics in column (41). Refer also to section H4.7 on page 289.

Table 16: Sewerage – financial and efficiency

WATER UTILITY	FINANCIAL (SEE ALSO COST RECOVERY TABLE 7)																		EFFICIENCY (SEE ALSO COST RECOVERY TABLE 7)														
	Total Revenue - Sewerage (excl. Capital Works Grants) (\$'000)		Revenue per property (\$)	Residential Revenue Vs Vol Collected		Current Replacement Cost (CRC) of System Assets			Net Debt to Equity			Return on Assets			ERRR			Cross Subsidies		Operating Result		Externalities (Annual Fees to EPA)	Loan Payment			Operating Cost (OMA)				Management Cost			
	(42) F2	(42a) F6	(43)	(44)	Written Down Cost (\$M)	Current Replacement Cost (\$M)	Current Replacement Cost per Assessment (\$)	%			(48a)			see also Table 7 Col (11)			Annual Fees & Charges (\$/assessment) (49a)	Developer Charge (\$/assessment) (49b)	(\$/property)	(\$/property)	(\$/property)	(52) F12				(54)							
	09/10	10/11		10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	10/11	10/11	09/10	10/11	10/11	08/09	09/10	10/11	07/08	08/09	09/10	10/11	07/08	08/09	09/10	10/11	
Sydney Water	1,070,000	1,096,440	628			22,898		103	120	123				0.9	1.7	1.6								261	240	245	256						
Hunter Water	125,584	129,274	602			3,001		32	39	40				2.0	1.8	1.8							259	271	305	323							
<b>LWUs with &gt; 10,000 Properties</b>																																	
1	Gosford	36,700	38,300	558	81	82	1,355	1,740	26,498	-5	-5	-1	1.4	2.1	0.9	1.1	2.1	0.9		126	177	0.7	6	6	13	261	282	313	272	105	133	128	98
2	Wyong	29,000	28,700	482	86	75	400	591	9,679	-1	-1	-2	-1.6	-1.0	-1.3	-1.6	-1.0	-1.6		-67	-85	0.9	111	25	50	300	319	327	350	84	112	127	71
3	Shoalhaven	32,700	35,300	868	86	79	415	589	12,838	8	8	9	0.8	1.1	1.5	1.3	1.6	2.1		120	152	1.0	135	162	161	397	424	427	442	143	153	150	157
5	MidCoast	31,600	33,000	1,000	88	80	436	649	18,888	26	27	26	-1.8	-1.1	-0.1	-0.2	0.3	1.4		-149	-22	1.7	330	345	351	404	415	416	498	70	80	83	103
6	Tweed	26,300	23,000	759	84	70	466	611	18,353	-3	-4	-4	-0.2	0.7	0.8	-0.2	-0.3	0.3		88	57	1.6	43	63	134	372	413	451	447	132	141	163	164
7	Port Macquarie-Hastings	19,600	21,200	793		90	233	343	12,196	3	5	3	-0.7	1.8	4.0	2.1	1.4	2.2	0	86	188	0.7	60	80	95	376	349	367	356	107	108	98	96
9	Wagga Wagga	14,500	14,600	578	68	88	224	310	12,770	4	-3	4	0.9	1.9	0.0	1.0	1.3	0.6		17	-4	0.7	18	18	129	253	270	251	291	50	54	44	53
10	Coffs Harbour	24,600	23,800	1,038	78	90	313	401	16,254	25	23	19	-0.7	1.6	0.6	2.1	2.6	2.0	21568	201	77	0.6	685	690	684	415	429	485	491	126	130	164	167
11	Albury City	14,900	14,100	667	74	90	158	288	13,492	11	9	7	1.2	1.7	0.6	2.1	2.1	1.1		129	42	0.9	104	115	111	319	254	386	414	133	31	142	142
13	Tamworth Regional	21,200	20,500	1,094	76	55	194	296	15,807	-10	8	14	8.8	7.4	5.5	7.8	6.5	5.2		743	627	0.7	158	56	162	269	277	333	339	91	105	95	101
15	Eurobodalla	14,900	15,900	893	90	73	179	287	15,179	2	1	3	1.3	3.1	1.4	1.6	1.8	1.5		286	128	1.0	151	215	167	441	403	445	497	106	157	165	162
17	Queanbeyan	6,200	6,600	408	87	82	117	221	14,107	-20	-21	-22	-0.5	-0.6	-0.6	-1.0	-2.3	-2.2		-62	-147	0.0	0	0	0	274	249	366	380	138	104	107	123
19	Orange	7,300	7,800	493	77	82	108	184	11,606	0	-16	-18	6.8	0.3	-0.1	5.8	-0.4	-1.4		-49	-7	0.5	0	0	0	318	296	300	384	136	123	136	206
18	Dubbo	10,200	10,500	674	72	66	159	194	13,798	-5	-6	-6	1.2	2.2	1.6	1.4	1.7	1.3		216	148	0.5	20	19	19	335	370	346	379	137	151	157	159
16	Wingecarribee	10,800	11,300	779	87	78	208	276	18,074	4	8	6	0.7	0.5	0.6	1.0	0.9	1.2		-20	4	1.5	130	163	233	324	323	367	359	140	142	143	140
14	Clarence Valley	11,700	12,100	832	83	89	201	246	15,902	4	14	12	-0.1	0.6	0.2	1.2	1.7	1.4		63	-144	1.7	370	366	364	356	357	360	413	141	124	149	152
21	Bathurst Regional	7,900	8,000	532	65	56	74	144	10,369	-15	-17	-18	2.7	1.5	0.7	2.2	1.1	0.1		63	33	0.5	13	1	3	317	342	348	391	136	134	154	99
24	Ballina	10,600	15,200	1,124	80	90	110	214	14,702	-11	-9	-6	-1.2	3.4	3.9	-2.3	-0.3	3.6		250	308	1.5	2	2	126	456	537	573	555	137	179	194	203
22	Lismore	8,500	9,800	778	77	90	182	340	28,360	-5	-6	-6	-1.8	0.5	-0.5	-1.3	-1.3	-1.0		55	-347	1.2	15	21	65	386	366	392	434	107	110	101	103
23	Bega Valley	13,700	13,800	1,144	84	64	118	196	15,945	19	15	15	0.4	0.8	0.5	1.5	1.9	1.4		80	46	1.4	197	196	193	574	596	660	698	208	213	228	284
27	Byron	12,100	13,000	1,257	75	60	186	266	24,702	16	33	35	0.4	0.0	-0.5	1.4	1.5	1.8		-138	-231	2.4	242	417	547	529	571	584	547	148	163	158	152
26	Essential Energy	4,900	5,400	555	80	60				0										150	88	1.0	0	0	0	268	337	253	363	87	83	69	63
20	Goulburn Mulwaree	8,300	9,100	892	73	90	78	126	12,718	12	8	2	1.8	3.3	4.0	3.6	3.6	4.0		325	326	0.7	190	199	201	350	352	382	365	107	110	112	105
25	Kempsey	6,800	7,400	827	76	73	121	207	24,019	4	7	7	0.0	-0.2	-0.7	0.4	0.6	0.0		-65	-140	2.6	120	203	205	365	381	433	545	127	128	143	172
<i>Medians (% of LWUs basis) for &gt;10,000 Properties</i>								15,179	5	3	1	1	1	1	83	44	71	131	375	402	142	141											
<b>LWUs with 3,001 - 10,000 Properties</b>																																	
29	Armidale Dumaresq	5,100	5,000	609	67	77	66	70	8,352	0	-6	-8	1.3	4.0	2.4	1.3	3.7	2.0		297	208	0.9	0	0	0	369	357	290	383	171	186	135	71
31	Lithgow	4,000	4,700	632	85	90	46	87	11,497	-2	-26	42	-1.4	5.1	-1.9	-1.6	-0.7	-2.1		192	-116	1.7	7	38	37	390	379	419	588	35	42	72	202
30A	Hawkesbury	16,400	10,400	1,380	73	0	85	149	19,349	0	-4	-3	0.1	14.4	5.5	0.0	14.1	5.0		1477	620	1.9	1	0	0	415	429	435	480				
30	Griffith	6,200	6,900	886	77	80	121	147	16,027	0	-2	10	0.1	1.7	1.8	0.3	1.3	1.7		226	282	1.3	63	82	75	442	464	446	441	141	145	151	142
33	Richmond Valley	6,900	6,600	1,006	87	90	71	125	18,097	6	-14	5	1.1	3.1	2.0	2.2	3.5	2.8		286	-164	2.8	197	117	226	417	482	455	453	187	198	223	236
32	Mid-Western Regional	3,100	3,400	510	87	69	35	79	11,915	-17	-20	-12	0.1	-0.1	0.6	-1.0	-1.2	-0.4	29322	-17	20	2.2	17	16	16	315	337	341	336	105	133	126	126
34	Nambucca	4,300	3,700	656	62	90	78	106	17,774	-7	-24	5	0.5	7.0	0.8	0.9	2.0	0.8		863	102	1.3	77	137	429	312	352	391	388	97	115	125	145
35	Singleton	2,900	3,200	591	78	90	28	57	10,138	0	-1	-29	2.3	2.2	4.7	0.5	0.8	2.3		95	231	1.3	0	0	0	247	275	316	302	80	85	106	99
37	Inverell	1,700	1,900	409		88	35	50	10,443	0	-3	-7	-1.0	0.9	1.1	0.7	0.2	0.7	1	23	40	1.0	0	0	0	316	250	269	260	90	97	112	106
41	Muswellbrook	3,800	5,100	986	88	90	44	71	13,171	-15	-10	-18	1.9	2.5	6.5	1.4	1.7	5.3		116	537	1.1	23	23	23	313	394	448	361	99	135	146	145

Table 16: Sewerage – financial and efficiency (continued)

WATER UTILITY	FINANCIAL (SEE ALSO COST RECOVERY TABLE 7)																		EFFICIENCY (SEE ALSO COST RECOVERY TABLE 7)														
	Total Revenue - Sewerage (excl. Capital Works Grants) (\$'000)		Revenue per property (\$)	Residential Revenue Vs Vol Collected		Current Replacement Cost (CRC) of System Assets			Net Debt to Equity (%)			Return on Assets			ERRR			Cross Subsidies		Operating Result (\$/property)		Externalities (Annual Fees to EPA) (\$/property)	Loan Payment (\$/property)			Operating Cost (OMA) (\$/property)				Management Cost (\$/property)			
	(42) F 2		(42a) F 6	Res Revenue (% of rates and charges) (43)	Res Vol collect (% total exfiltration) (44)	Written Down Cost (\$'M) (45) F10	Current Replacement Cost (\$'M) (46)	Current Replacement Cost per Assessment (\$) (47)	(48) F 22			(48a)			(48b) F 18			Annual Fees & Charges (\$/assessment) (49a)	Developer Charge (\$/assessment) (49b)	(50)		(51)	(51a)			(52) F12				(54)			
	09/10	10/11		10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	10/11	10/11	09/10	10/11	08/09	09/10	10/11	07/08	08/09	09/10	10/11	07/08	08/09	09/10	10/11	
36 Parkes	2,500	2,600	496	75	67	25	45	8,073	0	-16	-22	-0.2	6.0	6.5	0.4	4.3	4.3		93	173	1.4	0	10	24	168	210	208	200	32	34	36	39	
42 Corowa	3,300	3,400	693	85	90	31	45	8,715	4	-9	1	0.5	2.8	1.5	1.4	2.7	1.6		127	49	1.1	55	45	45	335	367	375	409	160	155	171	164	
38 Moree Plains	3,100	3,000	803	75	90	26	49	12,685	13	-1	13	1.8	2.4	2.6	2.3	2.2	2.5		75	199	1.9	98	98	98	432	423	449	389	90	93	56	100	
44 Gunnedah	1,300	1,500	378	78	82	22	55	14,247	0	-1	-18	-0.2	0.9	1.5	-0.3	-0.8	0.3		43	84	0.7	0	0	0	133	181	177	181	37	66	76	60	
46 Narrabri	1,800	2,300	617	90	90	18	47	12,228	-3	-7	-9	-1.0	2.2	3.7	-0.6	1.4	3.0		95	180	0.7	48	64	26	239	272	320	356	56	48	26	31	
43 Tumut	2,800	2,900	698	76	90	24	44	9,966	0	-4	-9	1.1	1.4	1.5	0.9	1.0	0.9		68	102		0	0	0	407	364	381	419	99	69	75	39	
49 Young	1,600	2,100	567	66	90	8	29	8,229	-30	-15	-38	5.8	6.9	13.6	5.4	6.6	14.5		71	312	0.7	11	11	11	112	146	145	138	20	59	67	63	
39 Cowra	2,700	3,200	903	81	90	33	49	13,112	-11	-16	15	4.0	4.3	0.9	4.2	4.7	3.1		296	93	0.8	40	52	251	298	393	361	427	161	221	241	100	
45 Upper Hunter	1,900	2,000	482	83	90	28	56	12,380	0	-17	-17	-1.2	-1.7	0.1	-2.6	-2.7	-1.3		-113	3	1.5	0	0	0	422	416	412	353	173	163	151	139	
52 Snowy River	3,000	2,700	749	79	-	25	43	16,979	0	-9	-8	1.8	3.3	-0.6	0.9	2.7	-1.1		215	-40	1.8	0	0	0	460	377	455	610	153	139	126	132	
51 Forbes	2,100	1,900	602	86	84	27	40	12,717	1	-11	-6	1.4	0.1	1.2	1.6	0.3	1.1		10	106	2.3	338	116	112	297	310	342	346	37	33	57	24	
50 Cooma-Monaro	2,500	3,000	688	84	2	27	44	9,540	-3	-3	-7	0.4	-0.7	0.8	0.3	-0.7	0.6		-63	43	0.8	45	42	33	470	474	502	418	152	163	168	180	
53 Berrigan	1,300	1,300	392	82	90	16	40	11,769	0	-15	-17	-1.9	-1.8	-0.8	-3.1	-3.0	-2.3		-123	-81	0.0	0	0	0	215	368	307	277	85	90	92	94	
48 Leeton	2,200	2,000	626	61	85	20	48	14,152	-25	-19	-25	1.4	1.6	2.6	0.7	0.7	0.8		69	128	1.7	115	6	24	358	420	439	378	156	113	120	119	
54 Deniliquin	1,900	1,900	600	90		14	43	13,096	-16	-3	-6	2.0	3.8	1.5	0.8	-0.2	0.7		83	11	0.9	21	21	0	385	391	477	414	171	196	259	198	
<i>Medians (% of LWUs basis) for 3,000 to 10,000 Properties</i>									12,304			-10 -8			2 1			1 1			88 97		18 23			378 381				122 113			
<i>LWUs with 1,501 - 3,000 Properties</i>																																	
47 Bellingen	1,700	1,800	604		90	29	52	16,561	-22	-21	-17	0.3	-0.6	-0.8	-1.7	-1.8	-1.8		-79	-112	2.1	1	1	0	402	451	506	546	181	184	175	174	
60 Glen Innes Severn	1,100	1,200	428		88	20	30	9,645	3	-11	-1	-0.1	1.1	-0.1	1.2	0.6	-0.2		71	-15	1.0	91	87	87	246	229	238	314	115	125	116	163	
58 Cootamundra	978	998	358	76	86	17	30	10,535	-3	-5	-6	0.3	-0.1	0.2	0.4	0.1	0.2		-56	5	1.0	38	47	24	185	201	227	223	51	58	60	62	
57 Wellington	1,600	1,700	637	78	90	21	33	12,110	17	-4	11	-1.1	0.3	0.6	0.0	1.2	1.3		2	35	1.0	168	149	150	312	421	332	361	159	154	157	158	
91 Cabonne	1,500	1,400	590	83	90	28	41	16,006	-7	-5	-4	1.2	-0.1	-0.4	0.9	-0.3	-0.6		-81	-99	2.3	64	54	45	214	240	360	236	48	69	184	41	
80 Greater Hume	861	894	348	80	86	21	33	12,388	-8	-8	-7	-0.6	-0.9	-1.3	-1.2	-1.4	-1.8		-73	-108	2.1	24	25	23	282	282	303	338	79	81	101	131	
59 Lachlan	748	894	414	79	78	12	29	13,784	0	-21	-29	-0.4	-1.4	-0.2	-1.0	-3.1	-2.4		-83	-9	1.3	0	0	0	224	284	287	314	54	78	83	90	
65 Murray	1,400	1,400	519	88	66	20	29	10,046	-4	-7	-8	1.7	1.9	1.6	1.7	1.7	1.2		136	113	1.0	36	40	39	294	241	269	286	145	96	108	116	
62 Narromine	1,100	1,100	562	76	90	6	19	9,020	0	-38	-42	1.0	4.8	3.9	0.8	3.6	2.2		152	119	1.4	0	0	0	308	280	297	301	139	149	197	169	
56 Yass Valley	1,500	1,500	664		77	16	27	11,027	0	-9	-4	2.7	1.8	0.9	2.6	1.4	0.5		104	-266	1.2	0	0	0	340	371	407	405	150	156	230	169	
61 Liverpool Plains	733	783	379		71	10	28	13,234	0	-17	-21	0.0	-0.2	0.8	-0.1	-0.9	-0.2		-11	42	2.7	0	0	0	230	205	249	184	86	76	143	69	
55 Warrumbungle	1,300	1,300	527	78	69	16	30	12,183	-19	-21	-14	0.4	2.1	1.9	0.6	1.6	1.1		131	126	2.8	11	11	1	301	285	294	331	70	73	55	60	
69 Temora	562	573	271	80	90	9	15	7,212	0	-9	-11	1.5	0.2	2.4	1.0	-0.3	1.7		9	103	1.3	0	0	0	159	155	219	145	33	32	48	20	
71 Palerang	2,200	2,300	1,212		90	24	35	17,687	-17	-30	-10	6.6	4.0	3.5	6.0	3.6	3.1		469	430	3.4	110	143	211	395	386	396	456	175	162	145	148	
72 Bland	946	980	535		90	10	21	11,049	0	-19	-19	0.1	2.0	0.7	0.5	1.0	0.3		136	47	1.5	22	0	0	324	312	292	337	141	64	49	46	
63 Narrandera	945	964	537		-	6	11	5,785	0	-30	-33	0.8	2.1	3.3	0.9	0.0	0.5		53	102	1.5	8	0	0	406	355	373	351	169	134	136	132	
67 Cobar	508	522	301		90	9	16	8,914	0	-1	-1	1.2	0.4	-0.4	1.1	0.3	-0.4		24	-23	1.6	0	0	0	165	137	129	172	55	20	20	20	
74 Wentworth	1,200	1,200	675		16	25	30	16,252	3	-1	2	-0.9	0.5	0.4	-0.5	0.7	0.6		47	42	2.8	120	112	110	260	276	251	291	54	57	56	59	
75 Coonamble	488	508	362		84	4	19	13,760	-28	-33	-36	-2.5	-3.9	-3.3	-7.5	-8.1	-7.4		-119	-94	2.6	7	7	7	296	275	300	290	85	44	53	44	
70 Kyogle	1,000	1,100	649	79	70	17	29	16,086	3	-6	-1	0.9	0.2	0.0	1.1	0.6	0.3		8	-117	2.7	54	50	59	319	332	375	404	88	103	105	119	
77 Junee	628	631	395	87	82	12	21	12,495	0	-8	-9	0.7	0.0	-0.3	0.1	-0.4	-0.9		1	-25	1.7	0	0	0	221	238	275	290	57	53	57	61	
78 Blayney	1,100	1,100	567		88	15	23	12,347	-11	-16	-13	-0.4	0.2	1.2	-0.2	0.4	0.3		16	95	1.4	64	61	59	341	335	335	335	150	153	151	144	
79 Walgett	640	713	437		-	10	16	8,559	-15	-16	-17	0.5	0.6	0.3	0.5	0.5	0.2		36	-22	1.7	5	5	5	194	221	280	312	73	32	77	161	
68 Tenterfield	1,500	1,400	807	81	-	22	31	16,899	10	2	13	-2.4	0.1	-1.3	-1.2	0.2	-0.4		5	-246	2.1	139	110										

Table 16: Sewerage – financial and efficiency (continued)

WATER UTILITY	FINANCIAL (SEE ALSO COST RECOVERY TABLE 7)																			EFFICIENCY (SEE ALSO COST RECOVERY TABLE 7)																							
	Total Revenue - Sewerage (excl. Capital Works Grants) (\$'000)		Revenue per property (\$)	Residential Revenue Vs Vol Collected		Current Replacement Cost (CRC) of System Assets			Net Debt to Equity			Return on Assets			ERRR			Cross Subsidies		Operating Result		Externalities (Annual Fees to EPA)	Loan Payment			Operating Cost (OMA)				Management Cost													
				Res Revenue (% of rates and charges)	Res Vol collect (% total excl infiltration)	Written Down Cost (\$M)	Current Replacement Cost (\$M)	Current Replacement Cost per Assessment (\$)	%						see also Table 7 Col (11)			Annual Fees & Charges (\$/assessment)	Developer Charge (\$/assessment)	(\$/property)		(\$/property)	(\$/property)			(\$/property)																	
	(42) F 2		(42a) F6	(43)	(44)	(45) F10	(46)	(47)	(48) F 22			(48a)			(48b) F 18			(49a)	(49b)	(50)		(51)	(51a)			(52) F12				(54)													
	09/10	10/11		10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	10/11	10/11	09/10	10/11	10/11	08/09	09/10	10/11	07/08	08/09	09/10	10/11	07/08	08/09	09/10	10/11										
<b>LWUs with 200 - 1,500 Properties</b>																																											
84	Gilgandra	571	568	415	81	69	8	16	11,214	-8	-7	-6	1.3	0.5	0.0	0.7	0.3	-0.2		-16	-66	2.0	0	53	53	180	186	249	242	23	34	44	52										
73	Upper Lachlan	952	1,400	918	86	90	15	22	14,500	1	-16	-8	-0.3	2.4	4.5	1.3	1.9	4.0		2882	199	2.4	159	159	148	319	318	318	351	107	109	104	126										
87	Bourke	665	520	413	83	90	6	11	9,041	-17	-20	-23	0.2	2.9	0.2	-0.4	1.8	-1.2		149	12	2.2	64	54	25	374	477	286	322	67	162	51	44										
86	Hay	773	801	629	85	90	5	19	14,578	-24	-24	-25	2.1	-0.6	1.4	0.9	-1.5	0.3		-21	16	0.4	0	0	0	255	300	466	440	77	94	179	175										
83	Oberon	628	763	555		90	4	6	4,473	0	-4	-12	0.7	1.9	3.0	-0.3	0.6	1.8	1595	69	136	2.0	0	0	0	368	399	383	415	105	112	127	144										
81	Gwydir	704	690	601	83	86	5	14	11,717	-17	-21	-23	2.0	3.4	2.4	0.9	2.3	0.8	13108	99	103	3.2	7	3	2	581	336	315	351	358	100	72	89										
85	Uralla	462	484	450		90	8	8	7,831	-9	-9	-10	1.3	0.2	4.1	1.4	1.8	1.7		-1	301	2.6	2	11	0	400	350	294	314	165	125	101	107										
95	Weddin	233	261	290		90	3	11	11,750	0	-11	-13	-1.6	-0.6	-0.3	-1.9	-1.0	-0.8		-27	-22	3.1	0	0	0	133	185	127	169	25	25	25	29										
89	Bogan	455	477	465	69		7	11	10,376	-14	-14	-15	2.0	0.2	1.6	1.2	-0.4	0.9		14	110	2.7	20	19	19	281	293	316	287	187	178	181	175										
76	Harden	561	573	620	80	90	3	12	12,511	-11	-21	-24	2.3	4.2	-0.9	2.2	3.9	-1.7		125	-27	3.0	137	139	137	320	285	239	421	75	79	96	96										
88	Wakool	597	749	697	77	90	42	28	25,121	-6	-8	-9	-0.9	-1.2	0.0	-1.0	-1.3	-0.2		-183	-28	0.0	55	55	42	257	266	296	302	67	68	69	73										
93	Tumbarumba	466	508	517	79	90	6	14	13,107	0	-26	-27	1.7	3.8	3.1	1.4	1.3	0.9		215	164	3.7	112	0	0	237	217	255	323	75	77	82	80										
94	Gundagai	371	403	532	66	74	6	13	14,988	0	-1	-1	-1.1	-1.4	-0.6	-1.2	-1.5	-0.6		-107	-91	1.2	0	0	0	309	317	403	422	69	77	98	131										
92	Carrathool	156	159	188		-	7	10	11,730							-3.9	-2.7			-291	-210	0.0	0	0	0	147	147	269	207	24	24	27	20										
96	Warren	462	459	570	78	90	3	12	13,632	0	-37	-40	1.1	0.8	1.2	-1.8	-2.0	-2.4		-5	24	3.4	26	0	0	378	414	412	418	93	100	134	182										
99	Coolamon	421	367	363	81	90	8	11	10,090	0	-10	-11	3.0	0.6	-0.1	2.4	0.1	-0.7		18	-51	0.5	0	0	0	189	197	271	298	65	62	67	87										
102	Lockhart	335	384	466		90	6	11	12,986	0	-21	-23	0.2	-0.2	0.4	-0.8	-1.0	-0.7		-11	8	2.1	0	0	0	274	266	281	336	34	63	24	79										
98	Walcha	348	352	439		74	7	9	10,810	-6	-7	-9	1.0	1.8	1.7	1.1	1.4	1.1		149	155	3.4	6	6	6	284	254	211	259	75	60	62	65										
100	Bairnald	233	243	276	86	90	10	14	15,452	0	-10	-11	0.1	0.3	0.3	-0.3	-0.2	-0.3		38	39	0.0	0	0	0	159	152	120	141	44	43	40	41										
97	Bombala	352	372	482	82	2	8	13	16,043	-11	-13	-15	-0.1	0.5	1.8	-0.4	-0.3	0.8		16	149	3.6	16	11	16	173	287	297	202	62	120	41	48										
101	Murrumbidgee	222	217	292		90	2	5	6,911	0	-41	-43	3.0	4.6	4.3	-0.9	1.3	-0.1		106	101	1.2	0	0	0	136	188	137	163	59	54	54	55										
90	Guyra	540	543	544	90	89	15	16	14,892	3	-3	3	0.6	0.9	0.6	1.1	1.1	0.7		99	63	2.8	116	102	142	300	362	350	407	107	108	108	111										
104	Boorowa	341	360	592		90	2	9	14,620	-20	-30	-33	1.4	2.2	-0.6	0.7	0.7	-2.0		29	-18	0.9	37	41	36	170	200	245	332	23	23	106	118										
105	Brewarrina	335	549	1,110	81	90	7	11	19,569	-5	-6	-7	-1.1	-1.1	0.0	-1.2	-1.1	-0.1	103	-204	-42		6	6	8	508	523	548	835	108	139	168	148										
106	Jerilderie	247	247	576	69	90	3	7	14,532	0	-27	-30	3.4	2.4	1.4	1.0	0.2	0.0		151	196	2.1	0	0	0	334	313	363	362	85	80	94	89										
103	Central Darling	96	96	442		90	2	2	9,673	0	-9	-9	-0.5	0.6	-0.4	-0.7	0.4	-0.8		10	-32		0	0	0	392	428	346	415														
107	Urana	158	147	465		90	6	7	21,270	-7	-12	-8	0.0	-0.5	-0.6	-0.2	-0.6	-1.0		-85	-104		216	215	218	280	320	405	439	111	111	114	114										
<i>Medians (% of LWUs basis) for 200 to 1,500 Properties</i>									12,986		-12	-12	0.6	0.4		0.2	-0.2			16	16		3	0		296	332			88	89												
<i>Median All LWUs (% of LWUs basis)</i>		<i>Revenue/prop</i>		\$580		<i>CRC \$/Assessment</i>		\$12800		<i>Net D/E</i>		-8		0.7		<i>ERRR</i>		0.6		<i>Loan Payment per property</i>		\$20		<i>OMA \$ per property</i>		\$360		<i>Mngmnt \$/prop</i>		\$110													
<i>Median All LWUs (Statewide basis)</i>		\$674				\$14,100				-1		0.8		0.9						\$87				\$380				\$103															
<b>Totals for all LWUs</b>		<b>Total Sge Revenue \$514 M</b>				<b>Total CRC \$11,200 M</b>																																					

NOTE: 1. If the reported management cost is <\$20/property or not reported, the previous year's management cost has been adopted and is shown in *italics bold*. In such cases, the OMA cost per property has not been increased to include this adopted management cost.  
 2. If the OMA cost is not reported, the previous year's value has been adopted and is shown in *italics bold*.  
 3. Where the residential volume is reported to be greater than 90%, a maximum value of 90% has been adopted. This is shown in *italics bold*.



Table 17: Sewerage – environmental and levels of service

WATER UTILITY	ENVIRONMENTAL																LEVELS OF SERVICE											
	EPA DISCHARGE LICENCE COMPLIANCE												Sewage Treated that was Compliant (%) (59e) E4	STWs Compliant at all times (59f) E5	Compliance with Environmental Regulator (60) E7	Odour Complaints (per 1000 properties) (61)			Service Complaints (per 1000 properties) (62) C 11			Average Sewerage Interruption (minutes) (65) C 16						
	BOD			SS			N (%) (59a)	P (%) (59b)	Oil & Grease (%) (59c)	Faecal Coli-form (%) (59d)	08/09	09/10				10/11	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11			
	Compliance (%) (55)	90 %-ile Limit (mg/L) (56)	Compliance (%) (57)	90 %-ile Limit (mg/L) (58)																								
Sydney Water													96	97	100	26 of 29	No				0	0.4	0.3	240	238	240		
Hunter Water													91	95	100	7	No				2	2	2	0	0	142		
<b>LWUs with &gt; 10,000 Properties</b>																												
1	Gosford	100	100	100	30	100	100	100	50	100	100	100	100	100	100	2 of 2	Yes	2	2	2	-	2	2	116	161	209		
2	Wyong	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	6 of 6	Yes	1	1	1	12	12	12	156	150	143		
3	Shoalhaven	100	100	100	40	88	83	93	40	100	100	100	100	70	83	93	11 of 12	No	1	0	0	7	7	3	-	96	99	
5	MidCoast	100	100	100	30	100	100	99	30	100	100	100	100	100	99	99	11 of 12	No	1	1	1	2	1	1	-	-	-	
6	Tweed	100	100	100	15	99	97	100	20	100	100	100	100	85	93	100	5 of 7	Yes	0	0	0	4	4	6	180	174	20	
7	Port Macquarie-Hastings	91	90	94	10	99	82	99	15	100	84	100	100	56	58	78	2 of 5	No	0	0	2	6	5	8	60	60	60	
9	Wagga Wagga	100	100	100	10	99	99	98	15	100	100	100	100	95	70	98	4 of 5	No	0	0	0	76	68	51	83	47	47	
10	Coffs Harbour	100	100	100	50	100	100	100	50	100	100	100	100	100	100	100	3 of 4	Yes	0	2	2	27	4	15	120	120	95	
11	Albury City	100	100	100	12	100	100	100	15	100	83	100	100	86	92	83	3 of 4	No	0	0	0	49	44	37	120	118	136	
13	Tamworth Regional	99	99	100	30	100	99	99	25	100	100	100	100	99	99	99	4 of 5	No	0	1	1	25	21	26	-	-	-	
15	Eurobodalla	100	100	100	20	100	100	100	30	92	100	100	100	100	100	100	5 of 5	No	1	1	2	1	1	2	-	-	-	
17	Queanbeyan	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	0	0	0	17	19	22	240	60	240	
19	Orange	100	100	100	20	100	100	100	25	100	100	100	60	45	100	60	1 of 2	No	1	2	1	25	23	41	-	-	180	
18	Dubbo	100	100	100	20	100	100	100	25	100	100	100	44	75	92	44	1 of 2	No	0	1	1	13	10	10	93	89	95	
16	Wingecarribee	100	100	100	10	100	100	100	15	100	92	100	100	100	97	92	4 of 5	No	1	3	3	22	31	35	120	120	120	
14	Clarence Valley	90	98	100	20	87	84	96	30	69	94	94	55	83	70	78	2 of 5	No	1	2	1	10	30	29	120	-	120	
21	Bathurst Regional	100	100	100	20	100	100	100	25	100	100	100	100	100	100	100	1 of 1	Yes	0	0	0	27	30	25	120	120	120	
24	Ballina	100	98	100	20	100	96	100	30	100	100	100	84	93	96	84	3 of 4	No	1	0	0	11	6	9	120	120	120	
22	Lismore	100	100	100	15	100	100	100	20	100	100	100	100	100	100	100	3 of 3	Yes	1	1	1	26	4	25	60	60	60	
23	Bega Valley	100	97	96	10	100	95	96	20	98	97	100	100	97	95	93	8 of 10	No	0	0	0	8	11	6	120	120	120	
27	Byron	97	99	100	NL	100	100	100	NL	100	99	100	100	88	98	99	3 of 4	No	1	2	2	2	2	2	60	60	60	
26	Essential Energy	100	100	100	50	100	100	100	50	100	100	100	100	100	100	100	2 of 2	Yes	1	1	1	1	1	1	60	-	-	
20	Goulburn Mulwaree	83	100	100	20	58	100	83	30	100	100	100	100	58	100	83	1 of 2	No	0	1	0	38	41	32	90	90	90	
25	Kempsey	100	100	100	15	82	76	90	20	94	95	100	90	82	76	88	4 of 7	No	0	1	2	1	1	2	146	83	130	
<i>Medians (% of LWUs basis) for &gt;10,000 Properties</i>		100			100	100			96					99	99				1	1	10			15	107			120
<b>LWUs with 3,001 - 10,000 Properties</b>																												
29	Armidale Dumaresq	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	0	0	1	0	0	1	105	95	95	
31	Lithgow	95	100	96	15	100	100	100	25	100	100	100	65	18	75	64	0 of 3	No	1	-	1	9	162	42	60	-	90	
30A	Hawkesbury	100	100	100	10	96	100	100	15	100	100	100	89	84	100	85	1 of 2	No	0	0	0	19	20	21	60	60	60	
30	Griffith	100	100	100	30	76	39	29	30	100	100	100	97	76	39	27	1 of 3	No	0	0	0	23	21	15	120	60	60	
33	Richmond Valley	100	100	100	20	100	100	100	30	100	100	100	100	95	100	100	4 of 4	Yes	0	1	0	0	1	1	120	120	-	
32	Mid-Western Regional	100	81	74	20	100	100	100	50	74	41	100	100	22	43	41	3 of 4	No	0	0	0	17	51	49	120	120	120	
34	Nambucca	99	87	98	20	99	69	93	30	72	100	100	100	99	45	93	2 of 4	No	0	1	1	13	8	7	45	60	60	
35	Singleton	100	100	100	30	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	0	1	1	13	17	12	180	180	60	
37	Inverell	100	96	97	20	100	92	93	30	97	97	97	97	100	92	93	1 of 4	No	-	0	0	43	43	43	50	45	50	
41	Muswellbrook	74	84	78	20	55	38	51	30	100	100	100	100	55	38	51	0 of 2	No	7	4	2	53	64	53	101	107	106	
36	Parkes	100	85	100	30	57	47	100	50	100	100	100	100	57	47	100	3 of 3	Yes	0	0	0	14	14	25	50	50	60	
42	Corowa	100	100	100	NL	100	100	100	NL	100	100	100	100	93	100	100	3 of 3	Yes	1	1	1	23	32	22	120	120	120	



Table 17: Sewerage – environmental and levels of service (continued)

WATER UTILITY		ENVIRONMENTAL												LEVELS OF SERVICE																							
		EPA DISCHARGE LICENCE COMPLIANCE								Sewage Treated that was Compliant (%)		STWs Compliant at all times	Compliance with Environmental Regulator	Odour Complaints (per 1000 properties)			Service Complaints (per 1000 properties)			Average Sewerage Interruption (minutes)																	
		BOD		SS		N	P	Oil & Grease	Faecal Coli-form																												
		Compliance (%)	90 %-ile Limit (mg/L)	Compliance (%)	90 %-ile Limit (mg/L)					(%)	(%)	(%)	(%)	(59e) E4	(59f) E5	(60) E7	(61)	(62) C 11	(65) C 16																		
08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11	(59a)	(59b)	(59c)	(59d)	08/09	09/10	10/11	08/09	09/10	10/11	08/09	09/10	10/11																
38	Moree Plains	100	97	-	20	100	97	-	30	-	-	-	-	100	100	100	2	of 3	No	0	0	-	38	34	31	250	310	180									
44	Gunnedah	100	100	100	20	75	60	100	30	100	100	100	100	75	60	100	2	of 2	Yes	0	-	0	32	29	22	60	60	60									
46	Narrabri	76	100	66	20	37	100	100	NL	100	100	100	100	37	100	66	2	of 3	No	0	0	0	33	33	24	19	60	20									
43	Tumut	100	100	100	10	100	100	97	15	100	100	100	100	100	100	97	3	of 5	No	0	0	-	41	32	25	90	90	90									
49	Young	100	-	100	20	100	-	75	25	100	100	100	100	100	-	75	0	of 1	No	1	-	1	21	-	32	100	-	100									
39	Cowra	100	-	100	20	75	-	60	30	100	100	100	100	25	45	25	1	of 2	No	0	-	0	0	39	27	240	240	240									
45	Upper Hunter	100	100	100	20	60	100	66	30	100	100	100	100	60	100	66	3	of 4	No	0	0	0	10	9	14	131	120	120									
52	Snowy River	54	92	97	10	66	92	84	15	100	100	97	100	54	92	84	1	of 4	No	-	0	0	14	20	19	-	60	120									
51	Forbes	100	100	100	10	100	100	100	50	83	100	100	100	100	83	83	0	of 1	No	0	0	0	18	14	12	103	96	60									
50	Cooma-Monaro	100	100	100	10	100	100	100	15	100	100	100	77	100	85	77	1	of 2	No	1	1	0	82	42	53	120	120	90									
53	Berrigan	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	4	of 4	Yes	0	0	1	57	39	49	120	120	120									
48	Leeton	100	100	100	70	100	100	100	70	100	100	100	100	98	98	100	3	of 3	Yes	0	0	0	2	3	3	120	120	120									
54	Deniliquin	100	-	100	20	100	-	100	30	100	100	100	100	100	-	100	1	of 1	Yes	3	-	1	54	-	21	120	-	120									
<i>Medians (% of LWUs basis) for 3,000 to 10,000 Properties</i>		100			100			100			100			92			93			0			0			30			23			107			95		
<i>LWUs with 1,501 - 3,000 Properties</i>																																					
47	Bellingen	100	97	97	10	100	95	93	15	100	100	100	100	100	91	93	1	of 3	No	1	1	0	15	7	8	60	60	60									
60	Glen Innes Severn	100	100	100	10	100	100	100	15	100	100	100	100	100	100	100	2	of 2	Yes	0	0	0	11	37	19	40	40	40									
58	Cootlamundra	100	100	100	30	100	75	100	40	100	75	75	100	100	75	75	0	of 1	No	0	0	0	71	67	59	120	120	120									
57	Wellington	100	100	100	15	100	100	100	30	100	100	100	100	100	100	100	2	of 2	Yes	1	0	0	13	8	10	50	55	50									
91	Cabonne	100	100	100	30	93	100	100	30	92	100	100	93	93	100	84	1	of 3	No	0	0	0	7	14	12	360	300	240									
80	Greater Hume	100	100	100	20	70	100	100	30	100	100	100	100	66	100	100	6	of 6	Yes	0	0	0	16	0	17	100	100	100									
59	Lachlan	60	61	60	20	35	20	35	30	60	60	60	60	35	20	35	0	of 3	No	0	1	0	32	25	19	50	55	50									
65	Murray	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	2	of 2	Yes	0	0	0	0	2	5	60	50	50									
62	Narromine	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	2	of 2	Yes	0	0	0	7	10	12	90	90	90									
56	Yass Valley	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1	of 1	Yes	0	0	0	32	34	20	180	150	150									
61	Liverpool Plains	92	-	67	20	22	-	30	30	100	100	100	100	22	30	30	0	of 2	No	0	-	0	21	-	15	60	-	45									
55	Warrumbungle	94	96	96	20	94	96	96	25	92	100	100	100	84	92	92	3	of 4	No	0	0	0	48	30	60	120	120	120									
69	Temora	100	100	100	30	100	100	67	40	100	100	100	100	75	80	67	0	of 1	No	0	0	0	48	40	38	60	60	60									
71	Palerang	100	84	68	10	100	100	79	15	100	100	100	100	100	84	63	1	of 3	No	0	1	2	34	34	18	60	60	60									
72	Bland	100	100	100	20	100	100	21	30	100	100	100	100	100	100	21	2	of 3	No	0	0	0	66	54	133	-	-	120									
63	Narrandera	100	100	100	20	100	100	100	30	100	100	100	100	80	100	100	1	of 1	Yes	0	0	0	103	0	100	90	-	90									
67	Cobar	100	100	100	19	100	100	100	86	100	100	100	100	100	100	100	2	of 2	Yes	0	0	0	3	3	23	120	120	120									
74	Wentworth	100	100	100	50	100	100	100	50	100	100	100	100	38	100	100	5	of 5	Yes	7	5	1	24	16	20	60	60	-									
75	Coonamble	100	100	-	20	86	85	-	50	-	-	-	-	78	85	-	-	-	No	0	0	0	0	16	0	60	60	60									
70	Kyogle	86	100	100	20	98	86	100	30	100	100	100	100	84	86	100	3	of 3	Yes	1	2	2	17	22	11	60	60	90									
77	June	100	100	100	30	100	75	100	30	100	100	100	100	100	75	100	1	of 1	Yes	0	0	0	0	0	0	30	30	30									
78	Blayney	100	100	100	20	100	100	100	25	100	100	100	100	100	70	80	0	of 1	No	0	0	0	13	14	16	60	60	60									
79	Walgett	-	100	100	NL	-	100	100	NL	-	-	-	-	-	100	100	3	of 3	Yes	-	-	0	-	4	7	-	-	-									
68	Tenterfield	-	100	100	40	-	100	100	45	100	100	100	100	-	100	100	2	of 2	Yes	-	1	0	-	34	28	-	120	125									
<i>Medians (% of LWUs basis) for 1,500 to 3,000 Properties</i>		100			67			100			48			100			100			0			0			16			19			60			75		

Table 17: Sewerage – environmental and levels of service (continued)

WATER UTILITY	ENVIRONMENTAL																LEVELS OF SERVICE										
	EPA DISCHARGE LICENCE COMPLIANCE												Sewage Treated that was Compliant				STWs Compliant at all times	Compliance with Environmental Regulator	Odour Complaints			Service Complaints			Average Sewerage Interruption		
	BOD				SS				N	P	Oil & Grease	Faecal Coliform							(per 1000 properties)			(per 1000 properties)			(minutes)		
	Compliance (%) (55)	90 %-ile Limit (mg/L) (56)	Compliance (%) (57)	90 %-ile Limit (mg/L) (58)	(%) (59a)	(%) (59b)	(%) (59c)	(%) (59d)					(%) (59e)	(%) (59f)	(%) (60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)				
08/09	09/10	10/11	10/11	08/09	09/10	10/11	10/11	10/11	10/11	10/11	10/11	10/11	08/09	09/10	10/11	10/11	10/11	08/09	09/10	10/11	08/09	09/10	10/11				
<b>LWUs with 200 - 1,500 Properties</b>																											
84	Gilgandra	100	75	-	20	100	75	-	50	-	-	-	100	100	75	-	0 of 1	No	2	2	0	50	61	56	60	60	100
73	Upper Lachlan	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	2 of 2	Yes	0	0	0	28	28	10	40	40	40
87	Bourke	25	33	33	15	25	29	30	20	80	-	80	100	25	29	30	0 of 1	No	3	2	0	148	102	70	120	120	60
86	Hay	100	100	100	30	100	100	100	40	100	100	100	100	100	100	100	1 of 1	Yes	0	0	0	39	39	39	-	300	300
83	Oberon	100	100	100	20	50	100	100	25	-	-	100	100	42	83	100	1 of 1	Yes	0	0	0	7	0	7	120	-	120
81	Gwydir	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	2 of 2	Yes	0	0	0	0	0	0	-	-	-
85	Uralla	-	100	100	15	-	100	100	20	100	100	100	100	-	83	100	1 of 1	Yes	0	2	2	13	18	16	120	180	120
95	Weddin	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	0	0	0	20	72	31	120	120	158
89	Bogan	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	8	4	0	27	40	38	180	180	180
76	Harden	66	100	100	20	100	45	56	30	100	100	100	100	66	45	56	0 of 1	No	0	0	0	30	18	12	60	60	60
88	Wakool	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	4 of 4	Yes	0	-	0	0	-	0	-	-	-
93	Tumbarumba	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	2 of 2	Yes	0	1	0	16	3	2	60	60	120
94	Gundagai	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	1	1	1	11	13	1	30	30	-
92	Carrathool	100	100	100	NL	100	100	100	NL	-	-	-	-	100	100	100	3 of 3	Yes	0	0	4	54	45	37	120	120	120
96	Warren	100	100	100	45	100	100	75	65	100	100	100	100	100	100	75	1 of 2	No	0	0	0	34	31	32	120	90	120
99	Coolamon	100	100	100	30	100	100	100	20	100	100	100	100	100	100	100	2 of 2	Yes	0	0	0	8	5	4	-	120	120
102	Lockhart	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	3 of 3	Yes	2	0	0	10	28	17	35	90	60
98	Walcha	100	58	100	20	100	100	100	30	100	100	100	100	100	58	100	1 of 1	Yes	0	0	0	6	10	16	70	70	90
100	Balranald	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	2 of 2	Yes	0	0	0	13	8	7	60	60	50
97	Bombala	100	100	79	20	100	100	44	30	100	100	100	100	100	100	44	1 of 2	No	8	0	0	65	45	43	95	120	120
101	Murrumbidgee	-	-	100	10	-	-	50	15	100	100	100	100	-	-	-	1 of 2	No	-	-	0	-	-	0	-	-	120
90	Guyra	100	100	100	15	100	100	100	20	100	100	100	100	100	100	100	2 of 2	Yes	0	0	0	10	11	7	120	120	120
104	Boorowa	100	100	100	20	65	65	70	30	100	100	100	100	65	65	70	0 of 1	No	3	4	0	7	5	5	60	60	60
105	Brewarrina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 of 3	No	0	0	0	10	44	24	60	60	120
106	Jerilderie	100	50	50	20	100	25	50	30	100	100	50	100	100	25	50	0 of 1	No	12	0	0	19	0	0	300	300	300
103	Central Darling	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	0	-	14	227	-	290	60	-	120
107	Urana	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	2 of 2	Yes	6	0	0	19	0	0	60	-	60
<i>Medians (% of LWUs basis) for 200 to 1,500 Properties</i>		100 100				100 100				100 100				0 0			18 12			90 120							
<i>Median All LWUs (% of LWUs basis)</i>		BOD 100.0 %				SS 100.0 %				Odour 0.0			Service 16.8			Duration 100											
<i>Median All LWUs (Statewide basis)</i>		100 %				100 %				0.6			12			106											
<i>Totals for all LWUs</i>		86 LWUs complied with BOD licence (87% of LWUs complied) 98% of sample days complied (3984 sample days)				76 LWUs complied with SS licence (77% of LWUs complied) 93% of sample days complied with SS licence (3984 sample days)				17 LWUs had no discharge licence and 4 LWUs did not report BOD or SS				48 LWUs fully complied with regulator 284 STWs were reported to be in use by LWUs 209 of these STWs were compliant at all times													

- Notes:
- Where there is no limit (NL) for BOD or SS licences, compliance is deemed to be 100%.
  - Where an LWU has 100 percentile licence limits rather than 90 percentile licence limits, the 100 percentile limits are shown.
  - An LWU is deemed to comply with its BOD or SS licence if it achieves >=90% compliance with the 90 percentile limit.

Table 18: Sewerage – benchmarking cost data (operation, maintenance and management)

WATER UTILITY	OPERATION & MAINTENANCE (O&M) COST*							MANAGEMENT COST (A)*				OMA*	O&M COST COMPONENTS for TYPES of ASSET																	
	Total O&M Cost (\$/prop) (66a)	Components (1) - Process					Components (2) - Type of Asset				Components			Total OMA Cost (\$/prop) (76b)	Components		Pumping				Sewer Main				Treatment					
		Maintenance	Operation	Energy	Chemicals	Effluent & Biosolids	Mains	Pumping Stations	Sewage Treatment	Other	Admin	Engineering & Supervision	Total Management Cost		Treatment	Reticulation	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	Energy Cost	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	O&M Cost	Operation Cost	Maintenance Cost	Chemical	
		(66)	(67)	(68)	(69)	(69a)	(70)	(71)	(72)	(73)	(74)	(75)	(\$/prop) (76a)		(c/kL) (76)	(77)	(78)	(c/kL) (79)	(c/kL) (80)	(\$'000/pumping station) (81)	(82)	(83)	(c/kL) (85)	(86)	(\$'000/100km) (87)	(88)	(\$/ML) (89)	(\$/property) (90)	(91)	(92)
2010/11	2010/11					2010/11				2010/11		2010/11		2010/11				2010/11				2010/11								
<b>LWUs with &gt; 10,000 Properties</b>																														
1 Gosford	173	69	81	23	1	33	50	80	11	85	13	98	46	272	80	82	23	19	1	13	5	15	170	67	103	373	53	15	1	
2 Wyong	279	103	176			42	92	117	28	71		71	27	350	117	134	34	39	22	16		16	201	70	131	438	82	35		
3 Shoalhaven	285	56	181	29	3	53	86	110	36	118	40	157	82	442	110	139	45	15	8	5	2	28	186	170	16	573	62	14	3	
5 MidCoast	395	76	205	51	9	29	56	155	155	78	25	103	50	498	155	86	28	9	2	3	4	14	97	16	81	756	41	21	9	
6 Tweed	284	120	84	47	10	46	82	144	11	118	46	164	54	447	144	128	27	14	4	7	3	15	203	0	203	476	54	31	10	
7 Port Macquarie-Hastings	260	110	60	48	2	20	72	137	31	66	30	96	30	356	137	92	23	13	1	8	3	6	82	20	62	434	18	47	2	
9 Wagga Wagga (NO WS)	238	26	199	9	4	44	32	131	31	53		53	21	291	131	76	13	22	13	4	5	17	188	101	87	522	126			
10 Coffs Harbour	324	85	122	59	14	36	97	180	12	108	59	167	47	491	180	133	28	19	9	6	4	10	123	46	77	511	53	30	14	
11 Albury City	272	84	101	44	6	35	44	126	67	134	7	142	57	414	126	79	18	14	1	8	5	14	148		148	507	31	25	6	
13 Tamworth Regional	238	99	92	24	9	81	25	131		12	89	101	36	339	131	107	9	20	5	11	3	29	290	61	229	472	68	21	9	
15 Eurobodalla	335	60	219	39	17	62	111	153	9	162		162	77	497	153	173	53	16	8	5	3	30	212	166	46	728	103	14	17	
17 Queanbeyan	258	77	114	25	36	93	33	124	8	123		123	49	380	124	126	13	36	16	12	8	37	454	284	171	499	40	26	36	
19 Orange	178	10	109	33	25	39	13	125		152	54	206	55	384	125	53	4	9	4	1	4	10	154	146	8	331	67	6	25	
18 Dubbo	220	70	111	31	8	29	28	128	35	120	40	159	81	379	128	57	14	33	13	10	10	15	118	21	97	662	62	35	8	
16 Wingecarribee	219	78	78	35	17	48	46	126		122	18	140	50	359	126	93	16	9	5	2	2	17	133		133	451	56	19	17	
14 Clarence Valley	261	83	116	32	13	46	49	140	27	106	46	152	63	413	140	95	20	8	2	3	3	19	177	6	172	576	76	20	13	
21 Bathurst Regional	292	90	150	36	0	135	18	139		90	10	99	36	391	139	153	7	17	12	2	4	49	521	321	201	584	55	37	0	
24 Ballina	352	159	123	62	8	43	132	160	17	140	64	203	56	555	160	174	36	14	2	9	3	12	180		180	438	97	22		
22 Lismore	331	188	66	29	26	96	55	172	8	71	31	103	27	434	172	151	15	21	1	15	4	26	348	29	320	465	54	52	26	
23 Bega Valley	414	88	301	9	17	74	79	261		185	98	284	169	698	261	153	47	1	0	0	0	44	231	67	164	1561	245			
27 Byron	395	122	156	64	30	45	109	211	31	136	16	152	47	547	211	153	33	14	4	6	4	14	193	82	111	679	80	45	30	
26 Essential Energy	300	214	67	15	4	120	49	131		41	22	63	36	363	131	169	28	44	0	34	10	69	469	4	465	755	66	57	4	
20 Goulburn Mulwaree	260	89	73	33	65	87	26	140	7	81	24	105	71	365	140	113	18	10	8		2	59	327	8	318	941	44	3		
25 Kempsey	374	123	122	56	12	46	79	246	3	56	116	172	53	545	246	124	24	9	2	4	3	14	152		152	763	101	42	12	
<b>Medians (% of LWUs basis)</b>		87	115	33	10	19	46	52	138	22	107	35	141	50	402	138	125	23	15	4	6	4	16	187	64	141	517	62	25	10
<b>LWUs with 3,001 - 10,000 Properties</b>																														
29 Armidale Dumaresq	312	221		8	83	140	10	152	9	27	44	71	27	383	152	151	4	85		70	15	53	508		508	569		62		
31 Lithgow	386	337		34	15	59	87	240		202		202	57	588	240	145	25	18		14	4	17	267		267	682		210		
30A Hawkesbury (NO WS)	285	97	143		45	16	58	210	1	109	87		61	285	210	74	18	17		17		5	68	-83	151	1109	163	2		
30 Griffith	298	41	214	22	8	82	102	96	18	98	44	142	43	441	96	184	31	27	21	3	4	25	281	236	44	292	49	16	8	
33 Richmond Valley	217	79	104	29	5	34	70	102	11	149	87	236	69	453	102	104	20	15	4	8	3	10	126	95	31	296	60	20	5	
32 Mid-Western Regional	210	136	61	13	0	68	25	117		102	24	126	51	336	117	93	10	14	1	10	4	27	219		219	469	59	51		
34 Nambucca (Groundwater)	243	141	49	49	4	17	76	101	49	110	35	145	48	388	101	93	25	8		5	3	6	60		60	305		80		
35 Singleton	203	114	67	21	1	98	13	91		42	57	99	45	302	91	112	6	5		5	0	44	389	96	293	412	43	27	1	
37 Inverell	154	50	74	30		50	34	70		57	49	106	57	260	70	84	18	8	5		2	27	183		183	375	51			
41 Muswellbrook	216	157	39	19	2	55	54	96	11	80	64	145	66	361	96	109	24	23	3	14	6	25	193		193	436	24	66	2	



Table 18: Sewerage – benchmarking cost data (operation, maintenance and management) (continued)

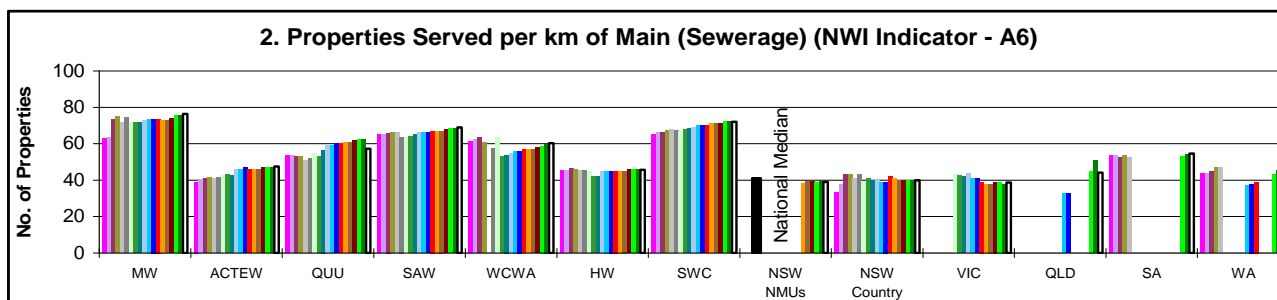
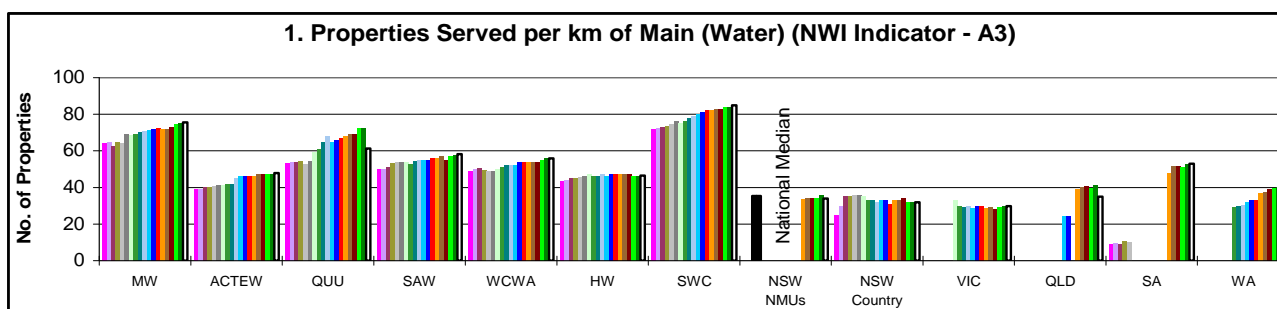
WATER UTILITY	OPERATION & MAINTENANCE (O&M) COST*										MANAGEMENT COST (A)*			OMA*	O&M COST COMPONENTS for TYPES of ASSET														
	Total O&M Cost (\$/prop) (66a)	Components (1) - Process					Components (2) - Type of Asset				Components			Total OMA Cost (\$/prop) (76b)	Components		Pumping				Sewer Main			Treatment					
		Maintenance	Operation	Energy	Chemicals	Effluent & Biosolids	Mains	Pumping Stations	Sewage Treatment	Other	Admin	Engineering & Supervision	Total Management Cost		Treatment	Reticulation	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	Energy Cost	O&M Cost	O&M Cost	Operation Cost	Maintenance Cost	O&M Cost	Operation Cost	Maintenance Cost	Chemical
		(66)	(67)	(68)	(69)	(69a)	(70)	(71)	(72)	(73)	(74)	(75)	(\$/prop) (76a)		(c/kL) (76)	(77)	(78)	(c/kL) (79)	(c/kL) (80)	(\$'000/pumping station) (81)	(82)	(83)	(c/kL) (85)	(86)	(\$'000/100km) (87)	(88)	(89)	(90)	(\$/property) (91)
2010/11	2010/11					2010/11				2010/11			2010/11	2010/11		2010/11				2010/11			2010/11						
<i>LWUs with 200 - 1,500 Properties</i>																													
84 Gilgandra	190	98	82	10		26	70	84	10	42	10	52	23	242	84	96	31	12	5	1	6	11	97	6	92	418	77	7	
73 Upper Lachlan	225	46	126	39	5	31	62	129	4	98	28	126	44	351	129	92	21	12	5	1	6	11	84	41	43	445	82	26	9
87 Bourke	279	143	104	32		44	175	60		23	21	44	28	322	60	219	113	28	7	16	5	29	165		165	385	60		
86 Hay	265	63	173	30		38	60	167		173	2	175	78	440	167	98	27	10	8		2	17	130	130		769	87	63	
83 Oberon	271	53	177	26	15	34	31	206		29	115	144	103	415	206	65	22	14	11	0	3	24	124		124	1474	154	18	15
81 Gwydir	262	77	154	24	4	22	52	180	8	89		89	39	351	180	74	23	8	3	3	1	10	61	2	59	793	125	30	4
85 Uralla	207	128			14	30	11	124	43	101	6	107	51	314	124	41	5	2			2	14	103		103	591		45	14
95 Weddin (NO WS)	140	20	111	9		26		114		9	20	29	15	169	114	26						13	74	74		598	85	20	
89 Bogan	112	71	33	8		45	15	53		175		175	29	287	53	59	2	4			4	7	230		230	87	33	12	
76 Harden	325	235	65	11	14	56		268		53	43	96	17	421	268	56						10	127		127	491	65	179	
88 Wakool	229	47	128	53		31	61	122	15	35	37	73	23	302	122	92	19	5	3	1	2	10	70	28	43	384	70	20	
93 Tumbarumba	243	182	53	8		50	4	189		34	47	80	19	323	189	54	1	1		1		12	104	104		438	3	178	
94 Gundagai	291	128	99	26	13	28	49	211	4	131		131	85	422	211	76	32	7	2	4	2	18	29		29	1368	86	73	13
92 Carrathool	203	156	7	40		27	83	74	19	4		4		207	74	110		6			4	1	105		105	568		54	
96 Warren	236	132	77	27		56	82	98		87	96	182	72	418	98	138	32	8	0	6	3	22	265	65	200	397	62	35	
99 Coolamon (NO WS)	212	67	113	29	3	27	49	135		33	54	87	89	298	135	76	51	6		5	1	27	61		61	1384	113		
102 Lockhart (NO WS)	257	203		36	18	27	30	196	4	79		79	36	336	196	57	14	4			4	12	52		52	931		142	
98 Walcha	195	10	155	24	6	35	17	142		40	25	65	22	259	142	52	6	14		8	6	12	93	93		491	120		6
100 Balranald	100	44	35	18	2	50	48	2		41		41	17	141	2	98	20	4		3	2	21	116	82	34	10			2
97 Bombala	154	97	57			16	45	82	12	48		48	21	202	82	61	20	7	5	2		7	34		34	301	16	66	
101 Murrumbidgee	108	74		32	1	26	46	36			55	55	33	163	36	71	27	3		2	1	15	83		83	216		22	1
90 Guyra	295	5	139	51	27	51	14	230		41	70	111	36	407	230	65	5	7		3	5	17	89	89		754	88		27
104 Boorowa	214	54	146	13		51	48	115		115	3	118	79	332	115	99	32	15	13	1	2	34	103		103	787	105	2	
105 Brewarrina	688	429	214	42	2	38	200	156	293	71	77	148	38	835	156	239	52	12	5	5	3	10	119		119	405	138	14	2
106 Jerilderie	273	240	7	26		19	103	145	7	61	28	89	37	362	145	121	43	9		8	1	8	67		67	674		133	
103 Central Darling	415	378		37		281	124	9						415	9	406	27	7		5	2	61	265		265	20		9	
107 Urana (NO WS)	326	291	19	16		28	205	92		25	89	114	40	439	92	234	72	7	0	6	1	10	60		60	322	9	82	
<i>Medians (% of LWUs basis) for 200 to 1,500 Properties</i>																													
	97	104	26	8	16	31	49	124	10	48	37	89	36	332	124	76	25	7	5	4	2	13	97	74	87	491	84	33	8

\* Operating cost is the OMA cost (operation, maintenance & administration (Col 76b)) which comprises the O & M Cost (operation & maintenance cost (Cols 66 to 69 or Cols 70 to 73)) PLUS

Management Costs (Col 76a) which is made up of the Administration cost (Col 74) plus Engineering and Supervision cost (Col 75).

# Appendix A: National performance comparisons 1992-93 to 2010-11

## Performance comparisons – utility characteristics



### Metropolitan Water Utilities

MW	Melbourne Water Consolidated (see note 1)
ACTEW	ACT Electricity and Water
QUU	Queensland Urban Utilities (Brisbane) (see note 3)
SAW	SA Water Corporation (Adelaide)
WCWA	WA Water Corporation (Perth)
HW	Hunter Water Corporation
SWC	Sydney Water Corporation

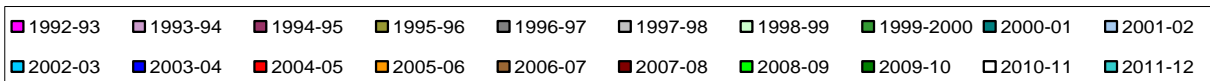
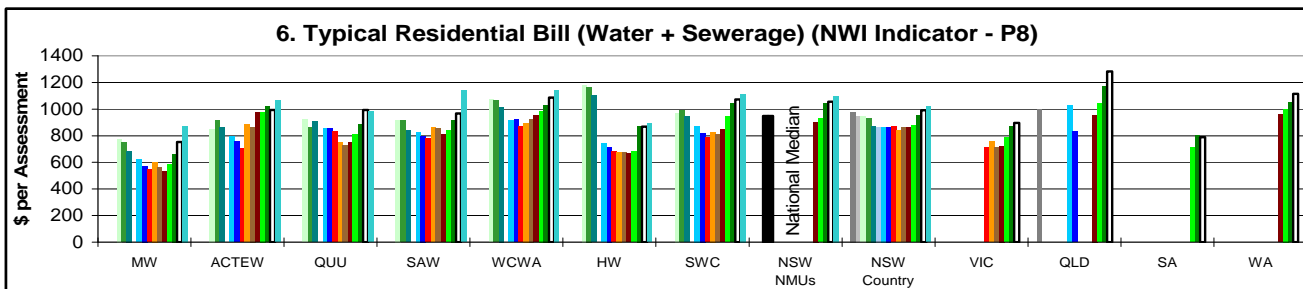
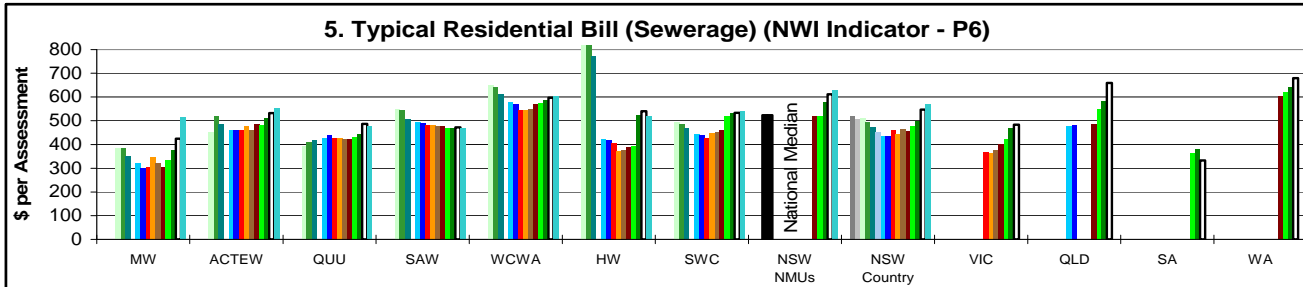
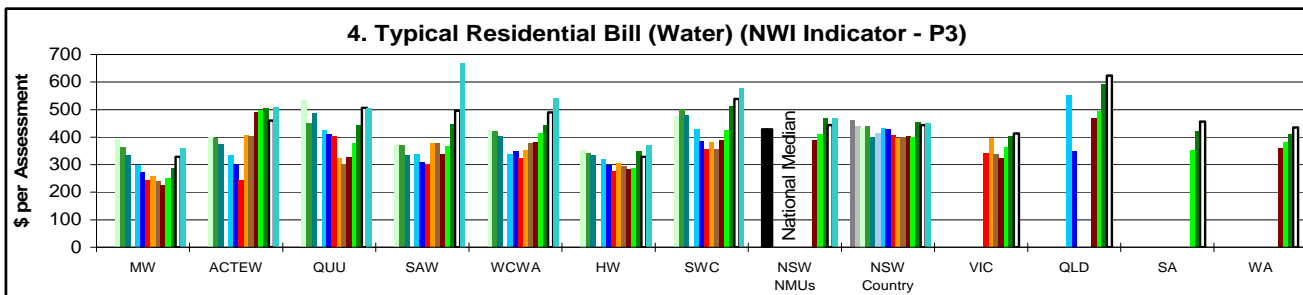
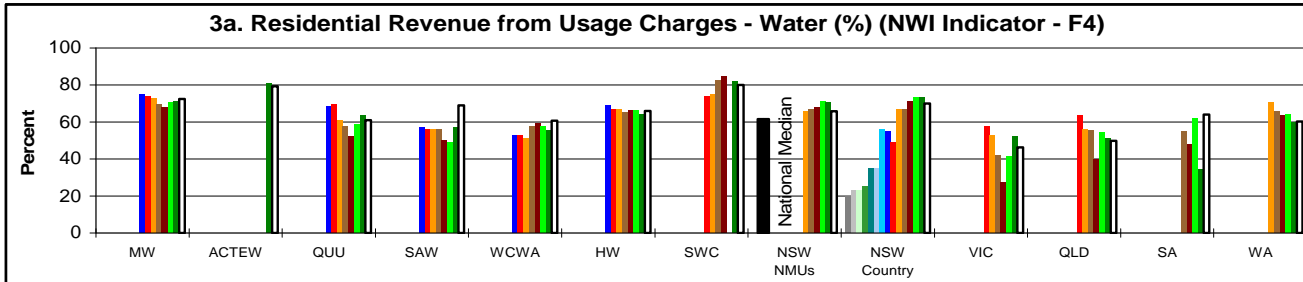
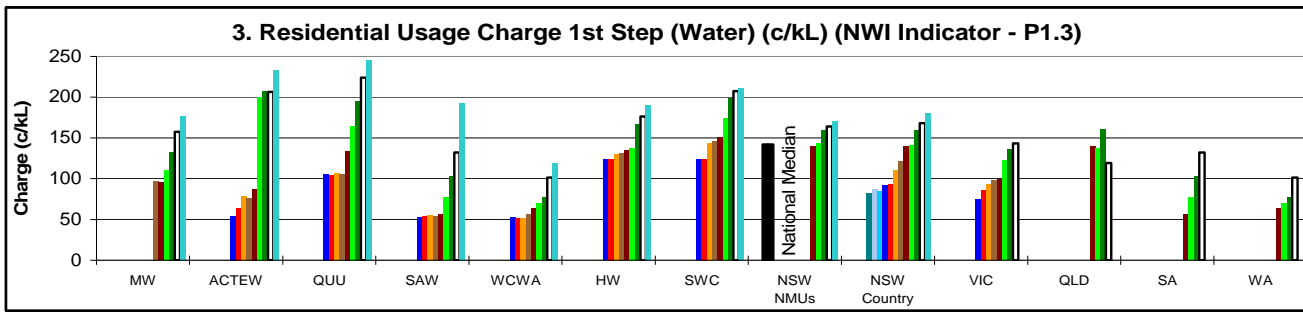
### Country Water Utilities

NSW NMUs	Median of NSW non-metropolitan LWUs with > 10,000 connected properties
NSW Country	Statewide median for all NSW non-metropolitan LWUs
VIC	VIC Country (see note 4)
QLD	QLD Country (see note 6)
SA	SA Country (see note 5)
WA	WA Country (see note 7)

### NOTES:

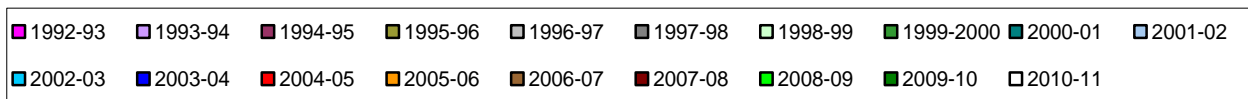
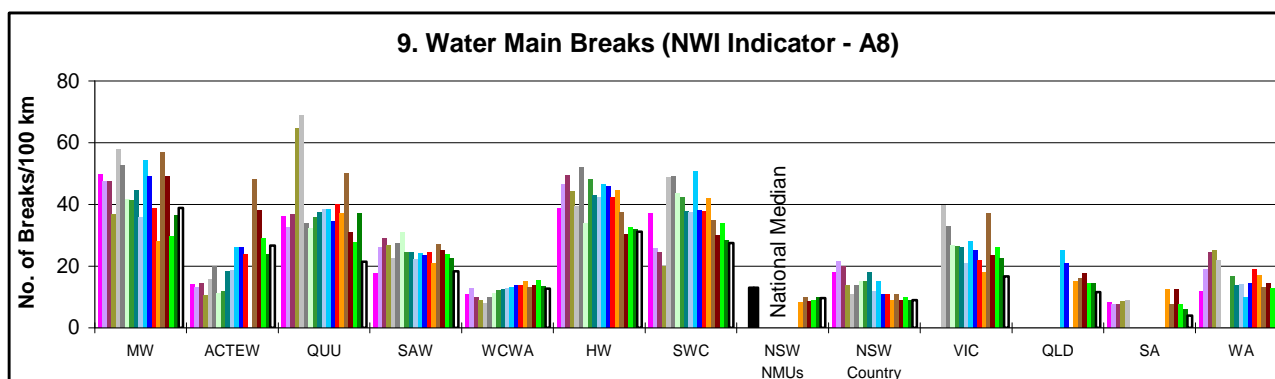
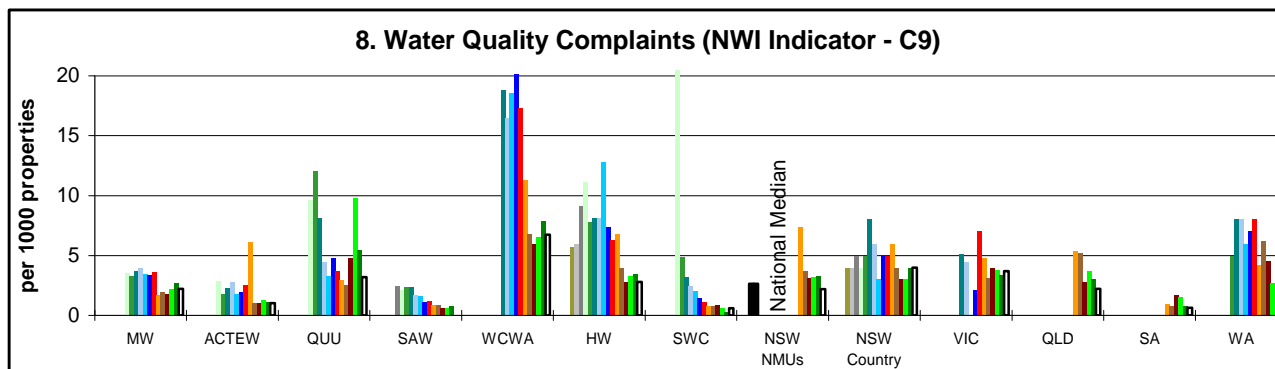
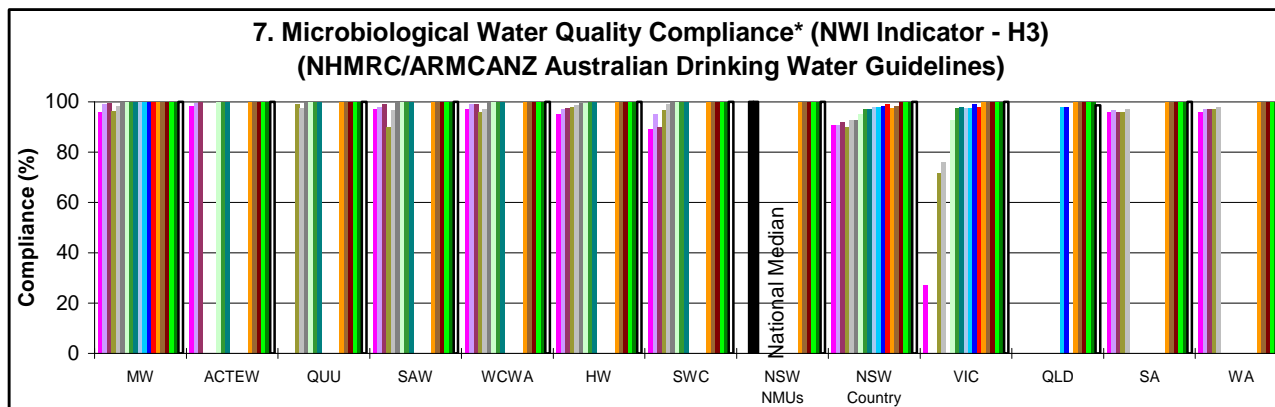
- Melbourne Water was disaggregated into 4 constituent utilities in 1994. Melbourne Water Consolidated results for 1994-95 to 2010-11 are either aggregated results of the constituent utilities or consolidated results reported in the *National Performance Report 2010-11*, *WSAA Facts* (note 2) or reported in *Urban Water Review* (note 4).
- Metropolitan Utilities - *National Performance Report 2010-11* used to obtain results from 2001-02 to 2010-11. *WSAA Facts 2005* and *WSAA Facts 1999* (published by the Water Services Association of Australia) used to obtain results from 1994-95 to 1999-00.
- Queensland Urban Utilities (QUU) was formed by aggregating Brisbane Water, Ipswich City Council, Scenic Rim Regional Council, Lockyer Valley Regional Council and Somerset Regional Council. QUU commenced operations on 1 July 2010. The results shown for QUU prior to 2010-11 are those reported in the NPR and *WSAA Facts* for Brisbane Water.
- Victorian Country - *Urban Water Review 1998* and *2004-2005*, (published by the Victorian Water Industry Association) used to obtain results for Victoria Country from 1996-97 to 2004-05. Results from 2005-06 to 2010-11 obtained from median of Victorian utilities (excluding Melbourne Water and its constituents) published in the *2010-11 National Performance Report*.
- SA Country - *Government Trading Enterprises Performance Indicators 1992-93 to 1996-97 and 1990-91 to 1994-95*, (published by Steering Committee on National Performance Monitoring of Government Trading Enterprises), used to obtain results for 1990-91 to 1996-97. Results from 2005-06 to 2010-11 obtained from median of SA NMUs (Whyalla and Mt Gambier) published in the *National Performance Report 2010-11*. **The results shown from 2005-06 do not report the overall performance of SA country utilities.**
- QLD Country - *Urban Water Service Providers Queensland Report 2003-2004*, (published by Queensland Department of Natural Resources and Mines), used to obtain results from 2002-03 and 2003-04. These results are for 18 large and medium utilities and exclude Brisbane City Council. Results from 2005-06 to 2010-11 obtained from median of QLD NMUs (Cairns, Logan, Ipswich, Mackay, Townsville) published in the *National Performance Report 2010-11*. **The results shown from 2002-03 report a maximum of 5 of the 72 Queensland country utilities**
- WA Country - *Government Trading Enterprises Performance Indicators 1992-93 to 1996-97 and 1990-91 to 1994-95*, (published by Steering Committee on National Performance Monitoring of Government Trading Enterprises), used to obtain results for 1990-91 to 1996-97. Results from 1999-2005 obtained from *Water Performance Information on 32 Major WA Towns 1999-2003* and *2001-2005* prepared by the Western Australia Economic Regulation Authority. The results are for regional towns and do not include Perth. Results from 2005-06 to 2010-11 obtained from median of WA NMUs (Albany, Bunbury, Busselton, Geraldton, Kalgoorlie-Boulder, Mandurah) published in the *National Performance Report 2010-11*. **The results shown from 1999 do not report the overall performance of WA country utilities.**
- Except for Graphs 3 to 6 which are in 2011-12 dollars, financial data is presented in 2010-11 dollars.
- The National Median is the median value of the 2010-11 results published in the *National Performance Report 2010-11*.

# Performance comparisons – social (bills)



- NOTES**
1. The Typical Residential Bill (TRB) is the annual bill paid by a residential customer using the utility's average annual residential water supplied.
  2. The TRB is the principal indicator of the overall cost of a water supply or sewerage system.
  3. The 2011-12 Usage Charge and TRB (graphs 3 to 6) for the capital city utilities have been determined from data published on each utility's website.
  4. As the 2009-10 and 2010-11 values for Indicator F4 were not reported by ACTEW, they have been conservatively estimated in graph 3a from the utility's reported TRB and fixed charge for 2009-10 and 2010-11:  $(\text{TRB} - \text{Fixed Charge})/\text{TRB} \times 100$ .

## Performance comparisons – social (water)



### \* Microbiological Water Quality Compliance

1991 to 1998 results are generally on the basis of the *1987 NHMRC/AWRC Drinking Water Quality Guidelines*.

1998-99 and subsequent results are generally on the basis of *E. coli* in the more stringent

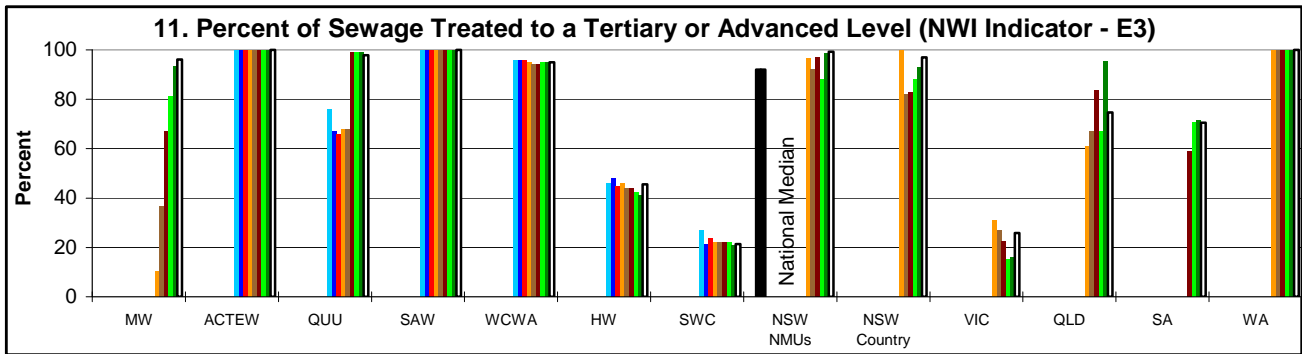
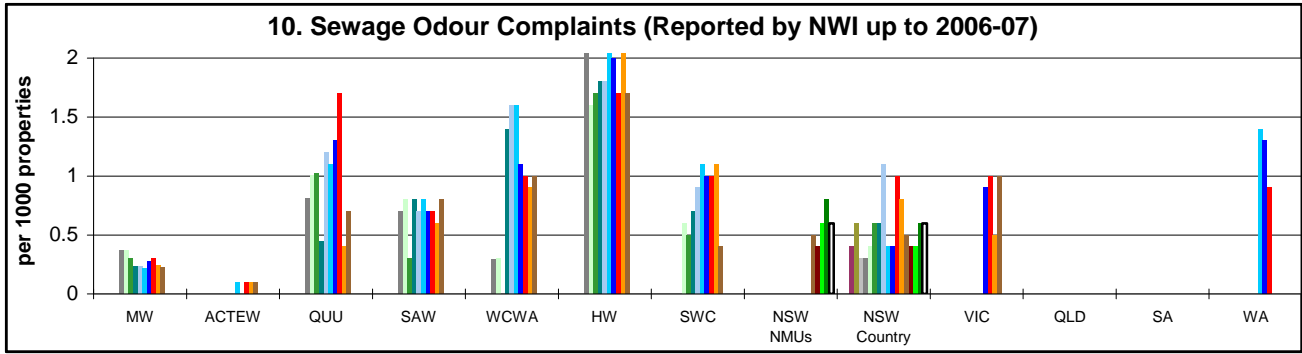
1996 and 2004 *NHMRC/ARMCANZ Australian Drinking Water Guidelines (ADWG)*.

The exceptions are Victorian country utilities where results up to 2003-04 are on the basis of the less stringent *1984 World Health Organisation Guidelines* and which are now on the basis of the Victorian Safe Drinking Water Regulations 2005, and also Melbourne Water where prior to 2004-05 the results are on the basis of the above 1987 Guidelines and which are now on the basis of the 2004 ADWG.

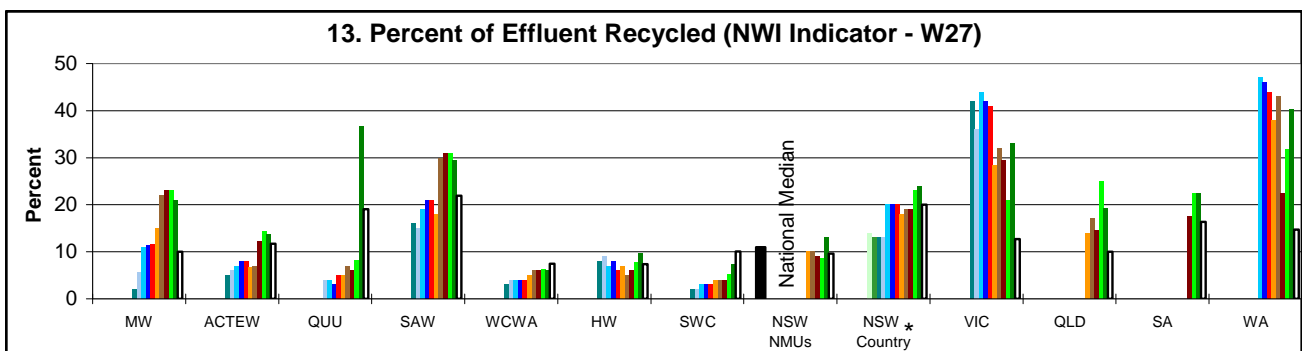
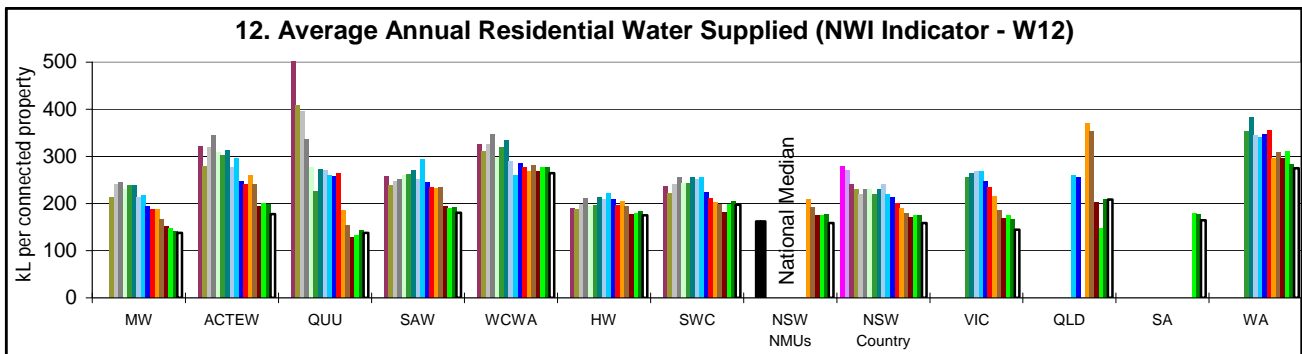
For 2005-06 to 2010-11, the results shown are for "% of population where microbiological compliance was achieved", in accordance with NWI Indicator H3.



## Performance comparisons – social (sewerage)



## Performance comparisons – environmental (water)

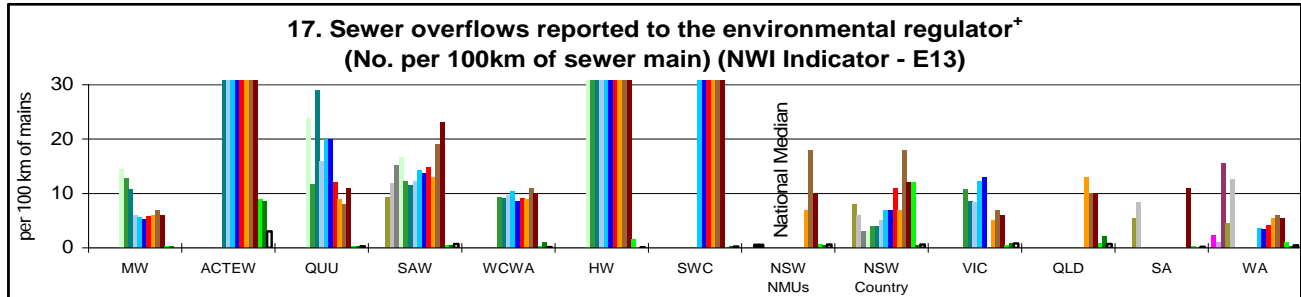
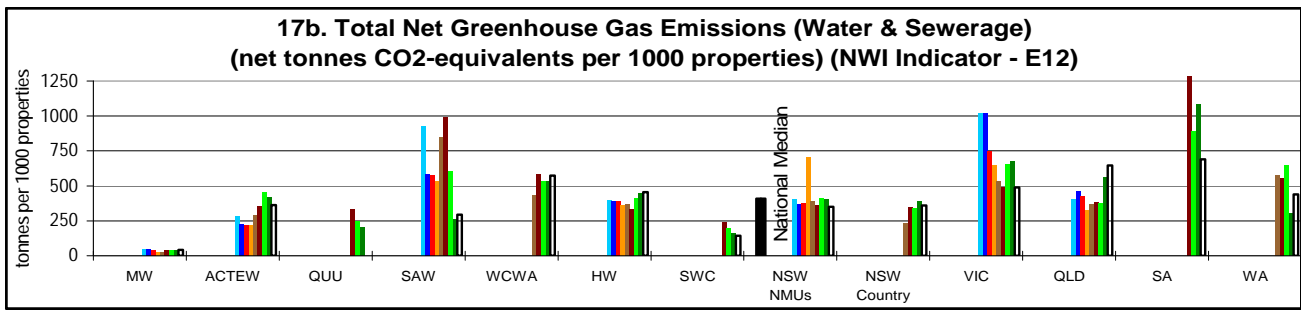


### \* NSW Effluent Result

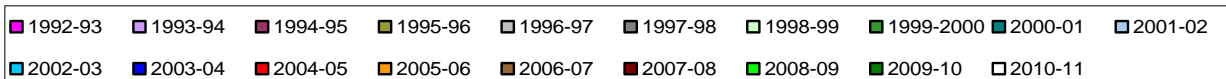
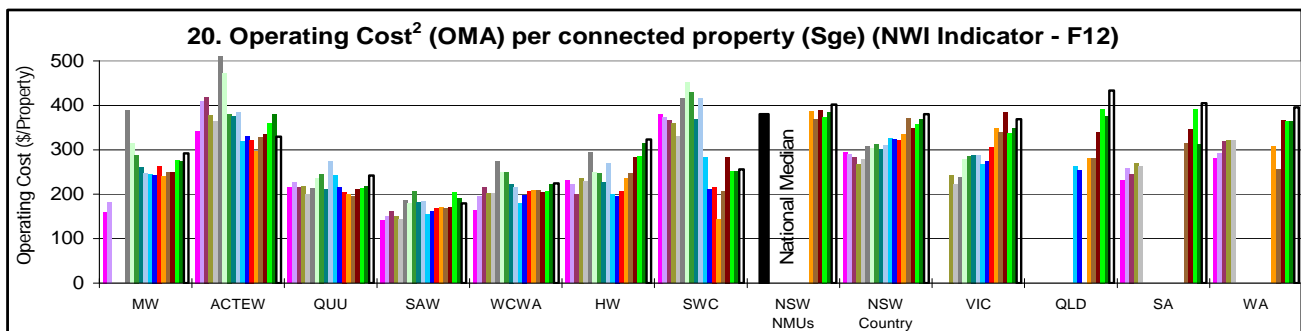
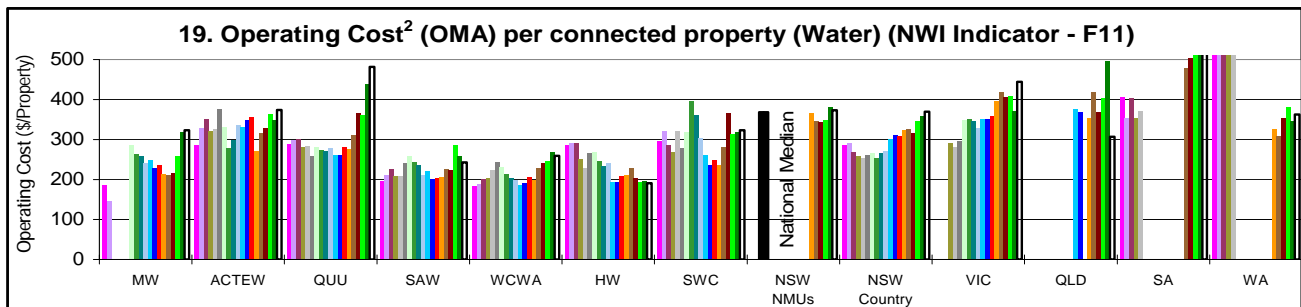
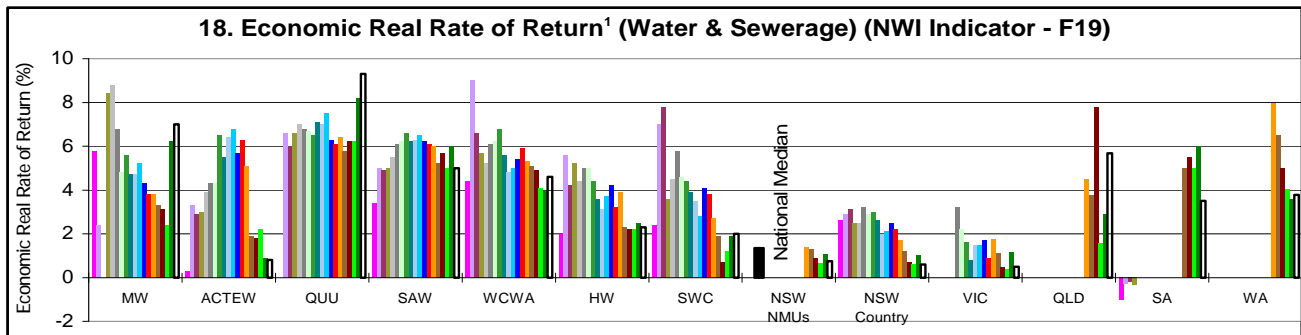
The values shown for country NSW are the percentages of total volume of sewage collected in non-metropolitan NSW that was recycled.

For country NSW, 37,000 ML of wastewater was recycled in 2010-11, which is 20 per cent of the total volume of sewage collected and was carried out by 81 per cent of the utilities, mostly for agriculture.



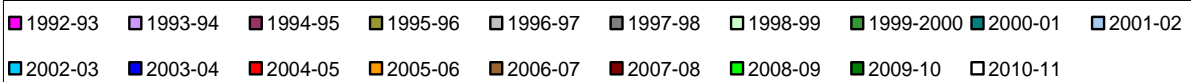
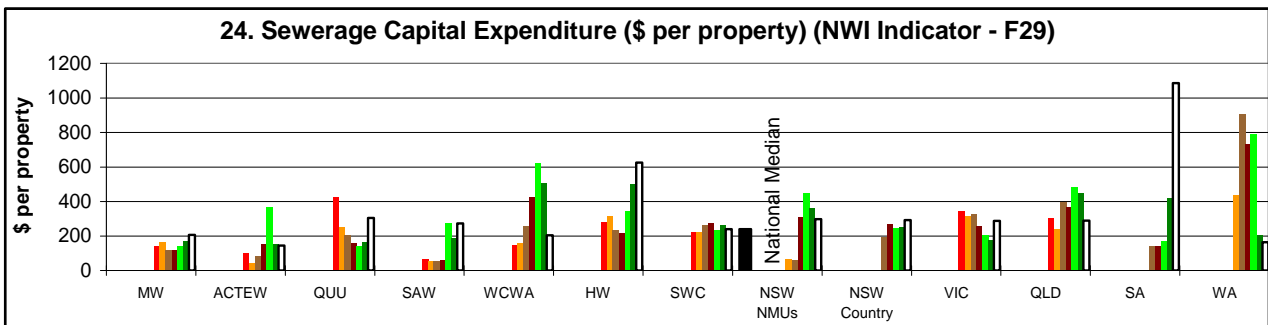
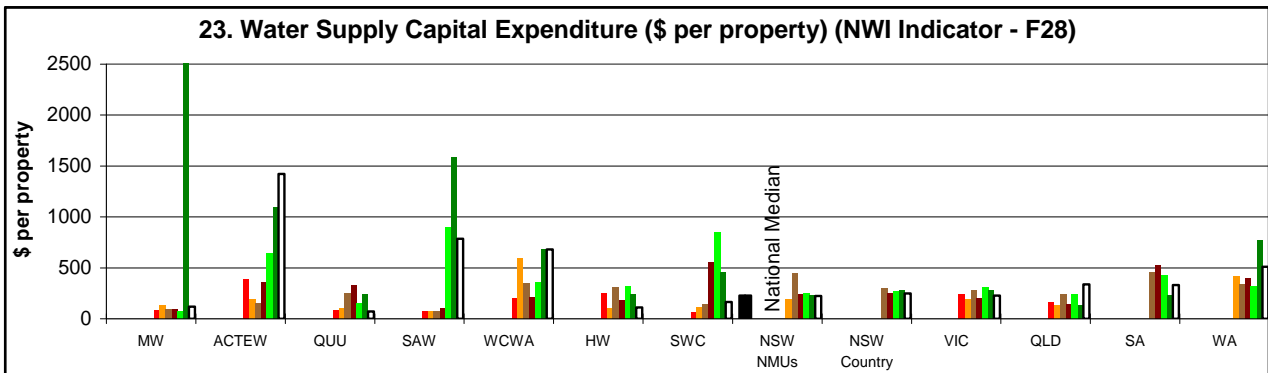
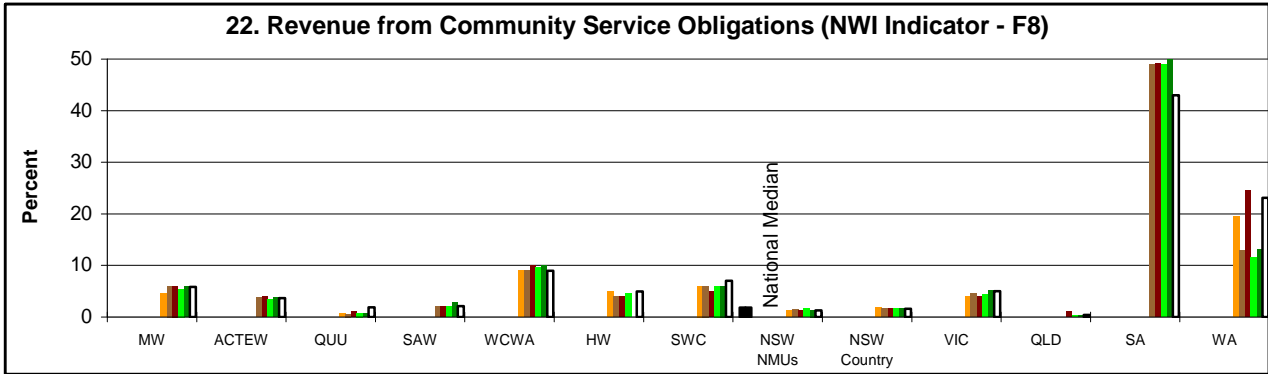
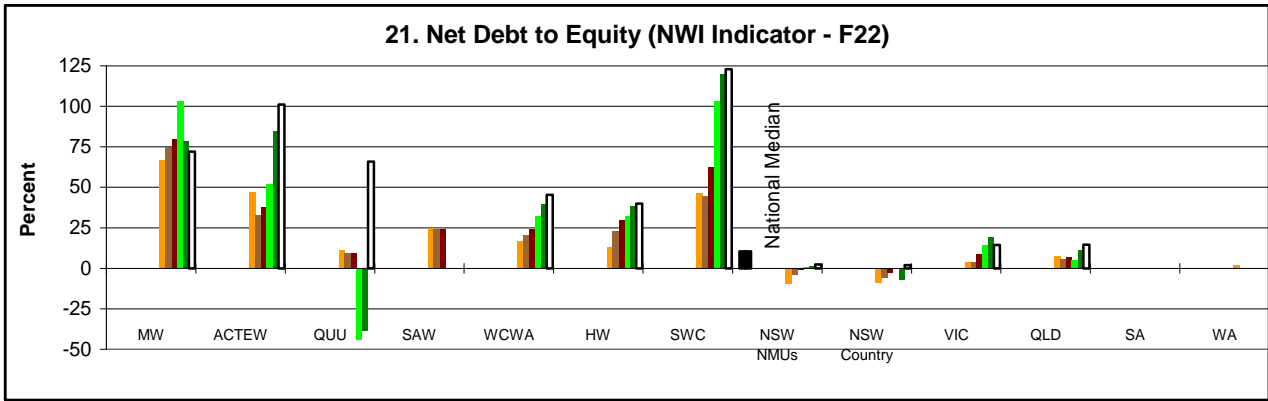


## Performance comparisons – economic



- NOTES:**
- As the economic real rate of return (ERRR) was not reported by utilities other than NSW NMUs and Country NSW in 2001/02 to 2004/05, the reported values for "return on assets" has been shown in graph 18 for all the other utilities for these years.
  - Operating Cost (OMA) is the Operation, Maintenance and Administration Cost in 2010/11\$.
- + The values shown prior to 2008-09 are all reported sewer overflows in accordance with definition for indicator E13 in the National Performance Framework 2007-08 Urban Water Performance Indicators and Definitions Handbook.

## Performance comparisons – economic (continued)



- NOTES:**
1. The Water Supply Capital Expenditure per property shown for Melbourne Water for 2009-10 includes the full \$3.5B capital expenditure by a private consortium for the Victorian Desalination Plant project.
  2. The Water Supply Capital Expenditure per property shown for Queensland Urban Utilities (QUU) for 2009-10 includes the \$230M capital expenditure by SEQ Water and LinkWater.

# Appendix B: NSW performance monitoring database

## Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
1	C1	Population served	Permanent			n	Population supplied with water in June this reporting year	Exclude population in non-serviced areas
2		Population served	Peak			n	Maximum population supplied anytime this reporting year	Permanent population plus temporary influx (tourists, seasonal workers). Exclude population in non-serviced areas
7		Dams	Number			n	Dams owned by the utility for seasonal water storage as distinct from daily balancing storages for distribution systems	Include on-stream and off-stream storages
8		Dams	Capacity			ML		
9		Service reservoirs	Number			n	Distribution storage facilities used in the delivery of potable water to customers such as steel or concrete tanks used as daily balancing storages	Include clear water tanks at water treatment works
10		Service reservoirs	Capacity			ML		
11		Weirs	Number			n	Low barriers, generally within the stream banks, to divert flow to an offtake	
12		Weirs	Capacity			ML		
13		Bores	Number			n	Bore holes connecting to an aquifer from which water is drawn	
14		Bores	Capacity			ML/d		
15		Pumping stations - potable and nonpotable	Number			n	Pumping stations for headworks and distribution systems	Include potable and non-potable pumping stations. Include pumping stations at treatment works that are used to deliver treated water into the distribution system. A pump station may include multiple pumps
16		Pumping stations - potable and nonpotable	Capacity			ML/d		
17	A1	Treatment works	Number			n	Treatment works providing comprehensive water treatment to achieve high quality water	Include facilities that remove colour and/or turbidity as well as filtration, disinfection and pH adjustment. Exclude facilities that do not provide filtration and disinfection. Exclude secondary or booster disinfection plants. Exclude flouridation plants.
18		Treatment works	Capacity			ML/d		
20a		Water mains - potable and nonpotable	Headworks transfer length			km	Trunk mains which are part of the headworks system (eg. dam, river) for delivery of water either from scheme to scheme or to treatment works. Bulk suppliers should include trunk mains to other urban centres or schemes. Exclude disused pipe even if maintained for future use.	Include potable and non-potable mains
20	[A2]	Water mains - potable and nonpotable	Trunk main length			km	A transfer main delivering water from a treatment works or service reservoir to a distribution area.	Include potable and non-potable gravity and rising (pressure) mains. Exclude disused pipe even if maintained for future use.
21	[A2]	Water mains - potable and nonpotable	Reticulation length			km	A reticulation main is relatively small pipework distributing supply to a network of customers.	Include potable and non-potable reticulation. Exclude non-potable reticulation to non-urban areas (eg. for agriculture). Exclude disused pipe even if maintained for future use. Exclude pipework associated with property water services (mains to property meter or service connections). Exclude private mains.
22	A2	Water mains - potable and nonpotable	Total length			km	Sum of (20) and (21). Excludes (20a)	
23		Renewals - potable and nonpotable	Mains renewed			km	Existing water mains renewed or replaced in the reporting period	Exclude maintenance work (refer to Section 5 of NSW Local Government Asset Accounting Manual, 1999)
24		Renewals - potable and nonpotable	Property service connections			n	Existing service connections renewed or replaced in the reporting period	
25		Renewals - potable and nonpotable	Customer water meters			n	Existing customer water meters renewed or replaced in the reporting period	
30		Service connections	Service connections			n	A service connection is not the same as a connected property. The number of service connections is the number of metered accounts minus the total of any submeters (after master meters eg. to shops or flats) plus the estimated service connections (eg fire connections). The number of service connections includes residential and non-residential and is only used to calculate the Infrastructure Leakage Index and real losses (L / connection / d)	The number of metered units and their configuration are not material for determining the number of service connections. Examples: a block of 30 units with a single shared connection is one service connection; a block of 30 units with sub-meters and separate bills for each unit but with a single shared connection to the water main is also one service connection; retirement villages, where there is a single shared connection to the water main that services the whole of the retirement village are also counted as one service connection
31		New residential connections	New residences connected			n	Number of new residences connected this reporting year	Include each individual house, flat, villa, unit, townhouse etc whether separately metered or not
32	[C2]	Assessments	Residential assessments			n	Residential assessments for water supply services	Include vacant lots
33	[C3]	Assessments	Non-residential assessments			n	Non-residential assessments for water supply services	Include vacant lots
36	[C4]	Assessments	Total assessments			n	Sum of (32) and (33)	
37		Connected Property-Assessment ratios	Connected properties / total assessments			n	See notes for (38)	
37a		Connected Property-Assessment ratios	Residential assessments / total assessments			n	See notes for (38)	

# Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
38		Connected Property-Assessment ratios	Connected residential properties / residential assessments			n	These ratios do not vary significantly from year to year for water supply systems. NOW has worked with LWUs to establish these ratios and will continue to use the existing ratio shown. If you consider that another ratio is more appropriate, you will need to provide detailed evidence to NOW to support such a change. Evidence that would be required includes the number of residential (single and multi) and non-residential assessments and connected properties from your financial, water and sewerage reports over the last 3 years together with details of vacant lots and new properties connected. Note that ratios are stored as floating decimals but are displayed on this page to two decimal places only	Connected properties are not the same as assessments. Connected properties rather than assessments are used for consistency with the National Performance Framework. A connected property is one which is connected to the water supply system but which may or may not have a separate assessment
39		Unserved properties and population	Unserved urban properties			n	Number of properties in urban zoned land in towns and villages in your utility's area of operations not served by a reticulated public water supply scheme	Only applies to properties in urban zoned land. Information on the unserved urban properties and population of each village is available in your LWU's water supply strategic business plan. Exclude vacant land and rural properties. Exclude premises in land zoned rural residential
40		Unserved properties and population	Unserved urban population			n	Estimated permanent population occupying unserved urban properties	
41	[W1]	Water sources	Off-stream dams			ML	Volume of water abstracted from off-stream dams.	Measured at the point of abstraction. Include volumes pumped from open channels supplied by these dams.
42	[W1]	Water sources	On-stream dams			ML	Volume of water abstracted from on-stream dams.	Measured at the point of abstraction. Include volumes pumped from open channels fed by these dams. Exclude volumes fed to off-stream dams for storage.
43	[W1]	Water sources	Run-of-river pumping excluding volumes pumped to dams			ML	Volume of water abstracted from run-of-river pumping.	Measured at the point of abstraction. Exclude volumes pumped to an off-stream dam or desalination plant
44	[W1]	Water sources	River release from State Water dams			ML	Volume of water drawn as a release from a State Water dam.	
45	[W2]	Water sources	Groundwater extraction			ML	Volume abstracted from groundwater.	Measured at the point of abstraction, not delivery. Exclude desalinated groundwater. Exclude volumes from artificial recharge by sources counted elsewhere eg. rivers, desalination plants and sewage treatment works (recycling).
46	W3	Water sources	Desalinated water			ML	Nominate whether marine, surface water or groundwater in dropdown box	
47	W4	Water sources	Recycled water			ML	Volume of water sourced from recycling. Include residential, industrial, commercial, municipal irrigation and on-site substitution where it replaces potable water. Water for agribusinesses should be included where potable (or untreated water in storage) would normally be used.	Includes water discharged to a waterway for environmental purposes as prescribed by the environmental regulator (68) and also managed aquifer recharge, both where potable (or untreated water in storage) would normally be used. Excludes urban stormwater use. This differs from (72) where any agricultural or on-site uses are counted.
47a	W28.4	Other indicators	Stormwater for urban use			ML	Includes potable and nonpotable urban stormwater used by the utility for urban water supply. Excludes stormwater supplied for managed aquifer recharge (173).	This is a component of (53) (Total sourced water)
48		Water sources	Total water from utility's sources			ML	Sum of (41)+(42)+(43)+(44)+(45)+(46)+(47)+(47a) or W1+W2+W3+W4+W28.4	
49	W5.1	Water sources	Bulk purchase: potable			ML	Volume of potable water received from a bulk supplier outside your utility's geographic area of responsibility (excludes recycled sewage and urban stormwater).	
50	W5.2	Water sources	Bulk purchase: nonpotable			ML	Volume of non-potable water purchased from a bulk supplier outside your utility's geographic area of responsibility (excludes recycled sewage and urban stormwater).	
51		Water sources	Potable bulk supplier/supply scheme				Select the name of bulk supplier or bulk supply scheme, or leave as "unknown" if no purchase was made	If a bulk supplier or scheme is not included in the pick list, please notify the Manager, Performance Monitoring, NOW.
52		Water sources	Purchase price potable bulk water			c/kL		
52a	W6	Water sources	Bulk purchase: recycled			ML	Volume of recycled water (potable and nonpotable) received from another utility outside your utility's geographic area of responsibility. This is a component of (52b)	
52b	W5	Water sources	Bulk purchase: Total			ML	Sum of (49), (50), (52a) and (172) or W5.1+W5.2+W6+W28.2	Total volume of water (potable or non-potable) received from another utility outside your utility's geographic area of responsibility. Includes water from recycled sewage and urban stormwater received. The volume of water will include water that is subsequently exported to another utility.
53	W7	Water sources	Total sourced water			ML	Sum of (48)+(52b) or W1+W2+W3+W4+W5+W28.4	

# Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
54	W8.1	Authorised potable supply	Residential			ML	Total metered and estimated non-metered potable water supplied to residential properties. Excludes recycled water and urban stormwater.	
55	[W9.1]	Authorised potable supply	Commercial			ML	Total metered and estimated non-metered potable water supplied to commercial customers. Excludes recycled water and urban stormwater use.	Include offices, shops, clubs, hotels, motels, caravan parks etc.
56	[W9.1]	Authorised potable supply	Industrial - Mining			ML	Total metered and estimated non-metered potable water supplied to mining industry customers. Excludes recycled water and urban stormwater use.	<p>For industrial customers within urban zoned land or industrial customers that are supplied with potable water outside of urban zoned land.</p> <p>Mining includes customers that mainly extract naturally occurring mineral solids (eg.coal and ores); liquid minerals (eg.crude petroleum); and gases, such as natural gas. The term mining is used in the broad sense to include: underground or open cut mining; dredging; quarrying; well operations or evaporation pans; recovery from ore dumps or tailings as well as beneficiation activities (i.e. preparing, including crushing, screening, washing and flotation) and other preparation work customarily performed at the mine site, or as a part of mining activity.</p> <p>Mining is distinguished by two basic activities: mine operation and mining support activities.</p> <p>Mine operation includes units operating mines, quarries, or oil and gas wells on their own account, or for others on a contract or fee basis, as well as mining sites under development.</p> <p>Mining support activities include units that perform mining services on a contract or fee basis, and exploration (except geophysical surveying).</p> <p>Mining excludes refining or smelting of minerals or ores (other than preliminary smelting of gold), or in the manufacture of such products of mineral origin as coke or cement. These are classified to Manufacturing.</p>
56a	[W9.1]	Authorised potable supply	Industrial - Manufacturing			ML	Total metered and estimated non-metered potable water supplied to manufacturing customers. Excludes recycled water and urban stormwater use.	<p>For industrial customers within urban zoned land or industrial customers that are supplied with potable water outside of urban zoned land.</p> <p>Manufacturing includes customers mainly engaged in the physical or chemical transformation of materials, substances or components into new products (except agriculture and construction). Manufacturing units are often described as plants, factories or mills and characteristically use power-driven machines and other materials-handling equipment.</p> <p>Assembly of the component parts of manufactured products, either self-produced or purchased from other units, is considered manufacturing. For example, assembly of self-manufactured prefabricated components at a construction site is considered manufacturing, as the assembly is incidental to the manufacturing activity.</p>
56b	[W9.1]	Authorised potable supply	Industrial - Electricity generation			ML	Total metered and estimated non-metered potable water supplied to electricity generating customers. Excludes recycled water and urban stormwater use.	For industrial customers within urban zoned land or industrial customers that are supplied with potable water outside of urban zoned land.
56c	[W9.1]	Authorised potable supply	Industrial - Other			ML	Total metered and estimated non-metered potable water supplied to other industrial customers. Excludes recycled water and urban stormwater use.	For industrial consumers within urban zoned land or industrial consumers that are supplied with potable water outside of urban zoned land.
57	[W9.1]	Authorised potable supply	Rural			ML	Total metered and estimated non-metered potable water supplied to farms and hobby farms outside urban zoned land.	Include potable water supplied for stock and domestic uses outside of urban zoned land including market gardens, agricultural irrigation. Include metered and estimated unmetered water supplied. Exclude nonpotable water supplied.
58	[W9.1]	Authorised potable supply	Municipal			ML	Total metered and estimated non-metered potable water supplied to municipal customers. Exclude recycled and urban stormwater use.	Include hospitals, schools, nursing homes, colleges, universities, gaols etc. Include metered and estimated unmetered water supplied. Exclude public parks.
59	W14.1	Authorised potable supply	Bulk water exports			ML	Total volume of water (potable) supplied to other utilities or entities outside your utility's geographic area of responsibility. Exclude recycled water and urban stormwater.	
60	[W9.1]	Authorised potable supply	Municipal - Public parks			ML	Total metered and estimated non-metered potable water supplied for watering public parks and gardens.	Include potable supply for watering of public parks, gardens and ovals etc. Include metered and estimated unmetered water supplied
61	[W10.1]	Authorised potable supply	Unbilled			ML	Metered and estimated unmetered potable authorised supply for which a bill is not issued to the consumer.	Include firefighting and mains flushing as this is authorised supply and is not a water loss. The National Performance Framework default value for unmetered, unbilled authorised supply is 0.5% of total water supplied. Examples: firefighting (customer fire connections and street hydrants); mains flushing etc
62	W11.1	Authorised potable supply	Total authorised potable supply			ML	Sum of (54)+(55)+(56)+(56a)+(56b)+(56c)+(57)+(58)+(60)+(61) or W8.1+W9.1+W10.1	Excludes recycled water (157) and urban stormwater used (47a)

# Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Unit	Indicator Definition	Instruction
<b>NOTE: ABS requires utilities to report details of each non residential customer using more than 3GL of water. Please email such details separately to the Office of Water who will forward the information to the ABS.</b>							
63	W8.2	Authorised non-potable supply	Residential		ML	Non-potable water reticulated to residential customers.	Include metered and estimated unmetered supply. Exclude recycled water and urban stormwater
63a	[W9.2]	Authorised non-potable supply	Commercial		ML	Total metered and estimated non-metered nonpotable water supplied to commercial customers. Excludes recycled water and urban stormwater use.	
63b	[W9.2]	Authorised non-potable supply	Industrial - Mining		ML	Total metered and estimated non-metered nonpotable water supplied to mining industry customers. Excludes recycled water and urban stormwater use.	For industrial customers within urban zoned land or industrial customers that are supplied with nonpotable water outside of urban zoned land. See potable water supplied indicator for a definition of Mining.
63c	[W9.2]	Authorised non-potable supply	Industrial - Manufacturing		ML	Total metered and estimated non-metered nonpotable water supplied to manufacturing customers. Excludes recycled water and urban stormwater use.	For industrial customers within urban zoned land or industrial customers that are supplied with nonpotable water outside of urban zoned land. See potable water supplied indicator for definition of Manufacturing.
63d	[W9.2]	Authorised non-potable supply	Industrial - Electricity generation		ML	Total metered and estimated non-metered nonpotable water supplied to electricity generating customers. Excludes recycled water and urban stormwater use.	For industrial customers within urban zoned land or industrial customers that are supplied with nonpotable water outside of urban zoned land.
63e	[W9.2]	Authorised non-potable supply	Industrial - Other		ML	Total metered and estimated non-metered nonpotable water supplied to other industrial customers. Excludes recycled water and urban stormwater use.	For industrial customers within urban zoned land or industrial customers that are supplied with nonpotable water outside of urban zoned land.
63f	[W9.2]	Authorised non-potable supply	Rural		ML	Total metered and estimated non-metered nonpotable water supplied to farms and hobby farms outside urban zoned land. Exclude recycled and urban stormwater.	
63g	[W9.2]	Authorised non-potable supply	Municipal		ML	Total metered and estimated non-metered nonpotable water supplied to municipal customers. Exclude recycled and urban stormwater.	Exclude public parks
63h	W14.2	Authorised non-potable supply	Bulk water exports		ML	Total volume of water (nonpotable) supplied to other utilities or entities outside your utility's geographic area of responsibility. Exclude recycled water and urban stormwater.	
63i	[W9.2]	Authorised non-potable supply	Municipal - Public parks		ML	Total metered and estimated non-metered potable water supplied for watering public parks and gardens. Exclude recycled and urban stormwater.	Include nonpotable supply for watering of public parks, gardens and ovals etc. Include metered and estimated unmetered water supplied
63j	W10.2	Authorised non-potable supply	Unbilled		ML	Metered and estimated unmetered nonpotable authorised supply for which a bill is not issued to the consumer. Exclude recycled and urban stormwater.	
63k	W10.3	Authorised non-potable supply	Managed aquifer recharge		ML	Nonpotable water supplied to managed aquifer recharge. Excludes recycled water and urban stormwater.	
63l	W10.4	Authorised non-potable supply	Agricultural irrigation		ML	Nonpotable water supplied to agricultural irrigation. Excludes recycled water and urban stormwater.	
64	W11.2	Authorised non-potable supply	Total authorised non-potable supply		ML	Sum of (63)+(63a)+(63b)+(63c)+(63d)+(63e)+(63f)+(63g)+(63i)+(63j) or W8.2+W9.2+W10.2	Include metered and estimated unmetered supply. Exclude recycled water (157) and urban stormwater used (47a)
150	W20	Authorised recycled supply	Recycled residential		ML	Recycled water for potable and non-potable town water supply reticulated to residential customers.Excludes urban stormwater.	Include metered and estimated unmetered recycled water supplied
151	W21	Authorised recycled supply	Recycled commercial		ML	Recycled water supplied to commercial, industrial, municipal properties. Includes golf courses. Excludes urban stormwater use.	
152	W22	Authorised recycled supply	Recycled agricultural		ML	Recycled water supplied for agricultural purposes. Includes irrigation, forestry and livestock. Excludes urban stormwater.	
153	W23	Authorised recycled supply	Recycled environmental		ML	Recycled water supplied for environmental purposes as prescribed by the environmental regulator. Includes discharge to rivers, sea or natural wetlands, provided there is a beneficial use rather than disposal.	
154	W24	Authorised recycled supply	Recycled on-site		ML	Recycled water used on-site external to the treatment process.	
155	W25	Authorised recycled supply	Recycled other		ML	Recycled water supplied to other users including managed aquifer recharge, firefighting, mains flushing, losses and leakage.	
156	W26.1	Authorised recycled supply	Recycled managed aquifer recharge		ML	Recycled water supplied for managed aquifer recharge, excluding environmental water and urban stormwater.	
157	W26	Authorised recycled supply	Total recycled water supplied		ML	Total treated effluent excluding evaporation and urban stormwater. Sum of (150) to (155). Or W20+W21+W22+W23+W24+W25	



## Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
158	W14	Bulk water exports	Total bulk water exports			ML	Total volume of potable and nonpotable water supplied to another utility outside your utility's geographic area of responsibility.  Sum (59)+(63h)+(159)+(171) or W14.1+W14.2+W15+W28.1	Includes recycled water (159) and urban stormwater supplied (174)
159	W15	Bulk water exports	Bulk recycled water exports			ML	Recycled water supplied to other utilities or entities outside your utility's geographic area of responsibility. Excludes urban stormwater.	(159) is a component of (158)
170	W28	Other indicators	Urban stormwater discharges			ML	Total volume of urban stormwater discharges from a stormwater discharge point including to water courses or to the ocean or to the urban stormwater drainage system operated by another organisation.	Includes all discharges of stormwater into watercourses and marine water bodies and stormwater exported to another stormwater drainage system operator.
171	W28.1	Other indicators	Urban stormwater supplied to other utilities			ML	Includes water for potable and nonpotable urban stormwater supplied to other utilities.	This is a component of (158) (volume of bulk water exports)
172	W28.2	Other indicators	Urban stormwater received from other utilities			ML	Includes water for potable and nonpotable urban stormwater received from other utilities.	This is a component of (52b) (volume of water received from bulk supplier)
173	W28.3	Other indicators	Urban stormwater supplied for managed aquifer recharge			ML		
174	W28.4	Other indicators	Urban stormwater supplied for urban water supply			ML	Includes potable and nonpotable urban stormwater used by the utility for urban water supply. Excludes stormwater supplied for managed aquifer recharge (173).	This is a component of (53) (Total sourced water)
82		Peak water supplied	Peak day			ML	The maximum 24 hour potable water supplied in the reporting year	
83		Peak water supplied	Peak week			ML	The maximum 7 day potable water supplied in the reporting year	
65		Apparent potable losses	Unauthorised supply			ML	Include theft and illegal use (illegal connections, illegal use of unmetered fire connections).	Exclude firefighting and mains flushing - this is included in unbilled authorised potable supply (indicator 61). The National Performance Framework default value for unauthorised consumption is 0.1% of total water supplied
66		Apparent potable losses	Meter inaccuracies			ML	Under-registration of customer meters and errors in system meters.	Your utility should have in place a meter testing program and appropriate statistical analysis to determine metering error. Retail meter error defaults are: 2.0% of BACMR (billed authorised consumption, metered residential) or 2.0% of indicator 54 less estimated non-metered supply (Note: an additional sum of 0.5% of BACMR may be added to the residential meter error to account for meter non-registration); 2% of BACMN (billed authorised consumption, metered non-residential) or 2% of indicators (62 - 54) less non-metered water supplied
67		Apparent potable losses	Total apparent losses			ML	Apparent losses are the sum of unauthorised potable supply plus meter inaccuracies	
68	[A10]	Real potable losses	Leakage			ML	Leakage from mains, reservoirs and connections including property service connections to customer meters.	If leakage is less than 6% of total water supplied, your data should be carefully re-examined as leakage studies have found 6% to be a minimum for leakage for other than bulk water suppliers. Losses of less than 6% should be supported by evidence (eg. waste metering, reservoir drop test or night flow analysis). Real losses represent a wasted resource and reduce the effective capacity of the supply system resulting in unnecessary capital and operating expenditures.
69		Total potable losses	Total potable losses			ML	Sum of real plus apparent losses	
77		Leakage factors	Average system pressure			m	Estimated average operating pressure in the distribution system.	Pressures should be averaged over 24 hours. For multiple zones report a weighted average using average pressures and the number of connections in each zone
78		Leakage factors	Average length of property service			m	Estimated average length of property service from the reticulation main to the customer meter.	Assumed to be zero if the customer meter is normally located at or close to the property boundary. If the customer meter is normally located some distance from the boundary, estimate the average length by randomly sampling an appropriate number of property service connections
74		Leakage testing	Leakage test method				Select the test used or leave as "unknown" if no test was carried out	
75		Leakage testing	Year of test			year	Year that latest leakage measurement was carried out or leave as "unknown" if no test was carried out	Enter the final year if testing was undertaken over several years (eg if 2003 to 2004, enter 2004)
76		Leakage testing	Result of test: percent leakage			%	If leakage is less than 6% of total water consumption, this data should be carefully examined as leakage studies have found 6% to be a minimum for leakage for other than bulk water suppliers. Losses of less than 6% should be supported by evidence (eg. waste metering, reservoir drop test or night flow analysis)	

## Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
84		Demand management initiatives	Customer education program			Y/N		
85		Demand management initiatives	Permanent water savings measures			Y/N	Permanent water savings measures in place to conserve water	Example: no hosing of concrete or hard surfaces at any time
86		Demand management initiatives	Effluent or stormwater reuse			Y/N		
87		Demand management initiatives	Leakage reduction program			Y/N		
88		Demand management initiatives	Retrofit program			Y/N		
89		Demand management initiatives	Rebates for water efficient appliances			Y/N		
90		Demand management initiatives	Customer billing interval			mths	Interval between customer bills this reporting year	
91		Demand management initiatives	Other initiative					
92		Demand management initiatives	Other initiative					
93		Rainwater tanks	Rebate for tanks			Y/N		
94		Rainwater tanks	Maximum rebate available			\$		
95		Drought restrictions	Days water restrictions due to drought			days	Include all days of drought water restriction regardless of the level of restriction.	
96	[C10]	Complaints	Service complaints			n	Complaints relating to service quality and reliability, including leaks. Exclude water quality complaints and billing complaints. Exclude queries about service quality and reliability.	Include bursts, leaks, service interruptions, adequacy of service, water pressure, affordability, behaviour of staff or agents. Exclude complaints about tariff structure. A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or failure to act by the water utility, its employees or contractors. Complaints from separate customers arising from the same cause count as separate complaints. Include complaints received by the water utility in person, by mail, by fax, phone, email or text message. Exclude complaints about planned service interruptions unless the customer expresses dissatisfaction about the interruption. Australian Standard AS ISO 10002-2006 refers. Examples: Include complaints about pressure when found to be caused by a leaking mains or when a customer expresses dissatisfaction with the normal pressure.
97		Complaints	Common service complaint 1				A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or failure to act by the utility, its employees or contractors	Include complaints in person, by mail, email, fax, phone, or text messaging.
98		Complaints	Common service complaint 2					
99	[C12]	Complaints	Billing complaints			n	Complaints concerning account payment, financial loss or overcharging and billing errors. Exclude queries.	Do not include complaints on government pricing policy or complaints about the tariff or queries about how the tariff is calculated. A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or failure to act by the water utility, its employees or contractors. Complaints from separate customers arising from the same cause count as separate complaints. Includes complaints received by the water utility in person, by mail, by fax, phone, email or text message. When a customer queries an account, this is not counted as a complaint unless the customer identifies that they have rung to make a complaint. If the customer rings to make an enquiry but remains dissatisfied or the enquiry identifies an error in the bill, this should be recorded as a complaint. If a customer makes repeated contact on the same billing issue this should be recorded as a complaint. If an operator is doubtful whether the customer is making an enquiry or complaint they should ask the customer whether they want a complaint to be recorded.
100	[C10]	Complaints	Other complaints			n	Complaints other than water quality, service or billing. Exclude queries.	A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or failure to act by the water utility, its employees or contractors. Complaints from separate customers arising from the same cause count as separate complaints. Include complaints received by the water utility in person, by mail, by fax, phone, email or text message. Exclude complaints on government pricing policy or tariff structures
101a	C9	Complaints	Water quality complaints (bulk supplies)			n	Customer complaints concerning the quality of reticulated bulk potable supplies. Exclude queries.	Water quality complaints for areas where your utility did not carry out water treatment (where the supply is obtained from a bulk supplier).
101b	[C9]	Complaints	Water quality complaints (treated supplies)			n	Complaints relating to water treated by your utility's treatment plants. Exclude queries.	Sum of water quality complaints for your treatment works (entered under Water Treatment/Service Levels NSW indicator number T37)
102	[C13]	Complaints	Total complaints			n	Sum of (96), (97), (99), (100), (101a) and (101b)	

# Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
103	C14	Telephone connect time	Percent of calls answered by an operator within 30 seconds			%	Percentage of calls answered by an operator within 30 seconds. If a percentage is provided for Sewerage indicator 41, do not provide a percentage here	If your utility does not record the "time to connect to telephone" leave this indicator blank. Exclude calls resolved by automated systems, hang-ups or where the customer has selected an incorrect dialling option. Examples: if a customer elects to speak with an operator via automatic dialling, the connect time is from the time when the customer was connected by the system until it is answered by an operator. The connect time starts when the call gets connected by person, (in which case the connect time would be zero), by an auto attendant (IVR) or by a message informing the caller they have been put in a queue. The connect time finishes when the caller is answered by a person. If the caller hangs up before they speak to a person, the call is not counted. Similarly, if the caller's question is answered by an IVR, meaning they don't need to speak to an operator, the call is not counted
104	[A8]	Unplanned supply interruptions	Water main breaks			n	Total number of water main breaks, bursts and leaks in all diameter water distribution and reticulation mains. Includes potable and non-potable water mains.	Exclude: Breaks in the property service connection; weeps and seepages in above-ground mains that can be fixed without shutting down the main.
105		Unplanned supply interruptions	Property service connection failures			n	Unplanned incidents where water is lost due to failure of a property service connection	Exclude a burst or leak which causes no discernable impact on customers, property or the environment
106		Unplanned supply interruptions	Properties affected			n	Unplanned interruptions are a total loss of water supply due to failure of the water asset	An unplanned interruption is when the customer has not received at least 24 hours notification of the interruption. Interruptions include both potable and recycled interruptions. Include each occurrence of interruption. Exclude interruptions caused by burst or leaks in the property service connection and interruptions where there is some reduction to service but where normal activities (eg. shower, washing machine, toilet flushing etc) are still possible
107	[C15]	Unplanned supply interruptions	Average duration			min	Measured from time of notification of interruption to time of restoration of normal service. Include: interruptions due to bursts or leaks in property service connections; all the period of planned interruptions where the duration exceeds planned duration. Exclude planned interruptions where planned duration is not exceeded.	For this indicator, include interruptions caused by bursts or leaks in property service connections as this indicator reports the average duration that customers are without a water supply service. This is different to indicators 103 to 105. If the utility responds to notification of a broken main, unless the notification also indicates a loss of supply, duration commences once the break is isolated. Examples - A utility advises customers an interruption will occur and will last 3 hours. The actual duration is 5 hours. The unplanned interruption duration is 5 hours. - A customer calls advising they are without water. The interruption commences at the time of notification. - A customer calls advising of a broken main. Unless the notification also indicates a loss of supply, the interruption commences when staff arrive at the main and isolate the break. - Mains are shut down due to fire fighting requirements. This interruption is included and commences at the time the mains are shut down. Include un-notified interruptions caused by third parties.
113	H6	Water quality management	Risk-based drinking water quality plan?			Y/N	Minimum requirement for answering "yes" is a documented water quality management plan in accordance with page 2-1 of the Australian Drinking Water Quality Guidelines 2004. Any other more rigorous plans are also satisfactory	
113a		Water quality management	Specify planning framework				State the basis for your Drinking Water Quality Management Plan	Examples: Framework for Management of Drinking Water Quality, HACCP, ISO 9001, WSAA (National Water Quality Framework Continuous Improvement Tool)
114	H5	Water quality management	External assessment of plan				State the basis for the external accreditation	For each external assessment, external third party accredited assessments must have taken place within the last 12 months. The scope of these quality systems must cover the entire water business water quality management system. If the quality system covers a more limited area, the indicated quality system must be footnoted with a description of the area covered
115		Public health incidents	Category 1 incidents			n	Incidents with nil or inconsequential public health effects	Example: a minor failure of a water treatment process or asset that results in a limited boil water alert. Examples of Category 1, 2 or 3 Public Health and/or Environmental Incidents are shown on page 205 of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report ( <a href="http://www.water.nsw.gov.au">www.water.nsw.gov.au</a> )
116		Public health incidents	Category 2 incidents			n	Incidents with a limited public health impact	Examples: non-compliance with health parameters (E. coli) of ADWG, 2004 for more than 7 days; system-wide boil water notice; failure of a disinfection system of more than 3 days; failure of a major treatment process or asset at a treatment works of more than 4 days; chlorine or ammonia gas leak (chlorination/chloramination); non-pathogenic/toxic contamination of the potable water supply due to a cross connection; an incident resulting in unplanned interruptions to supply of more than 2 days (if more than 7 days report as Category 3)
117		Public health incidents	Category 3 incidents			n	Incidents with a major impact on public health	Examples: outbreak of water borne disease and/or hospitalisation from water supplied by your utility's water supply system; an incident resulting in unplanned interruptions to supply of more than 7 days; pathogenic contamination of the potable water supply due to a cross connection; toxic contamination of water supply
118		Public health incidents	Category 3 incidents detail					
119		Public health investment	Capital investment to improve health performance			\$k	Capital expenditure with the principal outcome of improved health performance	This indicator highlights public health improvement and innovation. Include expenditure undertaken for compliance purposes having IMPROVED performance as an outcome. Include new treatment works. Exclude renewals. (Enter \$111,500 as 111.5, \$3,999,000 as 3999 etc)

## Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
120		Workforce and training	Total workforce in water business			FTE	A full-time employee has an FTE of 1. Part-time and casual employees will have an FTE of less than one based on hours employed.	Include water supply business workforce engaged in operation, maintenance and management including billing as well as contracted staff. Exclude staff engaged on design and construction
121		Workforce and training	Female workforce			FTE		
122		Workforce and training	Workforce receiving 2 or more training days			FTE	The training days FTE of water supply business employees that have undertaken at least 2 days of training in the reporting year. This number will be less than or equal to the workforce FTE	The training days FTE of a casual or part-time employee is the FTE of that employee multiplied by the number of days that employee trained in the reporting year
123		Days lost	Total days lost			FTE	Total FTE days lost for water supply business	Include days lost due to workplace injury, disease and industrial action. Exclude recreation leave, long-service leave, public holidays, rostered days off or flexi-leave, maternity leave, jury duty, leave for Army Reserve training, etc. Exclude days lost for staff engaged in design or construction
124		Days lost	Confirmed injuries			n	Include water supply business injuries that resulted in a fatality, permanent disability or time lost from work of one day or more. Include injuries for equivalent contractor employees. Exclude injuries for employees engaged in design or construction	
125		Days lost	Days lost due to injury			FTE	Total FTE days lost due to injury	Include days lost for injuries for equivalent contractor employees. Exclude days lost for injuries for employees engaged in design or construction
128		Workforce outsourced	Management costs outsourced			%	The percentages expended by the water supply business on outsourcing of management, operational and maintenance costs	
129		Workforce outsourced	Operational costs outsourced			%		
130		Workforce outsourced	Maintenance costs outsourced			%		Outsourcing is subcontracting part of the operation and/or management of a utility's business to a third party, where the subcontractor undertakes work that would normally be done by the utility's workforce. Include legal work, electrical maintenance, operation of a treatment works etc.
131		Community	Reduction in fees and charges to community organisations			\$k	The value of reductions in fees or charges permitted by legislation which are provided by your water supply business to the community. Exclude pensioner rebates	Utilities may elect to provide reduced fees and charges for certain non-profit and community organisations and charities (including non-rateable properties) as permitted by legislation. This indicator reports the total amount of reductions provided to such community organisations in comparison with the standard fees and charges for non-residential customers
131a		Community	Progress towards implementing the National Guidelines for Residential Customers' Water Accounts			%	Estimate your utility's percent progress toward implementing the National Guidelines for Residential Customers' Water Accounts, 2006 (available at <a href="http://www.mincos.gov.au">www.mincos.gov.au</a> )	
132a	C18	Community	Restrictions for non-payment of water bill			n	Restrictions and disconnections applied for non-payment of water bills in the reporting period	Include: all cases where restriction devices are fitted to reduce water flows to a customer (residential and non-residential). Multiple restrictions for one customer are to be counted as separate restrictions. Exclude: customers who choose to disconnect from the water supply; disconnections carried out due to unsafe infrastructure connected to the water utility's system; instances where your utility elects not to restrict supply due to non-payment.
132b	C19	Community	Legal action for non-payment of water bill			n	Legal actions for non-payment of water bills in the reporting period.	Legal action commences from issue of summons. Include action taken against both residential and non-residential customers. Multiple actions against one customer are to be counted as separate actions. Exclude cases where your utility threatens to take legal action but does not proceed
133		Operation and Maintenance expenses	Headworks			%	Financial data is provided by your utility in Special Schedule No.3 to the Annual Financial Statement, specifically "Operation and Maintenance Expenses". Divide this total into "headworks" and "distribution and reticulation"	
134		Operation and Maintenance expenses	Distribution and reticulation			%		
135		Developer charges	Typical developer charge for this reporting year			\$	This is the typical developer charge determined by your utility to recover part of the cost of water supply infrastructure for new development.	
136		Developer charges	Typical developer charge for next reporting year			\$		

## Water business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
137		Environmental incidents	Category 1 incidents			n	Incidents with little or no impact on the environment	Examples: a reportable incident but not a breach of environmental regulations; an incident resulting in under 4 days of odour or noise complaints; a minor spillage of non-toxic chemicals or sludge to waterway or land
138		Environmental incidents	Category 2 incidents			n	Incidents with limited and non-permanent impact on the environment	Examples: a minor breach of environmental regulations eg. non maintenance of the required environmental flows, an incident resulting in over 4 days of odour or noise complaints, a major soil erosion incident requiring remediation, a significant chemical or sludge spill to waterway or land
139		Environmental incidents	Category 3 incidents			n	Incidents with major and irreversible impact on the environment	Examples: a major breach of environmental regulations, a dam failure, a severe algal outbreak in storages/waterways, a major toxic chemical or sludge spill into waterways, widespread destruction of native forests/ecosystems
140		Environmental incidents	Category 3 incidents detail					
141		Environmental management	Environmental management plan?			Y/N		
142		Environmental management	Plan developed in consultation with other bodies including Catchment Management Board			Y/N		
143		Environmental management	Environmental consultative process in place			Y/N		
144		Environmental management	Capital investment to improve environmental performance			\$k	Capital expenditure with the principal outcome of improved environmental performance	This indicator highlights environmental improvement and innovation. Include expenditure undertaken for compliance purposes having IMPROVED performance as an outcome. Include new treatment works. Exclude renewals. (Enter \$111,500 as 111.5, \$3,999,000 as 3999 etc).
144a	W13	Other indicators	Environmental flows (new indicator 2008/09)			ML	Wholesale flow allocations to the environment, generally upstream of the master meter, as specified in the environmental flow management regime as required by the environmental regulator. Exclude unplanned releases unless these can be incorporated into the environmental flow regime.	
145		Energy	Non-renewable energy			MWh	Energy derived from non-renewable sources used by your water supply business	
146		Energy	Renewable energy			MWh	Energy derived from accredited renewable sources used by your water supply business	
147		Energy	Total energy			MWh	Sum of (145) and (146)	
148	E9	Greenhouse gas emissions - water supply	Operating emissions			t CO2 eq	Greenhouse gas emissions for all operations relating to water supply	The Greenhouse Gas calculator provided to you by the NSW Office of Water will simplify this task (copy available in Appendix G of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report).
148b	E11	Greenhouse gas emissions - water supply	Net administrative emissions			t CO2 eq	Net greenhouse gas emissions for other water supply activities (transport, office buildings and sequestration)	The Greenhouse Gas calculator provided to you by the NSW Office of Water will simplify this task (copy available in Appendix G of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report).

# Water treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/ Rel	Unit	Indicator Definition	Instruction
T1		Works parameters	Year commissioned / augmented			year	Year of commissioning or latest major augmentation	
T2		Works parameters	Design capacity			ML/d		
T3		Works parameters	Type of works				For multiple processes, hold the Control key and select the processes used	
T5		Works parameters	Percentage of population served			%	Estimated percent of your utility's permanent population supplied by this treatment works	
T4		Works parameters	Comments					
T7a		Qualifications	Operator 1 qualification				Highest qualification obtained by this operator	
T7e		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7i		Qualifications	Certification				Qualification level ie. Cert III in Water Industry Operations (Water Treatment Operator) issued by NSW TAFE: Office of Water Certificate Part 2 (Water Treatment Operator) or Certificate Part 1 (Chemical Dosing Systems) issued by the NSW Office of Water: Certificate IV, III, II or I from NSW TAFE: Certificate IV, III, II or I by OTHER RTO.	
T7b		Qualifications	Operator 2 qualification				Highest qualification obtained by this operator	
T7f		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7j		Qualifications	Certification				see (T7i)	
T7c		Qualifications	Operator 3 qualification				Highest qualification obtained by this operator	
T7g		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7k		Qualifications	Certification				see (T7i)	
T7d		Qualifications	Operator 4 qualification				Highest qualification obtained by this operator	
T7h		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7l		Qualifications	Certification				see (T7i)	
T6		Volume treated	Volume treated			ML	Volume treated by this treatment works this reporting year	
T26		E.coli	Number of system samples			n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring.	System performance monitoring is a wide ranging assessment of the quality of the water supplied to customers. Operational monitoring is used as a trigger for immediate corrective action to improve water quality and to check equipment is working properly. Sampling location and frequency should be scheduled sampling on the basis of Attachment 2 and ADWG 2004. The number of samples reported should be those taken for system performance monitoring from representative locations in the water supply system and not those taken for operational monitoring
T27	H2	E.coli	Percent complying			%	Number of samples taken for system compliance monitoring divided by the total number of such samples. Water quality compliance data for each treatment works will be used to determine NWI indicators H2, H3 and H4	It is neither physically nor economically feasible to test on an ongoing basis for all substances in a water supply system. Each water supply system will have its own key characteristics. It is therefore common for water utilities to monitor regularly for contaminants such as disinfection by-products whereas a wide range of other non-key characteristics will only be monitored irregularly.
T16		Physical	Number of system performance samples			n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring.	System performance monitoring is a wide ranging assessment of the quality of the water supplied to customers. Operational monitoring is used as a trigger for immediate corrective action to improve water quality and to check equipment is working properly. Sampling location and frequency should be scheduled sampling on the basis of Attachment 2 and ADWG 2004. The number of samples reported should be those taken for system performance monitoring from representative locations in the water supply system and not those taken for operational monitoring
T17		Physical	Percent complying			%	Number of samples taken for system compliance monitoring divided by the total number of such samples.	It is neither physically nor economically feasible to test on an ongoing basis for all substances in a water supply system. Each water supply system will have its own key characteristics. It is therefore common for water utilities to monitor regularly for contaminants such as disinfection by-products whereas a wide range of other non-key characteristics will only be monitored irregularly.

## Water treatment data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
T18		Chemical	Number of system samples			n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring.	System performance monitoring is a wide ranging assessment of the quality of the water supplied to customers. Operational monitoring is used as a trigger for immediate corrective action to improve water quality and to check equipment is working properly. Sampling location and frequency should be scheduled sampling on the basis of Attachment 2 and ADWG 2004. The number of samples reported should be those taken for system performance monitoring from representative locations in the water supply system and not those taken for operational monitoring
T19	H4	Chemical	Percent complying			%	Number of samples taken for system compliance monitoring divided by the total number of such samples. Water quality compliance data for each treatment works will be used to determine NWI indicators H2, H3 and H4	It is neither physically nor economically feasible to test on an ongoing basis for all substances in a water supply system. Each water supply system will have its own key characteristics. It is therefore common for water utilities to monitor regularly for contaminants such as disinfection by-products whereas a wide range of other non-key characteristics will only be monitored irregularly.
T22		pH	Number of system samples			n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring	System performance monitoring is a wide ranging assessment of the quality of the water supplied to customers. Operational monitoring is used as a trigger for immediate corrective action to improve water quality and to check equipment is working properly. Sampling location and frequency should be scheduled sampling on the basis of Attachment 2 and ADWG 2004. The number of samples reported should be those taken for system performance monitoring from representative locations in the water supply system and not those taken for operational monitoring
T23		pH	Percent complying			%	Number of samples taken for system compliance monitoring divided by the total number of such samples	It is neither physically nor economically feasible to test on an ongoing basis for all substances in a water supply system. Each water supply system will have its own key characteristics. It is therefore common for water utilities to monitor regularly for contaminants such as disinfection by-products whereas a wide range of other non-key characteristics will only be monitored irregularly.
T8		Colour	Raw water maximum			HU	For this treatment works only	
T9		Colour	Raw water average			HU	For this treatment works only	
T10		Colour	Treated water maximum			HU	For this treatment works only	
T11		Colour	Treated water average			HU	For this treatment works only	
T24		Colour	Number of system performance samples			n	For this treatment works only	
T25		Colour	Percent complying			%	For this treatment works only	
T12		Turbidity	Raw water maximum			NTU	For this treatment works only	
T13		Turbidity	Raw water average			NTU	For this treatment works only	
T14		Turbidity	Treated water maximum			NTU	For this treatment works only	
T15		Turbidity	Treated water average			NTU	For this treatment works only	
T20		Turbidity	Number of system performance samples			n	For this treatment works only	
T21		Turbidity	Percent complying			%	For this treatment works only	
T30		Non-compliance	Common reason for non-compliance					
T31		Chemical usage	Alum			tonnes	For this treatment works only	
T32		Chemical usage	Alkali			tonnes	For this treatment works only	
T33		Chemical usage	Chlorine			tonnes	For this treatment works only	
T34		Chemical usage	Flouride			tonnes	For this treatment works only	
T35		Malfunctions	Number of days chlorination system failed			days	For this treatment works only	
T36		Malfunctions	Number of days of major treatment process failure			days	For this treatment works only	
T37	[C9]	Water quality complaints	Number of complaints			n	Include only water quality complaints from customers supplied by this treatment works. Exclude complaints about adequacy and interruptions to supply, water pressure etc.	Include complaints about discolouration, taste, odour, stained washing, illness or cloudy water. Example: complaints about milky water caused by mains flushing.
T38		Water quality complaints	Common complaint 1				Most frequent water quality complaint from customers supplied by this treatment works only	
T39		Water quality complaints	Common complaint 2					



# Sewerage business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
1	C5	Population served	Permanent			n	Population served with sewerage service in June this reporting year	Exclude population in non-serviced areas
2		Population served	Peak			n	Maximum population served anytime this reporting year	Permanent population plus temporary influx (tourists, seasonal workers). Exclude population in non-serviced areas
3	A4	Treatment works	Number			n	Include all primary, secondary and tertiary treatment works	
4		Treatment works	Capacity			EP		
5		Pumping stations	Number			n		
6		Pumping stations	Capacity			ML/d		
7	A5	Sewage mains	Gravity / reticulation length			km	Length of mains, including trunk and reticulation mains, aqueducts etc. of all diameters.	Exclude pressure (rising) mains. Exclude property or house connections and conduits carrying treated effluent
8	A5	Sewage mains	Pressure / Rising length			km	Length of pressure (rising) mains.	
9	A5	Sewage mains	Total length			km		
10		Renewals	Mains renewed / replaced in reporting year			km	Include existing mains renewed or replaced in the reporting year. Exclude maintenance work (Sect 5 of NSW Local Government Asset Accounting Manual, 1999)	
11		Renewals	Property connections renewed / replaced in reporting year			n	A house or property connection is a short sewer owned and operated by your utility which connects the main sewer and the customer sanitary drain	
12		New residential connections	New residences connected			n	Number of new residences connected this reporting year	Include each individual flat, villa, unit, townhouse etc. whether separately metered or not
13	[C6]	Assessments	Residential			n	Residential assessments for sewerage services. Include vacant lots	
14	[C7]	Assessments	Non-residential			n	Non-residential assessments for sewerage services. Include vacant lots	
17	[C8]	Assessments	Total assessments			n	Sum of (13) and (14)	
18	[C8]	Connected Property-Assessment ratios	Connected properties / total assessments			n	See notes for (19)	
18a	[C6]	Connected Property-Assessment ratios	Residential assessments / total assessments			n	See notes for (19)	
19	[C6]	Connected Property-Assessment ratios	Connected residential properties / residential assessments			n	These ratios do not vary significantly from year to year for sewerage systems. NOW has worked with LWUs to establish these ratios and will continue to use the existing ratio shown. If you consider that another ratio is more appropriate, you will need to provide detailed evidence to NOW to support such a change. Evidence that would be required includes the number of residential (single and multi) and non-residential assessments and connected properties from your financial, water and sewerage reports over the last 3 years together with details of vacant lots and new properties connected. Note that ratios are stored as floating decimals but are displayed on this page to two decimal places only	Connected properties are not the same as assessments. Connected properties rather than assessments are used for consistency with the National Performance Framework. A connected property is one which is connected to the sewerage system but which may or may not have a separate assessment
20		Unserviced in reporting year	Unserviced urban properties			n	Number of properties in urban zoned land in towns and villages in your utility's area of operations that are not served by a reticulated public sewerage service	Exclude premises in land zoned rural residential. Information on the unserved urban properties and population of each village is available in your LWU's sewerage strategic business plan.
21		Unserviced in reporting year	Unserviced urban population			n	Estimated permanent population in unserved urban properties	
34	[C13]	Complaints	Sewage chokes			n	Complaints relating to sewage chokes. Exclude odour, billing and sewerage service complaints. Exclude queries.	
38	[C11]	Complaints	Service			n	Complaints other than chokes, odour or billing. Exclude queries.	Include complaints concerning sewerage system reliability, trade waste services, behaviour of staff and all other sewerage issues. Exclude complaints about chokes, odour or billing. Australian Standard AS ISO 10002-2006 refers.
35		Complaints	Common service complaint 1				Most frequent service complaints should be entered in these two fields	
36		Complaints	Common service complaint 2					
37	[C12]	Complaints	Billing			n	Complaints concerning account payment, financial loss or overcharging and billing errors. Exclude queries.	Exclude complaints about government pricing policy, the tariff structure or queries about how the tariff is calculated
39	[C11]	Complaints	Odour			n	Sum of odour complaints for treatment works, pumping stations and pipe network in your sewerage business	See Sewage Treatment/Service Levels NSW References 68 and 69
40	[C13]	Complaints	All complaints			n	Sum of complaints	A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or failure to act by the water utility, its employees or contractors. Complaints from separate customers arising from the same cause count as separate complaints. Includes complaints received by the utility in person, by mail, by fax, phone, email or text message



# Sewerage business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
41	C14	Telephone connect time	Percent of calls answered by an operator within 30 seconds			%	Percentage of calls answered by an operator within 30 seconds. If a percentage is provided for Water indicator 103, do not provide a percentage here.	If your utility does not record the "time to connect to telephone" leave this indicator blank. Exclude calls resolved by automated systems, hang-ups or where the customer has selected an incorrect dialing option. Examples: if a customer elects to speak with an operator via automatic dialling, the connect time is from the time when the customer was connected by the system until it is answered by an operator. The connect time starts when the call gets connected by person, (in which case the connect time would be zero), by an auto attendant (IVR) or by a message informing the caller they have been put in a queue. The connect time finishes when the caller is answered by a person. If the caller hangs up before they speak to a person, the call is not counted. Similarly, if the caller's question is answered by an IVR, meaning they don't need to speak to an operator, the call is not counted
43	[C16]	Unplanned interruptions	Average sewerage interruption			min	Measured from time when utility is aware that sewerage services are no longer available. This is an average based on the total minutes of all interruptions divided by the total number of interruptions.	Exclude planned interruptions, repair times relating to breaks, chokes and leaks in the property connection and time for site restoration. Include un-notified interruptions caused by third parties
44		Public health incidents	Category 1 incidents			n	Incidents with no or inconsequential public health effects	Example: minor failure of sewerage treatment processes
45		Public health incidents	Category 2 incidents			n	Incidents with a limited public health impact	Examples: an algal outbreak in receiving waters attributable to sewerage system; issue of public no-contact notice with receiving waters; sewer overflow affecting public access to land or water; sewage contamination of fishing or recreational water areas; a failure of effluent disinfection system; a failure of major treatment processes at a treatment works of more than 4 days; an incident resulting in unplanned interruptions to service of more than 3 days (if more than 20 days, report as Category 3); a chlorine leak
46		Public health incidents	Category 3 incidents			n	Incidents with a major impact on public health	Examples: an outbreak of water borne disease due to sewerage system; hospitalisations from water borne disease due to sewerage system; contamination of an oyster farming area; sewer overflow into a water supply catchment; an incident resulting in unplanned interruptions to service of more than 20 days
47		Public health incidents	Category 3 incidents detail					
48		Public health investment	Capital investment to improve health performance			\$k	Capital expenditure with the principal outcome of improved health performance	This indicator highlights public health improvement and innovation. Include expenditure undertaken for compliance purposes having IMPROVED performance as an outcome. Include new treatment works. Exclude renewals. (Enter \$111,500 as 111.5, \$3,999,000 as 3999 etc)
49		Resources and training	Total workforce in sewerage business			FTE	A full-time employee has an FTE of 1. Part-time and casual employees will have an FTE of less than one based on hours employed.	Include sewerage business employees engaged in operation, maintenance and management including billing. Include equivalent contractor employees. Exclude employees engaged on design and construction
50		Resources and training	Female workforce			FTE		
51		Resources and training	Workforce receiving 2 or more training days			FTE	The training days FTE of sewerage business employees that have undertaken at least 2 days of training in the reporting year. This number will be less than or equal to the workforce FTE	The training days FTE of a casual or part-time employee is the FTE of that employee multiplied by the number of days that employee trained in the reporting year
52		Days lost	Total days lost			FTE	Total FTE days lost for sewerage business	Include days lost due to workplace injury, disease and industrial action. Exclude recreation leave, long-service leave, public holidays, rostered days off or flexi-leave, maternity leave, jury duty, leave for Army Reserve training, etc. Exclude days lost for staff engaged in design or construction
53		Days lost	Confirmed injuries			n	Include sewerage business injuries that resulted in a fatality, permanent disability or time lost from work of one day or more. Include injuries for equivalent contractor employees. Exclude injuries for employees engaged in design or construction	
54		Days lost	Days lost due to injury			FTE	Total FTE days lost due to injury	Include days lost for injuries for equivalent contractor employees. Exclude days lost for injuries for employees engaged in design or construction
57		Workforce outsourced	Management costs outsourced			%	The percentages expended by the sewerage business on outsourcing of management, operational and maintenance costs	
58		Workforce outsourced	Operational costs outsourced			%		
59		Workforce outsourced	Maintenance costs outsourced			%		Outsourcing is subcontracting part of the operation and/or management of a utility's business to a third party, where the subcontractor undertakes work that would normally be done by the utility's workforce. Include legal work, electrical maintenance, operation of a treatment works etc.
60		Community	Reduction in fees and charges to community organisations			\$k	The value of reductions in fees or charges permitted by legislation which are provided by the sewerage business to the community. Exclude pensioner rebates	Utilities may elect to provide reduced fees and charges for certain non-profit and community organisations and charities (including non-rateable properties) as permitted by legislation. This indicator reports the total amount of reductions provided to such community organisations in comparison with the standard fees and charges for non-residential customers.
61		Developer charges	Typical developer charge for this reporting year			\$	The typical developer charge per equivalent tenement determined to recover part of the cost of sewerage infrastructure for new developments.	

# Sewerage business data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
62		Developer charges	Typical developer charge for next reporting year			\$		
63a		Overflows and chokes	Overflows			n	Include all overflows/surcharges in utility sewers, access chambers and pumping stations in any weather	Include contained and uncontained spills. Count each access chamber, pumping station etc. overflow as one overflow. Exclude spills or overflow caused by a blockage in the property connection sewer or customers house drains. Exclude overflows contained within emergency storages where there is no pollution of the environment
63b	[E13]	Overflows and chokes	Reported overflows (new indicator 2008/09)			n	Overflows/surcharges reported to the environmental regulator	Exclude overflows/surcharges not reported to the environmental regulator
64	[A14]	Overflows and chokes	Sewerage main breaks and chokes (new indicator 2009-10)			n	Confirmed partial or total blockages, or failures in a reticulation (gravity) sewer resulting in an interruption to the sewerage service	Exclude breaks and chokes in rising mains, property connections or chokes within customers house drains. Exclude pipelines carrying treated effluent.
65		Overflows and chokes	Rising / pressure main chokes and breaks			n	Confirmed chokes, breaks and leaks in sewer rising (pressure) mains resulting in a significant interruption to the sewerage service	
66		Overflows and chokes	Sewer chokes and breaks attended within 5 hours			n		
67	[A15]	Overflows and chokes	Property connection sewer breaks and chokes (new indicator 2009-10)			n	Chokes, breaks or leaks in property connections resulting in an interruption to the sewerage service	Exclude blockages in customer's house drains (internal drains)
69		Environmental incidents	Category 1 incidents			n	Incidents with little or no impact on the environment	Examples: a reportable incident but not a breach of environmental regulations; an incident resulting in under 4 days of odour or noise complaints; a minor spillage of non-toxic chemicals or sludge to waterway or land
70		Environmental incidents	Category 2 incidents			n	Incidents with limited and non-permanent impact on the environment	Examples: a minor breach of environmental regulations eg. non maintenance of the required environmental flows; an incident resulting in over 4 days of odour or noise complaints; a major soil erosion incident requiring remediation; a significant chemical or sludge spill to waterway or land
71		Environmental incidents	Category 3 incidents			n	Incidents with major and irreversible impact on the environment	Examples: a dry weather sewer overflow; a major breach of environmental regulations; a major wet weather sewer overflow or an overflow for more than 3 hours; a failure of STW resulting in discharge of large volumes of untreated sewage to the environment; a major toxic chemical or sludge spill into waterways; widespread destruction of native forests/ecosystems; embankment failure of a sludge lagoon
72		Environmental incidents	Category 3 incidents detail					
73		Environmental management	Environmental management plan?			Y/N		
74		Environmental management	Plan developed in consultation with other bodies including Catchment Management Board			Y/N		
75		Environmental management	Environmental consultative process in place			Y/N		
76		Environmental management	Capital investment to improve environmental performance			\$k	Capital expenditure with the principal outcome of improved environmental performance	This indicator highlights environmental improvement and innovation. Include expenditure undertaken for compliance purposes having IMPROVED performance as an outcome. Include new treatment works. Exclude renewals. (Enter \$111,500 as 111.5, \$3,999,000 as 3999 etc)
77		Energy	Non-renewable energy			MWh		
78		Energy	Renewable energy			MWh	Energy derived from accredited renewable sources used by the sewerage business	
79		Energy	Total energy			MWh	Sum of (77) and (78)	
80a	E10	Greenhouse gas emissions - sewerage service	Operating emissions			t CO2 eq	Greenhouse gas emissions for all operations relating to sewerage service	The Greenhouse Gas calculator provided to you by the NSW Office of Water will simplify this task (copy available in Appendix G of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report).
80b	E11	Greenhouse gas emissions - sewerage service	Net administrative emissions			t CO2 eq	Net greenhouse gas emissions for other sewerage service activities (transport, office buildings and sequestration). If your utility cannot split this value between sewerage and water, leave this field blank and place the consolidated value under water business at NSW Reference 148b	The Greenhouse Gas calculator provided to you by the NSW Office of Water will simplify this task (copy available in Appendix G of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report).

# Sewage treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
T1		Works parameters	Year built / augmented			year	Year of commissioning or latest major augmentation	
T10		Works parameters	Design capacity			EP		
T2		Works parameters	Type of works				For multiple processes, hold the Control key and select the processes used	
T3		Works parameters	Standard of treatment					
T5		Works parameters	Nitrogen removal			Y/N	Select yes only if at least 90% of nitrogen is removed from effluent	
T6		Works parameters	Phosphorus removal			Y/N	Select yes only if this treatment works operates either a chemical dosing facility to precipitate phosphorus or a carefully managed biological nutrient removal (BNR) system	
T7a		Qualifications	Operator 1 qualification				Highest qualification obtained by this operator	
T7e		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7i		Qualifications	Certification				Qualification level ie. Certificate III in Water Industry Operations (Wastewater Treatment Operator) issued by NSW TAFE: Office of Water Phosphorus Removal Certificate (Level 1A or Level 1B Certificate pre-requisite), Certificate Level 1B (Activated Sludge), Certificate Level 1A (Trickling Filter and Aerated Lagoons) or Certificate Level 0B (STW with <3,000 ep Activated Sludge) or Certificate Level 0A (STW with < 3,000 ep Trickling Filter and Aerated Lagoons) issued by the NSW Office of Water or its predecessors. Certificate IV, III, II or I from NSW TAFE: Certificate IV, III, II or I by OTHER RTO.	
T7b		Qualifications	Operator 2 qualification				Highest qualification obtained by this operator	
T7f		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7j		Qualifications	Certification				see (T7i)	
T7c		Qualifications	Operator 3 qualification				Highest qualification obtained by this operator	
T7g		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7k		Qualifications	Certification				see (T7i)	
T7d		Qualifications	Operator 4 qualification				Highest qualification obtained by this operator	
T7h		Qualifications	Year of qualification / update			year	Year qualification obtained or updated	
T7l		Qualifications	Certification				see (T7i)	
T67		Malfunctions	Number of days of major treatment process failure			days	Include days when a significant treatment process was not operating. Exclude periods due to routine maintenance	Include loss of MLSS and odour production
T68	[C11]	Odour complaints	Number of odour complaints from this treatment works			n	Exclude complaints that have been investigated and can be shown not to arise from this treatment works	A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or failure to act by the utility, its employees or contractors. Complaints from separate customers arising from the same cause count as separate complaints. Includes complaints received by the water business in person, by mail, fax, phone, email or text message
T69	[C11]	Odour complaints	Number of odour complaints from pumping stations and the sewerage network in this treatment work's catchment			n	Exclude complaints that have been investigated and can be shown not to arise from the network or pumping stations	
T8		Compliance summary	Licence expiry date			date		
T9		Compliance summary	Volume licenced			ML/d		
T64	E7	Compliance summary	Compliance with environmental regulators			Y/N	Compliance occurs when the licence conditions prescribed for the treatment plant and all attached system components (network, treatment, recycling and disposal) have been met.	Non-compliance is where your utility did not meet licence conditions, or received a financial penalty (>\$10,000) or had any successful litigation against it, by the environmental regulator. Include: penalties relating to infringements occurring in a previous reporting year.
T65		Compliance summary	Penalty or litigation for non-compliance			Y/N	Include successful litigation against your utility by an environmental regulator, a financial penalty, any other penalty imposed by an environmental regulator	
T66		Compliance summary	Details of penalty or litigation				Provide brief details of penalties and litigation	
T49		Biochemical oxygen demand	90th percentile limit			mg/L	The limit shown is reproduced from this plant's EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Absence of a value indicates that no limit is specified.	
T50		Biochemical oxygen demand	Percent compliance			%	Where the licence specifies a 90th percentile limit and the number of complying samples divided by the total number of scheduled samples is greater than 90%, compliance is deemed to be 100%	

# Sewage treatment data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
T51		Total suspended solids	90th percentile limit			mg/L	The limit shown is reproduced from this plant's EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Absence of a value indicates that no limit is specified.	
T52		Total suspended solids	Percent compliance			%	Where the licence specifies a 90th percentile limit and the number of complying samples divided by the total number of scheduled samples is greater than 90%, compliance is deemed to be 100%	
T53		Nitrogen (total)	90th percentile limit			mg/L	The limit shown is reproduced from this plant's EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Absence of a value indicates that no limit is specified.	
T54		Nitrogen (total)	Percent compliance			%	Where the licence specifies a 90th percentile limit and the number of complying samples divided by the total number of scheduled samples is greater than 90%, compliance is deemed to be 100%	
T57		Oil and grease	90th percentile limit			mg/L	The limit shown is reproduced from this plant's EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Absence of a value indicates that no limit is specified.	
T58		Oil and grease	Percent compliance			%	Where the licence specifies a 90th percentile limit and the number of complying samples divided by the total number of scheduled samples is greater than 90%, compliance is deemed to be 100%	
T59		Phosphorus (total)	90th percentile limit			mg/L	The limit shown is reproduced from this plant's EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Absence of a value indicates that no limit is specified.	
T60		Phosphorus (total)	Percent compliance			%	Where the licence specifies a 90th percentile limit and the number of complying samples divided by the total number of scheduled samples is greater than 90%, compliance is deemed to be 100%	
T61		Faecal coliforms	90th percentile limit			cfu/100mL	The limit shown is reproduced from this plant's EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Absence of a value indicates that no limit is specified.	
T62		Faecal coliforms	Percent compliance			%	Where the licence specifies a 90th percentile limit and the number of complying samples divided by the total number of scheduled samples is greater than 90%, compliance is deemed to be 100%	
T63		Sampling days	Number of scheduled sampling days			days	The scheduled sampling days are those specified in the treatment work's licence	
T32	[W16]	Volumes collected by this works	Network residential			ML	Estimated network residential sewage	
T33	[W16]	Volumes collected by this works	Network non-residential			ML	Estimated network non-residential sewage excluding sewer mining	
T33a	[W18.1]	Volumes collected by this works	Sewage supplied to other utilities			ML	Bulk volume of sewage supplied to other utilities outside your utility's geographic area of responsibility.	
T33b	[W18.2]	Volumes collected by this works	Sewage taken from other utilities			ML	Bulk volume of sewage received from other utilities outside your utility's geographic area of responsibility.	
T33c	[W18.3]	Volumes collected by this works	Sewage collected from sewer mining			ML	Volumes collected from sewer mining within your utility's geographic area of responsibility.	
T31	[W16]	Volumes collected by this works	Network infiltration / inflow			ML	Estimated groundwater infiltration and stormwater inflow	
T34	[W17]	Volumes collected by this works	Network trade waste			ML	Estimated non-metered and metered network trade waste	
T12	[W16]	Volumes collected by this works	Tanker septic tank effluent			kL	Enter volume in kilolitres not Megalitres	
T13	[W16]	Volumes collected by this works	Tanker septic sludge / pan			kL	Enter volume in kilolitres not Megalitres	
T14	[W16]	Volumes collected by this works	Tanker grease trap waste			kL	Enter volume in kilolitres not Megalitres	
T15	W18	Volumes collected by this works	Total sewage collected			ML	Sum of (20) to (24a)	
T16		Volumes treated by this works	No treatment			ML		
T17	E1	Volumes treated by this works	Primary treatment only			ML	Include only volume treated to remove suspended solids (primary standard). Exclude volumes treated to secondary or tertiary standard.	Primary treatment may include screening, clarification and grease removal.
T18	E2	Volumes treated by this works	Secondary treatment only			ML	Include only volume treated to primary standard with further polishing of effluent to reduce at least 85% of biochemical oxygen demand and suspended solids (secondary standard). Exclude volume treated to primary standard only or tertiary standard.	Secondary treatment may include a polishing step, activated sludge, anaerobic/aerobic processes, biological/sand filtration and lagoon sedimentation.
T19	E3	Volumes treated by this works	Tertiary treatment only			ML	Include only volume treated to secondary standard with further disinfection of effluent and filtering to remove nutrients and nitrogen using artificial wetland, ponds, chlorination, ozonation or UV treatment (tertiary standard). Exclude volume treated to primary or secondary standard only	Tertiary treatment may include biological/chemical dosing nutrient removal, reverse osmosis, advanced filtration systems, membrane bioreactors and secondary treatment with wetland nutrient removal.

## Sewage treatment data (continued)

NSW No.	NWI No.	Indicator Group	Reported Indicator	2010/11	Acc/Rel	Unit	Indicator Definition	Instruction
T20	W22	Volumes recycled by this works	Agriculture			ML	Total metered and estimated non-metered supply. Include horticulture, viticulture, forestry and pasture improvement. Exclude environmental flows.	
T21	[W21]	Volumes recycled by this works	Municipal / Institutional			ML	Total metered and estimated non-metered supply. Include supply to race-courses, parks, gardens, ovals and golf-courses.	
T22	[W21]	Volumes recycled by this works	Industrial / Commercial			ML	Total metered and estimated non-metered supply. Include supply to mine sites.	
T23	[W20]	Volumes recycled by this works	Residential			ML	Total metered and estimated non-metered supply. Include supply to all urban zone residences.	
T24a	W25	Volumes recycled by this works	Other			ML	Total metered and estimated non-metered supply. Include recycled water used for fire fighting, mains flushing and other uses. Include estimated leakage and customer meter error.	
T24	[W24]	Volumes recycled by this works	Sewage treatment works			ML	Total metered and estimated non-metered supply. Include supply for on-site reuse. Exclude volumes used to support the treatment process. Exclude evaporation loss.	On-site reuse includes landscape watering and toilet flushing. Exclude treatment process maintenance such as screen and filter cleaning etc.
T24b	[W21]	Volumes recycled by this works	Environmental (new indicator 2008/09)			ML	Include discharge to a waterway for environmental purposes. Such discharge must be approved by the environmental regulator as meeting the definition of environmental flow.	To provide a net benefit to the environment, recycled water must meet quality standards determined by the environmental regulator. Exclude volumes disposed to forest and bushland unless otherwise endorsed by the regulator.
T24c	[W21]	Volumes recycled by this works	Bulk sales (recycled)			ML	Include recycled water sold to another utility or entity outside your utility's geographic area of responsibility.	
T25	W26	Volumes recycled by this works	Total volume reused			ML	(T20)+(T21)+(T22)+(T23)+(T24)+(T24a)+(T24b)+(T24c)	
T25a		Charges	Usage charge for recycled town water			c/kL		
T26X	[E8]	Biosolids produced by this works	Mass extracted			tonnes	Include stabilised organic solids extracted from effluent. Exclude screened inorganic material	
T27	E8	Biosolids produced by this works	Percentage of mass reused			%	Include application as a soil conditioner on land used for agriculture or forestry, rehabilitation of mine and industrial sites and general landscaping. Include use in manufacturing other products. Include energy generation. Exclude landfill	
T29		Biosolids produced by this works	Percent of total disposed to landfill			%	Include injection below ground level, burial and disposal to tip or treatment works site.	
T30		Biosolids produced by this works	Percent to other			%	Include incineration	
T36		Large trade waste dischargers	Number of LTWDs			n	A large trade waste discharger (LTWD) is one approved to discharge over 20 kL/d into the sewerage system	
T37		Large trade waste dischargers	Maximum daily volume			kL/d		
T38		Large trade waste dischargers	Equivalent BOD load			EP	Total approved trade waste BOD-5 concentration converted to EP	EP = (concentration (mg/L) x discharge volume (kL/d))/70
T39		Large trade waste dischargers	Equivalent TSS load			EP	Total approved trade waste SS concentration converted to EP	EP = (concentration (mg/L) x discharge volume (kL/d))/70
T40		Discharge	Volume disposed to ocean			ML	Include effluent disposed within estuaries	
T41		Discharge	Volume disposed to river / creek			ML	Include effluent disposed to wetlands connected to a river or creek. Exclude disposal within estuaries	
T42		Discharge	Volume disposed to land			ML	Include effluent disposed to evaporation basins, dunes and exfiltration beds	
T43		Flow data	Average dry weather flow permanent population			L/s		Summed values of dry weather flows outside peak population periods divided by number of these records
T44		Flow data	Average dry weather flow peak population			L/s		Summed values of dry weather flows during peak population periods divided by number of these records
T45		Flow data	Peak dry weather flow - permanent population			L/s	Maximum flow rate recorded during dry weather outside peak population periods	
T46		Flow data	Peak dry weather flow - peak population			L/s	Maximum flow rate recorded during dry weather during peak population periods	
T48		Flow data	Peak 1 hour wet weather flow			L/s	Maximum volume recorded in any 1 hour period following a wet weather event during the reporting year.	
T47		Flow data	Peak 24 hr wet weather volume			ML	Maximum volume recorded in any 24 hour period following a wet weather event during the reporting year.	

# Australian Drinking Water Guidelines 2004 – Sampling location and frequency

## Guidelines

*The Australian Drinking Water Guidelines 2004* (NHMRC/NRMMC) supersede the 1996 Guidelines. The **main difference** between the 2004 Guidelines and those of 1996 is that the new Guidelines include the Framework for Management of Drinking Water Quality. The Framework incorporates a preventative risk management approach to water supply system management.

The Guidelines outline the aesthetic and health characteristics required for good quality drinking water. NSW local water utilities (LWUs) are required to adopt a 'best practice' approach for the supply of drinking water using the Framework for Management of Drinking Water Quality (Public Health Act 2010). In addition, the *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007* strongly encourage all LWUs to prepare and implement a risk based drinking water quality management plan using relevant elements of the Framework (refer also to pages 8 and 9 of the *2010-11 NSW Water Supply and Sewerage Benchmarking Report*). The measurable characteristics fall into the following categories:

- Microbiological
- Physical
- Chemical
- Radiological.

For each characteristic, the Guidelines identify three parameters, namely location of sampling, frequency of sampling and acceptable performance measures. Compliance requires that all three parameters be satisfied.

Table 1 indicates the number of microbiological samples required annually for systems supplying populations of 5,000, 10,000, 20,000, 50,000 and 100,000 respectively is 52, 64, 88, 160 and 280. See note to Table 1.

## Sampling location

Samples for system performance monitoring should be taken from representative locations within the system. These should include headworks, service reservoirs, the start of the distribution system and at representative points throughout the distribution system. Suggested locations for each characteristic are shown on pages 10.16 to 10.19 (all references to page numbers below refer to the 2004 Guidelines). NSW Health recommends that drinking water quality monitoring rotate amongst designated sample sites throughout the distribution system. Sample sites should give good geographical representation of the water supply system and enable the comparison of water quality over time for particular sections of the system.

## Sampling frequency

The frequency of sampling is dependent on the type of characteristic. The suggested sampling frequency for various water supply characteristics are shown on pages 10.16 to 10.19.

The sampling frequency required for microbiological quality is provided on page 10.5 and summarised in Table 1. The frequency should be increased following repair work, interruptions to supply, at times of flooding or during/after emergency operations. With small water supply systems, periodic sanitary surveys are likely to yield more information than infrequent sampling.

**Table 1 – Microbiological quality sampling frequency\***

Population	Recommended no. of samples
<1,000	Refer to pages 10.14 to 10.15 of the Guidelines.
1,000 to 5,000	1 sample per week.
5,000 to 100,000	1 sample per week plus 1 per month for each 5,000 above 5,000 population.
>100,000	6 samples per week plus 1 per month for each 10,000 above 100,000 population.

\* Note: the actual sample numbers recommended under the NSW Health Drinking Water Monitoring Program reflect the complexity of the system as well as population.

Sampling for the key physical characteristics should be carried out as shown in Table 2 where these are significant.

**Table 2 – Physical Quality Sampling Frequency+**

Characteristic	Sampling frequency
pH, turbidity, colour	Fortnightly at water treatment works or chlorinator. Monthly sample to lab in systems serving a population of 5,000 or more, otherwise biannually.
Hardness	Quarterly.

+ All of these are aesthetic (non-health related). However, turbidity >1 may reduce the effectiveness of disinfection.

Sampling for the full range of chemical characteristics should be carried out biannually. In addition, tests for key characteristics of a particular water supply should be undertaken more frequently as shown in Table 3 where these are significant.

**Table 3 – Chemical quality sampling frequency#**

Characteristic	Sampling frequency
Fluoride	Daily if the water supply is fluoridated
Aluminium, antimony, arsenic, barium, boron, cadmium, calcium, chloride, chromium, copper, fluoride, iodine, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, nitrate, nitrite, selenium, silver, sodium, sulfate, zinc	Monthly in systems serving a population of 5,000 or more, otherwise biannually.

# All of these chemicals are health related with the exception of:

- aluminium, calcium, chloride, iron, magnesium and zinc
- sodium which may be of concern to people on a low-sodium diet.

Radiological sampling should be assessed when a new water supply is brought into service, and then every two years for groundwater supplies and every five years for surface water supplies (page 10.14).

In order to satisfy the guidelines it may be necessary to carry out more frequent monitoring for some characteristics. Each water utility should carry out a detailed assessment of its water supply system when planning a monitoring program.

### Performance

Performance is regarded as satisfactory if over the preceding 12 months sampling location and frequency have complied with the Guidelines, and all guidelines values for each characteristic have been met. Guidelines values for microbiological characteristics are shown on page 10.21 and are summarised in Table 4.

**Table 4 – Microbiological performance**

Indicator	Guidelines value
Performance is regarded as satisfactory if, over the preceding 12 months:	
E.coli	At least 98% of scheduled samples contain no E. coli

Guidelines values for physical and chemical characteristics are shown on pages 10.22 to 10.26. Health related physical and chemical water quality is satisfactory if, over the preceding 12 months, 95 per cent of the results are less than the guidelines value (page 10.20). For non health related characteristics, water quality is satisfactory if the mean of results is less than the guidelines value (page 10.20).

## Examples of environmental and public health incidents

### Water supply

**Environmental incidents** (NSW Indicator Nos 137 to 140 on page 197)

#### Category 1 – Minor incidents with inconsequential effects

- A reportable incident but not a breach of environmental regulations.
- An incident resulting in under four days of odour or noise complaints.
- A minor spillage of non-toxic chemicals or sludge to waterway or land.

#### Category 2 – Incident with limited environmental effects

- A minor breach of environmental regulations, e.g. non maintenance of the required environmental flows.
- An incident resulting in over four days of odour or noise complaints.
- A major soil erosion incident requiring remediation.
- A significant chemical or sludge spill to waterway or land.

#### Category 3 – Severe incident with irreversible environmental effects

- A major breach of environmental regulations.
- A dam failure.
- A severe algal outbreak in storages/waterways.
- A major toxic chemical or sludge spill into waterways.
- Widespread destruction of native forests/ecosystems.

**Public health incidents** (NSW Indicator Nos 115 to 118 on page 195)

#### Category 1 – Minor incidents with inconsequential effects

- A minor failure of water treatment processes.
- An incident resulting in a limited boil water notice.

#### Category 2 – Incidents with limited health effects

- Non-compliance with health parameters (E. coli) of 2004 NHMRC/NRMMC water quality guidelines for over seven days.

- A system-wide boil water notice.
- A failure of a disinfection system for over three days.
- A failure of major treatment processes at a treatment works for over four days.
- A chlorine or ammonia gas leak (chlorination/chloramination).
- Non-pathogenic/toxic contamination of the potable water supply due to a cross connection.
- An incident resulting in unplanned interruptions to supply for over two days (if over seven days report as Category 3).

#### Category 3 – Incidents with major health effects

- An outbreak of water borne disease due to water supply system.
- Hospitalisations from water borne disease due to water supply.
- An incident resulting in unplanned interruptions to supply for over seven days.
- A pathogenic contamination of the potable water supply due to a cross connection.
- A toxic contamination of water supply.

#### Notes:

1. Environmental regulations include any licence conditions.
2. An incident with both environmental and public health impacts should be reported in both categories.

### Sewerage

**Environmental incidents** (NSW Indicator Nos 69 to 72 on page 202)

#### Category 1 – Minor Incidents with Inconsequential Effects

- A reportable incident but not a breach of environmental regulations
- An incident resulting in under 4 days of odour or noise complaints
- A minor spillage of non-toxic chemicals or sludge to waterway or land

### **Category 2 – Incident with limited environmental effects**

- A minor breach of environmental regulations, e.g.:
  - discharge of partially treated effluent to receiving waters
  - embankment failure of an effluent pond.
- A wet weather sewer overflow for under three hours.
- An incident resulting in over four days of odour or noise complaints.
- A major soil erosion incident requiring remediation.
- A significant chemical or sludge spill to waterways or land.

### **Category 3 – Severe incident with irreversible environmental effects**

- A dry weather sewer overflow
- A major breach of environmental regulations, e.g.:
  - a major wet weather sewer overflow or an overflow for over three hours
  - a failure of STW, resulting in discharge of large volume of untreated sewage to environment
  - a major toxic chemical or sludge spill into waterways
  - widespread destruction of native forests/ecosystems
  - embankment failure of a sludge lagoon.

**Public health incidents** (NSW Indicator Nos 44 to 47 on page 201)

### **Category 1 – Minor Incidents with Inconsequential Effects**

- A minor failure of sewage treatment processes.

### **Category 2 – Incidents with limited health effects**

- An algal outbreak in receiving waters attributable to sewerage system.
- Issue of public no-contact notice with receiving waters.
- Sewer overflow affecting public access to land or water.
- Sewage contamination of fishing or recreational water areas.
- A failure of effluent disinfection system.
- A failure of major treatment processes at a treatment works for over four days.
- An incident resulting in unplanned interruptions to service for over three days (if over 20 days, report as Category 3).
- A chlorine leak.

### **Category 3 – Incidents with major health effects**

- An outbreak of water borne disease due to sewerage system.
- Hospitalisations from water borne disease due to sewerage system.
- Contamination of an oyster farming area due to sewerage system.
- A sewer overflow into a water supply catchment.
- An incident resulting in unplanned interruptions to service for over 20 days.



## Special schedules (financial statements)

### NSW Council

#### Special Schedule No. 3 Water Supply Income Statement (Gross including Internal Transactions) for the year ended 2011 \$'000

2011

2010

#### A Expenses and Income

##### Expenses

- 1 Management expenses
  - a. Administration
  - b. Engineering and Supervision
- 2 Operation and Maintenance
  - Dams and Weirs
    - a. Operation expenses
    - b. Maintenance expenses
  - Mains
    - c. Operation expenses
    - d. Maintenance expenses
  - Reservoirs
    - e. Operation expenses
    - f. Maintenance expenses
  - Pumping Stations
    - g. Operation expenses (excluding energy costs)
    - h. Energy costs
    - i. Maintenance expenses
  - Treatment
    - j. Operation expenses (excluding chemical costs)
    - k. Chemical costs
    - l. Maintenance expenses
  - Other
    - m. Operation expenses
    - n. Maintenance expenses
    - o. Purchase of water
3. Depreciation
  - a. System assets
  - b. Plant and equipment
4. Miscellaneous expenses
  - a. Interest expenses
  - b. Revaluation decrements
  - c. Other expenses
5. **Total expenses**

##### Income

6. Residential charges
  - a. Access (including rates)
  - b. Usage charges
7. Non-residential charges
  - a. Access (including rates)
  - b. Usage charges
8. Extra charges
9. Interest income
10. Other income
11. Grants
  - a. Grants for acquisition of assets
  - b. Grants for pensioner rebates
  - c. Other grants



# NSW Council

## Special Schedule No. 3 (continued) Water Supply – Cross-subsidies as at 30 June 2011 \$'000

	Yes	No	Amount
<b>D Best practice annual charges and developer charges<sup>#</sup></b>			
<b>27. Annual charges</b>			
a. Does Council have best-practice water supply annual charges and usage charges*?	<input type="checkbox"/>	<input type="checkbox"/>	
If Yes, go to 28a.			
If No, please report if council has removed <b>land value</b> from access charges (ie rates)?	<input type="checkbox"/>	<input type="checkbox"/>	
* Such charges for both residential customers and non-residential customers comply with section 3.2 of <i>Water Supply, Sewerage and Trade Waste Pricing Guidelines</i> , NSW Office of Water, December, 2002. Such charges do not involved significant cross-subsidies.			
b. Cross-subsidy <b>from</b> residential customers using less than allowance (page 25 of Guidelines)			
c. Cross-subsidy <b>to</b> non-residential customers (page 24 of Guidelines)			
d. Cross-subsidy <b>to</b> large connections in unmetered supplies (page 26 of Guidelines)			
<b>28. Developer charges</b>			
a. Has council completed a water supply Development Servicing** Plan?	<input type="checkbox"/>	<input type="checkbox"/>	
b. Total cross-subsidy in water supply developer charges for <b>2010/11</b> (page 47 of Guidelines)			
** In accordance with page 9 of <i>Developer Charges Guidelines for Water Supply, Sewerage and Stormwater</i> , NSW Office of Water, December, 2002.			
<b>29. Disclosure of cross-subsidies</b>			
<b>Total of cross-subsidies (27b +27c + 27d + 28b)</b>			

<sup>#</sup> Councils which have not yet implemented best practice water supply pricing should disclose cross-subsidies in items 27b, 27c and 27d above.

However, disclosure of cross-subsidies is **not** required where a Council has implemented best practice pricing and is phasing in such pricing over a period of three years.

# NSW Council

## Special Schedule No. 4 Water Supply – Balance sheet (Gross including Internal Transactions) as at 30 June 2011 \$'000

	Current	Non current	Total
<b>ASSETS</b>			
30. Cash and investments			
a. Developer charges			
b. Special purpose grants			
c. Accrued leave			
d. Unexpended loans			
e. Sinking fund			
f. Other			
31. Receivables			
a. Specific purpose grants			
b. Rates and charges			
c. Other			
32. Inventories			
33. Property, plant and equipment			
a. System assets			
b. Plant and equipment			
34. Other assets			
35. <b>Total assets</b>			
<b>LIABILITIES</b>			
36. Bank overdraft			
37. Creditors			
38. Borrowings			
a. Loans			
b. Advances			
c. Finance leases			
39. Provisions			
a. Tax equivalents			
b. Dividend			
c. Other			
40. <b>Total liabilities</b>			
41. <b>Net assets committed</b>			
<b>EQUITY</b>			
42. Accumulated surplus			
43. Asset revaluation reserve			
44. <b>Total equity</b>			
<b>Note to system assets:</b>			
45. Current replacement cost of system assets			
46. Accumulated current cost depreciation of system assets			
47. Written down current cost of system assets			

# NSW Council

## Special Schedule No. 5 Sewerage Income Statement (Gross including Internal Transactions) as at 30 June 2011 \$'000

2011

2010

### A Expenses and Income

#### Expenses

1. Management expenses
  - a. Administration
  - b. Engineering and Supervision
2. Operations and Maintenance Expenses
  - Mains
    - a. Operation expenses
    - b. Maintenance expenses
  - Pumping Stations
    - c. Operation expenses (excluding energy costs)
    - d. Energy costs
    - e. Maintenance expenses
  - Treatment
    - f. Operation expenses (excluding chemical, energy, effluent and biosolids management costs)
    - g. Chemical costs
    - h. Energy costs
    - i. Effluent management
    - j. Biosolids management
    - k. Maintenance expenses
  - Other
    - l. Operation expenses
    - m. Maintenance expenses
3. Depreciation
  - a. System assets
  - b. Plant and equipment
4. Miscellaneous
  - a. Interest expenses
  - b. Revaluation decrements
  - c. Other expenses
5. **Total expenses**

#### Income

6. Residential charges (including rates)
7. Non-residential charges
  - a. Access (including rates)
  - b. Usage charges
8. Trade Waste Charges
  - a. Annual fees
  - b. Usage fees
  - c. Excess mass charges
  - d. Re-inspection fees
9. Extra charges
10. Interest income
11. Other income
12. Grants
  - a. Grants for acquisition of assets
  - b. Grants for pensioner rebates
  - c. Other grants

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# NSW Council

## Special Schedule No. 5 (continued) Sewerage Income Statement (Gross including Internal Transactions) as at 30 June 2011 \$'000

	2011	2010
<b>A Expenses and Income (continued)</b>		
13. Contributions:		
a. Developer charges		
b. Developer provided assets		
c. Other contributions		
14. <b>Total income</b>		
15. Gain or loss on disposal of assets		
16. Operating result		
16a. <b>Operating result</b> (less grants for acquisition of assets)		
<b>B Capital transactions</b>		
<b>Non-operating expenditures</b>		
17. Acquisition of Fixed Assets:		
a. New assets for Improved Standards		
b. New assets for Growth		
c. Renewals		
d. Plant and equipment		
18. Repayment of debt:		
a. Loans		
b. Advances		
c. Finance leases		
19. Transfer to sinking fund		
20. <b>Totals</b>		
<b>Non-operating funds employed</b>		
21. Proceeds from disposal of assets		
22. Borrowing utilised:		
a. Loans		
b. Advances		
c. Finance leases		
23. Transfer from sinking fund		
24. <b>Totals</b>		
<b>C Rates and charges</b>		
25. Number of assessments:		
a. Residential (occupied)		
b. Residential (unoccupied ie vacant lot)		
c. Non-residential (occupied)		
d. Non-residential (unoccupied ie vacant lot)		
26. Number of ETs for which developer charges were received	ET	
27. Total amount of pensioner rebates	\$	

# NSW Council

## Special Schedule No. 5 (continued) Sewerage – Cross-subsidies as at 30 June 2011 \$'000

	Yes	No	Amount
<b>D Best practice annual charges and developer charges<sup>#</sup></b>			
<b>28. Annual charges</b>			
a. Does Council have best-practice sewerage annual charges, usage charges and trade waste fees and charges*?	<input type="checkbox"/>	<input type="checkbox"/>	
If Yes, go to 29a.			
If No, please report if council has removed <b>land value</b> from access charges (ie rates)?	<input type="checkbox"/>	<input type="checkbox"/>	
* Such charges for both residential customers and non-residential customers comply with sections 4.2 and 4.3 of <i>Water Supply, Sewerage and Trade Waste Pricing Guidelines</i> , NSW Office of Water, December, 2002. Such charges do not involved significant cross-subsidies.			
b. Cross-subsidy <b>to</b> non-residential customers (page 45 of Guidelines)			
c. Cross-subsidy <b>to</b> trade waste discharges (page 46 of Guidelines)			
<b>29. Developer charges</b>			
a. Has council completed a sewerage Development Servicing** Plan?	<input type="checkbox"/>	<input type="checkbox"/>	
b. Total cross-subsidy in sewerage developer charges for <b>2010/11</b> (page 47 of Guidelines)			
** In accordance with page 9 of <i>Developer Charges Guidelines for Water Supply, Sewerage and Stormwater</i> , NSW Office of Water, December, 2002.			
<b>30. Disclosure of cross-subsidies</b>			
<b>Total of cross-subsidies (28b +28c + 29b)</b>			

<sup>#</sup> Councils which have not yet implemented best practice sewerage pricing and liquid trade waste pricing should disclose cross-subsidies in items 28b and 28c above.

However, disclosure of cross-subsidies is **not** required where a Council has implemented best practice sewerage and liquid trade waste pricing and is phasing in such pricing over a period of three years.

# NSW Council

## Special Schedule No. 6 Sewerage service – Balance sheet (Gross including Internal Transactions) as at 30 June 2011 \$'000

	Current	Non current	Total
<b>Assets</b>			
31. Cash and investments			
a. Developer charges			
b. Special purpose grants			
c. Accrued leave			
d. Unexpended loans			
e. Sinking fund			
f. Other			
32. Receivables			
a. Specific purpose grants			
b. Rates and charges			
c. Other			
33. Inventories			
34. Property, plant and equipment			
a. System assets			
b. Plant and equipment			
35. Other assets			
36. <b>Total assets</b>			
<b>Liabilities</b>			
37. Bank overdraft			
38. Creditors			
39. Borrowings			
a. Loans			
b. Advances			
c. Finance leases			
40. Provisions			
a. Tax equivalents			
b. Dividend			
c. Other			
41. <b>Total liabilities</b>			
42. <b>Net assets committed</b>			
<b>Equity</b>			
43. Accumulated surplus			
44. Asset revaluation reserve			
45. <b>Total equity</b>			
<b>Note to system assets:</b>			
46. Current replacement cost of system assets			
47. Accumulated current cost depreciation of system assets			
48. Written down current cost of system assets			



## Notes to Special Schedules 3 and 5

**Administration<sup>(1)</sup>** (item 1a of Special Schedules 3 and 5) comprises the following:

- Administration staff:
  - Salaries and allowance
  - Travelling expenses
  - Accrual of leave entitlements
  - Employment overheads.
- Meter reading.
- Bad and doubtful debts.
- Other administrative/corporate support services.

**Engineering and supervision<sup>(1)</sup>** (item 1b of Special Schedules 3 and 5) comprises the following:

- Engineering staff:
  - Salaries and allowance
  - Travelling expenses
  - Accrual of leave entitlements
  - Employment overheads.
- Other technical and supervision staff:
  - Salaries and allowance
  - Travelling expenses
  - Accrual of leave entitlements
  - Employment overheads.

**Operation expenses** (item 2 of Special Schedules 3 and 5) comprise the day to day operational expenses excluding maintenance expenses.

**Maintenance expenses** (item 2 of Special Schedules 3 and 5) comprise the day to day repair and maintenance expenses. (Refer to Section 5 of the Local Government Asset Accounting Manual regarding capitalisation principles and the distinction between capital and maintenance expenditure).

**Other expenses** (item 4c of Special Schedules 3 and 5) include all expenses not recorded elsewhere.

**Revaluation decrements** (item 4b of Special Schedules 3 and 5) is to be used when infrastructure assets have decreased in fair value.

**Residential charges<sup>(2)</sup>** (items 6a, 6b and item 6 of Special Schedules 3 and 5 respectively) include all income from residential charges. Item 6 of Schedule 3 should be separated into 6a Access Charges (including rates if applicable) and 6b User Charges. Exclude non-residential charges.

**Non-residential charges<sup>(2)</sup>** (items 7a, 7b of Special Schedules 3 and 5) include all income from non-residential charges separated into 7a Access Charges (including rates if applicable) and 7b User Charges. Exclude residential charges.

**Trade waste charges** (item 8 of Special Schedule 5) include all income from trade waste charges separated into 8a Annual Fees, 8b Usage Charges, 8c Excess Mass Charges and 8d Re-inspection Fees.

**Other income** (items 10 and 11 of Special Schedules 3 and 5 respectively) include all income not recorded elsewhere.

**Other contributions** (items 12c and 13c of Special Schedules 3 and 5 respectively) include capital contributions for water supply or sewerage services received by Council under Section 565 of the Local Government Act.

### Notes:

- (1) Administration and engineering costs for the development of capital works projects should be reported as part of the capital cost of the project and not as part of the recurrent expenditure (ie. in item 16 for water supply and item 17 for sewerage, and **not** in items 1a and 1b).
- (2) To enable accurate reporting of **residential revenue from usage charges**, it is essential for councils to accurately separate their residential (item 6) and non-residential (item 7) charges.
- (3) Particular attention should be paid to the 'Residential charges' and 'Non-residential charges' above, which have been incorrectly reported by a number of councils.

## Note 2 Water Supply Business best practice management disclosure requirements

2011

### 1. Calculation and Payment of Tax-Equivalents

(i)	Calculated Tax Equivalents	\$	
(ii)	No of assessments multiplied by \$3/assessment	\$	
(iii)	Amounts payable for Tax Equivalents (lesser of (i) and (ii))	\$	0
(iv)	Tax Equivalents paid	\$	

### 2. Dividend from Surplus

(i)	50% of Surplus before Dividends <i>(Calculated in accordance with Best Practice Management for Water Supply and Sewerage guidelines.)</i>	\$	
(ii)	No of assessments multiplied by \$30/assessment, less tax equivalent charges/assessment	\$	
(iii)	Cumulative Surplus before Dividends for 3 years to 30 June 2011, less cumulative dividends paid for 2 years to 30 June 2010	\$	
(iv)	Maximum Dividend from Surplus (least of (i), (ii) and (iii))	\$	0
(v)	Dividend paid from Surplus	\$	

### 3. Required Outcomes for 6 Criteria

(i)	Complete current Strategic Business Plan (including Financial Plan)	Yes/No	
(ii)	Full cost-recovery, without significant cross subsidies <i>(Item 2(a) in Table 1 on page 22 of Best Practice Management Guidelines)</i>	Yes/No	
	Complying charges <i>(Item 2(b) in Table 1)</i>	Yes/No	
	DSP with Commercial Developer Charges <i>(Item 2(e) in Table 1)</i>	Yes/No	
	If Dual Water Supplies, Complying Charges <i>(Item 2(g) in Table 1)</i>	Yes/No	
(iii)	Sound Water Conservation & Demand Management implemented	Yes/No	
(iv)	Sound Drought Management implemented	Yes/No	
(v)	Complete Performance Reporting <i>(by 15 September each year)</i>	Yes/No	
(vi)	a. Complete Integrated Water Cycle Management Evaluation	Yes/No	
	b. Complete and implement Integrated Water Cycle Management Strategy	Yes/No	

### National Water Initiative (NWI) Financial Performance Indicators

NWI F1	Total Revenue (Water) = Total income (w13) - Grants for acquisition of assets (w11a) - Interest income (w9)	\$ ('000)	
NWI F4	Revenue from Residential Usage Charges (Water) = Income from residential usage charges (w6b) x 100 / (Income from residential usage charges (w6a) + Income from residential access charges (w6b))	%	
NWI F9	Written Down Replacement Cost of Fixed Assets (Water) = Written down current cost of system assets (w47)	\$ ('000)	
NWI F11	Operating Cost (OMA) (Water) = Management expenses (w1) + Operation and maintenance expenses (w2)	\$ ('000)	
NWI F14	Capital Expenditure (Water) = Acquisition of fixed assets (w16)	\$ ('000)	
NWI F17	Economic Real Rate of Return (Water) = (Total income (w13) - Interest income (w9) - Grants for acquisition of assets (w11a) - Operating cost (NWI F11) - Current cost depreciation (w3)) x 100 / (Written down current cost of system assets (w47) + Plant and equipment (w33b))	%	
NWI F26	Capital Works Grants (Water) = Grants for acquisition of assets (w11a)	\$ ('000)	

- Notes:
- References to w (eg. w12) refer to item numbers in Special Schedules Nos. 3 and 4 of each Council's Annual Financial Statements.
  - The NWI performance indicators are based on the National Performance Framework handbook for Urban Performance Reporting Indicators and Definitions.  
The NWI indicators are to be calculated using the formulae shown above.



## Note 3 Sewerage Business best practice management disclosure requirements

2011

### 1. Calculation and Payment of Tax-Equivalents

(i)	Calculated Tax Equivalents	\$	
(ii)	No of assessments multiplied by \$3/assessment	\$	
(iii)	Amounts payable for Tax Equivalents (lesser of (i) and (ii))	\$	0
(iv)	Tax Equivalents paid	\$	

### 2. Dividend from Surplus

(i)	50% of Surplus before Dividends (Calculated in accordance with Best Practice Management for Water Supply and Sewerage guidelines.)	\$	
(ii)	No of assessments multiplied by \$30/assessment, less tax equivalent charges/assessment	\$	
(iii)	Cumulative Surplus before Dividends for 3 years to 30 June 2011, less cumulative dividends paid for 2 years to 30 June 2010	\$	
(iv)	Maximum Dividend from Surplus (least of (i), (ii) and (iii))	\$	0
(v)	Dividend paid from Surplus	\$	

### 3. Required Outcomes for 4 Criteria

(i)	Complete current Strategic Business Plan (including Financial Plan)	Yes/No	
(ii)	Pricing with full cost-recovery, without significant cross subsidies (Item 2(a) in Table 1 on page 22 of Best Practice guidelines)	Yes/No	
	Complying charges (a) Residential (Item 2(c) in Table 1)	Yes/No	
	(b) Non-Residential (Item 2(c) in Table 1)	Yes/No	
	(c) Trade Waste (Item 2(d) in Table 1)	Yes/No	
	DSP with Commercial Developer Charges (Item 2(e) in Table 1)	Yes/No	
	Liquid Trade Waste Approvals & Policy (Item 2(f) in Table 1)	Yes/No	
(iii)	Complete Performance Reporting Form (by 15 September each year)	Yes/No	
(iv)	a. Complete Integrated Water Cycle Management Evaluation	Yes/No	
	b. Complete and implement Integrated Water Cycle Management Strategy	Yes/No	

### National Water Initiative (NWI) Financial Performance Indicators

NWI F2	Total Revenue (Sewerage) = Total income (s14) - Grants for acquisition of assets (s12a) - Interest income (s10)	\$ ('000)	
NWI F10	Written Down Replacement Cost of Fixed Assets (Sewerage) = Written down current cost of system assets (s48)	\$ ('000)	
NWI F12	Operating cost (Sewerage) = Management expenses (s1) + Operation and maintenance expenses (s2)	\$ ('000)	
NWI F15	Capital Expenditure (Sewerage) = Acquisition of fixed assets (s17)	\$ ('000)	
NWI F18	Economic Real Rate of Return (Sewerage) = ((Total income (s14) - Interest income (s10) - Grants for acquisition of assets (s12a) - Operating cost (NWI F12) - Current cost depreciation (s3)) x 100 / (Written down current cost (WDCC) of system assets (s48) + Plant and equipment (s34b))	%	
NWI F27	Capital Works Grants (Sewerage) = Grants for acquisition of assets (s12a)	\$ ('000)	
NWI F3	Total Income (Water and Sewerage) = Total income (w13+s14) + Gain/loss on disposal of assets (w14+s15) - Grants for acquisition of assets (w11a+s12a) - Interest income (w9+s10)	\$ ('000)	
NWI F8	Revenue from Community Service Obligations (Water and Sewerage) = Community service obligations (NWI F25) x 100 / Total income (NWI F3)	%	
NWI F16	Capital Expenditure (Water and Sewerage) = Acquisition of fixed assets (w16 + s17)	\$ ('000)	
NWI F19	Economic Real Rate of Return (Water and Sewerage) = (Total income (w13 + s14) - Interest income (w9 + s10) - Grants for acquisition of assets (w11a + s12a) - Operating cost (NWI F11 + NWI F12) - Current cost depreciation (w3 + s3)) x 100 / (Written down replacement cost of fixed assets (NWIF9 + NWIF10) + Plant and equipment (w33b + s34b))	%	
NWI F20	Dividend (Water and Sewerage) = Dividend paid from surplus (2(v) of Note 2 + 2(v) of Note 3)	\$ ('000)	
NWIF21	Dividend Payout Ratio (Water and Sewerage) = Dividend (NWI F20) x 100 / Net profit after tax (NWI F24)	%	
NWI F22	Net Debt to Equity (Water and Sewerage) = (Overdraft (w36 + s37) + Borrowings (w38 + s39) - Cash and investments (w30 + s31)) x 100 / (Total assets (w35 + s36) - Total liabilities (w40 + s41))	%	
NWI F23	Interest Cover (Water and Sewerage) = EBIT / NI Earnings before Interest and Tax (EBIT) = Operating result (w15a+s16a) + Interest expense (w4a + s4a) - Interest income (w9 + s10) - Gain/loss on disposal of assets (w14 + s15) + Miscellaneous expenses (w4b + w4c + s4b + s4c) Net Interest (NI) = Interest expense (w4a+s4a) - Interest income (w9+s10) Note: If EBIT >0 AND Net Interest <=0 THEN Interest Cover is to be reported as ">100" If EBIT <0 THEN Interest Cover = 0		
NWI F24	Net Profit After Tax (Water and Sewerage) = (Surplus before dividends (w15a + s16a) - Tax paid (1(iv) of Note 2 + 1(iv) of Note 3))	\$ ('000)	
NWI F25	Community Service Obligations (Water and Sewerage) = Grants for pensioner rebates (w11b + s12b)	\$ ('000)	

- Notes:*
- 1 References to s (eg s12) refer to item numbers in Special Schedules Nos. 5 and 6 of each Council's Annual Financial Statements.
  - 2 The NWI performance indicators are based on the National Performance Framework handbook for Urban Performance Reporting Indicators and Definitions.  
The NWI indicators are to be calculated using the formulae shown above.

# Formulae for calculation of performance indicators in tables 5 to 18

## Formulae for calculation of performance indicators in table 5

Column No.	Performance Indicator	Background to Formula	Formula
<b>Water Supply</b>			
(1)	Water Supply Connected Properties (No.)	Total number of water supply connected properties (Residential plus Non-residential).	From Col (20) Table 9
(2)	Total Water Supplied (Potable + Non-potable + Recycled Excl. Bulk Supply) (ML)	Total annual water supplied (Potable plus Non-potable plus recycled. Excludes bulk water supplied). Where a Local Water Utility (LWU) has not reported the total water supplied, the previous year's value has been used and is shown in italics bold.	From Col (49) Table 10
(3)	Average Annual Residential Water Supplied (Potable + Nonpotable) (kL/ connected property)	Where an LWU has not reported potable residential water supplied, the residential water supplied has been estimated as 58% of the reported annual potable water supplied. As shown in Note 8 of Table 8, the average reported residential water supplied is 58% of the total potable water supplied.	From Col (56) Table 10 ÷ 1000
(3a)	Water Main Breaks (per 100km of main)	Number of main breaks per 100km of main. A main break is where the water main has to be shut down. Excludes service connection breaks.	From Col (42) Table 10
(4)	Revenue (\$M)	Total Revenue including gain/loss on disposal of assets, less grants for acquisition of assets, less interest income [Residential Charges + Non-residential Charges + Extra Charges + Grants (excluding grants for Acquisition of Assets) + Contributions (Developer Charges + Developer Provided Assets + Other Contributions)] + Gain/loss on disposal of assets.	From Col (57) Table 11
(7)	Water Quality Compliance - Chemical (%)	Chemical water quality compliance	From Col (70) Table 12
(7a)	Zones Compliant	Assessment with the chemical requirements of the water quality guidelines for each zone of the system.	From Col (70a) Table 12
(8)	Water Quality Compliance - Microbiological - E. coli (%)	Number of samples tested that meet the water quality requirements divided by the total number of samples tested. Note that this is the number of samples not tests, one sample may have a number of tests performed.	From Col (71) Table 12
(8a)	Zones Compliant	Assessment with the microbiological requirements of the water quality guidelines for each zone of the system.	From Col (71a) Table 12
(8b)	% Population with Microbiological Compliance	From population served and compliance achieved by each zone.	From Col (71b) Table 12
(8c)	Water Quality Complaints (per 1000 properties)	Complaints are any expression of customer dissatisfaction reported in person, by phone, fax, letter or email. Water quality complaints are reported under the relevant source water treatment works.	From Col (73) Table 12
<b>Sewerage</b>			
(9)	Revenue (\$M)	Total Revenue including gain/loss on disposal of assets, less grants for acquisition of assets and less revenue from investment activities. [Residential Charges + Non-residential Charges + Trade Waste Charges + Extra Charges + Other Revenues + Grants (less receipts from government for Acquisition of Assets) + Contributions (Developer Charges + Developer Provided Assets + Other Contributions)] + Gain/loss on disposal of assets.	From Col (42) Table 16
(10)	% Sewage that was Compliant	See Col (33a) of Table 15	From Col (33a) Table 15
(10a)	Sewer Overflows (per 100km of main)	All overflows, whether reported to environmental regulator or not.	From Col (25) Table 15
(11)	Sewage Odour Complaints (per 1000 properties)	Sum of odour complaints from all sewage treatment works.	From Col (61) Table 17
(12)	Recycled Water (%)	Percent of Effluent Recycled	From Col (41c) Table 15
(12a)	Recycled Water (ML)	Total Effluent Recycled	From Col (41a) Table 15
<b>Water Supply and Sewerage</b>			
(13a)	Average Duration of an Unplanned Interruption (mins) - Water Supply	Sum of total minutes of interruption divided by the total number of interruptions.	From Col (78) Table 12
(13b)	Average Duration of an Unplanned Interruption (mins) - Sewerage	Sum of total minutes of interruption divided by the total number of interruptions.	From Col (65) Table 17
(13c)	Net Profit After Tax (\$M)	Surplus before dividends less tax paid.	Col (32) Table 5A ÷ 1000
(13d)	Typical Residential Bill (\$/assessment)	Sum of water and sewerage Typical Residential Bills.	Col (8) Table 6 + Col (8) Table 7
(14)	Typical Developer Charge (\$/ET)	Sum of water and sewerage Typical Developer Charges.	Col (7) Table 6 + Col (7) Table 7
(15)	Current Replacement Cost per Assessment (\$)	The value of the infrastructure assets divided by the number of assessments.	Col (62) Table 11 + Col (47) Table 16
(17)	OMA Cost (\$/connected property)	Total water supply and sewerage operation, maintenance and administration (OMA) costs (excluding cost of purchasing water) divided by number of connected properties. OMA includes engineering and supervision costs.	Col (67) Table 11 + Col (52) Table 16
(18)	Management Cost (\$/connected property)	Total water supply and sewerage management costs divided by number of connected properties.	Col (68) Table 11 + Col (54) Table 16
(19)	Economic Real Rate of Return (%)	See Col (25) of Table 5A	From Col (25) Table 5A
(19a)	Net Debt to Equity	See Col (26) of Table 5A	From Col (26) Table 5A
(19b)	Capital Expenditure (\$/property)	See Col (24b) of Table 5A	From Col (24b) Table 5A
(19c)	Capital Expenditure (\$M)	Assets, renewals, plant/equipment.	Col (31a) Table 9 + Col (13a) Table 14
(21)	Strategic Business Plans Prepared? (Yes/No)	Strategic Business Plan is less than 5 years old, being prepared or updated, and is soundly based.	From NOW records

### Notes:

A. References to W (eg.  $W_{15}$ ) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Similarly, references to S (eg.  $S_{16}$ ) refer to each LWU's Special Schedules Nos 5 and 6. Note that dollar values in the Special Schedules are reported in '\$000 whereas the whole dollar value is used in these Tables and formulae.

B. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data or previous year's data).

# Formulae for calculation of performance indicators in tables 5A and 5B

Column No.	Performance Indicator	Background to Formula	Formula
<b>Water Supply &amp; Sewerage</b>			
(23)	Operating Cost (OMA) (\$/property)	Total water supply and sewerage operation, maintenance and administration (OMA) costs (excluding cost of purchasing water) divided by number of connected properties. OMA includes engineering and supervision costs.	Col (67) Table 11 + Col (52) Table 16
(24)	Income per Property (\$/property)	Total income divided by total connected properties (water or sewerage)	Col (24a) ÷ Col (15) Table 6
(24a)	Total Income (\$M)	Total income plus gain/loss on disposal of assets less grants for acquisition of assets less interest income.	$[(W_{13} + W_{14} - W_{11a} - W_9) + (S_{14} + S_{15} - S_{12a} - S_{10})] \div 1,000,000$
(24b)	Capital Expenditure (\$/property)	Assets, Renewals, Plant/Equipment.	Col (24b) Table 5A
(24c)	Return on Assets (%)	Total revenue less grants for acquisition of assets less total expenses plus revaluation decrements plus other expenses divided by written down replacement value of operational assets. Total revenue excludes gain/loss on disposal of assets. Operational assets include system assets plus plant and equipment.	$[(W_{13} - W_{11a} - W_5 + W_{4b} + W_{4c}) + (S_{14} - S_{12a} - S_5 + S_{4b} + S_{4c})] \times 100 \div (W_{47} + W_{33b} + S_{48} + S_{34b})$
(25)	Economic Real Rate of Return (%)	Revenue from operations (water supply and sewerage) less operating expenses (OMA + current cost depreciation) divided by written down replacement value of water supply and sewerage operational assets. Revenue from operations excludes interest income, grants for acquisition of assets or gain/loss on disposal of assets. Operational assets include system assets and plant and equipment.	$[(W_{13} - W_9 - W_{11a} - W_1 - W_2 - W_3) + (S_{14} - S_{10} - S_{12a} - S_1 - S_2 - S_3)] \times 100 \div (W_{47} + W_{33b} + S_{48} + S_{34b})$
(26)	Net Debt to Equity	Net debt (water supply and sewerage) divided by equity (water supply and sewerage). Net debt is borrowings plus bank overdrafts less cash and investments. Equity is Total Assets less Total Liabilities.	$[(W_{36} + W_{38} - W_{30}) + (S_{37} + S_{39} - S_{31})] \times 100 \div (W_{44} + S_{45})$
(27)	Interest Cover	Earnings before interest and tax (EBIT) for the whole water utility (water supply and sewerage) divided by net interest expense for the whole water utility (water supply and sewerage). The interest cover is nil for a loss making utility. Net interest expense is interest expenses less interest income and is zero for interest income greater than interest expense.	$[(W_{15a} + W_{4a} - W_9 - W_{14} + W_{4b} + W_{4c}) + (S_{16a} + S_{4a} - S_{10} - S_{15} + S_{4b} + S_{4c})] \div (W_{4a} - W_9 + S_{4a} - S_{10})$
(28)	Dividend Payable	Dividends paid, payable or proposed to be paid in relation to current year profit for the water and sewerage business for the whole water utility.	From SPFR Notes 2 & 3
(29)	Dividend Payout Ratio (%)	From SPFR Note 3	(Dividend paid or payable or proposed) x 100 ÷ (Net profit after tax)
(30)	CSOs (\$'000)	Subsidy provided by government to allow for the provision of a service at less than the total cost. Eg. If legislation requires a utility to provide a \$100 reduction to the water bills for pensioners for which the government provides \$60, the CSO is \$60.	From SPFR Note 3
(31)	% Revenue from CSOs	Revenue from CSOs divided by the total revenue (including CSOs).	[Col (30) ÷ Col (24a) Table 5A] x 100
(32)	Net Profit After Tax (NPAT) (\$'000)	Surplus before dividends less tax paid.	$[(W_{15a} + S_{16a}) - \text{Tax paid}] \div 1000$ From SPFR Notes 2 & 3
(32a)	NPAT Ratio	Net profit after tax divided by Total Income.	Col (32) ÷ [Col (24a) Table 5A x 1000] x 100

## 5B. 2010/11 NSW Water Utility Performance Summary

Column No.	Performance Indicator	Background to Formula	Formula
<b>Water Supply &amp; Sewerage</b>			
(33)	Billing Complaints (per 1000 properties)	Billing complaints for both water supply and sewerage businesses.	$(Q_{99 \text{ Water}} + Q_{37 \text{ Sewerage}}) \div \text{Col (20) Table 9}$
(34)	% of calls answered by Operator within 30 seconds	Proportion of calls that, where the customer has selected a relevant operator option, are answered by an operator within 30 seconds.	Q <sub>103 Water</sub>
(35a)	Greenhouse Gas Emissions - Water (tonnes CO2 per 1000 properties)	The greenhouse gas emissions (CO <sub>2</sub> -equivalent) generated by the water utility, directly (scope 1) and indirectly (scope 2), through all its operations relating to water supply.	Q <sub>148 Water</sub>
(35b)	Greenhouse Gas Emissions - Sewerage (tonnes CO2 per 1000 properties)	The greenhouse gas emissions (CO <sub>2</sub> -equivalent) generated by the water utility, directly (scope 1) and indirectly (scope 2), through all its operations relating to sewerage.	Q <sub>80a Sewerage</sub>
(35c)	Greenhouse Gas Emissions - Other (tonnes CO2 per 1000 properties)	This indicator is a balancing item, which reports the net greenhouse gas emissions generated by the water utility, directly (scope 1) and indirectly (scope 2) relating to other activities such as transport (vehicles) and office buildings. Scope 3 emissions are excluded.	Q <sub>148b Water</sub> + Q <sub>80b Sewerage</sub>
(35d)	Greenhouse Gas Emissions - Total (tonnes CO2 per 1000 properties)	Total net greenhouse gas emissions from water, sewerage and other.	Q <sub>148 Water</sub> + Q <sub>80a Sewerage</sub> + Q <sub>148b Water</sub> + Q <sub>80b Sewerage</sub>

### Notes:

A. References to W (eg. W<sub>15</sub>) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Similarly, references to S (eg. S<sub>16</sub>) refer to each LWU's Special Schedules Nos 5 and 6. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.

B. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data or previous year's data).

C. References to Q (eg. Q<sub>99 Water</sub>) refer to questions in each LWU's Water Supply or Sewerage Performance Reporting database.



# Formulae for calculation of performance indicators in tables 6 and 7

## 6. Water Supply - 2010/11 Charges, 2011/12 Bills

Column No.	Performance Indicator	Background to Formula	Formula
(1)	Type of Tariff	Tariff structure - Two Part, Inclining Block, Unmetered.	From Council's Schedule of Fees and Charges
(2)	Fixed Charge (or Minimum) (\$)	Fixed charge component of tariff.	From Council's Schedule of Fees and Charges
(4)	Special Levies (\$)	Charges directly levied upon properties and are neither a fixed or pay-for-use charge for water or sewage (e.g. environmental improvement levy).	From Council's Schedule of Fees and Charges
(5a-d)	Usage Charge for Steps 1 and 2 (c/kL)	Includes first two steps of usage charges ("All" if no steps or "N/A" if not applicable)	From Council's Schedule of Fees and Charges
(5e)	Billing (2006 National Guidelines) (% implementation)		
(6)	Operating Cost (OMA) c/kL	Total operation, maintenance and administration cost (excluding purchase of water) divided by total annual town water consumption (potable + non-potable - recycled).	$[W_1 + W_2] \times 100 \div [\text{Col (13) Table 8} \times 1000]$
(7)	Typical Developer Charge 2011/12 (\$/Equivalent Tenement (ET))	Upfront infrastructure contribution for new developments.	Q <sub>136</sub> (see note C)
(8)	Typical Residential Bill 2011/12 (\$/assessment) (see note C)	Calculated using the average residential water supplied for 2010/11 multiplied by the usage charges for 2011/12 plus the access charge for 2011/12.	$\text{Col (5)} \times \text{Col (14a)} \div 100 + \text{Col (2) Table 6}$
(11)	Return on Assets (%)	Total revenue less grants for acquisition of assets less total expenses plus revaluation decrements plus other expenses divided by written down replacement value of operational assets. Total revenue excludes gain/loss on disposal of assets. Operational assets include system assets plus plant and equipment.	$[(W_{13} - W_{11a} - W_5 + W_{4b} + W_{4c}) \times 100 \div (W_{47} + W_{33b})]$
(12)	Economic Real Rate of Return (%)	Revenue from operations less operating expenses (OMA + current cost depreciation) plus interest expenses divided by written down replacement value of operational assets. Revenue from operations excludes interest income and grants for acquisition of assets and gain/loss on disposal of assets. Operational assets include system assets plus plant and equipment.	$(W_{13} - W_9 - W_{11a} - W_1 - W_2 - W_3) \times 100 \div (W_{47} + W_{33b})$
(13)	Residential Revenue from Usage Charges (% of residential bills)	Revenue from residential usage charges divided by total residential revenue (residential usage plus access charges including any rates).	$W_{6b} \times 100 \div [W_{6a} + W_{6b}]$
(14a)	Average Annual Residential Water Supplied (potable) (kL/property)	Average annual residential water supplied (potable). Where an LWU has not reported residential water supplied and at least one of commercial and industrial consumption, 58% of the total potable supply has been used.	$\text{Col (1)} \div [\text{Cols (18)} \times \text{(21)} \times \text{(22) Table 9}]$
(14b)	Average Annual Residential Water Supplied (potable + non potable) (kL/property)	Average annual residential water supplied (potable and non potable).	$[\text{Col (1)} + \text{Col (11)} + \text{Col (12a) Table 8}] \div [\text{Cols (18)} \times \text{(21)} \times \text{(22) Table 9}]$
(14c)	Average Annual Residential Water Supplied (potable + non potable) (L/c/d)	Average annual residential water supplied per capita per day.	$[\text{Col (1)} + \text{Col (11)} + \text{Col (12a) Table 8}] \div [\text{Col (23) Table 9}]$
(14d)	Full Cost Recovery? (N / Y* / Y)	Achieved if either the economic real rate of return or the return on assets is $\geq 0$ , or if a LWU has significantly increased its charges to recover its costs.	From NOW records
(15)	Total Connected Properties	Total connected properties (residential plus non-residential). Calculated from number of assessments multiplied by the ratio of connected properties to assessments.	from Col (20) Table 9

## 7. Sewerage - 2010/11 Charges, 2011/12 Bills

Column No.	Performance Indicator	Background to Formula	Formula
(1)	Fixed Charge (or Minimum) (\$)	Fixed charge component of tariff.	From Council's Schedule of Fees and Charges
(2)	Operating Cost (OMA) c/kL	Total operation, maintenance and administration cost divided by total volume of sewage collected.	$[S_1 + S_2] \times 100 \div [\text{Col (32) Table 15} \times 1000]$
(3)	Access Charge Independent of Land Value? (Yes/No)	Charge not based on Council rates or land value.	From Council's Schedule of Fees and Charges
(3a)	Non-residential Sewer Usage Charge (c/kL)	Non-residential sewer usage charges not including sewer discharge factor.	From Council's Schedule of Fees and Charges
(3b)	Trade Waste Usage Charge (c/kL)	Charge applied to liquid trade waste dischargers.	From Council's Schedule of Fees and Charges
(4)	Complying Liquid Trade Waste Fees & Charges? (Yes/No)	Appropriate trade waste fees and charges are applied to all liquid trade waste dischargers.	From Council's Schedule of Rates, Fees and Charges
(5)	Non-residential & Trade Waste Charges (% of Annual Rates and Charges)	Non-residential charges plus trade waste charges divided by (residential charges + non-residential charges + trade waste charges).	$[S_7 + S_8] \times 100 \div [S_6 + S_7 + S_8]$
(6)	Non-residential & Trade Waste Volume (% of Total Volume of Sewage Collected)	Percentage of total sewage collected.	Col (36) + Col (37) Table 15
(7)	Typical Developer Charge 2011/12 (\$/Equivalent Tenement(ET))	Upfront infrastructure contribution for new developments.	Q <sub>62</sub> (see note C)
(8)	Typical Residential Bill 2011/12 (\$/assessment) (see note C)	Calculated using the access charge for 2011/12 plus, if council has residential sewer usage charges, the average residential water consumption for 2010/11 multiplied by the usage charges and usage factor for 2011/12.	Col (1) Table 7
(9)	Return on Assets (%)	Total revenue less grants for acquisition of assets less total expenses plus revaluation decrements plus other expenses divided by written down replacement value of operational assets. Total revenue excludes gain/loss on disposal of assets. Operational assets include system assets plus plant and equipment.	$[(S_{14} - S_5 - S_{12a} + S_{4b} + S_{4c}) \times 100 \div (S_{48} + S_{34b})]$
(11)	Economic Real Rate of Return (%)	Revenue from operations less operating expenses (OMA + current cost depreciation) plus interest expenses divided by written down replacement value of operational assets. Revenue from operations excludes interest income, grants for acquisition of assets and gain/loss on disposal. Operational assets include system assets plus plant and equipment.	$(S_{14} - S_{10} - S_{12a} - S_1 - S_2 - S_3) \times 100 \div (S_{48} + S_{34b})$
(11a)	Full Cost Recovery? (N / Y* / Y)	Achieved if either the economic real rate of return or the return on assets is $\geq 0$ , or if a LWU has significantly increased its charges in order to recover its costs.	From NOW records
(11b)	Recycled Water Usage Charge in place? (c/kL)	Charge applied for use of recycled water.	From Council's Schedule of Fees and Charges
(12)	Connected Properties (No.)	Total connected properties (residential plus non-residential). Calculated from number of assessments multiplied by the ratio of connected properties to assessments.	from Col (3) Table 14

### Notes:

- References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Water Supply or Sewerage Performance Reporting database.
- References to W (eg. W<sub>15</sub>) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Special Schedule No.3, previous year's data).

# Formulae for calculation of performance indicators in tables 8 and 9

8. 2010/11 Water Supplied in Non-Metropolitan NSW			
Column No.	Performance Indicator	Background to Formula	Formula
(1)	Residential	Domestic (inhouse and ex-house) potable water consumption.	Q <sub>54</sub>
(2)	Commercial	Offices, shops, clubs, hotels, motels, caravan parks potable consumption.	Q <sub>55</sub>
(3)	Industrial	Factories, mills, poultry, feed lots, sale yards, abattoirs, mining potable consumption.	Q <sub>56</sub> + Q <sub>56a</sub> + Q <sub>56b</sub> + Q <sub>56c</sub>
(4)	Rural	Farms or hobby farms outside urban zoned land, includes stock and domestic uses, market gardens, agricultural irrigation potable consumption.	Q <sub>57</sub>
(5)	Institutional	Hospitals, schools, colleges etc potable consumption.	Q <sub>58</sub>
(6)	Public Parks and Gardens	Watering of public parks, gardens, ovals etc using potable water.	Q <sub>60</sub>
(7)	Total Revenue Water (potable)	Excludes revenue from recycled water and urban stormwater used.	Sum Col (1) to (6) Table 8
(8)	Real Loss (Leakage)	Leakage. Real loss is included in water losses (see Note C).	Q <sub>68</sub>
(8a)	Apparent Loss	Illegal use plus meter inaccuracies	Q <sub>67</sub>
(8b)	Unbilled Authorised Consumption	Includes fire fighting and flushing (see Note C).	Q <sub>61</sub>
(9)	Total Non-revenue Water	Sum unbilled authorised consumption plus water losses	Col (8b) + Col (8a) + Col (8) Table 8 or Col (7) / 0.9 - Col (7) Table 8
(10)	Total Potable Urban Water Supplied	Sum of Total Revenue water plus Total Non-revenue water.	Col (7) + Col (9) Table 8
(11)	Recycled Water for Non-Potable Urban Residential Water Supply	Total metered and estimated non-metered consumption of non-potable recycled water by residential properties for the reporting period, excluding urban stormwater.	Q <sub>150</sub>
(11a)	Recycled Water for Urban Non-Residential	Total metered and estimated non-metered consumption of recycled water by commercial, municipal, industrial properties and other users (fire fighting, mains flushing etc) for the reporting period, excluding urban stormwater.	Q <sub>151</sub>
(11b)	Recycled Water - Non-Urban	Total metered and estimated non-metered consumption of water supplied for agricultural purposes, environmental purposes and on-site use, excluding urban	Q <sub>152</sub> + Q <sub>153</sub> + Q <sub>154</sub>
(11c)	Recycled Water - Total	Total recycled water supplied.	Col (11) + Col (11a) + Col (11b) Table 8
(12a)	Non-Potable Urban Residential Water Supplied	Non-potable water reticulated to residential customers.	Q <sub>63</sub>
(12b)	Non-Potable Urban Non-Residential Water Supplied	Total metered and estimated non-metered non-potable water supplied to commercial, mining, manufacturing, electricity generators, other industrial, rural, municipal, public parks and unbilled, excluding recycled and urban stormwater.	Q <sub>63a</sub> + Q <sub>63b</sub> + Q <sub>63c</sub> + Q <sub>63d</sub> + Q <sub>63e</sub> + Q <sub>63f</sub> + Q <sub>63g</sub> + Q <sub>63i</sub> + Q <sub>63j</sub>
(12c)	Non-Potable Urban Water Supplied	Includes untreated water for industry or non-potable water component in a dual water supply system and may also include recycled water .	Q <sub>64</sub> + Q <sub>157</sub>
(13)	Total Annual Urban Water Supplied	Total consumption equals the sum of potable consumption plus non-potable supply for industry or non-potable component in a dual supply system less recycled water	Col (10) + Col (12c) Table 8
(14)	Bulk Water Exports	Sales to other Local Water Utilities (LWUs) of potable and non-potable water.	Q <sub>59</sub>
(15)	Surface Water	Surface water + ground water + bulk purchases should equal total annual water	Q <sub>41</sub> + Q <sub>42</sub> + Q <sub>43</sub> + Q <sub>44</sub>
(16)	Groundwater	Volume extracted from groundwater.	Q <sub>45</sub>
(16b)	Recycled Water	Volume of water sourced from recycling.	Q <sub>47</sub>
(17)	Bulk Purchase	Potable plus non-potable	Q <sub>52b</sub>
(17b)	Total Sourced Water	Excluding non-urban recycled.	Col (15) + Col (16) + Col (16b) + Col (17) Table 8

9. Water Supply - 2010/11 Utility Characteristics			
Column No.	Performance Indicator	Background to Formula	Formula
(18)	Total No. of Assessments (see note C)	Where this data is ambiguous or missing, it has been estimated from other supporting information (financial data, previous year's data).	Q <sub>36</sub>
(18a)	Number of Connections	Number of physical connections to the water supply system (ie. A multiple dwelling with a single metered connection to the water supply system is counted as one	Q <sub>30</sub>
(19)	Ratio of Connected Properties to Assessments (see note C)	This ratio has been determined from previous performance reports. It does not normally change from year to year and will be continued unless change is considered warranted by the LWU, in which case evidence of a different factor	Q <sub>37</sub>
(20)	Connected Properties	Total connected properties (residential plus non-residential). Calculated from number of assessments multiplied by the ratio of connected properties to	Col (18) x Col (19) Table 9
(21)	Ratio of Residential Assessments to Total Assessments (see note C)	This ratio has been determined from previous performance reports. It does not normally change from year to year and will be continued unless change is considered warranted by the LWU, in which case evidence of a different factor	Q <sub>37a</sub>
(22)	Ratio of Residential Connections to Residential Assessments (see note C)	This ratio has been determined from previous performance reports. It does not normally change from year to year and will be continued unless change is considered warranted by the LWU, in which case evidence of a different factor	Q <sub>38</sub>
(22a)	Connected Residential Properties (No.)	A residential property connected to the water supply system, which may or may not have a separate assessment.	Col (18) x Col (21) x Col (22) Table 9
(22b)	New Residential Dwellings Connected (%)	New residences connected this reporting year as percentage of connected residential properties.	Q <sub>31</sub> ÷ Col (22a) Table 9
(23)	Permanent Population	Where this data is ambiguous or missing, it has been estimated from other supporting information (financial data, previous year's data).	Q <sub>1</sub>
(24)	Peak Population (% of permanent)	Maximum population supplied anytime this reporting year.	Q <sub>2</sub>
(25)	Transfer Mains (km)	Trunk mains which are part of the headworks system (eg. dam, river) for delivery of water either from scheme to scheme or to treatment works.	Q <sub>20a</sub>
(25a)	Trunk and Reticulation Mains (km)	Total length of mains including trunk mains and reticulation.	Q <sub>22</sub>
(26)	Properties Served per km of main	Total number of connected properties divided by length of mains.	Col (20) ÷ Col (25a) Table 9
(27)	Water Treatment Works	Number of works providing full treatment.	Q <sub>17</sub>
(28)	Dams	Number of dams.	Q <sub>7</sub>
(29)	Bores	Number of water supply bores.	Q <sub>13</sub>
(30)	Pumping Stations	Number of pumping stations.	Q <sub>15</sub>
(30a)	Pumping Stations per 100km of main	Number of pumping stations divided by length of main.	Col (30) ÷ [Col (25a) ÷ 100] Table 9
(31)	Capital Expenditure (\$/property)	Assets, renewals, plant/equipment.	Col (31a) x 1,000,000 ÷ Col (20) Table 9
(31a)	Capital Expenditure (Total \$M)	Assets, renewals, plant/equipment.	W <sub>16</sub> ÷ 1,000,000
(31b)	Capital Works Grants (\$'000)	Grants for acquisition of assets.	W <sub>11a</sub>
(32)	Total Workforce (water supply) (Employees/1000 properties)	Equivalent full time employees involved with water supply.	Q <sub>120</sub>
(34)	% Undergoing Training	% of employees in water supply workforce undergoing training for 2+ days during	Q <sub>122</sub> x 100 ÷ Q <sub>120</sub>
(37)	Outsourcing % of Maintenance Cost	% expended on outsourcing for maintenance of water supply business.	Q <sub>130</sub>
(38)	Number of Injuries	Number of injuries (fatality, permanent disability or time loss of 1+ days) in water	Q <sub>124</sub>
(39)	Total Days Lost (%)	Number of days lost for all reasons (disputes, sick leave, accidents) in water supply business expressed as a percentage of the total number of days worked.	Q <sub>123</sub> ÷ (230 x Q <sub>120</sub> )
(40a)	Days Lost due to Injuries	Number of days lost due to injuries (time loss of 1+ days) in water supply business.	Q <sub>125</sub>
(40b)	Days Lost due to Injuries (% of Total Days Lost)	Number of days lost due to injuries (time loss of one or more days) as a percentage of number of days lost for all reasons in water supply business.	(Q <sub>125</sub> x 100) ÷ Q <sub>123</sub>

### Notes:

- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Water Supply Performance Reporting database.
- B. References to W (eg. W<sub>15</sub>) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- C. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data, previous year's data).



# Formulae for calculation of performance indicators in tables 10 and 11

10. Water Supply - 2010/11 Asset Management			
Column No.	Performance Indicator	Background to Formula	Formula
(41)	Real Losses (Leakage) (L/d/c)	Real loss or leakage L per day per connection.	$Q_{68} \div 365 \div \text{Col (18a) Table 9}$
(41a)	Real Losses (Leakage) (kL/km/d)	Real loss or leakage kL per km of main per day	$Q_{68} \times 1000 \div Q_{22} \div 365$
(41b)	Infrastructure Leakage Index (ILI)	Ratio of Current Annual Real Loss to Unavoidable Annual Real Loss	Determined as per NPF
(41c)	Reservoir Drop Test (Type)	Whether Drop Test undertaken, the year and the result of the test.	
(41d)	(Year)		
(41e)	(Result %)		
(42)	Main Breaks (per 100km of main)	Number of main breaks per 100km of main. A main break is where the water main has to be shut down. Excludes service connection breaks.	$Q_{104} \div (Q_{22} \div 100)$
(43)	Unplanned Interruptions to Supply (per 1000 properties)	Number of properties affected by unplanned interruptions to supply per 1000 properties. Includes each occurrence. Excludes breaks in service connections or instances of low pressure.	$Q_{106} \times 1000 \div \text{Col (20) Table 9}$
(44)	Rehabilitation of mains (km/100km)	Length of mains rehabilitated per 100km of main.	$Q_{23} \div (Q_{22} \div 100)$
(45)	Rehabilitation of service connections (%)	Number of service connections rehabilitated as % of total.	$Q_{24} \times 100 \div \text{Col (18a) Table 9}$
(45a)	Rehabilitation of water meters (%)	Number of water meters rehabilitated as % of total.	$Q_{25} \times 100 \div \text{Col (18a) Table 9}$
(46)	Renewals (\$'000 per 100km of main)	Expenditure on renewals of mains per 100km of main.	$W_{16c} \div (Q_{22} \div 100)$
(47)	Renewals (% of CRC)	Expenditure on renewals of mains as percentage of Current Replacement Cost (CRC) of systems assets.	$W_{16c} \times 100 \div (\text{Col (61) Table 11} \times 1000)$
(48)	Mains Maintenance Cost (\$'000/100km of main)	Expenditure on maintenance of mains per 100km of main.	$(W_{2d} \div 1000) \div (Q_{22} \div 100)$
(49)	Total Urban Water Supplied (ML)	Where an LWU has not reported total potable consumption, the previous year's consumption has been adopted and is shown in italics bold.	see Col (13) Table 8
(50)	Non-potable Urban Water Supplied (ML)	Where an LWU has not reported total potable consumption, the previous year's consumption has been adopted and is shown in italics bold.	see Col (12c) Table 8
(51)	% Water Recycled	For non-potable urban water supplied.	$\text{Col (11c)} \times 100 \div \text{Col (13) Table 8}$
(53)	Peak Week to Average Consumption (%)	Average daily consumption over peak week (ML/d) divided by average daily consumption .	$Q_{83} \div [\text{Col (49)} \div 365]$
(56)	Average Annual Residential Water Supplied (Potable + Non Potable) (kL/property)	Average annual residential consumption (potable + non potable).	$[\text{Col (1)} + \text{Col (11)} + \text{Col (12a) Table 8}] \div [\text{Cols (18)} \times (21) \times (22) \text{ Table 9}]$
(56a)	Average Annual Residential Water Supplied (Potable) (kL/property)	Average annual residential consumption (potable). Where an LWU has not reported residential consumption and at least one of commercial and industrial consumption, 57% of the total potable supply has been used.	$\text{Col (1)} \div [\text{Cols (18)} \times (21) \times (22) \text{ Table 9}]$

11. Water Supply - 2010/11 Financial, Efficiency			
Column No.	Performance Indicator	Background to Formula	Formula
(57)	Total Revenue (excl Capital Works Grants) (\$'000)	Total Revenue excluding grants for acquisition of assets, interest income and gain/loss from disposal of assets [Residential Charges + Non-residential Charges + Extra Charges + Other Revenues + Grants (excluding for Acquisition of Assets) + Contributions (Developer Charges + Developer Provided Assets + Other Contributions)].	$(W_{13} - W_9 - W_{11a}) \div 1000$
(57a)	Revenue per property (\$)	Total revenue per connected property.	$[\text{Col (57) Table 8}] \times 1000 \div [\text{Col (20) Table 9}]$
(58)	Residential Revenue (% of rates and charges total)	Where an LWU has not reported a breakdown of revenue from rates and charges and sales into residential and non-residential, the percentage revenue for such LWUs has been estimated from the reported percentages of similar LWUs.	$(W_{6a} + W_{6b}) \times 100 \div (W_6 + W_7)$
(58a)	Residential Revenue (% of usage charges)	Residential revenue from usage charges.	$W_{6b} \times 100 \div (W_{6a} + W_{6b})$
(59)	Residential Water Supplied (% of potable water supplied excluding water losses)	% of potable water <u>excluding</u> water losses.	$(Q_{54} \div Q_{62}) \times 100$
(60)	Written Down Replacement Cost (\$M)	Written down replacement cost of system assets.	$W_{47} \div 1,000,000$
(61)	Current Replacement Cost (CRC) of System Assets (\$M)	The value of the infrastructure assets expressed in terms of how much it would cost to construct modern assets to provide the same function (ie. MEERA - Modern Engineering Equivalent Replacement Asset).	$W_{45} \div 1,000,000$
(62)	Current Replacement Cost per Assessment (\$)	The value of the infrastructure assets divided by the number of assessments.	$W_{45} \div \text{Col (18) Table 9}$
(63)	Net Debt to Equity (%)	All overdrafts, repayable borrowings, interest bearing non-repayable borrowings, advances and leases less cash and investments divided by total equity.	$(W_{36} + W_{38} - W_{30}) \times 100 \div W_{44}$
(63a)	Economic Real Rate of Return (%)	See Col (12) Table 6.	From Col (12) Table 6.
(63b)	Return on Assets (%)	See Col (11) Table 6.	From Col (11) Table 6.
(64a)	Cross Subsidies (Annual Charges & Fees) (\$/assessment)	Cross subsidies from residential customers using less than allowance to non-residential customers and to large connections in unmetered supplies.	$(W_{27b} + W_{27c} + W_{27d}) \div \text{Col (18) Table 9}$
(64b)	Cross Subsidies (Developer Charges) (\$/assessment)	Cross subsidies in water supply developer charges.	$(W_{28b}) \div \text{Col (18) Table 9}$
(65)	Operating Result (\$/property)	Total revenue less total expenses less grants for acquisition of assets divided by total number of connected properties.	$(W_{15a}) \div \text{Col (20) Table 9}$
(66)	Externalities (\$/property)	Water fees paid by LWUs to State Water.	From State Water records
(66a)	Loan Payment (\$/property)	Includes interest expenses, repayment of debt (Loans, Advances, Finance Leases).	$(W_{4a} + W_{17a} + W_{17b} + W_{17c}) \div \text{Col (20) Table 9}$
(67)	Operating Cost OMA (\$/property)	Total operation, maintenance and administration costs (plus proportion of bulk supplier OMA or purchase cost of water if no bulk supplier) divided by total number of connected properties.	$[W_1 + W_2] \div \text{Col (20) Table 9}$ plus bulk suppliers OMA
(68)	Management Cost (\$/property)	Total management costs divided by total number of connected properties.	$W_1 \div \text{Col(20) Table 9}$

## Notes:

- References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Water Supply Performance Reporting database.
- References to W (eg. W<sub>15</sub>) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data, previous year's data).

## Formulae for calculation of performance indicators in table 12

12. Water Supply - 2010/11 Health, Levels of Service			
Column No.	Performance Indicator	Background to Formula	Formula
(69)	Water Quality Compliance - Physical (%)	Overall compliance with physical requirements including the key characteristics of turbidity, pH and colour. Compliance refers to the number of samples taken for system performance monitoring and not the number of tests. Excludes samples taken for operational monitoring.	see note C
(69a)	Risk Based Drinking Water Quality Plan - Basis (e.g. ADWG, HACCP)	May include HACCP, ISO 9001, WSAA ADWG Aquality assessment, ADWG Framework for Management of Drinking Water Quality.	
(69b)	Risk Based Drinking Water Quality Plan - External Assessment? (Y/N)	Audited by an external accredited assessor and received certification for ISO 9001, HACCP or assessed against WSAA ADWG or ADWG.	
(70)	Water Quality Compliance - Chemical (%)	Overall compliance with chemical requirements. Compliance refers to the number of samples taken for system performance monitoring and not the number of tests. Excludes samples taken for operational monitoring.	see note C
(70a)	No. of Zones where Chemical Compliance was Achieved	Assessment with the chemical requirements of the water quality guidelines for each zone of the system.	Report as number of zones complying out of the total number of zones
(71)	Water Quality Compliance - E. coli (%)	E.coli contamination is the primary health-related indicator. Compliance refers to the number of samples taken for system performance monitoring and not the number of tests. Excludes samples taken for operational monitoring.	see note D
(71a)	No. of Zones where Microbiological Compliance was Achieved	Assessment with the microbiological requirements of the water quality guidelines for each zone of the system.	Report as number of zones complying out of the total number of zones
(71b)	% of Population with Microbiological Compliance	From population served and compliance achieved by each zone.	As per NPF
(73)	Water Quality Complaints (per 1000 properties)	Complaints are any expression of customer dissatisfaction reported in person, by phone, fax, letter or email. Water quality complaints are reported under the relevant source water treatment works.	$(Q_{101a} + Q_{101b}) \times 1000 \div \text{Col (20) Table 9}$
(74)	Water Service Complaints (per 1000 properties)	Complaints are any expression of customer dissatisfaction reported in person, by phone, fax, letter or email.	$Q_{96} \times 1000 \div \text{Col (20) Table 9}$
(75a)	Customers with Restrictions for Non-payment of Bills (per 1000 properties)	Restrictions and disconnections applied for non-payment of water bills in the reporting period.	$Q_{132a} \times 1000 \div \text{Col (20) Table 9}$
(75b)	Customers with Legal Action for Non-payment of Bills (per 1000 properties)	Legal actions for non-payment of water bills in the reporting period.	$Q_{132b} \times 1000 \div \text{Col (20) Table 9}$
(77)	Customer Interruption Frequency (No./1000 properties)	Includes each occurrence of unplanned interruptions to supply. Excludes reduced levels of service or breaks in service connections.	$Q_{105} \times 1000 \div \text{Col (20) Table 9}$
(78)	Average Duration of Interruptions (minutes)	Average duration of unplanned interruptions.	$Q_{107}$
(78a)	Drought Water Restrictions (% of time)	Percent of time that water restrictions apply.	$(Q_{95} \div 365) \times 100$

### Notes:

- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Water Supply Performance Reporting database.
- B. References to W (eg. W<sub>15</sub>) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- C. Physical compliance - sum for all treatment works, the product of T16 multiplied by T17 for each treatment works. Divide the total by the sum of T16 for all treatment works.  
Chemical compliance - sum for all treatment works, the product of T18 multiplied by T19 for each treatment works. Divide the total by the sum of T18 for all treatment works.
- D. Sum for all treatment works, the product of T26 multiplied by T27 for each treatment works. Divide the total by the sum of T26 for all treatment works.  
An LWU complied with the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines for E. coli if the required number of samples was tested and:  
**At least 98% of the samples contained no E. coli**  
For LWUs which did not comply, the percentage of samples complying is shown.
- E. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Special Schedule No.3, previous year's data).

# Formulae for calculation of performance indicators in table 13

Column No.	Performance Indicator	Background to Formula	Formula
(79)	Operating Cost Components - Maintenance (\$/property)	Maintenance cost of all water system assets.	$[W_{2b} + W_{2d} + W_{2f} + W_{2i} + W_{2l} + W_{2n}] \div \text{Col (20) Table 9}$
(79a)	Total O&M Cost (\$/property)	Maintenance, Operation, Energy, Chemical and Bulk Purchase costs.	$\text{Col (79)} + \text{Col (80)} + \text{Col (81)} + \text{Col (82)} + \text{Col (82a) Table 13}$
(80)	Operating Cost Components - Operation (\$/property)	Operation cost of all water system assets.	$[W_{2a} + W_{2c} + W_{2e} + W_{2g} + W_{2j} + W_{2m}] \div \text{Col (20) Table 9}$
(81)	Operating Cost Components - Energy (\$/property)	Energy cost of water pumping and treatment.	$W_{2h} \div \text{Col (20) Table 9}$
(82)	Operating Cost Components - Chemicals (\$/property)	The chemicals cost for water treatment.	$W_{2k} \div \text{Col (20) Table 9}$
(82a)	Operating Cost Components - Bulk Purchase (\$/property)	Purchase of water cost.	$W_{20} \div \text{Col (20) Table 9}$
(83)	Operating Cost Components - Dams & Weirs (\$/property)	Operation and Maintenance cost of dams and weirs.	$[W_{2a} + W_{2b}] \div \text{Col (20) Table 9}$
(84)	Operating Cost Components - Mains (\$/property)	Operation and Maintenance cost of water mains.	$[W_{2c} + W_{2d}] \div \text{Col (20) Table 9}$
(85)	Operating Cost Components - Reservoirs (\$/property)	Operation and Maintenance cost of reservoirs.	$[W_{2e} + W_{2f}] \div \text{Col (20) Table 9}$
(86)	Operating Cost Components - Pumping Stations (\$/property)	Operation, Energy and Maintenance cost of water pumping stations.	$[W_{2g} + W_{2h} + W_{2i}] \div \text{Col (20) Table 9}$
(87)	Operating Cost Components - Water Treatment (\$/property)	Operation, Chemical, Maintenance and Bulk Purchase cost of water treatment works.	$[W_{2j} + W_{2k} + W_{2l}] \div \text{Col (20) Table 9}$
(88)	Operating Cost Components - Other (\$/property)	Operation and Maintenance cost of other water system assets.	$[W_{2m} + W_{2n} + W_{2o}] \div \text{Col (20) Table 9}$
(89)	Management Cost Components - Administration (\$/property)	Administration costs.	$W_{1a} \div \text{Col (20) Table 9}$
(90)	Management Cost Components - Engineering & Supervision (\$/property)	Engineering and Supervision costs.	$W_{1b} \div \text{Col (20) Table 9}$
(91)	Management Cost Components - Total (c/kL)	Management cost per kL of urban water supplied.	$[W_{1a} + W_{1b}] \times 100 \div [\text{Col (49) Table 10} \times 1000]$
(91a)	Management Cost Components - Total (\$/property)	Administration, Engineering and Supervision costs.	$\text{Col (89)} + \text{Col (90) Table 13}$
(91b)	Total OMA Cost (\$/property)	Operation, Maintenance and Management costs.	$\text{Col (79a)} + \text{Col (91a) Table 13}$
(92)	Headworks Component (\$/property)	From the headworks component estimated in the reporting forms.	$[W_1 + W_2] \times [Q_{133} \div 100] \div \text{Col (20) Table 9}$
(93)	Distribution Component (\$/property)	From the distribution component estimated in the reporting forms.	$[W_1 + W_2] \times [Q_{134} \div 100] \div \text{Col (20) Table 9}$
(94)	Pumping Cost Components - Total Water Pumping Cost (c/kL)	From special schedule No. 3.	$[W_{2g} + W_{2h} + W_{2i}] \times 100 \div [\text{Col (49) Table 10} \times 1000]$
(95)	Pumping Cost Components - Total Water Pumping Cost (\$'000/pumping station)	From special schedule No. 3.	$[W_{2g} + W_{2h} + W_{2i}] \div 1000 \div \text{Col (30) Table 9}$
(96)	Pumping Cost Components - Operation (\$'000/pumping station)	From special schedule No. 3.	$[W_{2g} \div 1000] \div \text{Col (30) Table 9}$
(97)	Pumping Cost Components - Maintenance (\$'000/pumping station)	From special schedule No. 3.	$[W_{2i} \div 1000] \div \text{Col (30) Table 9}$
(98)	Pumping Cost Components - Energy (\$'000/pumping station)	From special schedule No. 3.	$[W_{2h} \div 1000] \div \text{Col (30) Table 9}$
(100)	Water Main Cost Components - Total Water Main Cost (c/kL)	From special schedule No. 3.	$[W_{2c} + W_{2d}] \times 100 \div [\text{Col (49) Table 10} \times 1000]$
(101)	Water Main Cost Components - Total Water Main Cost (\$'000/100km)	From special schedule No. 3.	$[W_{2c} + W_{2d}] \div 1000 \div [\text{Col (25a) Table 9} \div 100]$
(102)	Water Main Cost Components - Operation (\$'000/100km)	From special schedule No. 3.	$[W_{2c} \div 1000] \div [\text{Col (25a) Table 9} \div 100]$
(103)	Water Main Cost Components - Maintenance (\$'000/100km)	From special schedule No. 3.	$[W_{2d} \div 1000] \div [\text{Col (25a) Table 9} \div 100]$
(104)	Treatment Cost Components - Total Water Treatment Cost (\$/ML)	From special schedule No. 3.	$[W_{2j} + W_{2k} + W_{2l}] \div \text{Col (49) Table 10}$
(105)	Treatment Cost Components - Operation (\$/property)	From special schedule No. 3.	$W_{2j} \div \text{Col (20) Table 9}$
(106)	Treatment Cost Components - Maintenance (\$/property)	From special schedule No. 3.	$W_{2l} \div \text{Col (20) Table 9}$
(107)	Treatment Cost Components - Chemical (\$/property)	From special schedule No. 3.	$W_{2k} \div \text{Col (20) Table 9}$

## Notes:

- References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Water Supply Performance Reporting database.
- References to W (eg. W<sub>15</sub>) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data or previous year's data).

## Formulae for calculation of performance indicators in table 14

Column No.	Performance Indicator	Background to Formula	Formula
(1)	Total No. of Assessments (see note C)	Where this data is ambiguous or missing, it has been estimated from other supporting information (financial data, previous year's data).	Q <sub>17</sub>
(2)	Ratio of Connected Properties to Assessments (see note C)	This ratio has been determined from previous performance reports. It does not normally change from year to year and will be continued unless change is considered warranted by the LWU, in which case evidence of a different factor should be provided by the LWU.	Q <sub>18</sub>
(3)	Connected Properties	Total connected properties (residential plus non-residential). Calculated from number of assessments multiplied by the ratio of connected properties to assessments.	Col (1) x Col (2) Table 14
(4)	Ratio of Residential Assessments to Total Assessments	This ratio has been determined from previous performance reports. It does not normally change from year to year and will be continued unless change is considered warranted by the LWU, in which case evidence of a different factor should be provided by the LWU.	Q <sub>18a</sub>
(5)	Ratio of Residential Connections to Residential Assessments	This ratio has been determined from previous performance reports. It does not normally change from year to year and will be continued unless change is considered warranted by the LWU, in which case evidence of a different factor should be provided by the LWU.	Q <sub>19</sub>
(5a)	Connected Residential Properties	A residential property connected to the sewerage system, which may or may not have a separate assessment.	Col (1) x Col (4) x Col (5) Table 14
(6)	Permanent Population	Where this data is ambiguous or missing, it has been estimated from other supporting information (financial data, previous year's data).	Q <sub>1</sub>
(7)	Peak Population (% of permanent)	Maximum population served anytime this reporting year.	Q <sub>2</sub>
(8)	Mains (km)	Total length of sewer mains including reticulation, gravity and rising mains.	Q <sub>9</sub>
(9)	Properties Served per km of main	Total number of connected properties divided by length of mains.	Col (3) ÷ Col (8) Table 14
(10)	Sewage Treatment Works (No.)	Number of treatment works.	Q <sub>3</sub>
(11)	Pumping Stations	Number of sewage pumping stations.	Q <sub>5</sub>
(12)	Pumping Stations per 100km of main	Number of pumping stations divided by length of main.	Col (11) ÷ [Col (8) Table 14 ÷ 100]
(13)	Capital Expenditure (\$/property)	Assets, renewals, plant/equipment.	Col (13a) x 1,000,000 ÷ Col (3) Table 14
(13a)	Capital Expenditure (\$M)	Assets, renewals, plant/equipment.	S <sub>17</sub> ÷ 1,000,000
(13b)	Capital Works Grants (\$'000)	Grants for acquisition of assets.	S <sub>12a</sub>
(14)	Total Workforce (sewerage) (Employees/1000 properties)	Equivalent full time employees involved in sewerage business.	Q <sub>49</sub>
(15)	% Female	% of equivalent full time female employees in total sewerage business	Q <sub>50</sub> x 100 ÷ Q <sub>49</sub>
(19)	Outsourcing % of Maintenance Cost	% expended on outsourcing for maintenance of sewerage business.	Q <sub>59</sub>
(20)	Number of Injuries	Number of injuries (fatality, permanent disability or time loss of one or more days) in water supply business.	Q <sub>53</sub>
(21)	Total Days Lost (%)	Number of days lost for all reasons (disputes, sick leave, accidents) in sewerage business expressed as a percentage of the total number of days worked.	Q <sub>52</sub> ÷ (230 x Q <sub>49</sub> )
(22)	Days Lost due to Injuries	Number of days lost due to injuries (time loss of one or more days) in sewerage business.	Q <sub>54</sub>
(22a)	Days Lost due to Injuries (% of Total Days Lost)	Number of days lost due to injuries (time loss of one or more days) as a percentage of number of days lost for all reasons in sewerage business.	(Q <sub>54</sub> x 100) / Q <sub>52</sub>

### Notes:

- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Sewerage Performance Reporting database.
- B. References to S (eg. S<sub>15</sub>) refer to items in Special Schedules Nos 5 and 6 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- C. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data, previous year's data).

# Formulae for calculation of performance indicators in table 15 and 16

15. Sewerage - 2010/11 Asset Management			
Column No.	Performance Indicator	Background to Formula	Formula
(23)	Infiltration (ML per 100km of main)	Estimated groundwater infiltration and stormwater inflow into the system per 100km of main.	$\Sigma Q_{T31} \div (Q_9 \div 100)$
(24)	Breaks and Chokes (No. per 100km of main)	Breaks and chokes are partial or total blockages resulting in an interruption to sewerage services or overflows at gully traps. Blockages in risers and sidelines are excluded.	$Q_{64} \div (Q_9 \div 100)$
(25)	Overflows (No. per 100km of main)	Recorded overflows in sewers, access chambers and pumping stations. Overflows in risers and sidelines are excluded.	$Q_{63a} \div (Q_9 \div 100)$
(27)	Rehabilitation of mains (% of total length)	Length of mains rehabilitated as % of total length of main.	$(Q_{10} \div Q_9) \times 100$
(28)	Rehabilitation of service connections (%)	Number of service connections rehabilitated as % of total.	$Q_{11} \times 100 \div \text{Col}(3) \text{ Table 14}$
(29)	Renewals (\$'000 per 100km of main)	Expenditure on renewals of mains per 100km of main.	$(S_{17c} \div 1000) \div (Q_9 \div 100)$
(30)	Renewals (% of CRC)	Expenditure on renewals of mains as % of Current Replacement Cost (CRC) of systems assets.	$S_{17c} \times 100 \div [\text{Col}(46) \text{ Table 16} \times 1000]$
(31)	Mains Maintenance Cost (\$'000 per 100km of main)	Expenditure on maintenance of mains per 100km of main.	$(S_{2b} \div 1000) \div (Q_9 \div 100)$
(31a)	Overflows Reported to Regulator (No. per 100km of main)	Untreated sewage spills or discharges escape from the sewerage system to the external environment, reported as per utility's licence.	$Q_{63b} \div (Q_9 \div 100)$
(32)	Total Volume of Sewage Collected (ML)	Total volume transported through sewerage network.	$\Sigma Q_{T15}$
(32a)	Volume of Trade Waste (ML)	Network trade waste.	$\Sigma Q_{T34}$
(33)	Percentage of Sewage Treated (%)	% of total sewage treated.	$[\Sigma Q_{T18} + \Sigma Q_{T19}] \times 100 \div \text{Col} (32) \text{ Table 15}$
(33a)	% Sewage Treated that was Compliant	The number of scheduled samples that complied in the reporting period divided by the number of scheduled samples in the reporting period.	$(\text{No. of scheduled samples complying with licence limits}) \times 100 \div \text{Total No. of scheduled samples in reporting period.}$
(33b)	STWs Compliant at all times	Compliance is where effluent from the sewage treatment plant meets the licence conditions prescribed by the environmental regulator.	As per NPF
(34)	Percentage of Total Sewage Collected - Infiltration	% of total sewage collected.	$\Sigma Q_{T31} \times 100 \div \Sigma Q_{T15}$
(35)	Percentage of Total Sewage Collected - Residential	% of total sewage collected.	$\Sigma Q_{T32} \times 100 \div \Sigma Q_{T15}$
(36)	Percentage of Total Sewage Collected - Non-residential	% of total sewage collected.	$\Sigma Q_{T33} \times 100 \div \Sigma Q_{T15}$
(37)	Percentage of Total Sewage Collected - Trade Waste	% of total sewage collected.	$\Sigma Q_{T34} \times 100 \div \Sigma Q_{T15}$
(38)	Percentage of Total Sewage Collected - Other	Remainder not reported under columns (34), (35), (36) or (37). % of total sewage collected.	$100 - \text{Col} (34) - \text{Col} (35) - \text{Col} (36) - \text{Col} (37) \text{ Table 15}$
(39)	Volume of Sewage Collected per property (kL/property)	Includes residential, non-residential and trade waste.	$\text{Col} (32) \text{ Table 15} \div \text{Col} (3) \text{ Table 14}$
(39a)	Level of Treatment - Primary Level (%)	Primary treatment only.	$[\Sigma Q_{T17} \times 100] \div \text{Col} (32) \text{ Table 15}$
(39b)	Level of Treatment - Secondary Level (%)	Secondary treatment only.	$[\Sigma Q_{T18} \times 100] \div \text{Col} (32) \text{ Table 15}$
(39c)	Level of Treatment - Tertiary Level (%)	Tertiary treatment only.	$[\Sigma Q_{T19} \times 100] \div \text{Col} (32) \text{ Table 15}$
(40)	Biosolids Reused (%)	% of biosolids (sludge) to farmland, landfill etc.	$[\Sigma(Q_{T27} \div 100 \times Q_{T26X})] \div \Sigma Q_{T26X}$
(41a)	Effluent Recycled - Total (ML)	Total volume recycled.	$\Sigma Q_{T25}$
(41b)	Effluent Recycled - Urban Water (ML)	Total urban water recycled (excluding agricultural, environmental and bulk).	$\Sigma[Q_{T21} + Q_{T22} + Q_{T23} + Q_{T24} + Q_{T24a}]$
(41c)	% of Effluent Recycled	Percentage of effluent that is recycled.	$100 \times \text{Col} (41a) \div \text{Col} (32) \text{ Table 15}$

16. Sewerage - 2010/11 Financial, Efficiency			
Column No.	Performance Indicator	Background to Formula	Formula
(42)	Total Revenue (excl Capital Works Grants) (\$'000)	Total Revenue excluding grants for acquisition of assets, interest income and gain/loss on disposal of assets [Residential Charges + Non-residential Charges + Trade Waste Charges + Extra Charges + Other Revenues + Grants (excluding receipts from government for Acquisition of Assets) + Contributions (Developer Charges + Developer Provided Assets + Other Contributions)].	$(S_{14} - S_{10} - S_{12a}) \div 1000$
(42a)	Revenue per property (\$)	Total revenue per connected property.	$[\text{Col} (42) \text{ Table 16} \times 1000] \div [\text{Col} (3) \text{ Table 14}]$
(43)	Residential Revenue (% of rates and charges total)	Where an LWU has not reported a breakdown of revenue from rates and charges and sales into residential and non-residential, the percentage revenue for such LWUs has been estimated from the reported percentages of similar LWUs.	$(S_6) \times 100 \div (S_6 + S_7 + S_8)$
(44)	Residential Sewage (% of total collected excl infiltration/inflow)	% of total collected <u>excluding</u> infiltration and inflow.	$[\Sigma Q_{T32} \div (\Sigma Q_{T15} - \Sigma Q_{T31})] \times 100$
(45)	Written Down Replacement Cost (\$M)	Written down replacement cost of system assets.	$S_{48} \div 1,000,000$
(46)	Current Replacement Cost (CRC) of System Assets (\$M)	The value of the infrastructure assets expressed in terms of how much it would cost to construct modern assets to provide the same function (ie. MEERA - Modern Engineering Equivalent Replacement Asset).	$S_{46} \div 1,000,000$
(47)	Current Replacement Cost per Assessment (\$)	The value of the infrastructure assets divided by the number of assessments.	$S_{46} \div \text{Col} (1) \text{ Table 14}$
(48)	Net Debt to Equity (%)	All overdrafts, repayable borrowings, interest bearing non-repayable borrowings, advances and leases less cash & investments $\div$ total equity.	$(S_{37} + S_{39} - S_{31}) \times 100 \div S_{45}$
(48a)	Return on Assets (%)	See Col (9) in Table 7.	From Col (9) Table 7
(48b)	Economic Real Rate of Return (%)	See Col (11) in Table 7.	From Col (11) Table 7
(49a)	Cross Subsidies (Annual Charges & Fees) (\$/assessment)	Cross subsidies from residential customers to non-residential customers and trade waste dischargers.	$(S_{28b} + S_{28c}) \div \text{Col} (1) \text{ Table 14}$
(49b)	Cross Subsidies (Developer Charges) (\$/assessment)	Cross subsidies in sewerage developer charges.	$(S_{29b}) \div \text{Col} (1) \text{ Table 14}$
(50)	Operating Result (\$/property)	Total revenue less total expenses less grants for acquisition of assets divided by total number of connected properties.	$(S_{16a}) \div \text{Col} (3) \text{ Table 14}$
(51)	Externalities (\$/property)	Sewage treatment works licence fees paid by LWUs to EPA.	From EPA records
(51a)	Loan Payment (\$/property)	Includes interest expenses, repayment of debt (Loans, Advances, Finance Leases).	$(S_{4a} + S_{18a} + S_{18b} + S_{18c}) \div \text{Col} (3) \text{ Table 14}$
(52)	Operating Cost OMA (\$/property)	Total operation, maintenance and administration costs divided by total number of connected properties.	$[S_1 + S_2] \div \text{Col} (3) \text{ Table 14}$
(54)	Management Cost (\$/property)	Total management costs divided by total number of connected properties.	$S_1 \div \text{Col} (3) \text{ Table 14}$

### Notes:

- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Sewerage Performance Reporting database.  $\Sigma Q_{T99}$  refers to the sum of values for each treatment works.
- B. References to S (eg. S<sub>15</sub>) refer to items in Special Schedules Nos 5 and 6 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- C. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data, previous year's data).

## Formulae for calculation of performance indicators in table 17

17. Sewerage - 2010/11 Environmental, Levels of Service			
Column No.	Performance Indicator	Background to Formula	Formula
(55)	EPA Licence Compliance BOD (%)	Compliance refers to the number of samples taken for system performance monitoring and not the number of tests.	see note C
(56)	BOD 90 Percentile Discharge Licence Limit (mg/L)	Some councils only have 100 percentile licence limits for their treatment works. In this case the 100 percentile limits should be reported.	see note C
(57)	EPA Licence Compliance SS (%)	Compliance refers to the number of samples taken for system performance monitoring and not the number of tests.	see note D
(58)	SS 90 Percentile Discharge Licence Limit (mg/L)	Some councils only have 100 percentile licence limits for their treatment works. In this case the 100 percentile limits should be reported.	see note D
(59a)	EPA Licence Compliance N (%)		see note C
(59b)	EPA Licence Compliance P (%)		see note C
(59c)	EPA Licence Compliance Oil & Grease (%)		see note C
(59d)	EPA Licence Compliance Faecal Coliform (%)		see note C
(59e)	Sewage Treated that was Compliant (%)	Percent of sewage volume treated that was compliant.	see note F
(59f)	STWs Compliant at all times		
(60)	Compliance with Environmental Regulator (Y/N)		see note D
(61)	Odour Complaints (per 1000 properties)	Odour complaints for treatment works, pumping stations and pipe network in your sewerage business.	$Q_{39} \times 1000 \div \text{Col (3) Table 14}$
(62)	Service Complaints (per 1000 properties)	Complaints other than chokes, odour or billing. Exclude queries.	$Q_{38} \times 1000 \div \text{Col (3) Table 14}$
(65)	Average Sewerage Interruption (minutes)	Measured from time when utility is aware that sewerage services are non long available. Sum of total minutes of interruption divided by the total number of interruptions.	$Q_{43}$

### Notes:

- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Sewerage Performance Reporting database.
- B. References to S (eg. S<sub>15</sub>) refer to items in Special Schedules Nos 5 and 6 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- C. For multiple treatment works, the Licence Compliance indicators are calculated as a weighted average on the basis of the number of sampling days for each treatment works.  
 ie. For BOD compliance, sum for all treatment works, the product of T50 multiplied by T63 for each treatment works.  
 Divide this total by the sum of T63 for all treatment works.
- D. SS compliance is calculated in a similar manner to BOD compliance.  
 ie. For SS compliance, sum for all treatment works, the product of T52 multiplied by T63 for each treatment works.  
 Divide the total by the sum of T63 for all treatment works.
- E. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Special Schedule No.5, previous year's data).
- F. From page 66 of the 2010-11 National Performance Framework.



# Formulae for calculation of performance indicators in table 18

18. Sewerage - 2010/11 Benchmarking Cost Data			
Column No.	Performance Indicator	Background to Formula	Formula
(66a)	Total O&M Cost (\$/property)	Operation, Maintenance, Energy, Chemical, Effluent Management and Biosolids Management costs.	Col (66) + Col (67) + Col (68) + Col (69) + Col (69a) Table 18
(66)	Operating Cost Components - Maintenance (\$/property)	Maintenance cost of all sewerage system assets.	$[S_{2b} + S_{2e} + S_{2k} + S_{2m}] \div \text{Col (3) Table 14}$
(67)	Operating Cost Components - Operation (\$/property)	Operation cost of all sewerage system assets.	$[S_{2a} + S_{2c} + S_{2f} + S_{2i}] \div \text{Col (3) Table 14}$
(68)	Operating Cost Components - Energy (\$/property)	Energy cost of sewage treatment and pumping	$S_{2h} \div \text{Col (3) Table 14}$
(69)	Operating Cost Components - Chemical Treatment (\$/property)	The chemical cost of sewage treatment.	$S_{2g} \div \text{Col (3) Table 14}$
(69a)	Operating Cost Components - Effluent & Biosolids (\$/property)	Effluent Management and Biosolids Management cost of sewage treatment.	$[S_{2j} + S_{2l}] \div \text{Col (3) Table 14}$
(70)	Operating Cost Components - Mains (\$/property)	Operation and Maintenance cost of sewage mains.	$[S_{2a} + S_{2b}] \div \text{Col (3) Table 14}$
(71)	Operating Cost Components - Pumping Stations (\$/property)	Operation, Energy and Maintenance cost of sewage pumping stations.	$[S_{2c} + S_{2d} + S_{2e}] \div \text{Col (3) Table 14}$
(72)	Operating Cost Components - Sewage Treatment (\$/property)	Operation, Chemical, Energy, Effluent Management, Biosolids Management and Maintenance cost of sewage treatment.	$[S_{2f} + S_{2g} + S_{2h} + S_{2i} + S_{2j} + S_{2k}] \div \text{Col (3) Table 14}$
(73)	Operating Cost Components - Other (\$/property)	Operation and maintenance cost of other sewerage system assets.	$[S_{2l} + S_{2m}] \div \text{Col (3) Table 14}$
(74)	Management Cost Components - Administration (\$/property)	Administration costs.	$S_{1a} \div \text{Col (3) Table 14}$
(75)	Management Cost Components - Engineering & Supervision (\$/property)	Engineering and Supervision costs.	$S_{1b} \div \text{Col (3) Table 14}$
(76)	Management Cost Components - Total (c/kL)	Management cost per kL of sewage treated.	$[S_{1a} + S_{1b}] \times 100 \div \text{Col (32) Table 15}$
(76a)	Management Cost Components - Total (\$/property)	Administration, Engineering and Supervision costs.	Col (74) + Col (75) Table 18
(76b)	Total OMA Cost (\$/property)	Operation, Maintenance and Management costs.	Col (66a) + Col (76a) Table 18
(77)	Wholesale Component (\$/property)	The cost of sewage treatment.	$[S_{2f} + S_{2g} + S_{2h} + S_{2i} + S_{2j} + S_{2k}] \div \text{Col (3) Table 14}$
(78)	Retail Component (\$/property)	The cost of transportation and reticulation.	$[S_{2a} + S_{2b} + S_{2c} + S_{2d} + S_{2e}] \div \text{Col (3) Table 14}$
(79)	Pumping Cost Components - Total Sewage Pumping Cost (c/kL)	From special schedule No. 5.	$[S_{2c} + S_{2d} + S_{2e}] \times 100 \div [\text{Col (32) Table 15} \times 1000]$
(80)	Pumping Cost Components - Total Sewage Pumping Cost (\$'000/pumping station)	From special schedule No. 5.	$[S_{2c} + S_{2d} + S_{2e}] \div 1000 \div \text{Col (11) Table 14}$
(81)	Pumping Cost Components - Operation (\$'000/pumping station)	From special schedule No. 5.	$[S_{2c} \div 1000] \div \text{Col (11) Table 14}$
(82)	Pumping Cost Components - Maintenance (\$'000/pumping station)	From special schedule No. 5.	$[S_{2e} \div 1000] \div \text{Col (11) Table 14}$
(83)	Pumping Cost Components - Energy (\$'000/pumping station)	From special schedule No. 5.	$[S_{2d} \div 1000] \div \text{Col (11) Table 14}$
(85)	Sewer Main Cost Components - Total Sewer Main Cost (c/kL)	From special schedule No. 5.	$[S_{2a} + S_{2b}] \times 100 \div [\text{Col (32) Table 15} \times 1000]$
(86)	Sewer Main Cost Components - Total Sewer Main Cost (\$'000/100km)	From special schedule No. 5.	$[S_{2a} + S_{2b}] \div 1000 \div [\text{Col (8) Table 14} \div 100]$
(87)	Sewer Main Cost Components - Operation (\$'000/100km)	From special schedule No. 5.	$[S_{2a} \div 1000] \div [\text{Col (8) Table 14} \div 100]$
(88)	Sewer Main Cost Components - Maintenance (\$'000/100km)	From special schedule No. 5.	$[S_{2b} \div 1000] \div [\text{Col (8) Table 14} \div 100]$
(89)	Treatment Cost Components - Total Sewage Treatment Cost (\$/ML)	From special schedule No. 5.	$[S_{2f} + S_{2g} + S_{2h} + S_{2i} + S_{2j} + S_{2k}] \div \text{Col (32) Table 15}$
(90)	Treatment Cost Components - Operation (\$/property)	From special schedule No. 5.	$[S_{2f}] \div \text{Col (3) Table 14}$
(91)	Treatment Cost Components - Maintenance (\$/property)	From special schedule No. 5.	$[S_{2k}] \div \text{Col (3) Table 14}$
(92)	Treatment Cost Components - Chemical (\$/property)	From special schedule No. 5.	$[S_{2g}] \div \text{Col (3) Table 14}$

### Notes:

- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Sewerage Performance Reporting database.
- B. References to S (eg. S<sub>15</sub>) refer to items in Special Schedules Nos 5 and 6 of each LWU's Annual Financial Statement. Note that dollar values in the Special Schedules are reported in \$'000 whereas the whole dollar value is used in these Tables and formulae.
- C. Where LWU data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data or previous year's data).



# Appendix C: 2010-11 Local water utility TBL performance reports

## Tamworth Regional Council water supply – page 1

<b>Tamworth Regional Council</b>	<b>TBL Water Supply Performance</b>	<b>2010-11</b>
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**WATER SUPPLY SYSTEM** - Tamworth Regional Council serves a population of 43,500 (20,730 connected properties). Water is drawn from the Peel River and Durigowan Creek to supply Tamworth, Manilla River, Barraba Creek and Connors Creek Dam to supply Barraba, Namoi River and Manilla River to supply Manilla, 2 bores (1 ML/d) to supply Nundie, 2 bores (1.1 ML/d) to supply Attunga, McDonald River to supply Bendemeer, and 4 bores (4 ML/d) to supply Moonbi and Koolingal. Council has 2 storage dams (total capacity 6500 ML). The water supply network comprises 1 conventional water treatment works (4ML/d), 1 upflow clarifier/dual media (80 ML/d), 1 dissolved air flotation (3.9 ML/d), 1 lagoon sedimentation (0.9 ML/d), 29 service reservoirs (125 ML), 17 pumping stations, 92.5 ML/d delivery capacity into the distribution system, 193 km of transfer and trunk mains and 528 km of reticulation. The water supply is unfiltered (chlorinated) at Attunga, Bendemeer, Moonbi and Koolingal.

**PERFORMANCE** - Tamworth Regional Council achieved 90% compliance with Best Practice requirements. The typical residential bill was \$494 which was close to the statewide median of \$450 (Indicator 14). The economic real rate of return was 1.3% which was greater than the statewide median (Indicator 43). The operating cost (OMA) per property was \$442 which was above the statewide median of \$370 (Indicator 49). Compliance with microbiological water quality was 100% with 6 of 7 zones compliant (Indicator 20), physical compliance was 100% (Indicator 19) and chemical compliance was 100% with 6 of 7 zones compliant (Indicator 19b). Current replacement cost of system assets was \$306M (\$14,800 per assessment). Cash and investments were \$26.4M, debt was \$9.9M and revenue was \$15.3M (excluding capital works grants).

### COMPLIANCE WITH REQUIREMENTS OF BEST-PRACTICE MANAGEMENT FRAMEWORK

<p><b>(1) Complete Current Strategic Business Plan &amp; Financial Plan</b></p> <p><b>(2) (2a) Pricing</b> - Full Cost Recovery, without significant cross-subsidies</p> <p><b>(2b,2c) Pricing</b> - Complying Residential Charges</p> <p><b>(2d) Pricing</b> - Complying Non-residential Charges</p> <p><b>(2e) Pricing</b> - DSP with Commercial Developer Charges</p>	<p><b>YES</b></p> <p>Yes</p> <p><b>YES</b></p> <p>Yes</p> <p><b>YES</b></p> <p>Yes</p>	<p><b>(3) Sound water conservation implemented</b></p> <p><b>(4) Sound drought management implemented</b></p> <p><b>(5) Complete performance reporting (by 15 September)</b></p> <p><b>(6) Integrated water cycle management strategy</b></p> <p><b>COMPLIANCE WITH ALL REQUIREMENTS</b></p>	<p><b>YES</b></p> <p>YES</p> <p>YES</p> <p>YES</p> <p><b>90%</b></p>
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### TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

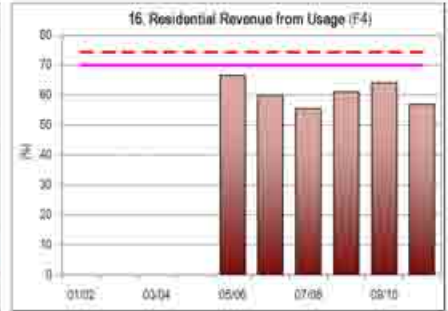
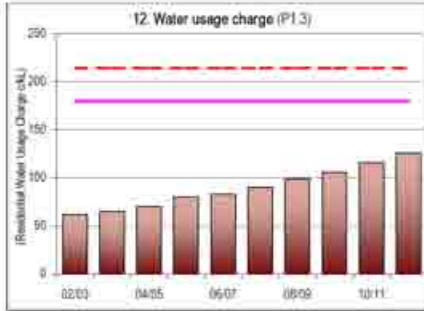
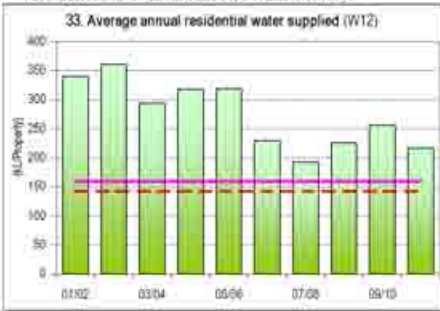
UTILITY	CHARACTERISTICS	NW1 No.	Description	Units	LWU RESULT	RANKING			STATEWIDE MEDIAN		
						%10,000 properties	ALL LWUs				
					Col 1	Note 1	Note 2	Note 3			
UTILITY	CHARACTERISTICS	C1	Population served:	43500							
		C4	Number of connected properties:	20730							
						Number of assessments: 20730					
		C2	Residential connected properties (% of total)			90			91		
		4	New residences connected to water supply (%)			1.5	1	1	0.0		
		A3	Properties served per kilometre of water main		Prop/km	31			32		
		6	Rainfall (% of median annual rainfall)			134	3	1	104		
		W11	Total urban water supplied at master meters (ML)			9,050					
		9	Peak week to average consumption (%)			192	5	4	140		
		10	Renewals expenditure (% of current replacement cost of system assets)						0.3		
			Employees per 1000 properties		1.8	5	3	1.5			
SOCIAL	CHARGES & BILLS - (P1-P17)	P1	Residential tariff structure:	inclining block; independent of land value							
		P13	Residential water usage charge (c/kL) for usage <400 c/kL Note 8			126	5	4	180		
		P12	Residential access charge per assessment (\$)			222	5	3	140		
		P3	Typical residential bill per assessment (\$)			494	4	3	450		
		F4	Typical developer charge per equivalent tenement (\$)			4,270	4	3	5,000		
		F5	Residential revenue from usage charges (% of residential bills)			57	5	3	70		
		F5	Revenue per property - water (\$)			740	5	4	657		
		18	Urban population without reticulated water supply (%)			2.4	5	3	0.8		
		H6	18a Risk based drinking water quality plan?			Yes					
		19	Physical water quality compliance (%)			100	1	1	100		
		19a	Chemical water quality compliance (%)			100	1	1	100		
		H4	19b Number of zones with chemical compliance			6 of 7					
		20	Microbiological (E. coli) water quality compliance (%)			100	1	1	100		
		H3	20a % population with microbiological compliance			99	5	4	100		
		SOCIAL	SERVICE LEVELS	C9	Water quality complaints per 1000 properties					4	
				C10	Water service complaints per 1000 properties			28	4	4	4
				C17	Average frequency of unplanned interruptions per 1000 properties						42
C15	Average duration of interruption (min)								120		
A8	Number of water main breaks per 100 km of water main					6	2	2	9		
31	Drought water restrictions (% of time)					10	4	3	0		
32	Total days lost (%)					3.2	4	5	2.0		
ENVIRONMENTAL	WATER RESOURCES MANAGEMENT	W12	Average annual residential water supplied per property (kL)			216	5	3	159		
		33a	Average annual residential water supplied - COASTAL (kL/property)						150		
		33b	Average annual residential water supplied - INLAND (kL/property)			216	3	2	215		
		A10	Real losses (leakage) (L/service connection/day)			190	5	5	60		
		35	Energy consumption per Megalitre (kiloWatt hours)			478	2	2	590		
36	Renewable energy consumption (% of total energy consumption)						0				
E12	38a Net greenhouse gas emissions - WS & Sge (net tonnes CO2 - equivalents per 1000 properties)			370	3	4	380				
ECONOMIC	FINANCE	F17	Economic real rate of return - Water (%)			1.3	1	1	0.4		
		44	Return on assets - Water (%)			1.6	1	1	0.0		
		F22	Net Debt to equity - Water (%)			-8	5	4	1.0		
		F23	Interest cover - Water			>100	1	1	1.3		
		47	Loan payment per property - Water (\$)			60	3	2	61		
		F24	47b Net profit after tax - WS & Sge (\$'000)			14,360	1	1	300		
		48	Operating cost (OMA) per 100km of main (\$'000)			1,390	3	4	1,240		
	EFFICIENCY	F11	Operating cost (OMA) per property (\$) Note 9			442	5	3	370		
		50	Operating cost (OMA) per kilolitre (cents)			101	1	2	137		
		51	Management cost per property (\$)			139	3	3	129		
		52	Treatment cost per property (\$)			120	5	3	50		
		53	Pumping cost per property (\$)			11	2	1	31		
		54	Energy cost per property (\$)			4	1	1	17		
		55	Water main cost per property (\$)			104	5	4	59		
F14	56 Capital Expenditure per property (\$)			214	3	2	239				

### NOTES

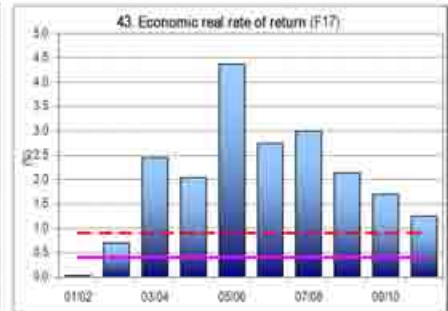
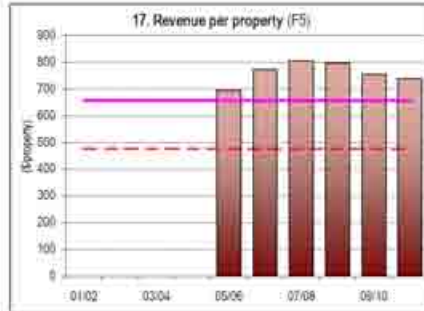
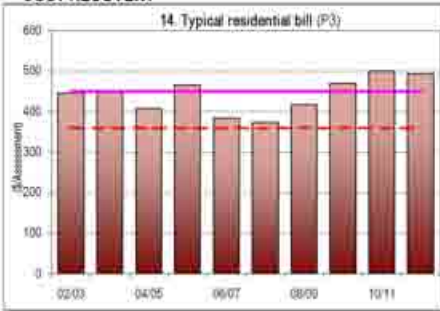
- Col 2 rankings are on a % of LWUs basis - best reveals performance compared to similar sized LWUs (ie. Col 1 is compared with LWUs with >10,000 properties). - see attachment.
- Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs). - see attachment.
- Col 4 (Statewide Median) is on a % of connected properties basis- best reveals statewide performance (gives due weight to larger LWUs & reduces effect of smaller LWUs- see attachment).
- LWUs are required to annually review key projections & actions in their Strategic Business Plan and annually update their financial plan. The SBP should be updated after 4 years.
- Tamworth Regional Council needs to review/update its DSP
- Non-residential Tariff: Access Charge based on Service Connection Size\* (eg. 40mm \$896), Inclining Block; Usage up to 400 kL = 126 c/kL; 401 to 800 kL = 139 c/kL.
- Non-residential water supplied was 46% of potable water supplied excluding non-revenue water. Non-residential revenue was 37% of annual rates and charges.
- Tamworth Regional Council has pay-for-use pricing but has not met the requirement for residential usage charges to recover at least 75% of residential revenue.
- The operating cost (OMA) per property was \$442.  
Components of OMA were: management (\$139), operation (\$124), maintenance (\$140), energy (\$4) and chemical (\$15).
- Tamworth Regional Council rehabilitations included 0.2% of its water mains and 0.3% of its service connections.

(Results shown for 10 years together with 2010-11 Statewide Median and Top 20%)

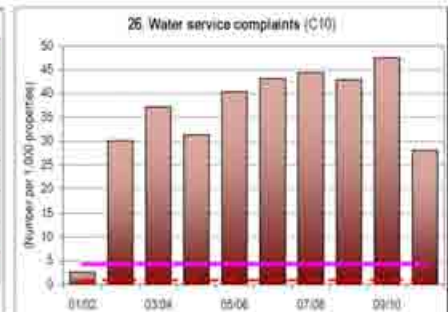
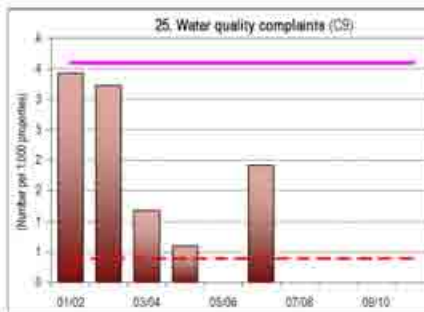
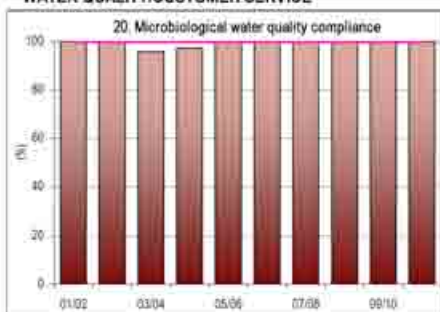
**RESIDENTIAL USE/REVENUE FROM USAGE**



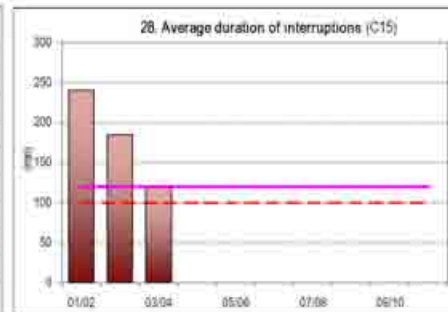
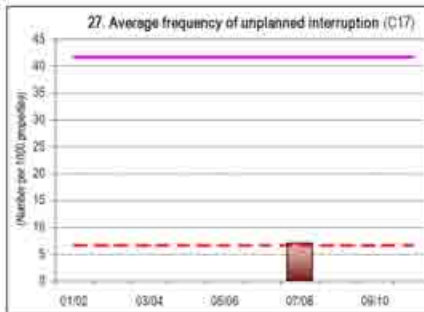
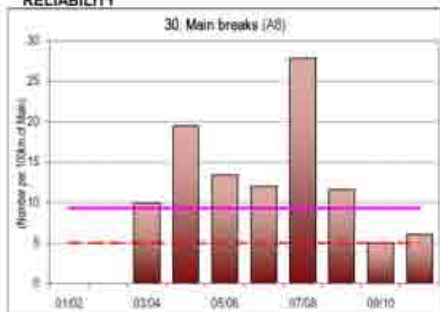
**COST RECOVERY**



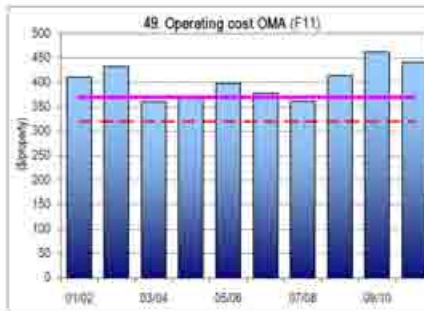
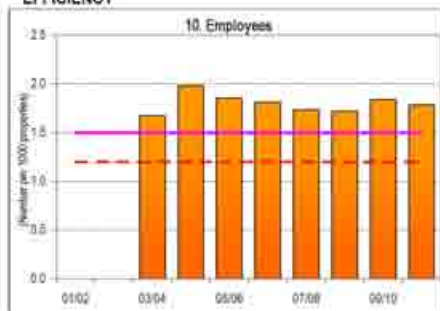
**WATER QUALITY/CUSTOMER SERVICE**



**RELIABILITY**



**EFFICIENCY**



**NOTES:**

- Costs are in Jan 2011\$ except for graphs 12 and 14, which are in Jan 2012\$.
- Microbiological water quality compliance 1999-00 to 2003-04 was on the basis of 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for E. coli; from 2004-05 compliance was on the basis of the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines.

**LEGEND**

2010-11 State Median ——— (solid purple line)

2010-11 Top 20% - - - - - (dashed red line)



# Tamworth Regional Council sewerage – page 1

<b>Tamworth Regional Council</b>	<b>TBL Sewerage Performance</b>	<b>2010-11</b>
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SEWERAGE SYSTEM - Tamworth Regional Council has 5 sewage treatment works providing secondary and advanced secondary treatment. The system comprises 82,350 EP treatment capacity (Intermittent Extended Aeration (Activated Sludge) and Tricking Filter), 24 pumping stations (70 ML/d), 24 km of rising mains and 495 km of gravity trunk mains and reticulation. 100% of effluent is recycled and treated effluent is discharged to land and river.

PERFORMANCE - Residential growth for 2010-11 was 1.6% which is higher than the statewide median. Tamworth Regional Council achieved 100% compliance with Best Practice requirements. The typical residential bill was \$716 which was above the statewide median of \$570 (Indicator 12). The economic real rate of return was 5.2% which was greater than the statewide median (Indicator 46). The operating cost per property (OMA) was \$339 which was less than the statewide median of \$380 (Indicator 50). Sewage odour complaints were above the statewide median of 0.6 (Indicator 21). Council did not comply with the SS requirements of the environmental regulator for effluent discharge. The current replacement cost of system assets was \$296M (\$15,800 per assessment), cash and investments were \$26M, debt was \$52M and revenue was \$20.5M (excluding capital works grants). Council paid a dividend of \$0.5M.

## COMPLIANCE WITH REQUIREMENTS OF BEST-PRACTICE MANAGEMENT FRAMEWORK

(1) Complete current strategic business plan & financial plan	<b>YES</b>	(2e) Pricing - DSP with commercial developer charges	<b>Yes<sup>5</sup></b>
(2) (2a) Pricing - Full Cost Recovery without significant cross subsidies	<b>Yes</b>	(2f) Pricing - Liquid trade waste approvals & policy	<b>Yes</b>
(2b) Pricing - Complying Residential Charges	<b>Yes</b>	(3) Complete performance reporting (by 15 September)	<b>YES</b>
(2c) Pricing - Complying Non-Residential Charges	<b>Yes</b>	(4) Integrated water cycle management strategy	<b>YES</b>
(2d) Pricing - Complying Trade Waste Fees and Charges	<b>Yes</b>	<b>COMPLIANCE WITH ALL REQUIREMENTS</b>	<b>100%</b>

## TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

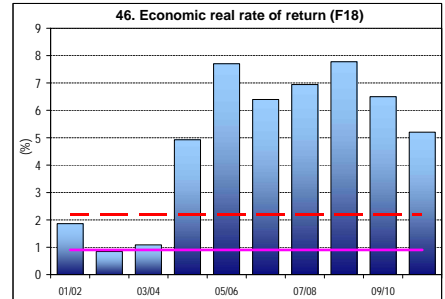
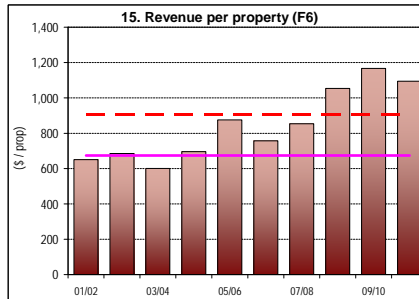
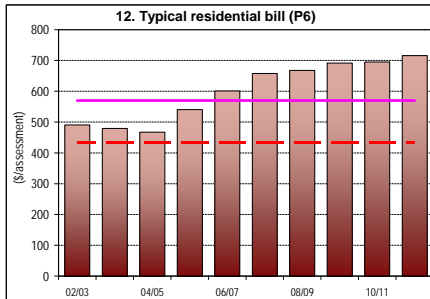
		NWI No.			LWU RESULT	RANKING		STATEWIDE MEDIAN	
						>10,000 properties	All LWUs		
						Note 1	Note 2	Note 3	
						Col 2	Col 3	Col 4	
<b>UTILITY</b>	<b>CHARACTERISTICS</b>	C5	1	Population served: 43,500	Number of assessments: 18,730				
		C8	2	Number of connected properties:	18,730				
		C6	3	Number of residential connected properties:	17,100				
		A6	4	New residences connected to sewerage (%)		1.6	1	1	0.8
		W18	5	Properties served per kilometre of main		36			40
			6	Volume of sewage collected (ML)		5,211			5,300
			7	Renewals expenditure (% of current replacement cost of system assets)		0.0	5	3	0.2
			8	Employees per 1000 properties		1.9	4	3	1.6
<b>SOCIAL</b>	<b>CHARGES &amp; BILLS - 2011-12</b>	P4		Description of residential tariff structure:	access charge/prop: independent of land value (Note 6)				
		P4.1	11	Residential access charge / assessment (\$)	\$ 716	4	5	570	
		P6	12	Typical residential bill / assessment (\$)	\$ 716	4	5	570	
			13	Typical developer charge / equivalent tenement (\$)	\$ 1,780	5	4	4,280	
			14	Non-residential sewer usage charge (c/kL)	c/kL 109	4	3	115	
	F6	15	Revenue per property - Sge (\$)	\$ 1090	1	1	674		
	<b>HEALTH</b>	E3	16	Urban properties without reticulated sewerage service (%)	6.2	4	3	3.4	
		E4	17	Percent of sewage treated to a tertiary level (%)	99	3	3	97	
		E4	18	Percent of sewage volume treated that complied (%)	4 of 5			99	
		E5	19	Sewage treatment works compliant at all times					
<b>SERVICE LEVELS</b>		C11	21	Odour complaints per 1000 properties	per 1,000 prop 1.1	4	5	0.6	
	C16	22	Service complaints per 1000 properties	per 1,000 prop 26	4	4	12		
		23a	Average sewerage interruption (minutes)	min 2.8	3	4	106		
		25	Total days lost (%)		3	4	1.9		
	<b>ENVIRONMENTAL</b>	<b>NATURAL RESOURCE MANAGEMENT</b>	W19	26	Volume of sewage collected per property (kL)	278	1	1	255
W26			26a	Total recycled water supplied (ML)	5,250	1	1	450	
W27			27	Recycled water (% of effluent recycled)	100	1	1	8	
E8			28	Biosolids reuse (%)	100	3	2	100	
			30	Energy consumption per Megalitre (kiloWatt hours)	467	1	2	800	
<b>ENVIRONMENTAL PERFORMANCE</b>		E12	31	Renewable energy consumption (% of total energy consumption)				0	
			32	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 properties)	370	3	4	360	
			33	90 Percentile licence limits for effluent discharge: BOD 30 mg/L; SS 25 mg/L; Total P 2 mg/L					
		A12	34	Compliance with BOD in licence (%)	100	1	1	100	
			35	Compliance with SS in licence (%)	99	4	4	100	
<b>ECONOMIC</b>	<b>FINANCE</b>	F18	43	Revenue from non-residential plus trade waste charges (% of total revenue)	24	2	2	17	
			44	Revenue from trade waste charges (% of total revenue)	5.5	1	1	2.2	
			46	Economic real rate of return - Sge (%)	5.2	1	1	0.9	
			46a	Return on assets - Sge (%)	5.5	1	1	0.8	
		[F22]	47	Net Debt to equity - Sge (%)	14	1	1	-1	
	<b>EFFICIENCY</b>	[F23]	48	Interest cover - Sge	>100	1	1	5	
			48a	Loan payment per property - Sge (\$)	\$ 162	2	1	87	
		F24	48c	Net profit after tax - WS & Sge (\$'000)	\$'000 14,360	1	1	300	
			49	Operating cost (OMA) per 100 km of main (\$'000)	\$'000 1,220	1	3	1,520	
		F12	50	Operating cost (OMA) per property (\$) Note 9	\$ 339	1	2	380	
	51	Operating cost (OMA) per kilolitre (cents)	c/kL 122	1	2	140			
	52	Management cost per property (\$)	\$ 101	2	3	103			
	53	Treatment cost per property (\$)	\$ 131	3	3	126			
	54	Pumping cost per property (\$)	\$ 25	1	2	50			
	55	Energy cost per property (\$)	\$ 24	1	2	31			
	56	Sewer main cost per property (\$)	\$ 81	5	5	45			
	F15	57	Capital Expenditure per property - Sewerage (\$)	\$ 1,380	1	1	252		

### NOTES :

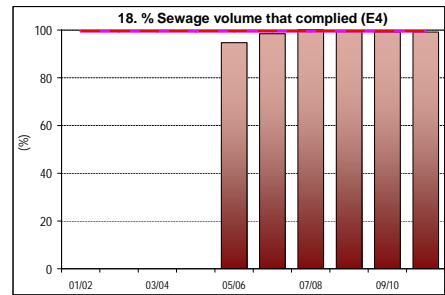
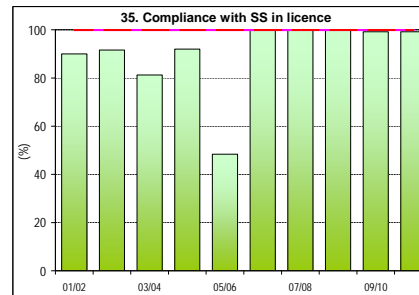
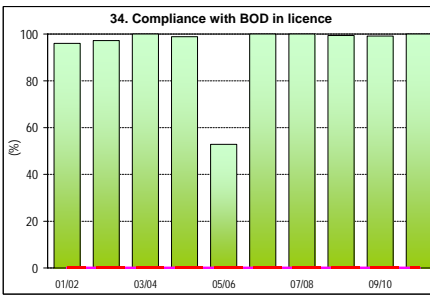
- Col 2 rankings are on a % of LWUs basis - best reveals performance compared to similar sized LWUs (ie. Col 1 is compared with LWUs with >10,000 properties). - see attachment.
- Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs). - see attachment.
- Col 4 (Statewide Median) is on a % of connected properties basis - best reveals statewide performance (gives due weight to larger LWUs & reduces the effect of smaller LWUs)- see attachment.
- LWUs are required to annually review key projections & actions in their Strategic Business Plan and annually update their financial plan. The SBP should be updated after 4 years.
- Tamworth Regional Council has commercial developer charges in place but needs to review/update its sewerage DSP.
- Non-residential access charge based on square of meter size. Sewer usage charge - 109 c/kL.
- Non-residential & trade waste volume was 45% of total sewage collected; Non-residential customers provided 24% of the revenue from annual charges, usage and trade waste charges.
- Compliance with Total N in Licence was 100%. Compliance with Total P in Licence was 100%.
- The operating cost (OMA)/property was \$339. Components were: management (\$101), operation (\$92), maintenance (\$99), energy (\$24), chemical (\$9) and effluent/biosolids (\$14).
- Tamworth Regional Council rehabilitations included 0.1% of its sewerage mains and 0.6% of its service connections.

(Results shown for 10 years together with 2010/11 Statewide Median and Top 20%)

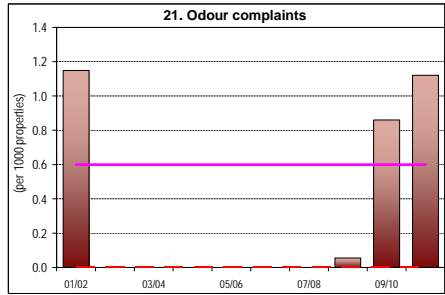
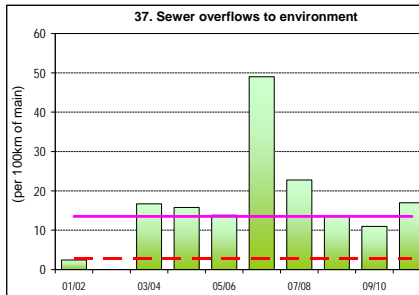
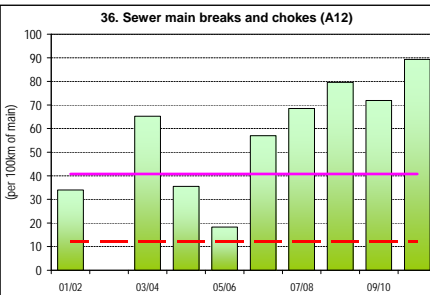
### COST RECOVERY



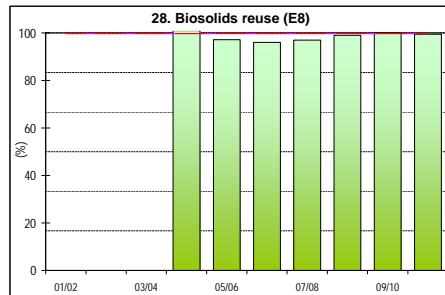
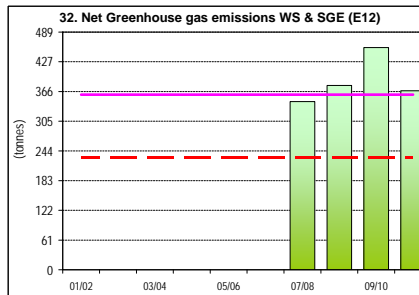
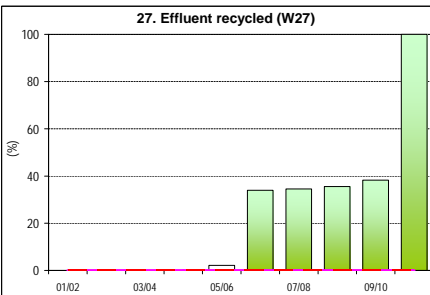
### COMPLIANCE



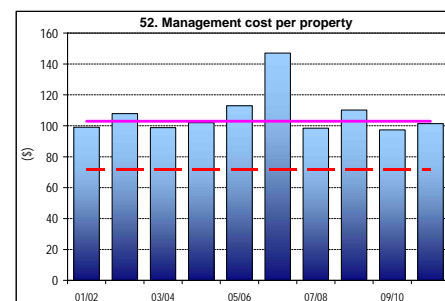
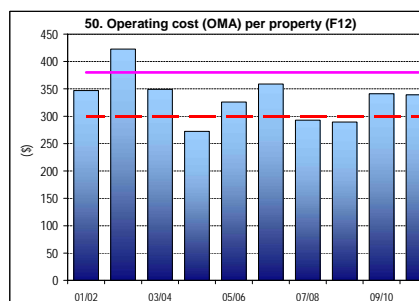
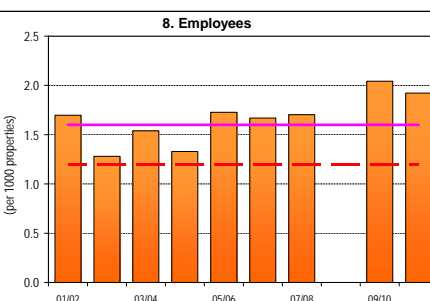
### CUSTOMER SERVICE/RELIABILITY



### ENVIRONMENT



### EFFICIENCY



### NOTES:

- Costs are in Jan 2011\$ except for graph 12, which is in Jan 2012\$.

**LEGEND**  
 2010-11 State Median ———— (solid magenta line)  
 2010-11 Top 20% - - - - - (dashed red line)

# Water performance percentiles (% of LWUs basis) 2010-11

UTILITY CHARACTERISTICS	NSW Non-metropolitan Utilities Percentiles					National Reporting <sup>3</sup>		
	20%	40%	50% Median	60%	80%	NWI No.	National Median	Utilities with < 100,000 properties
<b>3 Residential Assessments (% of total)</b>	91	89	<b>88</b>	88	85			
4 New Residential Dwellings Connected to Water Supply (%)	1.3	0.9	<b>0.7</b>	0.5	0.4			
<b>5 Properties Served per km of Main</b>	35	30	<b>27</b>	25	18	A3	35	32
6 Rainfall (% of average annual rainfall)	168	148	<b>145</b>	137	126			
<b>7 Total Urban Water Supplied (at Master Meters - ML)</b>	3,850	2,070	<b>1,430</b>	1,010	530	W11	8,760	6,986
8 Peak Week to Average Consumption (%)	130	160	<b>180</b>	200	230			
<b>9 Renewals Expenditure (% of current replacement cost of system assets)</b>	0.9	0.4	<b>0.3</b>	0.3	0.2			
10 Employees (employees per 1000 properties)	1.3	1.5	<b>1.7</b>	2.1	3.0			
<b>SOCIAL - Charges/Bills (2011/12)</b>								
<b>12 Residential Water Usage Charge (c/kL)</b>	195	160	<b>150</b>	135	95	P1.3	142	137
13 Residential Access Charge (\$/assessment)	135	175	<b>210</b>	240	300	P1.2	158	170
<b>14 Typical Residential Bill (\$/assessment)</b>	410	475	<b>500</b>	560	650	P3	428	428
15 Typical Developer Charge (\$/equivalent tenement)	7,100	4,900	<b>4,300</b>	3,400	1,700			
<b>16 Residential Revenue from Usage Charges (% of total rates and charges)</b>	75	70	<b>60</b>	55	55	F4	62	62
17 Revenue per property - Water (\$)	530	610	<b>660</b>	690	770	F5	657	661
<b>SOCIAL - Health</b>								
<b>18 Urban Population without Reticulated Water Supply (%)</b>	0.0	1.7	<b>2.3</b>	4.1	7.7			
19 Physical Water Quality Compliance (%)	100	100	<b>100</b>	100	100			
19a Chemical Water Quality Compliance (%)	100	100	<b>100</b>	100	100			
20 Microbiological (E. coli) Water Quality Compliance (%)	100	100	<b>100</b>	100	100			
<b>20a Percent Population with Microbiological Compliance</b>	100	100	<b>100</b>	100	99	H3	100	100
<b>SOCIAL - Levels of Service</b>								
<b>25 Water Quality Complaints (per 1000 properties)</b>	0.0	1.2	<b>2.3</b>	3.3	8.2	C9	2.6	2.7
26 Water Service Complaints (per 1000 properties)	1.5	4.2	<b>8.2</b>	13.2	29.3	C10	1.7	2.1
<b>27 Customer Interruption Frequency (per 1000 properties)</b>	9	17	<b>27</b>	34	65	C17	91	76
28 Average Duration of Interruption (minutes)	90	120	<b>120</b>	120	180	C15	104	96
<b>30 Number of Main Breaks (per 100 km of main)</b>	6	9	<b>12</b>	14	21	A8	13	12
31 Drought Water Restrictions (% of time)	0	0	<b>0</b>	22	100			
<b>32 Total Days Lost (%)</b>	0	0	<b>0</b>	1	3			
<b>ENVIRONMENTAL</b>								
<b>33 Average Annual Residential Supplied (kL/property)</b>	150	165	<b>185</b>	225	345	W12	162	162
33a Average Annual Residential Supplied COASTAL (kL/property)	140	155	<b>156</b>	160	175			
33b Average Annual Residential Supplied INLAND (kL/property)	170	220	<b>240</b>	265	415			
34 Real Loss (leakage) (L/service connection/day)	40	60	<b>70</b>	70	100	A10	68	69
<b>35 Energy Consumption (kWh/ML)</b>	340	490	<b>540</b>	600	800			
36 Renewable Energy Consumption (% of Total Energy)	0	0	<b>0</b>	0	0			
<b>36a Net Greenhouse Gas Emissions - WS &amp; Sge (net tonnes CO2 - equivalents/1000props)</b>	210	280	<b>310</b>	350	450	E12	405	408
<b>ECONOMIC - Financial</b>								
<b>42 Current Replacement Cost per Assessment (\$)</b>	17,310	14,540	<b>13,360</b>	12,650	10,520			
43 Economic Real Rate of Return (%)	0.9	0.2	<b>0.0</b>	-0.4	-1.4	F17	0.6	0.4
<b>44 Return on Assets (%)</b>	1.5	0.6	<b>0.0</b>	-0.4	-1.3			
45 Net Debt to Equity (%)	2	-4	<b>-6</b>	-8	-16	F22	8	5
<b>46 Interest Cover</b>	>100	6	<b>0</b>	0	0	F23	1	1
47 Loan Payment (\$/property)	102	26	<b>15</b>	1	0			
<b>47a Net Profit After Tax Ratio - WS &amp; Sge (%)</b>	18	8	<b>0</b>	-4	-17	F30	7	1
47b Net Profit After Tax - WS & Sge (\$)	235	90	<b>75</b>	60	30	F24	1,739	560
<b>ECONOMIC - Efficiency</b>								
<b>48 Operating Cost (OMA) per 100 km of Main (\$'000)</b>	790	965	<b>1,115</b>	1,275	1,600			
49 Operating Cost (OMA) per property (\$/property)	345	400	<b>420</b>	455	550	F11	367	375
<b>50 Operating Cost (OMA) per kL (c/kL)</b>	90	120	<b>126</b>	150	180			
51 Management Cost (\$/property)	100	130	<b>140</b>	145	180			
<b>52 Treatment Cost (\$/property)</b>	40	80	<b>90</b>	125	170			
53 Pumping Cost (\$/property)	16	35	<b>48</b>	55	98			
<b>54 Energy Cost (\$/property)</b>	9	22	<b>28</b>	31	46			
55 Water Main Cost (\$/property)	44	61	<b>69</b>	78	117			
<b>56 Capital Expenditure - Water Supply (\$/property)</b>	343	210	<b>164</b>	127	74	F28	230	250

## Notes:

- 20% top 20% of all NSW LWUs  
Median (50%) median of all NSW LWUs  
80% bottom 20% of all NSW LWUs
- The above performance indicators are on a percentage of LWUs basis as this is the most appropriate basis for comparing the performance of one LWU with other LWUs (throughout the rest of the report and in Table 1 the percentage of connected properties is used as this is the most appropriate for judging Statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs).
- Medians are shown from the *National Performance Report 2010-11* which shows performance indicators for 79 Australian urban water utilities with >10,000 properties [Note 14 on page 32].

# Sewerage performance percentiles (% of LWUs basis) 2010-11

UTILITY CHARACTERISTICS	NSW Non-metropolitan Utilities Percentiles					National Reporting <sup>3</sup>		
	20%	40%	50% Median	60%	80%	NWI No.	National Median	Utilities with < 100,000 properties
<b>UTILITY CHARACTERISTICS</b>								
3 Residential Assessments (% of Total)	87	89	90	91	93			
4 New Residential Dwellings Connected to Sewerage (%)	1.2	0.7	0.6	0.5	0.2			
5 Properties Served per km of Main	41	37	35	34	29	A6	41	40
6 Volume of Sewage Collected (ML)	3360	1070	670	570	290	W18	6,750	5,211
7 Renewals Expenditure (% of current replacement cost of system assets)	0.7	0.3	0.1	0.0	0.0			
8 Employees (per 1000 properties)	1.1	1.6	1.8	2.0	2.5			
<b>SOCIAL - Charges/Bills (2011/12)</b>								
11 Residential Access Charge (\$/assessment)	380	450	490	535	635	P4.1	507	522
12 Typical Residential Bill (\$/assessment)	380	450	490	535	635	P6	523	568
13 Typical Developer Charge (\$/equivalent tenement)	5490	4280	3690	2500	1320			
14 Non-residential sewer usage charge (c/kL)	180	131	115	109	83			
15 Revenue per property - Sge (\$)	800	620	580	540	440	F6	746	771
<b>SOCIAL - Health</b>								
16 Urban Properties without Reticulated Sewerage Service (%)	3	6	7	8	14			
17 Percent of sewage treated to a tertiary level (%)	100	99	77	28	0	E3	94	88
18 Percent of sewage volume treated that was compliant (%)	100	100	100	93	75	E4	99	98
<b>SOCIAL - Levels of Service</b>								
21 Odour Complaints (per 1000 properties)	0.0	0.0	0.0	0.1	0.9			
22 Service Complaints (per 1000 properties)	4	12	17	22	37	C11	2	5
23a Average Duration of Interruptions (min)	60	90	100	120	120	C16	109	99
25 Total Days Lost	0	0	0	1	3			
<b>ENVIRONMENTAL</b>								
26 Volume of Sewage Collected per property (kL)	3360	1070	670	570	290	W19	247	249
26a Total recycled water supplied (ML)	546	233	160	117	37	W26	1,312	825
27 Effluent Reclaimed for Recycling (% of total effluent)	50	17	8	5	1	W27	11	11
28 Biosolids Reuse (%)	100	0	0	0	0	E8	96	82
30 Energy Consumption (kWh/ML)	272	486	525	690	866			
31 Renewable Energy Consumption (% of total energy consumption)	2	0	0	0	0			
32 Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000)	210	280	310	350	450	E12	405	408
<b>90 Percentile Licence Limits for Effluent Discharge:</b> BOD 35 mg/L; SS 40 mg/L; Total N 25 mg/L; Total P 5 mg/L								
34 Compliance with BOD in Licence (%)	100	100	100	100	100			
35 Compliance with SS in Licence (%)	100	100	100	100	91			
36 Sewerage Main Breaks and Chokes (per 100 km of main)	12	28	41	53	88	A14	23	22
37 Sewer Overflows to the Environment (per 100 km of main)	0	2	3	7	24	E13	0.5	0.6
<b>ECONOMIC - Financial</b>								
43 Revenue from Non-residential and Trade Waste Charges (% of total rates & charges)	24	20	19	16	12			
44 Revenue from Trade Waste Charges (% of total rates & charges)	3	1	0	0	0			
45 Current Replacement Cost per assessment (\$)	16100	13800	12900	12300	10200			
46 Economic Real Rate of Return (%)	1.8	0.9	0.6	0.2	-0.8	F18	1.8	1.4
46a Return on Assets (%)	2.4	1.2	0.8	0.4	-0.3			
47 Net Debt to Equity (%)	4	-6	-8	-10	-19	F22	8	5
48 Interest Cover	>100	>100	3	1	0	F23	1	1
48a Loan Payment (\$/property)	138	40	23	7	0			
48b Net Profit After Tax Ratio WS & Sge (%)	18	9	1	-4	-15	F30	7	1
48c Net Profit After Tax WS & Sge (\$)	1093	198	7	-52	-521	F24	2	1
<b>ECONOMIC - Efficiency</b>								
49 Operating Cost (OMA) per 100 km of Main (\$'000)	855	1090	1215	1365	1655			
50 Operating Cost (OMA) per property (\$/property)	290	340	360	380	430	F12	380	392
51 Operating Cost (OMA) per kL (c/kL)	100	135	140	150	200			
52 Management Cost (\$/property)	60	98	107	131	160			
53 Treatment Cost (\$/property)	80	110	130	140	170			
54 Pumping Cost (\$/property)	25	40	45	55	75			
55 Energy Cost (\$/property)	20	26	29	35	40			
56 Sewer Main Cost (\$/property)	30	40	45	50	60			
57 Capital Expenditure (\$/property)	400	150	112	90	40	F29	229	233

## Notes:

- 20% top 20% of LWUs  
Median (50%) median of LWUs  
80% bottom 20% of LWUs
- The above performance indicators are on a percentage of LWUs basis as this is the most appropriate basis for comparing the performance of one LWU with other LWUs (throughout the rest of the report and in Table 2 the percentage of connected properties is used as this is the most appropriate for judging Statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs).
- Medians are shown from the *National Performance Report 2010-11* which shows performance indicators for 79 Australian urban water utilities with >10,000 properties [Note 14 on page 32].

# Appendix D1: 2010-11 water treatment performance

Water Utility	Source/type (Bulk Supplier)	Water Treatment Works 37a	Year built or Augmented	Capacity ML/d 37b	Type of Treatment Works <sup>2</sup> 38a	Volume Treated to Potable ML 38b	Colour Units				Turbidity Units				Compliance with 2004 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 6</sup>												Water Quality Compliant <sup>4</sup> No. 43 / 1,000 Props	No. of Samples + Allocation <sup>5</sup>		Chlorination System Failure days 45	Major Malfunction of Treatment Processes days 46							
							Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli			E. coli Zones Compliant 42m	E. coli % Pop Compliance 42n			Chemical % 44a	E. coli % 44b					
							Max 39a	Avg 39b	Max 39c	Avg 39d	Max 40a	Avg 40b	Max 40c	Avg 40d	Samples 42a	% 42b	Samples 42c	% 42d	Samples 42e	% 42f	Samples 42g	% 42h	Samples 42i	% 42j	Samples 42k	% 42l												
Albury City Council		Albury	1992	140	DF	6159	59	18	15	2	61	11	2	0.7	135	96	136	97	367	100	908	100	4,296	100	282	100	1 of 1	100	27	1.2	100	100	0	0				
Armidale Dumaresq Council		Armidale	2009	29	C	2665	134	44	1		9	2	0	0	365	100	365	100	365	100	365	100	365	100	780	100	1 of 1	100			100	100	0	0				
Ballina Shire Council	bulk purchase (Rous Water dual supply)	Marom Creek	1977	3	DF	114	83	66	3	2	31	8	2	0	6	100	98	100	98	100	392	100	49	100	63	100	1 of 1	100	5	0.3	100	100	0	0				
		Euston	1998	0.4	-	48	350	90	5	0	45	18	3	0	52	97	52	100	52	100	52	100	52	100	52	100												
		Bairnald	1988	1	CH	154	400	110	5		40	30	2	1	365	98	365	98	52	100	52	100	52	100	51	94			93	98								
Balranald Council		Total/Weighted Average (Note 1)		2		202	400	105	5	0	45	27	3	0.4	417	98	417	98	104	100	104	100	104	100	103	97	1 of 2	24					0	0				
Bathurst Regional Council		Bathurst	1989	60	C	6155	600	46	2	1	440	12	1	1	12	100	15	93	12	100	12	100	12	100	169	100	1 of 1	100	759	50.9	26	100	0	0				
	unfiltered	Yellow Pinch	1988	25	CH	1020					4	1.4			12	100	12	100	12	100	60	100	312	100	117	100												
	unfiltered	Bega	1987	16	CH	923					1	1			12	100	12	100	12	100	60	100	312	100	113	100												
	unfiltered	Brogo	2008	6	CH	321					18	6			8	88	9	100	9	100	42	100	209	100	148	100												
	unfiltered	Kiah	1972	6	CH	742					5	3			8	100	8	100	8	100	40	100	208	100	88	100												
	unfiltered	Bemboka	1988	1	CH	30					12	9			4	100	4	100	4	100	20	100	104	100	25	96												
	unfiltered	Tilba	1985	1	CH										100	100	100	100	100	100	100	100	100	100	100	100												
Bega Valley Shire Council		Total/Weighted Average (Note 1)		55		3036					18	4			4	9	44	98	45	100	45	100	222	100	1,145	100	491	100	5 of 6	99	10	0.7			0	0		
	groundwater	Bellingen / Seaboard	1993	12	CH	1015					1	1			10	100	10	100	10	100	10	100	10	100	85	100												
		Dorrig	1993	3	LS	159	75	45	3	3	11	3	0	0.2	368	100	368	100	368	100	3	100	3	100	50	100												
Bellingen Shire Council		Total/Weighted Average (Note 1)		15		1174	75	6	3	1	11	0	0	1	378	100	378	100	378	100	13	100	13	100	135	100	2 of 2	100	1	0.2					0	0		
		Tocumwal	1984	7	DAF	515	70	35	5	3.5	75	25	4.5	0.2	2	100	2	100	2	100	2	100	365	100	3	100	46	100			4,545,455	74						
		Finley	1977	2	C	265	95	40	5	5	185	77	25	0.5	2	100	2	100	365	100	365	100	3	100	48	100												
		Berrigan	1990	1	C	185	60	40	5	5	150	50	21	0.5	365	100	365	100	365	100	365	100	3	100	48	100												
		Barooga	2000	1	DAF	134	165	65	5	2	65	15	2	0.2	2	100	2	100	2	100	2	100	365	100	3	100	47	96			11	100						
Berrigan Shire Council		Total/Weighted Average (Note 1)		11		1099	165	41	5	4	185	41	25	0.3	371	100	371	100	734	100	1,460	100	12	100	189	100	3 of 4	88							0	0		
Bogan Shire Council	river abstraction (State)	Nyngan	1984	9	C		300	50	5		330	30	1	1	365	98	365	97	2	98	52	100	365	100	48	100	1 of 1	100	4	3.9	100	43	0	0				
		Bombala	1983	3	C	162									2	-	2	-	52	100	52	100	52	100	49	100												
		Delegate		1	CH	170									-	-	-	-	52	100	52	100	52	100	52	100												
Bombala Council		Total/Weighted Average (Note 1)		5		332									2	2	104	100	104	100	104	100	101	100	101	100	2 of 2	100	3	3.6					0	0		
Boorowa Council		Boorowa	1993	3	C	210	100	33	3	3	80	24	1	1	2	100	3	100	51	100	52	100	52	100	50	100	1 of 1	100							100	0	0	
Bourke Shire Council	dual supply	Bourke	1988	3	C	513					3	2	1,500	200	2	0.5	12	100	365	100	365	100	365	100	46	100	1 of 1	100							100	88	0	0
		Brewarrina	1991	1	C	200					8	4			25	1.0	17	100	27	78	27	93	17	100	17	100												
		Goodooga	1996	1	CH	40					7	1			1	0.3	6	100	9	100	9	33	6		6	100	22	100										
Brewarrina Shire Council	dual supply	Total/Weighted Average (Note 1)		2		240					8	4			25	1	23	100	36	84	36	78	23	100	23	100	98	100	2 of 2	100							0	0
Byron Shire Council	bulk purchase (Rous Water)	Mullumbimby	1970	3	C	320	79	20	4	1	85	9	2	0	41	100	339	100	141	93	159	100	88	100	101	100	1 of 1	100	3	0.3	100	100	0	0				
	non-potable	Molong	1986	2	C	168					1	1	33	5	4	1	1	100	52	100	52	100	1	100	1	100	52	100										
	non-potable groundwater	Cummock	1971	1	CH	15					2	2			1	1	1	100	1	100	14	100	1	100	1	100	14	100										
	non-potable groundwater	Yeoval	1964	1	CH	35					1	1			7	3	1	100	3	67	14	100	1		1	100	13	92										
		Delgany	1977	0.3	CH	3					1	1			3	1	1	100	14	100	14	93	1	100	1	100	13	100										
Cabonne Council		Total/Weighted Average (Note 1)		4		221					1	1	33	5	4	1	4	100	70	99	94	99	4	100	4	100	92	100	3 of 4	86	2	1.8			2	0		
	non-potable groundwater	Hillston	2010	10	CH	277					1	1			0	0.1	2	100	2	100	37	100	2	100	2	100	52	100										
		Rankins Springs	2010	3	U	361									-	-	-	-	1	100																		
		Goolgowl/Merriwagga	1995	2	CH	76					0	0			1	0	2	100	4	100	16	100	4	100	2	100	28	93										
		Carrathool	2010	1	CH	29					2	1.2			-	-	-	-	2	100	10	100	2	100	2	100	13	100										
Carrathool Shire Council	bulk purchase (Murrumbidgee)	Melbergen		2	CH	299								-	-	-	-	-	-	-	-	-	-	-	-	-												
		Total/Weighted Average (Note 1)		13		382					1	1			2	0	4	100	8	10																		



Water Utility	Source/type (Bulk Supplier)	Water Treatment Works	Year built or Augmented	Capacity ML/d 37b	Type of Treatment Works <sup>3</sup> 38a	Volume Treated to Potable ML 38b	Colour Units				Turbidity Units				Compliance with 2004 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3,6</sup>										Water Quality Complaint <sup>4</sup> No. 43 / 1,000 Props	No. of Samples = Allocation <sup>5</sup>		Chromatio n System Failure days 45	Major Malfuncio n of Treatment Processes days 46									
							Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical			E. coli				E. coli Zones Compliant 42m	E. coli % Pop Compliance 42n	Chemical % 44a	E. coli % 44b					
							Max 39a	Avg 39b	Max 39c	Avg 39d	Max 40a	Avg 40b	Max 40c	Avg 40d	Samples 42a	% 42b	Samples 42c	% 42d	Samples 42e	% 42f	Samples 42g	% 42h	Samples 42i	% 42j		Samples 42k	% 42l											
Cooma-Monaro Council		Cooma	1985	15	C	984	70	37	2	1	872	19	2.4	0.9	12	100	12	100	12	83	12	100	12	100	64	100			9		92	100						
		Nimmitabel	2004	1	CH	25										2	100	2	100	2	100	2	100	2	100	25	100					2	48					
		Bredbo	2006	1	CH	26	7	2					4.2	2.1		2	100	2	100	2	100	2	100	2	100	28	100					5	54					
		Total/Weighted Average (Note 1)			17		1035	70	35	2	1	872	18	4	0.9	16	100	16	100	16	87	16	100	16	100	117	100	3 of 3	100						0			
		Coonamble	1993	8	CH																								17		2	69						
Coonamble Shire Council		Gulargambone		2	CH																									1	75							
		Quambone		2	CH																									3	5							
		Total/Weighted Average (Note 1)			12																													0				
Coolamundra Shire Council	purchase (Goldenfields)	Corowa	2002	15	DAF	830	525	68	16	4	176	23	2	0.5	180	100	180	100	365	100	365	100	365	100	365	100	12	100	47	100			15		42	100		
		Mulwala	1944	13	C	1008						131	20	2	0.4		100	365	100	365	100	365	100	365	100	365	100	12	100	47	100			24	90			
Corowa Shire Council		Howlong	1989	5	LS	228	800	174			339	30	3	0.9	365	100	365	100	365	100	365	100	365	100	365	100	12	100	50	96			1		21	96		
		Balldale			U																																	
		Total/Weighted Average (Note 1)			33		2066	800	47	16	2	339	23	3	0	545	100	910	100	1,095	100	1,095	100	34	100	145	100	3 of 4	76			16	3.1				0	
		Broken Hill (Mica S)	2010	32	C	3785	58	10	1	1	753	77	0	0		12	100	12	100	65	100	113	100	312	100	121	100											
		Menindee	1997	1	C	87						1000	300	2	0.7	1	100	365	100	43	100	4	100	37	100	49	100											
Essential Energy		Total/Weighted Average (Note 1)			33		3872	58	9.58	3	1.04	1000	82	2	0.17	13	100	377	100	108	100	117	100	349	100	170	100	2 of 2	100					69.81132	94		0.1	0.1
		Cowra	1985	29	C	2087						5	2.2			0.7	0.28	13	100	13	100	13	100	13	100	103	100	1 of 1	100			82	16					0
Cowra Shire Council	Menindee Lakes (State)	Deniliquin	1986	26	C	1051	350	129	20	5	71	31	3	0	12	100	12	100	12	100	12	100	12	100	74	100	1 of 1	100			9	2.7	9	60		0		
Dubbo City Council		John Gilbert	2007	80	C	6720	347	76	13	2	247	25	2	0	365	100	365	100	144	94	144	100	144	100	148	100	1 of 1	100			6	0.4	100	100		0		
Eurobodalla Shire Council	unfiltered	Eurobodalla	2010	20	CH	1068	45	21	26	4	6	2	0.8	0.1	13	100	13	100	13	100	13	100	103	100	1 of 1	100										0		
		Duckmaloi	2003	11	MF		90	85	100	36	8	6	13	6.3		6	75	6	25	4		10	100	10	100	147	100	1 of 1	100			2	0.1	9	100		0	
Fish River Water Supply	groundwater	Forbes	1966	26	C	1591	300	25	10	3	261	35	2	0.6	365	100	365	100	13	100	24	100	216	100	59	100	1 of 1	100			9	2.5	100	100		0		
Forbes Shire Council		Gilgandra	1984	6	C	600	3	2	1	0	40	10	1	0.6	2	100	2	100	2	100	2	100	2	100	50	100	1 of 1	100			20	14.8	7	100		2		
Gilgandra Shire Council		Martins Lookout	1982	12	C	607	1,605	150	4	1	809	24	2	1	365	100	365	100	36	100	36	100	15	100	50	100									52	100		
		Deepwater	2006	2	CH	14																																
		Total/Weighted Average (Note 1)			14		621	1,605	147	4	1	809	24	2	1	365	100	365	100	48	75	36	100	27	92	77	100	1 of 2	98								0	
Glen Innes Severn Shire Council	groundwater	Oura	1975	26	A	3106									12	100	377	100	320	90	682	100	1,089	100	268	100	1 of 1	100			38	6.6	100	100		0		
		Jugiong	1991	40	C	3159	300	45	10	5	500	33	1	0		365	100	365	100	365	99	1,460	100	1,095	100	79	100			14		100	100					
Goldenfields Water Reticu	groundwater	Mount Arthur		4	CH	503																																
		Mount Daylight		1	CH	177																																
		Total/Weighted Average (Note 1)			46		3839	300	37	10	4	500	27	1	0	367	100	370	100	370	99	1,465	100	1,100	100	167	100	3 of 3	100			30						0
Goldenfields Water County Council	groundwater	Somersby	1986	140	C	14019	693	147	9	1	72	10	2	0	13	100	13	100	13	100	13	100	13	100	390	100					653		45	100				
		Woy Woy	2007	5	MF	120	191	69	14	2	30	7	1	0		13	100	13	100	13	100	13	100	13	100	390	100											
		Total/Weighted Average (Note 1)			145		14139	693	146	14	1	72	10	2	0	26	100	26	100	26	100	26	100	26	100	780	100	2 of 2	100			653	9.3					0
Gosford City Council		Goulburn	1975	35	C	2246	1,900	183	6	3	140	7	3	1	12	100	12	100	12	100	36	100	116	100	100	100					20							
		Marulan	1997	2	MF	82	39	22	18	8	8	2	1.1	0.6		12	92	12	100	12	100	36	100	95	100	47	100					1		100	100			
		Total/Weighted Average (Note 1)			37		2328	1,900	177	18	3	140	7	3	1	24	96	24	100	24	100	72	100	211	100	147	100	2 of 2	100			21	2.0					0
Goulburn Mulwaree Council		Villages	2005	5	CH	255																																
		Culcairn	2007	3	CH	123	1	1	1	1	7	2	2	1		9	100	9	100	52	100	2	100	2	0	51	100					4		98				
		Total/Weighted Average (Note 1)			7		378	1	1	1	7	2	2	1		9	100	9	100	52	100	54	100	4	50	103	100	2 of 2	100									0
Greater Hume Shire Council	bulk purchase (Albury C	Griffith	1987	60	DAF	4982					6	2	49	17	6	0.6	12	100	355	100	12	100	12	100	73	100					48		26	100				
		Yenda	2001	2	MF	21	99	80	9	6	88	39	4	0		16	100	107	100	2	100	8	100	8	100	49	100					16		32	100			
		Total/Weighted Average (Note 1)			62		5003	99	0	9	2	88	17	6	0.6	28	100	462	100	14	100	20	100	20	100	122	100	2 of 2	100									







# Appendix D2: 2010-11 sewage treatment performance

Water Utility	Comment	Sewage Treatment Works	Year built or Augmented	Capacity	Standard of Treatment <sup>1</sup>	Type of Treatment Works <sup>2</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	90 Percentile Licence Limits <sup>4</sup> and DEC Licence Compliance																Odour Complaints		% Sge Treated that was compliant	STWs compliant at all times	Sampling Days	Major Malfunction (Treatment Processes)	
											BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms		No.	No./1000 props							
											mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	cfu/100mL	% Samples	cfu/100mL	% Samples	68	69					
Albury City Council	No licence limits	Albury	1987	40,000	T	BNR	Y	Y		2,351	15	100	20	100	15	100	5	100	10	100	1	100	NL	300	0					13	1		
		Albury (Waterview)	1999	26,500	AT	BNR	Y	Y		2,871	12	100	15	100	15	100	5	100	2	100	1	69	300	100	0					13	1		
		Hume Weir	1980	500	T	IEA				R	35	20	100	30	100	NL	100	NL	100	10	100	NL	100	100	0					26	0		
		Lara Lakes	1990	200	S	A				L	16	NL	100	NL	100	NL	100	NL	100	100	100	NL	100	100	0					12	0		
		Total/Weighted Average <sup>1,5</sup>		67,200		IEA, BNR				L R	5,273	12	100	15	100	15	100	5	100	2	100	1	83	300	100	0	0.0	83	3 of 4	64	2		
Armidale Dumaresq Council	100% limits	Armidale	1989	22,000	T	TF				L R	2,194	20	100	30	100	NL	100	NL	100	10	100	NL	100	100	7	0.9	100	1 of 1	12	0			
		Ballina	1991	12,000	AS	TF	Y	Y		O	1,677	20	100	15	100	15	100	100	100	100	100	300	100	3					26	0			
		Lennox Head	2011	18,000	AS	IEA	Y	Y		O	2,455	20	100	30	100	NL	100	NL	100	10	100	NL	100	200	68	1				26	0		
		Alstonville	1986	8,000	AS	IEA	Y	Y		R	578	20	100	30	100	NL	100	NL	100	10	100	100	100	100	1					13	0		
		Wardell	1997	1,750	AS	IEA	Y	Y		R	236	15	100	20	100	NL	100	NL	100	10	100	NL	100	200	100	0					26	0	
Ballina Shire Council	100% limits	Total/Weighted Average <sup>1,5</sup>		39,750		IEA, TF				R O	4,946	20	100	30	100	NL	100	NL	100	10	100	NL	100	200	84	5	0.4	84	3 of 4	91	0		
		Balranald	1999	2,000	S	A					128	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	0					2	0		
		Euston	1995	1,100	S	A					75	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	0					2	0		
		Total/Weighted Average <sup>1,5</sup>		3,100		A					203	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	0	0	100	2 of 2	4	0			
		Bathurst	1998	55,000	T	IEA, BNR	Y	Y		R	3,575	20	100	25	100	15	100	100	100	100	100	1	100	200	100	1	0.1	100	1 of 1	52	0		
Bega Valley Shire Council	No Discharge Licence	Wolumla	2007	800	T	MBR	Y	Y		20	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	100	0					0	0		
		Cobargo	2006	800	T	MBR	Y	Y		L R O	26	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	0					0	0		
		Candelo	2007	800	T	MBR	Y	Y			20	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	100	0					0	0	
		Kalaru	2008	800	S	MBR	Y	Y			15	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	100	0					0	0	
		Tura Beach	2006	4,500	T	CEA	Y	Y			148	10	100	20	100	10	100	2	100	2	100	2	100	100	100	0					12	0	
		Eden	1998	8,000	AS	IEA	Y	Y			336	10	75	20	75	10	100	2	75	2	100	100	100	100	100	0					12	0	
		Tathra	2004	6,200	T	CEA	Y	Y			144	10	100	15	100	10	100	2	100	2	100	1	100	100	100	0					12	1	
		Bega	2008	8,000	T	IEA	Y	Y		R	422	10	100	10	100	10	100	2	100	2	100	1	100	200	100	0					12	15	
		Bermagui	2008	6,000	AS	CEA	Y	Y		O	182	10	100	15	100	10	75	2	100	2	100	8	67	200	100	0					12	2	
		Merimbula	2008	15,500	AS	IEA	Y	Y		O	708	10	100	20	100	NL	100	NL	100	2	100	100	200	100	100	0					12	1	
		Total/Weighted Average <sup>1,5</sup>		51,400		IEA, CEA				R O	2,021	10	96	20	96	10	98	2	100	96	2	100	97	200	100	0	0.0	93	8 of 10	72	19		
		Bellingen Shire Council	No licence limits	Ilunga	1989	6,650	T	IEA	Y	Y		R	370	10	100	15	100	10	100	2	100	2	100	100	200	100	0					26	0
				Bellingen	1994	5,000	T	IEA	Y	Y		R	317	10	100	15	89	10	100	2	100	2	100	100	200	100	0					26	0
				Dorrigo	1970	1,500	T	TF				R	130	20	83	30	83	NL	100	NL	100	10	100	NL	100	100	0					12	0
				Total/Weighted Average <sup>1,5</sup>		13,150		IEA, TF				R	817	10	97	15	93	10	100	2	100	2	100	100	200	100	0	0.0	93	1 of 3	64	0	
Recumwal	1944			4,000	T	TF				L	252	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	100	0					4	0	
Berrigan Shire Council	No licence limits	Finley	1967	3,200	T	TF				L	170	NL	100	NL	100	NL	100	100	100	100	100	100	100	100	2					4	0		
		Barooga	1989	3,000	T	A				L	75	NL	100	NL	100	NL	100	100	100	100	100	100	100	100	0					4	0		
		Berrigan	1968	1,500	T	TF				L	120	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	0					4	0		
		Total/Weighted Average <sup>1,5</sup>		11,700		TF, A				L	617	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	2	0.6	100	4 of 4	16	0			
		West Wyalong	1986	4,000	AS	AN				L O	282	20	100	30		100	NL	100	100	100	100	100	100	100	0					4	0		
Bland Shire Council	No licence limits	Unqarie	1961	600	AS	AN				L O	48	NL	100	NL	100	NL	100	100	100	100	100	100	100	100	0					0	0		
		Barmedman	1940	400	S	TF				L O	25	NL	100	NL	100	NL	100	100	100	100	100	100	100	100	0					0	0		
		Total/Weighted Average <sup>1,5</sup>		5,000		IEA, TF				L O	355	20	100	30		21	NL	100	100	100	100	100	100	100	0	0.0	21	2 of 3	4	0			
		Blayney	1991	7,000	AS	IEA	Y	Y			314	20	100	25	100	15	100	2	100	10	100	1	100	200	80	0	0.0	80	0 of 1	12	0		
		Boqan	1991	3,735	S	A				L R	71	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	100	0	0.0	100	1 of 1	4	0		
Bombala Council	No licence limits	Bombala	2000	3,000	S	TF				L	174	20	75	30	33	NL	100	100	100	10	100	100	100	100	0					8	0		
		Delegate	1992	680	AS	AL				L	35	NL	100	NL	100	NL	100	NL	100	100	100	100	100	100	0					0	0		
		Total/Weighted Average <sup>1,5</sup>		3,680		AL, TF				L	209	20	79	30	44	NL	100	100	100	10	100	100	100	100	0	0.0	44	1 of 2	8	0			
		Borowra	2000	3,400	S	TF				L R	89	20	100	30	70	NL	100	100	100	10	100	100	100	100	0	0.0	70	0 of 1	12	0			
		Bourke	1982	5,000	S	A				L	195	15	33	20	30	15	80	100	10	80	10	100	0	0.0	30	0 of 1	12	0					
Brewarrina Shire Council	No licence limits	Brewarrina	1971	1,600	S	TF				L	0	20	0	30	0	0	NL	100	10	0	10	0	100	0					0	0			
		Goodooga	1985	250	S	A				L	0	NL	100	NL	100	NL	100	100	100	100	100	100	100	100	0					0	0		
		Barwon Four		0	A				L R		NL	100	NL	100	NL	100	NL																

Water Utility	Comment	Sewage Treatment Works	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>5</sup>	Volume of Sewage Receiving Treatment	90 Percentile Licence Limits <sup>5</sup> and DEC Licence Compliance																Odour Complaints		% Spgs Treated that was compliant	STWS compliant at all times	Sampling Days	Major Malfunction (Treatment Process)						
											BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms		No.	No/1000 props												
											mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	cfu/100mL	% Samples	68	69										
1	10	3	2	5	6	15	49	50	51	52	53	54	55	56	57	58	59	60	61	62	68	69	71	72	73	74	75	76	77	78	79	80	81	82				
Cobar Shire Council	No licence limits	Cobar	1982	10,000	S	CEA			L	290	100	100	100	100	100	100	100	100	100	100	100	0											12	0				
		Murrin Bridge		0	0				Y	Y	LR												0										0	0				
		Total/Weighted Average <sup>1,6</sup>		10,000		CEA			LR	290	100	100	100	100	100	100	100	100	100	100	100	100	0	0.0	100	2 of 2							12	0				
Coffs Harbour City Council	No licence limits	Coffs Harbour	2009	70,000	AT	CEA	Y	Y	LRO	4,778	50	100	50	100	100	100	10	100	100	100	100	100	37										26	0				
		Sawfell	1986	18,000	AS	IEA	Y	Y	LRO	1,923	20	100	30	100	100	100	100	100	100	100	100	100	10											52	0			
		Woolpoolga	2005	18,000	AS	IEA	Y	Y	L O	1,259	10	100	100	100	15	100	100	2	100	100	100	100	100	1											26	0		
		Corindi Beach	2000	1,500	T	IEA	Y	Y	L	103	15	89	20	82	15	100	100	100	100	5	100	200	79	0											12	0		
		Total/Weighted Average <sup>1,6</sup>		107,500		IEA, BNR			O	8,063	50	100	50	100	50	100	50	100	50	100	50	100	50	48	2.1	100	3 of 4								116	0		
Coolamon Council	No licence limits	Coolamon	1965	1,200	T	TF			L	69	30	100	20	100	100	100	100	100	100	100	100	10	0											4	0			
		Sanmain	1998	1,000	S	A			L	30	100	100	100	100	100	100	100	100	100	100	100	100	0												0	0		
		Total/Weighted Average <sup>1,6</sup>		2,200		TF, A			L	99	30	100	20	100	100	100	100	100	100	100	100	100	10	0	0.0	100	2 of 2								4	0		
Cooma-Monaro Council	No licence limits	Cooma (The Glen)	1998	15,000	AT	IEA	Y	Y	R	698	10	100	15	100	10	100	2	100	2	100	100	200	77	0										13	0			
		Nimmitabel	2008	500	AS	IEA		Y	R	11	20	100	30	100	100	100	100	100	100	100	100	100	100	1											14	0		
		Total/Weighted Average <sup>1,6</sup>		15,500		IEA		Y	R	709	10	100	15	100	10	100	2	100	2	100	100	200	77	1	0.2	77	1 of 2								27	0		
Coonamble Council	No licence limits	Coonamble	1956	4,000	T	A			L	0	20	0	50	0	20							10	0											12	0			
		Culargambone	1975	750	AS	A			R	0	20	0	25	0	15							15	0												12	0		
		Total/Weighted Average <sup>1,6</sup>		4,750		IEA, TF			LR	0	20	0	25	0	15							600	0	0.0	-	-	-	-	-	-	-	-	-	-	24	0		
Coolamundra Council	No licence limits	Coolamundra	1992	14,000	AT	AL	Y	Y	R	688	30	100	40	100	20	100	100	100	100	100	100	100	1	0.4	75	0 of 1									4	0		
		Corowa	1988	12,200	S	TF			L	507	100	100	100	100	100	100	100	100	100	100	100	100	3													12	0	
		Mulwala	2008	5,316	T	IEA	Y	Y	R	299	20	100	30	100	40	100	100	100	100	100	100	100	1													12	0	
Corowa Council	No licence limits	Howlong	1990	2,500	S	A			L	160	100	100	100	100	100	100	100	100	100	100	100	0														0	0	
		Total/Weighted Average <sup>1,6</sup>		20,016		TF, IEA			LR	966	100	100	100	100	100	100	100	100	100	100	100	100	4	0.8	100	3 of 3										24	0	
		Broken Hill (Wilks St)	1998			T	TF			L	1,390	50	100	50	100	100	100	100	100	100	100	100	5													26	0	
Essential Energy	No licence limits	Broken Hill South	1968		T	TF			L	302	50	100	50	100	100	100	100	100	100	100	100	0														26	0	
		Total/Weighted Average <sup>1,6</sup>		0		TF			LR	1,692	50	100	50	100	100	100	100	100	100	100	100	100	5	0.5	100	2 of 2										52	0	
		Cowra	2011	14,800	AS	IEA	Y	Y	R	733	20	100	30	60	100	100	100	100	100	100	100	200	25	0												12	0	
Cowra Council	No licence limits	Wyandala		0	0			LR		100	100	100	100	100	100	100	100	100	100	100	100	0													0	-		
		Total/Weighted Average <sup>1,6</sup>		14,800		IEA			LR	733	20	100	30	60	100	100	100	100	100	100	100	200	25	0	0.0	25	1 of 2									12	0	
		Deniliquin	1998	11,500	S	TF	Y	Y	R	1,140	20	100	30	100	40	100	100	100	100	100	100	100	3	0.9	100	1 of 1										12	0	
Dubbo City Council	No licence limits	Wongarbon	2010	526	A	0				0	100	100	100	100	100	100	100	100	100	100	100	0													0	0		
		Troy Junction	1985	40,000	AS	IEA	Y	Y	LR	3,008	20	100	25	100	15	100	5	100	10	100	100	200	44	9	0.6	44	1 of 2									12	0	
		Total/Weighted Average <sup>1,6</sup>		40,526		IEA			LR	3,008	20	100	25	100	15	100	5	100	10	100	100	200	44	9	0.6	44	1 of 2									12	0	
Eurobodalla Council	No licence limits	Balemans Bay	1984	16,000	T	CEA	Y	Y	LRO	2,066	20	100	30	100	100	100	100	100	100	100	100	20														12	6	
		Narooma	1984	12,000	T	CEA	Y	Y	LRO	605	20	100	30	100	100	100	100	100	100	100	100	100	3														12	0
		Moruya	2000	8,000	T	CEA	Y	Y	LRO	289	20	100	30	100	15							1	100	4												12	0	
Forbes Council	No licence limits	Tomakin	1984	8,000	T	CEA	Y	Y	LRO	553	20	100	30	100	100	100	100	100	100	100	100	1															12	0
		Turoos Heads		4,000	AS	IEA			LRO	230	20	100	30	100	100	100	100	100	100	100	100	100	4														12	4
		Total/Weighted Average <sup>1,6</sup>		48,000		IEA, CEA			LRO	3,743	20	100	30	100	100	92	100	100	100	100	100	100	32	1.8	100	5 of 5										60	10	
Galgandra Council	No licence limits	Forbes	2005	12,000	T	IEA	Y	Y	LR	754	10	100	50	100	10	83	2	100	10	100	100	200	1	0.3	83	0 of 1									12	0		
		Galgandra	2009	3,000	T	TF				275	20	100	50	100	20							10	0													0	0	
		Deepwater	1987	500	S	A				13	100	100	100	100	100	100	100	100	100	100	100	100	0														12	0
Glen Innes Severn Council	No licence limits	Glen Innes	2007	8,000	AT	IEA	Y	Y	LR	1,094	10	100	15	100	10	100	2	100	2	100	100	200	0													26	14	
		Total/Weighted Average <sup>1,6</sup>		8,500		C			LR	1,107	10	100	15	100	10	100	2	100	2	100	100	200	0	0.0														







Water Utility	Comment	Sewage Treatment Works	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>4</sup>	Volume of Sewage Receiving Treatment	90 Percentile Licence Limits <sup>5</sup> and DEC Licence Compliance																Odour Complaints		% Sge Treated that was compliant	STW's compliant at all times	Sampling Days	Major Malfunction (Treatment Process)
											BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms		No.	No/1000 props						
											mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	cfu/100mL	% Samples	#	#				
1	10	3	2	Yes/No	5	Yes/No	6	Effluent Discharge <sup>4</sup>	15	46	49	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67				
Nambucca Council	No licence limits	Nambucca Heads	1986	10,000	AS	IEA		Y	L R O	1,026	20	100	30	100	NL	10	100	10	100	NL	100	100	100	4				29	0			
		Macksville	1998	5,500	T	IEA		Y	O	516	15	100	20	100	NL	5	100	10	100	100	1	100	200	100	1				25	0		
		Scotts Head	1985	2,000	S	IEA			L R O	157	20	100	30	77	NL	100	NL	100	10	100	NL	100	NL	100	0				13	0		
		Bowraville	1985	1,200	T	TF			L	165	20	77	30	46	NL	100	NL	100	10	100	NL	100	NL	100	1				13	0		
		Total/Weighted Average <sup>1,6</sup>		18,700		IEA, TF			L R O	1,864	20	98	30	93	NL	100	10	100	10	100	NL	100	NL	100	6	1.1	93	2 of 4	80	0		
Narrabri Council	No licence limits	Narrabri	1996	8,300	S	TF			L	685	20	57	NL	100	NL	100	100	10	100	NL	100	NL	100	0				11	0			
		Wee Waa	1972	1,500	S	TF			L	135	NL	100	NL	100	NL	100	100	10	100	NL	100	NL	100	0				0	0			
		Boggabri	1956	1,000	S	TF			L	44	NL	100	NL	100	NL	100	100	10	100	NL	100	NL	100	0				0	0			
Narrandera Council	No licence limits	Total/Weighted Average <sup>1,6</sup>		10,800		TF			L	864	20	66	NL	100	NL	100	10	100	NL	100	NL	100	0	0.0	66	2 of 3	11	0				
		Narrandera	2006	6,000	AS	C			R	630	20	100	30	100	NL	100	100	10	100	NL	100	200	100	0	0	100	1 of 1	12	0			
		Naromine	2005	5,000	S	A				340	NL	100	NL	100	NL	100	NL	100	10	100	NL	100	NL	100	0				6	0		
Naromine Council	No licence limits	Trangie	1997	1,000	AS	A			L	230	NL	100	NL	100	NL	100	NL	100	10	100	NL	100	NL	100	0				6	0		
		Total/Weighted Average <sup>1,6</sup>		6,000		A			L	570	NL	100	NL	100	NL	100	NL	100	10	100	NL	100	NL	100	0	0.0	100	2 of 2	12	0		
		Oberon	1989	7,000	S	TF		Y	L R	0	20	100	25	100	15	NL	100	10	100	1	200	100	0	0.0	100	1 of 1	12	0				
Orange City Council	No licence limits	Orange	1988	60,000	AS	CEA	Y	Y	R	5,937	20	100	25	100	15	100	10	100	1	100	400	60	14				12	0				
		Spring Hill	1990	1,000	AS	CEA			L	54	20	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	0				12	0		
		Total/Weighted Average <sup>1,6</sup>		61,000		CEA			L R	5,991	20	100	25	100	15	100	10	100	1	100	400	60	14	0.9	60	1 of 2	24	0				
Palerang Council	No licence limits	Braidwood	2010	2,000	AT	IEA	Y	Y	L R	102	20	100	30	77	NL	100	10	100	NL	100	NL	100	2				13	90				
		Bungendore	1993	2,000	T	IEA	Y	Y	R	270	10	50	15	75	NL	100	10	100	10	100	NL	100	2				4	0				
		Captains Flat	1984	500	T	IEA	Y		R	52	20	100	30	100	NL	100	10	100	10	100	NL	100	NL	100	0				4	0		
		Total/Weighted Average <sup>1,6</sup>		4,500		IEA	Y		L R	424	10	68	15	79	NL	100	10	100	10	100	NL	100	NL	100	4	2.1	63	1 of 3	21	90		
Parkes Council	No licence limits	Parkes	1994	14,500	0	0		Y	L R	1,090	30	100	50	100	40	100	10	100	10	100	100	100	2				12	0				
		Tullamore	2009	250	0	0			L	0	NL	100	NL	100	NL	100	NL	100	10	100	NL	100	NL	100	0				0	0		
		Peak Hill	1983	2,000	0	0			L	0	NL	100	NL	100	NL	100	NL	100	10	100	NL	100	NL	100	0				0	0		
Queanbeyan City Council	No licence limits	Total/Weighted Average <sup>1,6</sup>		16,750		C		L R	1,090	30	100	50	100	40	100	10	100	10	100	100	100	2	0.4	100	3 of 3	12	0					
		Queanbeyan	1986	34,500	AS	CEA, TF			L R	4,016	NL	100	NL	100	NL	100	10	100	100	100	100	100	100	0	0	100	1 of 1	365	0			
		Casino	1986	13,300	0	0		Y	L R	1,419	20	100	30	100	NL	100	10	100	100	100	100	100	100	0				26	0			
Richmond Valley Council	No licence limits	Evans Head	2007	5,500	0	0	Y	Y	L R	673	10	100	15	100	10	100	2	100	2	100	1	200	100	0				26	0			
		Coraki	1968	1,200	0	0			L R	155	NL	100	NL	100	NL	100	NL	100	10	100	NL	100	NL	100	0				13	0		
		Rileys Hill	1996	200	0	0	Y	Y	L R	6	15	100	20	100	15	100	2	100	10	100	1	200	100	0				13	0			
		Total/Weighted Average <sup>1,6</sup>		20,200		IEA, TF			L R	2,253	20	100	30	100	NL	100	10	100	10	100	NL	100	NL	100	0	0.0	100	4 of 4	78	0		
		Nowra	1989	21,000	AS	TF	Y	Y	R	1,897	40	100	40	100	NL	100	10	100	10	100	NL	100	NL	100	0				12	0		
		St Georges Basin	1992	16,000	AS	IEA	Y	Y	O	1,095	10	100	15	100	15	100	5	100	2	100	1	100	200	100	0				11	0		
Shoalhaven City Council	No licence limits	Huskisson	2002	14,000	T	IEA	Y	Y	O	572	10	100	15	100	NL	100	5	100	2	100	1	100	200	100	0				11	0		
		Bomaderry	1990	12,500	AS	TF	Y		R	847	20	100	40	33	NL	100	NL	100	10	100	NL	100	NL	100	1				12	0		
		Milton Uladulla	2006	31,500	T	IEA	Y		O	1,206	15	100	20	100	NL	100	10	100	2	100	100	100	200	100	0				12	0		
		Culburra	2005	10,500	T	IEA	Y		O	686	10	100	15	100	15	100	5	100	2	100	100	100	200	100	0				12	0		
		Sussex Inlet	2007	8,000	T	IEA	Y		L	523	20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	2				12	0		
		Callala	2000	6,000	T	IEA	Y	Y	O	263	10	100	15	100	15	100	5	100	2	100	1	100	200	100	0				11	0		
		Shoalhaven Heads	1983	4,000	AS	IEA	Y		R	251	30	100	30	100	NL	100	10	100	10	100	NL	100	NL	100	2				12	0		
		Berry	2007	3,000	T	IEA	Y		R	263	20	100	30	100	NL	100	10	100	10	100	NL	100	NL	100	0				12	0		
		Total/Weighted Average <sup>1,6</sup>		126,500		IEA, TF			L R O	7,790	40	100	40	93	NL	100	10	100	99	10	100	NL	100	NL	100	5	0.1	93	11 of 12	141	0	
		Singleton Council	No licence limits	Singleton	1998	20,000	AS	IEA	Y		R	1,198	30	100	30	100	15	100	10	100	10	100	100	100	5	0.9	100	1 of 1	12	0		
				Lindabyne	1984	8,000	AT	IEA	Y	Y	R	368	10	100	15	84	10	100	2	100	2	100	100	200	100	0				19	0	
Barrisdale	2008			2,000	AT	IEA	Y		R	88	20	86	30	86	NL	100	10	100	10	100	86	100	100	0				14	0			
Adamnaby	1972			750	S	TF	Y		Y	0	20	71	30	43	NL	100	10	100	10	100	NL	100	NL	100	0				14	0		
Intertaken	1981			1,200	AT	IEA	Y			0	NL	100	NL	100	NL	100	100	100	100	100	100	100	100	100	0				0	0		
Total/Weighted Average <sup>1,6</sup>				11,950		IEA, TF			R	456	10	97	15	84	10	100	2	100	2	97	100	200	100	0	0.0	84	1 of 4	47	0			
Tamworth (Westdale)	2011			61,000	AS	IEA	Y	Y	L R	3,565	30	100	25	100	NL	100	10	100	2	100	2	100	200	100	3				52	0		
Tamworth Regional Council	No licence limits																															

Water Utility	Comment	Sewage Treatment Works	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>2</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>1</sup>	Volume of Sewage Receiving Treatment	90 Percentile Licence Limits <sup>5</sup> and DEC Licence Compliance																Odour Complaints		% Sge Treated that was compliant	STW's compliant at all times	Sampling Days	Major Malfunction (Treatment Processes)
											BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms		No.	No./1000 props						
											mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	mg/L	% Samples	cfu/100mL	% Samples	68	69				
Upper Hunter Council	No licence limits	Scone	1988	7,000	AS	IEA			L	718	20	100	30	50	100	100	100	100	100	100	100	0				12	0					
		Aberdeen	1983	4,000	AS	IEA			R	165	20	100	30	100	100	100	100	100	100	100	100	0				12	0					
		Merriwa	1970	1,600	S	TF			L R	61	20	100	30	100	100	100	100	100	100	100	100	0				0	0					
		Murrundi	1979	1,000	AS	IEA			R	121	NL	100	NL	100	100	100	100	100	100	100	100	100	0				0	0				
		Total/Weighted Average <sup>1,6</sup>		13,600		IEA, TF			L R	1,065	20	100	30	66	100	100	100	100	100	100	100	100	0	0.0	66	3 of 4	24	0				
Upper Lachlan Council	No licence limits	Crookwell	1996	4,200	T	IEA		Y	R	380	20	100	30	100	15	100	5	100	10	100	1	100	200	100	0		12	0				
		Gunning	1976	1,000	T	IEA		Y	R	60	20	100	30	100	NL	100	NL	100	10	100	100	100	100	0			12	0				
		Total/Weighted Average <sup>1,6</sup>		5,200		IEA			R	440	20	100	30	100	15	100	5	100	10	100	1	100	200	100	0	1.0	100	2 of 2	24	0		
Uralla Council	No licence limits	Uralla	1994	3,960	AS	CEA		Y	Y	R	225	15	100	20	100	10	100	1	100	10	100	1	100	200	100	2	1.9	100	1 of 1	12	1	
		Urana	1996	754	S	A		Y	Y		55	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				51	0			
		Oaklands	1996	520	S	A		Y	Y		35	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				51	0			
Wagga Wagga City Council	No licence limits	Total/Weighted Average <sup>1,6</sup>		1,274		A				90	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0	0.0	100	2 of 2	102	0				
		Wagga (Narung St)	2010	72,917	T	CEA		Y	Y	L R	4,373	10	100	15	100	10	100	2	100	2	100	1	100	100	0			12	0			
		Wagga (Koorlingal)	2010	18,750	T	IEA		Y	Y	L R	1,552	10	100	15	100	10	100	2	100	2	100	1	100	100	1			12	0			
Wakool Council	No licence limits	Forest Hill	1974	6,000	T	IEA			L	268	20	100	30	50	100	100	100	100	100	100	100	100	0				4	0				
		Uranquinty	1984	1,000	S	A			L	115	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0				
		Tarcutta	1988	500	S	A			L	49	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0				
		Total/Weighted Average <sup>1,6</sup>		99,167		IEA, CEA			L R	6,357	10	100	15	98	10	100	2	100	2	100	1	100	100	1	0.0	98	4 of 5	28	0			
		Barham	1967	1,600	S	A			L	95	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0				
Walcha Council	No licence limits	Moulamein	1967	700	AS	IEA		Y	Y	L R	20	NL	100	NL	100	NL	100	NL	100	NL	100	0					0	0				
		Murray Downs	2005	260	AT	BNR			Y	L	80	NL	100	NL	100	NL	100	NL	100	NL	100	0					0	0				
		Tooleybec	1987	500	S	A		Y	Y	L R	146	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0			
		Total/Weighted Average <sup>1,6</sup>		3,066		IEA, BNR			L R	341	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0	0.0	100	4 of 4	0	0				
		Walcha	1971	2,400	S	TF			L R	232	20	100	30	100	NL	100	100	100	100	100	100	100	0	0	100	1 of 1	12	0				
Walgett Council	No licence limits	Walgett	1958	3,200	S	AN			L R		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0				
		Lightning Ridge	1979	1,000	S	A			L R		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0				
		Collarenebri	1970	600	S	A			L R		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0				0	0				
		Total/Weighted Average <sup>1,3</sup>		4,800		AN			L R	0		100											0	0.0	100	3 of 3	0	0				
Warren Council	No licence limits	Warren	1958	2,250	S	TF			L	199	45	100	65	75	30	100	NL	100	10	100	10	100	100	0				4	0			
		Neverite	1983	200	P	A			L	0	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0					0	0			
		Total/Weighted Average <sup>1,6</sup>		2,450		TF			L	199	45	100	65	75	30	100	NL	100	10	100	10	100	100	0	0.0	75	1 of 2	4	0			
Warrumbungle Shire Council	No licence limits	Coonabarabran	1964	3,500	S	TF		Y	R	243	20	100	25	100	20	100	100	10	100	10	100	100	0				12	0				
		Coolah	1970	1,000	S	O			L	74	40	75	150	75	15	50	100	3	100	3	100	3	100	0				2	0			
		Baradine	1997	1,000	P	A			L	49	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0					0	0			
		Dunedoo	1970	800	S	CEA			R	84	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0					2	0			
		Total/Weighted Average <sup>1,6</sup>		6,300		CEA, TF			L R	450	20	96	25	96	20	92	100	10	100	10	100	100	0	0.0	92	3 of 4	16	0				
Weddin Council	No licence limits	Grenfell	1943	2,500	S	TF			L R	172	20	100	30	100	40	100	NL	100	10	100	10	100	100	0	0.0	100	1 of 1	3	0			
		Wellington	2006	8,000	S	IEA		Y	Y	R	588	15	100	30	100	15	100	2	100	10	100	1	100	600	100	0			12	1		
Wentworth Council	No licence limits	Nanima		0					L R		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0					0	-			
		Total/Weighted Average <sup>1,6</sup>		8,000		IEA			L R	588	15	100	30	100	15	100	2	100	10	100	1	100	600	100	0	0.0	100	2 of 2	12	1		
		Buronga Gol Gol	1994	5,000	T	A			L R	180	50	100	50	100	NL	100	NL	100	10	100	100	100	0					4	0			
		Wentworth	1984	3,500	T	TF			L R	55	30	100	45	100	NL	100	NL	100	10	100	100	100	200	100	0				4	0		
		Darebin	1984	2,000	T	TF			L	36	30	100	45	100	NL	100	NL	100	10	100	100	100	600	100	2				4	0		
Wingecarribee Council	No licence limits	Ivanajira	1988	1,200	S	A			L	60	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	0					0	0			
		Wentworth (East)	1991	600	T	A			L	14	50	100	50	100	NL	100	NL	100	10	100	100	100	200	100	0				4	0		
		Total/Weighted Average <sup>1,6</sup>		12,300		TF, A			L R	345	50	100	50	100	NL	100	NL	100	10	100	100	100	100	2	1.1	100	5 of 5	16	0			
		Mittaqong	2002	14,000	AT	IEA		Y	Y	L R	1,055	10	100	15	100	10	100	2	100	10	100	100	200	100	12				26	0		
		Bowral	2006	14,600	AT	IEA		Y	Y	R	1,660	10	100	15	100	10	100	2	100	5	100	1	81	200	100	13				26	0	
Wyong Council	No licence limits	Moss Vale	1995	9,000	AT	IEA		Y	Y	R	936	20	100	30	100	15	100	2	100	100	1	100	200	100	10				26	0		
		Bundanoon	2010	5,400	AT	IEA		Y	Y	L R	295	20	100	30	100	15	100	NL	100	2	100	2	100	100	4				26	0		
		Berrima	1990	2,000	T	IEA		Y	Y	R	99	20	100	30	100	15	100	2	100	100	1	100	100	100	0				13	0		
		Total/Weighted Average <sup>1,6</sup>		45,000		IEA			L R	4,045	10	100	15	100	10	100	2	100	5	100	1	92	200	100	39	2.7	92	4 of				

# Appendix E: Maintaining effective disinfection of a water supply distribution system

## Overview

This appendix highlights the key elements for maintaining effective disinfection of a water supply distribution system. It is recommended that each NSW Local Water Utility (LWU) review its present processes and practices to ensure its practices address each of these elements.

In addition, as indicated in the *2010-11 NSW Water Supply and Sewerage Benchmarking Report* (page 9) and the *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007* (page 13), it is recommended that each utility develop and implement a risk based Drinking Water Quality Management Plan in accordance with the *Australian Drinking Water Guidelines, 2004* (page 2-1). The NSW Office of Water (NOW) is preparing some worked examples to assist LWUs and these will be provided to LWUs shortly.

**Monitoring of Chlorine Residual** in a water supply distribution system is one of the essential controls for maintaining effective disinfection and ensuring consistently safe drinking water quality. Such monitoring provides the necessary data for the utility to carry out timely corrective action.

## Developing a monitoring program

The monitoring program should include the following information:

- Parameters to be monitored (Chlorine Residual and pH); for unfiltered surface water supplies, Turbidity<sup>1</sup> should also be monitored.
- Sampling frequency and location, including system extremities.<sup>2</sup>
- Sampling methods and equipment.
- Schedules for sampling.
- Methods for quality assurance and validation of sampling results.
- Requirements for checking and interpreting results.
- Responsibilities and necessary training of staff.
- Requirements for documentation and management of records, including how monitoring results will be recorded and stored.
- Requirements for reporting and communication of results.
- Program should be designed to cover both random and regular variations in water quality.

## Field testing

- Basic chemical test kits for chlorine residual, pH and turbidity are available.
- Free chlorine, combined chlorine, pH and turbidity, tests need to be done in the field.

**Frequency of monitoring** – chlorine residual should be monitored at least daily at the water treatment works and weekly at consumer supply points.<sup>3</sup>

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<sup>1</sup> For filtered water supplies, all the treated water should normally have a turbidity of under 1 NTU, with 95 per cent of the supply having a turbidity of under 0.3 NTU.

<sup>2</sup> Each LWU's sampling locations for monitoring microbiological water quality for reporting in the NSW Water Quality Database would be suitable for this purpose.

<sup>3</sup> Table 10.7, *Australian Drinking Water Guidelines 2004*.

**Maintaining effective disinfection** is essential for controlling microbial quality in a water supply distribution system. Particular attention should be paid to:

- operational factors affecting microbial quality (e.g. chlorine residual, pH and turbidity) should be monitored as indicated above
- a minimum total chlorine residual of 0.5 mg/L<sup>1</sup> is recommended after 30 minutes contact time<sup>2</sup> and before water reaches the first consumer
- for filtered water, turbidity should be low (<1 NTU<sup>3</sup>)
- pH should be <8.5<sup>4</sup>
- the reticulation system should be properly maintained. New mains and repaired mains should be super-chlorinated<sup>5</sup> before use.

## Chlorine residual

- A minimum free chlorine residual of about 0.2mg/L<sup>6,7</sup> should be maintained throughout the distribution system
- Loss of chlorine residual may be an early warning indicator of a fault in the chlorination system or a change in the chlorine demand of the water. It will also result in lack of protection against any recontamination of the water supply.

If you wish to discuss implementation of the above elements for effective disinfection, please contact Bill Ho, Manager Water and Sewerage on tel: (02) 8281 7326 or email: [Bill.Ho@water.nsw.gov.au](mailto:Bill.Ho@water.nsw.gov.au).

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<sup>1</sup> Part IV Information Sheet I, Disinfection of Drinking Water, *Australian Drinking Water Guidelines 2004*.

<sup>2</sup> This should be sufficient to ensure microbial control, given a clean distribution system and no significant recontamination.

<sup>3</sup> Table 10.10, *Australian Drinking Water Guidelines 2004*.

<sup>4</sup> For effective disinfection pH should be as low as possible, but this needs to be tempered by the need for corrosion control. In most cases a pH of 7.8 to 8.2 is desirable.

<sup>5</sup> *Chlorine Fact Sheet under Drinking Water Treatment Chemicals, Australian Drinking Water Guidelines, 2004*.

<sup>6</sup> Example in Table A10 on page A-21 of *Australian Drinking Water Guidelines, 2004*.

<sup>7</sup> Re-chlorination may be necessary to maintain effective chlorine residual in very long water supply distribution mains.

# Appendix F: NMUs – National performance report 2010-11

WATER UTILITY	WATER RESOURCES																											
	SOURCES OF WATER																											
	Volume of water sourced from surface water				Volume of water sourced from groundwater				Volume of water sourced from desalination				Volume of water sourced from recycling (ie where potable water would normally be supplied)				Volume from bulk supplier				Volume bulk recycled purchased				Total sourced water			
	W1 (includes W3.3)				W2 Includes W3.2 Excludes W25.1				W3 W3 = W3.1+W3.2+W3.3				W4 Excludes W28.4 Includes W23 and W25.1				W5 W5=W5.1+W5.2+W6+W28.2				W6 Excludes W28.2				W7 W7=W1+W2+W3.1+W4+W5+W28.4			
	(ML)				(ML)				(ML)				(ML)				(ML)				(ML)							
2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11								
Sydney Water Corporation	5,486	5,885	6,065	5,589	0	0	0	0	0	0	19,952	77,102	10,101	8,264	10,253	10,606	475,156	491,727	479,633	414,004	0	0	0	0	490,743	505,876	515,903	507,301
Hunter Water Corporation	64,311	61,814	63,433	65,676	3,025	5,504	7,117	2,333	0	0	0	0	2,174	2,872	2,899	2,186	0	0	0	0	0	0	0	0	69,510	70,190	73,449	70,195
Sydney Catchment Authority	478,184	490,283	582,623	736,650	169	0	0	0	0	0	0	0	0	0	0	0	1,077	208	0	224	0	0	0	0	479,430	490,491	582,623	736,874
1 Gosford City Council	8,190	9,209	11,476	14,026	145	108	96	127	0	0	0	0	0	229	362	510	3,769	3,310	2,120	1,444	0	0	0	0	12,104	12,856	14,054	16,107
2 Wyong Shire Council	15,446	15,369	13,480	12,516	230	286	292	162	0	0	0	0	1,164	1,295	1,024	997	769	1,603	3,595	2,035	0	0	0	0	17,609	18,553	18,391	15,710
3 Shoalhaven City Council	14,140	14,854	14,724	14,230	0	0	0	0	0	0	0	0	125	161	144	156	74	82	87	70	0	0	0	0	14,339	15,097	14,955	14,456
4 Rous Water	10,078	10,501	12,070	11,142	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,202	10,501	12,070	11,142
5 MidCoast Water	8,566	8,537	8,477	7,728	665	628	687	603	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9,231	9,169	9,164	8,331
6 Tweed Shire Council	9,429	9,564	10,555	8,938	0	0	0	0	0	0	0	0	262	645	778	436	0	0	9	9	0	0	0	0	9,691	10,209	11,342	9,383
7 Port Macquarie Hastings Council	6,237	6,117	6,283	6,016	0	0	0	0	0	0	0	0	88	64	94	92	0	0	0	0	0	0	0	0	6,325	6,181	6,377	6,108
8 Riverina Water	3,972	6,055	4,463	2,335	10,844	11,287	10,517	8,363	0	0	0	0	0	0	0	0	24	24	22	19	0	0	0	0	14,840	17,366	15,002	10,717
10 Coffs Harbour City Council	5,458	5,153	5,976	5,570	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,458	5,153	5,976	5,570
11 Albury City Council	5,534	6,319	6,881	5,542	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,534	6,319	6,881	5,542
12 Fish River Water	7,404	5,999	5,124	7,946	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,404	5,999	5,124	7,946
13 Tamworth Regional Council	7,131	7,239	8,966	8,716	500	1,455	678	330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,631	8,694	9,644	9,046
14 Clarence Valley Council	6,949	7,987	7,057	5,893	0	0	0	0	0	0	0	0	79	127	165	150	0	0	0	0	0	0	0	0	7,028	8,114	7,222	6,043
15 Eurobodalla Shire Council		3,825	4,034	3,405		0	0	0		0	0	0		237	371	160		0	0	0		0	0	0		4,062	4,405	3,565
16 Wingecarribee Shire Council	672	876	1,512	868	0	0	0	0	0	0	0	0	49	64	73	54	4,601	4,379	3,628	3,518	0	0	0	0	5,322	5,319	5,213	4,440
17 Queanbeyan City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,416	3,658	3,747	3,442	0	0	0	0	3,416	3,658	3,747	3,442
18 Dubbo City Council	5,952	5,984	6,398	4,483	2,050	1,807	1,663	2,049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,002	7,791	8,061	6,532
19 Orange City Council	4,730	4,125	3,896	3,878	54	67	55	50	0	0	0	0	3,367	3,218	3,032	1,714	0	0	0	0	0	0	0	0	8,151	7,410	6,983	5,642
21 Bathurst Regional Council	6,155	7,528		5,415	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	6,155	7,528		5,415
22 Lismore City Council	148	115	173	176	0	0	0	0	0	0	0	0	0	0	0	0	3,202	3,406	3,622	3,129	0	0	0	0	3,350	3,521	3,795	3,305
23 Bega Valley Shire Council		1,634	1,450	1,560		1,855	2,017	1,665		0	0	0		0	0	0		0	0	0		0	0	0		3,489	3,467	3,225
24 Ballina Shire Council	123	129	130	114	0	4	0	0	0	0	0	0	107	119	717	123	3,299	3,316	3,900	3,476	0	0	0	0	3,529	3,568	4,747	3,713
25 Kempsey Shire Council	974	1,628	1,396	1,952	2,741	1,966	2,338	1,467	0	0	0	0	46	32	40	0	0	0	0	0	0	0	0	0	3,761	3,626	3,774	3,419
26 Essential Energy	1,896	3,212	1,030	3,279	0	0	0	0	0	0	0	0	649	523	622	379	3,568	1,633	3,929	920	0	0	0	0	6,113	5,368	5,581	4,578
27 Byron Shire Council	368	349	392	320	0	0	0	0	0	0	0	0	315	235	218	240	2,189	2,286	2,617	2,434	0	0	0	0	2,872	2,870	3,227	2,994
28A Goldenfields Water (Reticulation)	0	0			0	0			0	0	0	0	0	0	0	0	4,749	5,561	5,179	3,874	0	0	0	0	4,749	5,561	5,179	3,874
28B Goldenfields Water (Bulk Water Supp		3,957	3,817	3,273		4,779	4,509	3,464		0	0	0		0	0	0		379	390	270		0	0	0		9,115	8,716	7,007
20 Goulburn Mulwaree Council		2,433				0		0		0		0		0		0		0		0		0		0		2,433		
9 Wagga Wagga Council				0				0				0				0				0				0				0
LWU Range Max	15,446	15,369	14,724	14,230	10,844	11,287	10,517	8,363	0	0	0	0	3,367	3,218	3,032	1,714	4,749	5,561	5,179	3,874	0	0	0	0	17,609	18,553	18,391	16,107
LWU Range Min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,872	2,433	3,227	0
Median of NMU Indicators shown in Table	5,743	5,569	5,124	4,483	0	0	0	0	0	0	0	0	0	2	73	0	0	0	16	0	0	0	0	0	6,677	6,250	6,629	5,642

Notes \* Indicators shown are those published in the 2010/11 National Performance Report.

WATER UTILITY	WATER RESOURCES																															
	USES OF WATER SUPPLIED																															
	Volume of water supplied - Residential (incl nonpotable)				Volume of water supplied - commercial, municipal, industrial (incl nonpotable)				Volume of water supplied - other (incl nonpotable)				Total Urban Water Supplied (Excl Bulk Water W14 & Environmental Flows W13 Incl Recycled & Losses) W11 W11=W8+W9+W10 =W11.1+W11.2+W26-W22-W23-W24+W28.4 Includes recycled, excludes environmental & aquifer recharge				Average Annual Residential Water Supplied				Volume of water supplied - Environmental flows				Volume of bulk water exports				Volume of bulk recycled water exports			
	W8				W9				W10				W12				W13				W14				W15							
	Includes recycled water W8=W8.1+W8.2+W20 (ML)				Includes recycled water W9=W9.1+W9.2+W21 (ML)				W10=W10.1+W10.2+W25 excludes W10.3 (ML)				=W11.1+W11.2+W26-W22-W23-W24+W28.4 Includes recycled, excludes environmental & aquifer recharge (ML)				W12 (KL/prop)				Generally upstream of master meter Excludes recycled & aquifer recharge & stormwater (ML)				W14=W14.1+W14.2+W15+W28.1 Includes recycled & stormwater (ML)				W15 component of W14 (ML)			
2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11								
Sydney Water Corporation	292,782	320,861	334,488	325,769	136,064	126,712	130,640	126,036	52,855	44,395	40,522	92,411	481,701	491,968	505,650	544,216	182	198	205	197	0	0	0	0	0	0	0	0	0	0	0	0
Hunter Water Corporation	36,428	37,199	38,463	37,087	20,866	21,487	21,081	21,068	8,715	8,334	8,689	9,539	66,009	67,020	68,233	72,368	177	180	184	175	5,110	5,110	5,110	5,110	1,235	161	2,316	315	0	0	0	0
Sydney Catchment Authority																					70,842	80,680	82,382	293,085	479,430	490,491	481,961	416,740				
1 Gosford City Council	8,990	9,356	9,848	9,979	2,161	2,188	2,159	2,235	905	1,075	1,601	1,668	12,056	12,619	13,608	13,882	135	140	146	148	0	0	0	0	0	0	0	1,748	0	0	0	0
2 Wyong Shire Council	8,184	7,970	8,767	9,169	3,434	4,153	4,145	3,534	1,210	1,232	988	1,281	12,828	13,355	13,900	13,984	146	141	154	160	0	0	0	2,555	4,451	4,766	4,491	1,421	0	0		
3 Shoalhaven City Council	6,154	6,484	6,208	5,845	4,197	7,143	7,570	7,610	2,098	1,502	1,456	1,225	12,449	15,129	15,234	14,680	144	152	145	136	0	0			0	0	0	0	0	0	0	0
4 Rous Water	388	291	286	893	214	72	1,121	673	67	139	160	792	668	502	1,567	2,358			7	21	0	0			10,000	10,362	10,789	9,677	0	0	0	0
5 MidCoast Water	5,014	5,067	5,209	4,736	2,342	2,339	2,375	2,125	1,579	1,763	1,579	1,470	8,935	9,169	9,163	8,331	149	150	154	139	0	0			0	0	0	0	0	0	0	0
6 Tweed Shire Council	5,251	5,441	5,281	5,136	2,454	2,707	3,672	2,359	1,327	1,057	1,500	1,377	9,032	9,205	10,453	8,872	174	180	176	167	0	0			66	79	1	0	0	0	0	0
7 Port Macquarie Hastings Council	4,015	4,072	4,329	3,935	1,480	1,513	1,532	1,417	593	605	639	817	6,088	6,190	6,500	6,169	154	151	166	147	0	0			0	0	0	0	0	0	0	0
8 Riverina Water	8,329	9,710	8,678	6,012	5,172	5,974	5,473	3,995	1,339	1,393	1,702	1,442	14,840	17,077	15,853	11,449	327	374	330	225	0	0			0	0	0	0	0	0	0	0
10 Coffs Harbour City Council	3,743	3,675	4,194	3,732	1,441	1,505	1,798	2,445	447	621	627	705	5,631	5,801	6,619	6,882	169	165	186	162	0	0			0	649			0	0		
11 Albury City Council	3,857	4,488	4,527	3,733	1,303	1,716	1,592	1,368	573	689	679	566	5,733	6,893	6,798	5,667	193	222	220	180	0	0			291	389	328	255	0	0	0	0
12 Fish River Water	703				150	101	101	222	420	583	968	1,218	1,273	684	1,459	1,440					0	0	0	874	6,792	4,829	3,999	6,506	0	0		
13 Tamworth Regional Council	3,484	4,110	4,733	4,033	3,172	3,314	3,539	3,500	1,813	1,848	1,170	1,514	8,469	9,272	9,442	9,047	192	226	256	216	0	0			19	18	0	0	0	0	0	0
14 Clarence Valley Council	3,222	3,210	3,241	2,681	2,331	2,232	2,240	1,370	1,096	780	1,255	2,017	6,649	6,222	6,736	6,068	178	176	174	142	0	0			0	0	0	0	0	0		
15 Eurobodalla Shire Council	2,155	2,362	2,128	2,010	1,116	983	1,024	770	1,169	651	1,163	763	4,440	3,996	4,315	3,543	119	129	116	109	0	0			0	0	0	0	0	0		
16 Wingecarribee Shire Council	2,820	3,088	3,239	2,680	927	946	995	862	497	791	628	583	4,244	4,825	4,862	4,125	168	183	190	159	0	0			0	0	0	0	0	0	0	0
17 Queanbeyan City Council	2,766	2,925	2,985	2,845	639	723	743	434	378	405	551	512	3,783	4,053	4,279	3,791	188	198	200	191	0	0	0	4	0	0	0	0	0	0	0	0
18 Dubbo City Council	4,458	4,724	4,908	3,880	1,755	2,053	1,712	1,816	1,132	1,428	1,072	622	7,345	8,205	7,692	6,318	322	331	329	263	0	0			0	0	0	0	0	0	0	0
19 Orange City Council	2,590	3,696			4,711	4,121		2,472	869	537		581	8,170	8,354							0	0	0	365	0	0	0	0	0	0	0	0
21 Bathurst Regional Council	3,190	3,210	3,366	2,476	2,010	1,995	2,033	2,436	577	578	602	478	5,777	5,783	6,001	5,390	241	240	252	182	0	0	0	1,497	4	4	6	3	0	0	0	0
22 Lismore City Council	2,057	2,023	2,152	1,942	942	883	926	902	333	616	713	392	3,332	3,522	3,791	3,236	163	159	168	152	0	0			0	0	4	0	0	0	0	0
23 Bega Valley Shire Council	1,860	1,999	2,144	1,679	1,239	1,397	1,597	1,285	600	594	472	675	3,699	3,990	4,213	3,639	154	165	165	129	0	0			4	4	0	0	0	0	0	0
24 Ballina Shire Council	2,243	2,217	2,447	2,115	737	743	1,444	754	567	608	876	862	3,547	3,568	4,767	3,731	186	175	188	162	0	0			0	0	0	0	0	0		
25 Kempsey Shire Council	1,767	1,642	1,874	1,648	1,145	1,073	1,251	1,122	832	910	649	685	3,784	3,625	3,774	3,455	169	156	177	156	0	0			17	17	27	15	0	0	0	0
26 Essential Energy	2,801	2,712	2,676	2,095	3,438	2,600	2,775	2,224	494	448	475	410	6,733	5,760	5,926	4,729	284	284	280	219	0	0			0	0	0	0	0	0		
27 Byron Shire Council	1,707	1,712	1,855	1,524	1,013	1,026	941	1,570	214	282	376	390	2,934	3,020	3,172	3,484	181	181	194	159	0	0			0	0	5	0	0	0	0	0
28A Goldenfields Water (Reticulation)	1,740	2,055	1,797	1,212	2,704	2,938	2,864	2,282	494	541	504	380	4,938	5,534	5,165	3,874	229	298	259	176	0	0			0	0	0	63	0	0		
28B Goldenfields Water (Bulk Water Supp									539		973		539		973						0				9,115	8,716	7,007		0			
20 Goulburn Mulwaree Council		1,262	1,271	1,268		929	721	808	350	221	275		2,541	2,213	2,351		134	136	133		0				1	3	2		0	0	0	0
9 Wagga Wagga Council																									0				0	0	0	0
LWU Range Max	8,990	9,710	9,848	9,979	5,172	7143	7,570	7,610	2,098	1848	1702	2,017	14840	17077	15853	14,680	327	374	330	263	0	0	0	2,555	10000	10362	10789	9,677	0	0	0	0
LWU Range Min	388	291	286	893	150	72	101	222	67	139	160	275	668	502	1459	973	119	129	7	21	0	0	0	4	0	0	0	0	0	0	0	0
Median of NMU Indicators shown in Table	3,005	3,210	3,241	2,681	1,618	1716	1,655	1,570	597	618	696	734	5755	5772	5964	4,729	176	176	177	159	0	0	0	874	0	0	0	0	0	0	0	0

WATER UTILITY		WATER RESOURCES															
		SEWAGE COLLECTED															
		Volume of sewage collected - Residential, nonresidential and nontrade waste				Volume of sewage collected - trade waste				Total Sewage collected				Sewage collected per property			
		W16 Includes infiltration  (ML)				W17  (ML)				W18 W18=W16+W17 Excludes W13  (ML)				W19 W19=W18/C8  (kL/property)			
		2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
Sydney Water Corporation		520,845	451,075	440,251	485,268	25,536	24,617	23,986	24,167	546,381	475,692	464,237	509,435	324	279	269	306
Hunter Water Corporation		71,087	61,590	52,379	63,971	3,296	3,226	3,102	3,898	74,383	64,815	55,481	67,869	356	307	260	314
Sydney Catchment Authority																	
1	Gosford City Council	13,422	11,667	11,866	13,816	1,346	1,545	969	984	14,768	13,212	12,835	14,800	217	193	187	216
2	Wyong Shire Council	14,195	15,141	13,980	15,937					14,195	15,141	13,980	15,937	243	258	236	268
3	Shoalhaven City Council	7,223	6,277	6,824	7,682		230	119	110	7,223	6,507	6,943	7,792	188	165	171	192
4	Rous Water																
5	MidCoast Water	7,874	7,378	6,312	6,626	144	132	122	124	8,018	7,510	6,434	6,750	248	231	196	204
6	Tweed Shire Council	6,510	7,642	8,634	7,842	1,382	1,315	187	1,321	7,892	8,957	8,821	9,163	270	302	300	302
7	Port Macquarie Hastings Council	8,229	9,082	7,857	8,443					8,229	9,082	7,857	8,443	317	334	298	316
8	Riverina Water																
10	Coffs Harbour City Council	6,703	5,919	6,436	8,064		875	0	0	6,703	6,794	6,436	8,064	302	302	284	352
11	Albury City Council	4,137	3,609	4,219	5,102	154	178	311	172	4,291	3,787	4,530	5,274	211	184	216	249
12	Fish River Water																
13	Tamworth Regional Council	3,253	3,712	3,834	4,082	1,052	1,029	1,000	1,129	4,305	4,741	4,834	5,211	236	258	260	278
14	Clarence Valley Council	2,957	3,262	2,966	3,452	38	0	58	69	2,995	3,262	3,024	3,521	214	228	210	242
15	Eurobodalla Shire Council	3,125	2,875	3,627	3,662	62	0	0	81	3,187	2,875	3,627	3,743	183	163	205	210
16	Wingecarribee Shire Council	4,004	3,010	3,032	3,917	102	108	112	152	4,106	3,118	3,144	4,069	290	218	217	281
17	Queanbeyan City Council	3,740	3,691	3,361	3,734	250	300	300	281	3,990	3,991	3,661	4,015	250	249	228	248
18	Dubbo City Council	2,409	2,000	2,191	2,908	547	715	715	154	2,956	2,715	2,906	3,062	200	182	188	197
19	Orange City Council	3,509	3,871	3,318	5,822	188	137	103	148	3,697	4,008	3,421	5,970	248	265	219	378
21	Bathurst Regional Council	3,069	2,437	3,498	3,576	538	512	564	532	3,607	2,949	4,062	4,108	251	203	274	273
22	Lismore City Council	3,263	4,189	5,383	4,720					3,263	4,189	5,383	4,720	267	341	434	375
23	Bega Valley Shire Council	1,869	1,764	2,010	2,030					1,869	1,764	2,010	2,030	161	149	169	168
24	Ballina Shire Council	2,249	4,579	3,999	4,955					2,249	4,579	4,006	4,955	180	360	306	366
25	Kempsey Shire Council	2,560	2,896	2,298	2,804	54	90	100	83	2,614	2,986	2,398	2,887	293	333	266	323
26	Essential Energy	0	1,240	1,357	1,692		0	0	0	1,316	1,240	1,357	1,692	136	128	140	174
27	Byron Shire Council	3,025	3,008	3,286	3,211	225	294	0	146	3,250	3,302	3,286	3,357	325	335	324	325
28A	Goldenfields Water (Reticulation)																
28B	Goldenfields Water (Bulk Water Sup																
20	Goulburn Mulwaree Council		1,660	1,576	1,517						1,660	1,576	1,517		164	165	149
9	Wagga Wagga Council	4,827	4,627	4,347	5,619	616	747	827	738	5,443	5,374	5,174	6,357	236	228	206	252
	LWU Range Max	14,195	15,141	13,980	15,937	1,382	1,545	1,000	1,321	14,768	15,141	13,980	15,937	325	360	434	378
	LWU Range Min	0	1,240	1,357	1,517	38	0	0	0	1,316	1,240	1,357	1,517	136	128	140	149
	Median of NMU Indicators shown in Table	3,509	3,702	3,731	4,401	225	262	121	150	3,990	4,000	4,034	4,838	243	229	218	260



WATER UTILITY		WATER RESOURCES																															
		USES OF RECYCLED WATER																															
		Volume of Recycled water supplied (Residential)				Volume of Recycled water supplied (Commercial, Industrial, Municipal)				Volume of Recycled water supplied (Agricultural)				Volume of Recycled water supplied (Environmental)				Volume of Recycled water supplied (On-site)				Volume of Recycled water supplied (Other)				Total Recycled water supplied				Recycled water (% of effluent recycled)			
		W20 Includes potable & non-potable. Excludes sewer mining  (ML)				W21 Includes to golf courses. Excludes stormwater. Includes sewer mining  (ML)				W22 Includes crops, forestry & livestock. Excludes Stormwater. Includes sewer mining  (ML)				W23 Exclude disposal if not beneficial use. Exclude stormwater. Include sewer mining.  (ML)				W24 Exclude stormwater. Include sewer mining.  (ML)				W25 Include managed aquifer recharge W25.1, non revenue water, losses and sewer mining.  (ML)				W26 W26=W20+W21+W22+W23+W24+W25 Includes sewer mining. Excludes stormwater  (ML)				W27 W27=(W26+W15-W6)/W18.5x100 Exclude bulk recycled purchased  (%)			
2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11		
Sydney Water Corporation		1,402	1,704	2,209	2,250	7,212	5,155	7,537	7,687	632	3,034	5,643	5,199	0	0	1,980	15,989	14,917	15,549	16,314	16,396	0	0	0	0	24,163	25,442	33,683	47,521	4	5	7	10
Hunter Water Corporation		0	0	0	0	1,984	2,289	2,648	2,006	2,269	2,623	2,520	2,488	0	0	0	0	218	180	180	180	0	0	0	0	4,471	5,092	5,348	4,674	6	8	10	7
Sydney Catchment Authority																																	
1	Gosford City Council	0	0			0	68	14	37	0	0	0	0	0	-	0	0	277	216	348	0	0	0	0	0	277	284	362	37	2	2	3	0
2	Wyong Shire Council	0	0	0	123	832	865	940	570	0	9			0	0			391	422	84	304	0	0			1,223	1,296	1,024	997	9	9	7	6
3	Shoalhaven City Council	0	0	0	0	147	125	144	764	1,313	1,753	2,261	72	0	-	0	0	20	24	24	27	0	0	0	0	1,480	1,902	2,429	863	20	29	35	11
4	Rous Water			0									0				0																
5	MidCoast Water	0	0	0	0	0	4	0	0	57	151	672	546	0	0	0	0	2	4	26	0	0	0	0	0	59	159	698	546	1	2	11	8
6	Tweed Shire Council	0	0	0	0	257	645	779	386	41	40	0	48	0	0	0	0	5	58	0	2	0	0	0	0	303	743	779	436	5	8	9	5
7	Port Macquarie Hastings Council	0	0	0	0	158	137	109	92	107	93	207	200	0	0	0	0	0	36	53	0	0	0	0	0	265	266	369	292	3	3	5	4
8	Riverina Water			0									0				0																
10	Coffs Harbour City Council	0	0			93	107	346	1,155	637	1,403	516	1,087	0	-			60	62			0	0	0	65	790	1,572	1,029	2,307	12	23	16	29
11	Albury City Council	0	0	0	0	0	0	0	0	1,056	2,522	1,913	3,652	0	1,067	2,445	1,570	3,137	0	0	0	0	0	0	0	4,193	3,589	4,358	5,222	98	96	100	99
12	Fish River Water																																
13	Tamworth Regional Council	0	0			72	81			1,488	1,678	1,727	5,250	0	0			0	7	123	0	0	0	0	0	1,560	1,766	1,850	5,250	36	36	38	100
14	Clarence Valley Council	0	0			114	127	165	25	0	0			0	0			0	0			0	0			114	127	165	25	4	4	5	1
15	Eurobodalla Shire Council	0	0			184	171	281	103	0	0			0	0			59	66	71	19	0	0	0	38	243	237	370	160	8	8	10	4
16	Wingecarribee Shire Council	0	0	0	0	54	64	73	42	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	71	64	73	42	2	2	2	1
17	Queanbeyan City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	47	47	0	0	0	0	0	56	47	47	0	1	1	1	0
18	Dubbo City Council	0	0	0	0	0	0	0	0	2,914	2,576	2,183	1,411	0	0	0	0	0	0	98	85	0	0	0	0	2,914	2,576	2,281	1,496	99	97	78	50
19	Orange City Council	0	0	0	0	3,367	3,218	3,033	1,674	25	27	0	40	0	0	0	0	104	2	0	0	0	0	0	0	3,496	3,247	3,033	1,714	95	87	90	29
21	Bathurst Regional Council	0	0	0	0	0	0	0	0	0	0	0	0	0	2,949	3,575		848	590		336	0	0	0	0	848	3,539		24	100			
22	Lismore City Council	0	0	0	0	0	0	0	0	33	10	30	0	0	0	0	0	0	0	0	0	0	0	0	0	33	10	30	0	1	0	1	0
23	Bega Valley Shire Council	0	0	0	0	457	556	613	391	156	257	214	57	0	0	0	0	0	0	0	0	0	0	0	0	613	813	827	448	33	46	41	22
24	Ballina Shire Council	0	0			107	119	717	123	0	33			0	-			0	0			0	0			107	152	768	123	5	3	19	3
25	Kempsey Shire Council	0	0	0	0	34	32	40	0	11	7	9	0	0	0	0	0	1	1	6	0	0	0	0	0	46	40	55	0	2	1	2	0
26	Essential Energy	0	0			649	523	622	320	0	0			0	0			0	0			0	0			649	523	622	320	49	41	46	19
27	Byron Shire Council	0	0	0	0	340	235	218	241	343	210	231	248	0	0	0	0	40	42	28	0	0	0	0	0	723	487	477	489	22	13	15	15
28A	Goldenfields Water (Reticulation)																																
28B	Goldenfields Water (Bulk Water Supp																																
20	Goulburn Mulwaree Council		0	0	0		62	0	153		1,521	1,261	1,482		-	0	0		1,583	0	0					3,166	1,261	1,635		100	80	100	
9	Wagga Wagga Council	13	0	0	0	257	294	226	82	280	278	227	432	0	0	0	5,843	56	0	0	0	0	0	0	0	606	572	453	6,357	11	11	9	100
	LWU Range Max	13	0	0	123	3,367	3,218	3,033	1,674	2,914	2,576	2,261	5,250	0	2,949	2,445	5,843	3,137	1,583	348	336	0	0	0	65	4,193	3,589	4,358	6,357	99	100	100	100
	LWU Range Min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	10	30	0	1	0	1	0
	Median of NMU Indicators shown in Table	0	0	0	0	107	113	155	82	33	37	221	57	0	0	0	0	17	6	24	0	0	0	0	0	606	548	698	320	9	10	11	8

WATER UTILITY	WATER RESOURCES													
	SOURCES OF WATER					USES OF WATER SUPPLIED								
	Volume of water sourced from marine desalination	Volume of water sourced from groundwater desalination	Volume of water sourced from surface water desalination	Volume of potable water received from bulk supplier	Volume of non-potable water received from bulk supplier	Volume of potable water supplied – Residential	Volume of non-potable water supplied – Residential	Volume of potable water supplied - Commercial, municipal and industrial	Volume of non-potable water supplied - Commercial, municipal and industrial	Volume of potable water supplied – Other	Volume of non-potable water supplied – Other	Volume of water supplied - managed aquifer recharge	Volume of water supplied - agricultural irrigation	
	W3.1	W3.2	W3.3	W5.1 Excludes W6 and W28.2	W5.2 Excludes W6 and W28.2	W8.1 Excludes recycled water	W8.2 Excludes recycled water	W9.1	W9.2	W10.1	W10.2	W10.3 Excludes recycled water W25.1 and urban stormwater	W10.4	
(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)	(ML)		
2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	
Sydney Water Corporation	77,102	0	0		414,004	324,003	0	113,759	4,579					
Hunter Water Corporation	0	0	0	0	0	37,087	0	21,068	0	9,539	0	0	0	
Sydney Catchment Authority					224									
1 Gosford City Council	0	0	0	1,444	0	9,979	0	2,198	0	1,661	7	0	0	
2 Wyong Shire Council	0	0	0	2,035	0	9,046		2,963	1	1,281	0			
3 Shoalhaven City Council	0	0	0	0	70	5,840	5	4,434	2,412	1,225	0	0	0	
4 Rous Water	0	0	0	0	0	0	0	673	0	792	0	0	0	
5 MidCoast Water	0	0	0	0	0	4,736	0	2,125	0	1,470	0	0	0	
6 Tweed Shire Council	0	0	0	9	0	5,136	0	1,973	0	1,377	0	0	0	
7 Port Macquarie Hastings Council	0	0	0	0	0	3,935	0	1,325	0	817	0	0	0	
8 Riverina Water	0	0	0	19	0	6,012	0	3,995	0	1,442	0	0	0	
10 Coffs Harbour City Council						3,732		1,286	4	640	0			
11 Albury City Council	0	0	0	0	0	3,733	0	1,363	5	566	0	0	0	
12 Fish River Water	0	0	0	0	0		0	222	0	1,218	0			
13 Tamworth Regional Council	0	0	0	0	0	4,033	0	3,461	39	1,514	0		39	
14 Clarence Valley Council						2,638	43	1,345	0	2,017	0			
15 Eurobodalla Shire Council	0	0	0	0	0	2,010		667	0	725	0			
16 Wingecarribee Shire Council	0	0	0	0	3,518	2,680	0	820	0	583	0	0	0	
17 Queanbeyan City Council	0	0	0	3,442	0	2,845	0	434	0	512	0	0	0	
18 Dubbo City Council	0	0	0	0	0	3,880	0	1,621	195	622	0	0	0	
19 Orange City Council	0	0	0	0	0	2,312	0	798	0	581	0	0	0	
21 Bathurst Regional Council	0	0	0	0	0	2,474	2	1,430	1,006	478	0	0	0	
22 Lismore City Council	0	0	0	3,129	0	1,942	0	902	0	392	0	0	0	
23 Bega Valley Shire Council	0	0	0	0	0	1,679	0	894	0	675	0	0	0	
24 Ballina Shire Council	0	0	0	3,476	0	2,115	0	631	0	862	0	0	0	
25 Kempsey Shire Council	0	0	0	0	0	1,648	0	1,086	36	685	0	0	1	
26 Essential Energy					920	2,086	9	1,602	302	410	0			
27 Byron Shire Council	0	0	0	2,434	0	1,524	0	840	489	390	0	0	0	
28A Goldenfields Water (Reticulation)	0	0	0	3,874	0	1,200	12	2,224	58	380	0	0	0	
28B Goldenfields Water (Bulk Water Supply)			0	177	93	0	0	0	0	973	0			
20 Goulburn Mulwaree Council	0	0	0	0	0	1,268	0	655	0	275	0	0	0	
9 Wagga Wagga Council								0	0		0			
LWU Range Max	0	0	0	3,874	3,518	9,979	43	4,434	2,412	2,017	7	0	39	
LWU Range Min	0	0	0	0	0	0	0	0	0	275	0	0	0	
Median of NMU Indicators shown in Table	0	0	0	0	0	2,638	0	1,306	0	705	0	0	0	

WATER UTILITY	WATER RESOURCES														
	USES OF WATER SUPPLIED					SEWAGE COLLECTED									
	Total urban potable water supplied	Total urban non-potable water supplied	Total volume of potable water produced	Volume of potable bulk water exports	Volume of non-potable bulk water exports	Volume of sewage supplied to other infrastructure operators	Volume of sewage taken from other infrastructure operators	Volume of sewage taken from sewer mining	Volume of sewage measured at inlet to treatment works	Volume of treated sewage effluent					
	W11.1 W11.1=W8.1+W9.1+W10.1 excludes bulk exports  (ML)	W11.2 W11.2=W8.2+W9.2+W10.2 excludes recycled & stormwater  (ML)	W11.3 W11.3=W11.1+W14.1 excludes recycled & stormwater  (ML)	W14.1 excludes recycled & stormwater  (ML)	W14.2 excludes recycled & stormwater  (ML)	W18.1  (ML)	W18.2  (ML)	W18.3  (ML)	W18.4 W18.4=W16+W17- W18.1+W18.2-W18.3 excludes sge supplied to other utilities  (ML)	W18.5 Measured as output from STW Includes recycled on-site water W24  (ML)					
2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11	2009/10	2010/11
Sydney Water Corporation	437,762	4,579	492,167	0	0	908	0	0	532,694	472,129					
Hunter Water Corporation	67,694	0	0	315	0	0	0	0	67,869	63,190					
Sydney Catchment Authority		433,363			416,740										
1 Gosford City Council	12,246	7	13,994	1,748	0	0	0	0	14,800	14,799					
2 Wyong Shire Council	12,009	1	13,430	1,421	0	220	0	0	15,937	15,936					
3 Shoalhaven City Council	10,325	2,417	10,325	0	0	0	0	0	7,792	7,790					
4 Rous Water	725	0	10,402	9,677	0										
5 MidCoast Water	7,028	0	7,028	0	0	0	0	0	6,750	6,752					
6 Tweed Shire Council	7,151	0	7,151	0	0	0	0	0	9,163	9,162					
7 Port Macquarie Hastings Council	5,286	0	5,286	0	0	0	0	0	8,443	8,442					
8 Riverina Water	10,768	0	10,768	0	0										
10 Coffs Harbour City Council	5,093	4	5,093		321	0	0	0	8,064	8,063					
11 Albury City Council	5,124	5	5,379	255	0	0	0	0	5,274	5,273					
12 Fish River Water	222	0	6,728	6,506											
13 Tamworth Regional Council	7,494	39	7,494	0	0	0	0	0	5,211	5,211					
14 Clarence Valley Council	4,023	43	4,023		0	0	0	0	3,521	3,523					
15 Eurobodalla Shire Council	2,694	0	2,694	0	0	0	0	0	3,743	3,743					
16 Wingecarribee Shire Council	3,520	0	3,520	0	0	0	0	0	4,069	4,045					
17 Queanbeyan City Council	3,299	0	3,299	0	0	0	0	0	4,015	4,016					
18 Dubbo City Council	5,533	195	5,533	0	0	0	0	0	3,062	3,008					
19 Orange City Council	3,112	0	3,112	0	0	0	0	0	5,970	5,991					
21 Bathurst Regional Council	3,904	1,008	3,907	3	0				4,108	3,575					
22 Lismore City Council	2,858	0	2,858	0	0	0	0	0	4,720	4,670					
23 Bega Valley Shire Council	2,596	0	2,596	0	0	0	0	0	2,030	2,021					
24 Ballina Shire Council	2,764	0	2,764	0	0	0	0	0	4,955	4,946					
25 Kempsey Shire Council	3,010	36	3,025	15	0	0	0	0	2,887	2,886					
26 Essential Energy	3,688	311	3,688	0		0	0	0	1,692	1,692					
27 Byron Shire Council	2,364	489	2,364	0	0	0	0	0	3,357	3,210					
28A Goldenfields Water (Reticulation)	3,463	70	3,463	0	63										
28B Goldenfields Water (Bulk Water Sup	0		7,007	7,007	0										
20 Goulburn Mulwaree Council	1,923	0	1,925	2	0	0	0	0	1,517	1,517					
9 Wagga Wagga Council	0	0	0			0	0	0	6,357	6,357					
LWU Range Max	12,246	2,417	13,994	9,677	321	220	0	0	15,937	15,936					
LWU Range Min	0	0	0	0	0	0	0	0	1,517	1,517					
Median of NMU Indicators shown in Table	3,520	0	4,023	0	0	0	0	0	4,838	4,808					

WATER UTILITY	WATER RESOURCES													
	USES OF RECYCLED WATER													
	Volume of recycled water supplied - Managed Aquifer Recharge		Total volume of urban stormwater discharges from a stormwater discharge point		Volume of urban stormwater supplied to other infrastructure operators		Volume of urban stormwater received from other infrastructure operators		Volume of urban stormwater supplied for managed aquifer recharge		Volume of urban stormwater used		Total volume of treated and untreated sewage discharges from a sewage discharge point	
	W25.1 Exclude environmental W23 and urban stormwater  (ML)		W28 Include to ocean or another catchment.  (ML)		W28.1 Include potable & non-potable  (ML)		W28.2 include potable & non-potable  (ML)		W28.3  (ML)		W28.4 Exclude aquifer recharge W28.3. Include potable & non-potable.  (ML)		W29 Include to surface water or ocean or to another utility.  (ML)	
2009/10    2010/11		2009/10    2010/11		2009/10    2010/11		2009/10    2010/11		2009/10    2010/11		2009/10    2010/11		2009/10    2010/11		
Sydney Water Corporation	0													
Hunter Water Corporation	0		0		0		0		0		0			
Sydney Catchment Authority														
1 Gosford City Council	0												14,270	
2 Wyong Shire Council													14,719	
3 Shoalhaven City Council	0		0		0		0		0		0		6,932	
4 Rous Water	0		0		0		0		0		0			
5 MidCoast Water	0				0		0		0		0		6,138	
6 Tweed Shire Council	0		0		0		0		0		0		8,774	
7 Port Macquarie Hastings Council	0												8,202	
8 Riverina Water	0		0		0		0		0		0			
10 Coffs Harbour City Council													8,152	
11 Albury City Council	0				0		0		0		0		51	
12 Fish River Water														
13 Tamworth Regional Council	0		0		0		0		0		0		5,181	
14 Clarence Valley Council					0		0		0		0		3,523	
15 Eurobodalla Shire Council					0		0		0		0		3,587	
16 Wingecarribee Shire Council	0		0		0		0		0		0		4,044	
17 Queanbeyan City Council	0		0		0		0		0		0		2,702	
18 Dubbo City Council	0				0		0		0		0		997	
19 Orange City Council	0		1,940		0		0		0		0		4,330	
21 Bathurst Regional Council	0		0		0		0		0		0		3,575	
22 Lismore City Council	0		0		0		0		0		0		3,545	
23 Bega Valley Shire Council	0				0		0		0		0		1,450	
24 Ballina Shire Council					0		0		0		0		4,823	
25 Kempsey Shire Council	0		34,058		0		0		0		0		2,708	
26 Essential Energy			0		0		0		0		0		1,320	
27 Byron Shire Council	0		0		0		0		0		0		2,969	
28A Goldenfields Water (Reticulation)														
28B Goldenfields Water (Bulk Water Sup														
20 Goulburn Mulwaree Council	0												174	
9 Wagga Wagga Council	0												0	
LWU Range Max	0		34,058		0		0		0		0		14,719	
LWU Range Min	0		0		0		0		0		0		0	
Median of NMU Indicators shown in Table	0		0		0		0		0		0		3,581	

WATER UTILITY	ASSETS																											
	WATER ASSETS												SGE ASSETS															
	No. of WTWs providing full treatment				Length of Water Mains (excluding source transfer mains & property connections)				Properties served per km of water main				Number of Sewage Treatment Plants				Length of sewerage mains & channels				Properties served per km of sewer main				Number of Recycled Water Treatment Plants			
	A1				A2				A3				A4				A5				A6				A7			
(No.)				(km)				(no.)				(no.)				(km)				(no.)				(no.)				
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
Sydney Water Corporation	9	9	10	10	20,896	20,936	21,015	21,069	83	84	84	85	31	29	29	24	23,708	23,817	24,022	24,193	71	72	72	72	2	2	2	6
Hunter Water Corporation	5	6	6	6	4,692	4,822	4,857	4,896	47	46	46	47	17	18	18	18	4,556	4,626	4,667	4,729	46	46	46	46	0	0	0	0
Sydney Catchment Authority																												
1 Gosford City Council	2	2	2	2	1,007	1,014	1,014	979	69	69	69	72	2	2	2	2	1,400	1,401	1,323	1,312	49	49	52	52	0	0	2	2
2 Wyong Shire Council	1	1	1	1	1,120	1,136	1,145	1,214	53	52	52	50	6	6	6	6	1,210	1,220	1,201	1,243	48	48	49	48	0	0	0	0
3 Shoalhaven City Council	4	4	4	4	1,469	1,471	1,519	1,479	31	31	30	31	10	12	12	12	1,112	1,117	1,139	1,157	35	35	36	35	0	0	0	0
4 Rous Water	2	2	2	2	80	80	125	125			366	382													0	0	0	0
5 MidCoast Water	2	2	2	3	1,187	1,234	1,251	1,396	30	29	29	26	12	12	12	12	947	965	954	996	34	34	34	33	0	0	0	0
6 Tweed Shire Council	3	3	3	3	670	726	690	692	47	44	45	46	8	8	7	7	642	706	691	687	45	42	43	44	0	0	0	0
7 Port Macquarie Hastings Council	4	4	4	4	768	771	775	782	37	39	37	38	6	6	5	5	595	600	630	652	44	45	42	41	0	0	0	0
8 Riverina Water	4	5	17	17	1,631	1,623	1,612	1,619	17	17	18	18													0	0	0	0
10 Coffs Harbour City Council	1	1	2	2	603	611	615	641	39	39	39	38	5	5	5	4	649	653	654	665	34	34	35	34	0	0	0	0
11 Albury City Council	1	1	1	1	530	536	562	569	41	41	40	40	4	4	4	4	484	495	497	496	42	42	42	43	0	0	0	0
12 Fish River Water	1	1	1	1	241	231	231	241			102	98													0	0	0	0
13 Tamworth Regional Council	5	5	5	5	639	644	655	661	32	32	31	31	5	5	5	5	496	504	519	524	37	36	36	36	0	0	0	0
14 Clarence Valley Council	0	0	0	0	1,189	1,195	1,097	1,101	17	17	19	19	8	8	8	5	328	329	331	375	43	44	43	39	0	0	0	0
15 Eurobodalla Shire Council	0	0	0	1	877	886	934	938	22	22	21	21	5	5	5	5	505	508	509	522	35	35	35	34	0	0	0	0
16 Wingecarribee Shire Council	3	3	3	3	668	648	653	656	27	28	28	28	5	5	5	5	460	509	513	519	31	28	28	28	0	0	0	0
17 Queanbeyan City Council	0	0	0	0	279	279	279	286	57	57	57	56	1	1	1	1	326	326	327	329	49	49	49	49	0	0	0	0
18 Dubbo City Council	1	1	1	1	446	456	466	496	35	35	36	34	1	1	1	1	370	374	391	388	40	40	39	40	0	0	0	0
19 Orange City Council	2	2	2	1	481	497	503	546	33	32	32	30	2	2	2	2	382	393	395	401	39	38	40	39	0	0	0	0
21 Bathurst Regional Council	1	1	1	1	359	361	370	379	41	41	40	39	1	1	1	1	364	371	371	389	39	39	40	39	0	0	0	0
22 Lismore City Council	0	0	0	0	337	340	339	341	41	41	41	41	3	3	3	3	345	346	347	348	35	36	36	36	0	0	0	0
23 Bega Valley Shire Council	0	0	0	0	576	576	576	576	24	24	24	25	6	10	10	10	390	390	390	390	30	30	30	31	0	0	0	0
24 Ballina Shire Council	1	1	1	1	339	341	348	321	41	41	41	45	4	4	4	4	308	312	319	320	41	41	41	42	0	0	0	0
25 Kempsey Shire Council	2	2	2	3	542	544	547	551	23	23	23	22	7	7	7	7	270	267	268	270	33	34	34	33	0	0	0	0
26 Essential Energy	3	3	3	3	362	362			30	29	29	27	2	2	2	2	195	248	248		50	39	39		0	0	0	0
27 Byron Shire Council	1	1	1	1	233	233	237	237	45	46	45	46	6	5	5	4	252	252	239	239	40	39	42	43	0	0	0	0
28A Goldenfields Water (Reticulation)	1	1	1	1	1,829	1,829	1,821	1,834	6	5	6	5													0	0	0	0
28B Goldenfields Water (Bulk Water Sup)	1	1	3	3	315	315	315	315																	0	0	0	0
20 Goulburn Mulwaree Council		2	2	2		242	269	269		44	38	39		2	2	2		239	272	272		42	35	38		0	0	0
9 Wagga Wagga Council													5	5	5	5	559	566	573	590	41	42	44	43	0	0	0	0
LWU Range Max	5	5	17	17	1,829	1,829	1,821	1,834	69	69	366	382	12	12	12	12	1,400	1,401	1,323	1,312	49	50	52	52	0	0	2	2
LWU Range Min	0	0	0	0	80	80	125	125	6	5	6	5	1	1	1	1	252	195	239	239	30	28	28	28	0	0	0	0
Median of NMU Indicators shown in Table	1	1	2	2	576	560	576	576	34	35	37	38	5	5	5	5	472	444	446	449	40	40	40	39	0	0	0	0

WATER UTILITY	ASSETS																							
	WATER ASSETS												SGE ASSETS											
	Water main breaks per 100km of main				Infrastructure Leakage Index (ILI)				Real losses (L/connection/day)				Real losses (kL/km main/day)				Sge Main Breaks and chokes per 100km of main (excludes property connections)				Property Connection Breaks and chokes per 1000 props			
	A8 (no./100km)				A9				A10				A11				A14 (per 100km of main)				A15 (per 1000 properties)			
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
Sydney Water Corporation	30	34	28	28	1.5	1.4	1.3	1.3	91	81	73	79	5.6	5.0	4.6	5.0	56	57	0	0				
Hunter Water Corporation	30	33	32	31	1.2	1.3	1.3	1.2	80	94	88	84	3.9	3.7	3.5	3.4	58	60	13	13				
Sydney Catchment Authority																								
1 Gosford City Council	29	27	34	29	1.0	1.0	1.0	1.0	25	32	52	61	1.4	1.9	3.0	3.7	40	42	4	4				
2 Wyong Shire Council	4	9	6	10	1.0	1.0	1.0	1.0	28	29	31	31	1.5	1.5	1.5	1.5	48	57	2	1				
3 Shoalhaven City Council	9	14	9	10	1.0	1.0	1.0	1.0	80	59	69	45	2.5	1.8	2.1	1.4	15	12	2	1				
4 Rous Water	24	16	21	53					9	10	27		1.4	4.8	3.5	9.4								
5 MidCoast Water	9	5	3	4	1.1	1.3	1.1	1.0	86	101	85	79	2.3	2.7	2.2	1.9	7	6						
6 Tweed Shire Council	10	5	3	8	1.0	1.5	1.0		63	89	58		2.0	3.1	2.0	5	11	1	1					
7 Port Macquarie Hastings Council	2	3	2	3	1.0	1.0	1.0	1.4	52	39	40	71	1.7	1.3	1.4	2.4	20	26						
8 Riverina Water	13	14	10	14	1.3	1.0	1.0	1.0	126	56	50	47	1.9	0.8	0.9	0.9								
10 Coffs Harbour City Council	7	11	11	12	1.0	1.0			49	49	46	50	1.8	1.8	1.7	1.8	37	51	8	8				
11 Albury City Council	8	12	7	7	1.8	1.4	1.4	1.1	68	55	51	44	2.6	2.1	2.0	1.6								
12 Fish River Water	2	5	3	3									4.8	6.9	11.5	13.8								
13 Tamworth Regional Council	28	12	5	6	7.0	6.6	5.0	6.7	202	188	143	186	5.9	5.6	4.2	5.8	72	89	2	4				
14 Clarence Valley Council	19	10	16	14	1.0				54				1.0				40	41	3	5				
15 Eurobodalla Shire Council	3	4			2.2	1.1	2.1	1.3	172	88	166	99	3.4	1.7	3.2	1.9								
16 Wingecarribee Shire Council		8	12	5	1.5	1.0	1.0		112	87	79		2.9	2.3	2.0	50	36	7	16					
17 Queanbeyan City Council	5	1		18	1.0	1.8	1.7		58	88			2.4	4.3	4.2	75		0						
18 Dubbo City Council	7	7	4	6	3.2	3.7	3.4	1.4	155	177	163	69	4.8	5.6	5.2	2.1	38	38	14	15				
19 Orange City Council		28			1.9	1.0			145	60			4.6	1.8		85	32	1	1					
21 Bathurst Regional Council	11	9	10	12	1.0		1.0		77				2.6	2.7	2.2	93	32	14	10					
22 Lismore City Council	20	20	23	14	1.0	1.6	2.0	1.0	43	106	126	40	1.6	4.0	5.0	1.6	104	120	12	16				
23 Bega Valley Shire Council	7	5	4	6	1.1	1.0	1.0	1.0	77	58	58	54	1.5	1.2	1.2	1.1	30	18						
24 Ballina Shire Council	4	9	13	8	1.0	2.1	3.2	3.3	37	121	197	194	1.3	4.3	6.2	6.7	16	28	2	1				
25 Kempsey Shire Council	12	24	11	10	1.9	1.3	1.0	1.0	119	80	63	49	2.4	1.7	1.3	1.0	3	2						
26 Essential Energy	18	11			1.2	1.3	1.1		68	75	65		2.0			137	129	51	37					
27 Byron Shire Council	8	8	12	8	1.0	1.3	2.6	2.7	53	49	101	104	2.2	2.0	4.1	4.3	27	26	8	11				
28A Goldenfields Water (Reticulation)	7	6	19	19	1.0	1.0	1.0	1.0	98	99	90	67	0.5	0.6	0.5	0.4								
28B Goldenfields Water (Bulk Water Sup)	0	0	0	0									5.2	4.7	5.6	8.5								
20 Goulburn Mulwaree Council		14			1.0				43				1.7											
9 Wagga Wagga Council																	96	78	46	25				
LWU Range Max	29	28	34	53	7.0	6.6	5.0	6.7	202	188	197	194	6	7	12	14	137	129	51	37				
LWU Range Min	0	0	0	0	1.0	1.0	1.0	1.0	25	9	10	27	1	1	1	0	3	2	1	0				
Median of NMU Indicators shown in Table	8	9	10	9	1.1	1.0	1.2	1.0	78	59	75	63	2	2	3	2	39	36	6	5				

WATER UTILITY	ENVIRONMENTAL																											
	SEWAGE TREATMENT LEVELS												SEWAGE TREATMENT COMPLIANCE															
	% sge treated to primary level only				% sge treated to secondary level (but not tertiary)				% sge treated to tertiary level				% sge treated that was compliant				STWs compliant at all times				Public disclosure of STW performance				Compliance with environmental regulator - sewerage			
	E1 (%)				E2 (%)				E3 (%)				E4 (%)				E5 (no.)				E6 (YES/NO)				E7 (YES/NO)			
2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				
Sydney Water Corporation	67	74	76	75	11	3	3	4	22	22	21	21	96	96	97	100	29 of 31	27 of 29	28 of 29	26 of 29	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Hunter Water Corporation	0	0	0	0	56	58	59	54	44	42	41	46	87	91	95	100	11 of 17	12 of 18	14	7	Yes	Yes	Yes	Yes	Yes	No	No	No
Sydney Catchment Authority																												
1 Gosford City Council	1	0	0	1	99	98	97	98	0	2	3	1	100	100	100	100	2 of 2	2 of 2	2 of 2	2 of 2	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
2 Wyong Shire Council			0	30	92	91	93	64	8	9	7	6	100	100	100	100	6 of 6	6 of 6	6 of 6	6 of 6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3 Shoalhaven City Council			0	0	40	42	42	38	60	58	58	62	86	83	83	93	7 of 10	9 of 12	10 of 12	11 of 12	Yes	Yes	Yes	Yes	No	No	No	No
4 Rous Water																												
5 MidCoast Water			0	0	13	12	12	12	87	88	88	88	98	100	99	99	10 of 12	12 of 12	11 of 12	11 of 12	Yes	Yes	Yes	Yes	No	Yes	Yes	No
6 Tweed Shire Council			0	0	11	6	0	1	89	94	100	100	89	91	93	100	3 of 8	3 of 8	1 of 7	5 of 7	Yes	Yes	Yes	Yes	No	No	No	Yes
7 Port Macquarie Hastings Council			0	0			1	0	100	100	100	100	89	90	58	78	4 of 6	4 of 6	2 of 5	2 of 5	Yes	Yes	Yes	Yes	No	No	No	No
8 Riverina Water																												
10 Coff's Harbour City Council			0	0	58	54	0	0	42	46	100	100		100	100	100		5 of 5	5 of 5	3 of 4	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
11 Albury City Council			0	0		0	0	0	100	100	100	100	87	86	92	83	3 of 4	3 of 4	3 of 4	3 of 4	Yes	Yes	Yes	Yes	No	No	No	No
12 Fish River Water																												
13 Tamworth Regional Council			0	0	100	100	100	100			0	0		99	99	99	5 of 5	4 of 5	4 of 5	4 of 5	Yes	Yes	Yes	Yes	No	No	No	No
14 Clarence Valley Council			0	0	3	15	69	1	97	85	31	99		83	69	78	4 of 8	2 of 8	1 of 8	2 of 5	Yes	Yes	Yes	Yes	No	No	No	No
15 Eurobodalla Shire Council			0	0	91	92	5	6	9	8	95	95	100	100	100	100	5 of 5	5 of 5	5 of 5	5 of 5	Yes	Yes	Yes	Yes	No	Yes	Yes	No
16 Wingecarribee Shire Council			0	0			0	0	100	100	100	100	100	100	94	92	5 of 5	5 of 5	3 of 5	4 of 5	Yes	Yes	Yes	Yes	No	Yes	Yes	No
17 Queanbeyan City Council			0	0			0	0	100	100	100	100	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
18 Dubbo City Council			0	0			0	0	100	100	100	100	70	75	92	44	0 of 1	0 of 1	0 of 1	0 of 1	Yes	Yes	Yes	Yes	No	No	No	No
19 Orange City Council		4	0	0	1	1	0	1	99	96	100	99	100	45	100	60	2 of 2	1 of 2	2 of 2	1 of 2	Yes	Yes	Yes	Yes	No	No		
21 Bathurst Regional Council			0	0			0	0	100	100	100	100	88	100	100	100	0 of 1	1 of 1	1 of 1	1 of 1	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
22 Lismore City Council		4	3	5	1	13	4	0	99	83	92	95		100	100	100	3 of 3	3 of 3	3 of 3	3 of 3	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
23 Bega Valley Shire Council			0	0	71	70	70	59	29	30	30	41	100	97			6 of 6	9 of 10	8 of 10	8 of 10	Yes	Yes	Yes	Yes	No	No	No	No
24 Ballina Shire Council			0	0			0	0		100	100	100	100	93	96	84	4 of 4	3 of 4	3 of 4	3 of 4	Yes	Yes	Yes	Yes	No	No	No	No
25 Kempsey Shire Council			0	0	19	19	27	23	81	81	73	77	74	82	76	88	5 of 7	6 of 7	5 of 7	4 of 7	Yes	Yes	Yes	Yes	No	No	No	No
26 Essential Energy			0	0	100	100	100	0		0	0	100		100	100	100	0 of 2	2 of 2	2 of 2	2 of 2	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
27 Byron Shire Council			0	0	0	27	0	0	100	73	100	100	90	89	98	100	2 of 6	3 of 5	4 of 5	3 of 4	Yes	Yes	Yes	Yes	No	No	No	No
28A Goldenfields Water (Reticulation)																												
28B Goldenfields Water (Bulk Water Sup																												
20 Goulburn Mulwaree Council			0	0			0	0		100	100	100		58	100	83		1 of 2	2 of 2	1 of 2		Yes	Yes	Yes		No	No	No
9 Wagga Wagga Council			0	0	3	3	3	3	97	97	97	97	88	95	70	98	4 of 5	3 of 5	3 of 5	4 of 5	Yes	Yes	Yes	Yes	No	No	No	No
LWU Range Max			3	30	100	100	100	100	100	100	100	100	100	100	100	100												
LWU Range Min			0	0	0	0	0	0	0	0	0	0	70	45	58	44												
Median of NMU Indicators shown in Table			0	0	30	27	2	0	97	88	98	99	94	96	99	99												



WATER UTILITY	ENVIRONMENTAL																																							
	BIOSOLIDS				GREENHOUSE GAS WS & SGE												GREENHOUSE GAS WS & SGE BULK																							
	Biosolids reused				Greenhouse emissions WATER				Greenhouse emissions SEWERAGE				Net greenhouse emissions OTHER				TOTAL Net greenhouse emissions				Sewer overflows reported to environmental regulator				Greenhouse emissions WATER				Greenhouse emissions SEWERAGE				Net greenhouse emissions OTHER				TOTAL Net greenhouse emissions			
	E8 (%)				E9 (t CO2 per 1,000 properties)				E10 (t CO2 per 1,000 properties)				E11 (t CO2 per 1,000 properties)				E12 (t CO2 per 1,000 properties)				E13 (number per 100km of main)				E9.1 (t CO2 per ML)				E10.1 (t CO2 per ML)				E11.1 (t CO2 per ML)				E12.1 (t CO2 per ML)			
2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11								
Sydney Water Corporation	100	100	100	100	83	68	71	67	150	192	184	200	11	-55	-87	-119	240	200	164	143	64	0	0	0																
Hunter Water Corporation	100	88	104	95	117	132	144	140	215	273	294	303	14	21	26	27	333	412	448	455	43	2	0	0																
Sydney Catchment Authority																																								
1 Gosford City Council	100	100	100	100	205	128	147	170	179	298	312	343	13	24	23	380	439	482	536	1	3	3																		
2 Wyong Shire Council	100	100	100	100	-	-	-	99	-	-	-	342	-	-	7	-	-	-	-	0	1	1																		
3 Shoalhaven City Council	100	100	100	100	220	239	205	198	187	163	164	203	11	7	8	6	389	408	377	408	0	3	1																	
4 Rous Water					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					0.4	0.4							0.3			0.4 0.7					
5 MidCoast Water	100	100	100	100	188	165	117	116	136	138	143	172	12	12	80	19	321	315	341	306	1	1	1																	
6 Tweed Shire Council	57	61	100	100	190	150	161	135	199	189	266	291	0	0	4	375	339	427	429	0	0	0																		
7 Port Macquarie Hastings Council	93	100	100	100				148		12	103	54					12	103	202	1	1	1																		
8 Riverina Water					395	407	307		-				0	0	0	395	407	307																						
10 Coffs Harbour City Council	100	100	100	100	104	113	111		278	322	335		76	19	5	458	453	450		0	1	1																		
11 Albury City Council	0	0	0	0	282	310	308	260	238	233	234					282	548	540	494		0	0	0																	
12 Fish River Water					118				-				0			118											1.0	0.2						0.2						
13 Tamworth Regional Council	97	99	100	100	261	223	186		118	233	182					379	457	368		0	0	0																		
14 Clarence Valley Council	35	0	0	37	16	23	12		84	90	86		-			100	113	98		1	0	0																		
15 Eurobodalla Shire Council	5	0	29	0	180	186	192	138	181	159	139	183	0		20	346	345	331	341	5	19	4																		
16 Wingecarribee Shire Council	100	0	0	0	178	177	149		151	143	216		7	17	17	336	338	382		3	4	3																		
17 Queanbeyan City Council	0	100	0	0	13	15	15	9	154	160	224	74	37	39	43	27	204	214	281	110	0		1																	
18 Dubbo City Council	100	100	100	100	483	545	282	256	240	202	189	216	13	13	13	11	722	759	486	482	2	0	1																	
19 Orange City Council	100	100	0	0	280	241	242	200	243	186	193	250	0			505	428	435	449	3	10	2																		
21 Bathurst Regional Council	95	96	95	100	-	-	-	178	-	-	-	438	-	-	-	-	-	-	616	-	0	0																		
22 Lismore City Council	82	0	0	0	7	14	14		162	185	55		0			169	198	69		1	4	2																		
23 Bega Valley Shire Council	0	0	0	0	8				8	0	32		1		40	17		72		1	0	0																		
24 Ballina Shire Council	100	100	100	100	2	13	12		264	267	339		-			266	280	351		3	2	1																		
25 Kempsey Shire Council		0	49	70	207	173	214	157	180	150	149	151	1	1	39	31	340	324	401	340	1	0	1																	
26 Essential Energy	100	0	0	0	549	906	480		55	77	55			15	15	604	998	550		0	0	1																		
27 Byron Shire Council	100	100	100	100	-	14	7		-	457	276		-			-	-	471	283	14	5	5																		
28A Goldenfields Water (Reticulation)									-																															
28B Goldenfields Water (Bulk Water Supply)									-																		1.2	1.1						1.0 1.1						
20 Goulburn Mulwaree Council		100	0	0	122	114	113		134	169	175		2	2	2	257				1	0	2																		
9 Wagga Wagga Council	100	100	96	96					36	199	245		-			36	199	245		0	0	0																		
LWU Range Max	100	100	100	100	483	549	906	480	243	298	457	438	37	76	80	40	722	759	998	616	14	19	5					1	1			0	0		1 1					
LWU Range Min	0	0	0	0	13	2	13	7	136	8	0	32	0	0	0	0	204	12	103	69	0	0	0					0	0			0	0		0 0					
Median of NMU Indicators shown in Table	100	100	96	98	206	165	169	148	181	159	187	210	12	2	16	15	361	336	401	351	1	1	1					1	0			0	0		1 1					

WATER UTILITY	CUSTOMERS																															
	WS CUSTOMERS												SGE CUSTOMERS																			
	Population receiving water supply services				Connected residential properties - water supply				Connected nonresidential properties - water supply				Total connected properties - water supply				Population receiving sewerage services				Connected residential properties - sewerage				Connected nonresidential properties - sewerage				Total connected properties - sewerage			
	C1				C2				C3				C4				C5				C6				C7				C8			
(000)				(000)				(000)				(000)				(000)				(000)				(000)				(000)				
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
Sydney Water Corporation	4,322	4,344	4,435	4,581	1,608	1,623	1,635	1,651	129	132	137	142	1,737	1,755	1,772	1,793	4,195	4,240	4,333	4,477	1,570	1,586	1,598	1,615	118	121	126	130	1,688	1,707	1,724	1,745
Hunter Water Corporation	511	516	522	539	205	207	209	212	15	15	16	16	221	222	225	228	491	496	501	520	194	199	201	204	14	12	12	12	209	211	213	216
Sydney Catchment Authority																																
1 Gosford City Council	158	160	161	163	67	67	67	67	3	3	3	3	70	70	70	71	155	156	157	159	65	66	66	66	3	3	3	3	68	68	69	69
2 Wyong Shire Council	143	145	149	150	56	57	57	58	3	3	3	3	59	59	60	60	141	143	147	148	56	56	56	57	3	3	3	3	58	59	59	60
3 Shoalhaven City Council	88	89	91	92	43	43	43	43	3	3	3	3	45	46	46	46	82	80	81	82	37	38	39	39	1	1	2	2	39	39	41	41
4 Rous Water					40	41	43		5	5	5		46	46	48																	
5 MidCoast Water	77	78	78	78	34	34	34	34	2	2	3	3	36	36	36	37	76	77	77	77	30	30	30	30	2	2	3	3	32	33	33	33
6 Tweed Shire Council	72	73	77	81	30	30	30	31	1	1	1	1	31	32	31	32	67	69	73	78	28	29	29	29	1	1	1	1	29	30	29	30
7 Port Macquarie Hastings Council	77	78	79	79	26	27	26	27	3	3	3	3	29	30	29	30	69	70	71	72	24	25	25	25	2	2	2	2	26	27	26	27
8 Riverina Water	65	69	68	70	26	26	26	27	2	2	2	2	28	28	29	29																
10 Coffs Harbour City Council	63	65	66	67	22	22	23	23	1	2	2	2	24	24	24	25	62	64	65	66	21	21	21	22	1	1	1	1	22	22	23	23
11 Albury City Council	48	50	51	52	20	20	21	21	2	2	2	2	22	22	23	23	47	50	51	51	19	19	19	19	2	2	2	2	20	21	21	21
12 Fish River Water					21	21	21		3	3	3		24	24	24																	
13 Tamworth Regional Council	43	44	43	44	18	18	19	19	2	2	2	2	20	20	21	21	42	42	43	44	17	17	17	17	2	2	2	2	18	18	19	19
14 Clarence Valley Council	50	50	49	49	18	18	19	19	2	3	2	2	21	21	21	21	28	28	28	28	13	13	14	14	1	1	1	1	14	14	14	15
15 Eurobodalla Shire Council	37	36	37	37	18	18	18	18	1	1	1	1	19	19	19	19	37	35	36	36	17	17	17	17	1	1	1	1	17	18	18	18
16 Wingecarribee Shire Council	36	38	37	39	17	17	17	17	1	1	1	1	18	18	18	18	32	34	33	33	13	14	14	14	1	1	1	1	14	14	15	15
17 Queanbeyan City Council	36	36	39	40	15	15	15	15	1	1	1	1	16	16	16	16	36	36	39	40	15	15	15	15	1	1	1	1	16	16	16	16
18 Dubbo City Council	36	36	33	34	14	14	15	15	2	2	2	2	16	16	17	17	34	32	33	33	13	14	14	14	1	1	1	1	15	15	15	16
19 Orange City Council	36	38	38	38	15	14	15	15	2	2	2	2	16	16	16	16	36	38	38	38	14	14	15	15	1	1	1	1	15	15	16	16
21 Bathurst Regional Council	33	33	33	35	13	13	13	14	1	2	1	1	15	15	15	15	33	33	33	35	13	13	13	14	1	2	2	2	14	15	15	15
22 Lismore City Council	35	35	31	32	13	13	13	13	1	1	1	1	14	14	14	14	32	33	29	30	11	11	11	12	1	1	1	1	12	12	12	13
23 Bega Valley Shire Council	28	29	30	30	13	13	13	13	1	1	1	1	14	14	14	14	24	23	25	26	11	11	11	11	1	1	1	1	12	12	12	12
24 Ballina Shire Council	33	36	36	37	12	13	13	13	2	1	1	1	14	14	14	15	31	34	35	35	12	12	12	12	1	1	1	1	13	13	13	14
25 Kempsey Shire Council	23	25	25	25	10	11	11	11	2	2	2	2	12	12	12	12	18	19	19	19	8	8	8	8	1	1	1	1	9	9	9	9
26 Essential Energy	19	19	20	20	10	10	10	10	1	1	1	1	11	10	11	11	19	19	19	19	9	9	9	9	1	1	1	1	10	10	10	10
27 Byron Shire Council	29	29	29	29	9	9	10	10	1	1	1	1	11	11	11	11	29	29	29	29	9	9	9	9	1	1	1	1	10	10	10	10
28A Goldenfields Water (Reticulation)	21	21	21	23	8	7	7	7	3	3	3	3	11	10	10	10																
28B Goldenfields Water (Bulk Water Supply)																																
20 Goulburn Mulwaree Council		22	22	22		9	9	10		1	1	1		11	10	11		21	22	22		9	9	9		1	1	1		10	10	10
9 Wagga Wagga Council																	57	57	57	64	22	22	24	24	2	2	2	2	23	24	25	25
LWU Range Max	158	160	161	163	67	67	67	67	3	5	5	5	70	70	70	70.5	155	156	157	159	65	66	66	66	3	3	3	3	68	68	69	68.7
LWU Range Min	19	19	20	20	8	7	7	7	1	1	1	1	11	10	10	10.0	18	19	19	19	8	8	8	8	1	1	1	1	9	9	9	8.9
Median of NMU Indicators shown in Table	37	38	38	39	18	18	18	18	2	2	2	2	19	19	19	19.4	36	36	37	37	15	14	15	15	1	1	1	1	16	16	16	16.0

WATER UTILITY	COMPLAINTS & INTERRUPTIONS																																											
	WS				SGE				WS & SGE				WS				SGE				WS																							
	Water quality complaints		Water service complaints		Sewage service complaints (including odour complaints)		Billing and account complaints - water supply & sewerage		Total water and sewerage complaints		% of calls answered by an operator within 30 secs		Av duration of unplanned interruptions		Av sewerage interruption		Average frequency of unplanned interruptions - water		No. of restrictions applied for non-payment of bills		No. of legal actions applied for non-payment of bills																							
	C9		C10		C11		C12		C13		C14		C15		C16		C17		C18		C19																							
(per 1000 properties)		(per 1000 properties)		(per 1000 properties)		(per 1000 properties)		(per 1000 properties)		(% )		(min)		(min)		(per 1000 props)		(per 1000 props)		(per 1000 props)																								
2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11		2007/08 2008/09 2009/10 2010/11																								
Sydney Water Corporation	0.9	0.6	0.7	0.6	0.5	0.4	0.3	0.3	0.9	0.4	0.4	0.3	5	4	2	2	8.1	6.0	4	3	89	85	89	79	167	141	140	147	143	240	238	240	5	5	4	175	2	2	3	3	0	0	0	1
Hunter Water Corporation	2.8	3.2	3.4	2.8	4.0	0.2	0.3	0.3	26.5	2.3	2.2	2.2	3	2	2	2	39	7	8	8	56	72	70	60	118	121	119	141	144	0	0	142	225	271	255	258	8	5	5	4	0	0	0	0
Sydney Catchment Authority																																												
1 Gosford City Council	94	25	39	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	238	230	222	134	116	161	209	181	203	239	200	0	0	0	0	7	6	7	8				
2 Wyong Shire Council	3	5	5	17	2	4	3	5	11	12	12	12	0	0	0	0	21	21	34	34	88	92	65	59	202	210	204	195	165	156	150	143	39	61	61	88	0	0	0	0	0	1	0	0
3 Shoalhaven City Council	3	3	1	1	1	0	1	1	7	7	4	4	0	0	0	0	13	8	6	6	100	100	100	100	-	112	84	84	-	96	99	99	-	39	64	64	1	1	1	1	0	0	0	0
4 Rous Water																	0	0	0	0	95	95	95	95																				
5 MidCoast Water	27	9	12	7	27	2	2	1	12	2	1	1	0	0	0	0	65	15	18	10	-	-	-	-	330	-	-	-	-	-	-	-	5	6	2	1	0	2	5	4				
6 Tweed Shire Council	1	1	3	5	23	20	3	22	8	4	4	6	0	0	0	0	31	26	10	35	-	-	-	-	120	120	120	120	180	174	20	20	9	14	7	7	0	0	0	0	0	0	1	2
7 Port Macquarie Hastings Council	6	9	8	5	22	18	22	20	3	6	5	8	0	0	0	0	31	36	39	36	86	81	85	74	210	178	236	198	60	60	60	60	7	11	5	7	0	0	1	1	0	0	0	0
8 Riverina Water	4	2	3	4	9	13	4	2					1	1	2	4	14	17	9	9	99	99	99	99	334	206	260	260					34	39	69	69	1	1	1	0	0	0	0	0
10 Coffs Harbour City Council	3	8	4	4	26	40	10	41	34	27	4	15	0	0	0	0	64	88	18	63	-	85	99	99	120	120	120	120	120	120	95	95	7	24	20	42	2	2	2	4	0	0	0	0
11 Albury City Council		0	1	1	5	4	4	4	49	44	37	37	0	0	0	0	51	55	55	55	-	49	48	48	180	180	180	180	120	118	136	136	-	-	-	-	0	0	0	0	0	0	13	15
12 Fish River Water																	1	1	1	1	98	98	98	98																				
13 Tamworth Regional Council	-	-	-	-	43	48	28	28	25	21	26	26	0	0	0	0	72	74	57	57	-	-	-	-	-	-	-	-	-	-	-	-	4	2	4	0	0	0	0	0				
14 Clarence Valley Council	9	3	9	8	0	12	41	44	15	10	30	29	2	1	1	1	22	37	103	105	-	-	-	-	120	120	120	120	120	120	120	120	-	-	-	-	0	0	0	0	0	0	7	6
15 Eurobodalla Shire Council	-	-	0	0	0	0	0	0	1	1	2	2	0	0	0	0	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	0	0	0	0	2	0	0	0
16 Wingecarribee Shire Council	10	5	6	10	36	64	67	67	22	31	35	35	3	16	1	1	79	139	133	133	100	75	75	75	120	120	120	120	120	120	120	120	46	61	15	15	7	7	7	8	2	3	3	4
17 Queanbeyan City Council	0	0	0	0	39	5	9	27	27	17	19	22	9	9	5	4	78	31	52	52	-	100	100	100	240	180	180	180	240	240	240	240	6	5	5	5	0	0	0	0	12	13	12	12
18 Dubbo City Council	0	1	0	0	2	2	3	3	13	10	10	10	1	1	0	0	18	18	18	18	82	87	88	86	179	138	138	147	91	93	89	95	20	24	31	26	0	0	0	0	0	0	0	0
19 Orange City Council	2	2	2	2	62	77	29	29	25	23	41	41	7	8	23	23	100	100	100	100	-	80	80	80	180	180	180	180	-	-	-	-	175	175	175	175	0	1	0	0	0	0	0	0
21 Bathurst Regional Council	24	14	17	51	55	74	63	64	29	27	30	25	0	0	0	0	107	117	108	139	-	-	-	-	120	120	120	120	120	120	120	120	2	2	3	3	-	-	-	-	-	-	-	-
22 Lismore City Council	0	2	4	1	58	72	4	3	33	26	4	25	0	0	0	1	87	111	13	30	75	75	75	75	208	351	351	351	60	60	60	60	49	37	125	125	0	0	0	0	0	0	1	1
23 Bega Valley Shire Council	2	2	1	1	3	3	1	1	8	11	7	7	2	3	3	3	16	16	16	16	87	72	71	79	180	180	180	180	120	120	120	120	-	-	-	-	0	0	0	0	1	1	0	7
24 Ballina Shire Council	0	3	0	0	1	3	1	1	10	11	6	9	0	0	0	0	12	12	10	10	99	99	99	99	120	120	120	120	120	120	120	120	-	-	-	-	0	0	0	0	-	-	-	-
25 Kempsey Shire Council	0	0	1	1	0	0	0	0	2	1	1	2	0	0	0	0	3	2	3	3	0	0	0	0	100	159	114	114	146	83	130	130	114	23	31	31	1	1	1	1	0	0	0	0
26 Essential Energy	0.0	0.1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	2	1	1	1	-	80	79	79	60	60	60	60	60	60	60	60	-	-	-	-	1	1	0	13	0	0	0	0
27 Byron Shire Council	1	0	0	0	0	1	0.1	0.1	2	2	2	2	7	5	11	11	10	8	14	14	-	-	-	-	120	120	120	120	60	60	60	60	9	9	9	9	0	2	8	1	0	0	0	0
28A Goldenfields Water (Reticulation)	7	7	7	7	46	49	39	39					0	0	0	0	51	51	51	51	-	-	-	-	191	191	191	191	150	150	150	150	5	5	7	6	0	0	0	0				
28B Goldenfields Water (Bulk Water Supply)																																												
20 Goulburn Mulwaree Council	6	4	2	2	35	38	6	6	38	42	32	32	0	0	0	0	81	81	41	41	-	-	-	-	180	180	180	180	90	90	90	90	-	-	-	-	5	8	5	5	0	0	0	0
9 Wagga Wagga Council									89	76	68	51	0	0	0	0	76	68	51	51	-	-	-	-					47	47	47	47												
LWU Range Max	94	25	39	51	58	74	77	67	89.2	76.1	68.2	51	9	9	16	23	107	117	139	139	100	100	100	100	232	351	236	260	330	240	174	240	181	203	239	200	7	7	8	13	7	12	13	13
LWU Range Min	0	0	0	0	0	0	0	0	2.4	0.6	0.7	1	0	0	0	0	3	0	1	1	75	0	49	48	120	60	112	84	60	60	47	20	7	2	2	3	0	0	0	0	0	0	0	0
Median of NMU Indicators shown in Table	3	2	3	2	22	9	4	4	13.7	11.8	8.7	11	0.2	0.1	0.4	0.1	51	26	18	35	95	90	83	80	205	178	182	180	127	120	107	99	20	29	34	31	0	0	0	0	0	0	0	0

WATER UTILITY	HEALTH																												
	WS												WS																
	Water quality guidelines				No. of zones with microbiological compliance				% population with microbiological compliance				No. of zones with chemical compliance				Risk based drinking water management plan externally assessed				Risk based drinking water plan				Public disclosure of WQ performance				
	H1				H2				H3 (%)				H4				H5 (YES/NO)				H6				H7 (YES/NO)				
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	
Sydney Water Corporation	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	13 of 13	13 of 13	13 of 13	13 of 13	100	100	100	100	13 of 13	13 of 13	13 of 13	13 of 13	Yes	Yes	Yes	Yes	ISO 9001	ISO 9001	ISO9001	ISO9001	Yes	Yes	Yes	Yes	
Hunter Water Corporation	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	4 of 4	4 of 5	5 of 5	5 of 5	100	100	100	100	4 of 4	5 of 5	5 of 5	5 of 5	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
Sydney Catchment Authority	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004																									
1 Gosford City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	2 of 2	2 of 2	2 of 2	100	100	100	100	2 of 2	2 of 2	2 of 2	2 of 2	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
2 Wyong Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
3 Shoalhaven City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	4 of 4	4 of 4	4 of 4	3 of 4	100	100	100	99	4 of 4	4 of 4	4 of 4	4 of 4	No	No	No	No	HACCP	HACCP	HACCP	HACCP	Yes	Yes	Yes	Yes	
4 Rous Water	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 2	2 of 2	2 of 2	1 of 1	100	100	100	100	1 of 2	2 of 2	2 of 2	1 of 1	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
5 MidCoast Water	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	2 of 4	4 of 4	4 of 4	4 of 4	91	100	100	100	2 of 4	3 of 4	3 of 4	3 of 4	Yes	Yes	Yes	Yes	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
6 Tweed Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	3 of 3	3 of 3	3 of 3	3 of 3	100	100	100	100	2 of 3	3 of 3	3 of 3	3 of 3	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
7 Port Macquarie Hastings Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	5 of 5	5 of 5	5 of 5	5 of 5	100	100	100	100	4 of 4	4 of 5	5 of 5	4 of 5	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
8 Riverina Water	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	13 of 14	14 of 14	14 of 14	14 of 14	99	100	100	100	12 of 14	13 of 14	10 of 14	14 of 14	Yes	Yes	Yes	Yes	HACCP	HACCP	HCCP	HACCP	Yes	Yes	Yes	Yes	
10 Coffs Harbour City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	3 of 3	3 of 3	3 of 3	3 of 3	100	100	100	100	3 of 3	3 of 3	3 of 3	3 of 3	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
11 Albury City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	3 of 4	4 of 4	1 of 1	1 of 1	75	100	100	100	4 of 4	4 of 4	0 of 1	1 of 1	No	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes
12 Fish River Water	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	0 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
13 Tamworth Regional Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	5 of 7	7 of 7	6 of 7	6 of 7	98	100	99	99	5 of 7	6 of 7	6 of 7	6 of 7	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
14 Clarence Valley Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	3 of 5	4 of 5	4 of 5	4 of 5	98	99	99	99	4 of 5	5 of 5	4 of 5	3 of 5	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
15 Eurobodalla Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004		1 of 1	1 of 1	1 of 1		100	100	100		1 of 1	1 of 1	1 of 1	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
16 Wingecarribee Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	2 of 2	2 of 2	3 of 3	3 of 3	100	100	100	100	2 of 2	1 of 2	3 of 3	3 of 3	No	No	No	No	No	No	ADWG	ADWG	Yes	Yes	Yes	Yes	
17 Queanbeyan City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100		1 of 1	1 of 1	1 of 1	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
18 Dubbo City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	No	No	ADWG	ADWG	Yes	Yes	Yes	Yes	
19 Orange City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	2 of 2	2 of 2	2 of 2	2 of 2	100	100	100	100	2 of 2	2 of 2	2 of 2	2 of 2	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
21 Bathurst Regional Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
22 Lismore City Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	0 of 1	1 of 1	1 of 1	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
23 Bega Valley Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	6 of 6	6 of 6	6 of 6	5 of 6	100	100	100	99	6 of 6	6 of 6	4 of 6	6 of 6	No	No	No	No	No	No	ADWG	ADWG	Yes	Yes	Yes	Yes	
24 Ballina Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	Yes	No	No	ADWG	Yes	Yes	Yes	Yes	
25 Kempsey Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	7 of 8	7 of 8	7 of 8	7 of 7	100	100	100	100	7 of 8	6 of 8	5 of 8	7 of 7	No	No	No	No	NHMRC	NHMRC	NHMRC	NHMRC	Yes	Yes	Yes	Yes	
26 Essential Energy	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	2 of 2	2 of 2	2 of 2	2 of 2	100	100	100	100	2 of 2	2 of 2	2 of 2	2 of 2	No	No	No	No	No	No	No	ADWG	Yes	Yes	Yes	Yes	
27 Byron Shire Council	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
28A Goldenfields Water (Reticulation)	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	1 of 1	1 of 1	1 of 1	1 of 1	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
28B Goldenfields Water (Bulk Water Sup)	ADWG 2004	ADWG 2004	ADWG 2004	ADWG 2004	2 of 3	3 of 3	2 of 3	3 of 3	95	100	99	100	1 of 1	3 of 3	3 of 3	3 of 3	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes	
20 Goulburn Mulwaree Council		ADWG 2004	ADWG 2004	ADWG 2004		2 of 2	2 of 2	2 of 2		100	100	100		2 of 2	2 of 2	2 of 2		No	No	No		No	No	ADWG		Yes	Yes	Yes	
9 Wagga Wagga Council																													
LWU Range Max									100	100	100	100																	
LWU Range Min									75	99	99	99																	
Median of NMU Indicators shown in Table									100	100	100	100																	

WATER UTILITY	RESIDENTIAL CHARGES AND BILLS																											
	WATER SUPPLY																											
	Tariff structure		Free water allowance		Fixed charge		Usage charge 1st step				Usage charge 2nd step				Usage charge 3rd step				Usage charge 4th step				Usage charge 5th step					
	P1		P1.1		P1.2		P1.3				P1.4				P1.5				P1.6				P1.7					
					Basis		\$		kL limit		\$/kL		kL limit		\$/kL		kL limit		\$/kL		kL limit		\$/kL		kL limit		\$/kL	
2009/10 2010/11		2009/10 2010/11		2010/11 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		2009/10 2010/11		
Sydney Water Corporation	Two Part	Two Part				125		All	All	1.93	2.01																	
Hunter Water Corporation	Two Part	Two Part	0	0		19		All	All	1.62	1.71																	
Sydney Catchment Authority																												
1 Gosford City Council	Two Part	Two Part	0	0	Connection size	94		All	All	1.84	1.86																	
2 Wyong Shire Council	Two Part	Two Part	0	0	Connection size	121		All	All	1.84	1.87																	
3 Shoalhaven City Council	Inclining Block	Inclining Block	0	0	Connection size	75		<450	<450	1.34	1.45	>450	>450	2.01	1.95													
4 Rous Water																												
5 MidCoast Water	Inclining Block	Inclining Block	0	0	Meter size	156		<200	<200	2.08	2.20	>200	>200	2.31	2.46													
6 Tweed Shire Council	Inclining Block	Inclining Block	0	0	Meter size	106		<450	<350	1.55	1.65	>450	>350	2.32	2.50													
7 Port Macquarie Hastings Council	Inclining Block	Inclining Block	0	0	Meter size	145		<270	<270	2.03	2.02	>270	>270	4.06	4.04													
8 Riverina Water	Inclining Block	Inclining Block	0	0	Uniform charge	80		<600	<600	0.89	0.90	>600	>600	1.33	1.35													
10 Coffs Harbour City Council	Inclining Block	Inclining Block	0	0	Meter size	127		<365	<365	2.21	2.19	>365	>365	3.09	3.29													
11 Albury City Council	Inclining Block	Inclining Block	0	0	Meter size	90		<225	<225	0.56	0.64	>225	>225	1.12	1.30													
12 Fish River Water																												
13 Tamworth Regional Council	Inclining Block	Inclining Block	0	0	Connection size	204		<400	<400	1.09	1.16	400-800	400-800	1.64	1.74	>800	>800	2.46	2.39									
14 Clarence Valley Council	Inclining Block	Inclining Block	0	0	Connection size	127		<450	<450	1.34	1.38	>450	>450	2.01	2.07													
15 Eurobodalla Shire Council	Inclining Block	Inclining Block	0	0	Meter size	234		<450	<450	2.01	2.40	>450	>450	2.99	3.60													
16 Wingecarribee Shire Council	Inclining Block	Inclining Block	0	0	Meter size	110		<225	<225	1.35	1.36	>225	>225	2.02	2.02													
17 Queanbeyan City Council	Inclining Block	Inclining Block	0	0	Meter size	280		<176	<160	1.87	1.90	>176	>160	2.52	2.76													
18 Dubbo City Council	Inclining Block	Two Part	0	0	Meter size	176		<450	All	0.97	1.53	>450																
19 Orange City Council	Inclining Block	Inclining Block	0	0	Connection size	170		<450	<450	1.59	1.60	>450	>450	2.38	2.40													
21 Bathurst Regional Council	Inclining Block	Inclining Block	0	0	Connection size	125		<250	<250	1.29	1.30	>250	>250	1.94	1.95													
22 Lismore City Council	Two Part	Two Part	0	0	Connection size	145		All	All	1.96	2.15																	
23 Bega Valley Shire Council	Two Part	Two Part	0	0	Connection size	175		All	All	2.17	2.20																	
24 Ballina Shire Council	Inclining Block	Inclining Block	0	0	Connection size	142		<350	<350	1.36	1.52	>350	>350	2.04	2.28													
25 Kempsey Shire Council	Inclining Block	Inclining Block	0	0	Meter size	240		<250	<250	1.24	1.45	>250	>250	1.80	2.00													
26 Essential Energy	Inclining Block	Inclining Block	0	0	Connection size	230		<400	<400	1.08	1.25	>400	>400	2.43	2.51													
27 Byron Shire Council	Inclining Block	Inclining Block	0	0	Connection size	121		<450	<450	1.75	1.80	>450	>450	2.58	2.70													
28A Goldenfields Water (Reticulation)	Inclining Block	Inclining Block	0	0	Meter size	129		<600	<600	1.57	1.56	>600	>600	2.37	2.34													
28B Goldenfields Water (Bulk Water Sup																												
20 Goulburn Mulwaree Council	Inclining Block	Inclining Block	0	0	Connection size	246		<292	<292	1.54	1.59	>292	>292	2.06	2.14													
9 Wagga Wagga Council																												
NMU Range Max						280				2.21	2.40			4.06	4.04			2.46	2.39									
NMU Range Min						75				0.56	0.64			1.12	1.30			2.46	2.39									
Median of NMU Indicators shown in Table						142				1.55	1.59			2.19	2.31			2.46	2.39									

WATER UTILITY		RESIDENTIAL CHARGES AND BILLS																							
		WATER SUPPLY																							
		Special levies		Income retained from special levies		Annual Bill based on 200kL/a				Average Annual Residential Water Supplied				Typical Residential Bill (TRB)				Number of meter readings per annum				Number of bills per annum			
		P1.12		P1.13		P2				P2.1				P3				P3.1				P3.2			
\$		(Yes/No)		(\$ per assessment)				(kL)				(\$ per assessment)				(no.)				(no.)					
2009/10 2010/11		2009/10 2010/11		2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11					
Sydney Water Corporation				No	No	353	420	490	528	186	198	205	197	333	416	499	522	4	4	4	4				
Hunter Water Corporation		0	0	No	No	303	312	365	361	177	180	184	175	273	285	339	318	3	3	3	3	3	3	3	3
Sydney Catchment Authority																									
1	Gosford City Council	16	16	No	No	393	445	478	481	135	140	146	148	295	339	380	385	2	2	2		2	2	2	
2	Wyong Shire Council	16	15	No	No	404	455	488	510	146	141	154	160	323	351	404	430	2	2	2		2	2	2	
3	Shoalhaven City Council	0	0	No	No	273	275	335	365	144	152	145	136	215	225	262	272	4	4	4	4	4	4	4	4
4	Rous Water																								
5	MidCoast Water	0	0	No	No	457	500	563	596	149	150	154	139	376	407	467	462	4	4	4	4	4	4	4	4
6	Tweed Shire Council	0	0	No	No	371	390	414	436	174	180	176	167	354	361	377	382	2	2	2	2	2	2	2	2
7	Port Macquarie Hastings Council	0	0	No	No	453	504	552	549	154	151	166	147	376	409	482	442	4	4	4	4	4	4	4	4
8	Riverina Water	0	0	No	No	250	249	260	260	327	374	330	225	354	392	375	283	4	4	4	4	4	4	4	4
10	Coffs Harbour City Council	0	0	No	No	529	533	569	565	169	165	186	162	466	460	539	482	4	4	4	4	4	4	4	4
11	Albury City Council	0	0	No	No	203	202	201	218	193	222	220	180	200	214	212	205	3	3	3		3	3	3	3
12	Fish River Water																								
13	Tamworth Regional Council	0	0	No	No	381	394	411	436	192	226	256	216	373	420	473	454	4	4	4	4	4	4	4	4
14	Clarence Valley Council	0	0	No	No	359	376	391	403	178	176	174	142	360	344	351	320	4	4	4		4	4	4	
15	Eurobodalla Shire Council	0	0	No	No	658	670	717	714	119	129	116	109	517	543	547	496	3	3	3		3	3	3	
16	Wingecarribee Shire Council	0	0	No	No	377	378	380	382	168	183	190	159	334	354	367	327	3	3	3		3	3	3	
17	Queanbeyan City Council	0	0	No	No	639	635	668	694	188	198	200	191	611	632	669	668	4	4	4		4	4	4	
18	Dubbo City Council	0	0	No	No	315	320	324	482	322	331	329	263	430	446	449	579	4	4	4		4	4	4	
19	Orange City Council	0	0	No	No	433	436	439	490	178	254	148	158	408	522	355	423	4	4	4		4	4	4	
21	Bathurst Regional Council	0	0	No	No	391	408	387	385	241	240	252	182	410	440	455	362	4	4	4		4	4	4	
22	Lismore City Council	0	0	No	No	403	464	526	575	163	159	168	152	348	391	463	471	4	4	4		4	4	4	
23	Bega Valley Shire Council	0	0	No	No	598	580	602	615	144	154	165	129	471	479	527	459	3	3	3		3	3	3	
24	Ballina Shire Council	0	0	No	No	342	365	399	446	186	175	188	162	326	334	383	388	4	4	4		4	4	4	
25	Kempsey Shire Council	0	0	No	No	514	522	516	530	169	156	177	156	481	471	487	466	4	4	4		4	4	4	
26	Essential Energy	0	0	No	No	399	418	442	480	284	284	280	219	468	498	528	503	4	4	4		4	4	4	
27	Byron Shire Council	0	0	No	No	401	434	469	481	181	181	194	159	375	404	459	408	4	4	4		4	4	4	
28A	Goldenfields Water (Reticulation)	0	0	No	No	470	468	442	441	229	298	259	176	535	592	530	400	4	4	4	4	4	4	4	4
28B	Goldenfields Water (Bulk Water Sup																								
20	Goulburn Mulwaree Council	0	75	No	No			544	639			136	133			445	532								
9	Wagga Wagga Council																								
	NMU Range Max						717	714			330	263		632	669	668		4	4	4		4	4	4	
	NMU Range Min						201	218			116	109		214	212	205		2	2	2		2	2	2	
	Median of NMU Indicators shown in Table						442	481			177	159		408	455	430		4	4	4		4	4	4	

WATER UTILITY		RESIDENTIAL CHARGES AND BILLS																									
		SEWERAGE																									
		Tariff Structure				Fixed charge min				Usage charge				Special Levies				Income from Special Levies Retained by Utility									
		P4 (Charge Type)				P4.1 (\$)				P4.2 (\$/kL)				P4.3 (\$)				P4.4 (Yes/No)									
2007/08		2008/09		2009/10		2010/11		2007/08		2008/09		2009/10		2010/11		2007/08		2008/09		2009/10		2010/11		2009/10		2010/11	
Sydney Water Corporation								444	507	517	517									No	No						
Hunter Water Corporation								329	339	477	489	0.5	0.5	0.0	0.0	Environmental	58	58	34	34	Yes	Yes					
Sydney Catchment Authority																											
1	Gosford City Council	Fixed C	Fixed Charge	Fixed Charge		419	421	478	483	0	0	0	0			0	0	0	0	No	No						
2	Wyong Shire Council	Fixed C	Fixed Charge	Fixed Charge		429	420	442	437	0	0	0	0			0	0	0	0	No	No						
3	Shoalhaven City Council	Fixed C	Fixed Charge	Fixed Charge		589	588	603	615	0	0	0	0			0	0	0	0	No	No						
4	Rous Water																										
5	MidCoast Water	Fixed C	Fixed Charge	Fixed Charge		703	728	819	834	0	0	0	0			0	0	0	0	No	No						
6	Tweed Shire Council	Fixed C	Fixed Charge	Fixed Charge		535	537	543	568	0	0	0	0			0	0	0	0	No	No						
7	Port Macquarie Hastings Council	Fixed C	Fixed Charge	Fixed Charge		526	587	620	617	0	0	0	0			0	0	0	0	No	No						
8	Riverina Water																										
10	Coffs Harbour City Council	Fixed C	Fixed Charge	Fixed Charge		653	665	697	698	0	0	0	0			0	0	0	0	No	No						
11	Albury City Council	Fixed C	Fixed Charge	Fixed Charge		426	421	439	444	0	0	0	0			0	0	0	0	No	No						
12	Fish River Water																										
13	Tamworth Regional Council	Fixed C	Fixed Charge	Fixed Charge		658	673	696	695	0	0	0	0			0	0	0	0	No	No						
14	Clarence Valley Council	Fixed C	Fixed Charge	Fixed Charge		577	617	657	694	0	0	0	0			0	0	0	0	No	No						
15	Eurobodalla Shire Council	Fixed C	Fixed Charge	Fixed Charge		602	651	683	712	0	0	0	0			0	0	0	0	No	No						
16	Wingecarribee Shire Council	Fixed C	Fixed Charge	Fixed Charge		560	560	563	579	0	0	0	0			0	0	0	0	No	No						
17	Queanbeyan City Council	Fixed C	Fixed Charge	Fixed Charge		342	341	344	342	0	0	0	0			0	0	0	0	No	No						
18	Dubbo City Council	Fixed C	Fixed Charge	Fixed Charge		495	504	518	537	0	0	0	0			0	0	0	0	No	No						
19	Orange City Council	Fixed C	Fixed Charge	Fixed Charge		307	309	302	334	0	0	0	0			0	0	0	0	No	No						
21	Bathurst Regional Council	Fixed C	Fixed Charge	Fixed Charge		395	402	411	399	0	0	0	0			0	0	0	0	No	No						
22	Lismore City Council	Fixed C	Fixed Charge	Fixed Charge		502	502	562	607	0	0	0	0			0	0	0	0	No	No						
23	Bega Valley Shire Council	Fixed C	Fixed Charge	Fixed Charge		968	939	987	986	0	0	0	0			0	0	0	0	No	No						
24	Ballina Shire Council	Fixed C	Fixed Charge	Fixed Charge		435	464	495	550	0	0	0	0			0	0	0	0	No	No						
25	Kempsey Shire Council	Fixed C	Fixed Charge	Fixed Charge		602	601	613	625	0	0	0	0			0	0	0	0	No	No						
26	Essential Energy	Fixed C	Fixed Charge	Fixed Charge		357	381	409	429	0	0	0	0			0	0	0	0	No	No						
27	Byron Shire Council	Fixed +	Fixed +	Usage C Fixed + Usage C		592	608	622	633	1.18	1.14	1	1.08			0	0	0	0	No	No						
28A	Goldenfields Water (Reticulation)																										
28B	Goldenfields Water (Bulk Water Sup																										
20	Goulburn Mulwaree Council	Fixed Charge		Fixed Charge				619	630									0	0	No	No						
9	Wagga Wagga Council	Fixed C	Fixed Charge	Fixed Charge		362	376	392	406	0	0	0	0			0	0	0	0	No	No						
NMU Range Max						939	987	986	1	1	1					0	0	0									
NMU Range Min						309	302	334	0	0	0					0	0	0									
Median of NMU Indicators shown in Table						537	563	593	0	0	0					0	0	0									



WATER UTILITY		RESIDENTIAL CHARGES AND BILLS																					
		SEWERAGE								WS & SGE													
		Annual Bill based on 200kL/a				Typical Residential Bill (TRB)				Number of bills per annum				Annual Bill based on 200kL/a WS + Sge				Typical Residential Bill (TRB) WS + Sge					
		P5 (\$ per assessment)				P6 (\$ per assessment)				P6.1 (no.)				P7 (\$ per assessment)				P8 (\$ per assessment)					
2007/08		2008/09		2009/10		2010/11		2007/08		2008/09		2009/10		2010/11		2007/08		2008/09		2009/10		2010/11	
Sydney Water Corporation		444	507	517	517	444	507	517	517	4	4	4	4	797	926	1,007	1,045	776	923	1,016	1,039		
Hunter Water Corporation		380	388	511	523	374	383	511	523	3	3	3	3	682	700	876	884	646	668	850	841		
Sydney Catchment Authority																							
1	Gosford City Council	419	421	478	483	419	421	478	483	2	2	2	2	812	867	956	964	714	760	858	868		
2	Wyong Shire Council	429	420	442	437	429	420	442	437	2	2	2	2	833	874	931	947	751	771	846	868		
3	Shoalhaven City Council	589	588	603	615	589	588	603	615	4	4	4	4	862	863	938	980	804	813	865	887		
4	Rous Water																						
5	MidCoast Water	703	728	819	834	703	728	819	834	4	4	4	4	1160	1228	1,382	1,430	1,079	1,135	1,286	1,296		
6	Tweed Shire Council	535	537	543	568	535	537	543	568	2	2	2	2	906	927	958	1,004	889	898	921	950		
7	Port Macquarie Hastings Council	526	587	620	617	526	587	620	617	4	4	4	4	979	1091	1,171	1,166	903	996	1,102	1,059		
8	Riverina Water													250	249	260	260	354	392	375	283		
10	Coffs Harbour City Council	653	665	697	698	653	665	697	698	4	4	4	4	1182	1197	1,266	1,263	1,119	1,125	1,236	1,180		
11	Albury City Council	426	421	439	444	426	421	439	444	3	3	3	3	630	622	640	662	626	635	652	649		
12	Fish River Water																						
13	Tamworth Regional Council	658	673	696	695	658	673	696	695	4	4	4	4	1039	1067	1,107	1,131	1,031	1,093	1,168	1,149		
14	Clarence Valley Council	577	617	657	694	577	617	657	694	4	4	4	4	936	993	1,048	1,097	937	961	1,008	1,014		
15	Eurobodalla Shire Council	602	651	683	712	602	651	683	712	3	3	3	3	1260	1321	1,399	1,426	1,119	1,194	1,229	1,208		
16	Wingecarribee Shire Council	560	560	563	579	560	560	563	579	3	3	3	3	937	937	943	961	894	914	930	906		
17	Queanbeyan City Council	342	341	344	342	342	341	344	342	4	4	4	4	980	976	1,012	1,036	953	973	1,013	1,010		
18	Dubbo City Council	495	504	518	537	495	504	518	537	4	4	4	4	810	824	841	1,019	925	950	966	1,116		
19	Orange City Council	307	309	301	334	307	309	302	334	4	4	4	4	740	744	740	824	715	830	657	757		
21	Bathurst Regional Council	395	402	411	399	395	402	411	399	4	4	4	4	786	810	798	784	805	842	866	761		
22	Lismore City Council	502	502	562	607	502	502	562	607	4	4	4	4	904	966	1,088	1,182	850	893	1,025	1,078		
23	Bega Valley Shire Council	968	939	987	986	968	939	987	986	3	3	3	3	1567	1519	1,589	1,601	1,439	1,418	1,514	1,445		
24	Ballina Shire Council	435	464	495	550	435	464	495	550	4	4	4	4	777	829	894	996	761	798	878	938		
25	Kempsey Shire Council	602	601	613	625	602	601	613	625	4	4	4	4	1116	1124	1,129	1,155	1,083	1,073	1,100	1,091		
26	Essential Energy	357	381	409	428	357	381	409	428	4	4	4	4	756	799	852	909	825	879	937	931		
27	Byron Shire Council	788	779	789	795	776	762	784	762	4	4	4	4	1189	1212	1,258	1,276	1,150	1,166	1,242	1,170		
28A	Goldenfields Water (Reticulation)													470	468	442	441	535	592	530	400		
28B	Goldenfields Water (Bulk Water Sup																						
20	Goulburn Mulwaree Council			619	630			619	630							1,163	1,269			1,064	1,162		
9	Wagga Wagga Council	362	376	392	406	362	376	392	406	4	4	4	4	362	376	392	406	362	376		406		
	NMU Range Max			987	986	968	939	987	986			4	4			1,589	1,601	1,439	1,418	1,514	1,445		
	NMU Range Min			301	334	307	309	302	334			2	2			260	260	354	376	375	283		
	Median of NMU Indicators shown in Table			562	593	526	537	563	593			4	4			957	1,012	889	898	966	980		

WATER UTILITY	FINANCIAL																																	
	WS				SGE				WS & SGE				WS				SGE				WS & SGE													
	Total Revenue Water (excludes gain/loss on disposal of assets, grants for capital works & investment income)				Total Revenue Sewerage (excludes gain/loss on disposal of assets, grants for capital works & investment income)				Total Income WS + Sge (includes gain/loss on disposal of assets) (may not equal F1 + F2)				Residential Revenue from Usage Charges				Revenue per property for WS				Revenue per property for Sge				Income for Utility				Revenue from CSOs					
	F1				F2				F3				F4				F5				F6				F7				F8					
	(\$'000)				(\$'000)				(\$'000)				(%)				(\$/property)				(\$/property)				(\$/property)				(%)					
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11		
Sydney Water Corporation	802,867	957,416	1,105,750	1,163,680	988,581	1,050,440	1,108,000	1,096,440	1,837,050	1,973,780	2,198,440	2,251,580	84	82	80		462	545	624	649	585	615	642	628	1,058	1,125	1,240	1,256	5.0	6.0	6.0	7.0		
Hunter Water Corporation	94,980	95,054	115,966	108,880	119,791	117,484	125,584	129,974	217,880	212,593	242,071	239,724	66	66	64	66	431	428	515	478	574	557	590	602	988	958	1,076	1,051	4.0	4.6	4.8	4.9		
Sydney Catchment Authority	174,196	185,973	202,358	190,850																														
1 Gosford City Council	25,662	30,447	33,924	34,647	31,635	31,883	37,881	38,255	57,296	62,025	71,983	72,864	70	75	73	76	369	435	483	492	465	466	553	557	823	885	1,025	1,034	2.0	2.0	0.8	0.8		
2 Wyong Shire Council	31,716	32,888	47,761	41,390	28,001	26,865	29,921	28,692	59,717	59,752	77,682	70,082	69	74	63	60	537	553	798	686	480	458	506	482	1,012	1,004	1,299	1,162	2.0	2.2	0.9	1.9		
3 Shoalhaven City Council	16,579	17,434	20,361	21,091	31,296	31,871	33,665	35,269	47,875	49,033	53,889	56,125	67	71	74	72	366	382	444	458	813	809	831	868	1,054	1,074	1,175	1,218	2.0	2.0	1.9	1.8		
4 Rous Water	13,404	14,605	17,053	17,822					13,404	14,140	15,355	17,669							373	374							336	370	0.0	0.1	0.1	0.1		
5 MidCoast Water	19,778	19,959	24,138	23,943	28,005	28,039	32,620	32,454	47,783	47,740	56,637	56,243	71	75	77	74	548	550	665	656	866	861	993	983	1,324	1,316	1,559	1,541	2.0	1.8	1.6	1.6		
6 Tweed Shire Council	22,662	19,312	21,193	17,528	30,537	29,041	27,147	22,996	53,199	47,094	45,542	38,721	70	72	75	73	735	610	679	551	1,103	978	922	759	1,690	1,488	1,461	1,216	2.5	1.6	1.6	2.0		
7 Port Macquarie Hastings Council	18,214	22,649	24,281	21,346	16,713	20,290	20,226	21,190	34,927	42,531	44,309	40,595	74	74	70	69	636	758	839	713	643	746	766	793	1,221	1,424	1,532	1,355	2.0	1.7	1.3	2.1		
8 Riverina Water	18,138	18,684	19,147	13,340					18,138	18,684	19,135	13,344	77	79	80	80	653	661	669	458					653	661	669	649	1.0	1.1	1.0	1.4		
10 Coffs Harbour City Council	18,389	17,098	33,294	20,434	23,382	21,629	25,343	23,821	41,772	38,727	58,213	44,257	80	76	75	73	780	718	1,385	832	1,052	963	1,117	1,039	1,771	1,625	2,421	1,802	1.0	1.2	0.8	1.1		
11 Albury City Council	8,476	8,293	9,439	8,348	12,646	12,775	15,337	14,061	21,121	21,068	24,776	22,415	52	64	64	62	386	373	419	367	621	620	732	665	963	949	1,098	984	1.0	1.5	1.3	1.3		
12 Fish River Water				6,456								6,456																						
13 Tamworth Regional Council	15,233	15,881	16,207	15,300	15,607	19,493	21,882	20,535	30,840	35,374	38,089	35,835	56	61	64	58	755	781	786	738	857	1,060	1,176	1,096	1,530	1,739	1,847	1,728	1.0	1.1	1.0	1.1		
14 Clarence Valley Council	32,935	16,144	12,515	11,780	10,917	10,965	12,075	12,149	43,852	27,075	24,504	21,326	71	69	64	65	1,603	776	597	556	781	765	839	835	2,134	1,301	1,169	1,007	1.0	1.7	1.8	2.0		
15 Eurobodalla Shire Council	13,155	13,580	14,227	12,792	12,936	14,244	15,411	15,873	26,091	26,061	28,990	28,071	40	40	43	53	693	707	735	661	742	810	870	892	1,375	1,357	1,498	1,450	2.0	1.5	1.4	1.3		
16 Wingecarribee Shire Council	8,680	9,546	11,217	9,001	10,582	10,199	11,149	11,271	19,262	19,725	22,337	20,278	68	71	71	66	486	530	619	493	749	714	770	777	1,078	1,096	1,231	1,111	1.0	2.0	1.4	1.5		
17 Queanbeyan City Council	11,235	10,205	12,402	11,427	8,231	6,083	6,419	6,563	19,465	16,110	18,498	16,373	57	56	62	59	704	647	778	718	516	380	399	406	1,220	1,021	1,161	1,028	1.0	1.0	1.1	1.0		
18 Dubbo City Council	9,212	9,722	11,306	12,468	10,296	10,206	10,510	10,531	19,508	19,230	21,420	22,575	75	75	77	72	590	603	670	747	697	684	681	676	1,248	1,193	1,270	1,353	1.0	1.0	0.9	0.8		
19 Orange City Council	11,148	13,297	10,007	10,740	11,592	14,319	7,575	7,778	22,739	27,617	17,620	18,548	72	72	70	61	693	825	621	658	778	947	485	492	1,414	1,713	1,093	1,136	1.0	0.9	1.4	1.3		
21 Bathurst Regional Council	9,784	11,218	11,179	9,952	7,266	8,278	8,144	7,977	17,050	19,495	19,322	17,929	38	52	81	64	665	751	762	668	506	570	551	530	1,158	1,305	1,317	1,203	1.0	1.1	1.1	1.2		
22 Lismore City Council	6,914	7,397	8,658	8,617	9,500	8,356	8,811	9,820	16,415	15,375	17,035	14,744	68	73	72	70	499	530	616	611	777	680	710	780	1,185	1,101	1,211	1,045	2.0	2.0	1.5	1.7		
23 Bega Valley Shire Council	8,682	9,138	10,144	9,363	12,797	12,846	14,100	13,826	21,479	21,978	24,232	23,188	72	73	67	66	629	651	722	657	1,102	1,084	1,186	1,146	1,556	1,565	1,723	1,627	1.0	1.2	1.1	1.2		
24 Ballina Shire Council	6,501	6,489	7,974	9,993	9,653	9,074	10,902	15,214	16,154	15,296	18,876	25,205	67	66	70	66	467	463	556	689	770	714	832	1,125	1,160	1,091	1,316	1,739	2.0	2.0	1.6	1.2		
25 Kempsey Shire Council	7,298	7,698	8,127	8,655	6,656	6,767	7,016	7,419	13,955	13,942	14,939	15,943	38	41	49	50	596	626	656	704	746	754	777	829	1,140	1,134	1,205	1,297	2.0	1.8	1.7	1.6		
26 Essential Energy	13,396	13,154	13,095	12,321	4,502	4,804	5,012	5,359	17,898	17,958	18,106	17,680	56	57	60	54	1,241	1,258	1,251	1,176	466	496	517	551	1,658	1,718	1,729	1,688	2.0	1.6	1.5	1.8		
27 Byron Shire Council	5,024	5,990	6,861	6,306	10,775	11,641	12,437	12,970	15,799	17,515	19,298	19,276	66	70	77	71	479	563	637	576	1,078	1,182	1,227	1,254	1,504	1,645	1,791	1,760	1.0	0.9	0.8	0.8		
28A Goldenfields Water (Reticulation)	5,986	6,534	6,546	7,545					5,986	6,454	6,534	7,540	61	65	78	44	565	654	652	758					565	646	653	634	2.0	1.6	1.5	1.3		
28B Goldenfields Water (Bulk Water Sup)	5,908	6,006	6,872	3,264					5,908	6,006	6,863	3,259																						
20 Goulburn Mulwaree Council			7,403	7,817			8,516	9,060				16,387	16,841			40	41											892	888		1,602	1,584		
9 Wagga Wagga Council					13,392	14,302	14,954	14,646	13,392	14,302	11,449	14,646									581	606	595	580										
NMU Range Max	32,935	32,888	47,761	41,390	31,635	31,883	37,881	38,255	59,717	62,025	77,682	72,864	80	79	81	80	1,603	1,258	1,385	1,176	1,103	1,182	1,227	1,254	2,134	1,739	2,421	1,802	2.5	2.2	1.9	2.1		
NMU Range Min	5,024	5,990	6,546	3,264	4,502	4,804	5,012	5,359	5,908	6,006	6,534	3,259	38	40	40	41	366	373	373	275	465	380	399	406	565	646	336	275	0.0	0.0	0.0	0.0		
Median of NMU Indicators shown in Table	12,195	13,225	12,402	11,604	12,646	12,846	13,269	13,944	19,508	19,725	20,371	20,278	68	71	70	66	613	637	667	658	749	746	774	787	1,220	1,247	1,285	1,216	1.0	1.5	1.3	1.3		

WATER UTILITY	FINANCIAL																															
	WS				SGE				WS				SGE				WS + SGE				WS				SGE							
	Written Down Replacement Cost of WS Assets				Written Down Replacement Cost of Sge Assets				Operating Cost OMA - Water Supply				Operating Cost OMA - Sewerage				Combined Operating Cost OMA - WS & Sge				Total Water Capital Expenditure				Total Sge Capital Expenditure							
	F9				F10				F11				F12				F13				F14				F15							
	(\$'000)				(\$'000)				(\$/prop)				(\$/prop)				(\$/prop)				(\$'000)				(\$'000)							
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
Sydney Water Corporation	8,889,412	10,433,975	11,592,458	12,013,525	20,069,452	21,549,095	22,278,233	22,898,198	366	315	321	323	284	253	253	256	641	569	573	579	990,146	1,533,090	825,671	292,167	482,648	416,412	469,110	417,392				
Hunter Water Corporation	1,486,197	1,535,793	1,579,034	1,642,790	1,622,182	2,648,806	2,715,289	3,001,406	202	195	196	191	282	286	315	323	469	481	511	514	40,946	71,750	55,228	24,926	47,263	75,079	109,665	135,155				
Sydney Catchment Authority																	79,304	84,144	56,042	27,580												
1 Gosford City Council	455,081	463,393	523,975	506,176	374,675	381,264	413,083	1,355,000	294	300	364	325	284	297	323	272	571	597	687	596	24,017	20,570	42,959	42,517	16,145	16,186	17,198	25,850				
2 Wyong Shire Council	454,986	463,165	510,820	557,210	388,314	395,968	396,095	400,447	300	379	403	398	326	337	337	350	623	716	740	748	16,543	16,411	53,152	31,657	4,093	4,269	10,343	4,386				
3 Shoalhaven City Council	281,440	286,281	289,545	290,134	432,546	456,966	470,883	414,832	254	275	282	293	432	448	440	442	619	722	723	735	9,442	1,754	16,457	18,092	20,647	21,875	27,197	73,007				
4 Rous Water	308,562	316,043	310,148	314,813																	16,997	3,877	5,148	4,660								
5 MidCoast Water	259,957	296,643	326,096	331,942	393,492	427,448	437,452	436,498	355	301	326	313	446	438	429	498	754	739	755	811	36,419	38,514	32,695	15,285	25,356	24,258	9,935	10,334				
6 Tweed Shire Council	338,801	342,740	420,347	432,259	451,855	454,127	458,345	466,076	312	320	367	368	405	436	465	447	688	756	832	816	9,139	54,176	83,919	5,609	56,146	13,754	11,031	2,342				
7 Port Macquarie Hastings Council	335,985	348,354	356,333	360,470	179,883	205,511	221,201	232,964	260	265	318	324	409	368	378	356	632	633	696	680	3,787	4,169	3,912	6,381	10,429	27,715	17,603	11,444				
8 Riverina Water	136,485	144,122	147,896	185,360					310	320	325	334					310		325	315	9,049	9,134	6,866	8,584								
10 Coffs Harbour City Council	192,169	295,363	315,649	322,842	260,582	298,375	310,315	313,366	258	292	309	330	455	452	500	491	687	745	809	820	25,967	33,529	6,475	5,599	49,321	35,908	13,640	3,203				
11 Albury City Council	180,156	187,189	188,849	196,658	142,000	157,832	161,771	157,695	294	285	277	280	347	268	398	414	617	553	674	694	4,164	4,338	0	2,137	4,571	5,182	0	2,214				
12 Fish River Water			20,953									132											2,212									
13 Tamworth Regional Council	152,295	155,993	162,447	168,238	98,447	101,886	104,536	194,257	362	418	465	442	293	292	343	339	627	710	808	781	10,905	6,791	4,141	4,446	5,754	21,517	49,757	25,856				
14 Clarence Valley Council	212,489	217,785	223,373	366,303	60,367	116,305	116,865	200,582	265	306	323	341	387	376	371	413	529	682	694	753	56,278	9,286	2,936	4,609	7,738	44,874	23,836	7,335				
15 Eurobodalla Shire Council	142,979	178,006	191,641	201,890	153,689	162,743	167,833	179,058	355	329	346	358	480	425	459	497	795	754	805	855	18,765	15,104	18,264	8,200	4,633	4,240	6,556	10,281				
16 Wingecarribee Shire Council	95,713	163,821	173,502	176,142	120,544	184,798	206,219	208,408	318	313	318	288	353	341	378	359	597	654	697	647	3,918	9,279	2,868	2,397	4,137	11,912	13,677	4,385				
17 Queanbeyan City Council	104,499	105,159	105,934	106,856	109,954	110,579	111,573	117,289	380	524	688	743	298	263	377	380	678	787	1,065	1,124	1,384	752	707	359	5,002	3,441	1,043	654				
18 Dubbo City Council	167,887	166,725	190,365	189,572	134,779	136,517	157,032	159,387	475	442	465	442	364	391	357	379	820	832	822	821	2,584	1,867	4,949	1,233	2,016	4,521	2,170	4,555				
19 Orange City Council	116,029	130,716	133,743	141,012	91,990	105,388	107,197	108,095	345	346	290	373	346	312	309	384	666	659	599	757	1,112	6,034	3,692	4,367	701	804	911	646				
21 Bathurst Regional Council	121,231	125,567	128,442	131,510	67,705	70,374	72,302	73,979	406	412	440	448	345	361	359	391	742	772	799	839	4,364	2,982	1,463	1,818	1,897	2,816	1,771	1,598				
22 Lismore City Council	73,777	73,889	74,983	76,369	174,365	175,089	181,003	181,700	410	438	476	518	420	386	404	434	780	824	880	952	3,546	1,189	1,560	1,680	5,177	2,012	5,830	4,422				
23 Bega Valley Shire Council	96,355	100,141	104,230	103,097	109,710	115,872	115,569	117,919	366	392	414	459	625	628	680	698	891	1,020	1,094	1,158	3,079	3,102	4,082	17,616	22,659	8,317	986	4,369				
24 Ballina Shire Council	81,738	82,787	83,908	86,848	87,401	90,823	97,823	110,122	401	461	483	522	496	567	591	555	848	1,028	1,073	1,077	562	666	404	2,527	4,753	5,325	7,907	12,872				
25 Kempsey Shire Council	219,915	224,105	231,594	238,985	104,086	112,662	119,214	121,193	332	353	384	410	397	402	446	545	621	755	831	955	1,936	2,879	5,636	4,904	2,160	8,518	5,927	1,404				
26 Essential Energy									870	844	842	1,032	292	356	261	363	1,132	1,200	1,104	1,395	9,053	19,827	27,147	5,124	1,648	975	989	1,977				
27 Byron Shire Council	48,637	49,229	49,695	51,012	147,842	156,203	184,061	186,111	448	452	472	496	576	602	602	547	996	1,055	1,074	1,042	1,580	433	255	1,015	6,536	8,342	28,993	4,751				
28A Goldenfields Water (Reticulation)	104,572	108,710	110,209	168,393					412	433	527						412	433	420													
28B Goldenfields Water (Bulk Water Sup)	100,607	104,445	108,682	50,910																												
20 Goulburn Mulwaree Council			140,197	168,123			86,492	77,685			395	344			394	365			789	709			4,392	31,309			1,708	1,485				
9 Wagga Wagga Council						211,627	219,005	224,164					275	285	259	291	275	285	259	251						14,844	32,531	11,763	5,505			
NMU Range Max	455,081	463,393	523,975	557,210	451,855	456,966	470,883	1,355,000	870	844	842	1,032	625	628	680	698	1,132	1,200	1,104	1,395	56,278	54,176	83,919	42,517	56,146	44,874	49,757	73,007				
NMU Range Min	48,637	49,229	49,695	20,953	60,367	70,374	72,302	73,979	254	265	277	132	275	263	259	272	275	285	259	132	562	433	0	359	701	804	0	646				
Median of NMU Indicators shown in Table	152,295	166,725	181,176	185,360	142,000	160,288	167,833	186,111	345	350	384	371	387	376	386	402	672	742	794	781	6,706	5,186	4,392	4,782	5,177	8,342	8,921	4,404				

WATER UTILITY	FINANCIAL																												
	WS + SGE				WS				SGE				WS + SGE																
	Capital Expenditure WS + Sge				ERRR WS				ERRR Sge				ERRR WS & Sge				Dividend Paid or Payable				Dividend Payout Ratio				Net Debt to Equity				
	F16 (\$'000)				F17 (%)				F18 (%)				F19 (%)				F20 (\$'000)				F21 (%)				F22 (%)				
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11	
Sydney Water Corporation	1,472,790	1,949,500	1,294,780	709,559	-0.5	1.7	2.3	2.6	1.2	0.9	1.7	1.6	0.7	1.2	1.9	2.0	206,720	216,275	239,192	230,000	105	116	52	84	62	103	120	123	
Hunter Water Corporation	88,209	146,829	164,893	160,081	2.0	2.5	3.7	3.3	2.3	2.0	1.8	1.8	2.2	2.2	2.5	2.3	37,645	32,072	35,157	16,600	96	69	76	69	30	32	39	40	
Sydney Catchment Authority		84,144	56,042	27,580													6,706	28,291	32,179	27,335	75	75	75	75					
1 Gosford City Council	40,161	36,756	60,157	68,367	-0.3	0.3	0.1	0.8	1.3	1.1	2.1	0.9	0.4	0.6	1.0	0.9	1,900	1,787	3,968	1,776	437	115	180	20	-1	1	3	3	
2 Wyong Shire Council	20,636	20,679	63,495	36,043	0.0	-0.6	1.6	0.6	-1.2	-1.6	-1.0	-1.6	-0.5	-1.0	0.5	-0.3	0	0	0	0	0	0	0	0	8	10	11	11	
3 Shoalhaven City Council	30,089	23,630	43,654	91,099	-0.3	-0.3	0.4	0.4	1.6	1.3	1.6	2.1	0.9	0.7	1.1	1.5	2,402	1,238	969	2,321	67	-409	13	25	1	4	3	2	
4 Rous Water	16,997		5,148	4,993	-0.2	-0.4	-0.4	0.3									0	0	0	0	0	0	0	0	10	11	10	10	
5 MidCoast Water	61,775	62,771	42,630	25,619	0.2	0.8	3.5	-0.2	-0.1	-0.2	0.3	1.3	0.0	0.2	1.7	0.6	0	0	0	0	0	0	0	0	16	25	30	30	
6 Tweed Shire Council	70,214	67,930	94,950	7,951	1.3	0.2	0.4	-0.2	1.0	-0.2	-0.3	0.3	1.1	0.0	0.0	0.1	0	0	0	0	0	0	0	0	-6	1	2	2	
7 Port Macquarie Hastings Council	14,216	31,884	21,515	17,825	0.7	1.7	1.9	0.9	0.3	2.1	1.4	2.2	0.6	1.9	1.7	1.4	0	0	0	851	0	0	0	14	-3	2	0	-1	
8 Riverina Water	9,049		6,866	6,660	3.4	3.4	3.4	-0.5									0	0	0	0	0	0	0	0	-7	0	-5	-1	
10 Coffs Harbour City Council	75,289	69,437	20,115	8,802	3.9	1.7	6.3	2.1	3.1	2.1	2.6	2.0	3.4	1.9	4.5	2.0	0	0	0	0	0	0	0	0	13	26	24	21	
11 Albury City Council	8,734	9,520	0	4,351	-1.6	-1.6	-1.0	-1.7	1.3	2.1	2.1	1.1	-0.4	0.1	0.4	-0.4	0	0	0	0	0	0	0	0	3	4	4	3	
12 Fish River Water				2,212				14.0																0				0	
13 Tamworth Regional Council	16,660	28,308	53,898	30,302	3.0	2.1	1.7	1.3	6.9	7.8	6.5	5.2	4.6	4.7	4.2	3.4	1,140	1,109	1,092	1,066	9	6	6	7	-12	-9	-1	3	
14 Clarence Valley Council	64,016	54,161	26,772	11,944	9.9	1.7	0.7	0.1	3.6	1.2	1.7	1.4	8.4	1.5	1.0	0.6	0	0	0	0	0	0	0	0	-1	6	8	8	
15 Eurobodalla Shire Council	23,397	19,345	24,820	18,481	2.4	2.3	2.3	1.3	1.0	1.6	1.8	1.5	2.0	1.9	2.0	1.4	0	0	356	600	0	0	4	15	2	0	2	3	
16 Wingecarribee Shire Council	8,054	21,191	16,546	6,782	0.4	0.0	0.6	-0.2	2.2	1.0	0.9	1.2	1.4	0.5	0.8	0.6	0	0	0	0	0	0	0	0	-6	-2	1	-1	
17 Queanbeyan City Council	6,385	4,194	1,751	1,013	2.2	-0.7	-1.2	-3.0	0.1	-1.0	-2.3	-2.2	1.1	-0.9	-1.8	-2.6	0	0	0	0	0	0	0	0	-16	-16	-15	-16	
18 Dubbo City Council	4,600	6,388	7,119	5,788	-0.3	0.2	0.6	1.3	1.7	1.4	1.7	1.3	0.6	0.7	1.1	1.3	0	0	0	0	0	0	0	0	3	3	3	3	
19 Orange City Council	1,813	6,837	4,603	5,013	1.0	2.5	0.6	0.3	3.3	5.8	-0.4	-1.4	2.0	4.0	0.1	-0.5	0	0	0	0	0	0	0	0	-12	-11	-12	-13	
21 Bathurst Regional Council	6,261	5,798	3,234	3,416	1.1	1.9	1.4	0.5	1.3	2.2	1.1	0.1	1.1	2.0	1.3	0.4	0	0	0	0	0	0	0	0	-9	-10	-11	-12	
22 Lismore City Council	8,723	3,201	7,390	6,102	-1.6	-1.7	-0.8	-1.7	-0.9	-1.3	-1.3	-1.0	-1.1	-1.5	-1.1	-1.2	0	0	0	0	0	0	0	0	-4	-4	-5	-4	
23 Bega Valley Shire Council	25,738	11,418	5,067	21,985	1.6	1.5	1.9	0.4	2.1	1.5	1.9	1.4	1.8	1.5	1.9	0.9	0	0	0	0	0	0	0	0	0	0	0	-4	1
24 Ballina Shire Council	5,316	5,990	8,311	15,399	-1.2	-2.4	-1.3	0.2	-0.7	-2.3	-0.3	3.6	-1.0	-2.3	-0.8	2.1	261	0	0	0	0	130	0	0	0	-13	-11	-10	-8
25 Kempsey Shire Council	4,095	11,397	11,564	6,308	-0.4	-0.5	-0.4	-0.3	0.5	0.4	0.6	0.0	-0.1	-0.2	0.0	-0.2	0	0	0	0	0	0	0	0	2	4	6	6	
26 Essential Energy	10,702	20,801	28,136	7,101													0	0	0	0	0	0	0	0	0	0	0	0	
27 Byron Shire Council	8,114	8,774	29,247	5,767	-1.3	0.2	1.3	-0.4	1.3	1.4	1.5	1.8	0.7	1.1	1.4	1.3	0	0	0	0	0	0	0	0	4	6	18	19	
28A Goldenfields Water (Reticulation)					-1.3	-0.9	-1.1	-1.3									0	0	0	0	0	0	0	0	-9	0	-9	0	
28B Goldenfields Water (Bulk Water Sup)					-0.5	-0.8	-0.4	-2.8									0	0	0	0	0	0	0	0	-9	0	-8	0	
20 Goulburn Mulwaree Council			6,100	32,794			0.1	0.6			3.6	4.6			1.5	1.8			0	0			0	0			5	2	
9 Wagga Wagga Council	14,844	32,531	11,763	11,409					1.0	1.3	0.7						0	0	0	0	0	0	0	0	-9	4	5	5	
NMU Range Max	75,289	69,437	94,950	91,099	10	3	6	14	6.9	7.8	6.5	5.2	8.4	4.7	4.5	3.4	2,402	1,787	3,968	2,321	437	115	180	25	16	26	30	30	
NMU Range Min	1,813	3,201	0	1,013	-2	-2	-1	-3	-1.2	-2.3	-2.3	-2.2	-1.1	-2.3	-1.8	-2.6	0	0	0	0	0	-409	0	0	-16	-16	-15	-16	
Median of NMU Indicators shown in Table	14,216	20,679	14,154	7,951	0	0	1	0	1.3	1.2	1.4	1.3	0.9	0.7	1.1	0.8	0	0	0	0	4	0	0	0	-1	1	2	2	

WATER UTILITY	FINANCIAL																															
	WS + SGE								WS				SGE				WS				SGE				WS & SGE							
	Interest Cover				Net Profit after Tax				CSO				Capital Works Grants WS				Capital Works Grants SGE				Water Supply Capital Expenditure				Sewerage Capital Expenditure				NPAT Ratio			
	F23				F24				F25				F26				F27				F28				F29				F30			
				(\$'000)				(\$'000)				(\$'000)				(\$'000)				(\$/property)				(\$/property)								
Sydney Water Corporation	0.9	1.5	3.2	1.9	196,384	187,264	459,675	273,768	99,329	118,936	134,656	146,902	0	0	0	0	0	0	0	0	874	466	163	244	272	239	9	21	12			
Hunter Water Corporation	3.2	3.0	2.4	2.0	39,206	46,687	46,368	24,004	9,746	9,788	11,679	11,852	0	0	0	0	2,858	0	0	0	323	245	109	356	515	626	22	19	10			
Sydney Catchment Authority					5,093	41,327	44,364	36,759																								
1 Gosford City Council	2	>100	2	4	435	1,558	2,200	8,790	1,213	1,226	609	594	886	1,552	16,320	27,234	2,211	1,911	1,094	257	294	611	603	236	251	377	3	3	12			
2 Wyong Shire Council	0	0	1	0	-27,440	-18,496	-5,067	-11,789	1,421	1,340	698	1,344	764	339	13,233	27,668	44	0	1	39	276	889	525	73	175	74	-31	-7	-17			
3 Shoalhaven City Council	3	1	9	32	3,858	-303	7,549	9,464	953	976	1,004	992	0	4	77	0	9,507	4,764	5,199	197	38	359	393	555	671	1,796	-1	14	17			
4 Rous Water	0	0	0	1	-12,131	-5,528	-6,488	-3,186	11	7	12	10	0	0	1,834	0					113	98				-39	-42	-18				
5 MidCoast Water	0	0	1	0	-20,627	-15,837	1,920	-6,907	1,036	870	902	916	2,228	3,296	757	539	0	1,504	226	404	1,062	900	419	745	302	313	-33	3	-12			
6 Tweed Shire Council	>100	0	>100	1	7,117	-4,181	-1,865	-4,385	776	757	750	754	0	0	0	0	0	113	0	0	1,711	2,692	176	463	374	77	-9	-4	-11			
7 Port Macquarie Hastings Council	0	1	>100	>100	-3,240	-7,560	10,520	6,253	714	716	555	841	0	0	642	0	7	5	0	0	140	135	213	1,019	667	428	-18	24	15			
8 Riverina Water	>100	>100	>100	0	4,962	4,157	2,624	-2,229	203	200	198	191	0	0	11	61					323	240	294				22	14	-17			
10 Coffs Harbour City Council	1	1	4	1	4,781	-5,731	20,478	3,647	512	476	491	482	0	606	0	0	5,729	4,361	641	205	1,407	269	228	1,598	601	140	-15	35	8			
11 Albury City Council	0	0	4	0	-2,404	-1,077	1,039	-2,195	311	310	312	293	0	0	0	0	0	0	0	0	195	0	94	251	0	105	-5	4	-10			
12 Fish River Water				0												0							94									
13 Tamworth Regional Council	>100	>100	>100	>100	13,077	17,281	17,518	14,364	404	401	392	380	1,024	235	125	116	0	0	0	0	334	201	214	1,171	2,675	1,380	49	46	40			
14 Clarence Valley Council	17	2	1	1	24,047	2,183	1,334	-3,459	450	446	434	428	6,216	372	695	11	1,377	9,789	2,983	587	446	140	218	3,132	1,656	504	8	5	-16			
15 Eurobodalla Shire Council	>100	12	>100	8	3,175	4,255	9,574	4,020	396	394	393	376	4,930	8,071	2,254	3,006	0	3,503	0	0	787	943	424	241	370	578	16	33	14			
16 Wingecarribee Shire Council	>100	>100	5	2	806	445	-603	-1,124	288	389	309	300	0	0	0	0	799	3,518	3,230	3,868	516	158	131	834	944	302	2	-3	-6			
17 Queanbeyan City Council	>100	0	0	0	4,264	-2,054	-2,612	-5,523	169	165	207	162	0	0	0	0	0	0	0	0	48	44	23	215	65	40	-13	-14	-34			
18 Dubbo City Council	2	2	29	6	532	102	3,383	3,167	197	190	184	188	13	5	5	0	3	1	0	0	116	294	74	303	141	292	1	16	14			
19 Orange City Council	42	>100	>100	0	1,136	7,850	-1,362	-775	261	257	254	247	218	2,935	3,041	4,053	0	0	0	0	374	229	267	53	59	41	28	-8	-4			
21 Bathurst Regional Council	>100	>100	>100	>100	3,333	5,197	2,592	140	208	210	208	207	16	32	33	310	0	0	27	0	200	100	122	194	120	106	27	13	1			
22 Lismore City Council	0	0	0	0	-4,255	-5,087	-243	-5,973	252	301	256	247	0	0	0	0	0	0	0	0	85	111	119	164	470	351	-33	-1	-41			
23 Bega Valley Shire Council	>100	8	10	>100	4,274	2,920	3,921	2,166	265	266	262	266	20	452	2,965	5,804	8,484	4,001	0	0	221	291	1,236	702	82	362	13	16	9			
24 Ballina Shire Council	0	0	0	>100	201	-3,185	2,671	4,814	300	300	304	290	0	0	0	18	50	0	0	0	47	28	174	419	604	952	-21	14	19			
25 Kempsey Shire Council	0	0	0	0	-2,037	-3,429	-2,769	-3,120	262	254	258	253	0	45	520	195	7	0	36	0	234	455	399	949	657	157	-25	-19	-20			
26 Essential Energy	>100	>100	>100	>100		1,385	3,050	-355	309	288	274	315	0	0	190	0	0	0	0	0	1,897	2,592	489	101	102	203	8	17	-2			
27 Byron Shire Council	0	1	2	1	-565	-1,205	-1,120	-2,440	162	157	154	153	0	0	0	0	343	809	1,844	431	41	24	93	847	2,861	459	-7	-6	-13			
28A Goldenfields Water (Reticulation)	0	0	0	0	-24	-194	-747	0	104	101	100	100	9	0	0	289											-3	-11	0			
28B Goldenfields Water (Bulk Water Sup)	0	0	0	0	-586	-592	-9	0	0	0	0	0	0	0	0	236											-10	0	0			
20 Goulburn Mulwaree Council			7	20			3,190	3,370			181	178			1,031	25,128			0	183			430	2,945			178	146	20	20		
9 Wagga Wagga Council	>100	9	>100	1	2,218	1,838	430	-153	168	161	164	168					0	0	0	0				1,378	468	218	13	4	-1			
NMU Range Max	42	>100	>100		24,047	17,281	20,478	14,364	1,421	1,340	1,004	1,344	6,216	8,071	16,320	27,668	9,507	9,789	5,199	3,868	1,897	2,692	2,945	3,132	2,861	1,796	49	46	40			
NMU Range Min	0	0	0	0	-27,440	-18,496	-6,488	-11,789	0	0	0	0	0	0	0	0	0	0	0	0	38	0	23	53	0	40	-39	-42	-41			
Median of NMU Indicators shown in Table	0	>100	>100	1	669	-303	1,627	-254	288	300	268	278	0	2	77	15	3	1	0	0	276	240	216	463	372	297	-3	4	-2			

WATER UTILITY	FINANCIAL																																			
	WS				SGE				WS & SGE				WS				SGE				WS & SGE				WS				SGE							
	Revenue per ML for WS - Bulk utility				Revenue per ML for Sge - Bulk utility				Income for Utility per ML WS & SGE - Bulk utility				Operating cost OMA WS - Bulk utility				Operating cost OMA SGE - Bulk utility				Operating cost OMA WS & SGE - Bulk utility				Capital Expenditure WS - Bulk utility				Capital Expenditure SGE - Bulk utility							
	F5.1				F6.1				F7.1				F11.1				F12.1				F13.1				F28.1				F29.1							
(\$/ML)				(\$/ML)				(\$/ML)				(\$/ML)				(\$/ML)				(\$/ML)				(\$/ML)				(\$/ML)								
2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11				2007/08 2008/09 2009/10 2010/11								
Sydney Water Corporation																																				
Hunter Water Corporation																																				
Sydney Catchment Authority				0																																0
1 Gosford City Council																																				
2 Wyong Shire Council																																				
3 Shoalhaven City Council																																				
4 Rous Water			1,381	1,481							1,242	1,468			778	753								753				417	387							
5 MidCoast Water																																				
6 Tweed Shire Council																																				
7 Port Macquarie Hastings Council																																				
8 Riverina Water																																				
10 Coffs Harbour City Council																																				
11 Albury City Council																																				
12 Fish River Water				812								812				390								390					2							
13 Tamworth Regional Council																																				
14 Clarence Valley Council																																				
15 Eurobodalla Shire Council																																				
16 Wingecarribee Shire Council																																				
17 Queanbeyan City Council																																				
18 Dubbo City Council																																				
19 Orange City Council																																				
21 Bathurst Regional Council																																				
22 Lismore City Council																																				
23 Bega Valley Shire Council																																				
24 Ballina Shire Council																																				
25 Kempsey Shire Council																																				
26 Essential Energy																																				
27 Byron Shire Council																																				
28A Goldenfields Water (Reticulation)																																				
28B Goldenfields Water (Bulk Water Sup				789 409								788 408																								
20 Goulburn Mulwaree Council																																				
9 Wagga Wagga Council																																				
NMU Range Max												1,468				753								753				387								
NMU Range Min				409				408				390				390								390				2								
Median of NMU Indicators shown in Table				812				812				572				572								572				194								

# Appendix G: NSW Greenhouse Gas Calculator

## Overview

Greenhouse gases are produced from the use of fossil fuel in a water utility's operations, including transport and office accommodation, and are also produced from the chemical reactions resulting from the processing of sewage in a sewage treatment works. The mass of greenhouse gases can be calculated by applying appropriate conversion factors to the quantities of fuel consumed and by using appropriate formulae to calculate emissions from sewage treatment works.

The Federal Government provides guidance in the calculation of emissions and has published supporting information including tables of conversion factors and formula for the calculation of emissions from sewage treatment works (see Federal Department of Climate Change and Energy Efficiency). However, the calculation of emissions is relatively complex and, for sewage treatment works, requires the measurement or estimation of a number of factors. It requires the utility to assess the relevance and suitability of the appropriate factors and to apply these factors to its situation.

In order to assist NSW utilities in estimating the greenhouse gas emissions resulting from their water and sewerage operations, the NSW Office of Water has developed this greenhouse gas calculator for use by utilities. This will simplify and standardise the process. The calculator is a spreadsheet based on the Federal Government factors and also includes some simplifying assumptions for sewage treatment. Utilities should review whether these assumptions are appropriate for their situation. Where a utility has specific data or different circumstances, the calculator may not apply.

To calculate greenhouse gas emissions, utilities should follow steps A to D in the Instructions worksheet (see pink tab **Instructions**). These steps comprise:

- A** Emissions from water and sewerage operations - excluding STWs
- B** Emissions from Sewage Treatment Works (STWs)
- C** Carbon Offsets
- D** Total Emissions

Calculation of emissions for an example utility is shown at the green tab **Example**.

## Instructions

Calculate the emissions from your water and sewerage operations and also from your sewage treatment works by following steps A to D below<sup>1</sup>.

An example has been provided for an example utility showing the procedure for calculation of emissions (see green tab **Example**).

### **A. Emissions from Water and Sewerage Operations - excluding Sewage Treatment Works (STWs)**

To calculate emissions from water and sewerage operations, go to orange tab **Emissions**.

Collect the relevant data (quantities of each fuel combusted including electricity) for your water, sewerage and other operations.

Insert the quantities of each fuel in the appropriate blue shaded cells.

---

<sup>1</sup> Examples of common emission sources are shown at yellow tab **Emission Source Examples**



## B. Emissions from Sewage Treatment Works (STWs)

To calculate emissions from the sewage treatment works, go to orange tab **STW 1**.

Insert the relevant data in the blue cells for steps 1 to 8 for your STW.

However, if your utility does not have sufficient data to use the tables, you may use the graphs of emissions from typical sewage treatment works provided under orange tab **STW Graphs**.

Repeat as necessary for each of your STWs in tabs **STW 2** to **STW 10**.

Sum the total emissions from each of your STWs (sum step 11 for **STW 1** to **STW 10**).

Insert the sum of total emissions from your STWs into the blue shaded cell for sewage treatment in the orange tab **Emissions**.

## C. Carbon Offsets

Go to the orange tab **Emissions**.

Determine your utility's accredited sequestration (usually in the form of tonnes of carbon in tree plantations).

Enter the accredited sequestration in the blue shaded cell for sequestration.

## D. Total Emissions

Your utility's total greenhouse gas emissions will be shown at the bottom of orange tab **Emissions**.

Note that the orange tab **Emissions** worksheet is based on Tables 1 to 4 of the Australian Government Department of Climate Change and Energy Efficiency "National Greenhouse Accounts (NGA) Factors" July 2011. The NSW Office of Water will arrange for updating of this worksheet if Tables 1 to 4 are updated or when better information becomes available.

# Calculation of Emissions from Water and Sewerage Operations

## A. CALCULATION OF EMISSIONS FROM WATER AND SEWERAGE OPERATIONS BY NSW WATER UTILITIES - 2011

Based on Tables 1 to 5 of the NATIONAL GREENHOUSE ACCOUNTS (NGA) FACTORS July 2011

Insert Council Name and Year

Insert Council name and year in cell above

1. Enter the annual quantity of fuel used in water, sewerage or other operations in the appropriate blue cells below.
2. Enter the estimated emissions from sewage treatment works (from orange tab STW 1 to STW 10 ).
3. Enter the carbon offset (if any) in the cell for sequestration.
4. The TOTAL Emissions (tonnes CO2-e) are shown at the bottom of the table.

FUEL or PROCESS UTILISED	UNITS	ANNUAL QUANTITY of FUEL USED				GREENHOUSE GAS EMISSIONS			
		WATER SUPPLY	SEWERAGE OPERATION	OTHER*	TOTAL USED	WATER SUPPLY	SEWERAGE OPERATION	OTHER*	TOTAL EMISSIONS
		Water source, storage, treatment, transfer and	Sewage collection, storage, treatment and	Transport (vehicles), office buildings		t CO2-e	t CO2-e	t CO2-e	t CO2-e
<b>ELECTRICITY PURCHASED FROM GRID (Table 5 of NGA)</b>		Enter data into the blue cells only							
Electricity purchased from NSW or ACT Grid	kWh								
Electricity purchased from QLD Grid	kWh								
Electricity purchased from Vic Grid	kWh								
<b>SUBTOTAL</b>	t CO2-e					0.0	0.0	0.0	0.0
<b>LIQUID FUELS (Transport) (Adapted from Table 4 of NGA)</b>									
Gasoline for use in an aircraft (AVGAS)	kL								
Kerosene for use in an aircraft (AVTUR)	kL								
Fuel oil (General transport)	kL								
Biodiesel (General transport)	kL								
Gasoline (Vehicles)	kL								
Diesel oil (Vehicles)	kL								
Liquefied petroleum gas (Vehicles)	kL								
Ethanol (Vehicles)	kL								
<b>SUBTOTAL</b>	t CO2-e					0.0	0.0	0.0	0.0
<b>LIQUID FUELS (Non Transport) (Adapted from Table 3 of NGA)</b>									
Petroleum based oils (other than fuel, eg lubricants)	kL								
Gasoline (other than for use in an aircraft)	kL								
Kerosene (other than for use in an aircraft)	kL								
Heating oil	kL								
Diesel oil	kL								
Fuel oil	kL								
Liquefied petroleum gas	kL								
Biodiesel	kL								
Ethanol for use in an internal combustion engine	kL								
<b>SUBTOTAL</b>	t CO2-e					0.0	0.0	0.0	0.0
<b>SOLID FUELS (Non Transport) (Adapted from Table 1 of NGA)</b>									
Black coal	t								
Brown coal	t								
Coking coal	t								
Brown coal briquettes	t								
Industrial materials (eg. tyres) derived from fossil fuels	t								
Municipal materials (non-biomass)	t								
Municipal and industrial materials (Biomass)	t								
Wood (dry)	t								
Wood (Green and air dried)	t								
Bagasse	t								
Charcoal	t								
<b>SUBTOTAL</b>	t CO2-e					0.0	0.0	0.0	0.0
<b>NATURAL GAS (Non Transport) (Adapted from Table 2 of NGA)</b>									
Coal seam methane	m <sup>3</sup>								
Coal mine waste gas	m <sup>3</sup>								
Town gas	m <sup>3</sup>								
Liquefied natural gas	kL								
Landfill or sludge biogas (methane only)	m <sup>3</sup>								
<b>SUBTOTAL</b>	t CO2-e					0.0	0.0	0.0	0.0
<b>SEWAGE TREATMENT (from STW spreadsheet)</b>									
Sum of STW 1 to STW 10 or from STW Graphs	t								
<b>SUBTOTAL</b>	t CO2-e						0.0		0.0
<b>SEQUESTRATION</b>									
Carbon Offset	t								
<b>SUBTOTAL</b>	t CO2-e							0.0	0.0
<b>TOTAL EMISSIONS</b>	t CO2-e					0.0	0.0	0.0	0.0

\* OTHER is the estimated water and sewerage component of the fuel used in Councils' office buildings and vehicles and can also include sequestration as an offset (ie. a negative value).

# Calculation of Greenhouse Gas Emissions from Sewerage Treatment Works

## B. CALCULATION OF GREENHOUSE GAS EMISSIONS FROM SEWAGE TREATMENT WORKS (STWs)

STW 1

It is only necessary to insert the STW identifier in blue cell above and enter data in the blue cells below (steps 2 and 7).

Green cells may be left blank or data can be inserted if available. Total emissions are calculated at step 16.

If additional STWs are required, see orange worksheets STW 2 to STW 10.

Step		Input	Result
1	Inflow to STW	Insert volume of sewage entering STW per year (if known). Else leave blank.	0 ML
		OR	
2	Population	Insert actual population served by STW (if known). Else leave blank. (If population unknown, it can be estimated assuming residential sewage is 240 L/c/d.)	0 No.
		OR	
3	COD in influent (CODw)	Insert COD in influent (if known). Else leave blank. (If BOD in influent is known, COD can be calculated from BOD x 2.6). If COD or BOD in influent are unknown, COD in influent is estimated from the following approximation. $CODw = 0.0585 \times \text{population}$	0 tonnes
4	Volatile solids in sludge (VS)	Insert volatile solids in primary sludge VSpsl (if known). Else leave blank.	tonnes
		Insert volatile solids in waste activated sludge VSwasl (if known). Else leave blank.	tonnes
5	COD in sludge (CODsl)	CODsl is calculated as (VSpsl x 1.99) plus (VSwasl x 1.48) if VS is known. If VS is unknown, either enter fraction of COD removed as sludge or leave blank. (CODsl is assumed to be 0.6 x CODw)	0 tonnes
6	COD in effluent (CODEff)	Insert COD in effluent (if known). Else leave blank. (If BOD in effluent is known, COD can be calculated from BOD x 2.6). If COD or BOD in effluent are unknown, COD in effluent is estimated from the following approximation. $CODEff = 0.08 \times CODw$	0 tonnes
7	Methane correction factor (MCF) (The fraction of COD anaerobically treated)	Select MCFww for appropriate type of STW from table below at note (g). Select MCFsl for appropriate type of STW from table below at note (g).	
8	Sludge transferred out of plant (CODtr)	Insert COD in sludge transferred out of the plant to landfill (CODtrl). Else leave blank (default for CODtrl = CODsl x (1-MCFx0.4)) COD in sludge transferred out of the plant to other than fill (CODtro) (default is zero) COD in sludge transferred out of plant (CODtr)	0 tonnes 0 tonnes 0 tonnes 0 tonnes
9	Methane emissions (CH4gen)	Emissions from wastewater treatment (CH4genww) $CH4genww = (CODw - CODsl - CODEff) \times MCFww \times EFw$ in tonnes CO2-e where $EFw = 5.3$ tonnes CO2-e per tonne COD Emissions from sludge (CH4gensl) $CH4gensl = (CODsl - CODtrl - CODtro) \times MCFsl \times EFsl$ in tonnes CO2-e where $EFsl = 5.3$ tonnes CO2-e per tonne COD	0 t CO2-e 0 t CO2-e
10	Methane captured for combustion or flaring (R) eg. methane recovered in a digester	Insert volume (Q) combusted or flared in m3 if applicable OR Insert methane recovered in digester in tonnes CO2-e if applicable Methane captured from biogas $R = 0.0142464 \times Q$ OR tonnes methane recovered	0 t CO2-e 0 t CO2-e
11	Total Methane emissions (CH4gen)	Total methane emissions = CH4genww + CH4gensl - R	0 t CO2-e

12	Nitrogen in wastewater (N)	Nitrogen entering STW (Nin assumed to be = 0.036 x 0.16 x Population in tonnes Nitrogen)	0.0	t N
13	Nitrogen in sludge	Dry mass of sludge transferred to landfill (Mtrl) (default CODtrl)	0	tonnes
		Nitrogen in sludge transferred to landfill Ntrl = 0.05 x Mtrl	0.0	t N
		Nitrogen in sludge transferred to other than landfill Ntro assumed to be zero	0.0	t N
		Nitrogen in sludge Nslout = Ntrl + Ntro	0.0	t N
14	Nitrogen discharged to the environment	Nitrogen discharged to enclosed waters (Nencw) (default Nin - Nslout) (ie. other than estuarine or open coastal waters)	0.0	t N
		Nitrogen discharged to estuarine waters (Nestw)		t N
		Nitrogen discharged to open coastal waters (Ncw)		t N
		Note that Nin should equal (Nslout + Nencw + Nestw + Ncw)		
15	Total nitrous oxide emissions (Ej)	$Ej = ((Nin - Nslout - Nencw) \times 4.9 + Nencw \times 4.9 + Nestw \times 1.2 + Ncw \times 0)$ tonnes CO2-e	0	t CO2-e
16	TOTAL EMISSIONS FROM STW (GHG)	Total Greenhouse Gas Emissions (GHG) GHG = Methane emissions (CH4gen) plus nitrous oxide emissions (Ej)	0	t CO2-e

**NOTES:**

- (a) Calculation of emissions from STWs requires estimation or measurement of various parameters including BOD or COD for inflow and outflow.
- (b) The greenhouse gas emissions can be calculated using the NGER System Measurement Technical Guidelines July 2011 (NGER Guidelines). The NGER Guidelines are available on the Department of Climate Change and Energy Efficiency website.
- (c) The calculations above include a number of simplifying assumptions which have been based on typical STW operations shown at yellow tab STW Assumptions. However, where these assumptions are incorrect, they can be overridden as necessary.
- (d) Primary sludge is from the first major treatment process in a STW that removes a substantial amount of suspended matter and no colloidal or dissolved matter.
- (e) Waste activated sludge is from a secondary treatment process in a STW involving aeration and active biological material.
- (f) Graphs have also been prepared based on typical STW operations for different inflows and populations. These are shown at orange tab STW Graphs.
- (g) Table of default Methane Correction Factors for different treatment types is shown below. See also yellow tab STW Assumptions

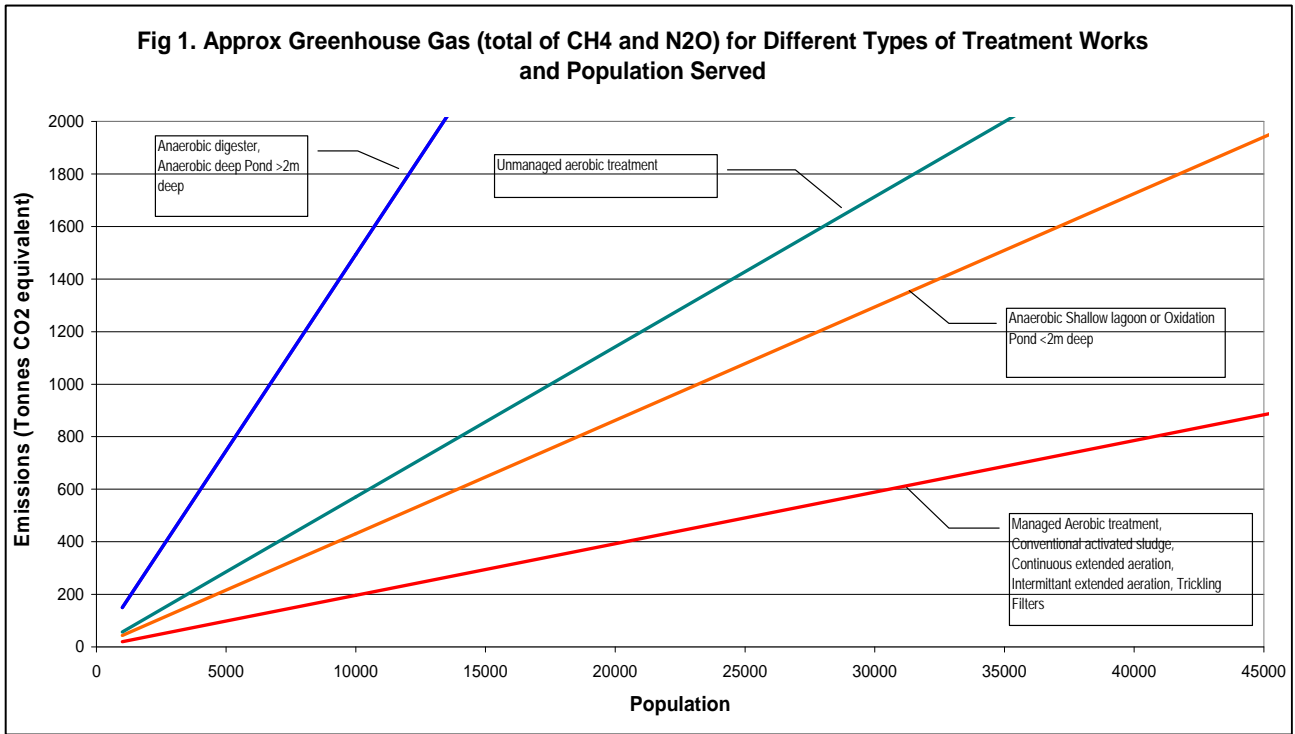
TYPE OF TREATMENT	STW assumed for each type of treatment	MCF <sub>fw</sub>	MCF <sub>sl</sub>
Managed aerobic treatment	Aerated Lagoon	0	0
	Preliminary treatment		
	Activated sludge processes		
	Secondary sedimentation tanks of clarifiers		
	Intermittent Extended Aeration (IDEA)		
	Oxidation ditches and carrousel		
	Mechanically aerated lagoons		
	Trickling filters		
	Dissolved air flotation		
	Aerobic digesters		
	Tertiary filtration		
Unmanaged aerobic treatment	Disinfection (eg. chlorination, ultraviolet, ozonation)		
	Mechanical dewatering		
Anaerobic digester/reactor	Gravity thickeners	0.3	0.3
	Imhoff Tanks		
Anaerobic shallow lagoon (<2m deep)	Anaerobic digester	0.8	0.8
	High rate anaerobic reactors		
Anaerobic deep lagoon (>2m deep)	Facultative lagoons	0.2	0.2
	Maturation/polishing lagoons		
	Sludge drying pans		
Anaerobic deep lagoon (>2m deep)	Sludge lagoons	0.8	0.8
	Covered anaerobic lagoons		

# Graphs of Emissions from different types of STW

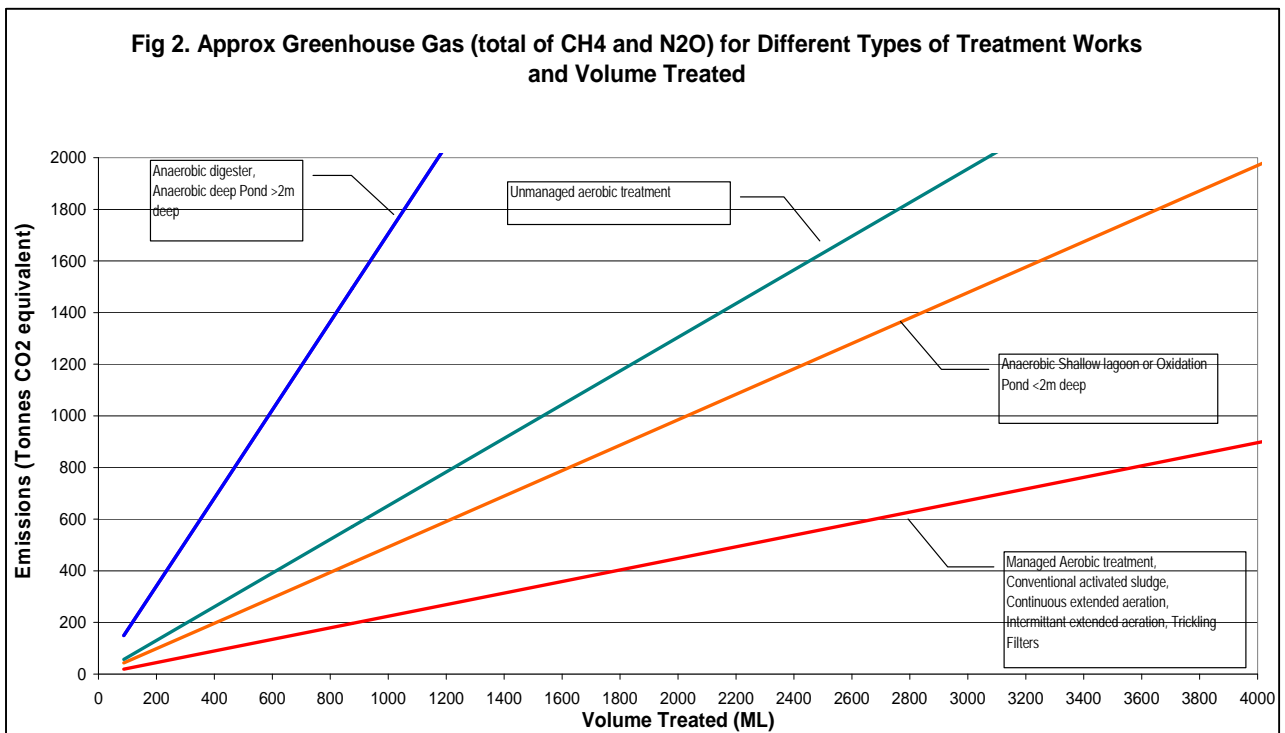
## Graphs of Emissions for different types of STW

Greenhouse gas emissions for typical types of treatment are graphed below against population and inflow. The graphs have been developed on the assumption that inflow from residential sewage is 240 L per capita per day and that the types of treatment correspond to the default fractions anaerobic shown in yellow tab **STW Assumptions**. Refer also to the other assumptions shown at yellow tab **STW Assumptions**.

**Figure 1. Greenhouse Gases Based on Population**



**Figure 2. Greenhouse Gases Based on Volume of Inflow**



# Assumptions Adopted for the Calculation of Emissions from STWs

## ASSUMPTIONS ADOPTED FOR THE CALCULATION OF EMISSIONS FROM STWs

Refer to orange tabs STW1 to STW10

The following assumptions have been provided to assist in the calculation of emissions from STWs.

Using these assumptions will enable a first approximation of greenhouse gas emissions.

Where utilities have measured data or different circumstances, the assumptions below may not apply.

In general, formulae and factors shown below have been adopted from the National Greenhouse And Energy System Measurement Technical Guidelines July 2011

(a) COD in influent to STW (COD<sub>w</sub>)

BOD from domestic sewage is assumed to be 2.25 tonnes per annum per 100 persons

COD is assumed to be 2.6 times BOD

$$\text{COD} = 2.6 \times 2.25 / 100 = 0.0585 \text{ tonnes per capita}$$

COD in influent to the STW (COD<sub>w</sub>) is therefore calculated from

$$\text{COD}_w = 0.0585 \times \text{population}$$

(b) Population served

Where the inflow to the STW is measured but the population served is unknown, an approximation for the population served can be calculated from the assumption that the volume of inflow for residential sewage is 240 L per capita per day.

(c) Quantity of COD removed as sludge from wastewater and treated in the plant (COD<sub>sl</sub>)

$$\text{COD}_{sl} = \text{COD}_{psl} + \text{COD}_{wasl}$$

where COD<sub>psl</sub> is the quantity of COD removed as primary sludge from wastewater and treated at the plant

and COD<sub>wasl</sub> is the quantity COD removed as waste activated sludge

$$\text{COD}_{psl} = \text{VS}_{psl} \times 1.99$$

where VS<sub>psl</sub> is the estimated volatile solids in the primary sludge

$$\text{COD}_{wasl} = \text{VS}_{wasl} \times 1.48$$

where VS<sub>wasl</sub> is the estimated volatile solids in the waste activated sludge

The fraction of COD removed as sludge should be readily available from internal records of treatment plants.

It is assumed that the COD removed as sludge (COD<sub>sl</sub>) is about 60% of COD entering STW

$$\text{COD}_{sl} = 0.6 \times \text{COD}_w \quad \text{unless a better estimate is available from the estimated volatile solids.}$$

(d) COD in wastewater discharged from STW (COD<sub>eff</sub>)

COD in wastewater discharged from the STW in effluent is assumed to be

$$\text{COD}_{eff} = 0.08 \times \text{COD}_w \quad \text{unless COD}_{eff} \text{ is known, in which case the actual value should be inserted}$$

(e) Methane emission factor for wastewater (EF<sub>w</sub>)

Default emission factor for wastewater is

$$\text{EF}_w = 5.3 \text{ tonnes CO}_2\text{-e / tonne COD (wastewater)}$$

(f) Methane emission factor for sludge (EF<sub>sl</sub>)

Default emission factor for sludge is

$$\text{EF}_{sl} = 5.3 \text{ tonnes CO}_2\text{-e / tonne COD (sludge)}$$

(g) Fraction of COD anaerobically treated in wastewater (MCF<sub>ww</sub>) and in sludge (MCF<sub>sl</sub>)

Methane correction factors for wastewater (MCF<sub>ww</sub>) and for sludge (MCF<sub>sl</sub>) for different types of treatment

are provided in the NGER Guidelines and are shown in the table below

The STWs assumed to correspond to each type of treatment are also shown in the table below

(h) Methane captured for combustion or flaring

$$\text{Methane captured} = 0.0142464 \times Q \quad \text{in tonnes CO}_2\text{-e (where Q is the volume in m}^3\text{ of methane combusted, flared or transferred out)}$$

(i) Methane emissions generated from wastewater treatment are calculated using the formula shown in the NGER Guidelines

$$\text{CH}_4\text{gen}_{ww} = (\text{COD}_w - \text{COD}_{sl} - \text{COD}_{eff}) \times \text{MCF}_{ww} \times \text{EF}_w \quad \text{in tonnes CO}_2\text{-e}$$

Using default values, this results in:

$$\text{CH}_4\text{gen}_{ww} = (\text{COD}_w \times 0.63) \times \text{MCF}_{ww} \times 5.3 \quad \text{in tonnes CO}_2\text{-e}$$

(j) Methane emissions generated from sludge are calculated using the formula shown in the NGER Guidelines

$$\text{CH}_4\text{gen}_{sl} = (\text{COD}_{sl} - \text{COD}_{trl} - \text{COD}_{tro}) \times \text{MCF}_{sl} \times \text{EF}_{sl} \quad \text{in tonnes CO}_2\text{-e}$$

Using default values, and assuming all COD in sludge transferred out goes to landfill, this results in:

$$\text{CH}_4\text{gen}_{sl} = (\text{COD}_w \times 0.6 - \text{COD}_{trl}) \times \text{MCF}_{sl} \times 5.3 \quad \text{in tonnes CO}_2\text{-e}$$

(k) The total methane emissions are the sum of the wastewater emissions plus sludge emissions less the methane captured

$$\text{Total Methane Emissions} = \text{CH}_4\text{gen}_{ww} + \text{CH}_4\text{gen}_{sl} - \text{methane captured} \quad \text{in tonnes CO}_2\text{-e}$$

- (l) Nitrogen entering the plant is assumed to be  
 $N_{in} = \text{Protein} \times \text{Fracpr} \times \text{Population}$   
 where  
 Protein = 0.036 (default from NGER Guidelines)  
 Fracpr = 0.16 (default from NGER Guidelines)
- (m) Nitrogen in sludge transferred to landfill is assumed to be 0.05 times the dry mass of sludge transferred to landfill  
 $N_{trl} = 0.05 \times M_{trl}$   
 where  $M_{trl}$  is the dry mass of sludge transferred to landfill (default assumed to be  $COD_{trl}$ )
- Nitrogen in sludge transferred to other than landfill is assumed to be zero  
 $N_{tro} = 0$
- (n) Nitrogen in effluent is assumed to be that remaining in effluent  
 $N_{out} = N_{in} - N_{trl} - N_{tro}$
- (o) Nitrous oxide emissions ( $E_j$ ) are calculated using the formula shown in the NGER Guidelines  
 $E_j = (N_{in} - N_{trl} - N_{tro} - N_{out}) \times EF_{secij} + N_{out} \times E_{fdisij}$   
 where  $EF_{secij}$  is the emission factor for wastewater treatment with default value of 4.9 tonnes  $N_2O$  measured in  $CO_2\text{-e}$  per tonne nitrogen  
 and  $E_{fdisij}$  is the emission factor for the discharge environments shown below in  $CO_2\text{-e}$  per tonne nitrogen

	$E_{fdisij}$
Discharge to enclosed waters (ie. all waters other than estuarine or open coastal waters)	4.9
Discharge to estuarine waters	1.2
Discharge to open coastal waters	0

For convenience, based on all of the above assumptions, graphs have been prepared for different types of STWs for different inflows or populations. These graphs are shown at the orange tab STW Graphs.

TYPE OF TREATMENT	STW assumed for each type of treatment	MCF <sub>fw</sub>	MCF <sub>sl</sub>
Managed aerobic treatment	Aerated Lagoon Preliminary treatment Activated sludge processes Secondary sedimentation tanks of clarifiers Intermittent Extended Aeration Oxidation ditches and carrousel Mechanically aerated lagoons Trickling filters Dissolved air flotation Aerobic digesters Tertiary filtration Disinfection (eg. chlorination, ultraviolet, ozonation) Mechanical dewatering	0	0
Unmanaged aerobic treatment	Gravity thickeners Imhoff Tanks	0.3	0.3
Anaerobic digester/reactor	Anaerobic digester High rate anaerobic reactors	0.8	0.8
Anaerobic shallow lagoon (<2m deep)	Facultative lagoons Maturation/polishing lagoons Sludge drying pans	0.2	0.2
Anaerobic deep lagoon (>2m deep)	Sludge lagoons Covered anaerobic lagoons	0.8	0.8



# Example Calculation of Emissions from Water and Sewerage Operations

## Example Calculation of Emissions from Water and Sewerage Operations

Example Council 2010-11

For an example council, fictitious fuel quantities have been assumed and are shown in the table at right.

These quantities have been entered into the appropriate blue shaded cells in the emissions table below.

The council also has an anaerobic lagoon <2m deep.

The STW has no biogas captured or flared.

Inflow to STW is 430ML serving 5,000 people

The total greenhouse gas generated from this STW

is shown in the green tab Example STW and is 216 t CO<sub>2</sub>-e

This value is entered into the blue shaded cell

for sewerage operations emissions below

Fuel Type	Water		Sewerage		Other	
Electricity	200000	kwh	300000	kwh	100000	kwh
Fuel oil	10	kL	15	kL	15	kL
Diesel oil					10	kL
Ethanol					12	kL
Heating oil					5	kL
Diesel oil (non transport)					2	kL
Fuel oil (non transport)					1	kL
Wood (dry)					55	t
Town gas	125	m3	335	m3	540	m3
Carbon offset					45	t

The total greenhouse gas emissions are shown below as 749t CO<sub>2</sub>-e (207t for water supply, 528t for sewerage and 14t for Other).

FUEL or PROCESS UTILISED	UNITS	ANNUAL QUANTITY USED				GREENHOUSE GAS EMISSIONS (t CO <sub>2</sub> -equivalent)			
		WATER SUPPLY OPERATIONS	SEWERAGE OPERATIONS	OTHER*	TOTAL USED	WATER SUPPLY OPERATIONS	SEWERAGE OPERATIONS	OTHER*	TOTAL EMISSIONS
		Water source, storage, treatment, transfer and distribution	Sewage collection, storage, treatment and discharge	Transport (vehicles), office buildings, sequestration		t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e
<b>ELECTRICITY PURCHASED FROM GRID (Table 5 of NGA)</b>		Enter data into the blue cells only							
Electricity purchased from NSW or ACT Grid	kWh	200,000	300,000	100,000	600,000	178.0	267.0	89.0	534.0
Electricity purchased from QLD Grid	kWh								
Electricity purchased from Vic Grid	kWh								
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>					<b>178.0</b>	<b>267.0</b>	<b>89.0</b>	<b>534.0</b>
<b>LIQUID FUELS (Transport) (Adapted from Table 4 of NGA)</b>									
Gasoline for use in an aircraft (AVGAS)	kL								
Kerosene for use in an aircraft (AVTUR)	kL								
Fuel oil (General transport)	kL	10	15	15	40	29.2	43.8	43.8	116.8
Biodiesel (General transport)	kL								
Gasoline (Vehicles)	kL								
Diesel oil (Vehicles)	kL			10	10			26.9	26.9
Liquefied petroleum gas (Vehicles)	kL								
Ethanol (Vehicles)	kL			12	12			0.1	0.1
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>					<b>29.2</b>	<b>43.8</b>	<b>70.9</b>	<b>143.9</b>
<b>LIQUID FUELS (Non Transport) (Adapted from Table 3 of NGA)</b>									
Petroleum based oils (other than fuel, eg lubricants)	kL								
Gasoline (other than for use in an aircraft)	kL								
Kerosene (other than for use in an aircraft)	kL								
Heating oil	kL			5	5			12.9	12.9
Diesel oil	kL			2	2			4.0	4.0
Fuel oil	kL								
Liquefied petroleum gas	kL								
Biodiesel	kL								
Ethanol for use in an internal combustion engine	kL								
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>					<b>0.0</b>	<b>0.0</b>	<b>16.9</b>	<b>16.9</b>
<b>SOLID FUELS (Non Transport) (Adapted from Table 1 of NGA)</b>									
Black coal	t								
Brown coal	t								
Coking coal	t								
Brown coal briquettes	t								
Industrial materials (eg. tyres) derived from fossil fuels	t								
Municipal materials (non-biomass)	t								
Municipal and industrial materials (Biomass)	t								
Wood (dry)	t			55	55			1.1	1.1
Wood (Green and air dried)	t								
Bagasse	t								
Charcoal	t								
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>					<b>0.0</b>	<b>0.0</b>	<b>1.1</b>	<b>1.1</b>
<b>NATURAL GAS (Non Transport) (Adapted from Table 2 of NGA)</b>									
Coal seam methane	m <sup>3</sup>								
Coal mine waste gas	m <sup>3</sup>								
Town gas	m <sup>3</sup>	125	335	540	1000	0.3	0.8	1.3	2.3
Liquefied natural gas	kL								
Landfill or sludge biogas (methane only)	m <sup>3</sup>								
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>					<b>0.3</b>	<b>0.8</b>	<b>1.3</b>	<b>2.3</b>
<b>SEWAGE TREATMENT (from STW spreadsheet)</b>									
From emissions calculated in 'STW Example' spreadsheet	t						216.0		216.0
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>						<b>216.0</b>		<b>216.0</b>
<b>SEQUESTRATION</b>									
Carbon Offset	t			-45	-45			-165.2	-165.2
<b>SUBTOTAL</b>	<b>t CO<sub>2</sub>-e</b>							<b>-165.2</b>	<b>-165.2</b>
<b>TOTAL EMISSIONS</b>	<b>t CO<sub>2</sub>-e</b>					<b>207.5</b>	<b>527.6</b>	<b>14.0</b>	<b>749.1</b>

\* OTHER is the estimated water and sewerage component of the fuel used in Councils' office buildings and vehicles and can also include sequestration as an offset (ie. a negative value).

# Example Calculation of Greenhouse Gas Emissions from STWs

## B. CALCULATION OF GREENHOUSE GAS EMISSIONS FROM SEWAGE TREATMENT WORKS (STWs)

STW 1 **Example STW (Anaerobic pond <2m deep) serving 5,000 people**

It is only necessary to insert the STW identifier in blue cell above and enter data in the blue cells below (steps 2 and 7).

Green cells may be left blank or data can be inserted if available. Total emissions are calculated at step 16.

If additional STWs are required, see orange worksheets STW 2 to STW 10.

Step		Input	Result
1	Inflow to STW	Insert volume of sewage entering STW per year (if known). Else leave blank. OR	438 ML
2	Population	Insert actual population served by STW (if known). Else leave blank. (If population unknown, it can be estimated assuming residential sewage is 240 L/c/d.) OR	5,000 No.
3	COD in influent (CODw)	Insert COD in influent (if known). Else leave blank. (If BOD in influent is known, COD can be calculated from BOD x 2.6). If COD or BOD in influent are unknown, COD in influent is estimated from the following approximation. CODw = 0.0585 x population	293 tonnes
4	Volatile solids in sludge (VS)	Insert volatile solids in primary sludge VSspl (if known). Else leave blank. Insert volatile solids in waste activated sludge VSwasl (if known). Else leave blank.	tonnes
5	COD in sludge (CODsl)	CODsl is calculated as (VSspl x 1.99) plus (VSwasl x 1.48) if VS is known. If VS is unknown, either enter fraction of COD removed as sludge or leave blank. (CODsl is assumed to be 0.6 x CODw)	176 tonnes
6	COD in effluent (CODEff)	Insert COD in effluent (if known). Else leave blank. (If BOD in effluent is known, COD can be calculated from BOD x 2.6). If COD or BOD in effluent are unknown, COD in effluent is estimated from the following approximation. CODEff = 0.08 x CODw	23 tonnes
7	Methane correction factor (MCF) (The fraction of COD anaerobically treated)	Select MCFww for appropriate type of STW from table below at note (g). Select MCFsl for appropriate type of STW from table below at note (g).	0.2
8	Sludge transferred out of plant (CODtr)	Insert COD in sludge transferred out of the plant to landfill (CODtrl). Else leave blank (default for CODtrl = CODsl x (1-MCFx0.4)) COD in sludge transferred out of the plant to other than fill (CODtro) (default is zero) COD in sludge transferred out of plant (CODtr)	161 tonnes 0 tonnes 161 tonnes
9	Methane emissions (CH4gen)	Emissions from wastewater treatment (CH4genww) CH4genww = (CODw - CODsl - CODEff) x MCFww x EFw in tonnes CO2-e where EFw = 5.3 tonnes CO2-e per tonne COD Emissions from sludge (CH4gensl) CH4gensl = (CODsl - CODtrl - CODtro) x MCFsl x EFsl in tonnes CO2-e where EFsl = 5.3 tonnes CO2-e per tonne COD	99 t CO2-e 15 t CO2-e
10	Methane captured for combustion or flaring (R)	Insert volume (Q) combusted or flared in m3 if applicable OR Insert methane recovered in digester in tonnes CO2-e if applicable Methane captured from biogas R = 0.0142464 x Q OR tonnes methane recovered	0 t CO2-e
11	Total Methane emissions (CH4gen)	Total methane emissions = CH4genww + CH4gensl - R	114 t CO2-e

NOTE THAT METHANE RECOVERED IN A DIGESTER SHOULD BE DEDUCTED FROM THE TOTAL METHANE EMISSIONS SHOWN IN STEP 11

12	Nitrogen in wastewater (N)	Nitrogen entering STW (Nin assumed to be = 0.036 x 0.16 x Population in tonnes Nitrogen)	29	t N
13	Nitrogen in sludge	Dry mass of sludge transferred to landfill (Mtrl) (default CODtrl)	161	tonnes
		Nitrogen in sludge transferred to landfill Ntrl = 0.05 x Mtrl	8	t N
		Nitrogen in sludge transferred to other than landfill Ntro assumed to be zero	0	t N
		Nitrogen in sludge Nslout = Ntrl + Ntro	8.1	t N
14	Nitrogen discharged to the environment	Nitrogen discharged to enclosed waters (Nencw) (default Nin - Nslout) (ie. other than estuarine or open coastal waters)	20.7	t N
		Nitrogen discharged to estuarine waters (Nestw)		t N
		Nitrogen discharged to open coastal waters (Ncw)		t N
		Note that Nin should equal (Nslout + Nencw + Nestw + Ncw)		
15	Total nitrous oxide emissions (Ej)	$Ej = ((Nin - Nslout - Nencw) \times 4.9 + Nencw \times 4.9 + Nestw \times 1.2 + Ncw \times 0)$ tonnes CO2-e	102	t CO2-e
16	TOTAL EMISSIONS FROM STW (GHG)	Total Greenhouse Gas Emissions (GHG) GHG = Methane emissions (CH4gen) plus nitrous oxide emissions (Ej)	216	t CO2-e

**NOTES:**

- (a) Calculation of emissions from STWs requires estimation or measurement of various parameters including BOD or COD for inflow and outflow.
- (b) The greenhouse gas emissions can be calculated using the NGER System Measurement Technical Guidelines July 2011 (NGER Guidelines). The NGER Guidelines are available on the Department of Climate Change and Energy Efficiency website.
- (c) The calculations above include a number of simplifying assumptions which have been based on typical STW operations shown at yellow tab STW Assumptions. However, where these assumptions are incorrect, they can be overridden as necessary.
- (d) Primary sludge is from the first major treatment process in a STW that removes a substantial amount of suspended matter and no colloidal or dissolved matter.
- (e) Waste activated sludge is from a secondary treatment process in a STW involving aeration and active biological material.
- (f) Graphs have also been prepared based on typical STW operations for different inflows and populations. These are shown at orange tab STW Graphs.
- (g) Table of default Methane Correction Factors for different treatment types is shown below. See also yellow tab STW Assumptions

TYPE OF TREATMENT	STW assumed for each type of treatment	MCF <sub>fw</sub>	MCF <sub>sl</sub>
Managed aerobic treatment	Aerated Lagoon Preliminary treatment Activated sludge processes Secondary sedimentation tanks of clarifiers Intermittent Extended Aeration (IDEA) Oxidation ditches and carrousel Mechanically aerated lagoons Trickling filters Dissolved air flotation Aerobic digesters Tertiary filtration Disinfection (eg. chlorination, ultraviolet, ozonation) Mechanical dewatering	0	0
Unmanaged aerobic treatment	Gravity thickeners Imhoff Tanks	0.3	0.3
Anaerobic digester/reactor	Anaerobic digester High rate anaerobic reactors	0.8	0.8
Anaerobic shallow lagoon (<2m deep)	Facultative lagoons Maturation/polishing lagoons Sludge drying pans	0.2	0.2
Anaerobic deep lagoon (>2m deep)	Sludge lagoons Covered anaerobic lagoons	0.8	0.8

## Examples of Common Emission Sources in Water Supply and Sewerage

Examples of Common Emission Sources in Water Supply and Sewerage			
SOURCE	WATER SUPPLY OPERATIONS	SEWERAGE OPERATIONS	OTHER*
ELECTRICITY PURCHASED FROM GRID (Table 5 of NGA)	Electricity used during water sourcing, treatment, distribution and transfer.	Electricity used during sewage collection, storage, treatment and discharge.	Electricity used in office buildings for both Water and Sewerage Operations.
LIQUID FUELS (Transport) (Table 4 of NGA)	N/A	N/A	Transport - vehicles owned & used by utility AND registered for road use.
LIQUID FUELS (Non Transport) (Table 3 of NGA)	Liquid fuels used for water supply operations other than transport vehicles	Liquid fuels used for sewerage operations other than transport vehicles	Fuels used for heating, hot water, etc in office buildings. Transport - vehicles owned by utility but NOT registered for road use.
SOLID FUELS (Non Transport) (Table 1 of NGA)	N/A	N/A	Wood/coals used for heating, etc in office buildings.
NATURAL GAS (Non Transport) (Table 2 of NGA)	Natural gas used for water supply operations other than in office buildings	Natural gas used for sewerage operations other than in office buildings	Natural gas used for heating, hot water, etc in office buildings.
WASTEWATER TREATMENT	N/A	Emissions from wastewater treatment (methane and nitrous oxide) See instructions sheet	N/A
SEQUESTRATION	N/A	N/A	<u>Accredited</u> Carbon offsets e.g. tree plantations
EXCLUDED (SCOPE 3)	Disposal of waste generated. Employee business travel. Employees commuting to/from work. Out-sourced activities (transport/vehicles not owned by utility). Transportation of products, materials and waste.		

# Appendix H: Data Validation Procedures for the NSW Performance Monitoring System

## H1 Introduction

A prime objective of the NSW performance monitoring system is to reliably determine statewide medians and totals for key performance indicators. These statewide results reveal historical trends and enable interstate performance comparisons. A further objective is to publish performance data which is accurate and which is not misleading, both for individual local water utilities (LWUs) and for statewide indicators. The achievement of these objectives is contingent on obtaining a full and accurate data set. To this end, the NSW Office of Water reviews all reported data to identify any anomalies or inconsistencies and undertakes actions where appropriate to validate and/or correct such anomalous data. In addition, in order to obtain a fully representative data set for six of the more critical performance indicators, the Office of Water adopts the previous year's reported data for those few LWUs that omitted to report such data for the current year. Such data is shown in italics bolds in Tables 3 to 18 (section H3 on page 286).

In addition to the extensive independent auditing of the reported NSW data (page 1 and footnote 26 on page 287), this appendix outlines the validation processes undertaken by the Office of Water to identify and address apparent anomalies in the reported data and to develop a full data set which assures ongoing data reliability for the NSW Performance Monitoring System.

## H2 Anomalous Data

The quality and consistency of data reported by LWUs in the *NSW Performance Monitoring Database* varies significantly. To assist LWUs in reporting their data, the database includes a facility that screens the data and provides an alert to notify the user where data is inconsistent, out of range or incomplete. Most LWUs accurately report their performance data. However, review by the Office of Water of the full data set from all LWUs consistently reveals a small but significant percentage of anomalous data. This may arise due to misinterpretation of an indicator definition, due to errors in data handling (input or misreading), due to inconsistencies in the data stream or due to errors/omissions in the data itself.

Data that is inconsistent or anomalous includes:

- **Incomplete data** - data that is not reported or left blank in the current year's reported data.
- **Inconsistent data** - reported data that is inconsistent with historic values or out of expected range.
- **Errors in data** - reported data that is in error (e.g. text instead of numerals, percentage greater than 100, data where the summation does not agree etc).
- **Unsubstantiated data** - reported data that is out of expected range with no substantiating evidence (e.g. leakage less than 6% of the total water supplied or a reported number of assessments which differs significantly from historical trends or from that reported in the utility's Annual Financial Statements).
- **Data that conflicts with data from other sources** - reported data that differs significantly from data available elsewhere (e.g. drinking water quality compliance results from NSW Health, data from the LWU's annual financial statements, IWCM Strategies etc).

Anomalous data must be reviewed and either validated or rejected. The procedures undertaken by the Office of Water to validate data are outlined in the following sections.

## H3 Validation of Data

The NSW Office of Water undertakes various broad screening procedures and follows this up with intensive manual and computerised validation procedures. The criteria used in the validation process for the more critical indicators is shown in section H4 on page 287. Following screening and validation, the Office of Water reviews all anomalous reported values and anomalies are either:

- referred to the LWU for confirmation, or
- adjusted where relevant data from other sources is available, or
- rejected and left as blank, or
- adjusted where the reported value is unsubstantiated or does not meet adopted criteria.

In addition, in order to enable reporting of Statewide totals and medians for six of the more critical indicators (Total Urban Water Supplied, Operating Cost, Management Cost, Current Replacement Cost, Total Volume of Sewage Collected and Volume of Effluent Recycled), where a LWU has not reported current data, the data reported for the previous year has been adopted and is shown in italics bold in Tables 3 to 18 of this Report and Appendices C, D, E and F of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

It is noted that the 105 NSW LWUs each report more than 180 water supply indicators and a similar number of sewerage indicators together with their financial indicators (from the LWUs' Annual Financial Statements). Of these indicators, approximately 50 for each of water supply and sewerage are key indicators which are shown on each LWU's annual TBL Performance Report (pages 232 to 235). Of these 50 key indicators, 20 are considered to be critical indicators to determine a LWU's performance and the criteria for validating these critical indicators are described in section H4 on page 287.

Screening and validation procedures identify the more significant anomalies, and anomalies occurring in key indicators will be followed up with the LWU. However, there may be instances where an error is not identified. To allow for this, the Office of Water also provides a draft copy of tables of performance indicators to each LWU for its review prior to finalisation of the annual report.

The Office of Water procedures for validation and adjustment of selected data are detailed below.

**Incomplete data** - Where a LWU has not reported data, the validation process is as follows:

- For critical indicators, refer to the criteria outlined in section H4.
- For other key indicators, the Office of Water will contact the LWU to obtain such data, unless the reported value can be adjusted in accordance with data obtained from an alternative source.
- For less significant indicators, the field will be left blank.

**Inconsistent data** - Where the reported value is inconsistent with historic values, out of expected range or otherwise inconsistent, the validation process is as follows:

- For critical indicators, refer to the criteria outlined in section H4.
- For other key indicators, the Office of Water will contact the LWU to review the reported data, unless the reported value can be adjusted in accordance with data obtained from an alternative source.
- For less significant indicators, the reported value will be deleted and the field left blank.

**Errors in data** - Where a reported value is obviously in error (e.g. numbers reported as text, values reported as \$M instead of \$'000 etc), the Office of Water will correct the error. Where there is some doubt, if it is a key indicator the LWU will be requested to review the reported value, otherwise it will be deleted and the field left blank.

**Unsubstantiated data** - Where the reported value is out of expected range and is unsubstantiated, the validation process is as follows:

- For critical indicators, refer to the criteria outlined in section H4.
- For other key indicators, the Office of Water will contact the LWU to review the reported data, unless the reported value can be adjusted in accordance with data obtained from an alternative source.
- For less significant indicators, the reported value will be deleted and the field left blank.

**Data that conflicts with data from other sources** - Where reported data conflicts with data obtained from alternative sources (e.g. NSW Health, Environment Protection Authority, Special Schedules etc) the Office of Water will review the data and will either adjust the data to agree with the alternative source or request confirmation of the data from the LWU.

**Audited data** - The NWI requires an independent audit to be undertaken every 3 years<sup>26</sup> of the water supply and sewerage performance reporting for those LWUs with over 10,000 connected properties. The Office of Water approves the LWU's proposed auditor, after confirming that the auditor has met the NWI Auditing Requirements and reviews the audit findings for the non-financial data and requests confirmation or follow up by the LWU's auditor for indicators that fail the audit.

**Financial data** – the financial data is reviewed by the Office of Water and any omissions or inconsistencies are referred to the LWU for confirmation. Independent audits are conducted annually for all of the 30 NWI financial performance indicators, which are reported in Notes 2 and 3 of the Special Purpose Financial Reports to each LWU's annual financial statements.

## H4 Criteria for Adjustment of Critical Indicators

The Office of Water takes care to ensure that the critical indicators are consistent and accurate. The criteria adopted by the Office of Water to review and where necessary adjust anomalous data for critical indicators is outlined below.

### H4.1 Aggregated Businesses

The performance indicators in the NSW Performance Monitoring System are determined for each LWU's aggregated water supply or sewerage businesses rather than for individual water supply or sewerage systems. This is done to align with national performance reporting and to facilitate comparisons. Nevertheless, detailed data showing the performance of each of the 580 LWU water and sewerage treatment works is published in Appendices D1 and D2 on pages 238 to 247.

### H4.2 Connected Properties

Performance indicators are determined on a 'per connected property' basis for consistency with the National Performance Framework. A connected property is a property that is connected to the water supply or sewerage system, as opposed to an assessment, which is a bill issued by a water utility.

**Determination of number of assessments** – The number of assessments is determined from a review of the data reported by the LWU in the NSW Performance Monitoring Database and the number of assessments reported by the LWU in its annual financial statements (Special Schedule Nos 3 and 5) together with the historic data. The number of assessments adopted must be consistent with historic data.

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<sup>26</sup> Independent audits of the auditable indicators in the *National Performance Framework 2010-11* for the 29 LWUs required to report nationally were undertaken in 2006-07 and 2009-10. Indicators which met the rigorous national auditing requirements have been published in the *National Performance Report 2010-11*. These LWUs serve 74% of the connected properties in non-metropolitan NSW. In addition the reported values for the 30 NWI financial performance indicators have been independently audited annually since 2006-07 for all of the LWUs.



**Calculation of connected properties** – The number of connected properties is calculated as the product of the number of assessments times the ratio of the number of connected properties per assessment for each of water supply and sewerage (Tables 9 and 14 on pages 152 and 167). The Office of Water has worked with LWUs to establish these ratios which do not change significantly from year to year.

### H4.3 Charges And Bills

**Charges** – water supply and sewerage charges (access charges and usage charges) are shown in Tables 6 and 7 on pages 120 and 132 for a LWU's principal water supply or sewerage system (charges are also shown for the non-potable supply component in dual supply systems). LWUs with multiple residential tariffs (i.e. those with different charges for separate water supply or sewerage systems) are shown in Tables 6A and 7A on pages 123 and 135. The charges shown in Tables 6 and 7 include the charges for the current reporting year and also for the forthcoming year and are obtained from each LWU's website.

**Typical residential bill (TRB)** – the TRB is calculated for each LWU's principal water supply system. The TRB is calculated from the utility's average annual volume of residential water supplied per connected property multiplied by the usage charge and added to the access charge. If the LWU has a dual supply system, the above calculation is repeated to obtain the non-potable water component which is added to the potable component to obtain the total TRB.

The current TRB is calculated from the current charges and the current residential water supplied. The TRB for the forthcoming reporting year is estimated from the forthcoming year's charges applied to the current residential water supplied. In the following year, the TRB will be recalculated using the actual volume of residential water supplied in that year. Therefore the current TRB shown in column 8 of Table 6 may differ from the corresponding TRB shown in the previous year's reports.

### H4.4 Urban Water Supplied

**Total potable urban water supplied** – Where a LWU has not reported its total potable urban water supplied, the data reported for the previous year has been adopted (shown in italics bold in the tables).

**Residential water supplied** – Where a LWU has reported residential water use but not commercial or industrial use, the reported residential use has been reduced and a commercial component has been included. Similarly, where a LWU has not reported residential water use, a residential component has been included. The residential component in each case has been calculated on the basis of the statewide average percentage of 57% of the LWU's Total Urban Water Supplied (column (1) of Table 8 on page 150).

**Real Loss (Leakage)** - Where a LWU has reported a real loss of less than 6% of the Total Potable Urban Water Supplied and has not provided evidence to substantiate such a low value of leakage, the reported real loss has been increased to 6%. In this case, the Total Potable Urban Water Supplied has also been increased to include the additional leakage component.

**Non Revenue Water (Apparent Loss, Real Loss and Unbilled Water)** – Similarly, where a LWU has reported non revenue water of less than 10% of the Total Potable Urban Water Supplied, the reported non revenue water has been increased to 10%. However, where the LWU has provided evidence of a Real Loss of less than 6%, then the adopted value for non revenue water is assumed to be the Real Loss plus 4%.

### H4.5 Efficiency

**Operating Cost (OMA)** – Where a LWU purchases water from a bulk water provider, the operating cost calculated for the LWU excludes the purchase cost of the bulk water but includes an appropriate proportion of the operating cost of the bulk water provider. The cost allocated to the LWU is calculated by multiplying the operating cost of the bulk provider by the ratio of the water purchased by the LWU to the total water supplied by the bulk provider to all customers. This is done in order to provide a 'level playing field' comparison of operating costs by not penalizing reticulators through inclusion of the capital cost component of providing the bulk supply, which is included in the purchase price of the water.

Where a LWU has not reported its operating cost, the previous year's operating cost per property has been adopted (shown as italics bold in the tables).

**Management Cost** – Where a LWU has not reported its management cost, the previous year's management cost per property has been adopted (shown in italics bold in the tables).

## H4.6 Health

**Drinking Water Quality Compliance** – Compliance for each LWU is based on the number of samples tested as part of the *NSW Health Drinking Water Monitoring Program* supplemented with samples reported by the LWU in the of *NSW Performance Monitoring Database*. A LWU has complied with the guidelines for microbiological water quality (i.e. it is shown as 100% compliant) if the required number of samples has been tested and at least 98% of samples had no E.coli. Similarly, chemical water quality (health related<sup>27</sup>) is satisfactory (shown as 100% compliant) if at least 95% of the samples are less than the guidelines value and physical (aesthetic) water quality is satisfactory if the mean of results is less than the guidelines value. Where a LWU has more than one treatment works, the reported compliance has been pro rated on the basis of the number of samples tested at each treatment works. Where a LWU has not reported the number of samples tested or the compliance of samples from a particular treatment works and no details are available from NSW Health, compliance for that treatment works is deemed to be zero. Refer also to page 8.

It is important that LWU water treatment works are fit for purpose, robust & cost-effective. In this regard, any LWU proposals for construction or modification of a dam, water or sewage treatment works require approval of the Minister for Primary Industries under section 60 of the *Local Government Act, 1993*.

In addition, under section 61 of the Local Government Act 1993, the NSW Office of Water regularly inspects the 580 LWU water and sewage treatment works and provides feedback and mentoring to the LWU operators. The performance of each of these treatment works is disclosed annually in Appendices D1 and D2 on pages 238 to 247.

## H4.7 Sewerage

**Sewage Collected** – Where a LWU did not report the current year's volume of sewage collected, either the previous year's value or the current year's volume of sewage treated has been adopted, whichever is the larger (shown in italics bold in the tables).

**Effluent Recycled** – Where a LWU has not reported a value for effluent recycled but has reported greater than 10% recycling in previous years, the percentage recycled for the current reporting year is assumed to be the same as that for the previous year (shown in italics bold in the tables).

**Compliance with Licence for Prescribed Indicators** – LWU Licence limits are generally 90 percentile limits. A LWU is deemed to comply with its licence for each prescribed indicator (i.e. compliance is 100%) if it achieves  $\geq 90\%$  compliance. Where there is no licence limit for a prescribed indicator, compliance is shown as 100%. Where a LWU has not reported the compliance for a sewage treatment works, compliance for that treatment works is deemed to be zero.

**Sewage Treatment Works (STW) Compliance** – An STW is fully compliant if it meets the licence conditions for all prescribed indicators. However, **if any indicator** which is prescribed in the licence **fails** to meet the licence conditions (e.g. BOD, Suspended Solids, Total Nitrogen, Ammonia, Oil and Grease, Phosphorous, E. coli etc), then the STW is deemed **not to comply** with its licence. Refer also to page 10 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*.

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<sup>27</sup> ADWG specifies guideline limits for chemical water quality (health related). Aesthetic parameters such as iron, aluminium, sodium, total dissolve solids (TDS), chloride and iodine are excluded.

## H5 Compliance with Best-Practice Management Framework

LWUs must comply with the *NSW Best-Practice Management Framework* (page 6) in order to achieve sustainable water supply and sewerage businesses and to comply with *National Competition Policy* and with the *National Water Initiative*. Compliance with the framework is also a pre-requisite for payment of a dividend from the surplus of the water supply or sewerage businesses to the council's general revenue and is also a pre-requisite for financial assistance towards the capital cost of backlog infrastructure (as at 1996) under the CTWS&S Program.

Each LWU reports its compliance with the *Best-Practice Management Framework* in Notes 2 and 3 of the Special Purpose Financial Reports to its annual financial statements. The Office of Water assesses this reported compliance against the 19 requirements set out in Table 1 of the *Best-Practice Management Guidelines, 2007* (10 for water supply and 9 for sewerage – refer to page 7). The assessment procedure for each of these requirements is shown below. Where a LWU has not reported its compliance against one or more of the requirements, the Office of Water will assess the LWU's compliance from other available data (e.g. annual financial statements, Strategic Business Plans submitted previously and completion of performance reporting via the *NSW Performance Monitoring Database*). Otherwise, the LWU will be deemed not to comply for that particular requirement. Each LWU's compliance results are shown in Table 3 on page 105.

**Strategic Business Plan and Financial Plan** – The strategic business plan is a LWU's peak planning document for water supply and sewerage: *NSW Water and Sewerage Strategic Business Planning Guidelines*, NSW Office of Water, July 2011 ([http://www.water.nsw.gov.au/ArticleDocuments/36/utilities\\_nsw\\_water\\_sewerage\\_strategic\\_planning\\_guidelines.pdf.aspx](http://www.water.nsw.gov.au/ArticleDocuments/36/utilities_nsw_water_sewerage_strategic_planning_guidelines.pdf.aspx)).

The NSW Office of Water reviews LWU strategic business plans and financial plans in order to ensure they are soundly based. A LWU is compliant if it has prepared a sound 20 to 30-year water and/or sewerage strategic business plan and financial plan. Such a plan demonstrates the long term financial sustainability of its water and/or sewerage businesses and compliance with National Competition Policy. Where a LWU has a strategic business plan but the plan is more than 4 years old, it is deemed to have provisional compliance, shown as YES\* in Table 3 on page 105 (column 1) and Table 5 on page 110 (column 21). Such a LWU needs to update its plan.

As noted on page 19 each LWU needs to annually review and update its 20 to 30-year financial plan. A brief report to Council should be provided on the updated financial plan, including any necessary corrective action (example Report to Council is provided on page 131 of the *NSW Strategic Business Planning Guidelines*).

### Pricing –

**Full cost recovery** – Full cost recovery (lower bound pricing) is achieved if either the economic real rate of return or the return on assets is  $\geq 0$  (shown as 'Y' in column 14d of Table 6 on page 120 and column 11a of Table 7 on page 132).

Alternatively, if a LWU has significantly increased its charges in order to recover its costs, it is also deemed to have full cost recovery (shown as 'Y\*' in column 14d of Table 6 on page 120 and column 11a of Table 7 on page 132). Refer also to page 19 and to Appendix G on page 84 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report*.

**Pay for use pricing** – For water supply, compliance requires pay for use pricing, with the residential tariff independent of land value and no free water allowance. Refer to column 2a of Table 3 on page 105. Refer also to columns 1, 5b and 5d of Table 6 on page 120.

**Residential water usage charges > 75%** - The water supply tariff for LWUs with 4,000 or more connected properties must be such that at least 75% of residential revenue is obtained through water usage charges. At least 50% of residential revenue from usage charges is required for LWUs with fewer than 4,000 properties. Where a LWU has not met the above requirements but has obtained at least 70% (or 45% for fewer than 4,000 properties) of residential revenue from usage charges, it is assigned provisional compliance and shown as Yes\*. Refer also to column 2c of Table 3 on page 105 and to column 13 of Table 6 on page 120.

**Complying non-residential water supply charges** – Appropriate water usage charge per kL and access charge relative to customer's capacity requirements. Refer to column 2d of Table 3 on page 105 and to Table 6B on page 127.

**Residential sewerage charges** – Residential tariff is independent of land value. Refer to column 2b of Table 3 on page 105 and to column 3 of Table 7 on page 132.

**Non-residential sewerage charges** – Compliance is achieved if a two part tariff is applied with an appropriate sewer usage charge per kL and an access charge that is reflective of the customer's load on the sewerage system. Refer to column 2c of Table 3 on page 105, column 3a of Table 7 on page 132 and Table 7B on page 136.

**Liquid trade waste fees and charges** – Compliance is achieved if appropriate trade waste fees and charges are applied to all liquid trade waste dischargers. Refer to column 2d of Table 3 on page 105, column 4 of Table 7 on page 132 and Table 7C on page 139.

A sound liquid **trade waste regulation policy** (endorsed by the Office of Water) and approvals are a further requirement. Refer to column 2f of Table 3 on page 105.

In view of the potential risks to sewerage infrastructure, public health and safety and the environment, from uncontrolled trade waste discharges, the acceptance of trade discharges to the sewerage system requires the Office of Water's concurrence under section 90(1) of the *Local Government Act, 1993*.

**Developer charges** – Compliance is achieved if an appropriate Development Servicing Plan (DSP) with commercial developer charges is implemented. Utilities which have commercial developer charges but have not completed a DSP are assigned provisional compliance and shown as Yes\*. In addition utilities with growth of under 5 lots/a are granted an exemption and shown as Yes°. Refer to columns 2e of Table 3 on page 105. Refer also to column 7 of Table 6 on page 120 (water supply) and column 7 of Table 7 on page 132 (sewerage).

**Complete Performance Report by due date** – A LWU complies if it completes its performance report for water supply and/or sewerage by the due date (currently 15 September each year). Refer to column 5 of Table 3 on page 105 (water supply) and column 3 on page 105 (sewerage).

**Water conservation** – A LWU complies if it has a water conservation and demand management plan. Refer to column 3 of Table 3 on page 105.

**Drought management** – A LWU complies if it has a drought management plan. Refer to column 4 of Table 3 on page 105.

**Integrated water cycle management** – A LWU complies if it has commenced an integrated water cycle management study. Refer to column 6 of Table 3 on page 105 (water supply) and to column 4 on page 105 (sewerage). LWUs which have completed an IWCM Evaluation or an IWCM Strategy are shown in columns 20 and 21 of Table 8C on page 149.

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## Note:

Page numbers shown in:

- **black bold** are the main reference to each topic;
- **blue bold** refer to figures comparing the performance of the **NSW utilities**; and
- **red bold** refer to graphs of **Interstate performance comparisons**.

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