

2013-14

# **WATER SUPPLY AND SEWERAGE**

NSW BENCHMARKING REPORT





**2013-14**

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**BEST PRACTICE MANAGEMENT**

This report is produced with the assistance of Local Government NSW.

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (April 2015). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent adviser.



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## Foreword

The *NSW Performance Monitoring System* (page 3) has been conceived and implemented as a **'one stop shop'** for continuous productivity and performance improvement by the NSW local water utilities (LWUs). The System assures data reliability, minimises red tape, avoids duplication in reporting and enables the NSW Office of Water to develop evidence based policies and guidelines for the local water utilities to improve productivity and to annually provide the required LWU data to the Australian Bureau of Meteorology [for publication in the annual *National Performance Report for Urban Water Utilities* ([www.bom.gov.au](http://www.bom.gov.au))] and the Australian Bureau of Statistics, as well as for statewide reporting such as the *NSW Performance Monitoring Report*, this *Benchmarking Report* and the reporting for *NSW 2021* and the *State of the Environment Report*.

In line with the National Water Initiative, which extends the 1994 *Strategic Framework for Water Reform* and *National Competition Policy*, 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, pricing and management and for continuing productivity and performance improvement by each utility through the *NSW Best-Practice Management (BPM) of Water Supply and Sewerage Framework* (page 6). The *BPM Framework* requires 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 *2013-14 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 344).

A summary of the key performance indicators for all NSW urban water utilities, together with the overall Statewide performance of the NSW regional water utilities and comparison of that performance with interstate utilities, are provided in the companion report *2013-14 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 Lands and Water 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 regional 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 – 2013-14 Urban Performance Reporting Indicators and Definitions*, National Water Commission/Water Services Association of Australia, June 2014 ([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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Local Government NSW (LGNSW) is acknowledged for its strong and continuing support for the NSW annual water supply and sewerage performance monitoring system since its commencement in 1986.

The public health regulator, NSW Health is acknowledged for its oversight of drinking water quality in regional NSW, including administering the preparation and implementation of a Drinking Water Management System (Public Health Act 2010) by each utility providing a drinking water supply and for its contributions to Appendix E and Appendix B (sampling location and frequency). NSW Health has also provided additional water quality data (from the NSW Health Drinking Water Database) and water quality monitoring compliance data, which has been incorporated into Tables 5 and 12 and Appendices D1 and D3.

The NSW Local Government Water Directorate is also acknowledged for its support and significant contributions and for permitting use of its *Technical Guidelines for Drought Management*.

The continuing success of the NSW performance monitoring system as a robust evidence basis for productivity and performance improvement 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 and in implementing the NSW Best-Practice Management Framework 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 68 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 *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* (available at [www.water.nsw.gov.au](http://www.water.nsw.gov.au)), discloses the key performance indicators for the NSW water utilities together with the overall Statewide performance of the NSW regional water utilities, compares that performance with interstate utilities and explains the 2014 streamlining and simplification of the NSW Best-Practice Management (BPM) Framework. With the exception of Appendix A, these matters are not repeated in this *Benchmarking Report*.

The NSW component of the *National Performance Report 2013-14 for Urban Water Utilities* is shown in Appendix F [page 309] of this Benchmarking Report while national performance comparisons are shown in Appendix A [page 204]. Independent auditing and validation assure data reliability (page 346).

This Benchmarking Report discloses the NSW results for all of the approximately 150 NWI Performance Indicators as shown in note 15 on page 35.

In addition, the Benchmarking Report is a valuable annual **resource kit** and continuous improvement tool for the NSW utilities by addressing 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 i, 344, 346]
- **NSW 'one stop shop'** minimises regulatory burden and avoids duplication in reporting [page 3]
- Statewide and National Medians [pages 105, 106, 107]; water supply **system planning insights** from trends in Statewide performance indicators [pages 19, 111, 113, 115]
- **National Certification** Framework for Water Treatment Operators [pages 36, 281, 354];
- Risk-based drinking water management system (**DWMS**) [page 9]
- Achieving **microbiological compliance** [page 10]
- Boil water alerts [page 10], **lessons learnt** [page 12], distribution system integrity [11, 300]
- Assuring safety and integrity of a water supply distribution system [page 9, 298]
- Water quality sampling locations and frequency [page 235]
- Performance of each LWU's water and sewage treatment works [pages 281, 289]
- BPM [page 5], NSW **BPM Framework** [page 6] and BPM implementation [page 108]
- Cost-effective **renewals** [page 14], **infrastructure asset condition and performance** [pages 126, 130], asset rehabilitation, renewals expenditure [pages 126, 130]
- Leakage [page 15], **Non-revenue water** (NRW) in L/d/connection should be used for tracking performance over time [page 16]
- Benefits of the strong NSW **pricing signals** [page 13], achieving **full cost recovery** [page 22]
- Achieving **efficient water use** [page 13], **total urban water supplied** [page 25]
- Greenhouse gases [page 16], **NSW greenhouse gas calculator** [page 332], pollution incident response management plan (**PIRMP**) [page 289], wastewater treatment **operators** [page 289]
- Triple bottom line (**TBL**) **Performance Report** [pages 4, 30, 275, 277]
- **Action Plan** [pages 4, 20, 28], 'liveability', emerging issues, financial plan update [page 20]
- Improving performance [page 17], NSW Performance monitoring database [page 213]
- Economic efficiency indicators for four sizes of LWUs [page 21]
- Local Government Integrated Planning and Reporting (**IPR**) Framework, 2010 [pages 7, 8]
- **Software, guidelines, training, tools** and assistance available from the NSW Office of Water [pages 8, 9, 12, 13, 16, 22, 24, 36, 349]
- Contents of tables 5 to 18 [page 37]
- General notes [page 32], rainwater tanks, liveability indicators [pages 16, 356]

## 2. NSW water utilities

This report discloses performance indicators for all NSW urban water utilities, comprising the 105 regional local water utilities (LWUs) together with four metropolitan utilities (Sydney Water, Hunter Water, Water NSW (from January 2015, formerly 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 (regional 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 Water
100	Balranald (DS)	15	Eurobodalla	61	Liverpool Plains		
21	Bathurst Regional			102	Lockhart (NO WS)	13	Tamworth Regional
23	Bega Valley	12	Fish River WS (BS)			69	Temora (NO WS)
47	Bellingen	51	Forbes	5	MidCoast	68	Tenterfield
53	Berrigan (DS)			32	Mid-Western Regional	93	Tumbarumba
72	Bland (NO WS)	84	Gilgandra	38	Moree Plains	43	Tumut
78	Blayney (NO WS)	60	Glen Innes Severn	65	Murray (DS)	6	Tweed
89	Bogan	28	Goldenfields (NO SGE)	101	Murrumbidgee		
97	Bombala	1	Gosford	41	Muswellbrook	45	Upper Hunter
104	Boorowa	20	Goulburn Mulwaree			73	Upper Lachlan
87	Bourke (DS)	80	Greater Hume	34	Nambucca	85	Uralla
105	Brewarrina	30	Griffith	46	Narrabri	107	Urana (NO WS)
27	Byron (R)	94	Gundagai	63	Narrandera		
		44	Gunnedah	62	Narromine	9	Wagga Wagga (NO WS)
91	Cabonne	90	Guyra			88	Wakool (DS)
92	Carrathool	81	Gwydir	83	Oberon (R)	98	Walcha
103	Central Darling (DS)			19	Orange	79	Walgett (DS)
40	Central Tablelands (NO SGE)	76	Harden (R)			96	Warren (DS)
		30A	Hawkesbury (NO WS)	71	Palerang		Water NSW (formerly Sydney Catchment Authority)
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 both the Independent Pricing and Regulatory Tribunal (IPART) and the Productivity Commission.

The State Government promotes continuous productivity and 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 implemented as a '**one stop shop**'<sup>5</sup> for continuous productivity and performance improvement by the local water utilities (LWUs). The system assures data reliability, **minimises the regulatory burden and avoids 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 online by each LWU via the NSW Performance Monitoring Database by 15 September each year in order to meet this requirement of the *Best-Practice Management of Water Supply and Sewerage Framework* (page 6). Financial data is obtained through the Office of Local Government from each LWU's Special Schedule Nos 3 to 7 and Notes 2 and 3 of the Special Purpose Financial Statements of their *2013-14 Annual Financial Statements* (pages 239 to 255). The NSW Office of Water obtains the water, sewerage and trade waste charges from each LWU's website. In addition to extensive independent auditing (page 346), the NSW Office of Water validates the data in order to assure data reliability (Appendix H on page 344) and provides relevant data to other Government agencies as required (i.e. to ABS, BOM and for key Statewide reports including NSW 2021 and the State of the Environment Report).

#### 3.2. Benchmarking

Each LWU has the opportunity to improve its performance in areas of apparent under-performance by

<sup>5</sup> Successful coordination and cooperation with Commonwealth agencies (ABS, BOM) has **avoided duplication in reporting**. The single data collection in the NSW Performance Monitoring System enables the NSW Office of Water to develop evidence based policies and guidelines for the LWUs to improve productivity and to:

- Annually provide the approximately 150 NWI performance indicators for the 29 eligible NSW LWUs to the BOM for publication in the National Performance Report ([www.bom.gov.au](http://www.bom.gov.au));
- Annually provide the required data to BOM and 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*, which has been prepared by the NSW Office of Water since 1986;
  - A Triple Bottom Line (TBL) Report for each LWU (examples on pages 30 and 31 and pages 275 to 278); and
  - An Action Plan template for each LWU (example on pages 28 and 29).

The Australian Bureau of Meteorology's Water Amendment Regulations 2012 (No. 1) for Category 7 have been aligned with the national performance reporting through 57 water resources performance indicators (page 19 of the National Performance Framework [www.nwc.gov.au](http://www.nwc.gov.au)). All Australian urban water utilities with over 10,000 connected properties are required to report mostly monthly data for those indicators. The NSW Performance Monitoring Database has been extended to enable the 29 eligible NSW LWUs to report this data through the NSW Database. To further avoid duplication, utilities which report these indicators to BOM are exempted from reporting the relevant 33 water resources indicators in the NSW Office of Water's annual data collection.

In addition, to avoid duplication of effort by LWUs and to facilitate sound planning and preparation of integrated water cycle management (IWCM) strategies by each LWU, a 19-year water supply and sewerage planning data set of 170 performance indicators has been developed with the key results reported for each LWU in the NSW Benchmarking Report and each LWU's TBL Performance Report since 1994/95. These LWU data sets will minimise the work required for assembling and analysing the necessary water supply and sewerage historical & pricing data by each LWU and are now available to each LWU on request ([urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au)). [An example data set based on the data reported by Coffs Harbour City Council can be downloaded here.](#)

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' of its work processes with a group of LWUs with similar characteristics. The best-practices thus identified can then be adopted by the other LWUs.

### 3.3 TBL performance reports and action plans

As indicated on page 3, the NSW Office of Water provides each NSW local water 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. Each TBL report is an annual "report card" which discloses the LWU's implementation of the requirements of the NSW Best-Practice Framework and its performance for over 50 key performance indicators together with the Statewide and National medians and the LWU's relative performance against similar sized LWUs. TBL reports and action plans are discussed in section 5.4 on page 20. Example TBL reports are provided on pages 30, 275 and 277 and an example action plan is provided on page 28.

LWUs that implement the 19 planning, pricing and management requirements of the *Best-Practice Management of Water Supply and Sewerage Framework* will have demonstrated appropriate, affordable, cost-effective and sustainable piped water supply and sewerage services 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 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 a LWU's performance, as discussed in section 5.2 on page 17. 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. Eg. the rankings take no account of the impact of utility characteristics (e.g. whether the water supply is fully filtered, whether the utility provides a bulk storage dam and raw water transfer mains, whether the supply is nearby good quality groundwater etc.).

The second page of the TBL reports provide graphs with the LWU's performance and the Statewide median over the past 10 years for 15 key indicators (pages 31, 276 and 278). These graphs enable the LWU to review trends over time for each indicator, which provide the most meaningful assessment of performance, and in addition to the typical residential bill, economic real rate of return, operating cost, employees, main breaks and complaints, include:

- Drought water restrictions, Incidence of unplanned interruptions & Average duration of interruptions
- Peak day & peak week water supplied (kL/d/property) & average annual residential water supplied
- Water usage charge (per kL) and Residential revenue from usage charges (%)
- Non-residential sewer usage charge (per kL)
- Effluent recycled (%) and sewage that complied with licence (%)
- Capital expenditure (per property)
- 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 275 to 278) and to prepare and implement a sound Action Plan to Council (pages 28 & 29) which addresses any emerging issues following its review and update of its 30-year total asset management plan and 30-year financial plan or areas of under-performance, as indicated in section 5.4 on page 20.

## 4. Best-practice management

### 4.1 Regulatory framework

Through the NSW Government's Country Towns Water Supply and Sewerage (CTWSS) Program, the *Local Government Act 1993* and the *Water Management Act 2000*, the Minister for Lands and Water is responsible for overseeing and monitoring the performance of NSW regional LWUs in the sustainable provision of water supply and sewerage services to the community. The aim of NSW Government policy is for NSW regional LWUs to achieve appropriate, affordable, cost-effective and sustainable water supply and sewerage services.

The State Government provides assistance to country towns in NSW through the CTWSS Program, which is a major reform program administered by the NSW Office of Water ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). The Office of Water oversees and monitors utility performance, provides leadership, guidance, software and training (page 9) to the utilities and is the primary regulator for the 105 regional LWUs. The CTWSS Program provides technical assistance in best-practice planning, pricing, 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
- implementation of best-practice management and pricing 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 (pages 7 and 8) to ensure sound planning and pricing of services and that capital works needed to meet growth or renewals are self-funded.

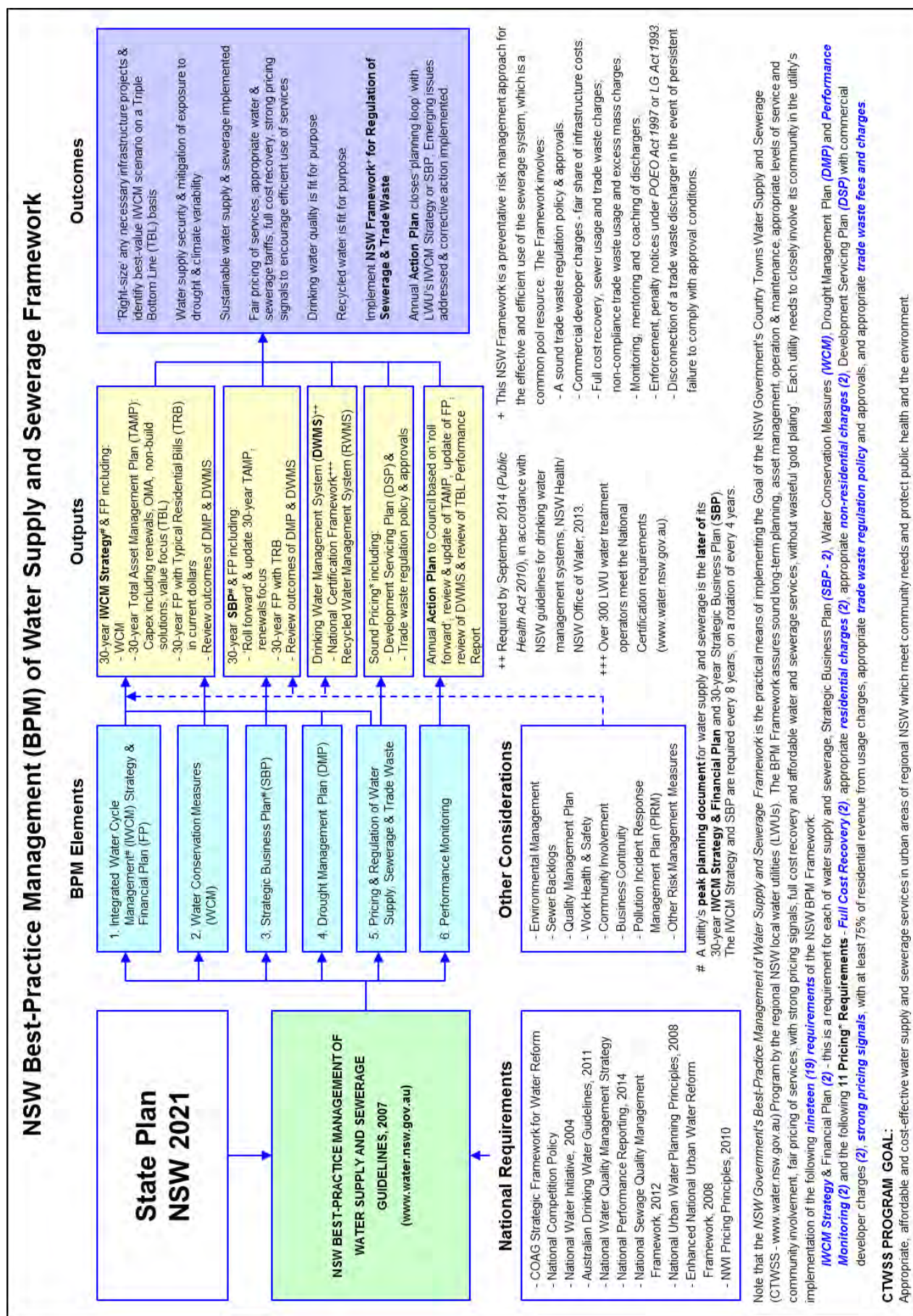
Subsequently, the Minister published the '*Best-Practice Management of Water Supply and Sewerage Guidelines*' in 2004. These guidelines consolidated a number of earlier initiatives and are the key driver for reform of planning, pricing and management and for continuing productivity and performance improvement by each utility. Implementation of the 19 requirements of the guidelines (page 108) 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 (as at 1996).

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 implemented all of the 19 requirements of the *Best-Practice Management Framework* (Table 3 on page 108) are encouraged to pay an 'efficiency dividend' from the surplus of their water supply and sewerage businesses to the Council's general revenue. Refer also to the box on page 22.



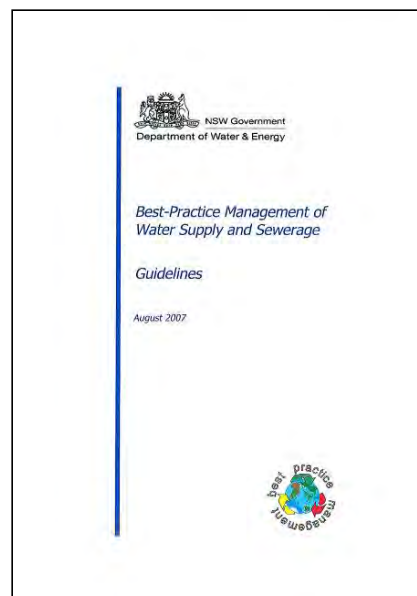


## 4.2 Best-practice management framework

The *NSW Best-Practice Management of Water supply and Sewerage Framework* (page 6) drives reform of planning, pricing and management and continuing improvement in productivity and performance of water and sewerage services 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 (BPM) Framework* shows that utilities which implement the Framework also implement the following national urban water requirements:

- *COAG Strategic Framework for Water Reform*;
- *National Competition Policy*;
- *Australian Drinking Water Guidelines, 2011*;
- *National Water Quality Management Strategy*;
- *The National Water Initiative (NWI), 2004*;
- *National Performance Reporting, 2014*;
- *National Sewage Quality Management Framework, 2012*;
- *National Urban Water Planning Principles, 2008*;
- *Enhanced National Urban Water Reform Framework, 2008*; and
- *The NWI Pricing Principles, 2010*.



In summary, the BPM Framework requires a LWU to prepare strategic business plans and financial plans setting out how it plans to manage these businesses over the next 30 years. This requires negotiation of appropriate levels of service with the community and development of the utility's 30-year total asset management plan (TAMP). 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 which includes cost-effective non-build solutions, and a maintenance plan. The strategic business plan must include both the above 30-year TAMP and a sound 30-year financial plan which identifies the resulting Typical Residential Bill (in current dollars) over this period. Each LWU needs to prepare a 30-year strategic business plan, TAMP and financial plan in accordance with the July 2014 Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). 93 per cent of the NSW LWUs have now prepared such a sound strategic business plan, TAMP and financial plan (column 34 of Table 5 on page 116). These plans cover over 99% of the connected properties in regional NSW. Annual 'roll forward', review and update of the 30-year TAMP and 30-year financial plan and preparation and implementation of an annual Action Plan to Council (page 20) will ensure the long term effectiveness and sustainability of these services.

All the utilities need to implement the 19 requirements<sup>6</sup> of the Framework (Table 3 on page 108), which involve the following six interrelated elements:

<sup>6</sup> Page 20 of the *Integrated Planning and Reporting Manual for local government in NSW, March 2013* ([www.olg.nsw.gov.au](http://www.olg.nsw.gov.au)) highlights the following more stringent requirements which apply for water supply and sewerage:

**"Councils responsible for water supply and sewerage infrastructure**

Councils that have responsibility for water supply and sewerage infrastructure need to comply with the requirements and timeframes of the NSW Government's *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007*. These requirements include:

- Preparing and implementing a 30 year Integrated Water Cycle Management (IWCM) Strategy
- Preparing and implementing a 20-30-year Strategic Business Plan, Financial Plan and associated asset management plans
- Annual Performance Monitoring, including preparing an annual Action Plan to review the council's performance and to identify and address any areas of under-performance. The review also includes whether the current Typical Residential Bill is in accordance with the projection in the Strategic Business Plan and any proposed corrective action.

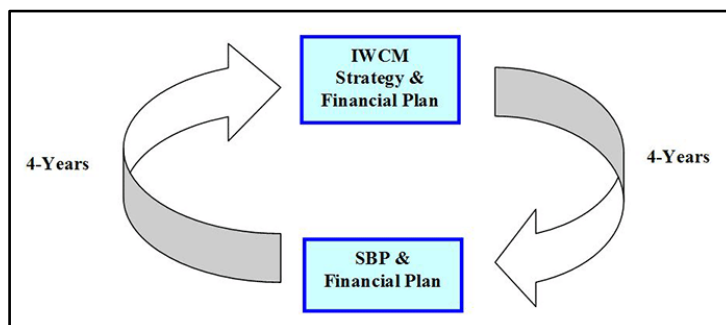
The development of both the IWCM Strategy and the Strategic Business Plan require significant community involvement. Further information on these requirements is available from the NSW Office of Water website [www.water.nsw.gov.au](http://www.water.nsw.gov.au).



1. Integrated water cycle management
2. Water conservation and demand management
3. Strategic business planning
4. Drought management
5. Pricing and regulation of water supply, sewerage and trade waste
6. Annual performance monitoring.

As set out in Appendix H of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)), the NSW Best-Practice Management Framework has been streamlined in order to minimise the regulatory burden and the cost to LWUs, without diminishing effectiveness or efficiency in achieving the outcomes of the BPM Framework. This has resulted in deletion of 9 documents previously required over an 8 year cycle. However, the analysis and responses required for the deleted documents have been subsumed into the IWCM Strategy and Financial Plan and the Strategic Business Plan (SBP) and Financial Plan, which will now need to be prepared every 8 years on a rotation of every 4 years.

A LWU's **peak planning document** for water supply and sewerage is the **later of** its 30-year **IWCM Strategy and financial plan** and 30-year **SBP and financial plan**.



The reported LWU implementation of each requirement of the Framework is shown in Table 3 on page 108 of this report and the overall level of implementation is shown in column 33 of Table 5 on page 116. A summary of LWU implementation is provided in the *2013-14 NSW Performance Monitoring Report* (page 24 and Figures 21, 22 and 23). Particular attention is required for strategic business planning and financial planning (column 34 of Table 5 on page 116), full cost recovery (columns 29 and 30 of Table 5 on page 116, page 22), residential water supply revenue from usage charges (column 3 of Table 5 on page 116 and Figure 13 on page 51), non-residential sewer usage charges (column 3a of Table 7 on page 146 and Figure 44 on page 81), liquid trade waste fees and charges (column 2 of Table 7C on page 153 and Figure 45 on page 82), trade waste regulation policy and approvals (columns 1 and 3 of Table 7C on page 153), and an IWCM Strategy and financial plan (columns 20 and 21 of Table 8C on page 163).

As noted on page 26 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report*, future IWCM Strategies will need to be in accordance with the July 2014 IWCM Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)) and to include assessment of the secure yield of the utility's water supply in accordance with new climate variability guidelines.

The *Local Government Integrated Planning and Reporting (IPR) Framework, March 2013* (footnote 6 on page 7) has been designed to complement and avoid duplication with the *Best-Practice Management of Water Supply and Sewerage Guidelines*. The inter-relationship of the IPR Framework with the BPM Framework is shown on pages 4, 95 and 99 of the *NSW Water and Sewerage Strategic Business Planning Guidelines, July 2011* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Refer also to pages 109 and 114 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).



### Software, guidelines and training

Comprehensive software, guidelines and check lists (pages 7 and 8) to assist LWUs in developing appropriate water supply and sewerage strategic business plans (page 7), financial plans (page 7), community involvement<sup>7</sup>, drinking water management systems (page 9), assuring safety and integrity of a water supply distribution system (page 298), water supply tariffs (page 351), sewerage tariffs (page 352), liquid trade waste fees and charges (page 352), developer charges (page 352), total asset management plans (TAMP – capital works plan, operation plan and maintenance plan (page 7)), asset valuation<sup>8</sup>, integrated water cycle management (IWCM) (page 8), water conservation and demand management (page 352), drought management (page 352), assessing future urban water security<sup>9</sup>, greenhouse gas calculator (page 332), Biochemical Oxygen Demand (BOD) charges calculator and trade waste regulation policies (page 352), continue to be available from the NSW Office of Water.

The NSW Government also provides **nationally certificated training** for water utility operators in water treatment (refer to section 6.2 on page 36 and page 355), wastewater treatment, fluoridation, dam safety inspection and trade waste regulation ([www.water.nsw.gov.au](http://www.water.nsw.gov.au); [urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au) or (02) 9842 8508). In response to recent LWU requests, training courses on assuring the safety of water supply distribution systems, water treatment operation for engineers and risk management for water recycling projects will be provided in the 2015 calendar year.

In addition, the NSW Government provides **Update Seminars** in water treatment, wastewater treatment, trade waste regulation and Best-Practice Management for updating employee training and skills, which is required at least every 3 years ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Refer also to pages 23, 169 and 189.

## 4.3 Managing drinking water quality

In regional NSW, the public reticulated water supply and sewerage services are the most important factor in protecting public health.

### Risk based drinking water management system

**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.** 99.8 per cent of the 20,200 regional NSW samples tested for *E. coli* in 2013-14 complied with the *Australian Drinking Water Guidelines 2011 (ADWG)*, (column 9 of Table 5 on page 116, column 71 of Table 12 on page 184, Figure 17 on page 55 and Appendix D1 on page 281).

The risk of contamination of public water supplies due to system integrity failure remains the dominant cause. This can be seen in the table on page 12, which indicates that 86% of the 22 boil water alerts issued by LWUs over the period May 2006 to June 2008 were due to system integrity breaches.

Table 12 on page 184 shows the 71 LWUs with a risk-based drinking water management system, 2 of which have had their system externally assessed. Commencing in reporting for the 2014-15 financial year, the drinking water management systems will need to comply with the *NSW guidelines for drinking water management systems*, NSW Health and Office of Water, 2013. Such systems should include reference to sound standard operating procedures (SOP) in accordance with the 3<sup>rd</sup> paragraph of the box on page 10, are

<sup>7</sup> NSW Water and Sewerage Community Involvement Guidelines – Consultation draft, October 2012, NSW Office of Water (available on request from [urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au)).

<sup>8</sup> NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets, 2014, NSW Office of Water ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

<sup>9</sup> Assuring future urban water security: Assessment and adaptation guidelines for NSW local water utilities, NSW Office of Water, Draft – December 2013 (available on request from [urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au)).

<sup>10</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, 86% of recent boil water alerts in regional NSW were found to be due to avoidable system integrity breaches (page 12). 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 e.g. due to poor treated water quality. (<http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-microbiological.aspx>).

required from 1 September 2014 and need to be independently audited in order to comply with the *Public Health Act 2010* and to report 'Yes' for 'Externally Assessed – NWI Indicator H5' for the drinking water management system.

### Australian Drinking Water Guidelines (ADWG) 2011

A **priority** issue for all water supply utilities is preparing and implementing a risk-based drinking water management system (DWMS) in accordance with the *NSW guidelines for drinking water management systems*, NSW Health and Office of Water, 2013. As noted on page 9, this is required from 1 September 2014 under the *Public Health Act 2010*. Annual or more frequent review of your DWMS is required as noted in these guidelines and on page 20.

A further **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. Maintains the microbiological<sup>6</sup> & chemical drinking water quality through providing appropriate water supply, treatment & distribution infrastructure and carrying out necessary operation and maintenance activities in accordance with sound standard operating procedures (SOP). These include adjusting treatment processes in response to changes in raw water characteristics and regular inspections of service reservoirs in order to detect and repair any defects in the reservoir roof, wall or vermin proofing which may allow contamination of the stored water by birds, wasps, vermin, animals and windborne contaminants (pages 11, 12 and 303).
4. Maintains effective disinfection and the integrity of the utility's water supply distribution systems in accordance with Circular LWU 18 of June 2014 (page 298). The LWU needs to provide a Summary Report to NOW (page 308) following its detailed investigation of the integrity of each of its water supply distribution systems.

Guidance on items 3 and 4 above is provided in Appendix E on page 298, which sets out a robust basis for assuring the safety of a water supply. Each LWU needs to ensure that the standard operating procedures (**SOP**) for its water supply systems **meet** the minimum monitoring **requirements in Appendix E** for ensuring effective disinfection of the source water and assuring the integrity of its distribution system in order to prevent contamination of the supply.

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 (note 4 on page 29). Refer also to page 24.

Assistance available: [urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au) or Manager Water and Sewerage on (02) 9842 8495 or your Regional Water and Sewerage Treatment Officer (refer to page 36).

### Boil water alerts and lessons learnt

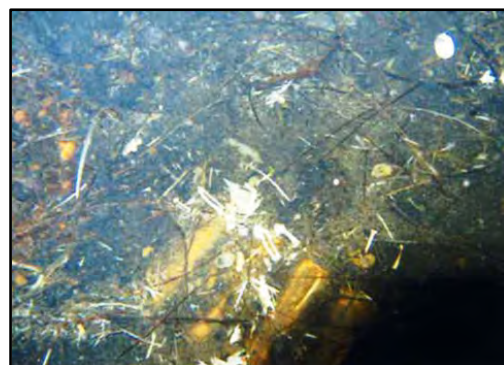
Information provided by the Water Unit of NSW Health has revealed that 22 boil water alerts were issued by LWUs between May 2006 to June 2008 (refer to the table on page 12). The vast majority of these alerts were due to system integrity breaches, which resulted in failure of the water utility to meet 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 the boil water alerts.

Photos 1 to 5 on page 11 show examples of failure of distribution system integrity in regional NSW.

## Examples of Failure of Integrity of Distribution Systems

**Photo 1** (right) shows the **hatch** of a 20m high service reservoir, which has inadvertently been **left open** for a few weeks. The result was repeat detections of *E. coli* in the reticulated water supply and the need to issue a boil water alert.

**Photos 2 and 3** below are underwater photos in the above service reservoir showing evidence of contamination by birds – **bird eggs** (left) and **dead birds** (right).



**Photo 4** (below left) is a service reservoir where the **mesh openings** are **too large** and the roof design is deficient, allowing the entry of small birds, rainwater and windblown material to contaminate the stored water. The reservoir roof needs to be modified so that roof runoff and windblown material cannot contaminate the stored water. **Photo 5** (below right) shows mesh openings that are also too large, allowing entry of vermin, such as wasps and windblown material.



The continued detection of *E. coli* in reticulated water supplies and boil water alerts in 2012 and 2013 have highlighted the need for a strategic approach for assuring the integrity of the distribution system to prevent contamination of a water supply that has been effectively disinfected. The recommended approach in Appendix E on page 298 was developed by the NSW Office of Water and NSW Health in consultation with the NSW Water Directorate and LWUs to provide a robust basis for assuring the safety of a water supply. As noted in the box on page 10, each LWU needs to review its present standard operating procedures (SOP) to ensure they address the minimum requirements in Appendix E for achieving safe water supplies:

Barrier 1 – **Effective disinfection** to kill, inactivate or remove pathogens in the water supply prior to distribution.

Barrier 2 – Ensure **distribution system integrity** to prevent contamination.

Barrier 3 – **Maintain free chlorine residual** in the water in the distribution system where practicable, to help protect against minor contamination and as an indicator of a potential breach in distribution system integrity.

## Summary of boil water alerts in regional NSW – May 2006 to June 2008

No. of alerts	Reason for alert
17	<b>Defects in the reservoir roof, wall or bird proofing</b> which allowed bird entry through gap in reservoir roof or windblown material to contaminate the treated water.
3	Highly turbid raw water, no filtration plant, ineffective disinfection. <sup>11</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:

- 1 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.
- 2 Duration of boil water alerts generally ranged from two days to 25 days with a median of nine days.
- 3 Total population affected by the 22 boil water alerts was 24,500.

These incidents highlight that 86% of the alerts were due to breaches in distribution system integrity such as the entry of birds or windblown material through **defects in the reservoir roof, wall or bird proofing**. They also show that a number of LWUs have been using reactive measures to protect public health. Preventive management in accordance with Appendix E provides a robust basis for assuring the safety<sup>10</sup> of a water supply and would have avoided the need for 86% of the above boil water alerts.

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

## Lessons learnt<sup>12</sup> from 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>Ensure effective disinfection of the source water</b> prior to distribution.</li> <li>• Continuous monitoring<sup>13</sup> of the chlorination system to warn of any interruptions/failures of the chlorinator.</li> <li>• Carry out chlorine demand tests on a regular basis and after a change in raw water characteristics; adjust chlorine dosage as necessary.</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 physical inspection is essential in order to <b>detect</b> and <b>repair</b> any design deficiencies (eg. photos 4 and 5 on page 11) or <b>defects</b> in the <b>reservoir roof, wall or bird proofing</b> of each reservoir. Early repairs must be effected to correct any defects and <b>prevent contamination</b> of the stored water by birds, vermin or windblown material (pages 303, 308).</li> </ul>
Free chlorine residual	<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 distribution system<sup>14</sup> (including extremities where practicable).</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>11</sup> Guidance on ensuring effective disinfection and assuring the integrity of the distribution system to prevent contamination of the supply is provided in Appendix E on page 298. This guidance incorporates the above lessons.

<sup>12</sup> The above lessons include **learnings** from the investigation of several boil water alerts in 2012 and 2013. The investigations have identified instances of bird droppings on reservoir roofs contaminating the stored water through unplugged drill holes in the reservoir roof and windblown material contaminating the stored water through large openings in the bird proofing mesh or through holes drilled in the reservoir wall. As noted on page 299, each LWU should **within the next 12 months physically inspect** each reservoir roof, wall and bird proofing using lifting equipment in order to identify and repair such defects and provide a Summary Report (page 308) on findings and the corrective action implemented. This action is essential in order to proactively assure distribution system integrity and to prevent contamination of the water supply.

<sup>13</sup> Monitoring requirements must be clearly documented in each LWU's Drinking Water Management System with appropriate responsibility & authority assigned to suitably **trained officers**. Refer to Appendix E on page 298, section 6.2 on page 36 & page 23.

<sup>14</sup> Maintaining such a **chlorine residual** is Barrier 3 in the recommended **multi-barrier approach** for assuring drinking water quality (page 305).



However, it is acknowledged that 14% of the alerts were due to pumping of highly turbid raw water during flooding, which was mostly beyond the control of the LWU, unless the LWU had access to alternate water sources, or had imposed water restrictions on residents to allow it to avoid pumping during such floods.

The above lessons have been integrated into the guidance in Appendix E on Page 298 to provide a robust basis for assuring the safety of a water supply. As noted in the box on page 10, each LWU needs to ensure that the standard operating procedures (**SOP**) for its water supply systems **meet** the minimum monitoring **requirements in Appendix E** for ensuring effective disinfection and assuring the integrity of its distribution systems in order to prevent contamination of the supply.

## 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 *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* (available at [www.water.nsw.gov.au](http://www.water.nsw.gov.au)), Figure 26 on page 64 and Figure 33 on page 111, the regional NSW utilities have reduced the average annual residential water supplied per property by 48 per cent over the past 23 years.

Many LWUs have reduced their average annual residential water supplied 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 205 and Figure 12 on page 50, the first step water usage charge has risen to 213 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 22) has removed the need for use of inclining block tariffs by LWUs. **The NSW Government encourages<sup>15</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, Wyong and Essential Energy.

Median revenue from residential water usage charges was 73 per cent (Figure 13 on page 51). However, affordability has been maintained through the \$582 (Jan 2015\$) water Typical Residential Bill, which has increased by only 18% in real terms over the past 19 years (figure 14 on page 111, graph 5 on page 206).

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 *2013-14 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 3 of Table 5 on page 116) should develop appropriate tariffs in order to provide the necessary pricing signals to its customers and achieve the above benefits of efficient water use in its area. LWUs also continue to need to achieve full cost recovery (page 22 & column 29 of Table 5 on page 116). Assistance is available from the NSW Office of Water ([Dilip.Dutta@dpi.nsw.gov.au](mailto:Dilip.Dutta@dpi.nsw.gov.au) or (02) 9842 8499). Refer also to the box on page 22.

The peak day water supplied per property is shown in Figure 8 on page 46 and on each LWU's TBL Performance Report (graph 33c on page 31). Figure 33c on page 111 shows a 50% reduction in the Statewide median peak day water supplied per connected property over the past 14 years. This can provide major cost savings through avoiding or deferring the need to augment the capacity of water treatment works, service reservoirs, pumping stations and trunk mains. Refer also to section 5.3 on page 19.

## 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 the utility's 30-year strategic business plan and

<sup>15</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)).

financial plan. Details of each LWU's asset rehabilitation activities and renewals expenditure are provided in Tables 10 and 15 on pages 172 and 192 respectively. In addition, Tables 5C and 5D on pages 126 and 130 provide comprehensive information on **infrastructure condition, asset rehabilitations, asset renewal expenditure, financial performance, system performance, TRB and BPM Implementation**. These are also shown on notes 9 and 10 respectively of each LWU's Water Supply and Sewerage TBL Reports (pages 275 and 277).

As noted on page 7, each LWU needs to prepare a 30-year total asset management plan (TAMP). This comprises an operation plan, which includes cost-effective non-build solutions, a maintenance plan and a capital works plan (involving works for improved levels of service, works to service growth and a **30-year renewals plan**<sup>16</sup>).

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 needs to include:

- **An economic analysis** – identifies pipelines where renewal is more economic than continuing with repairs. Takes into account the impact of pipe failure (e.g. 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 **cost-effectively 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 total asset management plan<sup>17</sup>. They should also annually 'roll forward', review and update their 30-year TAMP for projects completed, modified or deferred and input the results, together with their latest annual financial statements to prepare an update of their 30-year financial plan. Any warranted corrective actions, including those from the review of the LWU's DWMS and any Section 61 Reports needs to be included in the LWU's annual Action Plan to Council (page 20).

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 23, your LWU's Action Plan must report on whether the Typical Residential Bill (TRB) is consistent with the projection in the later of your LWU's 30-year strategic business plan and financial plan and 30-year IWCM Strategy and financial plan.

As shown in Figure 21 on page 59 and graph 10 on page 207, water main breaks for NSW LWUs have remained much lower than all the other states and metro utilities, indicating good water main asset condition. Further information on the development of a cost-effective asset renewal plan can be obtained from the NSW Office of Water ([Dilip.Dutta@dpi.nsw.gov.au](mailto:Dilip.Dutta@dpi.nsw.gov.au) or (02) 9842 8499). 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', 2014 ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)) and broad guidance on asset

<sup>16</sup> The NSW Office of Water will be preparing tools and guidance materials on identifying and implementing a cost-effective & robust 30-year renewals plan. Refer also to Item 7F of the July 2014 Strategic Business Planning Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

<sup>17</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)).

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)).

**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 potable water supply 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 172 and Table 10A on page 175.
- **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 159).
- **Water losses** = Real Losses (mostly leakage) + Apparent Losses (meter errors, illegal use).
- **Non-revenue water (NRW)** consists of Water Losses plus unbilled authorised consumption (column 41f of Table 10 on page 172, column 9 of Table 8 on page 155 and Figure 29 on page 67). Unbilled authorised consumption (column 8b of Table 8 and column 9 of Table 8A on page 159) may or may not be metered and may include firefighting and mains flushing. Any watering of parks and gardens (column 6 of Table 8) 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 no. of service connections in a water supply network (column 18a of Table 9 on page 169). 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 (Indicator 30 on page 213), 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 the 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 the system is under pressure. UARL is a function of length of mains, number of service connections & 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. While an ILI of 2.2 appears to be better than one of 2.5, in practice it is likely 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 ([www.nwc.gov.au](http://www.nwc.gov.au)) has adopted the ILI as a measure of leakage (NWI Indicator A9) and the NSW Office of Water has reported the ILI for each LWU since 2005-06

(column 41b of Table 10 on page 172). 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) (column 41 of Table 10 on page 172, Figure 28 on page 66), which is the best measure **for tracking a LWU's leakage performance over time**. This indicator (A10) is also preferred in the National Performance Framework. Similarly, as indicated in note 9 on page 33, **Non-Revenue Water (NRW in L/connection/d)** should be used for tracking a utility's performance over time. Refer also to column 41f of Table 10 on page 172 and Figure 29 on page 67.

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>18</sup> the best performing urban water utilities in the world for minimising leakage and real losses.

The Statewide median real water loss is 70 L/connection/d, which is lower than the National Median of 79 L/connection/d (page 119 and Figure 28 on page 66 and page 208). As shown in Table 10 on page 172, 75 LWUs have recently carried out water loss management, including leakage testing, analysis and leakage reduction. The Regional NSW Water Loss Management Program (Table 10A on page 175) has resulted in reductions in the average water losses for the 68 participating LWUs from 154 to 92 L/connection/d, or from 16% to 10% of the potable water supplied, a total saving of 5,500 ML/a. Real water losses 'before' and 'after' the Regional NSW Water Loss Management Program are shown in columns 8 to 13 of Table 10A on page 175 for each of the 68 LWUs.

## 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 123 and pages 115 and 278). A greenhouse gas calculator has been developed by the NSW Office of Water to assist LWUs. The calculator has been provided to all LWUs, as well as to interstate utilities, and is included in Appendix G on page 332. 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.

Eg. LWUs with a car fleet should report emissions – petrol used in those 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). Factors are used to calculate GHG emissions by multiplying the factor (e.g. kg CO<sub>2</sub>/GJ energy in petrol) with activity data (e.g. 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 (eg. 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.

## Rainwater Tanks

Appendix J on page 356 shows a total of 28,000 residential rainwater tanks reported by 26 LWUs. The typical rainwater tank volume is 3 to 5 kL. The nine LWUs which reported at least 1,000 rainwater tanks were Wyong (10,000), Gosford (8,856), Singleton (2,078), Bega Valley (1,800), Tweed (1,713), Coffs Harbour (1,618), Gwydir (1,500), Mid-Western Regional (1,435) and Armidale (1,224).

<sup>18</sup> Alan Lambert "The Future of Leakage Indicators" presentation to the National Performance Report 2008-09 Definitions Review and Planning Workshop, 11 February 2010.



## 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 sound planning, pricing and efficient operation, 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 22, utilities which have implemented 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.

After undertaking a review of indicators and trends in performance, each LWU should include any warranted corrective actions in its annual Action Plan to Council using the Action Plan template provided by the NSW Office of Water (see section 5.4 on page 20).

**The typical residential bill is the principal indicator of the overall cost** of a water supply or sewerage system (columns 4, 5 and 6 of Table 5 on page 116, Figure 1 on page 38, column 8 of Table 6 on page 126, Figure 10 on page 48, column 8 of Table 7 on page 146, Figure 42 on page 79) and is the annual bill paid by a residential customer using the utility's average annual residential water supplied (column 17 of Table 5 on page 116, Figure 26 on page 64). 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) (columns 31 and 32 of Table 5 on page 116, column 67 of Table 11 on page 180, Figures 33, 34, 35 on pages 70, 71, 72) 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 supply 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 and raw water transfer mains and channels will have a much higher capital and operating cost structure than a utility which has a nearby 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 (refer to pages 18 and 19).

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.

**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 (page 31) and comparing your results with the Statewide and National 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, i.e. 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 68% 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 14.
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 32, but has a range of 2 to over 70 (column 26 of Table 9 on page 169, Figure 6 on page 43)). 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>19</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 Water NSW dam (from January 2015, formerly State Water) (note 12 on page 34).
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 (page 21 and Figure 37 on page 74). Refer also to footnote 19 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 34).

## Environmental

9. **High average annual residential water supplied per property** (column 17 of Table 5 on page 116, column 56a of Table 10 on page 172, Figure 26 on page 63) – 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 26, the regional NSW utilities have reduced the average annual residential water supplied per property by 48 per cent over the past 23 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 13). Refer also to section 4.4 on page 13 and section 5.3 on page 19.

<sup>19</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.

## 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 strongly recommended** in order to minimise the required Typical Residential Bill (TRB), which avoids unfairly burdening existing customers and facilitates **inter-generational equity**. Refer also to page 14 of the *2013-14 NSW Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).
11. **High pumping cost** (columns 94 to 99 of Table 13 on page 186, Figure 38 on page 74) – is influenced mainly by topography and geography. As noted on page 27, 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.

## 5.3 Trends in Statewide performance indicators for Regional NSW

The trends in **Statewide performance** indicators for regional NSW and comparisons with the **National Median** for the 71 utilities reporting in the National Performance Report are shown in Table 4 on page 111. This data provides valuable contextual information to **inform** your LWU's **future water supply and sewerage system planning** and the annual review of your LWU's TBL Performance Reports (example Reports on pages 275 to 278). Strategic considerations arising from these results are discussed below.

Interstate performance comparisons for the 2013-14 financial year are provided on pages 17 to 21 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)) and are not repeated here.

### Peak day water supplied

**Figure 33c** and figure 33 on page 111 show that over the period 2000-01 to 2013-14, the Statewide median **peak day** water supplied per connected property has **declined by 50%** to 1,400 L/property/d, whilst the average annual residential water supplied has reduced by 30%. Although these results have been affected by drought water restrictions during the Millennium Drought of 2001 to 2010 and the very wet years in 2010-11 and 2011-12, they nevertheless point to large reductions in water use, which should enable significant **deferral** of the need for augmentation of water treatment and water supply distribution system capacity.

The TBL Performance Report for each LWU shows graphs of the above 2 performance indicators (peak day water supplied (eg. figure 33c on page 31) and average annual residential water supplied (eg. figure 33 on page 31)), as well as the peak week water supplied for each of the last 10 years (figure 33c on page 31). **Utility planning for the design peak day water treatment capacity should be informed by the volumes of your unrestricted peak day and peak week water supplied during hot weather (figure 33c on page 31), rather than now irrelevant former design values such as 4,000 L/d per tenement.** Refer also to the 19-year planning data set which is now available to each LWU from the NSW Office of Water for use in each LWU's IWCM Strategy or Strategic Business Plan (final paragraph of footnote 5 on page 3). Figure 33c on page 111 shows that the Statewide median peak day water supplied over the last 5 years has ranged from 1,800 to 1,300 kL/d/connected property.

### Pricing signals

The above also highlights the importance of providing **appropriate pricing signals** to your community including meeting the 75% requirement for residential revenue from water usage charges (column 3 of Table 5 on page 116, **figure 16** on page 111), and achieving full cost recovery (column 29 of Table 5). The 75% requirement applies to LWUs with 4,000 or more connected properties. Although the requirement is only 50% for smaller LWUs, 30% of the smaller LWUs have now substantially met the 75% requirement – Table 5 on page 116. As noted on page 87 of the *NSW Strategic Business Planning Guidelines*

([www.water.nsw.gov.au](http://www.water.nsw.gov.au)), your long term financial plan needs to take account of your projected capital expenditure over the next 30 years, which is typically well in advance of the need for the new capital investment.

In most cases such strong pricing signals [e.g. the median NSW water usage charge of 213 c/kL – **Figure 12** on page 111] will provide the necessary evidence to confirm significant reductions in the required design peak day demand, with a corresponding deferral of the need for augmentation of system capacity and reduction in the required future capital expenditure and borrowings. Such deferral of system augmentation will be of strategic benefit to your community through reduced future Typical Residential Bills (Figure 14 on page 111). Refer also to the final 2 paragraphs of page 19 and to page 5 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

## 5.4 Action plan

Each LWU is required to prepare and implement a sound 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 28 of the *2013-14 NSW Performance Monitoring Report*. In addition to reviewing its TBL Performance Reports to identify any warranted remedial actions, the LWU needs to annually 'roll forward', review and update its 30-year total asset management plan for projects completed, modified or deferred and input the results, together with its latest annual financial statements to prepare and update its 30-year financial plan. The LWU's Action Plan also needs to include actions from the review of its DWMS (page 10), any Section 61 Reports from the NSW Office of Water, as well as actions for addressing any 'emerging issues', such as 'liveability', water security and climate variability in its IWCM strategy.

A key role for the Action Plan is to '**close the planning loop**' with the later of the utility's 30-year strategic business plan and 30-year IWCM Strategy and 30-year financial plan. The utility's TRB must therefore be compared with the above projection and any necessary corrective action included in the Action Plan (note 3 on page 29).

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 28 and 29) together with the annual TBL reports for each LWU. The template shows your LWU's results, comments and 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 document your proposed actions (the right hand column on pages 28 and 29).

In order to prepare and implement a sound annual Action Plan to Council, 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. An updated copy of this appendix is emailed annually by the NSW Office of Water to each LWU with the LWU's TBL Reports and Action Plan templates.

### Median economic efficiency indicators for four sizes of LWUs – Water Supply 2013-14

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	Statewide Median (page 104)
Performance indicator	(27 LWUs)	(28 LWUs)	(19 LWUs)	(22 LWUs)	(96 LWUs)
Operating cost/property (\$)	383	550	515	578	400
Operating cost (c/kL)	124	113	116	90	126
Operating cost/100 km (\$'000)	1,265	1,208	1,095	1,177	1,290
Management cost/property (\$)	130	157	147	146	140
Treatment cost <sup>1</sup> /property (\$)	51	130	110	129	58
Pumping cost/property (\$)	34	43	85	90	43
Energy cost <sup>2</sup> /property (\$)	19	35	45	62	25
Water Main cost/property (\$)	71	70	73	85	74
No. of employees/1,000 properties	1.3	1.5	1.8	2.2	1.5
Economic Real Rate of Return	1.4	1.1	1.3	-0.2	1.2
Capital expenditure <sup>3</sup> (\$ per property)	195	177	204	71	181
Properties served/km of main	37	27	24	24	32

**Notes:**

1. Only LWUs with a water treatment works with at least filtration and disinfection for over 50 per cent of supply have been considered.
2. A component of pumping cost.
3. 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 2013-14 capital expenditure with the medians in these tables.

### Median economic efficiency indicators for four sizes of LWUs – Sewerage 2013-14

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	Statewide Median (page 105)
Performance indicator	(24 LWUs)	(24 LWUs)	(24 LWUs)	(27 LWUs)	(99 LWUs)
Operating cost/property (\$)	429	408	357	334	430
Operating cost (c/kL)	191	222	185	173	206
Operating cost/100 km (\$'000)	1,758	1,320	1,151	760	1,730
Management cost/property (\$)	161	125	112	97	161
Treatment cost/property (\$)	144	140	151	128	155
Pumping cost/property (\$)	64	42	43	53	68
Energy cost <sup>1</sup> /property (\$)	38	38	33	29	42
Sewer main cost/property (\$)	47	63	38	39	47
No. of employees/1,000 properties	1.4	1.7	1.4	2.3	1.6
Economic Real Rate of Return	1.7	1.7	1.2	0.6	1.5
Capital expenditure <sup>2</sup> (\$ per property)	236	150	63	49	193
Properties served/km of main	42	35	33	30	38

**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 2013-14 capital expenditure with the medians in these tables.

### 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 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 Strategic Business Planning Check List, July 2014 ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

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 ([urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au) or (02) 9842 8508).

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 13, which notes that the NSW Government and the Productivity Commission encourage all LWUs to use a 2-part tariff with a uniform water usage charge per kL for all water use and highlights the strategic benefits of the strong NSW pricing signals; and
- note 3 on page 29, which indicates that comparing your Typical Residential Bill (TRB) with the projection in the later of your IWCN Strategy and Financial Plan and your Strategic Business Plan is mandatory in preparing your annual Action Plan to Council. If you are not achieving full cost recovery, you will need to review & increase your access and/or usage charges in order to do so.

### Implementation of best-practice management framework

Implementation of each of the key requirements (Table 3 on page 108) of the Framework is shown on the TBL Report (page 30) and the overall level of implementation is shown in column 33 of Table 5 on page 116. LWUs should address any areas not yet implemented, which are shown on the Action Plan template (page 28). For each instance of non-implementation, the Action Plan should briefly outline the strategy and target date for achieving implementation. LWUs that achieve the outcomes required by the Framework will have appropriate, affordable, cost-effective and sustainable piped water supply and sewerage services and will comply with the National Water Initiative. As noted on page 5 implementation of 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 (as at 1996) under the NSW Government's *Country Towns Water Supply and Sewerage Program* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Refer also to footnote 6 on page 7.

## Performance based on triple bottom line

LWUs should review the Performance indicators shown in the TBL Report (example on page 30) 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 17.

Eg., 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 nearby good quality groundwater, whether the LWU provides a bulk storage dam & raw water transfer mains and channels 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<sup>th</sup> percentile (Tables 1, 2 and 2A on pages 105, 106 and 107), 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 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 section 4.5 on page 14.
- **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 169, Figure 10 on page 48, column 14 of Table 14 on page 189, Figure 41 on page 78). If the number of employees per 1,000 properties is significantly higher than the median shown in the tables on page 21 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. However, 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 the third dot point on page 27 and to page 21).
- **Employee awareness and training** is of strategic importance in the safe and effective delivery of water supply and sewerage services, eg. refer to Element 7 of the NSW guidelines for drinking water management systems, NSW Health and NSW Office of Water, 2013 ([www.health.nsw.gov.au/environment/water](http://www.health.nsw.gov.au/environment/water)). In particular, LWUs need to ensure that water treatment operators, wastewater treatment operators, dam safety officers, trade waste officers and engineers update their training and skills at least every 3 years. Refer to the boxes on pages 9 and 36. LWUs should provide an average of at least 2 days/a of appropriate training for each employee. Refer to Tables 9 and 14 on pages 169 and 189 for the training currently provided by each LWU.
- **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 37 properties per km (range 6 to 72), while for LWUs with 200 to 1,500 properties the median is 24 (range 3 to 34) (column 26 of Table 9 on page 169, Figure 6 on page 43, column 9 of Table 14 on page 189, Figure 40 on page 77).

### Social factors

- **Typical residential bill (TRB)** – as noted on page 17, 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) (columns 31 and 32 of Table 5 on page 116, column 67 of Table 11 on page 180, Figures 33, 34, 35 on pages 70, 71, 72) as noted on page 27 under Economic Factors – Efficiency. As noted on page 20, your LWU's Action Plan must report on whether the TRB is



consistent with the projection in the later of your LWU's 30-year strategic business plan and 30-year IWCM Strategy and financial plan and on any warranted corrective action. A TRB which meets these requirements will also ensure you are achieving **full cost recovery** (ERRR on page 26).

- **Residential revenue from usage charges (per cent)** – The Best-Practice Management Framework (page 6) requires LWUs with 4,000 or more properties to have at least 75 per cent of residential revenue generated through usage charges, while LWUs with fewer 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 3 of Table 5 on page 116, column 13 of Table 6 on page 134, Figure 13 on page 51). As noted in Section 4.4 on page 13, the statewide median residential revenue from water usage charges was 73 per cent. Refer also to item 9 on page 18 and the residential water usage charge below.
- **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 *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report*. Refer also to Figure 12 on page 50 and column 5b of Table 6 on page 134.

## Health

- **Microbiological water quality compliance** – This is the most important public health indicator, **achievement of microbiological compliance is a high priority for each LWU** and must be reported in the annual Action Plan to Council. As shown in Figure 17 on page 55, all the LWUs complied with the microbiological water quality requirements in 2013-14 (also refer to columns 9 and 10 of Table 5 on page 116). LWUs with less than 98 per cent of samples containing no *E. coli* do not comply with the Australian Drinking Water Guidelines, 2011. Microbiological non-compliance, boil water alerts, the remedial action implemented and whether it was successful must be reported in your LWU's annual Action Plan to Council (refer to pages 8 to 12, note 4 on page 29 and Appendix E on page 298). Assistance is available from your NSW Office of Water Regional Water and Sewerage Treatment Officer (refer to page 36 for the contact details of each officer).

As indicated in section 4.3 on pages 9 and 10, each LWU should develop and implement a risk-based drinking water management system as a matter of priority. Assistance is available from the NSW Office of Water ([urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au) or (02) 9842 8508).

- **Public health incidents** – Where this indicator is significantly higher than the statewide median, your LWU's Action Plan should provide a brief explanation and the 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.
- **Sewerage coverage** – Figure 46 on page 83 – percentage of the urban population (residential zoned land) with a reticulated sewerage service. Refer also to Indicator 16 on page 277.

## 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 & 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 13 of Table 5 on page 116, Figure 19 on page 57).
- **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 61 of Table 17 on page 198, Figure 49 on page 86).

- **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 ten 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 15 of Table 5 on page 116, Figure 21 on page 59). Refer also to section 4.5 on page 14.
- **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 14 of Table 5 on page 116).
- **Average interruption (sewerage)** – where this indicator is significantly higher than the statewide median of 109 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 198).

## 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 a 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 2013-14 was 263 kL/property compared to 157 kL/property for coastal LWUs (column 17 of Table 5 on page 116, column 14 of Table 6 on page 134, Figure 26 on page 64). Refer also to Item 9 on page 18.
- **Total urban water supplied** – Figure 9 on page 47 and column 2 of Table 5 on page 116.
- **Real Losses** – LWUs should monitor their Real Losses (column 18 of Table 5 on page 116, column 41 of Table 10 on page 172, Figure 28 on page 66) 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 timely 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 16, for almost all LWUs, monitoring your leakage in "L/d per connection" is the relevant measure for tracking your LWU's leakage performance. As also noted on page 16, **non-revenue water (NRW)** should also be monitored in L/d/connection (column 41f of Table 10 on page 172, Figure 29 on page 67).
- **Water Losses (ILI)** – The real losses above are the principal indicators of leakage performance. The ILI may provide some additional information and is recommended for international comparisons (page 15; refer also to footnote 18 on page 16). 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 172).
- **Recycled water** – The volume of recycled water use includes effluent reuse for town water & agricultural uses. The volume reported for town water should equal the recycled volume shown in the water supply report. In 2013-14 24 per cent of LWUs reused over 50 per cent of their effluent (columns 13 to 14b of Table 8 on page 155 & Figure 57 on page 94). As shown in columns 21 & 22 of Table 5 on page 116, the highest volume recycled by a utility was 5,500 ML and a further five utilities each recycled over 2,000 ML. Refer also to figure 33d on page 111, figures 27 and 26a on page 114 and figure 27 on page 278.
- **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 198).

page 198, Figure 50 on page 87).

- **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 198, Figure 51 on page 88).
- **Percent of sewage treated that was compliant** – Figure 54 on page 91 and column 19 of Table 5 on page 116. Refer also to figure 18 on page 113 and figure 18 on page 278.
- **Sewer main breaks and chokes** – sections of sewer main with a high incidence of breaks and chokes (say treble the statewide median of 37 per 1,000 connected properties) warrant close attention. Provide a brief explanation together with proposed remedial action in the Action Plan (column 20 of Table 5 on page 116, column 59 of Table 17 on page 198, Figure 55 on page 92). Refer also to figure 36 on page 113 and figure 36 on page 278
- **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 198, Figure 56 on page 93).
- **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

- **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 (columns 27 and 28 of Table 5 on page 116, column 12 of Table 6 on page 134, Figure 32 on page 69, column 11 of Table 7 on page 146, Figure 61 on page 97). LWUs should achieve **full cost recovery** by setting 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 22, which will result in a satisfactory Typical Residential Bill (TRB – page 23). This is particularly important during drought periods. Refer also to Figures 17 and 18 on pages 50 and 51 of the *2013-14 NSW Performance Monitoring Report* and Appendix G on page 84 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 134, column 9 of Table 7 on page 146, column 24c of Table 5A on page 120). Refer also to note 3 on page 29.
- **Net Debt to equity**<sup>20</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 2013-14 the NSW median net debt to equity for water supply and sewerage was 1% (column 19a of Table 5 on page 116). LWUs facing significant capital investment are encouraged to make greater use of borrowings to reduce their required TRB. **Twenty year loan terms are strongly recommended** in order to avoid an unfair financial burden on existing customers and to facilitate **inter-generational equity**. Refer also to Item 10 on page 19.

<sup>20</sup> It is important to note that most NSW LWUs have relatively little borrowings at present. In **2013-14** the Statewide median net debt to equity for LWU water and sewerage was 1% (range -35% to 23%). The **2013-14** debt to equity for major Australian utilities include 96% for Sydney Water, 164% for ACT Electricity and Water, 179% for Melbourne Water, 127% for Yarra Valley Water, 68% for Queensland Urban Utilities, 53% for Water Corporation (WA), 35% for SA Water and 78% for Hunter Water (National Performance Report 2013-14 for Urban Water Utilities). Refer also to graph 27 on page 211. 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.

- **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 180 and column 51a of Table 16 on page 195). The median loan payment in 2013-14 for water supply was \$64 per connected property (Table 1 on page 105).
- **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 120). As a general guide, an interest cover >2 is a good interest cover position. For 2013-14, the median interest cover for water supply and sewerage was 4 (Table 2A on page 107).

## 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 (columns 31 and 32 of Table 5 on page 116, column 67 of Table 11 on page 180, Figure 33 on page 70). The components of operating cost (shown on pages 31, 112, 114, 276 and 278) 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 180, Figure 36 on page 73). 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 'employees' on page 23). Similarly, LWUs with a low development density, under about 20 properties served / km of water main (column 26 of Table 9 on page 169) will need a higher level of employees.
- **Treatment cost (water)** – (columns 104 to 107 of Table 13 on page 186, Figure 37 on page 74) 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 21, there are great economies of scale for the operation of water treatment works (i.e. facilities involving at least filtration and disinfection).
- **Treatment cost (sewage)** – (columns 89 to 92 of Table 18 on page 201, Figure 66 on page 102) 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 98 of Table 13 on page 186, Figure 38 on page 75) 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** – (column 98 of Table 13 on page 186) 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 (column 83 of Table 18 on page 201). 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 186, Figure 39 on page 76, column 70 of Table 18 on page 201, Figure 68 on page 104) this is dependent on the age and condition of the mains, the ground conditions and the number of connected properties per km of main.

## 5.5 Example TBL Report and Action Plan – Coffs Harbour City Council

An example TBL Performance Report is shown on pages 30 and 31 for Coffs Harbour City Council. An example analysis and Action Plan for endorsement by Council is shown below.

### Coffs Harbour City Council Water Supply – Action Plan Page 1

#### Summary

In 2013-14, Coffs Harbour City Council has implemented all 19 planning, pricing and management requirements (10 water, 9 sewerage) of the *NSW Best-Practice Management Framework* and its performance has continued to be very good. The key actions required are shown below for Indicators 20 and 32. Note also Indicators 12 and 14 and that a new IWCM Strategy and financial plan are required in 2016.

Key action from Council's Strategic Business Plan:

- Strategic business plan and financial plan completed in May 2012

(<http://www.coffsharbour.nsw.gov.au/places-for-living/Documents/Strategic-Business-Plans-Water-Supply-Sewerage.pdf>).

INDICATOR		RESULT <sup>2</sup>		COMMENT/DRIVERS	ACTION
	<b>Best-Practice Management Framework</b>	Implemented all the Best-Practice Requirements <sup>1</sup>	Very good	Implementation of the requirements demonstrates effectiveness and sustainability of water supply business. 100% implementation is required for eligibility to pay an 'efficiency dividend'.	Prepare a new 30-year IWCM Strategy, Financial Plan and Report in accordance with the July 2014 IWCM Check List ( <a href="http://www.water.nsw.gov.au">www.water.nsw.gov.au</a> ) as the existing IWCM Strategy is over 6 years old.
<b>CHARACTERISTICS</b>					
5	Connected property density	37 per km of main Highest ranking (1, 1)		A connected property density below 30 can significantly increase the cost per property of providing services, as will also a high number of small discrete water supply schemes.	
9	Renewals expenditure	0.3% Lowest ranking (5, 4)	May require review	Adequate funds must be programmed for works outlined in the Asset Management Plan – page 3 of the 2013-14 NSW Performance Monitoring Report.	Satisfactory. Appropriate renewals included in capital works program reported in Council's Strategic Business Plan 2012.
10	Employees	1.7 per 1,000 props Highest ranking (1, 3)	Good		Satisfactory in view of Council's storage dams and water treatment works.
<b>SOCIAL - CHARGES</b>					
12	Residential water usage charge	263 c/kL Highest ranking (1, 1)	Good	Benefits of strong pricing signals are shown on page 5 of the 2013-14 NSW Performance Monitoring Report.	Good. Consider replacing the existing inclining block tariff with a two-part tariff [refer to Circular LWU11] with a uniform usage charge for all water use, as recommended by the NSW Government and the Productivity Commission.
13	Residential access charges	\$143 per assessment Highest ranking (1, 1)	Good		See 12.
14	Typical residential bill <sup>3</sup> (TRB)	\$587 per assessment Low ranking (1, 2)	Good	TRB should be consistent with projection in the financial plan. Drivers – OMA Management Cost and Capital Expenditure.	The TRB of \$587 is satisfactory as it is greater than the projected TRB of \$571 (2014/15\$) in Council's SBP. The 2015-16 tariff will be determined in accordance with Circular LWU11 of March 2011.
15	Typical developer charges	\$9900 per ET Highest ranking (1, 1)	Good		
16	Residential revenue from usage charges	76% of residential Highest ranking (1, 2)	Very good	≥ 75% of residential revenue should be generated through usage charges.	See 12.
<b>SOCIAL – HEALTH</b>					
19	Physical quality compliance	Yes Highest ranking (1, 1)	Very good		
19 a	Chemical quality compliance	Yes Highest ranking (1, 1)	Very good		
20	Microbiological compliance <sup>4</sup>	Yes Highest ranking (1, 1)	Very good	Critical indicator. LWUs should annually review their risk based Drinking Water Management System (DWMS) in accordance with NSW Guidelines for drinking water management systems, NSW Health and NSW Office of Water, 2013.	Also address the requirements of Circular LWU 18 of June 2014 and any Section 61 Reports from the Office of Water. Include the corrective actions identified in your Action Plan.

1. Council needs to annually 'roll forward', review and update its 30-year total asset management plan (TAMP) and 30-year financial plan, review Council's TBL Performance Report and prepare an **Action Plan** to Council. The Action Plan is to include any actions identified in Council's annual review of its DWMS (Indicator 20) and any Section 61 Reports from the NSW Office of Water. Refer to pages 27, 28, 107 and 111 of the 2013-14 NSW Water Supply and Sewerage Performance Monitoring Report.

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).

## Coffs Harbour City Council Water Supply – Action Plan Page 2

INDICATOR		RESULT		COMMENT/DRIVERS	ACTION
SOCIAL – LEVELS OF SERVICE					
25	Water quality complaints	0 per 1,000 props Highest ranking (1, 1)	Very good	Critical indicator of customer service. Can be influenced by the type of business - e.g. unfiltered supply.	
26	Service complaints	0.2 per 1,000 props Highest ranking (1, 1)	Very good	Key indicator of customer service.	Council's reporting system has been revised to record complaints only, [i.e. expressions of dissatisfaction], in accordance with the definition of this indicator.
27	Incidence of unplanned interruptions	9 per 1,000 props Highest ranking (1, 2)	Very good	Key indicator of customer service, condition of network and effectiveness of operation.	
30	Number of main breaks	3 per 100km of main Highest ranking (1, 1)	Very good	Drivers – condition and age of water mains, ground conditions.	Satisfactory, as result is equal to the Statewide Median of 10 breaks per 100 km of main.
32	Total Days Lost	3.4% Highest ranking (1, 4)	Very good		Will be reviewed.
ENVIRONMENTAL					
33	Average annual residential water supplied	169 kL per prop Highest ranking (1, 2)		Drivers – available water supply, climate, location (Inland or coastal), pricing signals (Indicator 12), restrictions.	
34	Real losses (leakage)	60 L/c/d Highest ranking (1, 2)	Very good	Loss reduction is important where an LWU is facing drought water restrictions or the need to augment its water supply system.	
ECONOMIC					
43	Economic Real Rate of Return (ERRR)	1.2% Highest ranking (1, 3)	Good	Reflects the rate of return generated from operating activities (excluding interest income and grants). An ERRR or ROA of ≥ 0% is required for full cost recovery.	Satisfactory. See 14.
44	Return on assets (ROA)	-0.2% Lowest ranking (5, 4)	May require review	See 43.	
45	Net debt to equity – water and sewerage	14% Highest ranking (1, 1)	Very good	LWUs facing significant capital investment are encouraged to make greater use of borrowings – page 13 of the 2012-13 NSW Performance Monitoring Report.	
46	Interest cover	1 Median ranking (3, 3)	Satisfactory	Drivers – in general, an interest cover > 2 is satisfactory.	
47	Loan payment	\$523 per prop Highest ranking (1, 1)	Very good	The component of TRB required to meet debt payments. Drivers – expenditure on capital works, short term loans.	
49	Operating cost (OMA)	\$396 per prop Highest ranking (1, 1)	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.	The components below have been carefully reviewed as part of developing Council's strategic business plan.
51	Management cost	\$144 per prop Highest ranking (1, 3)	Very good	Typically about 40% of the OMA. Drivers – No. of employees. No. of small discrete water schemes.	
52	Treatment cost	\$76 per prop Highest ranking (1, 2)	Very good	Drivers – type and quality of water source. Size of treatment works	Satisfactory, as Council has a dissolved air flotation water treatment works.
53	Pumping cost	\$15 per prop Highest ranking (1, 1)	Very good	Drivers – topography, development density and location of water source.	
55	Water main cost	\$91 per prop Highest ranking (1, 3)	Very good	Drivers – age and condition of mains. Ground conditions. Development density.	
56	Capital expenditure	\$137 per prop		An indicator of the level of investment in the business. Drivers – age and condition of assets, asset life cycle and water source.	
		Lowest ranking (5, 4)			

3. Review and comparison of the 2014-15 **Typical Residential Bill (Indicator 14)** with the projection in the later of your IWCW Strategy and financial plan and your Strategic Business Plan is **mandatory**.  
In addition, if both indicators 43 and 44 are negative, you must report your proposed 2015-16 typical residential bill to achieve full cost recovery.
4. **Microbiological compliance (Indicator 20)** is a **high priority** for each NSW LWU. Corrective action for non-compliance ( $\leq 97\%$ ), or any 'boil water alerts' must be reported in your Action Plan. Refer to pages 7, 8 and 28 of the 2013-14 NSW Water Supply and Sewerage Performance Monitoring Report ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).



Coffs Harbour City Council Water Supply TBL Report (Page 1)

Coffs Harbour City CouncilTBL Water Supply Performance2013-14

WATER SUPPLY SYSTEM - Coffs Harbour City Council serves a population of 70,200 (24,890 connected properties). Water is sourced from the Nymboida River (part of the Regional Water Supply which includes Shannon Creek Dam) and also from the Orara River. Water is transferred to Karangi Dam where it is treated and supplied to the Coffs Harbour area which stretches from Sawtell to Corindi. Council has 2 storage dams at Karangi and Woolgoolga (total storage capacity 5,870ML), not including the 30,000ML Shannon Creek Dam. Council has 2 smaller systems providing treated water to Coramba and Nana Glen villages. The water supply network comprises a dissolved air flotation treatment works, a conventional water treatment works and a chlorinator, 18 service reservoirs (88 ML), 7 pumping stations, 43.2 ML/d delivery capacity into the distribution system, 180 km of transfer and trunk mains and 510 km of reticulation.

PERFORMANCE - Coffs Harbour City Council achieved 100% implementation of the NSW BPM requirements. The 2014-15 typical residential bill was \$587 which was close to the statewide median of \$582 (Indicator 14). The economic real rate of return was similar to the statewide median (indicator 43). The operating cost (OMA) per property was \$396 which was close to the statewide median of \$400 (Indicator 49). Water quality complaints were negligible compared to the statewide median of 3 (Indicator 25). Compliance was achieved for microbiological water quality (100% of the population, 3 of 3 zones compliant), chemical water quality and physical water quality. There were no failures of the chlorination system or the treatment system. Coffs Harbour City Council reported no water supply public health incidents. Current replacement cost of system assets was \$413M (\$15,600 per assessment). Cash and investments were \$34M, debt was \$83M and revenue was \$20M (excluding capital works grants).

IMPLEMENTATION OF REQUIREMENTS OF NSW BEST-PRACTICE MANAGEMENT (BPM) FRAMEWORK

(1) Complete Current Strategic Business Plan & Financial Plan	YES <sup>12</sup>	(3) Sound water conservation implemented	YES
(2) (2a) Pricing - Full Cost Recovery, without significant cross subsidies	Yes	(4) Sound drought management implemented	YES
(2b,2c) Pricing - Appropriate Residential Charges	Yes	(5) Complete performance reporting (by 15 September)	YES
(2d) Pricing - Appropriate Non-residential Charges	Yes	(6) Integrated water cycle management strategy	YESC
(2e) Pricing - DSP with Commercial Developer Charges	Yes	IMPLEMENTATION OF ALL REQUIREMENTS	100%

TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

		NW1		No.		LWU		RANKING		MEDIAN	
						RESULT		>10,000 properties		Statewide	
								Note 1		Note 3	
								Col 2		Col 4	
								Col 3		Note 4	
								Col 5			
UTILITY	CHARACTERISTICS	C1	1	Population served:	70200						
		C4	2	Number of connected properties:	24890	Number of assessments: 26480	Col 1				
			3	Residential connected properties (% of total)		%	94			91	
			4	New residences connected to water supply (%)		%	1.3	2	1	0.9	
		A3	5	Properties served per kilometre of water main		Prop/km	37			32	35
			6	Rainfall (% of median annual rainfall)		%	65	4	5	77	
		W11	7	Total urban water supplied at master meters (ML)		ML	6,530			6,800	10,280
			8	Peak week to average consumption (%)		%	126	1	1	152	
			9	Renewals expenditure (% of current replacement cost of system assets)		%	0.3	5	4	0.5	
			10	Employees per 1000 properties		per 1,000 prop	1.7	4	3	1.5	
SOCIAL	CHARGES & BILLS	P1		Residential tariff structure for 2014-15:	inclining block; independent of land value; access charge \$143						
		P1.3	12a	Residential water usage charge for 2013-14 for usage <365 kL (c/kL)	c/kL (2013-14)	255		1	1	208	185
			12	Residential water usage charge for 2014-15 for usage <365 kL (c/kL)	c/kL (2014-15)	263		2	1	213	
		P3	14a	Typical residential bill for 2013-14 (\$/assessment)	\$ (2013-14)	569		4	2	550	567
			14	Typical residential bill for 2014-15 (\$/assessment)	\$ (2014-15)	587		3	2	582	
			15	Typical developer charge for 2014-15 (\$/equivalent tenement)	\$ (2014-15)	9,900		1	1	5,500	
		F4	16	Residential revenue from usage charges (% of residential bills)	%	76		2	2	73	68
		F5	17	Revenue per property - water (\$/property)	\$/prop	810		3	3	795	849
	HEALTH		18	Water Supply Coverage (% of Urban Population with reticulated WS)	% of population	99.5		3	2	99.6	
		H6	18a	Risk based drinking water quality plan?		Yes					
			19	Physical compliance achieved? Note 10		Yes		1	1		
			19a	Chemical compliance achieved? Note10		Yes		1	1		
		H4	19b	% population with chemical compliance		100		1	1	100	
			20	Microbiological (E. coli) compliance achieved? Note 10		Yes		1	1		
	SERVICE LEVELS	H3	20a	% population with microbiological compliance	% of population	100		1	1	100	100
		C9	25	Water quality complaints per 1000 properties	per 1,000 prop	0		1	1	3	2
		C10	26	Water service complaints per 1000 properties	per 1,000 prop	0.2		1	1	6	1
		C17	27	Incidence of unplanned interruptions per 1000 properties	per 1,000 prop	9		2	2	50	96
		C15	28	Average duration of interruption (min)	min	120		1	2	150	113
		A8	30	Number of water main breaks per 100 km of water main	per 100km	3		1	1	10	13
ENVIRONMENTAL	NATURAL RESOURCE MANAGEMENT		31	Drought water restrictions (% of time)	% of time	0		1	1	0	
			32	Total days lost (%)	%	3.4		4	4	2.9	
		W12	33	Average annual residential water supplied - STATEWIDE (kL/property)	kL/prop	169		3	2	173	185
			33a	Average annual residential water supplied - COASTAL LWUs (kL/property)	kL/prop	169		4	4	157	
			33b	Average annual residential water supplied - INLAND LWUs (kL/property)	kL/prop					263	
		A10	34	Real losses (leakage) (L/service connection/day)	L/connection/day	60		2	2	70	79
ECONOMIC	FINANCE		35	Energy consumption per Megalitre (kiloWatt hours)	kWh	461		2	2	620	
			36	Renewable energy consumption (% of total energy consumption)	%					0	
		E12	36a	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 - equivalents per 1000 properties)	t CO2	360		2	3	370	390
			42	Current replacement cost per assessment (\$)	\$	15,600		4	3	16,500	
		F17	43	Economic real rate of return - Water (%)	%	1.2		3	2	1.2	1.9
			44	Return on assets - Water (%)	%	-0.2		5	4	1.1	
	EFFICIENCY	F22	45	Net Debt to equity - WS&Sge (%)	%	14		1	1	1	11
		F23	46	Interest cover - WS&Sge		1		3	3	4	2
			47	Loan payment per property - Water (\$)	\$	523		1	1	64	
		F24	47b	Net profit after tax - WS & Sge (\$'000)	\$'000	-3,200		5	5	1180	5345
			48	Operating cost (OMA) per 100km of main (\$'000)	\$'000	1,450		4	4	1,290	
		F11	49	Operating cost (OMA) per property (\$/prop) Note 8	\$/prop	396		2	1	400	439
			50	Operating cost (OMA) per kilolitre (cents)	c/kL	149		4	4	126	
			51	Management cost (\$/prop)	\$/prop	144		3	3	140	
			52	Treatment cost (\$/prop)	\$/prop	76		4	2	58	
			53	Pumping cost (\$/prop)	\$/prop	15		2	1	43	
			54	Energy cost (\$/prop)	\$/prop	12		2	2	25	
			55	Water main cost (\$/prop)	\$/prop	91		4	3	74	
		F28	56	Capital Expenditure (\$/prop)	\$/prop	67		5	4	181	175

- NOTES :
- 1 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).
  - 2 Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs).
  - 3 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).
  - 4 Col 5 (National Median) is the median value for the 67 utilities reporting water supply performance in the National Performance Report 2013-14 (www.bom.gov.au).
  - 5 LWUs are required to annually review key projections & actions in the later of their IWCM Strategy and financial plan and their Strategic Business Plan and to annually 'roll forward', review and update their 30-year total asset management plan (TAMP) and 30-year financial plan.
  - 6 2014-15 Non-residential Tariff: Access Charge based on Meter Size: 40mm \$572, Two Part Tariff; Usage Charge 263c/kL.
  - 7 Non-residential water supplied was 27% of potable water supplied excluding non-revenue water.
  - 8 Non-residential revenue was 24% of annual rates and charges, indicating fair pricing of services between the residential and non-residential sectors.
  - 9 The operating cost (OMA) per property was \$396. Components were: management (\$144), operation (\$114), maintenance (\$104), energy (\$12) & chemical (\$19).
  - 10 Rehabilitations included 0.1% of water mains, 0.07% of service connections and 2.4% of water meters. Renewals expenditure was \$168,000/100km of main.
  - 11 Compliance with ADWG 2011 for drinking water quality is shown as "Yes" if compliance has been achieved (indicators 19, 19a & 20).
  - 12 Council has 2 fully qualified water treatment operators who meet the requirements of the National Certification Framework. 93% of employees received 2 or more days of training.
  - 13 As Council's IWCM Strategy is over 6 years old, it will need to prepare a new 30-year IWCM Strategy, financial plan and report in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au).



Coffs Harbour City Council Water Supply TBL Report (Page 2)

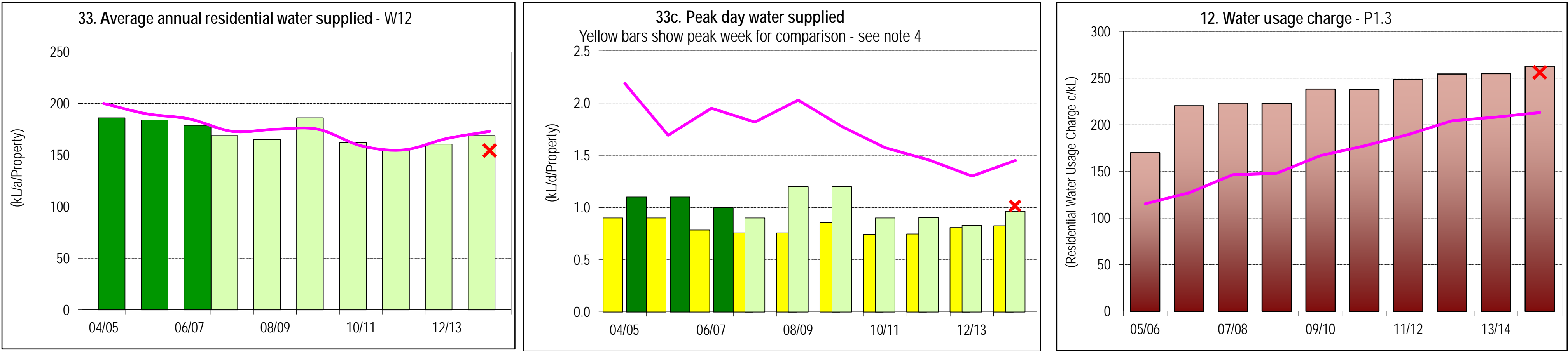
Coffs Harbour City Council

TBL Water Supply Performance (page 2)

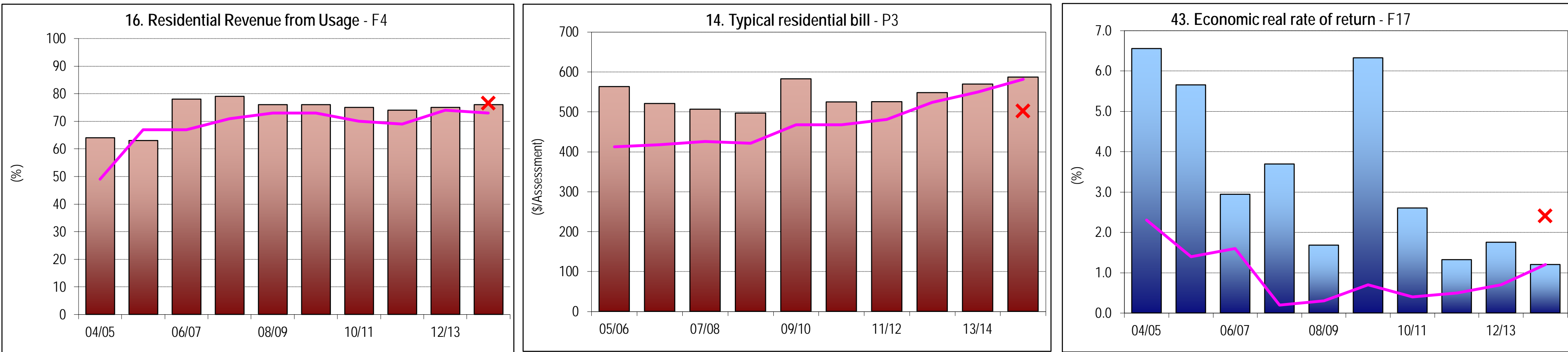
2013-14

(Results shown for 10 years together with 2013-14 Statewide Median and Top 20%)

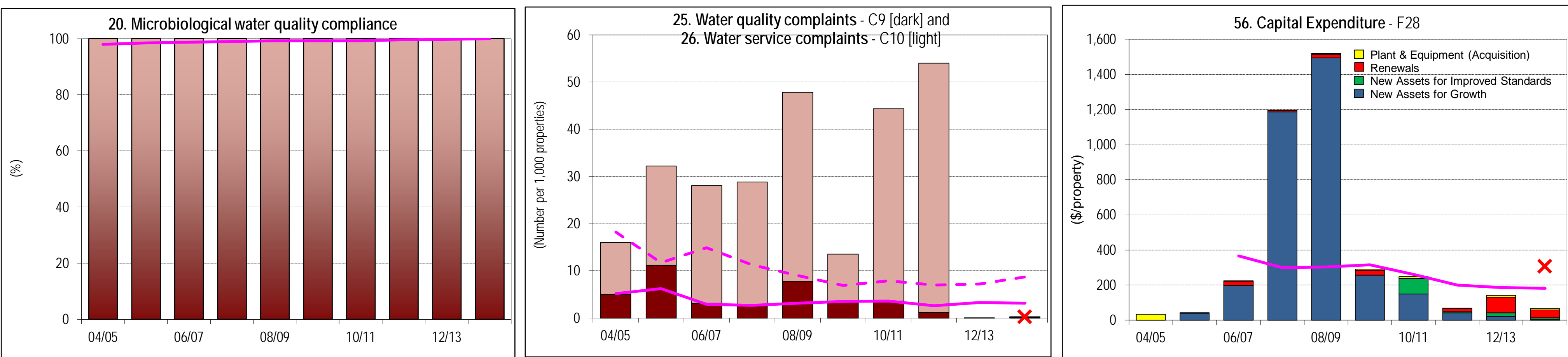
RESIDENTIAL USE/REVENUE FROM USAGE



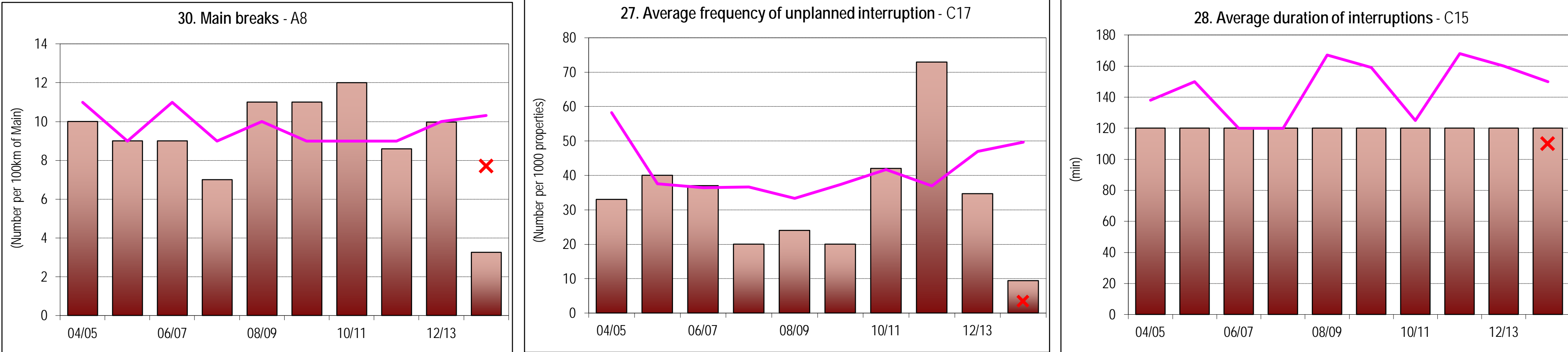
COST RECOVERY



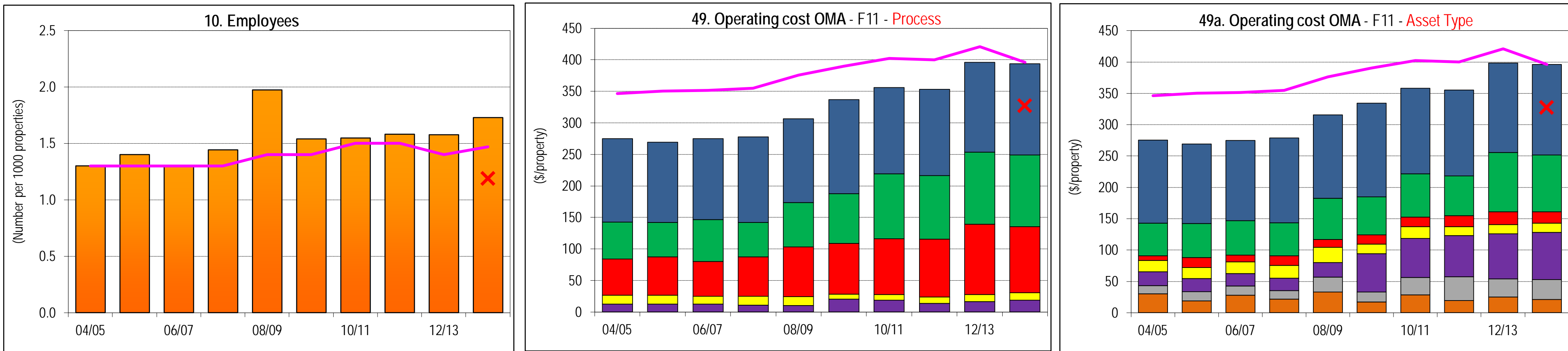
WATER QUALITY/CUSTOMER SERVICE/CAPITAL EXPENDITURE



RELIABILITY



EFFICIENCY



NOTES:

1. Costs are in Jan 2014\$ except for graphs 12 and 14, which are in Jan 2015\$.
2. 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 to 2010-11 compliance was on the basis of the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines (ADWG) and for 2011-12 to 2013-14 compliance was on the basis of the 2011 ADWG.
3. Indicators 33 and 33c - Green shading of bars shows % of time Drought Water Restrictions applied in each year:
4. Indicator 33c - Yellow bars show Peak Week Water Supplied for comparison with Peak Day Water Supplied shown in green.

LEGEND

State Median for all years

Top 20% for 2013-14

0 - 30%

30-50%

>50% of time



## 6. General notes

This *2013-14 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 344) assure data reliability for the NSW Performance Monitoring System. The data validation procedures include matters such as:
  - Aggregated businesses (section H4.1 on page 346)
  - Assessments (section H4.2 on page 347)
  - Connected properties (section H4.2 on page 347)
  - Charges, bills and cost recovery (section H4.3 on page 347)
  - Urban water supplied (section H4.4 on page 347)
  - Operating cost and management cost (section H4.5 on page 348)
  - Drinking water quality compliance (section H4.6 on page 348)
  - Sewage treatment works compliance (section H4.7 on page 350)
  - Implementation of Best-Practice Management Framework (section H5 on page 350)
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, Water NSW (from January 2015, formerly 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 sized 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 30 and in Appendix C on page 275). Statewide medians are shown in Tables 1, 2 and 2A on pages 105, 106 and 107. Table 4 on page 111 shows trends in Statewide performance indicators for regional NSW and comparisons with the National Median for the 71 utilities reported in the National Performance Report. This data provides valuable contextual information to inform each LWU’s future water supply and sewerage planning and to supplement the water planning information reported by each LWU (final paragraph of footnote 5 on page 3).

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 supply 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 17.

**Calculation of TRB** – The 2014-15 typical residential bill is based on a customer of the LWU's principal water supply or sewerage system using the LWU's 2013-14 average annual residential water supplied (see Tables 6 and 7 on pages 134 and 146). The typical residential bill for 2013-14 and previous years is based on the reported average annual residential water supplied for that year (the 2013-14 residential water supplied is shown in column 17 of Table 5 on page 116). Refer also to section H4.3 on page 347.

6. **Total urban water supplied** – Total urban water supplied comprises the sum of the potable water supplied plus the non-potable water supplied (column 2 of Table 5 on page 116 and Figure 9 on page 47). 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 17 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 59 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 2012 (i.e. 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 516 (133), Berrigan 427 (237), Bourke 1,114 (284), Central Darling 632 (179), Hay 1,019 (155), Jerilderie 1,187 (246), Murray 287 (172), Wakool 507 (143), Walgett 1,341 (797), Warren 797 (302) and Wentworth 407 (74).

The typical residential bill (TRB) has been calculated for those LWUs with a dual supply using the above volumes. The TRB for 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 and international performance reporting, water losses comprise *Real Losses* (mostly leakage) plus *Apparent Losses* (under-registration of customer meters and illegal use). *Unbilled Water* supplied (firefighting and mains flushing) is not a water loss but is a component of non revenue water (NRW) (below and note 10). Real losses and NRW apply to the potable water supply only.

As noted on page 16, NWI Indicator A10 (real losses in L/connection/d) is the relevant measure for **tracking a LWU's leakage performance over time** for most LWUs. Each LWU's real losses (L/connection/d) are shown in column 18 of Table 5 on page 116, column 41 of Table 10 on page 172 and Figure 28 on page 66. Refer also to figure 34 on page 112.

Due to perverse impacts shown on page 15, it is inappropriate to track a utility's leakage as a percentage of the total water supplied. Similarly, use of Unaccounted for Water (**UFW**) is not appropriate. Rather '**Non Revenue Water (NRW)**' (L/connection/d) should be used, as recommended by the International Water Association – Reference: Kenneth J Brothers, Assessing UFW and Variable Water Rate Impacts, Use and Loss Metrics in a Declining Water Consumption Environment, IWA Water Loss Conference, 2012, February 2012, Manila, Philippines.

NRW (L/connection/d) is shown in column 41f of Table 10 on page 172 and Figure 29 on page 67.

In addition, the 2013-14 adopted volume of NRW (NWI Indicator W10.1) and NRW as a percentage of

the total potable water supplied are shown in columns 15 and 16 of Table 8A on page 159.

10. **Minimum real loss and NRW** – Further to note 9 above, the NSW Performance Monitoring System determines minimum values for each LWU's real loss and NRW as shown below.

Leakage studies for 71 NSW LWUs indicate an average leakage from potable water supply distribution systems of 3% to 15% of total potable water supplied, as shown in column 41e of Table 10 on page 172. These utilities have recently carried out a reservoir drop test, waste metering or night flow analysis to determine their real losses and opportunities for leakage reduction. Only 13 of these utilities had a real loss of under 6%. In addition, Table 10A on page 175 discloses the real losses for 68 LWUs 'before' and 'after' leakage reduction under the Regional NSW Water Loss Management Program<sup>21</sup>. For these LWUs, Table 10A indicates average real losses of 10% of the potable water supplied after leakage reduction.

Accordingly, a **minimum real loss** (mostly leakage) of 6% of the total potable urban water supplied (NWI Indicator W11.1) has been adopted. Reported real losses of less than 6% have only been accepted where the utility has provided evidence to support the adoption of a lower value. Where such evidence has not been provided, real losses have been increased to 6% of the total potable urban water supplied (W11.1) and are shown in italics bold in column 8 of Table 8 on page 155. Refer also to the final paragraph below on NRW and to the 3<sup>rd</sup> paragraph of page 16.

Similarly, Statewide analysis of **NRW** (*Real Losses, Apparent Losses and Unbilled Water* supplied (refer to note 9 above)) for NSW water utilities other than bulk water suppliers, indicates a minimum of 10% of the potable water supplied.

Accordingly, a **minimum NRW** of 10% of the total potable urban water supplied (W11.1) has been adopted. Where a LWU has reported NRW of less than 10% of the potable water supplied, the reported NRW has been increased to 10%, unless the LWU has provided evidence of a Real Loss of less than 6%. In such cases, the adopted value for NRW has been determined as the Real Loss plus 4%. Any increases to the real loss (above) or to the NRW (W10.1) have also been applied to W11.1. The adjusted values of the real loss, NRW (W10.1) and the total potable urban water supplied (W11.1) are shown in italics bold in columns 8, 9 and 10 of Table 8 on page 155.

11. **Sydney Water, Hunter Water and Water NSW** – The performance indicators for Sydney Water Corporation, Hunter Water Corporation and Water NSW (from January 2015, formerly Sydney Catchment Authority) were obtained from the *National Performance Report 2013-14 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 18). The following 45 regional 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. Refer also to column 37 of Table 5B on page 123.
13. **Unfiltered** – A utility with over 50 per cent of its supply comprising an unfiltered surface water supply i.e. 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.

<sup>21</sup> Refer to Table 10A on page 175. In addition, results from the Regional NSW Water Loss Management Program (WLMP) are available at <http://www.lgsa.org.au/policy/water/water-loss-management-program>.

**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 33).

14. **National Water Initiative (NWI) Indicators** – There are 32 NSW water utilities with >10,000 connected properties including three metropolitan utilities and 29 regional utilities. These utilities have reported their performance in the *National Performance Report 2013-14* ([www.nwc.gov.au](http://www.nwc.gov.au)) 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 2013-14* and are shown in Appendix F on page 309. 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 2013-14* 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 local water 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 116 reports the results for NWI indicators C4, W11, F4, P3, P6, P8, H3, H4 (expressed as % population), C9, C15, A8, C13, W12, A10, E4, A14, W27, W26, F1+F2, F22, F28+F29, F16, F17, F18, F11 and F12.

**Table 5A** on page 120 reports the results for NWI indicators F13, F7, F3, the sum of F28 and F29, F19, F22, F23, F20, F21, F25, F8, F24 and F30.

**Table 5B** on page 123 reports the results for NWI indicators C12, C14, E9, E10, E11 and E12.

**Table 5C** on page 126 reports indicators F9, F14, F11, F22, F17, A8, C17, A10, C9, C10, H3 and P3.

**Table 5D** on page 130 reports indicators F10, F15, F12, F22, F18, A14, C11, E4 and P6.

**Table 6** on page 134 reports indicators P1, P1.2, P1.12, P1.3, P1.4, P3, F17, F4, W12 and C4.

**Table 7** on page 146 reports indicators P4.1, P4.2, P6, F18 and C8.

**Table 8** on page 155 reports the results for NWI indicators W8.1, W9.1, W10.1, W11.1, W20, the sum of W21 and W25, W11.2, W8.2, the sum of W9.2 and W10.2, W14, the sum of W22, W23 and W24, W26, W1, W2, W4, W5 and W7.

**Table 8D** on page 166 reports the results for NWI indicators W9.1, W9.2, W9, W11.3, W21 and W28.4.

**Table 9** on page 169 reports the results for NWI indicators C4, C2, C1, A2, A3, A1, F28, F14 and F26.

**Table 10** on page 172 reports the results for NWI indicators A10, A11, A9, A8, C17, W11 and W12.

**Table 10A** on page 175 reports the results for NWI indicators A9, W11.1 and A10.

**Table 11** on page 180 reports the results for NWI indicators F1, F5, F4, F9, F22, F17 and F11.

**Table 12** on page 183 reports the results for NWI indicators H6, H5, H4, H2, H3, C9, C10, C18, C19, C17 and C15.

**Table 14** on page 189 reports the results for NWI indicators C8, C6, C5, A5, A6, A4, F15 and F27.

**Table 15** on page 192 reports the results for NWI indicators A14, E13, W18, W17, E4, E5, E1, E2, E3, W19, E8, W26 and W27.

**Table 16** on page 195 reports the results for NWI indicators F2, F6, F10, F22, F18 and F12.

**Table 17** on page 198 reports the results for NWI indicators E4, E5, E7, C11, C13 and C16.

The results for NWI indicators P8; F3 and F16; F19; C13; A3 and A2; W11; P3; P1.3; F4; C9; C10; A8; W12; A10; F17; F11; C11; E4; A6 and A5; P6; A14; E13; W27; F18 and F12 are shown on Figures 1, 2, 3, 6, 8, 9, 11, 12, 13, 19, 20, 21, 26, 27, 28, 32, 33, 40, 42, 48, 54, 55, 56, 57, 61 and 62 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 H1 refers to the 2011 ADWG for all LWUs.

All the NSW LWUs have complied with indicators E6, H1, H3, H4 and H7. Results for indicators H5 and H6 are reported in Table 12 on page 183.

## 6.1 Regional Water and Sewerage Treatment Officers - NSW Office of Water

Area	Name	Mobile	Email
Albury	Patrick Freeman	0429 308 954	Patrick.Freeman@dpi.nsw.gov.au
Alstonville	Terry Call	0412 283 768	Terry.Call@dpi.nsw.gov.au
Cootamundra	Bernie Barnes	0429 604 409	Bernie.Barnes@dpi.nsw.gov.au
Dubbo	Bruce Lamont	0458 268 453	Bruce.Lamont@dpi.nsw.gov.au
Newcastle	Graham Campbell	0419 620 990	Graham.Campbell@dpi.nsw.gov.au
Orange	Chris Carlon	0419 624 526	Chris.Carlon@dpi.nsw.gov.au
Tamworth	Trent Betts	0417 458 247	Trent.Betts@dpi.nsw.gov.au
Wollongong	Geoff Parish	0427 248 007	Geoff.Parish@dpi.nsw.gov.au

As noted on pages 10 and 24, assistance is available from your NSW Office of Water Regional Water and Sewerage Treatment Officer for achieving microbiological water quality compliance and for addressing other water and sewage treatment issues.

## 6.2 National Certification Framework for Water Treatment Operators

### National Certification Framework for Water Treatment Operators

Appendix I on page 354 discloses that the 89 NSW LWUs responsible for providing water treatment<sup>#</sup> have a total of 294 fully qualified water treatment operators\* to operate the 154 LWU water treatment works and 85 chlorinators/aerators. In addition, a further 45 operators are qualified to operate the chlorinators and aerators<sup>+</sup>.

Continuing professional development of operators is required, such as attending a NOW Water Treatment Update Seminar at least every 3 years. The above 339 operators meet the requirements of the National Certification Framework for Water Treatment Operators.

<sup>#</sup> Excludes the 9 LWUs responsible for sewerage only (page 2), reticulators Cootamundra, Harden, Queanbeyan and Young, and Cobar Water Board which provides a bulk raw water supply.

\* Such operators have a Certificate III in Water Operations (Water Treatment) or equivalent and are employed in operating a LWU treatment works or a chlorinator/aerator (refer to page 23 of *NSW Guidelines for drinking water management systems*, NSW Health and NSW Office of Water, 2013 (<http://www.health.nsw.gov.au/environment/water/Documents/NSW-Guidelines%20for-Drinking-Water-Management-Systems.pdf>)).

<sup>+</sup> Such operators have a NSW Office of Water Part 1 Certificate (Chemical Dosing Systems) or equivalent, have also completed chlorine safety training and are employed in operating a LWU chlorinator/aerator (refer to page 23 of *NSW Guidelines for drinking water management systems*).

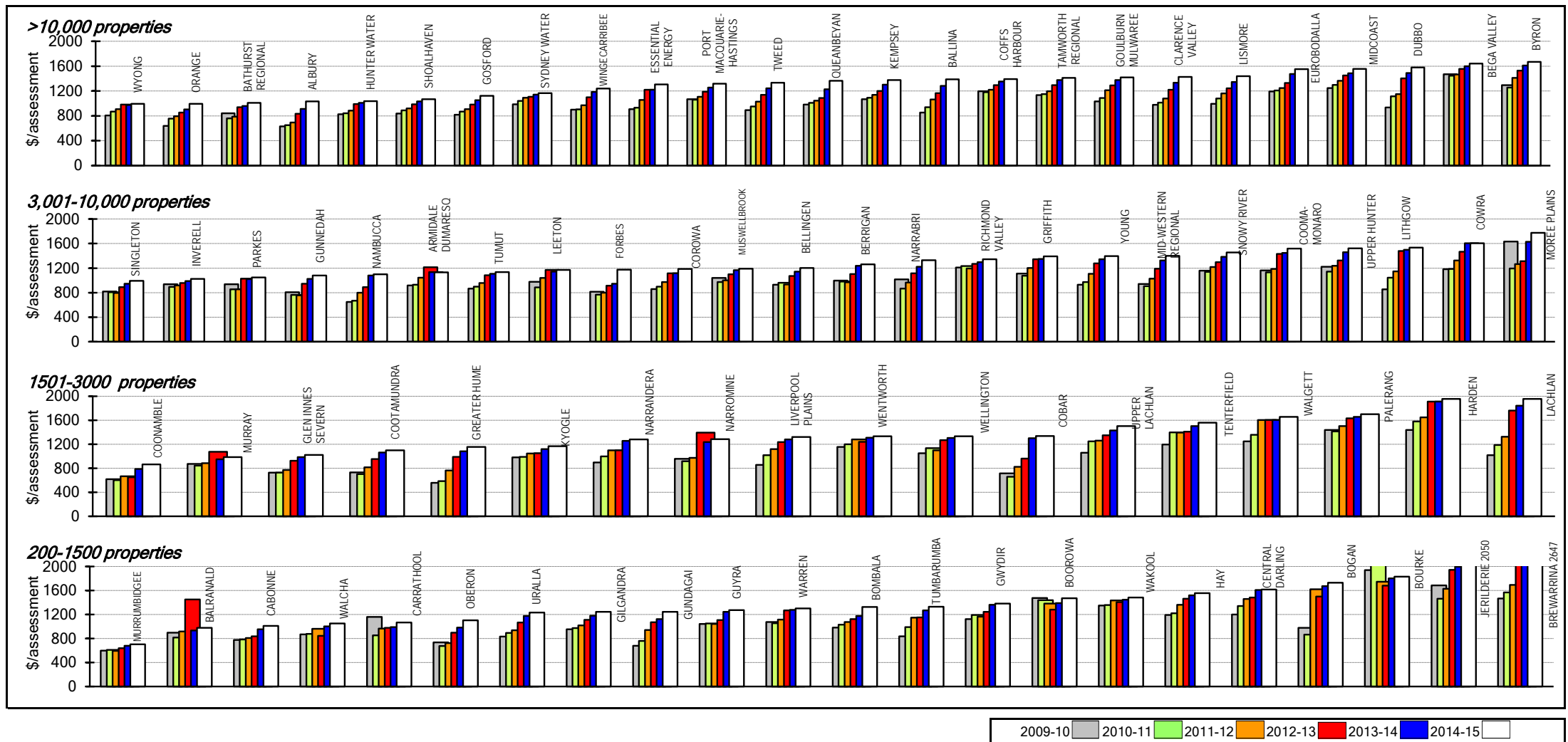
## 6.3 Contents of tables 5 to 18

Table 5	<b>2013-14 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 5C	<b>Water supply – Infrastructure Asset Condition and Performance 2013-14</b>
Table 5D	<b>Sewerage – Infrastructure Asset Condition and Performance 2013-14</b>
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 – 2013-14 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 – 2013-14 residential multiple tariffs, non-residential tariffs, liquid trade waste fees and charges</b>
Table 8	<b>2013-14 NSW urban water supplied</b> – Water supplied by customer category, water losses, leakage, non-revenue water, total potable and non-potable water supplied, recycled water use and surface and groundwater use
Table 8A	<b>2013-14 Water losses and non-revenue water</b>
Table 8B	<b>2013-14 Water consumptions from source catchments in regional NSW</b> – Shows details of water consumptions by customer category for each source catchment
Table 8C	<b>2013-14 Water conservation initiatives</b>
Table 8D	<b>2013-14 Components of commercial, industrial and rural water supplied, municipal water used, potable water produced, urban stormwater used</b>
Table 9	<b>Water supply – utility characteristics</b> – Population [permanent, peak], no. of assessments, no. of service connections, connected properties, new residential dwellings connected, assets employed, capital investment, workforce employed, employees undergoing training, outsourcing, days lost
Table 10	<b>Water supply – asset management, water resource management</b> – Leakage, Non-Revenue Water (NRW), main breaks, interruptions to supply, rehabilitations, renewals and maintenance expenditure, total annual & average residential water supplied, recycled water use, drought & demand management policies
Table 10A	<b>Estimated Real Water Losses from Regional Water Loss Management Program</b> – Zone, ILI before, estimated water loss - before and after, annual water savings, leakage test and the test year
Table 11	<b>Water supply – financial, efficiency</b> – Revenue, residential revenue and water supplied, current replacement cost, net 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 <i>e. coli</i> water quality compliance, water quality complaints, water service complaints, customer inquiries, customer restrictions and legal action, customer interruption incidence 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 [refer also to pages 111, 112 and 276]
Table 14	<b>Sewerage – utility characteristics</b> – Population [permanent, peak], no. of assessments, connected properties, new residential dwellings connected, assets employed, capital investment, workforce employed, employees undergoing training, outsourcing, days lost
Table 15	<b>Sewerage – asset management, resource management</b> – Infiltration, interruptions to service, rehabilitations, renewals, maintenance expenditures, volume of sewage collected/treated, biosolids reused, per cent effluent reclaimed
Table 16	<b>Sewerage – financial, efficiency</b> – Revenue, current replacement cost, net debt to equity, cross subsidies, operating result, externalities, loan payment, operating cost (OMA) & management cost
Table 17	<b>Sewerage – environmental, levels of service</b> – BOD & SS compliance, sewage treated that was compliant, STW compliance, odour complaints, service complaints, customer inquiries, 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 [refer also to pages 114 and 278]



## 7. Water supply and sewerage figures

Figure 1: Typical residential bill – water supply and sewerage - P8



### Parameter:

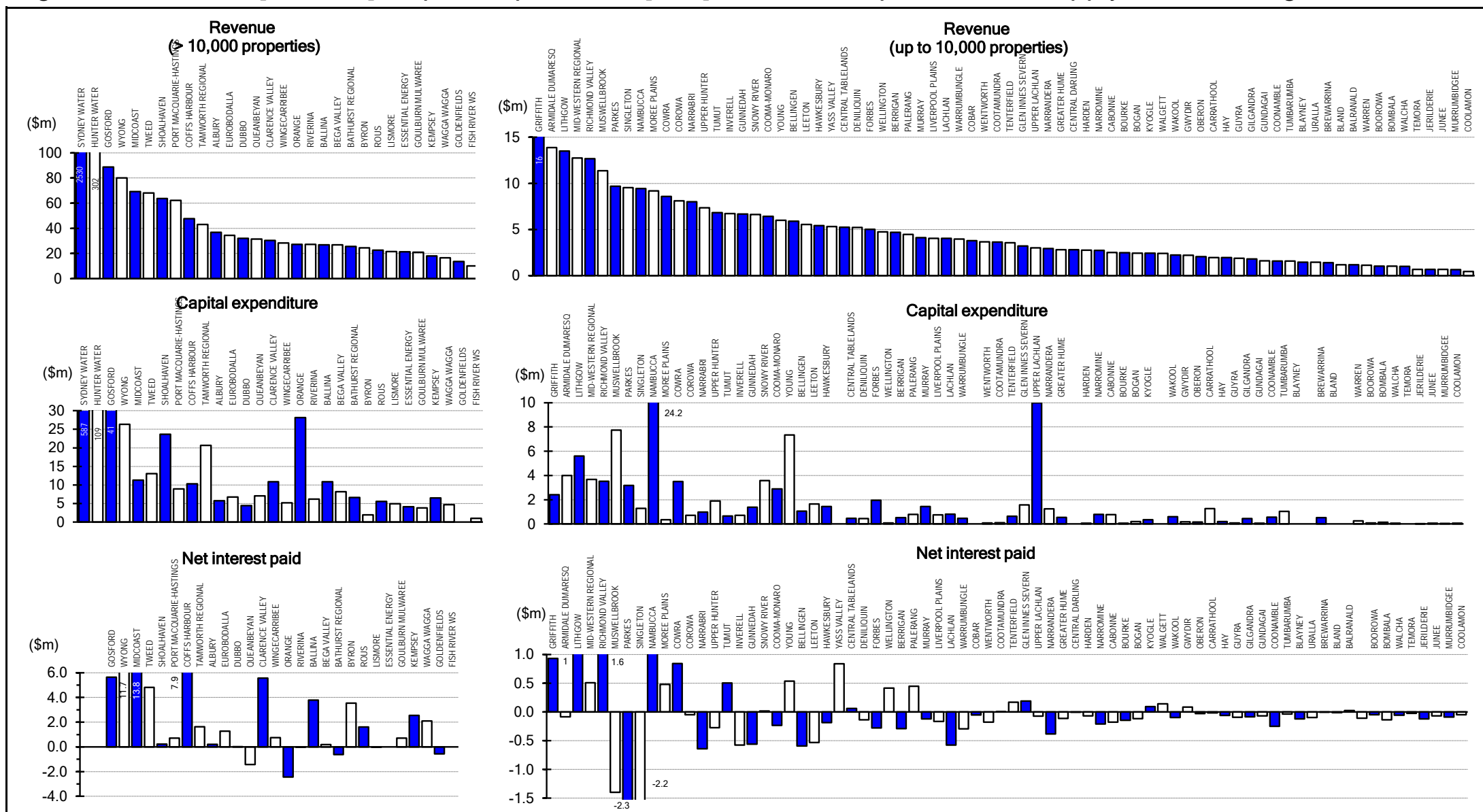
$(2013-14 \text{ Average Residential Water Supplied} \times 2014-15 \text{ Water Usage Charge}) + 2014-15 \text{ Water and Sewerage Access Charges}$

### Notes:

1. This figure shows ranked values of the 2014-15 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 2014-15 typical residential water bill for water supply and sewerage for the 24 LWUs shown ranges from \$991 to \$1780. Results for the previous 5 years are also shown in Jan 2015\$.
2. The 2014-15 Statewide median typical residential bill for water supply and sewerage is \$1,251 per assessment [National Median is \$1,234 for 2013-14]. Refer also to Table 5 on page 116, graph 7 on page 206 and figure 2a on page 115.
3. Refer also to pages 7 and 35 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).
4. For general notes see page 32.



Figure 2: Revenue [F1 + F2], capital expenditure [F16], net interest paid - water supply and sewerage



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

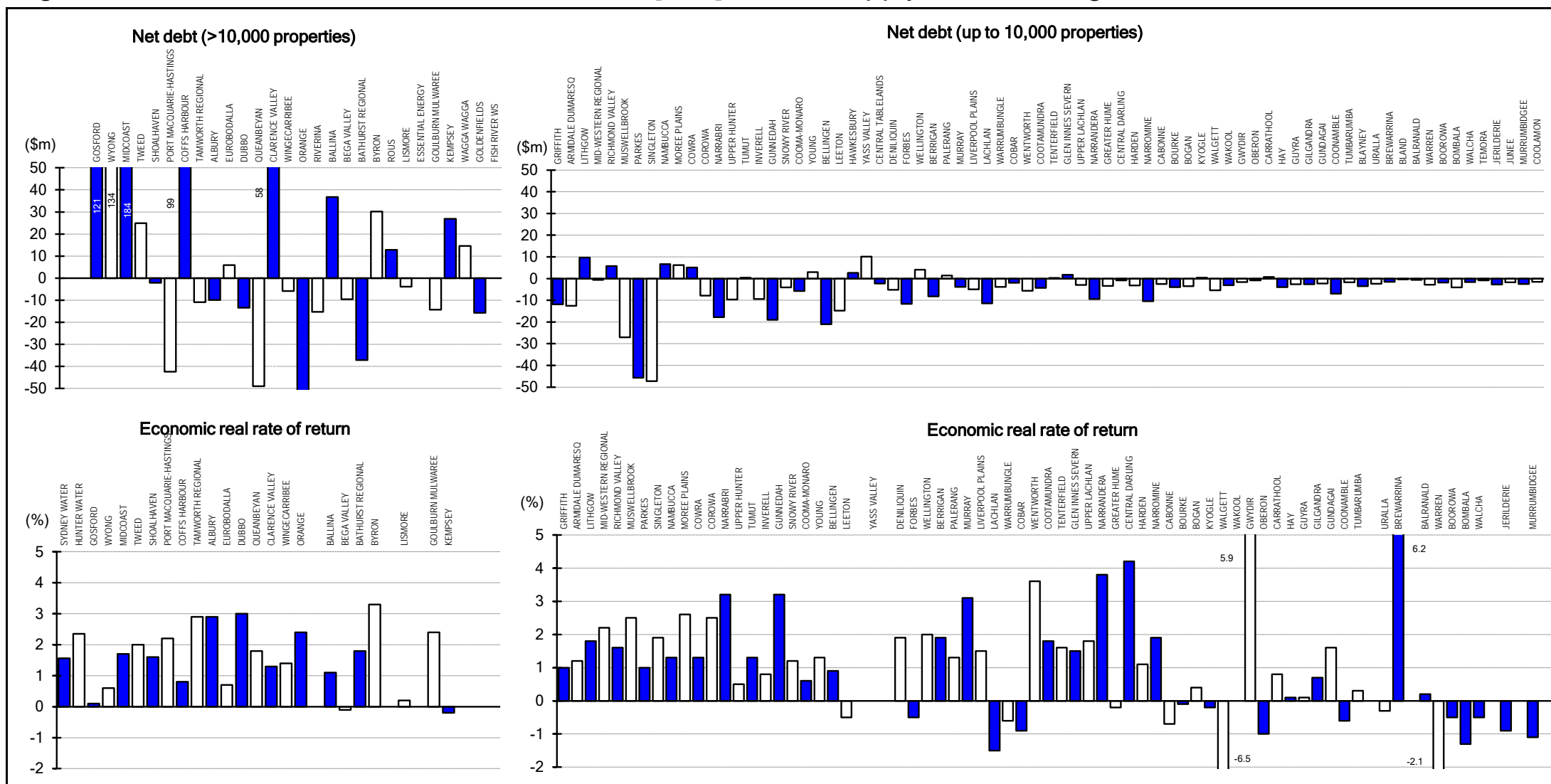
**Parameter:** Acquisition of fixed assets (W16 + S17)

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

**Notes:**

- Utilities are ranked on the basis of revenue (see the top graph). Revenue for Sydney Water was \$2,530M and Hunter Water's revenue was \$302M.
- Refer also to Table 3 on page 108, Table 5 on page 116 and graphs 30 and 31 on page 212.
- For general notes see page 32.

Figure 3: Net debt, economic real rate of return [F19] - water supply and sewerage



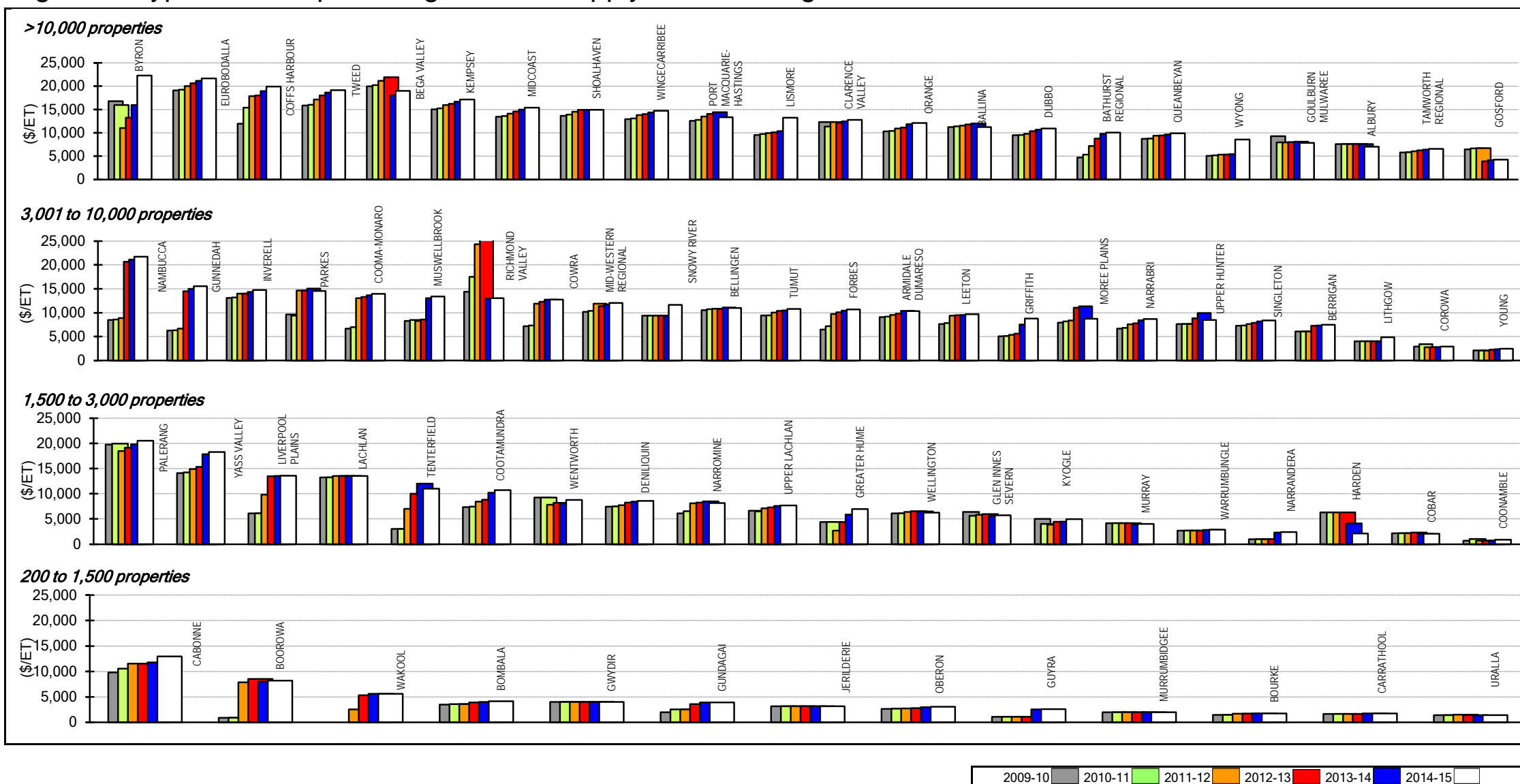
**Parameter:** [Borrowings (W39 + S40) + bank overdraft (W37 + S38)] - cash and investments (W30 + S31)

**Parameter:** [Revenue from operations (W13 + S14) - OMA & current cost depreciation (W1 + W2 + W3 + S1 + S2 + S3) - interest income (W9 + S10) - grants for acquisition of assets (W11a + S12a)] x 100  
Written down replacement cost of system assets, plant & equipment (W47 + W33b + S48 + S34b)

#### Notes:

- Utilities are ranked on the basis of revenue (see the top graph). Revenue for Sydney Water was \$2,530M and Hunter Water's revenue was \$302M.
- Refer also to Table 5 on page 116, Table 5A on page 120, graphs 24 and 27 on page 211 and figure 13 on page 115.
- For general notes see page 32.

Figure 4: Typical developer charge - water supply and sewerage

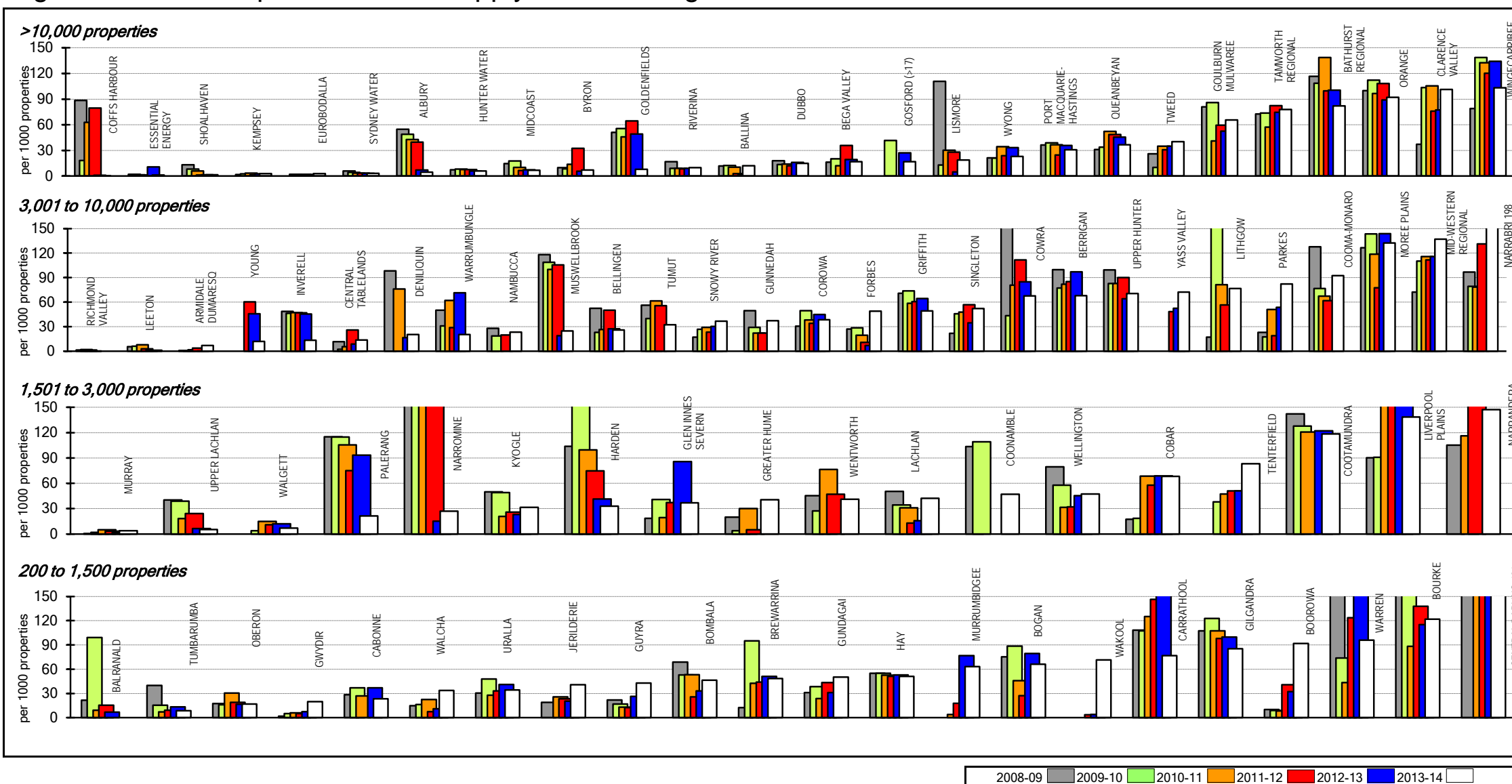


**Parameter:** Typical Water Supply Developer Charge (Q136) + Typical Sewerage Developer Charge (Q62)

**Notes:**

1. This figure shows ranked values of the 2014-15 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 \$21700 to \$25000. Results for the previous 5 years are also shown in Jan 2015\$.
2. The 2014-15 Statewide median typical developer charge for water supply and sewerage is \$10600 per Equivalent Tenement (ET). Refer also to Table 5 on page 116.
3. For general notes see page 32.

Figure 5: Total complaints - water supply and sewerage - C13



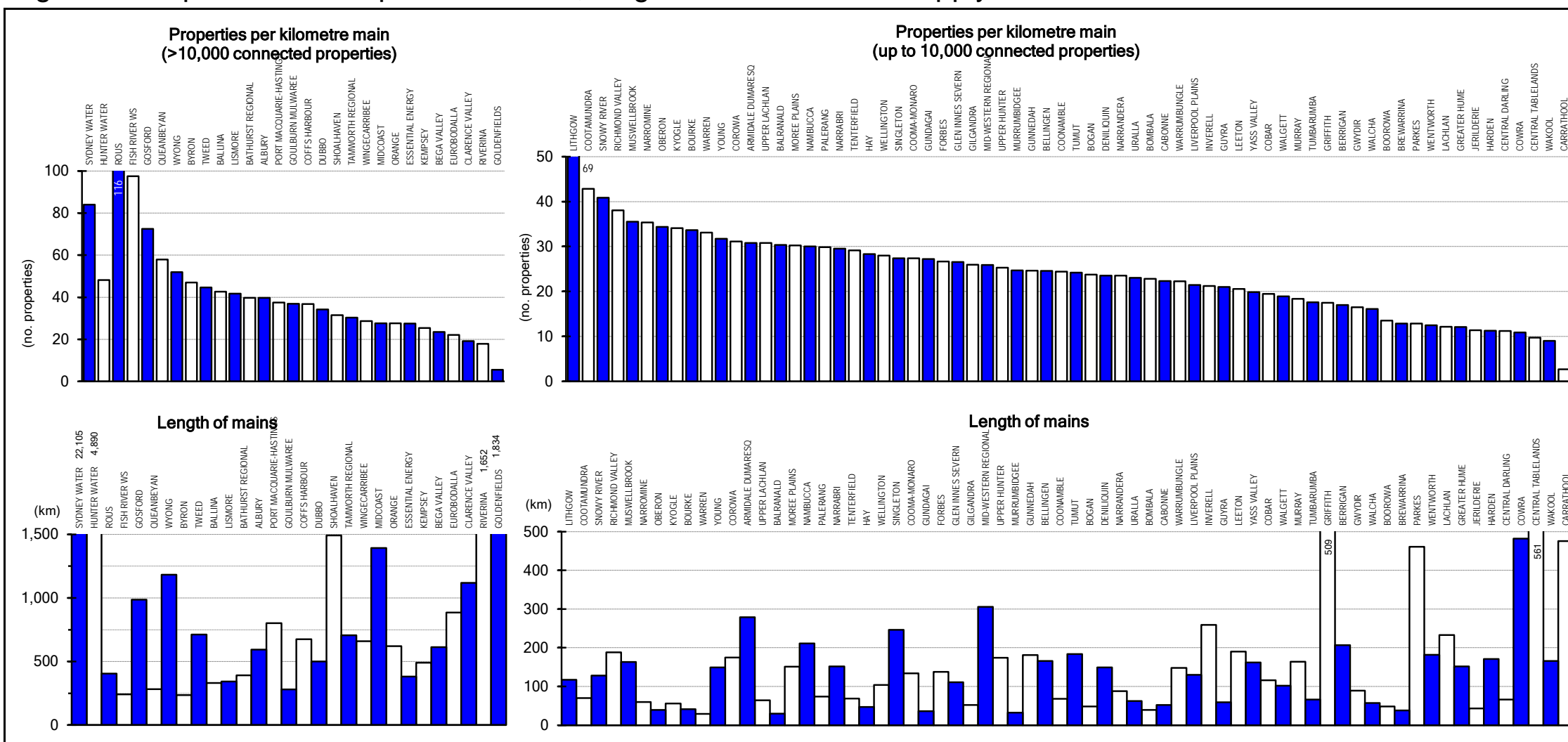
**Parameter:**  $\frac{[\text{No. of Water Complaints (Q102)} + \text{No. of Sewerage Complaints (Q40)}] \times 1000}{[\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 total number of water supply and sewerage 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 total water supply and sewerage complaints for the 26 LWUs shown ranges from nil to 198 per 1,000 connected properties.
2. The Statewide median total number of water and sewerage complaints is 21 per 1,000 properties [National Median is 6 per 1,000 properties]. Refer also to figure 5 on page 115 and pages 183 and 198.
3. For general notes see page 32.

## 8. Water supply figures

Figure 6: Properties served per km of main, length of mains - water supply - A3



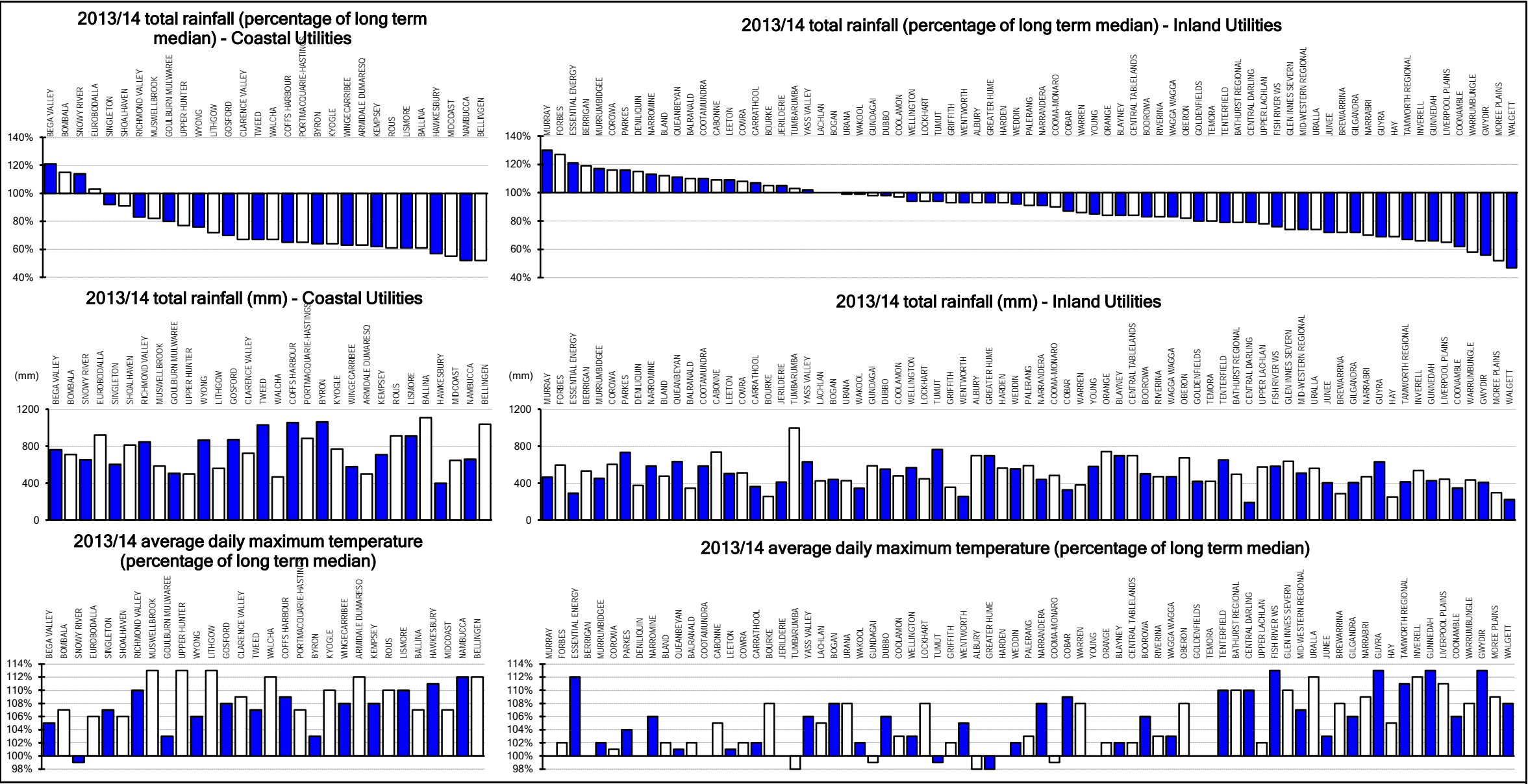
**Parameter:**  $\frac{\text{No. of residential assessments (Q32)} + \text{No. of non-residential assessments (Q33)} \times \text{No. of connected properties per assessment}}{\text{Length of headworks transfer mains (Q20a)} + \text{length of trunk mains (Q20)} + \text{length of reticulation mains (Q21)}}$

**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 [National Median is 35 per km of main]. Refer also to Table 9 on page 169 and graph 1 on page 205.
3. For general notes see page 32.

Figure 7: Rainfall, temperature - water supply



**Parameter:**  $[2013/14 \text{ total rainfall} \times 100] \div \text{Long term median annual rainfall}$   
**Parameter:** 2013/14 total rainfall (mm)  
**Parameter:**  $[2013/14 \text{ average daily maximum temperature} \times 100] \div \text{Long term median of daily maximum temperature}$   
**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 2013/14 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. The statewide median annual rainfall was 77% of the long term median. However, the top graphs above show that the weighted medians for the coastal and inland utilities were 72% and 91% respectively.
- 5. For general notes see page 32.

Figure 8: Total water supplied - water supply - W11

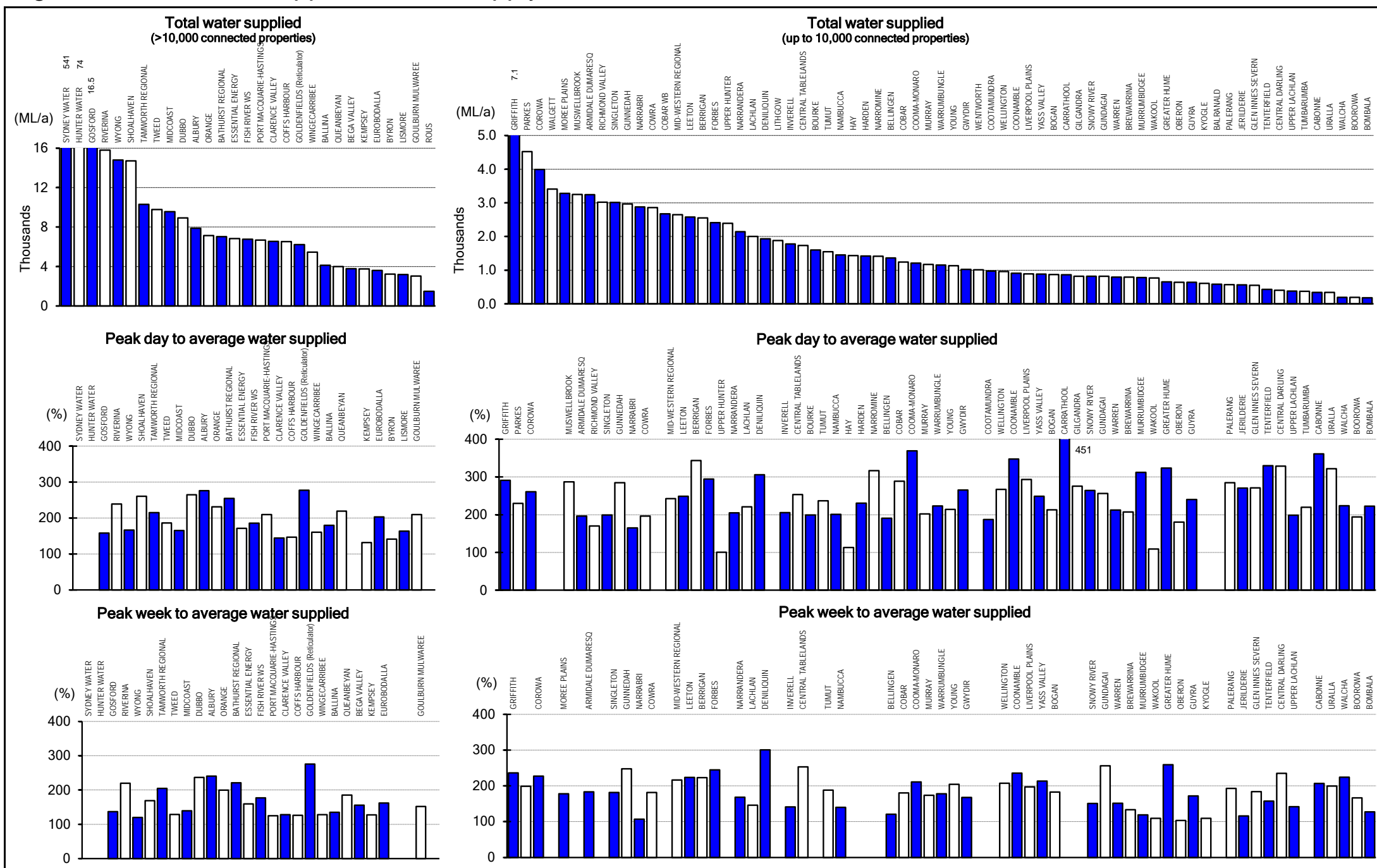




Figure 8: Total water supplied - water supply (continued)

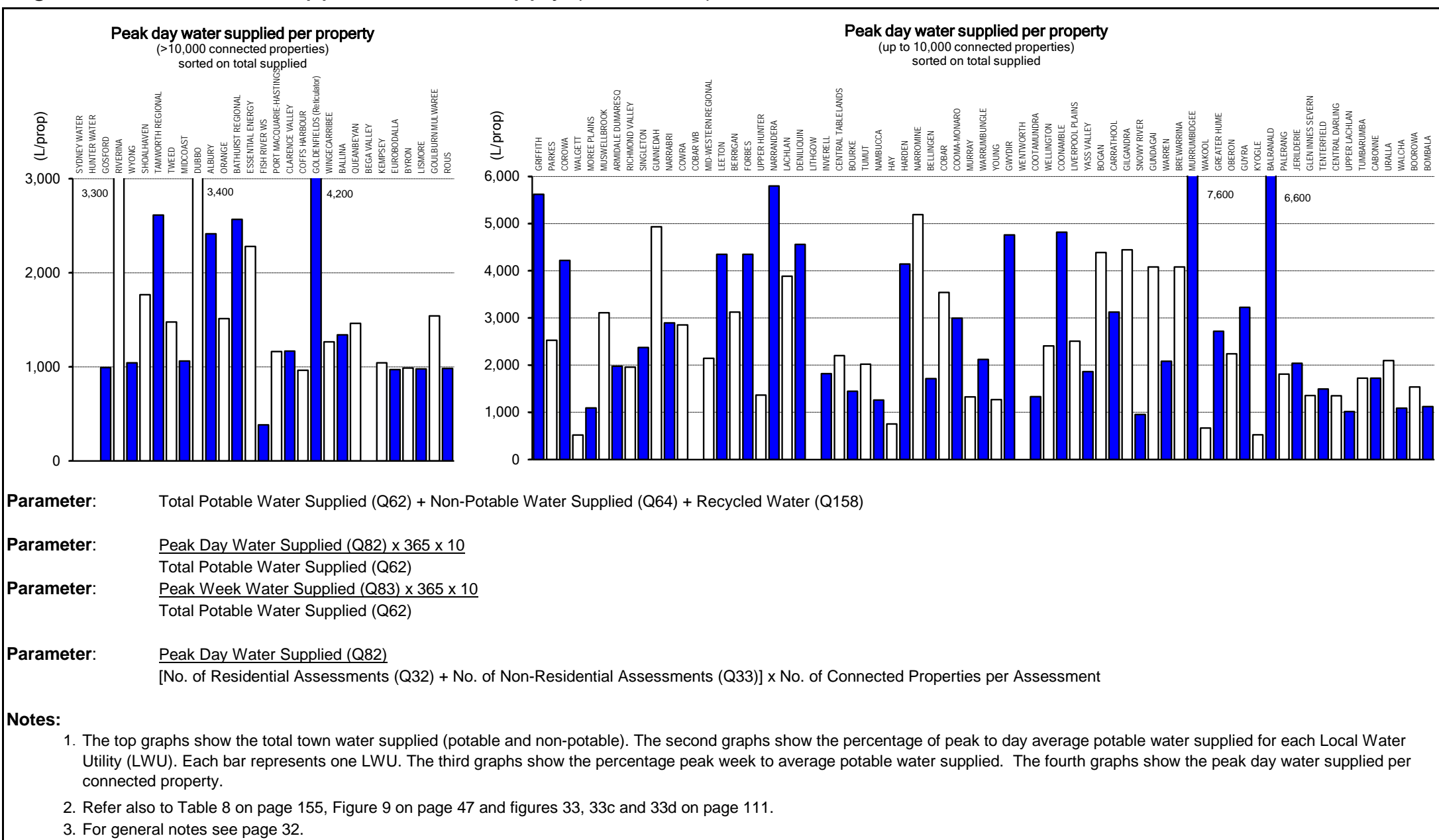
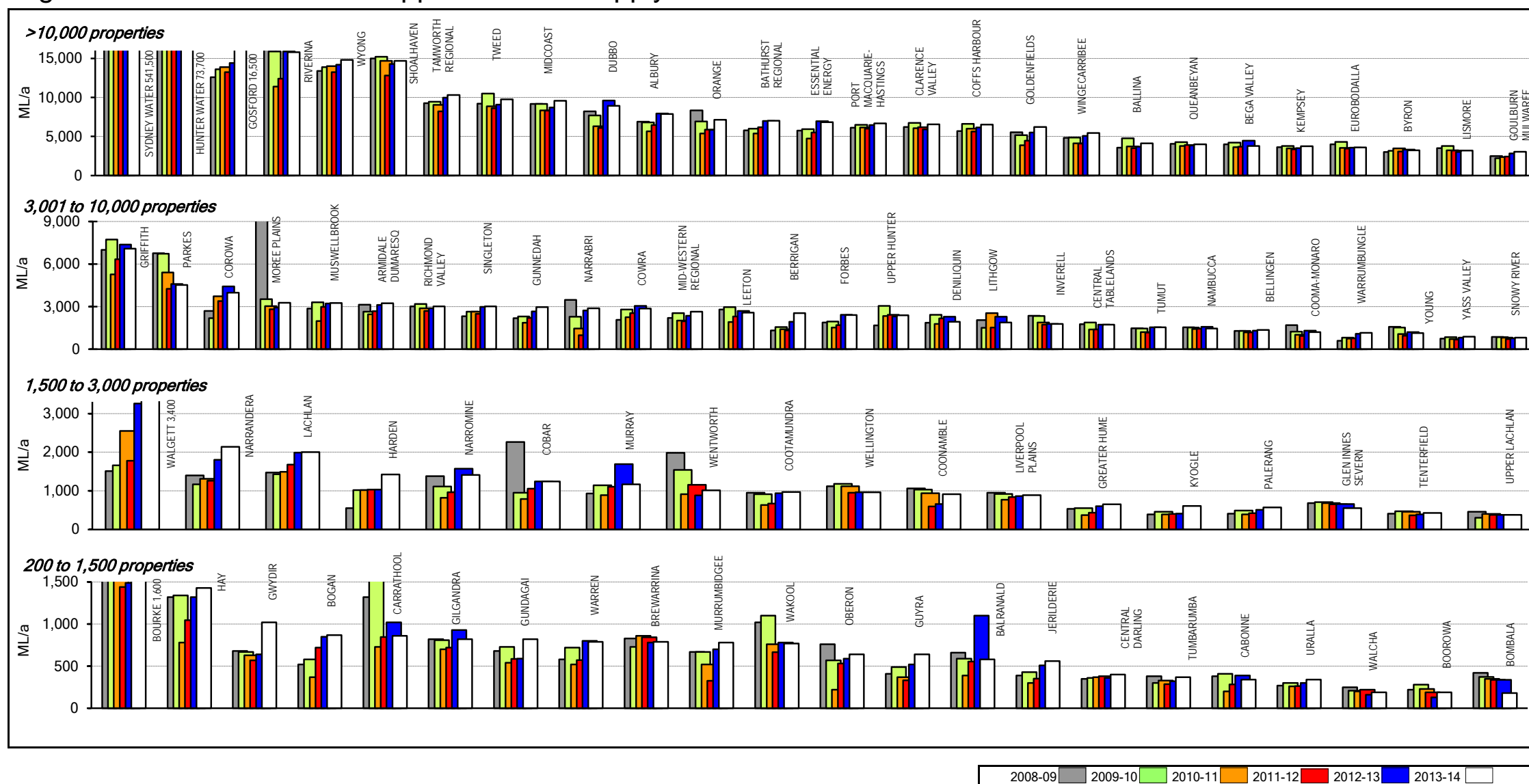


Figure 9: Total urban water supplied - water supply - W11

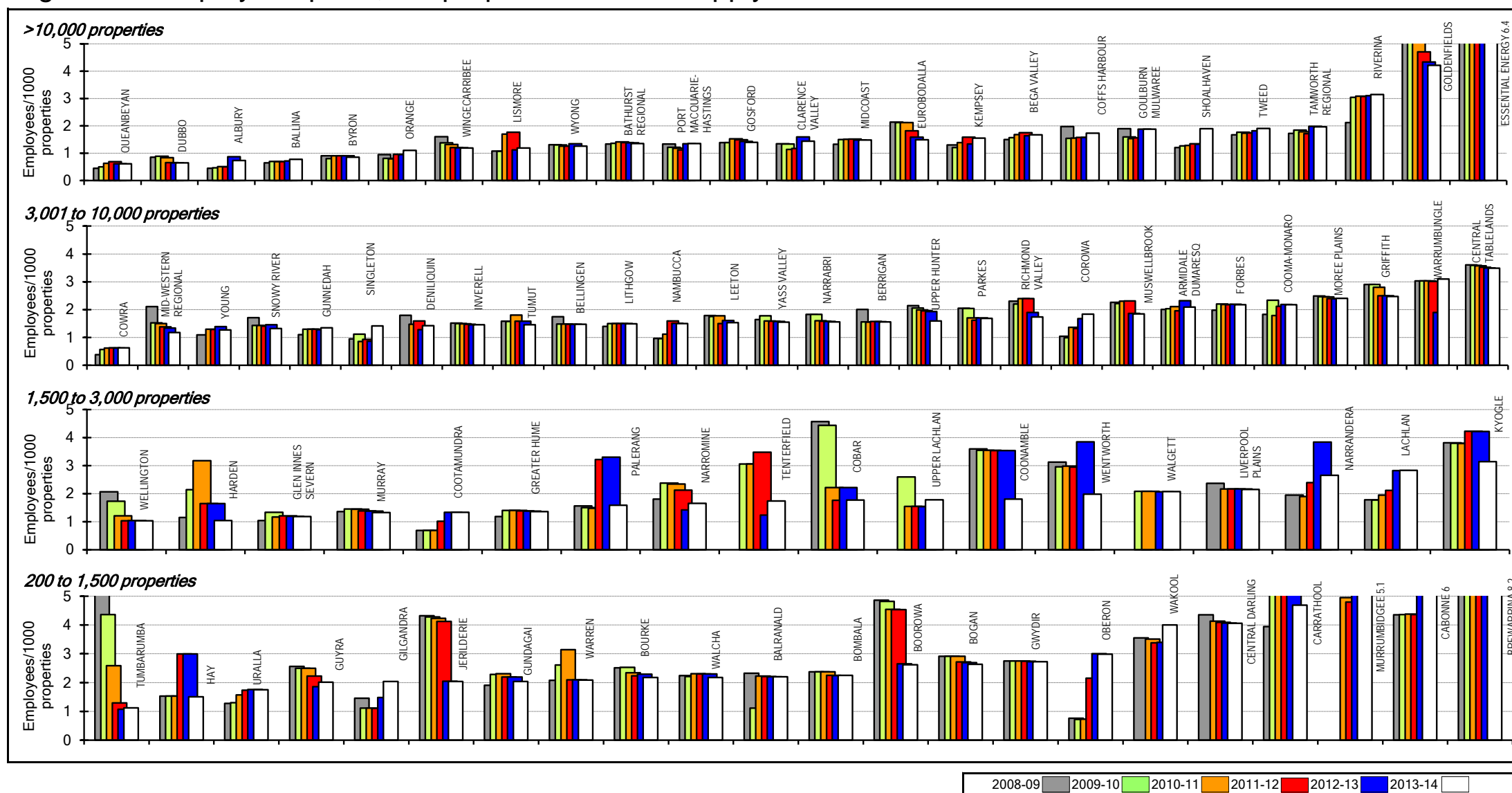


**Parameter:** Total Potable Water Supplied (Q62) + Non-Potable Water Supplied (Q64) + Recycled Water (Q158)

**Notes:**

1. This figure shows ranked values of the 2013-14 total urban water supplied 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 total urban water supplied for the 28 LWUs shown ranges from 7,080 to 820 ML/a. Results for the previous 5 years are also shown.
2. The Statewide median total urban water supplied is 6,800 ML/a [National Median is 10,280 ML/a]. Refer also to Table 5 on page 116 and Table 10 on page 172.
3. For general notes see page 32.

Figure 10: Employees per 1,000 properties - water supply



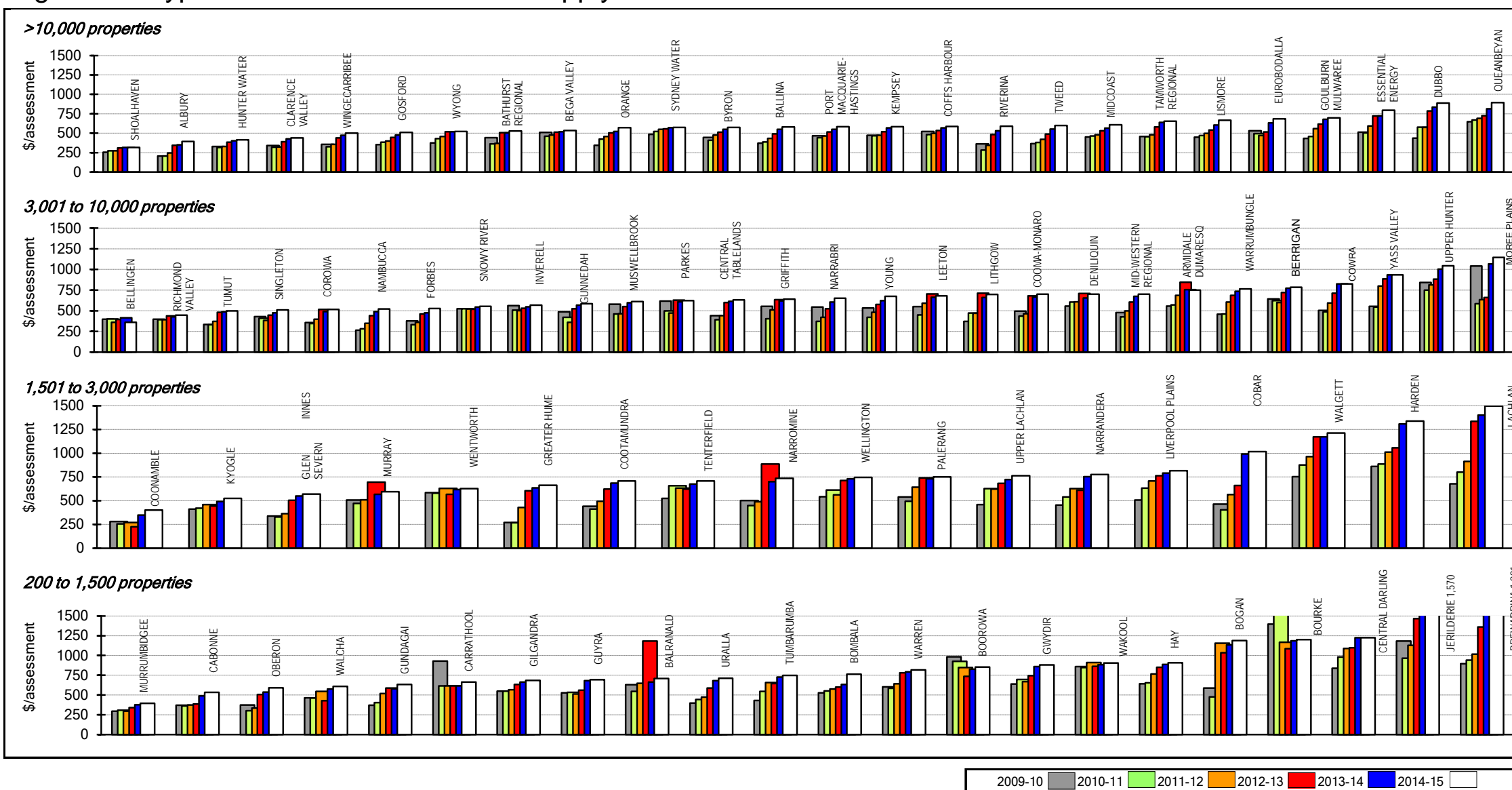
**Parameter:**  $\text{Equivalent Full-time Employees (Q120)} \times 1000$

$[\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 3.5. 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. Refer also to pages 21, 23 and Table 9 on page 169.
3. For general notes see page 32.

Figure 11: Typical residential bill – water supply

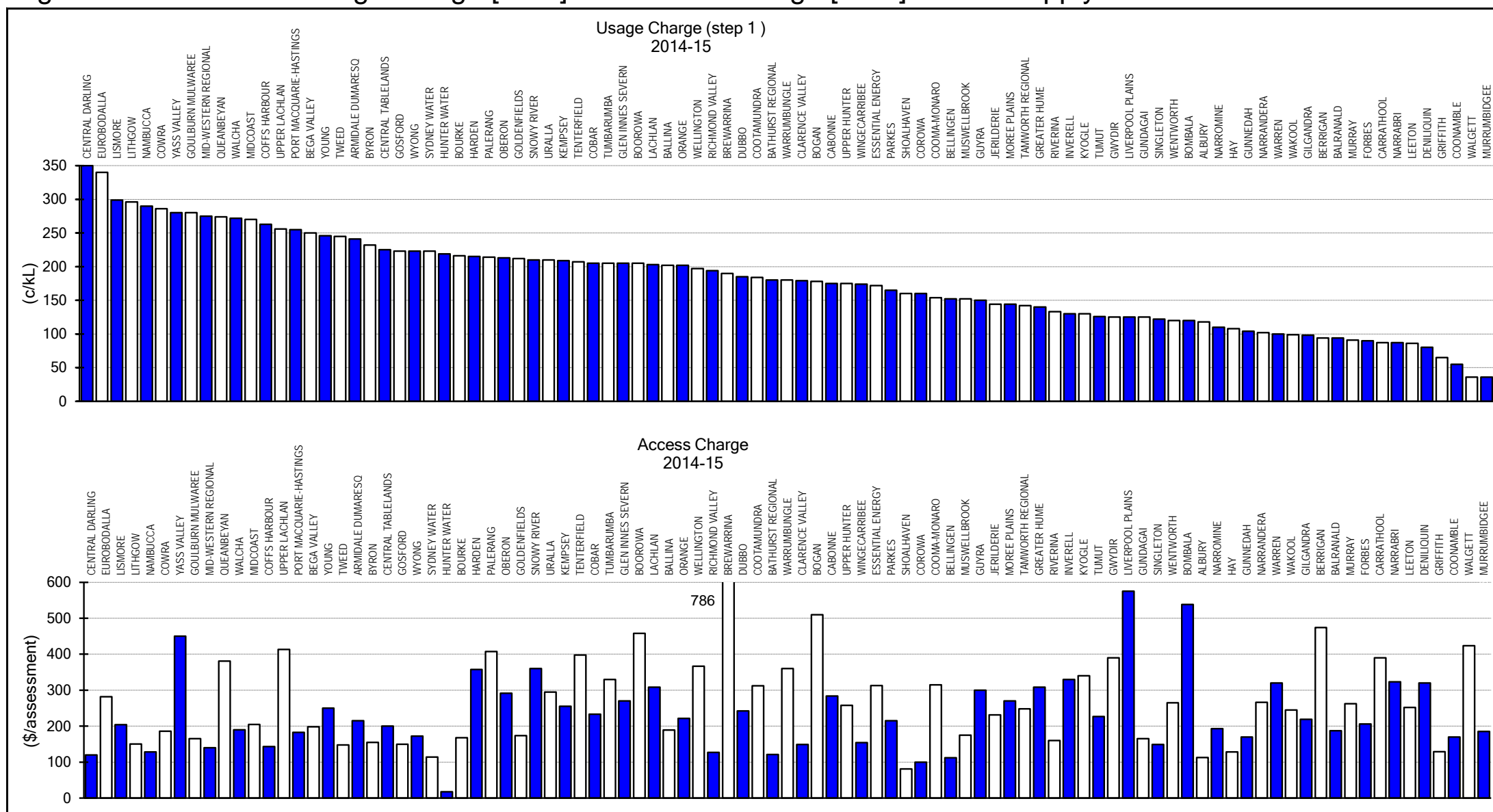


**Parameter:** (2013-14 Average Residential Water Supplied x 2014-15 Water Usage Charges) + 2014-15 Access Charge

**Notes:**

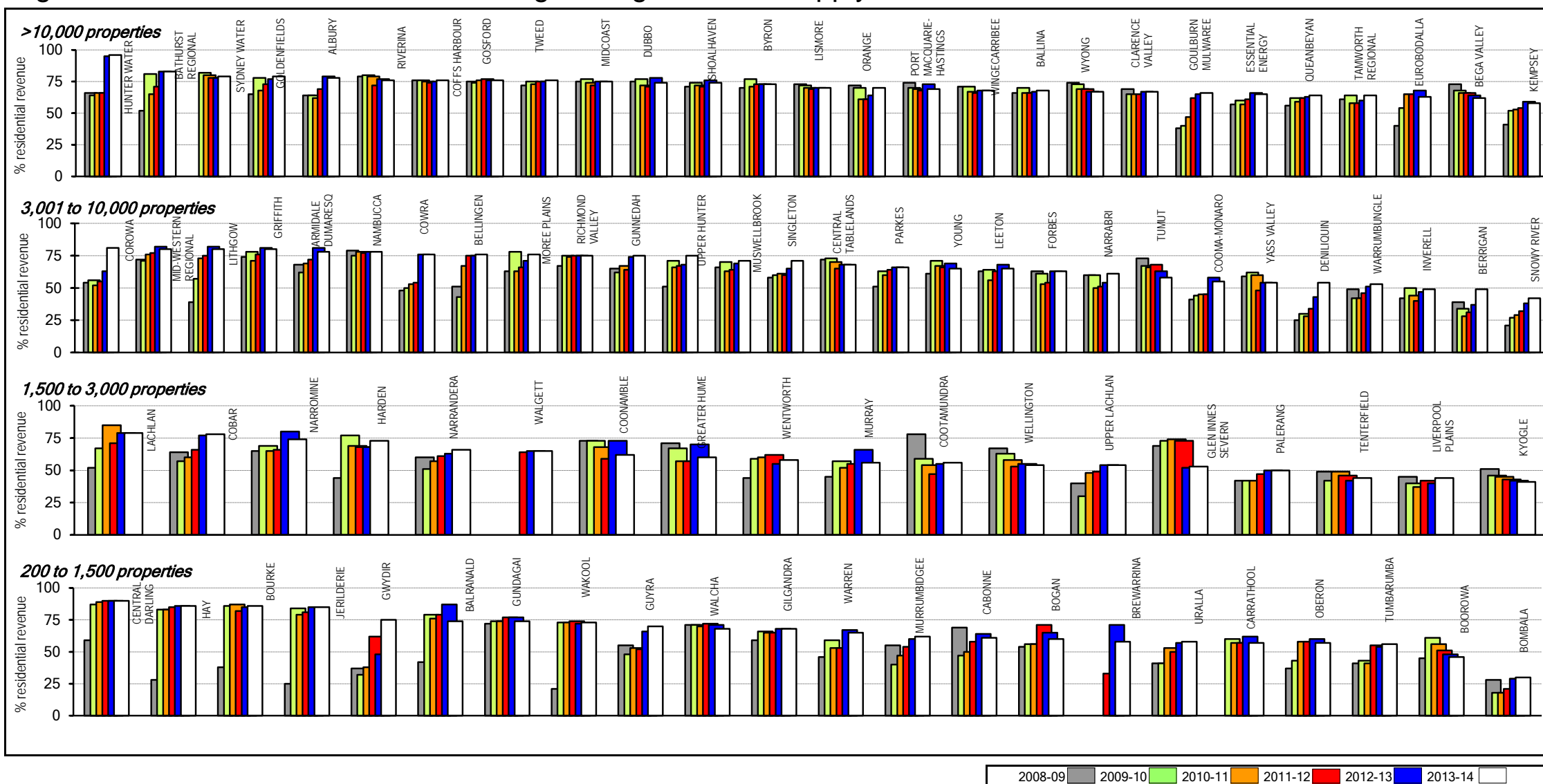
1. This figure shows ranked values of the 2014-15 typical residential bill for water supply for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served – over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the typical residential bill in 2014-15 for the 28 LWUs shown ranges from \$360 to \$1150 per assessment. Results for the previous 5 years are also shown in Jan 2015\$.
2. The 2013-14 Statewide median typical residential bill for water supply is \$582 per assessment [National Median is \$567 for 2013-14]. Refer also to Table 6 on page 134, graph 5 on page 206 and figure 14 on page 111.
3. For general notes see page 32.

Figure 12: Residential usage charge [P1.3] and access charge [P1.2] - water supply

**Notes:**

1. ALL LWUs abolished their free water allowance for potable water supply by 2007. All LWUs now 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. Refer also to Table 6 on page 134 and graph 3 on page 206.
3. The 2014-15 Statewide median water usage charge for the first step was 213 c/kL [National Median is 185 c/kL for 2013-14]. 20% of LWUs had a usage charge greater than 256 c/kL. 80% of LWUs had a usage charge greater than 152 c/kL. Refer also to figure 12 on page 111.
4. For general notes see page 32. Refer also to page 13.

Figure 13: Residential revenue from usage charges - water supply - F4



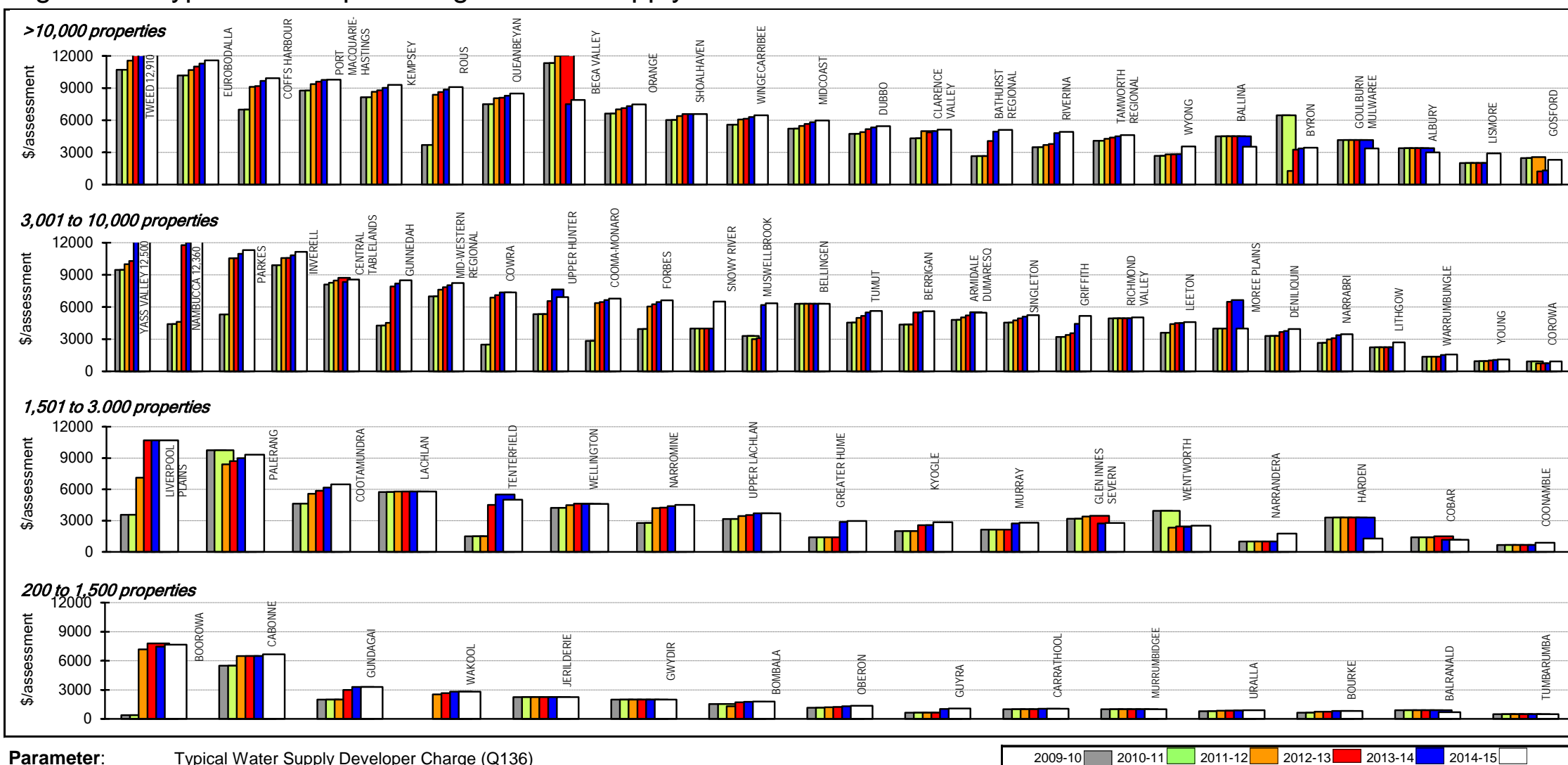
**Parameter:**  $\frac{\text{Revenue from residential user charges (W6b)} \times 100}{\text{Revenue from residential access charges (W6a)} + \text{Revenue from residential user charges (W6b)}}$

#### Notes:

1. This figure shows ranked values of the 2013-14 residential revenue from usage charges 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 residential revenue from usage charges for the 28 LWUs shown ranges from 81 to 42 percent. Results for the previous 5 years are also shown.
2. The Statewide median residential revenue from water usage charges was 73% [National Median is 68%]. Refer also to Table 5 on page 116, Table 6 on page 134, Table 3 on page 108, graph 4 on page 206 and figure 16 on page 111. Refer also to page 5 of the 2013-14 Water Supply and Sewerage Performance Monitoring Report ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).
3. For general notes see page 32.

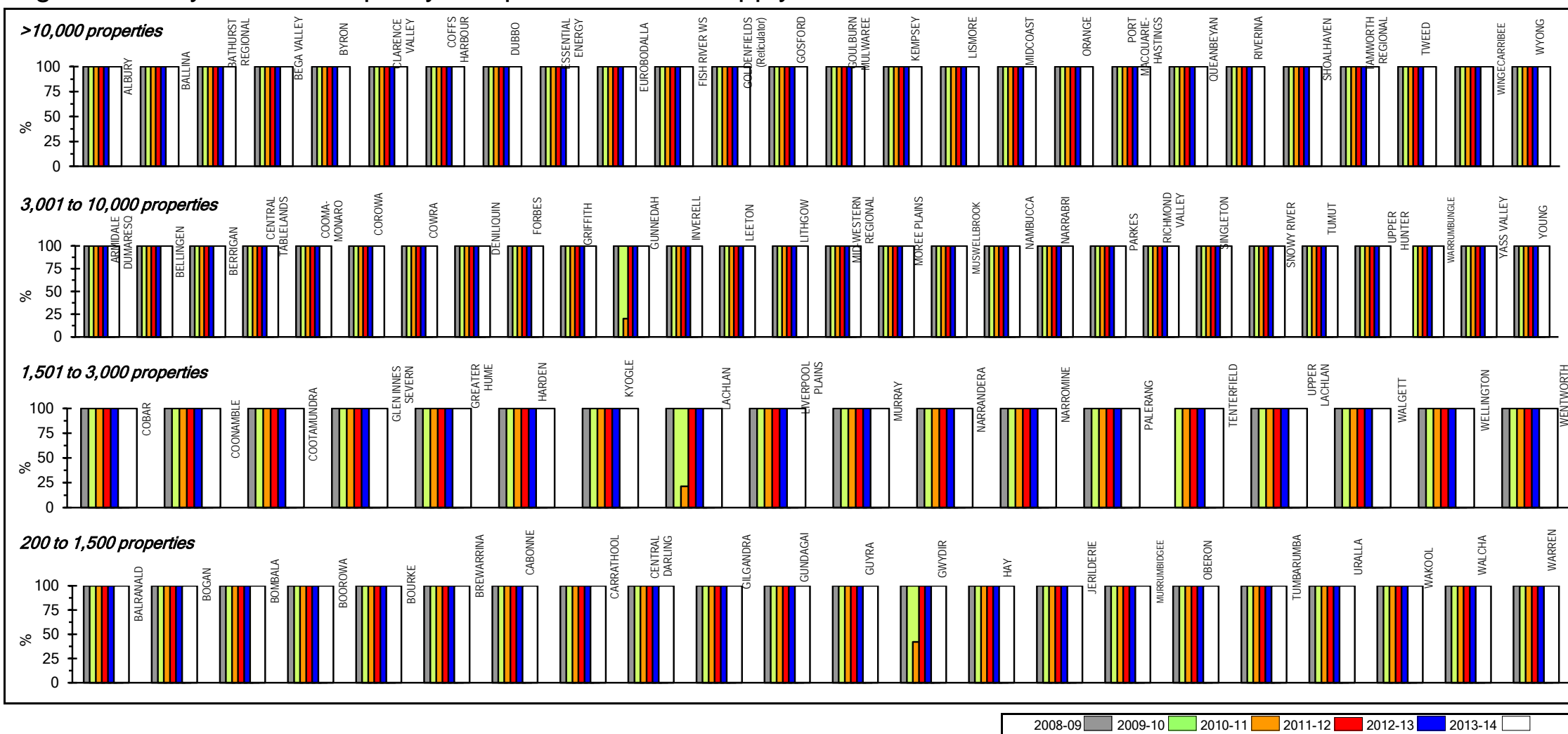


Figure 14: Typical developer charge – water supply

**Notes:**

1. This figure shows ranked values of the 2014-15 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 \$12,500 to \$900. Results for the previous 5 years are also shown in Jan 2015\$.
2. The 2014-15 Statewide median typical developer charge for water supply is \$5,500 per equivalent tenement (ET), which is 33% of the median current replacement cost of water supply system assets of \$16,500 per assessment. Refer also to Table 6 on page 134.
3. 84 LWUs levied water supply developer charges.
4. 83% of LWUs have an appropriate water supply Development Servicing Plan (DSP) with commercial developer charges. This includes the following 12 utilities which have received an exemption from needing to levy commercial water supply developer charges due to their low growth of under 5 lots/a - Bogan, Boorowra, Bourke, Brewarrina, Central Darling, Coonamble, Essential Energy, Gilgandra, Hay, Kyogle, Tumbarumba and Warren.
5. For general notes see page 32.

Figure 15: Physical water quality compliance - water supply

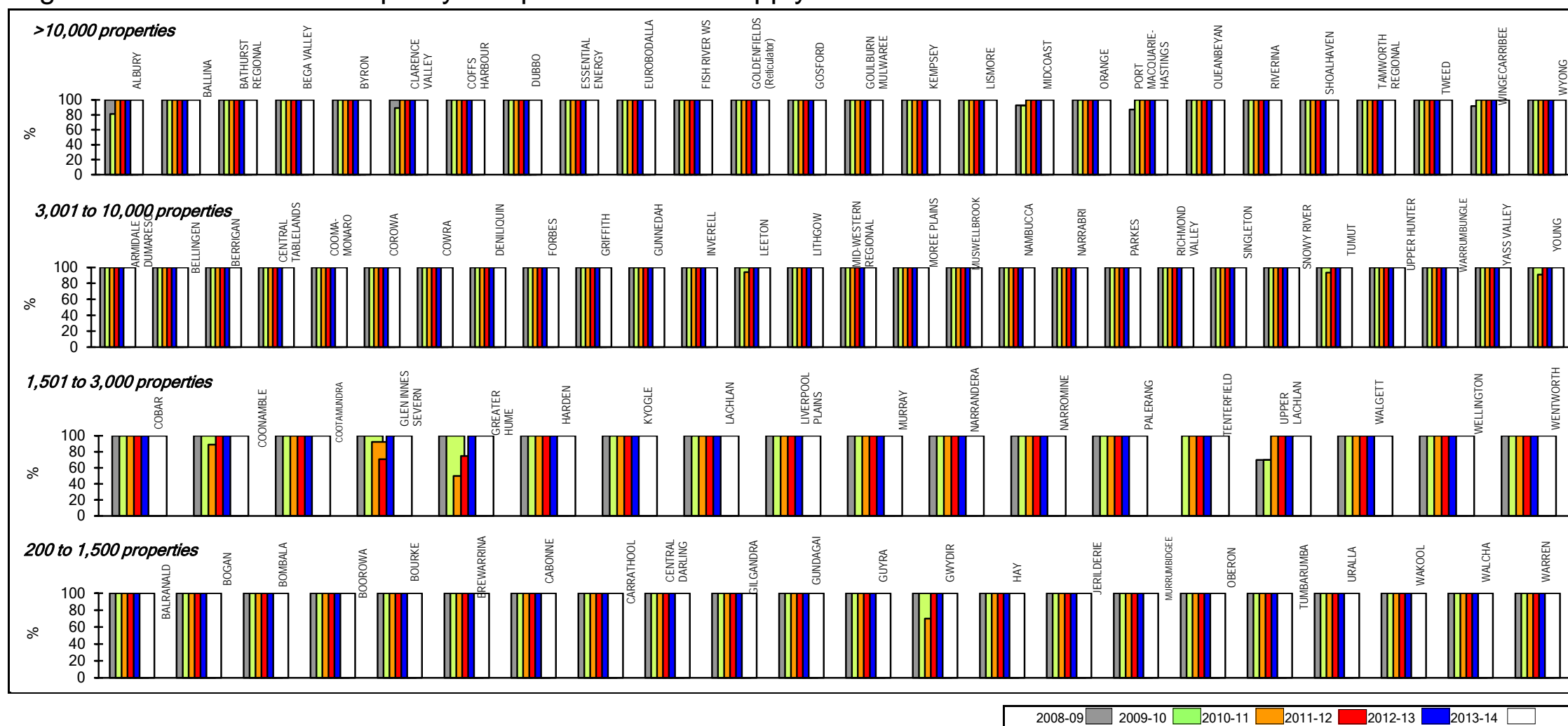


**Parameter:** Percentage of distribution system water samples complying with physical criteria of the NHMRC/NRMMC Australian Drinking Water Guidelines 2011.

**Notes:**

1. This figure shows ranked values of the 2013-14 distribution system compliance with the NHRMC/NRMMC Australian Drinking Water Guidelines 2011 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 2011 Australian Drinking Water Guidelines for physical water quality (aesthetic), the required number of samples must be tested (refer to page 235) and the mean of results must not exceed the guideline value for each characteristic. The result for such an LWU is shown as '100%' in this figure. Non-potable water supplies are excluded.
3. 98.4% of the 4,600 samples tested in 2013-14 achieved 100% compliance with these guidelines. 100% of LWUs complied with the guidelines in 2013-14.
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 on page 281 provides the 2013-14 results for each treatment works.
5. The Statewide median physical water quality compliance is 100%. Refer also to Table 12 on page 183.
6. For general notes see page 32.

Figure 16: Chemical water quality compliance - water supply

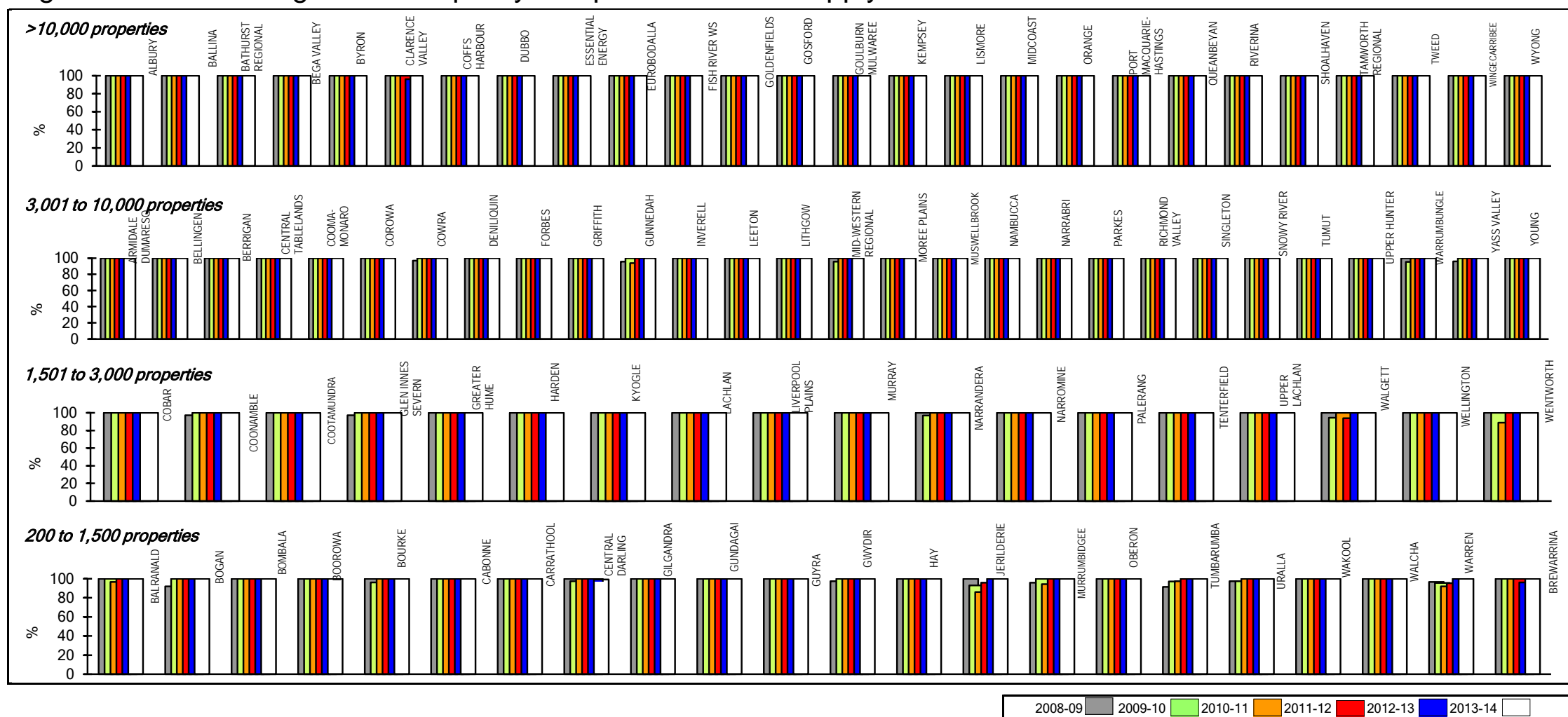


**Parameter:** Percentage of distribution system water samples complying with chemical criteria of the 2011 NHMRC/NRMMC Australian Drinking Water Guidelines.

**Notes:**

1. This figure shows ranked values of the 2013-14 distribution system compliance with the 2011 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 are all 100%. Results for the previous 5 years are also shown.
2. 99.4% of the 4,500 samples tested in 2013-14 complied with the 2011 Guidelines. 100% of the LWUs complied with the Guidelines in 2013-14.
3. For a LWU to comply with the 2011 Australian Drinking Water Guidelines for chemical water quality (health related), the required number of samples must be tested (refer to page 235) and at least the 95th percentile of results must not exceed the guideline value for each chemical. The result for such a LWU is shown as '100%' in this figure. 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 on page 281 provides the 2013-14 results for each treatment works. Refer also to Table 5 on page 116 and Table 12 on page 183.
4. The Statewide median chemical water quality compliance is 100%.
5. For both 2012-13 and 2013-14, the public drinking water supply for 99.9% of the urban population in regional NSW complied with 2011 ADWG for both microbiological and chemical water quality.
6. For general notes see page 32.

Figure 17: Microbiological water quality compliance - water supply

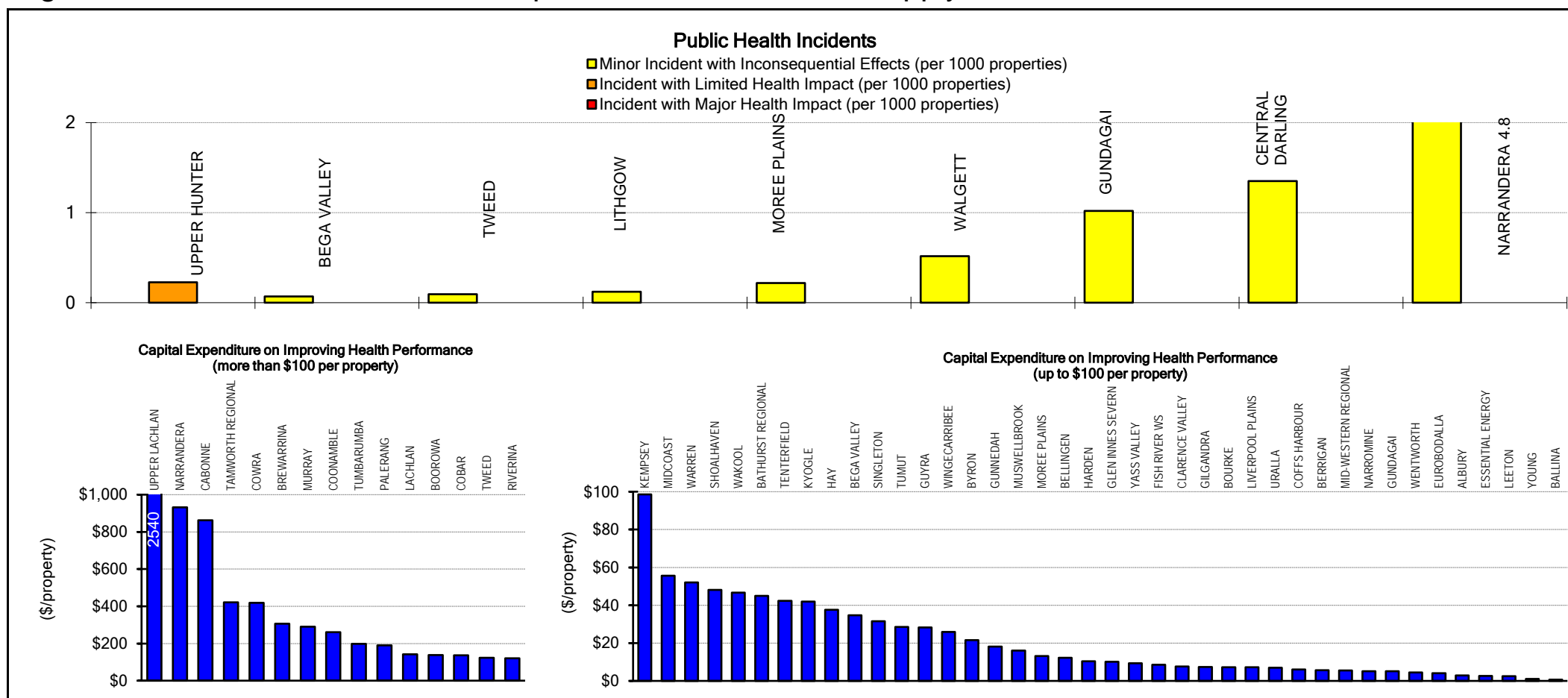


**Parameter:** Percentage of distribution system water samples complying with E. coli criteria of the 2011 NHMRC/NRMMC Australian Drinking Water Guidelines

**Notes:**

1. This figure shows ranked values of the 2013-14 distribution system compliance with the 2011 NHMRC/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 are all 100%. Results for the previous 5 years are also shown.
2. For a LWU to comply with the 2011 Australian Drinking Water Guidelines for microbiological water quality, the required number of samples must be tested (refer to page 235) and at least 98% of the samples must contain no E.coli. The result for such a LWU is shown as '100%' in this figure. Non-potable water supplies are excluded. 99.8% of the 20,200 samples tested in 2013-14 contained no E. coli. All% of the LWUs complied with the 2011 Guidelines for E. coli in 2013-14. Refer also to page 24.
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. Appendix D1 on page 281 provides the 2013-14 results for each treatment works.
4. The Statewide median microbiological water quality compliance is 100%. Refer also to Table 5 on page 116, Table 12 on page 183 and graph 8 on page 207.
5. For both 2012-13 and 2013-14, the public drinking water supply for 99.9% of the urban population in regional NSW complied with 2011 ADWG for both microbiological and chemical water quality.
6. For general notes see page 32.

Figure 18: Public health incidents, capital investment - water supply

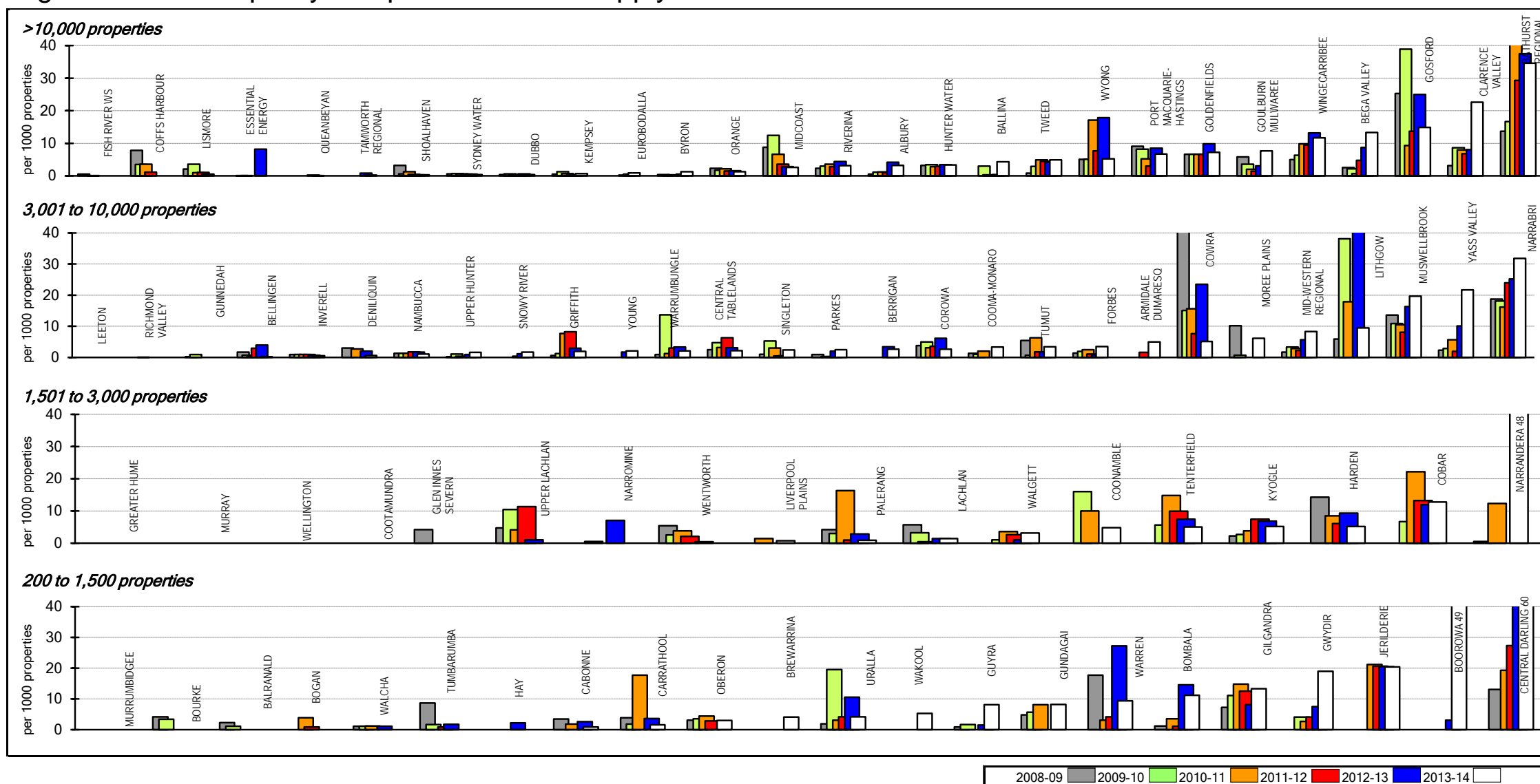


Parameter:	Total No. of Minor Incidents with Inconsequential Effects (Q115)
Parameter:	$[(\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}) \times \text{No. of Connected Properties per Assessment}]$
Parameter:	Total No. of Minor Incidents with Limited Health Impacts (Q116)
Parameter:	$[(\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}) \times \text{No. of Connected Properties per Assessment}]$
Parameter:	Total No. of Major Incidents with Major Health Impacts (Q117)
Parameter:	$[(\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}) \times \text{No. of Connected Properties per Assessment}]$
Parameter:	Capital Expenditure on Improving Health Performance (\$) x (Q119)
Parameter:	$[(\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}) \times \text{No. of Connected Properties per Assessment}]$

**Note:**

1. 9 Utilities are shown in the figure above, while 86 utilities reported zero public health incidents.
2. For general notes see page 32.

Figure 19: Water quality complaints - water supply - C9



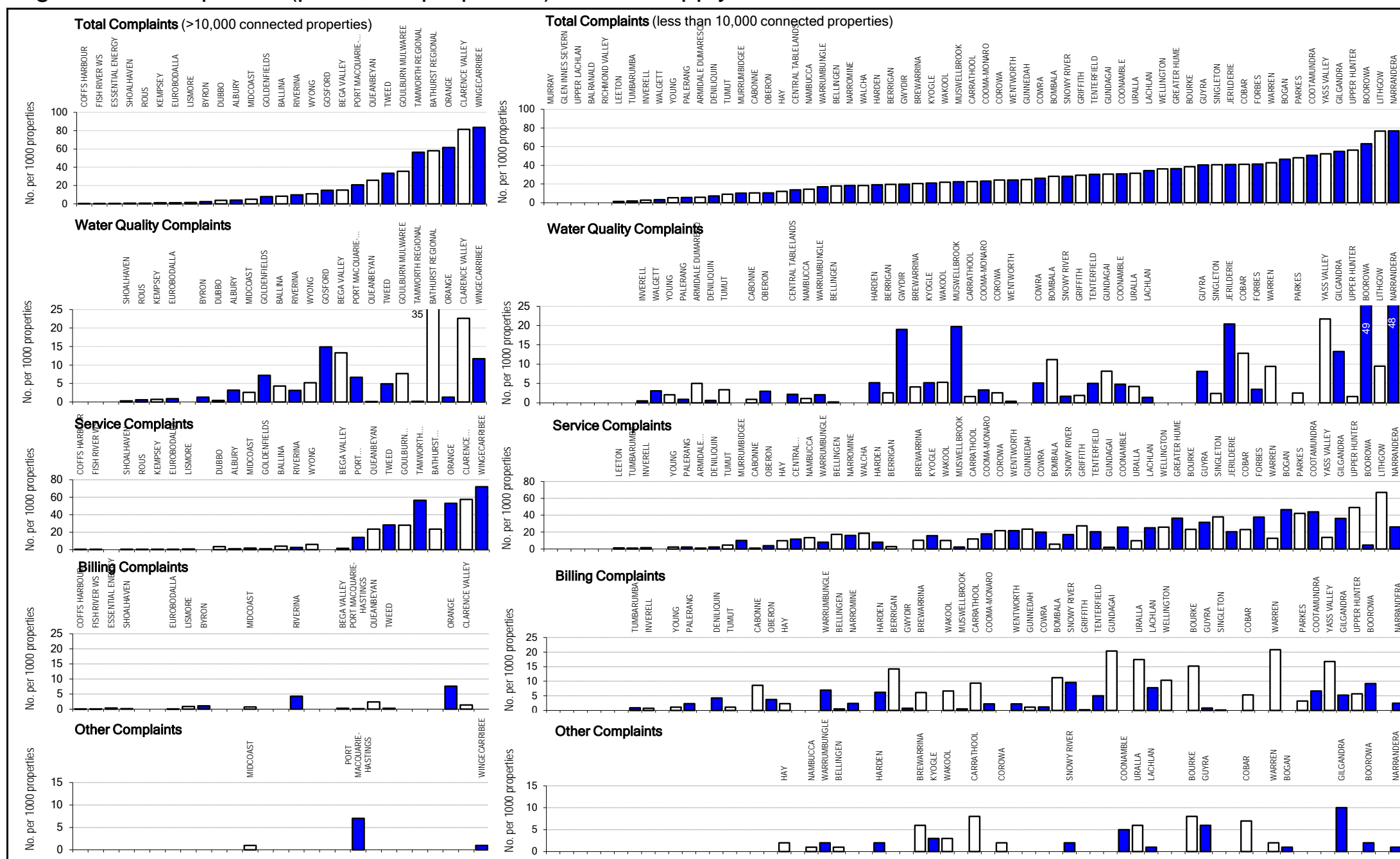
**Parameter:**  $\frac{\text{No. of Water Quality Complaints (Q101)} \times 1000}{[\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 32 per 1000 connected properties.
2. The Statewide median number of water quality complaints is 3 per 1000 properties [National Median is 2 per 1,000 properties]. Refer also to Table 5 on page 116, graph 9 on page 207 and figure 25 on page 112.
3. For general notes see page 32.

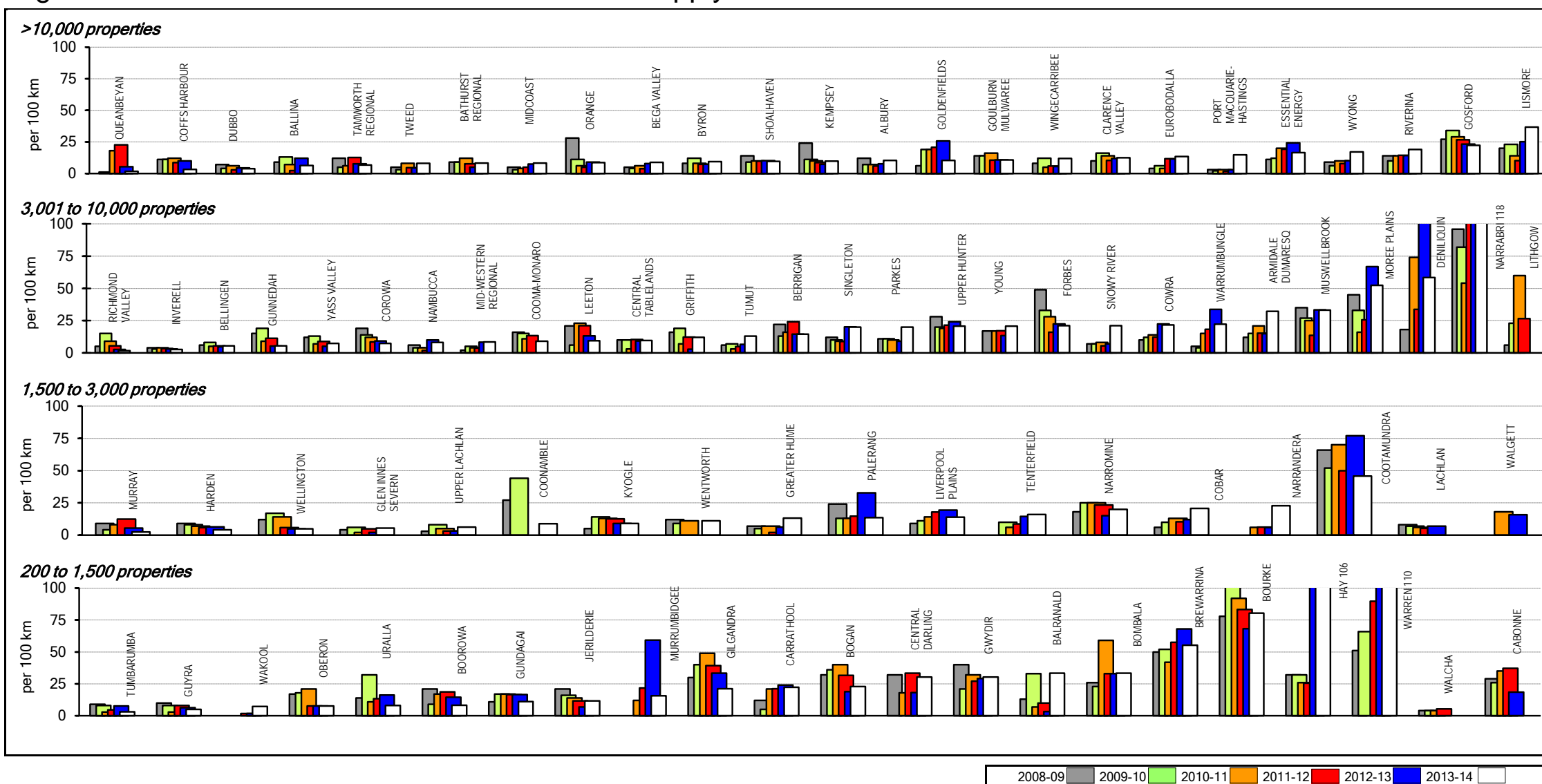


Figure 20: Complaints (per 1,000 properties) - water supply - C9, C10



1. For general notes see page 32. Refer also to Table 5 on page 116, Table 12 on page 183, figure 25 on page 112, figure 21 on page 114 and figure 5 on page 115.

Figure 21: Number of water main breaks - water supply - A8

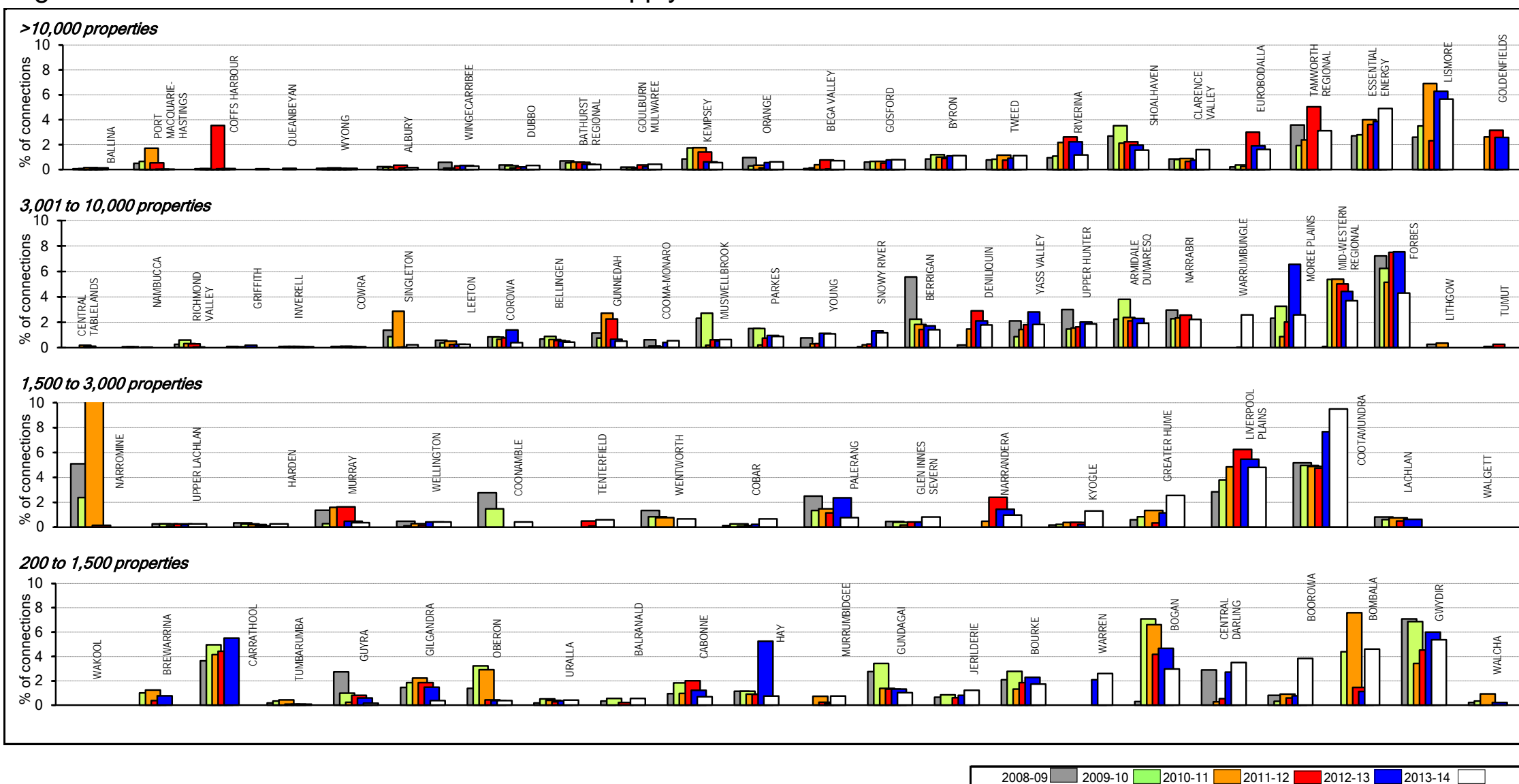


**Parameter:**  $\frac{\text{No. of Pipeline Breaks (Q104)} \times 100}{\text{Length of Distribution and Trunk Mains (Q22)}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 1.6 to 118 per 100km of water mains. The 1 LWU on the right did not report this indicator for 2013-14. Results for the previous 5 years are also shown.
2. The Statewide median number of water supply main breaks is 10 per 100km of water main [National Median is 13 per 100km of water main]. This has remained much lower than all the other states and metropolitan utilities, indicating good water main asset condition (graph 10 on page 207 of Appendix A and figure 30 on page 112). Refer also to Table 5 on page 116 and Table 10 on page 172.
3. For general notes see page 32.

Figure 22: Service connection failures - water supply

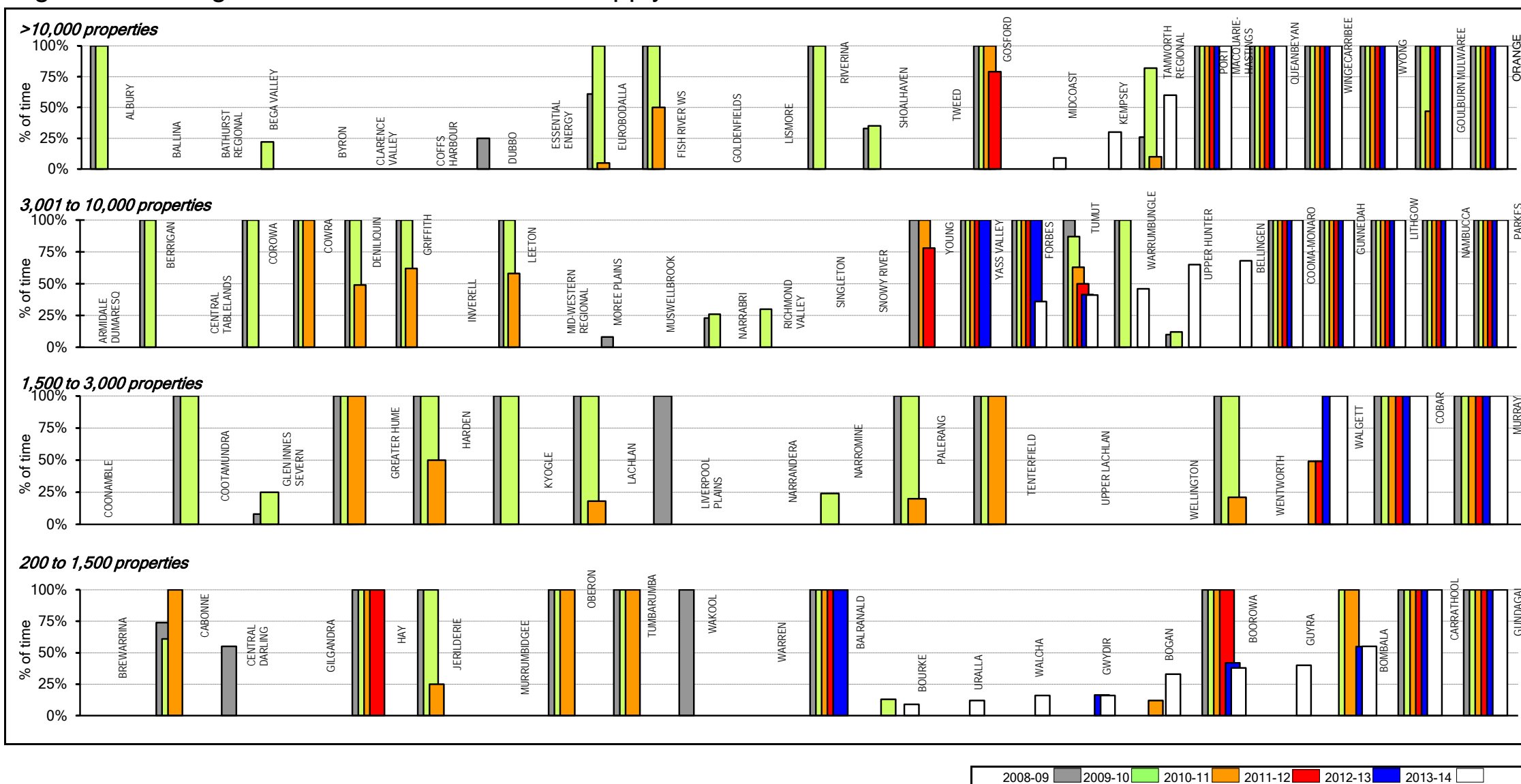


**Parameter:**  $\frac{\text{No. of Service Connection Failures (Q105)} \times 100}{[\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 26 LWUs shown ranges from nil to 4%. The 2 LWUs on the right did not report this indicator for 2013-14. Results for the previous 5 years are also shown.
2. Refer also to Table 10 on page 172.
3. For general notes see page 32.

Figure 23: Drought water restrictions - water supply

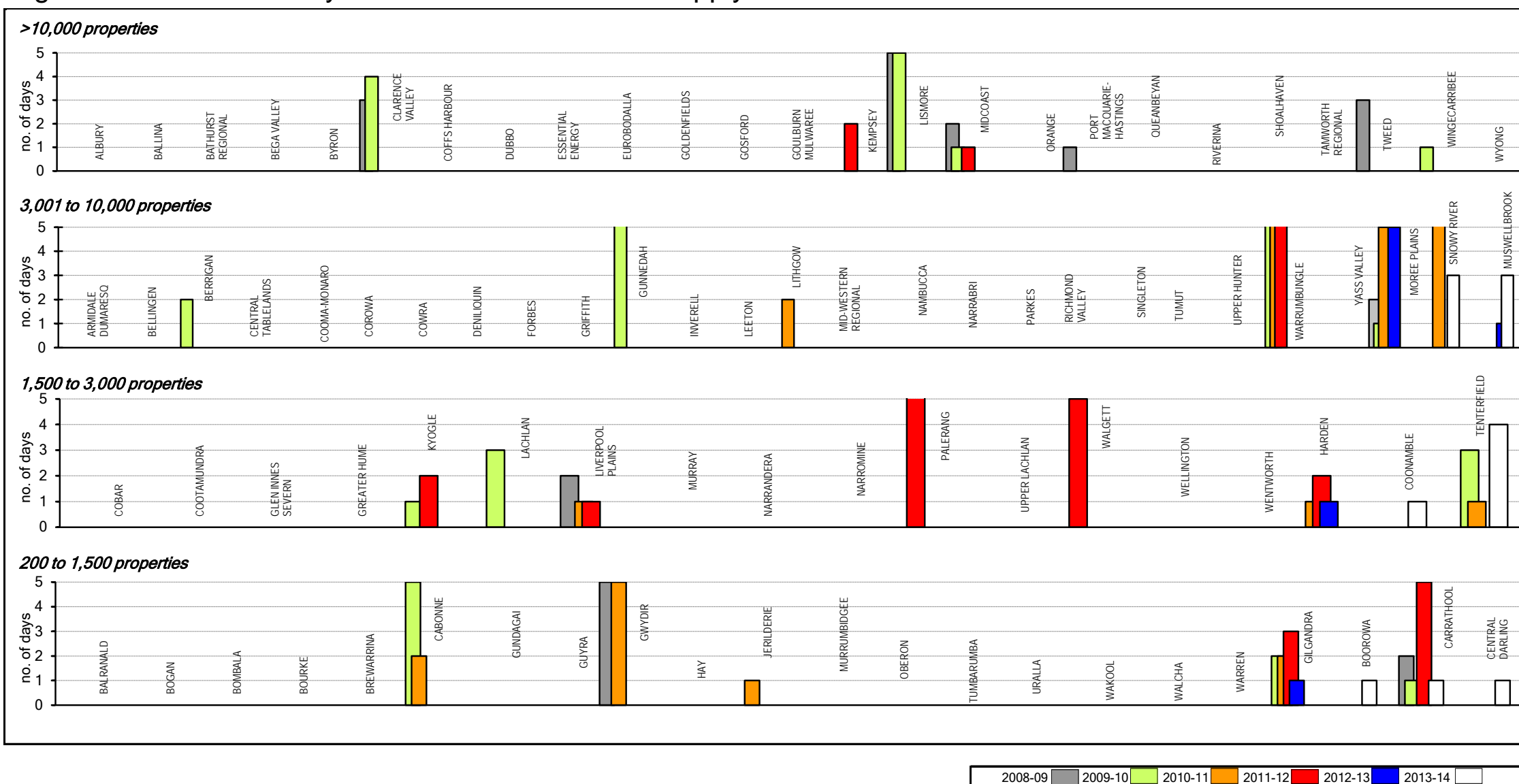


**Parameter:** No. of Days of Water Restrictions Due to Drought (Q95) x 100  
365 Days

**Notes:**

1. This figure shows ranked values of the 2013-14 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), 10 of the 28 reporting LWUs reported restrictions ranging from 41% of the time to 100% of the time. 18 LWUs reported no drought water restrictions. Results for the previous 5 years are also shown.
2. Refer also to Table 12 on page 183 and to page 3 of the 2013-14 NSW Water Supply and Sewerage Performance Monitoring Report ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).
3. For general notes see page 32.

Figure 24: Chlorination system malfunction - water supply

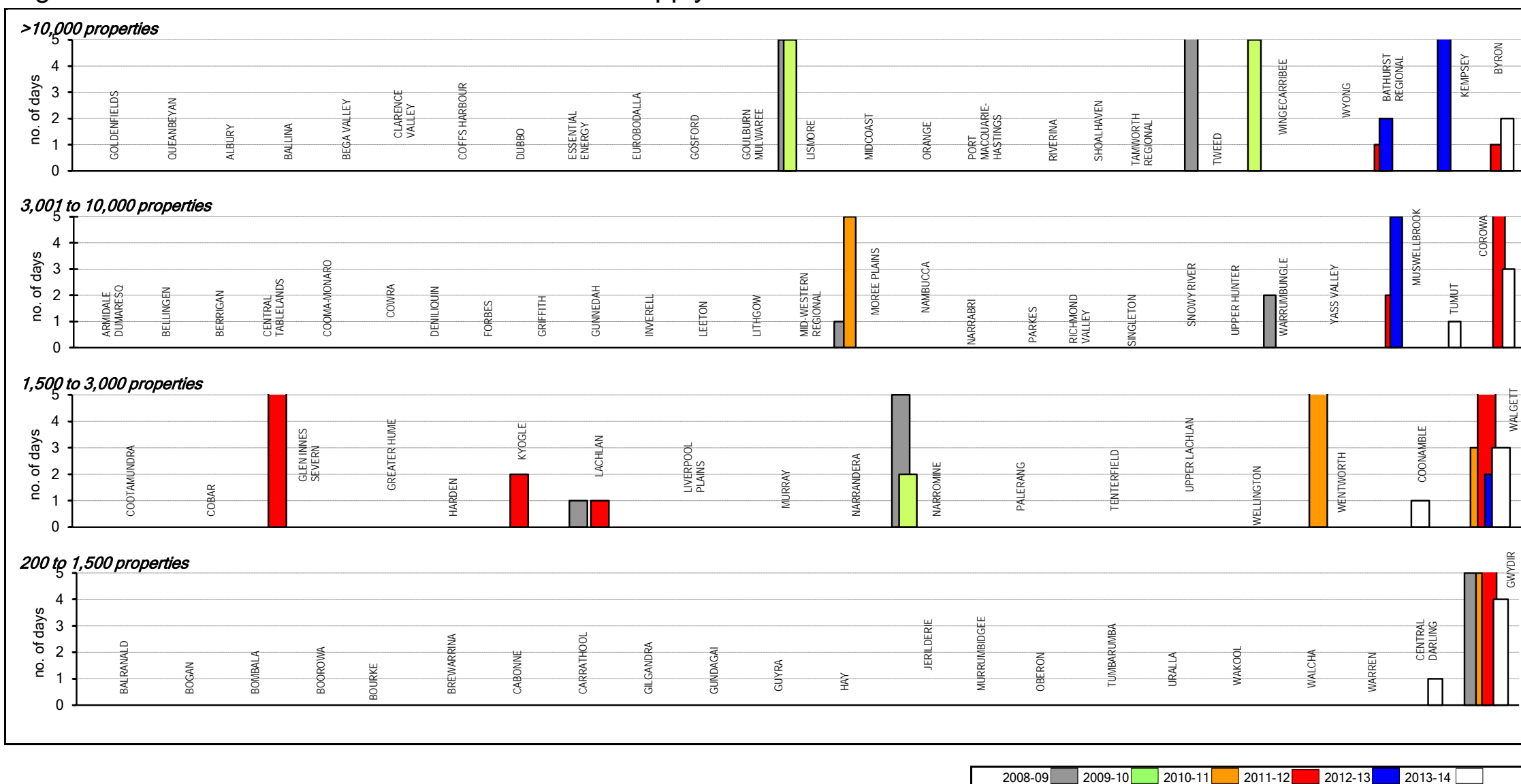


**Parameter:** Number of Days Chlorination System failed to Operate (Q44)

**Notes:**

1. The figure shows the 2013-14 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 3 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. Refer also to Appendix D1 on page 281.
3. For general notes see page 32.

Figure 25: Treatment works malfunction - water supply



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

**Notes:**

1. The figure shows the 2012-13 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 25 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. Refer also to Appendix D1 on page 281.
3. For general notes see page 32.



Figure 26: Average annual residential water supplied - water supply - W12

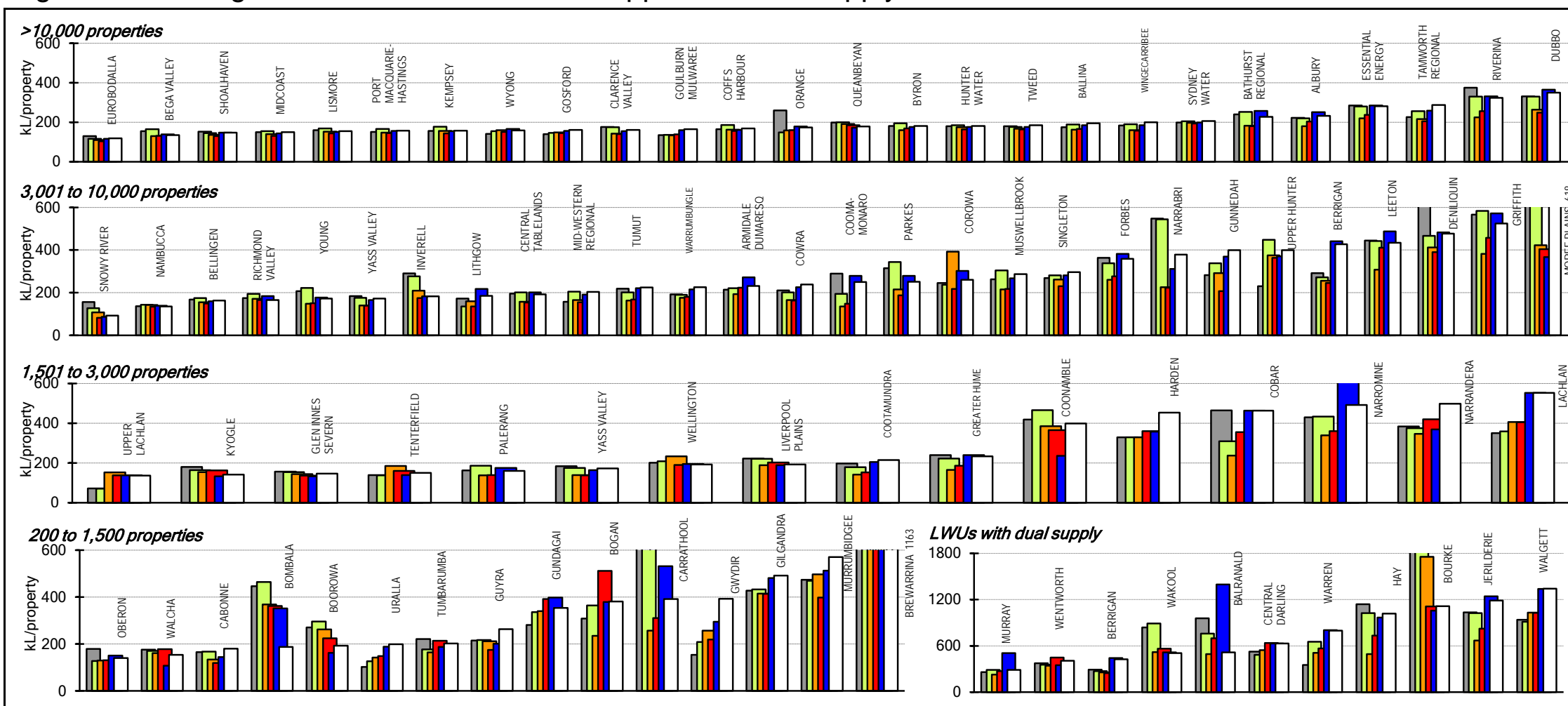
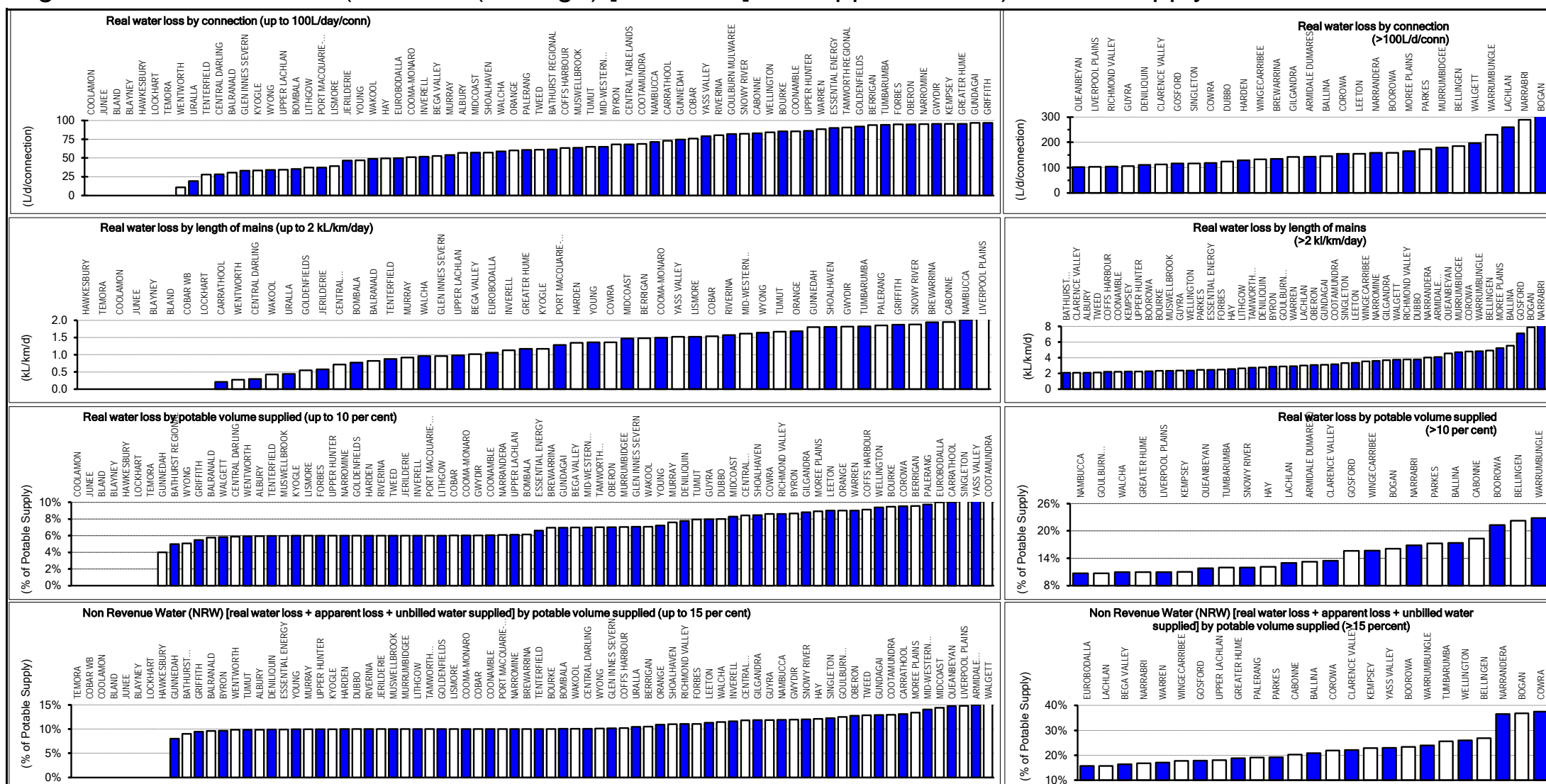


Figure 27: Water losses (real loss (leakage) [A10, A11] and apparent loss) - water supply



Parameter:

Real water losses (Q68) x 1000

Parameter:

No. of service connections (Q30)

Parameter:

Real water losses (Q68) x 100

Parameter:

Length of mains (Q22)

Parameter:

Real water losses (Q68) x 100

Parameter:

Total potable water supplied (Q62)

Parameter:

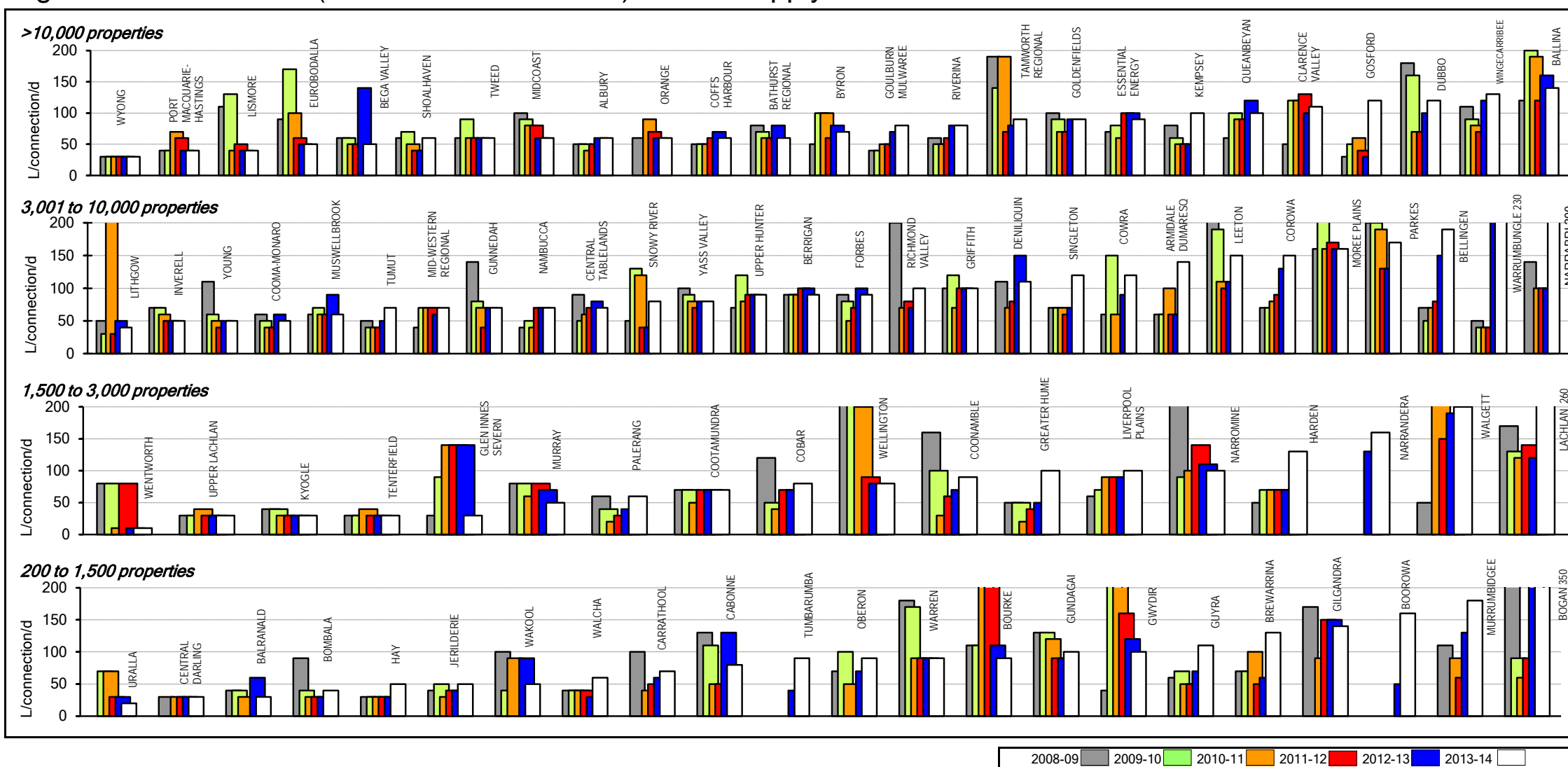
[Real &amp; apparent water losses (Q69) + Unbilled water supplied (Q61)] x 100

Notes:

Total potable water supplied (Q62)

1. Refer to Note 9 of General Notes on page 33 for water losses. Refer also to Table 5 on page 116, Table 10 on page 172, Table 10A on page 175, graph 13 on page 208 & figure 34 on page 112.
2. For general notes see page 32.

Figure 28: Real losses (L/service connection/d) - water supply - A10

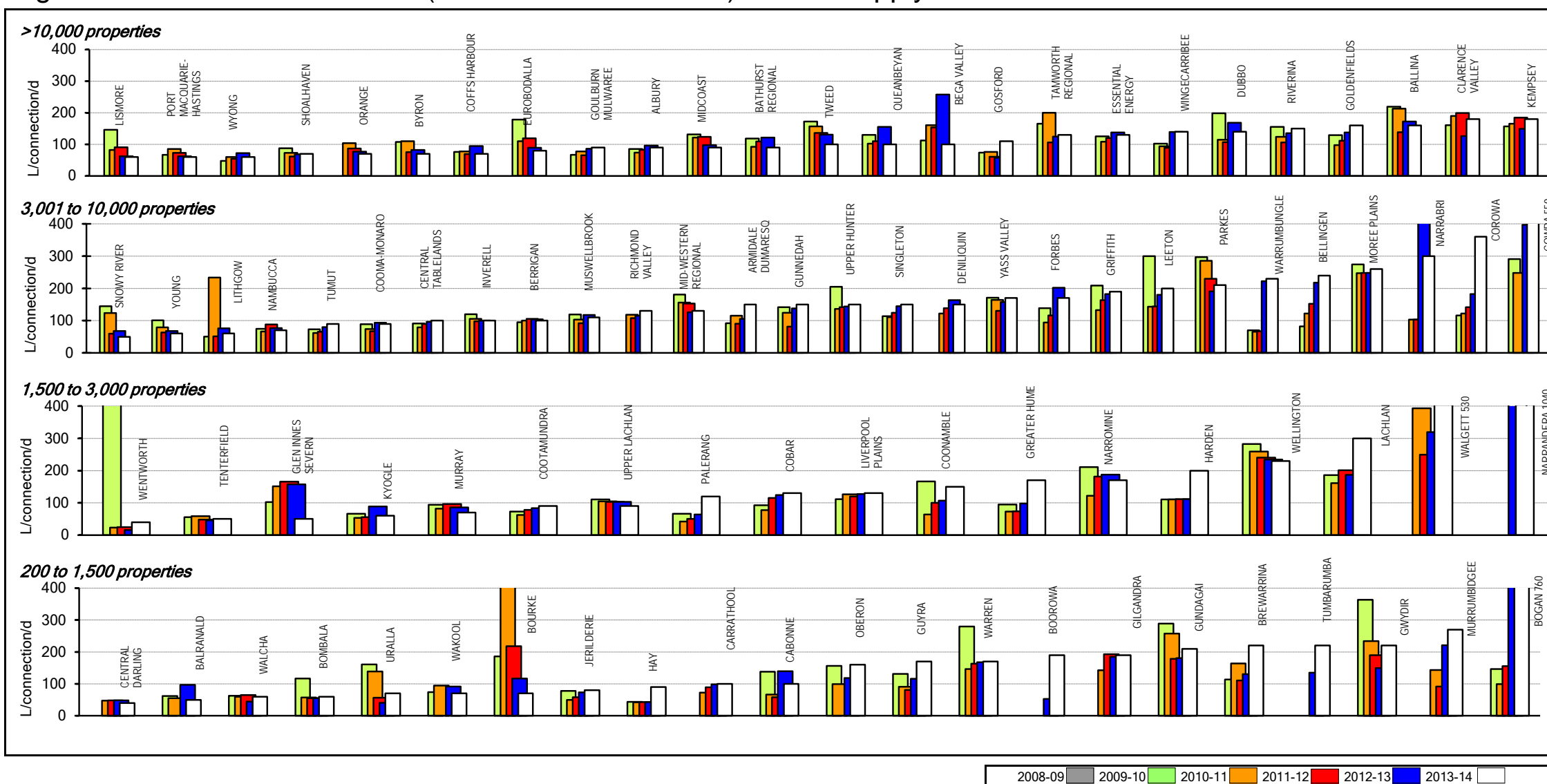


**Parameter:** Real water losses (Q68) x 1000  
No. of service connections (Q30)

**Notes:**

1. This figure shows ranked values of the 2013-14 real losses 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, 1,500 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 real losses for the 28 LWUs shown ranges from 40 to 290 L/service connection/d. Results for the previous 5 years are also shown.
2. The Statewide median real losses is 70 L/service connection/d [National Median is 80 L/service connection/d]. Refer also to Table 10 on page 172.
3. As a result of the Regional NSW Water Loss Management Program 2006-2011, many utilities have been able to reduce their real losses. Two notable results are Uralla, which reduced losses from 15% to 3% and Snowy River, which reduced losses from 34% to 12% of the potable water supplied (refer to columns 10 and 13 of Table 10A on page 175). Refer also to graph 13 on page 208 and figure 34 on page 112.
4. For general notes see page 32.

Figure 29: Non Revenue Water (L/service connection/d) - water supply

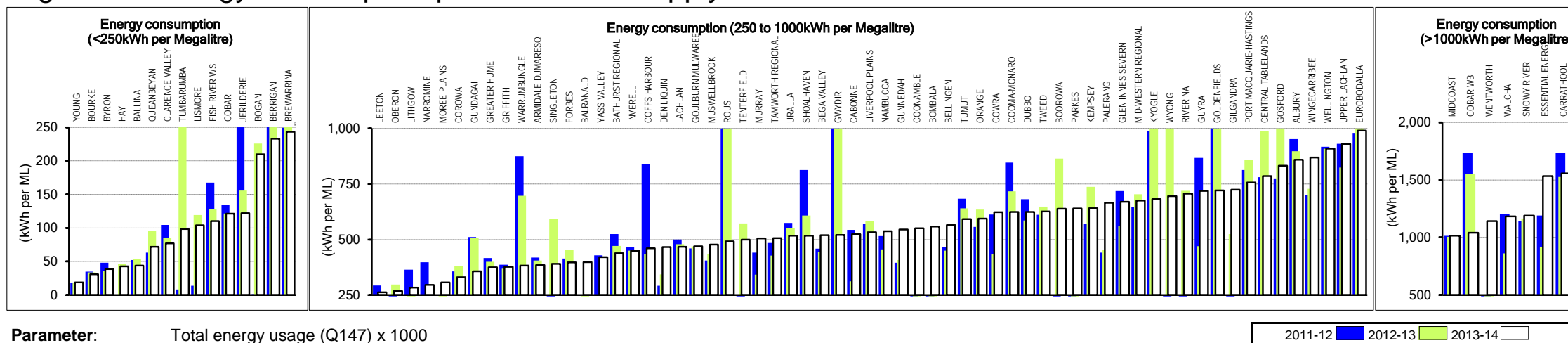


**Parameter:**  $\frac{[\text{Real \& apparent water losses (Q69)} + \text{Unbilled water supplied (Q61)}] \times 100}{\text{No. of service connections (Q30)}}$

**Notes:**

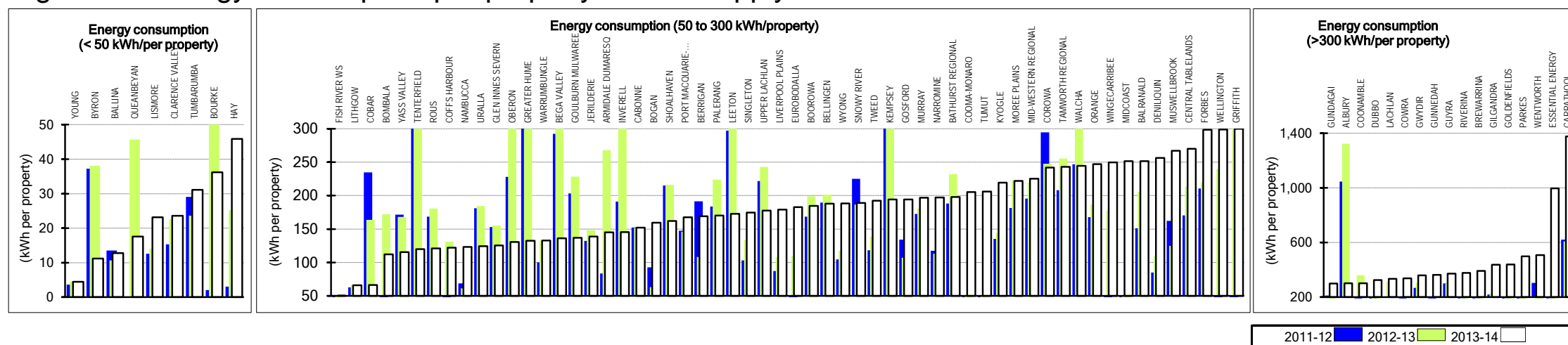
1. This figure shows ranked values of the 2013-14 non revenue water for each Local Water Utility (LWU) in 4 groups based on the number of connected properties served – over 10,000, 3,001 to 10,000, 1,501 to 3,000 and 200 to 1,500. Each white bar represents one LWU. As an example, for the second graph (property range from 3,001 to 10,000), the non revenue water for the 28 LWUs shown ranges from 50 to 550 L/service connection/d of the potable supply. Results for the previous 5 years are also shown.
2. The Statewide median non-revenue water is 101 L/service connection/d.
3. Refer also to Table 8A on page 159 and Table 10 on page 172.
4. For general notes see page 32.

Figure 30: Energy consumption per ML - water supply

**Notes:**

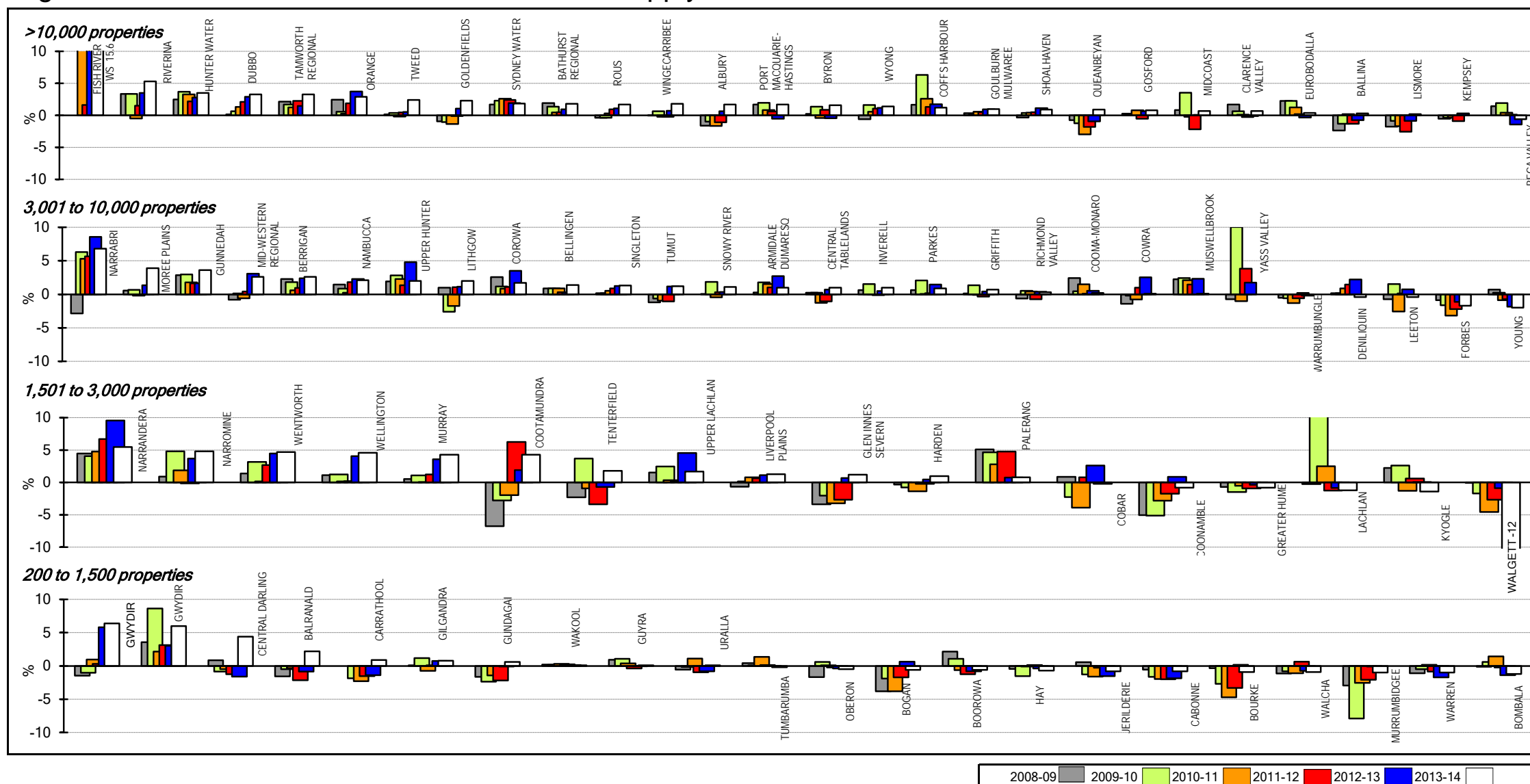
1. This figure shows ranked values of the 2013-14 total energy consumption per ML. The energy consumption per ML for the 85 Local Water Utilities (LWUs) shown range from about 19 to 1560kWh per ML. Results for the previous 2 years are also shown.
2. For general notes see page 32.

Figure 31: Energy consumption per property - water supply

**Notes:**

1. This figure shows ranked values of the 2013-14 total energy consumption per connected property. The energy usage per connected property for the 83 Local Water Utilities (LWUs) shown range from 4 to 1380kWh per connected property. Results for the previous 2 years are also shown.
2. For general notes see page 32.

Figure 32: Economic real rate of return - water supply - F17



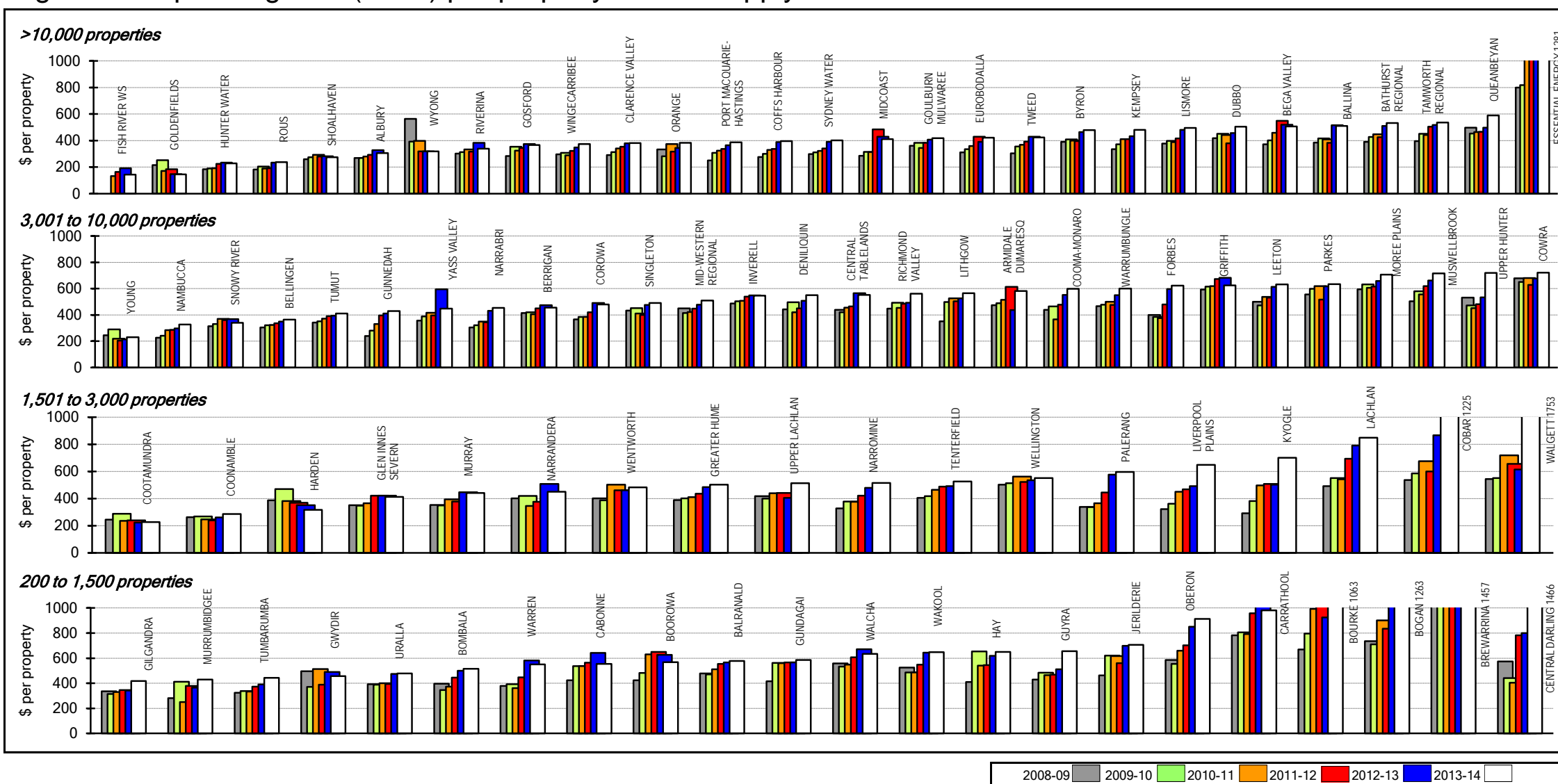
**Parameter:**  $\frac{[\text{Operating result (W15)} + \text{interest expense (W4a)} - \text{interest income (W9)} - \text{grants for acquisition of assets (W11a)}] \times 100}{\text{Written down replacement cost of system assets, plant \& equipment (W33)}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 water supply real rate of return for the 28 LWUs shown ranges from 7% to -2%. Results for the previous 5 years are also shown.
2. The statewide median water supply ERRR is 1.2% [National Median is 1.9%]. Refer also to Table 5 on page 116, Table 6 on page 134 and figure 43 on page 111.
3. The ERRR includes developer provided assets and capital contributions from other LWUs.
4. For general notes see page 32.



Figure 33: Operating cost (OMA) per property - water supply - F11



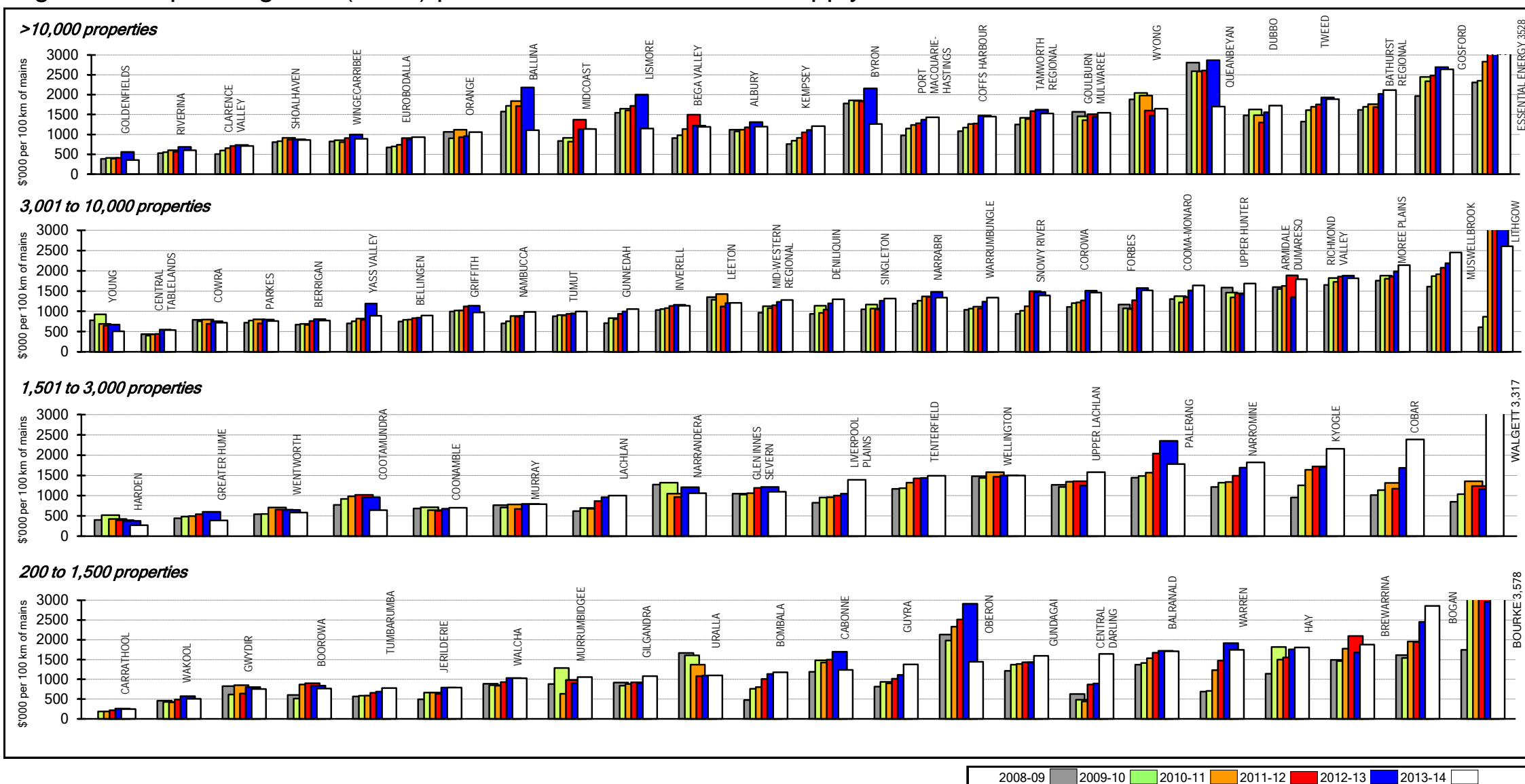
**Parameter:**  $\text{Management Expenses (W1) + Total Operations Expenses (W2) - Purchase of Water + prorate Bulk Supplier's OMA}$

$[\text{No. of Residential Assessments (Q32) + No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 water supply operating costs for the 28 LWUs shown ranges from \$230 to \$722 per connected property. Results for the previous 5 years are also shown in Jan 2014\$.
2. The Statewide median operating cost per connected property is \$400 [National Median is \$440]. Refer also to Table 5 on page 116, Table 11 on page 180, Table 13 on page 186, graph 25 on page 211, figure 49 on page 112 and pages 21, 23 and 27.
3. For general notes see page 32.

Figure 34: Operating cost (OMA) per 100km of main - water supply



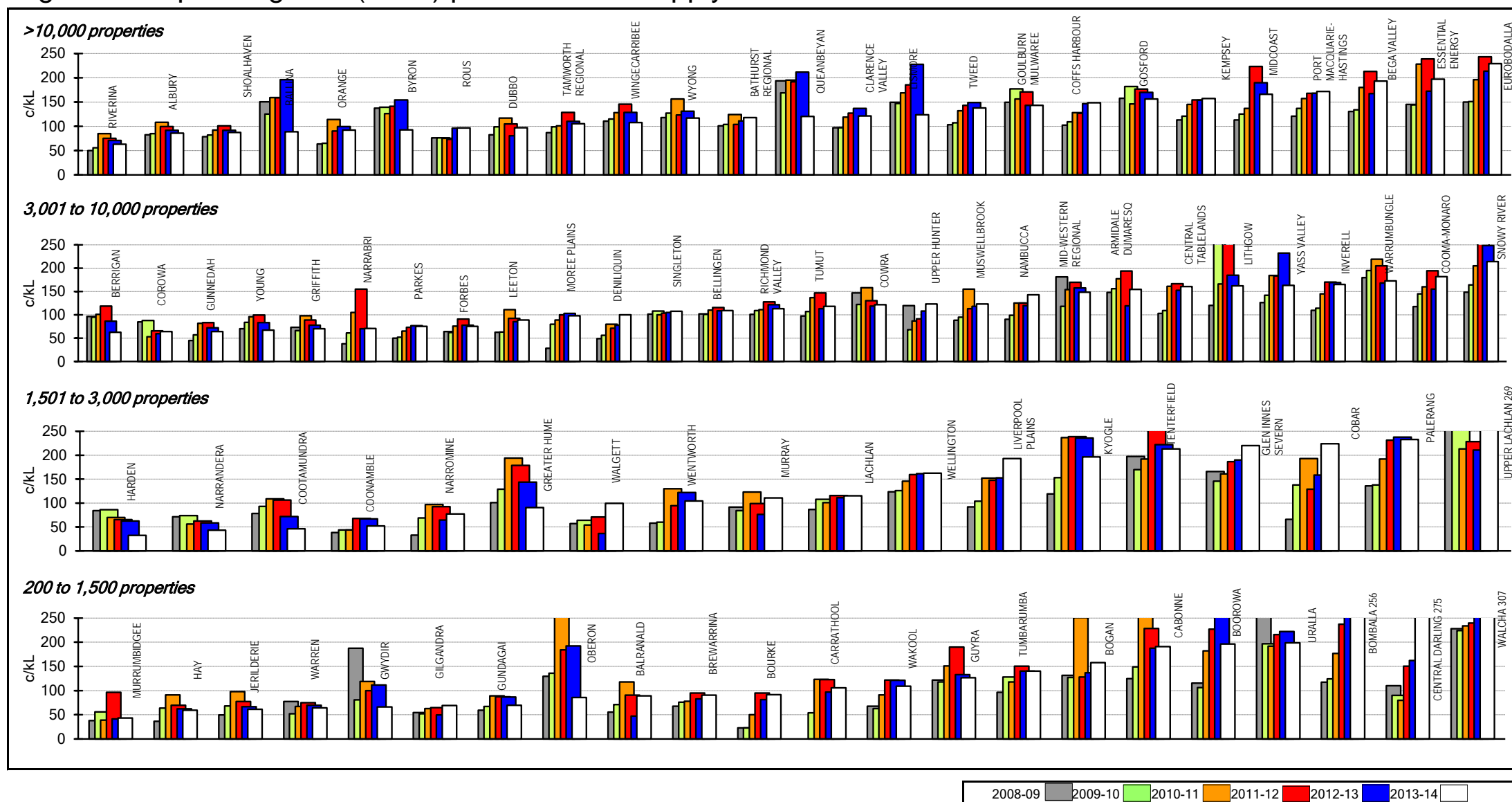
**Parameter:** Water Main Operation Expenses (W2c) + Water Main Maintenance Costs (W2d)

Length of Distribution and Reticulation Mains (Q22) x 100

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 operating costs for the 28 LWUs shown ranges from \$506,000 to \$2,606,000 per 100km of distribution and reticulation mains (excludes source transfer mains). Results for the previous 5 years are also shown in Jan 2014\$.
2. The Statewide median operating cost is \$1.29M per 100km of water main. Refer also to Table 11 on page 180 and Table 13 on page 186.
3. For general notes see page 32.

Figure 35: Operating cost (OMA) per kL - water supply

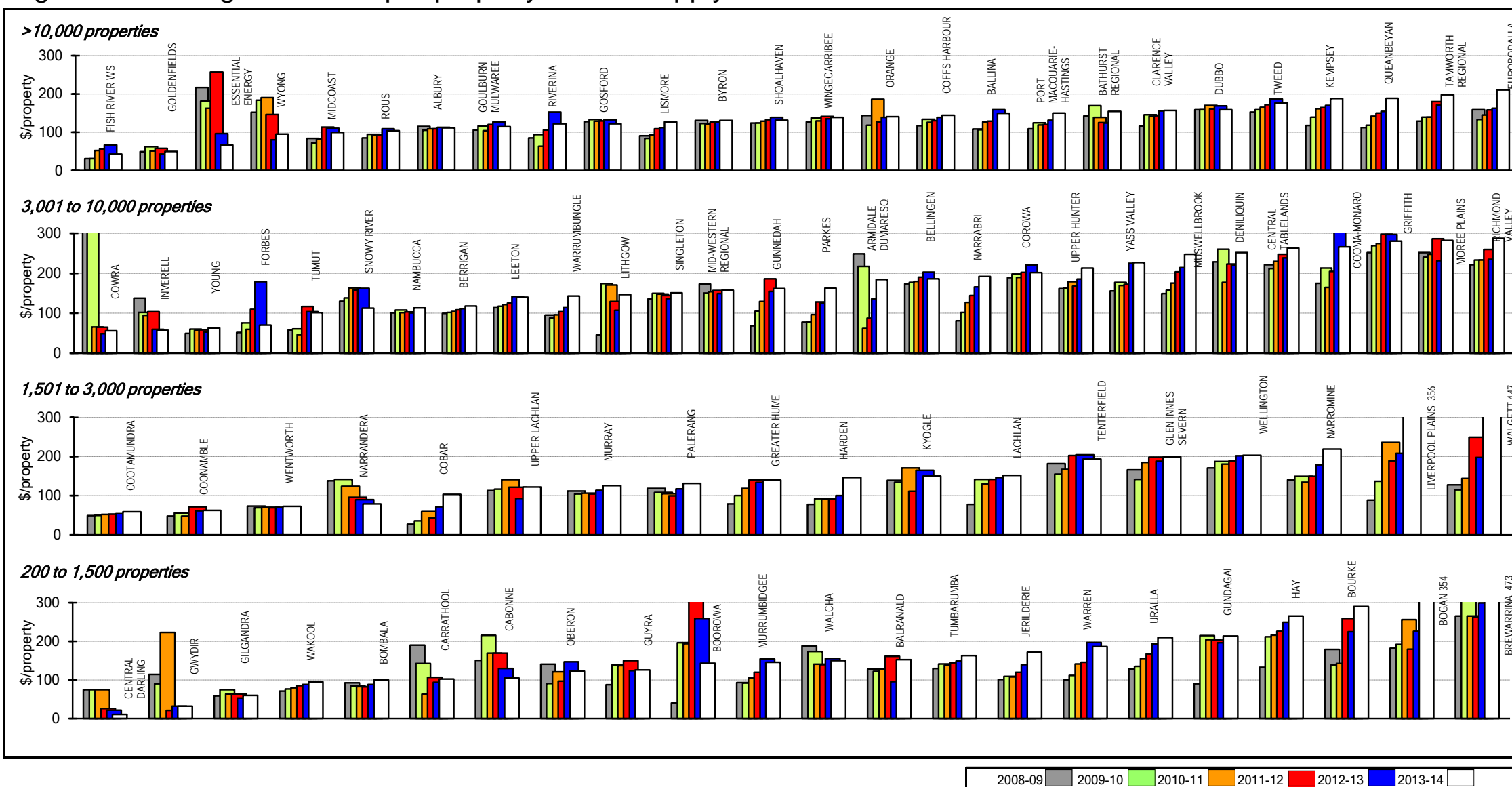


**Parameter:**  $\frac{\text{Management Expenses (W1)} + \text{Total Operations Expenses (W2)} - \text{Purchase of Water (W2o)}}{\text{Total Potable Water Supplied (Q62)}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 operating costs per kL for the 28 LWUs shown ranges from 63 to 214 c/kL. Results for the previous 5 years are also shown in Jan 2014\$.
2. The Statewide median operating cost is 126c/kL. Refer also to Table 6 on page 134.
3. For general notes see page 32.

Figure 36: Management cost per property - water supply



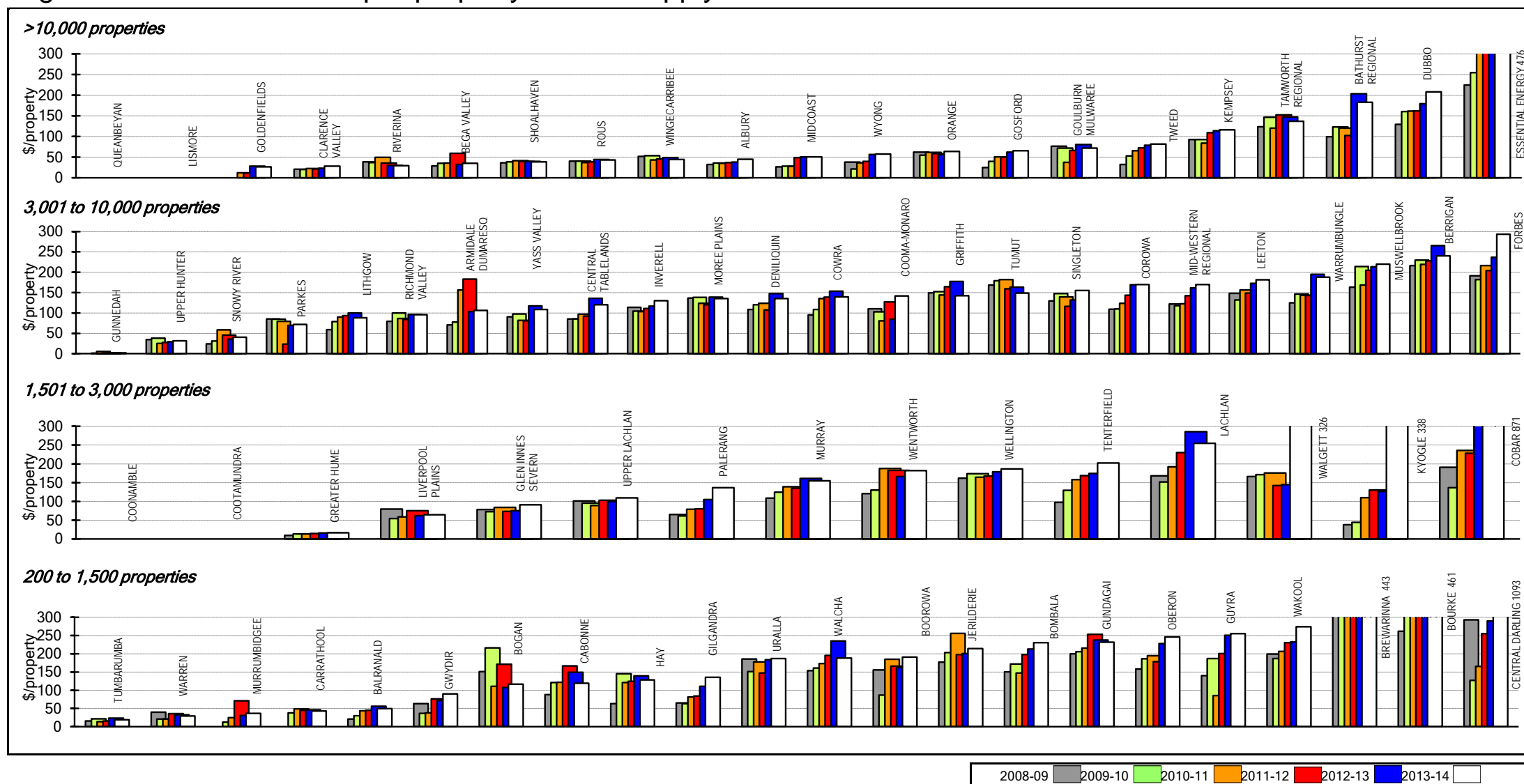
**Parameter:** Administration Cost (W1a) + Engineering Cost (W1b)

[No. of Residential Assessments (Q32) + No. of Non-Residential Assessments (Q33)] x No. of Connected Properties per Assessment

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 management costs per property for the 28 LWUs shown ranges from \$56 to \$287. Results for the previous 5 years are also shown in Jan 2014\$.
2. The Statewide median management cost is \$140 per connected property. Refer also to Table 11 on page 180 and figure 31 on page 112.
3. For general notes see page 32.

Figure 37: Treatment cost per property - water supply



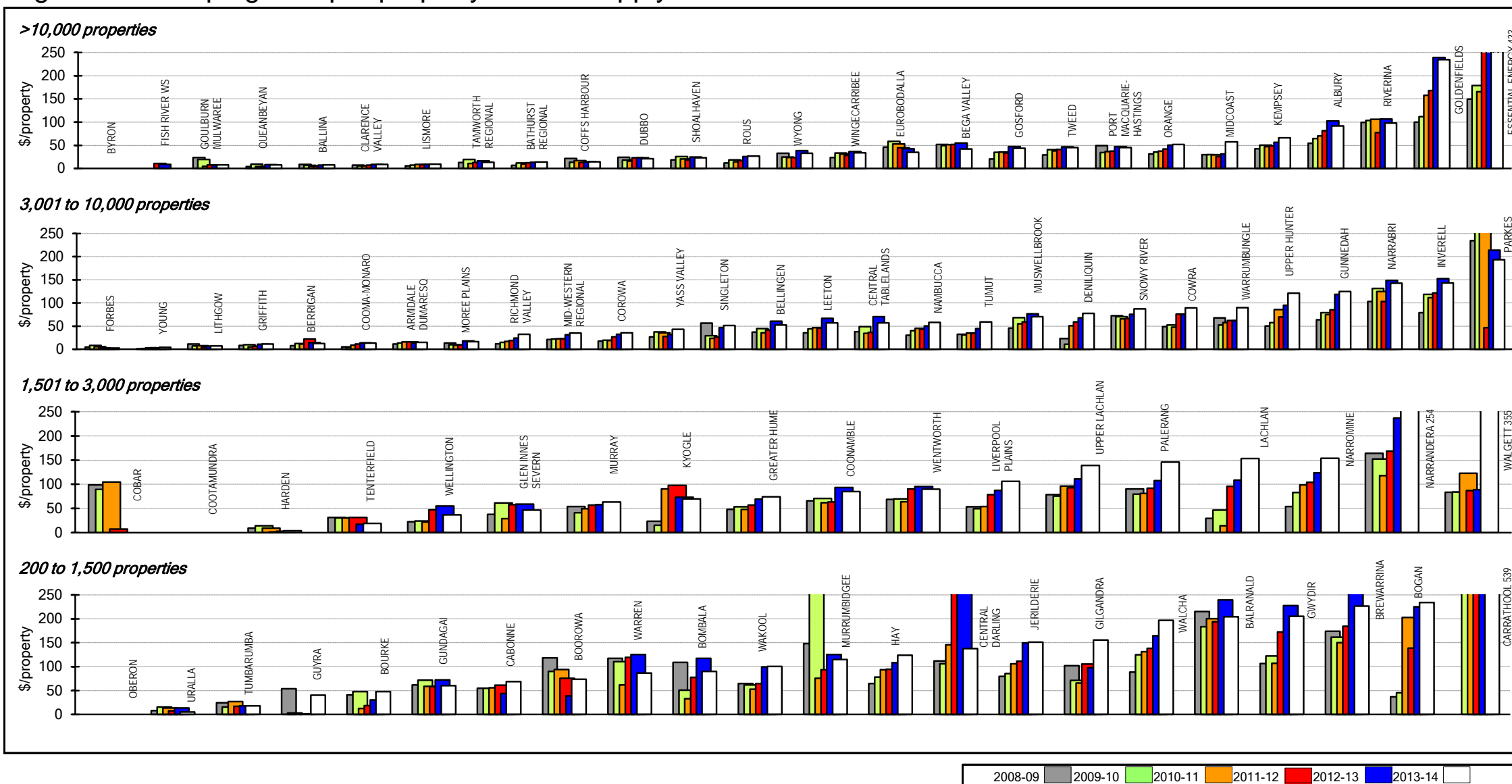
**Parameter:**  $\frac{\text{Treatment Operation Expenses (W2j)} + \text{Treatment Chemical Cost (W2k)} + \text{Treatment Maintenance Expenses (W2l)}}{[\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}}$

[No. of Residential Assessments (Q32) + No. of Non-Residential Assessments (Q33)] x No. of Connected Properties per Assessment

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 treatment costs for the 24 LWUs shown ranges from \$0 to \$290 per connected property. Results for the previous 5 years are also shown in Jan 2014\$.
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 \$58 per connected property. Refer also to pages 21, 23, 27 and Table 13 on page 186.
4. For general notes see page 32.

Figure 38: Pumping cost per property - water supply



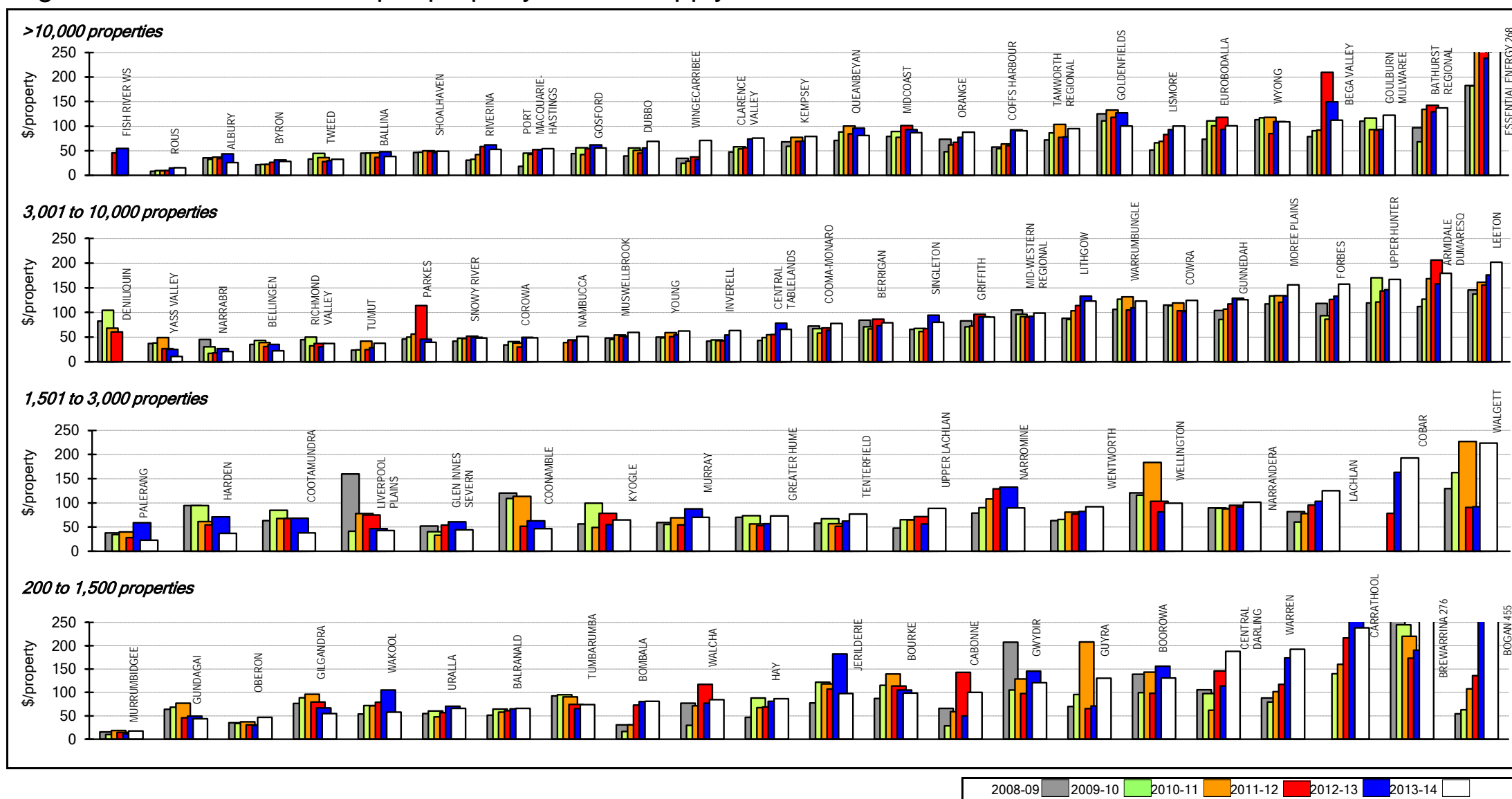
**Parameter:**  $\frac{\text{Pumping Station Operation Expenses (W2g)} + \text{Pumping Station Energy Cost (W2h)} + \text{Pumping Station Maintenance Costs (W2i)}}{[\text{No. of Residential Assessments (Q32)} + \text{No. of Non-Residential Assessments (Q33)}] \times \text{No. of Connected Properties per Assessment}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 water pumping costs for the 28 LWUs shown ranges from \$2 to \$194 per connected property. Results for the previous 5 years are also shown in Jan 2014\$.
2. The Statewide median water pumping cost (including energy costs) is \$43 per connected property. Refer also to Table 13 on page 186.
3. For general notes see page 32.



Figure 39: Water main cost per property - water supply



**Parameter:** Water main operation expenses (W2c) + water main maintenance costs (W2d)

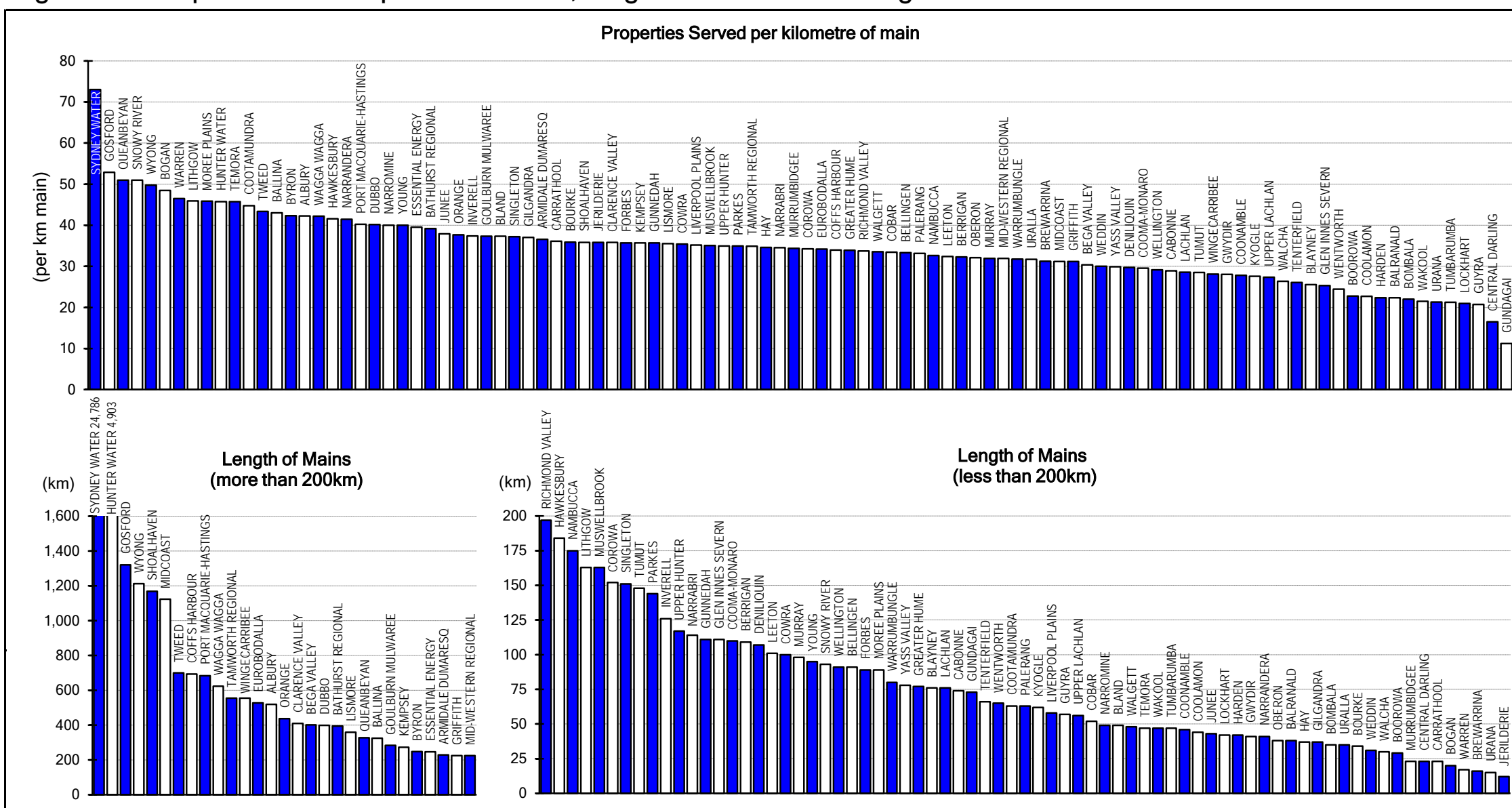
[No. of residential assessments (Q32) + No. of non-residential assessments (Q33)] x No. of connected properties per assessment

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 water main costs for the 28 LWUs shown ranges from \$0 to \$202 per property. Results for the previous 5 years are also shown in Jan 2014\$.
2. The Statewide median water main cost is \$74 per property. Refer also to Table 13 on page 186.
3. For general notes see page 32.

## 9. Sewerage figures

Figure 40: Properties served per km of main, length of mains - sewerage - A5

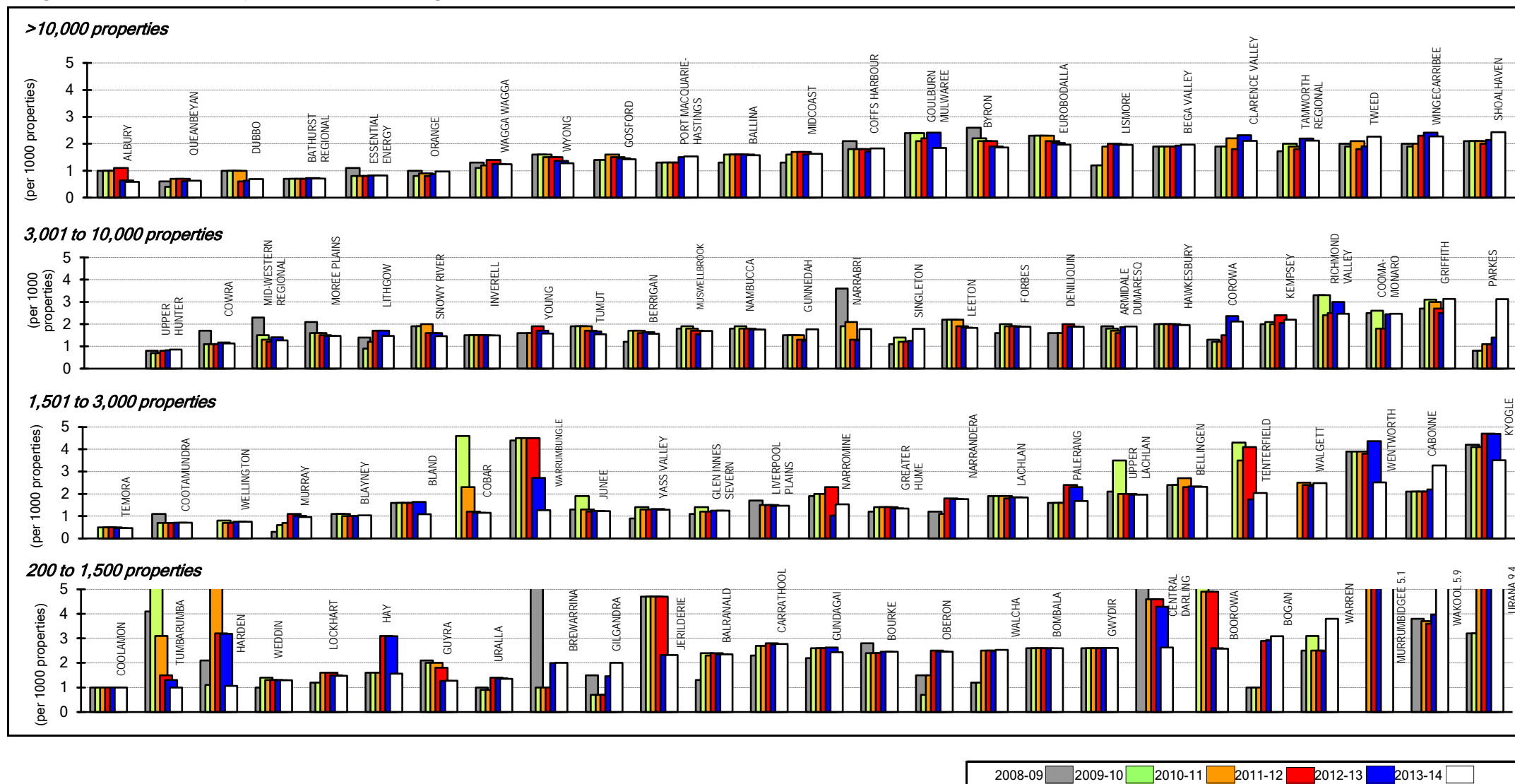


**Parameter:**  $\frac{[\text{No. of Residential Assessments (Q13)} + \text{No. of Non-Residential Assessments (Q14)}] \times \text{No. of Connected Properties per Assessment}}{\text{Length of Reticulation/Gravity Mains (Q7)} + \text{Length of Rising Mains (Q8)}}$

**Note:**

1. The top graph shows the ranked values of number of connected properties per km of sewerage 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 sewerage connected properties per km of main is 38 [National Median is 40 per km of main]. Refer also to Table 14 on page 189 and graph 2 on page 205.
3. For general notes see page 32.

Figure 41: Employees - sewerage



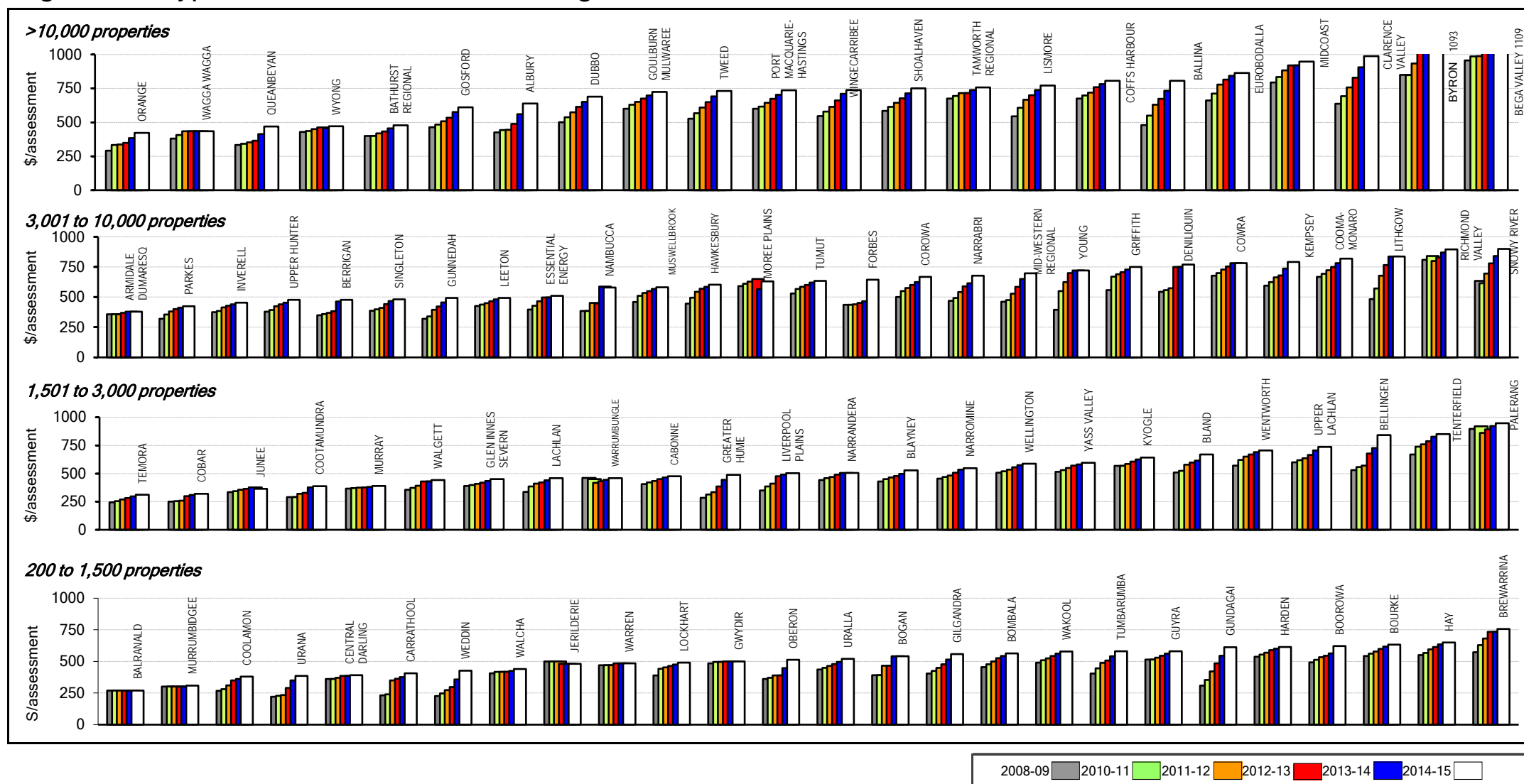
Parameter: Full-time Equivalent Employees (Q49) x 1000

[No. of Residential Assessments (Q13) + No. of Non-Residential Assessments (Q14) x No. of Connected Properties per Assessment]

#### Notes:

1. This figure shows ranked values of the 2013-14 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 2013-14 sewerage employees for the 26 LWUs shown ranges from about 1 to 3 per 1,000 connected properties. Results for the previous 5 years are also shown.
2. The 2013-14 Statewide median number of sewerage employees is 1.6 per 1,000 connected properties. Refer also to pages 21, 23 and Table 14 on page 189.
3. For general notes see page 32.

Figure 42: Typical residential bill – sewerage - P6

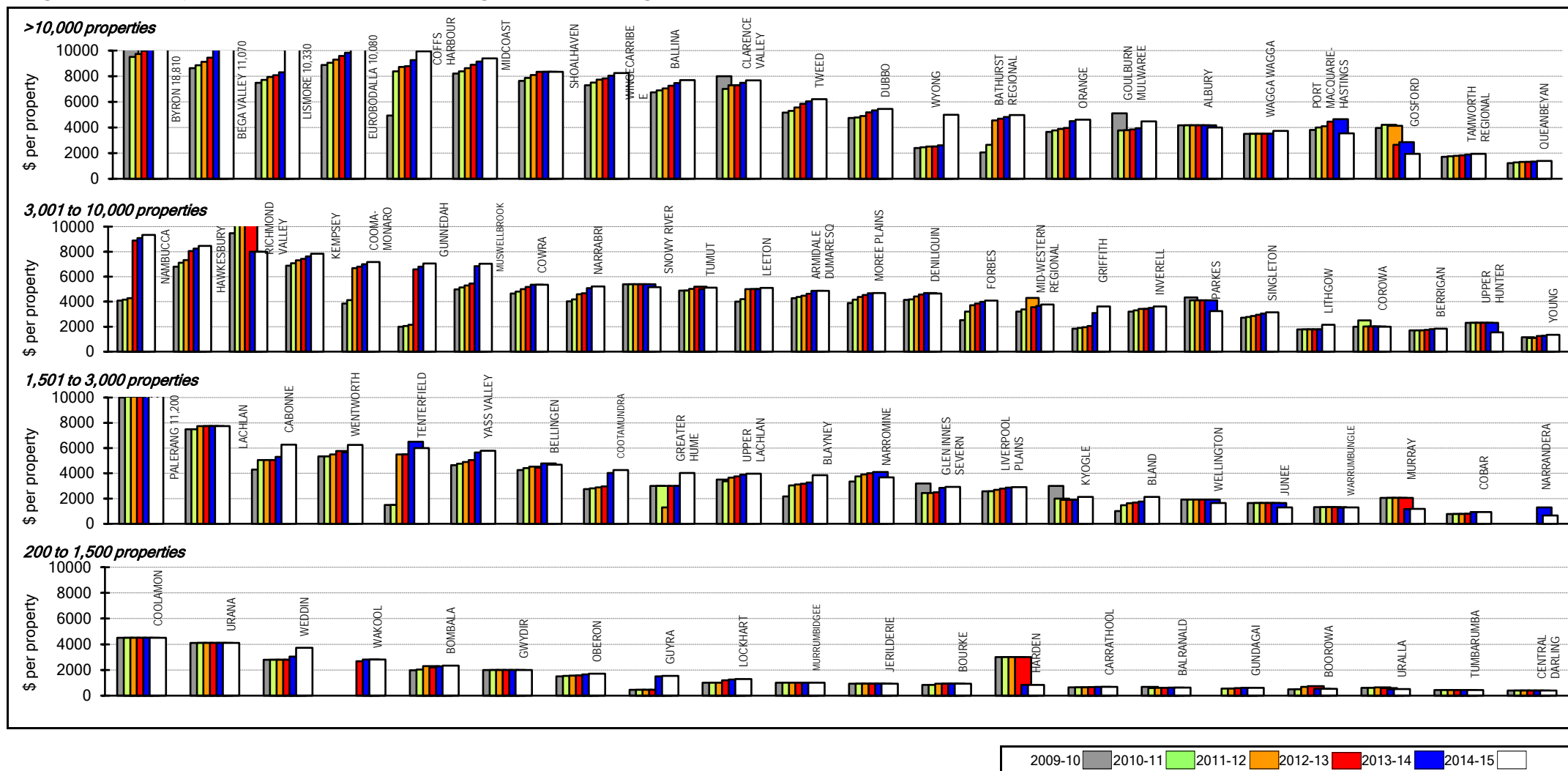


**Parameter:** Residential Access Charge

**Notes:**

1. This figure shows ranked values of the 2014-15 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 2014-15 typical residential bill for sewerage for the 27 LWUs shown ranges from about \$379 to \$900.
2. The 2014-15 Statewide median typical residential bill for sewerage is \$669 per assessment [National Median for 2013-14 is \$683 per assessment]. Refer also to Table 5 on page 116, Table 7 on page 146, graph 6 on page 206 and figure 12 on page 113.
3. For general notes see page 32.

Figure 43: Typical developer charge - sewerage

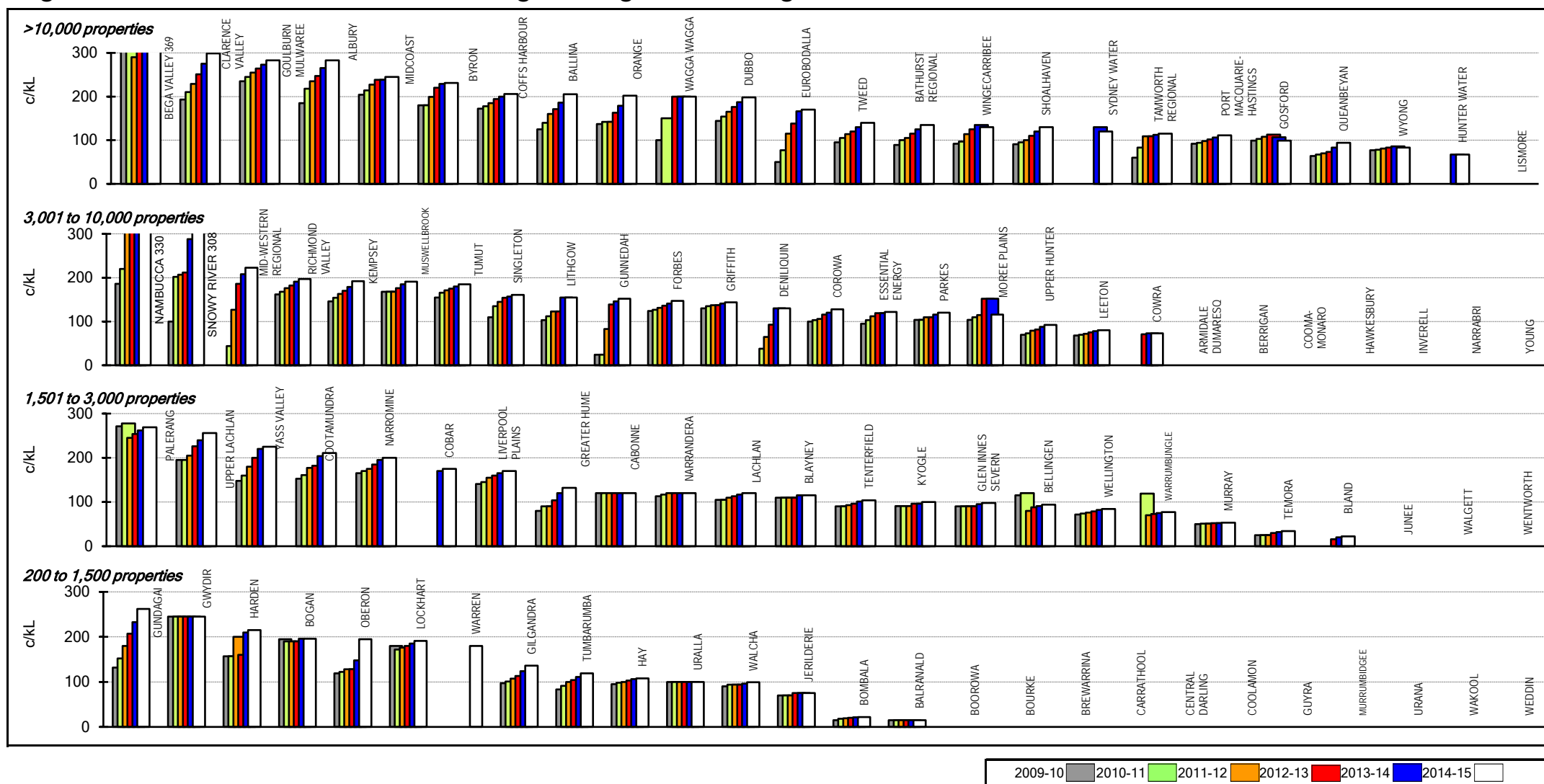


**Parameter:** Typical Sewerage Developer Charge (Q62)

**Notes:**

1. This figure shows ranked values of the 2014-15 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 \$9300 to \$1400 per equivalent tenement (ET).
2. The 2014-15 Statewide median typical sewerage developer charge was \$5,100 per ET, which is 31% of the current replacement cost of sewerage system assets of \$16,700 per assessment. Refer also to Table 7 on page 146.
3. 88 LWUs levied sewerage developer charges.
4. For general notes see page 32.

Figure 44: Non-residential sewer usage charge - sewerage



**Parameter:** Non-residential sewer usage charge (c/kL)

**Notes:**

1. This figure shows ranked values of the 2014-15 non-residential sewer usage charge 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 non-residential sewer usage charge for the 26 LWUs shown ranges from 330 to 73c/kL. 7 utilities do not have a sewer usage charge.
2. The 2014-15 Statewide median non-residential sewer usage charge was 136c/kL. Refer also to Table 7 on page 146 and figure 14 on page 113.
3. For general notes see page 32.

Figure 45: Trade waste usage charge - sewerage

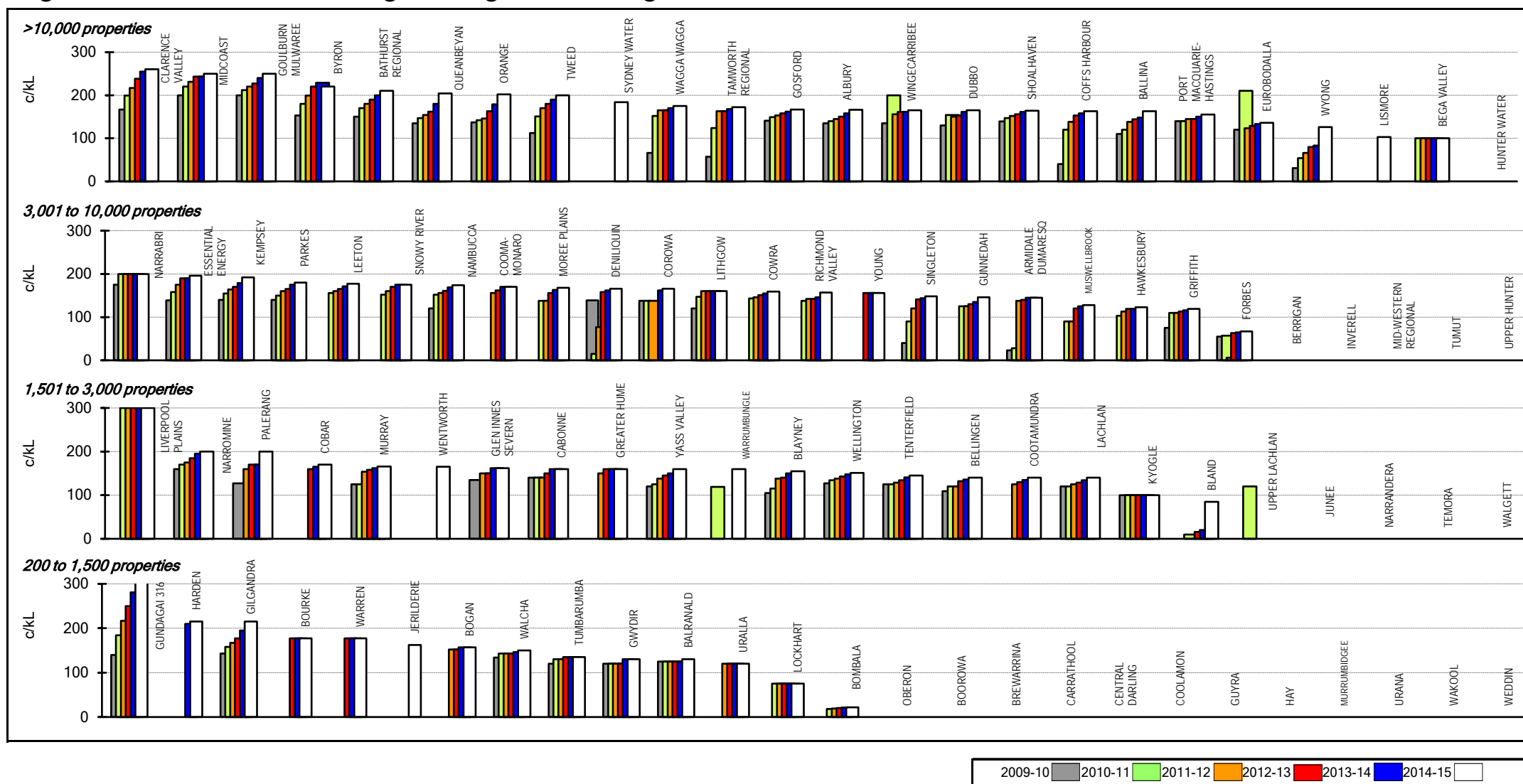
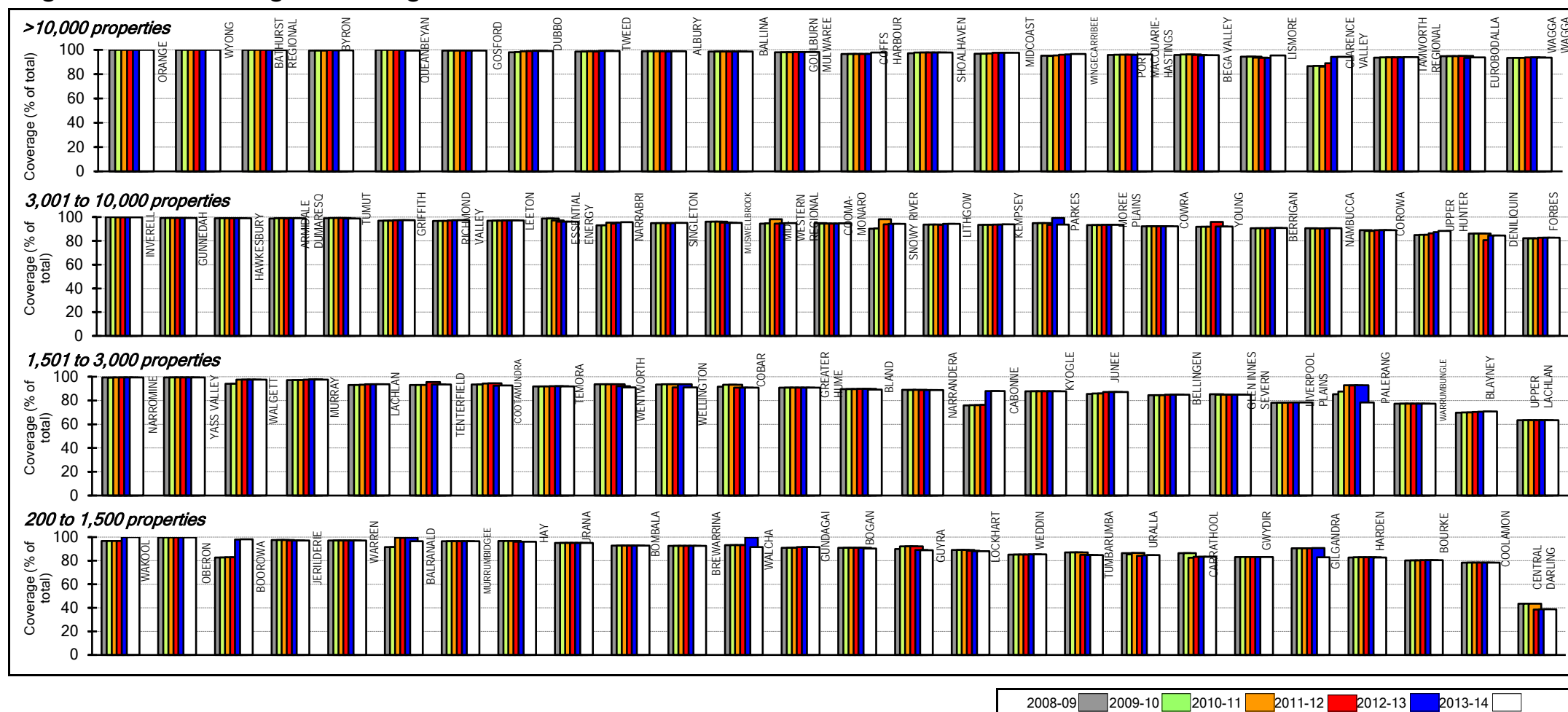




Figure 46: Sewerage coverage

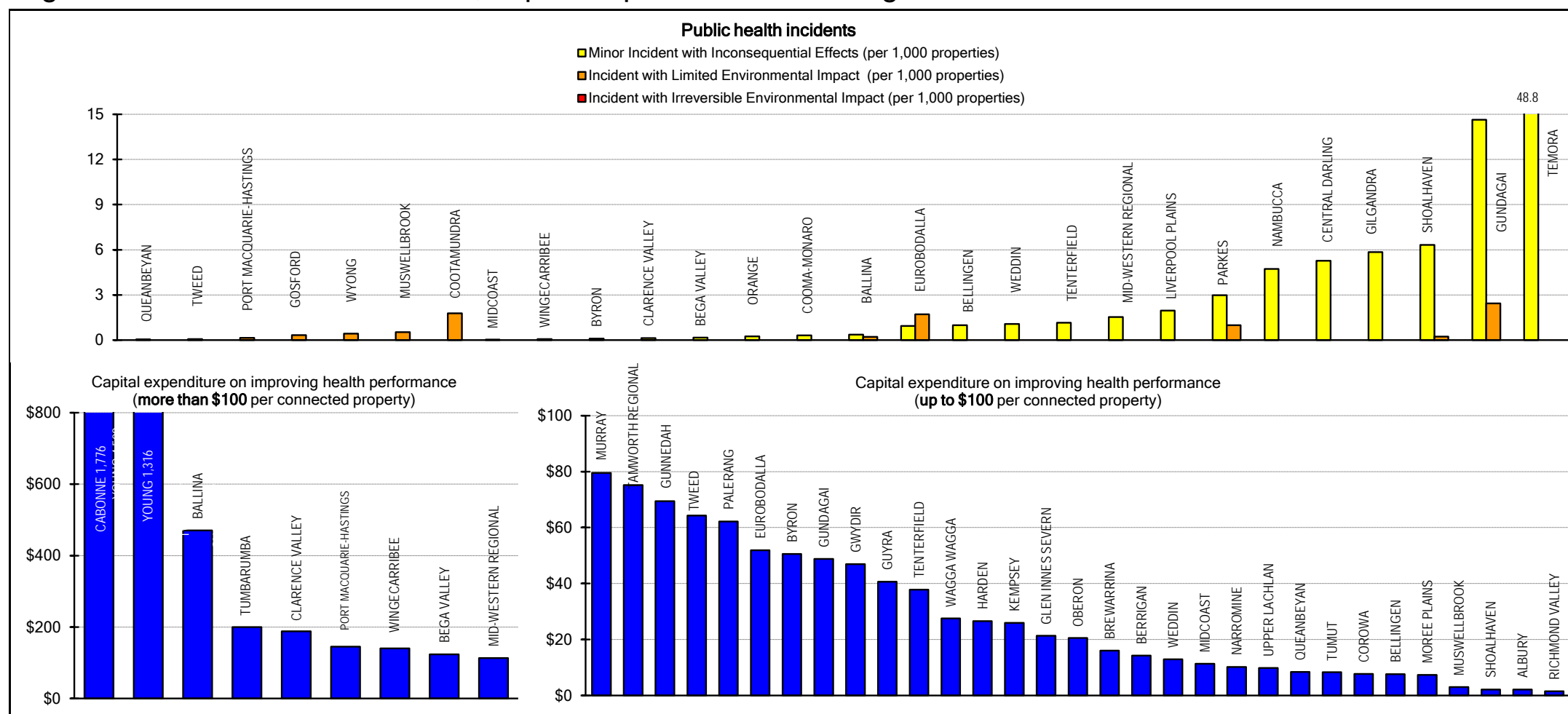


**Parameter:** Population served (Q1)  
 Population served (Q1) + unserved urban population (Q21)

**Notes:**

1. This figure shows ranked values of the sewerage coverage for the urban population 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 coverage for the 27 LWUs shown ranges from 99.8% to 83%. Results for the previous 5 years are also shown.
2. The 2013-14 Statewide median sewerage coverage was 97.9%.
3. The sewerage coverage for the median LWU was 94%.
4. The overall sewerage coverage for regional NSW was 96.1% of the urban population (ie. 1.72 million people). The systematic provision of backlog sewerage services for unsewered small towns under the NSW Government's Country Towns Water Supply and Sewerage Program has increased the sewerage coverage to 96.1% of the urban population, compared to 92.3% in 1996.
5. For general notes see page 32.

Figure 47: Public health incidents, capital expenditure - sewerage

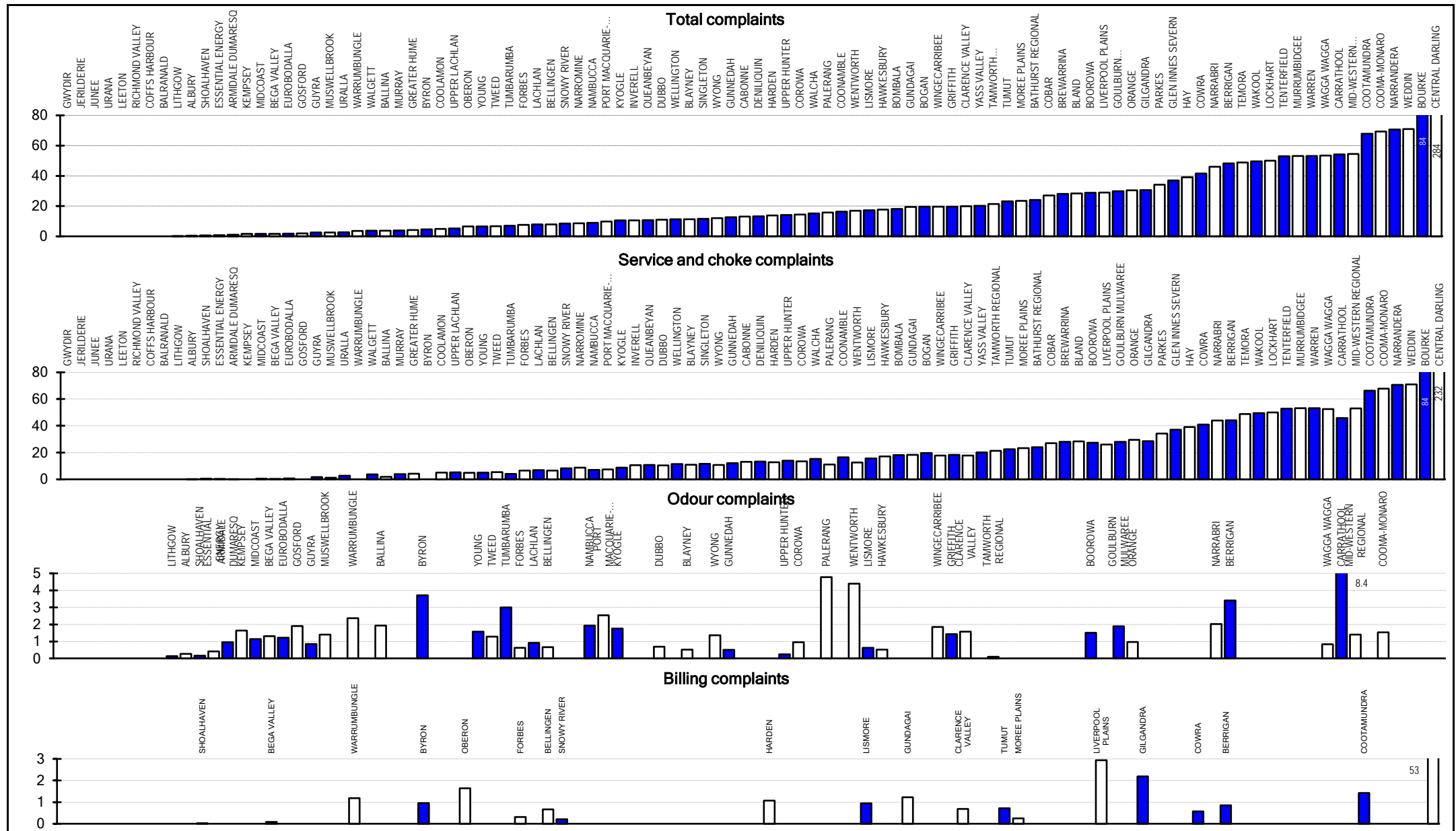


<b>Parameter:</b>	Total No. of minor incidents with inconsequential effects ( Q44)
	[No. of residential assessments (Q13) + No. of non-residential assessments (Q14)] x No. of connected properties per assessment
<b>Parameter:</b>	Total No. of minor incidents with limited health impacts (Q45)
	[No. of residential assessments (Q13) + No. of non-residential assessments (Q14)] x No. of connected properties per assessment
<b>Parameter:</b>	Total No. of major incidents with major health impacts (Q46)
	[No. of residential assessments (Q13) + No. of non-residential assessments (Q14)] x No. of connected properties per assessment
<b>Parameter:</b>	Capital expenditure on improving health performance (S) x (Q48)
	[No. of residential assessments (Q13) + No. of non-residential assessments (Q14)] x No. of connected properties per assessment

**Notes:**

- Deniliquin, Murrumbidgee and Walgett did not report public health incidents. 28 Utilities reported incidents and are shown in the figure above, while 68 utilities reported zero health incidents.
- For general notes see page 32.

Figure 48: Complaints (per 1000 properties) - sewerage

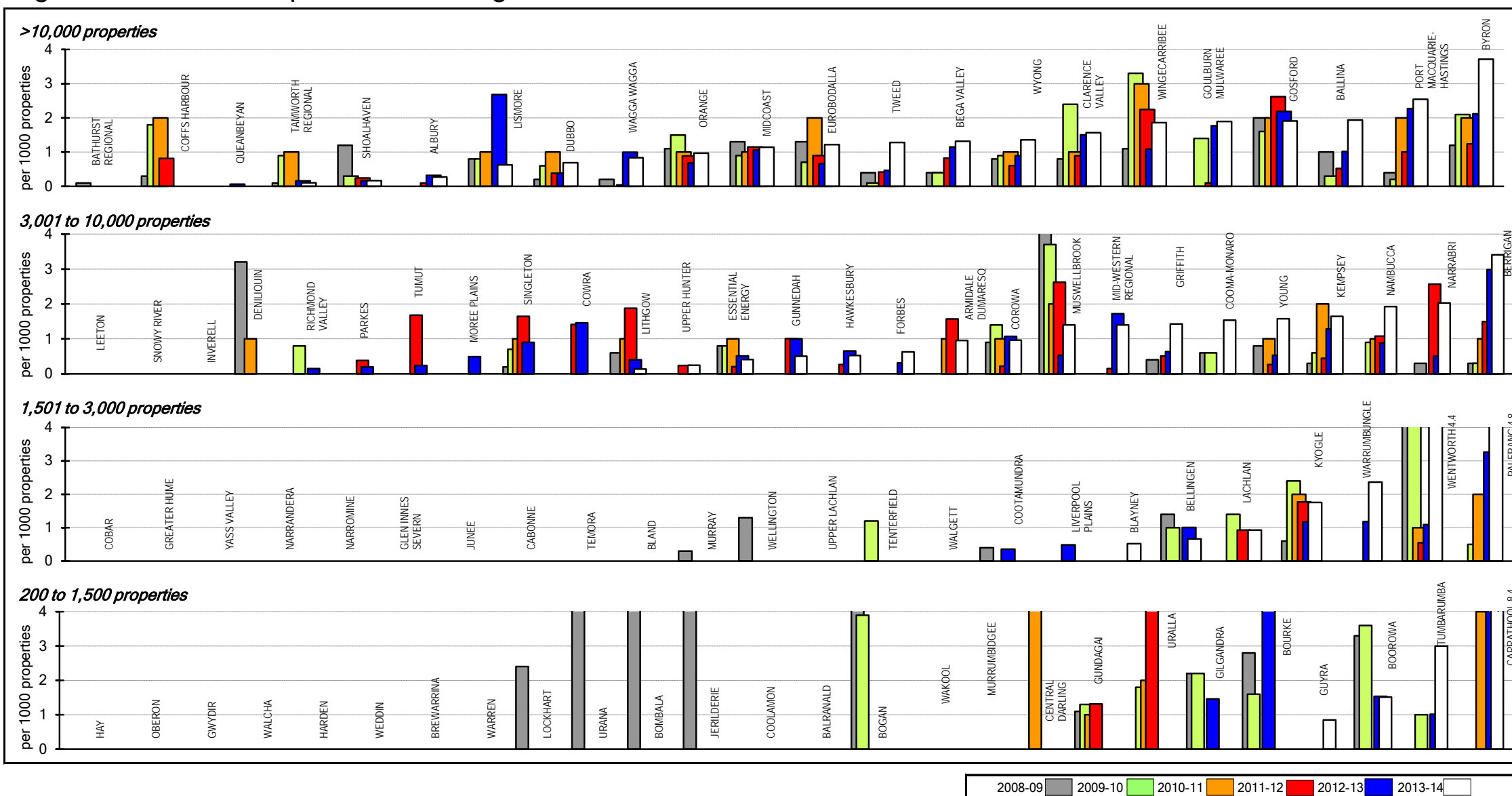


**Parameter:** 
$$\frac{[\text{Total no. of complaints (Q34) + (Q37) + (Q38) + (Q39)] \times 1000}{[\text{No. of residential assessments (Q13) + No. of non-residential assessments (Q14)] \times \text{No. of connected properties per assessment}}$$

**Note:**

1. For general notes see page 32. Refer also to Table 17 on page 198.

Figure 49: Odour complaints - sewerage



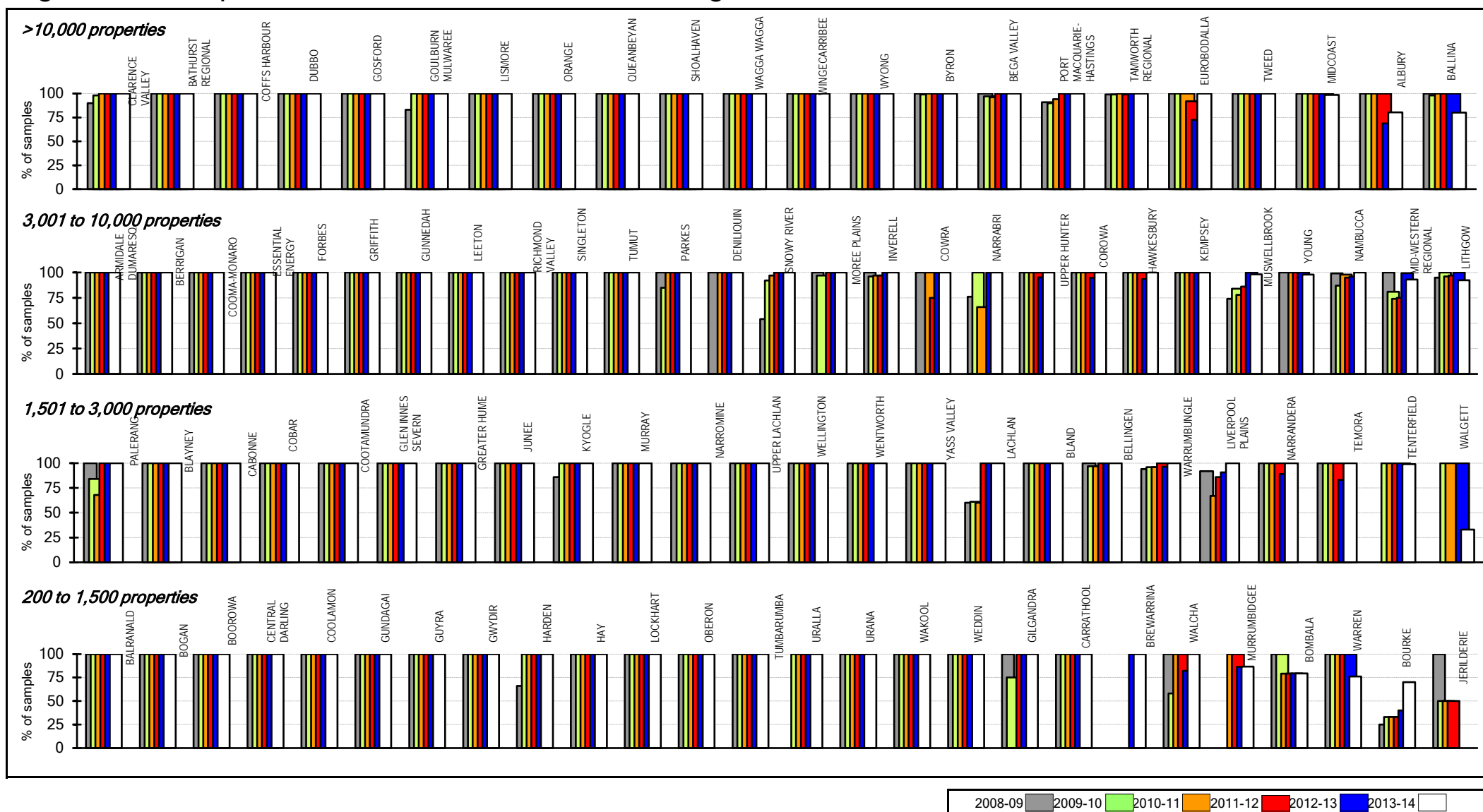
**Parameter:** [No. of Odour Complaints from Treatment Works and Pumping Stations (Q39) x 1000

[No. of Residential Assessments (Q13) + No. of Non-Residential Assessments (Q14)] x No. of Connected Properties per Assessment

**Notes:**

1. This figure shows ranked values of the 2013-14 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 3.4 complaints per thousand connected properties. Results for the previous 5 years are also shown.
2. The 2013-14 Statewide median number of odour complaints is 1 per 1000 properties. Refer also to Table 17 on page 198, graph 11 on page 207 and figure 21 on page 114.
3. For general notes see page 32.

Figure 50: Compliance with BOD in licence - sewerage

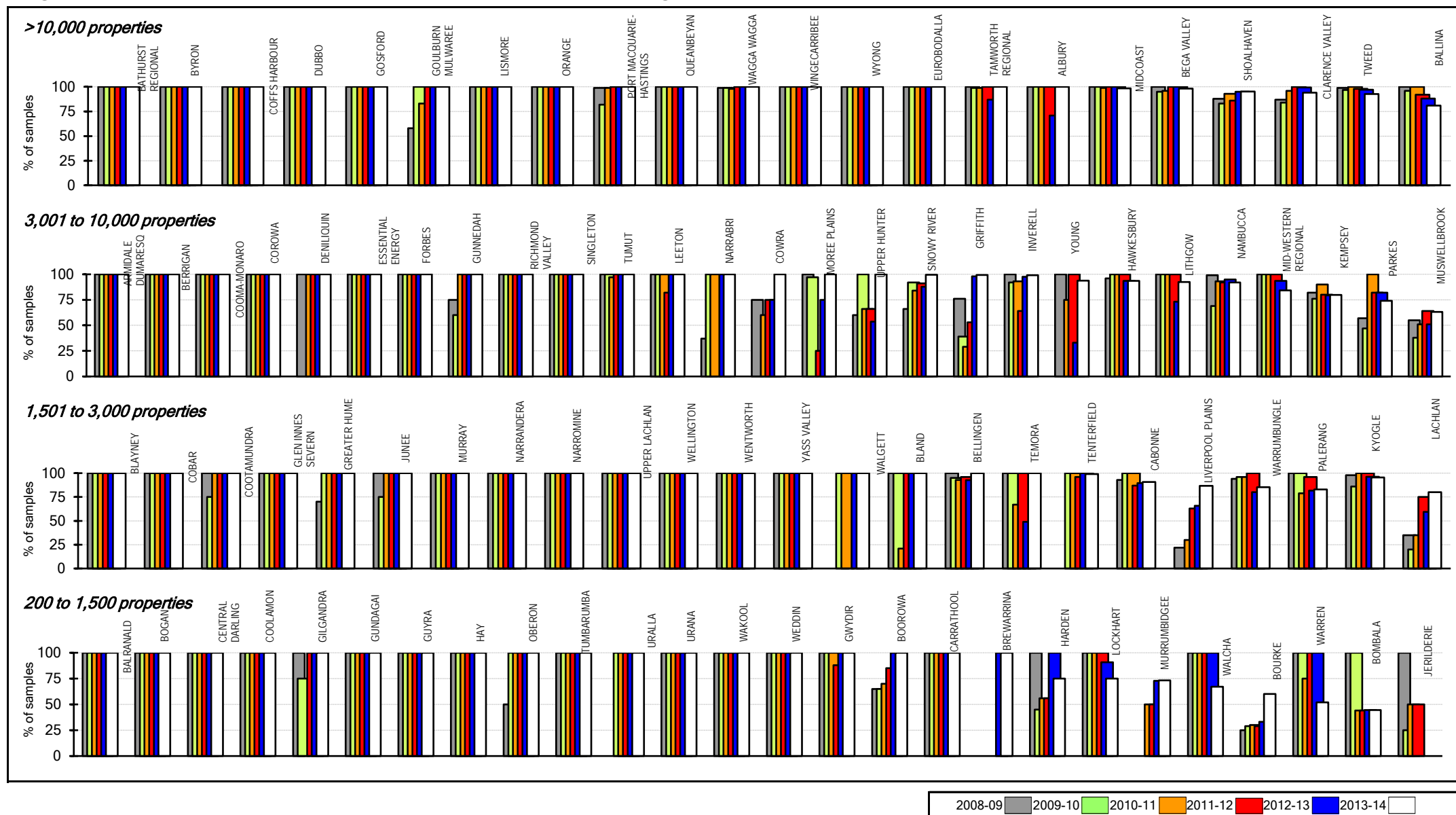


**Parameter:** Percentage of samples complying with 90 percentile Environment Protection Authority (EPA) licence limits for Biochemical Oxygen Demand (BOD) (STW Q50)

**Note:**

1. Refer also to Table 17 on page 198 and graph 18 on page 209.
2. For general notes see page 32.

Figure 51: Compliance with SS in licence - sewerage

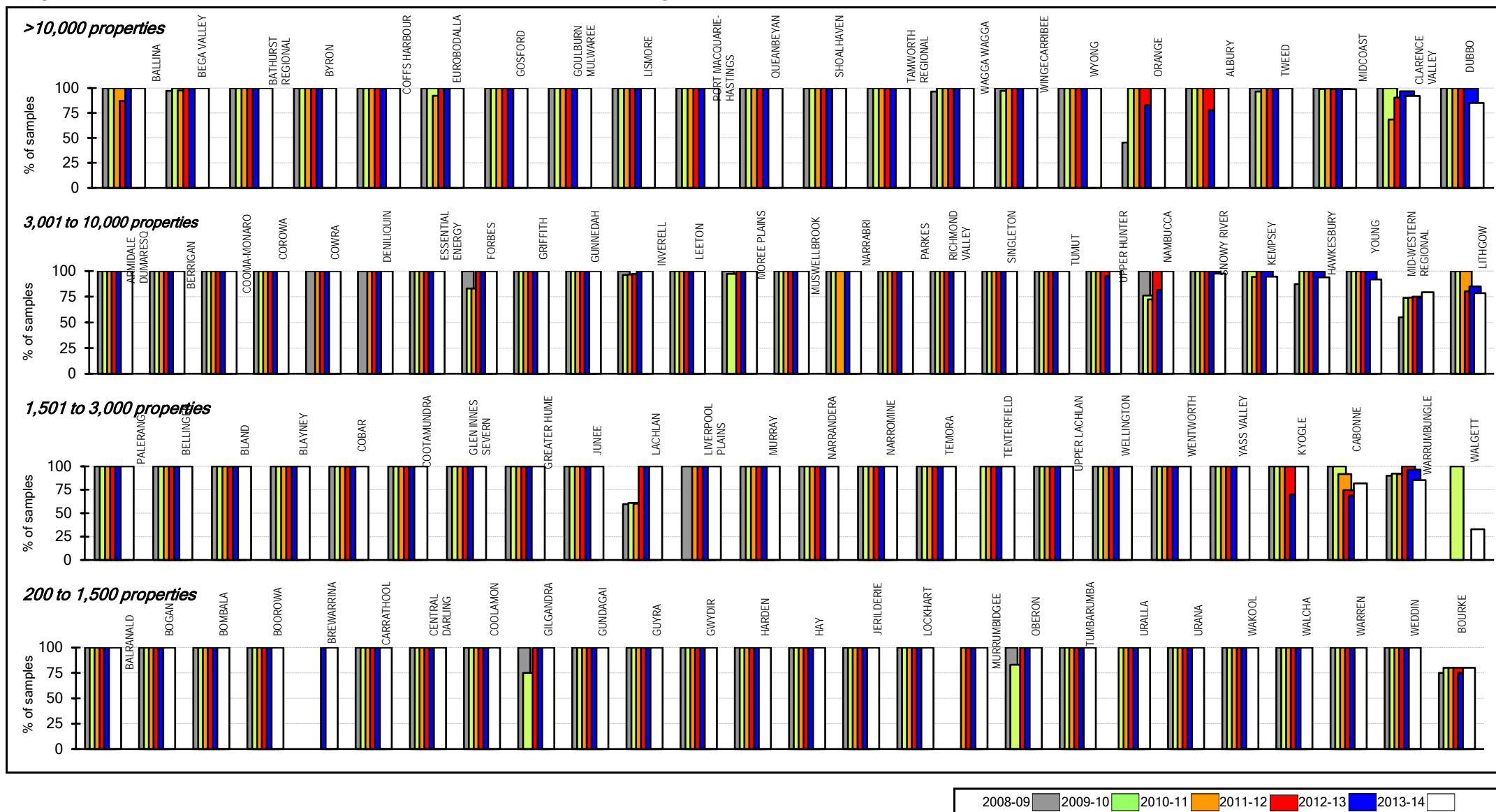


**Parameter:** Percentage of samples complying with 90 percentile Environment Protection Authority (EPA) licence limits for Suspended Solids (SS) (STW Q52)

**Note:**

1. Refer also to Table 17 on page 198 and graph 18 on page 209.
2. For general notes see page 32.

Figure 52: Compliance with N in licence - sewerage



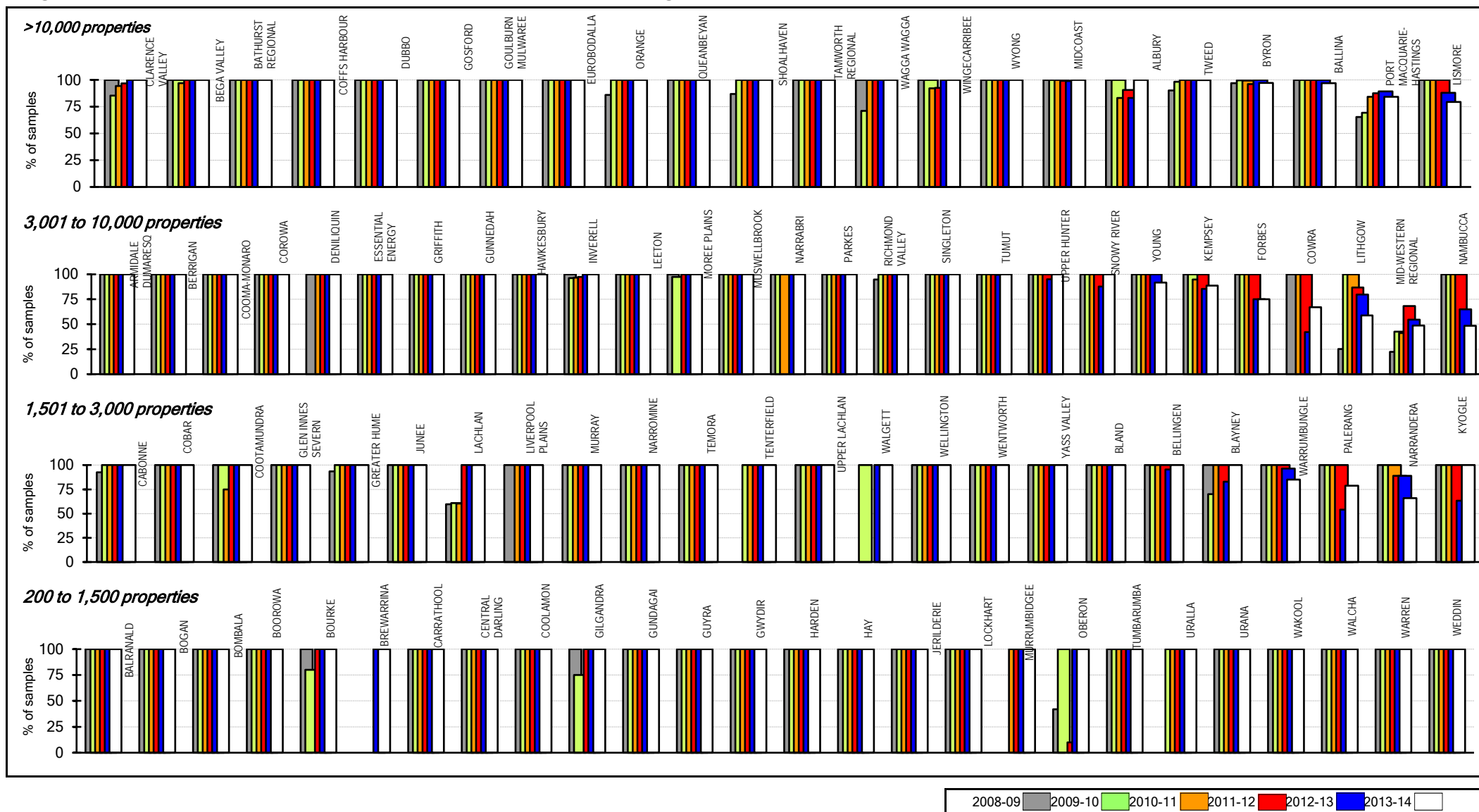
**Parameter:** Percentage of samples complying with 90 percentile Environment Protection Authority (EPA) licence limits for Total Nitrogen (STW Q54)

**Note:**

1. Refer also to Table 17 on page 198.
2. For general notes see page 32.



Figure 53: Compliance with P in licence - sewerage

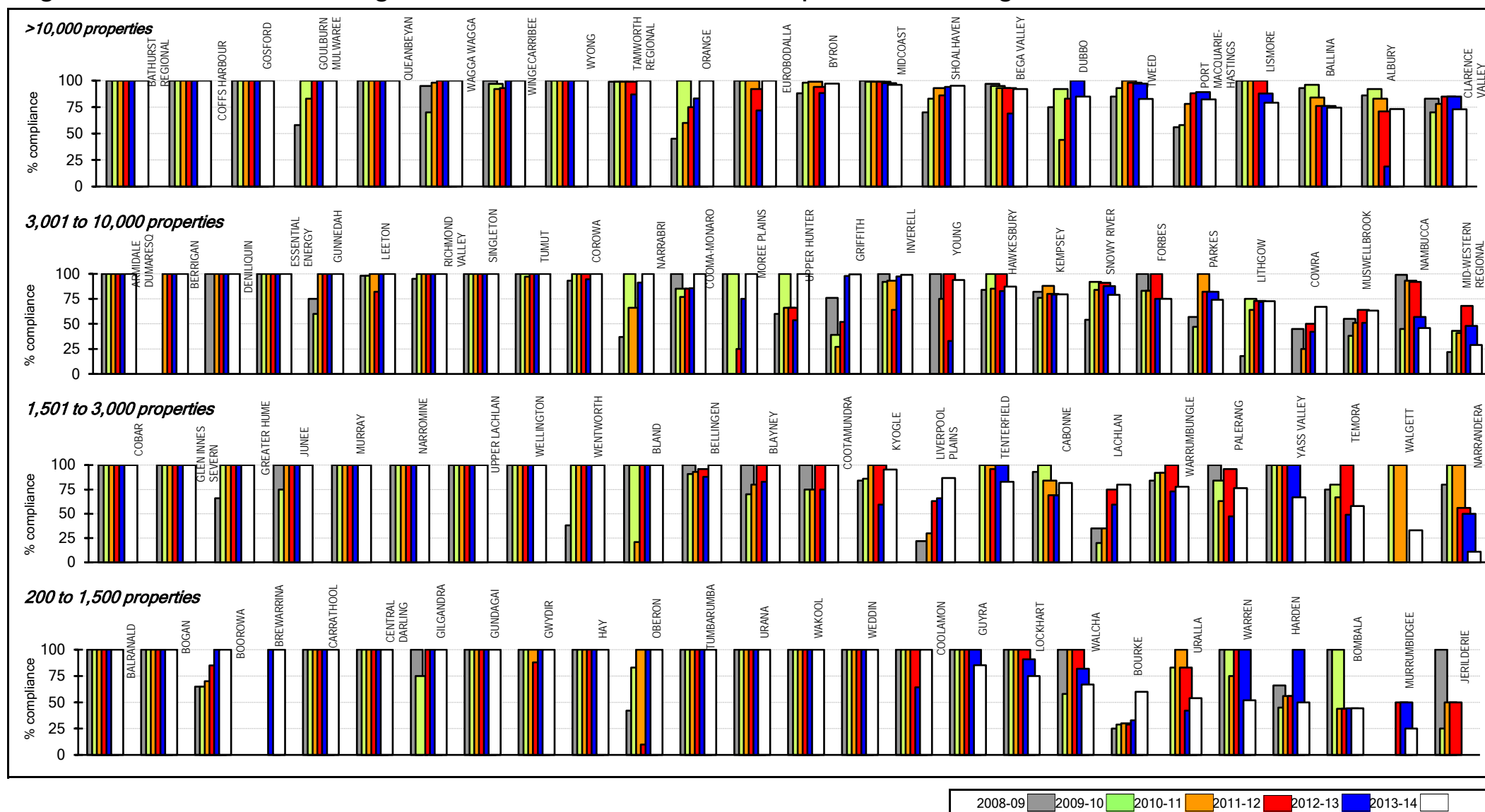


**Parameter:** Percentage of samples complying with 90 percentile Environment Protection Authority (EPA) licence limits for Total Phosphorus (STW Q60)

**Note:**

1. Refer also to Table 17 on page 198.
2. For general notes see page 32.

Figure 54: Percent of sewage volume treated that was compliant - sewerage - E4

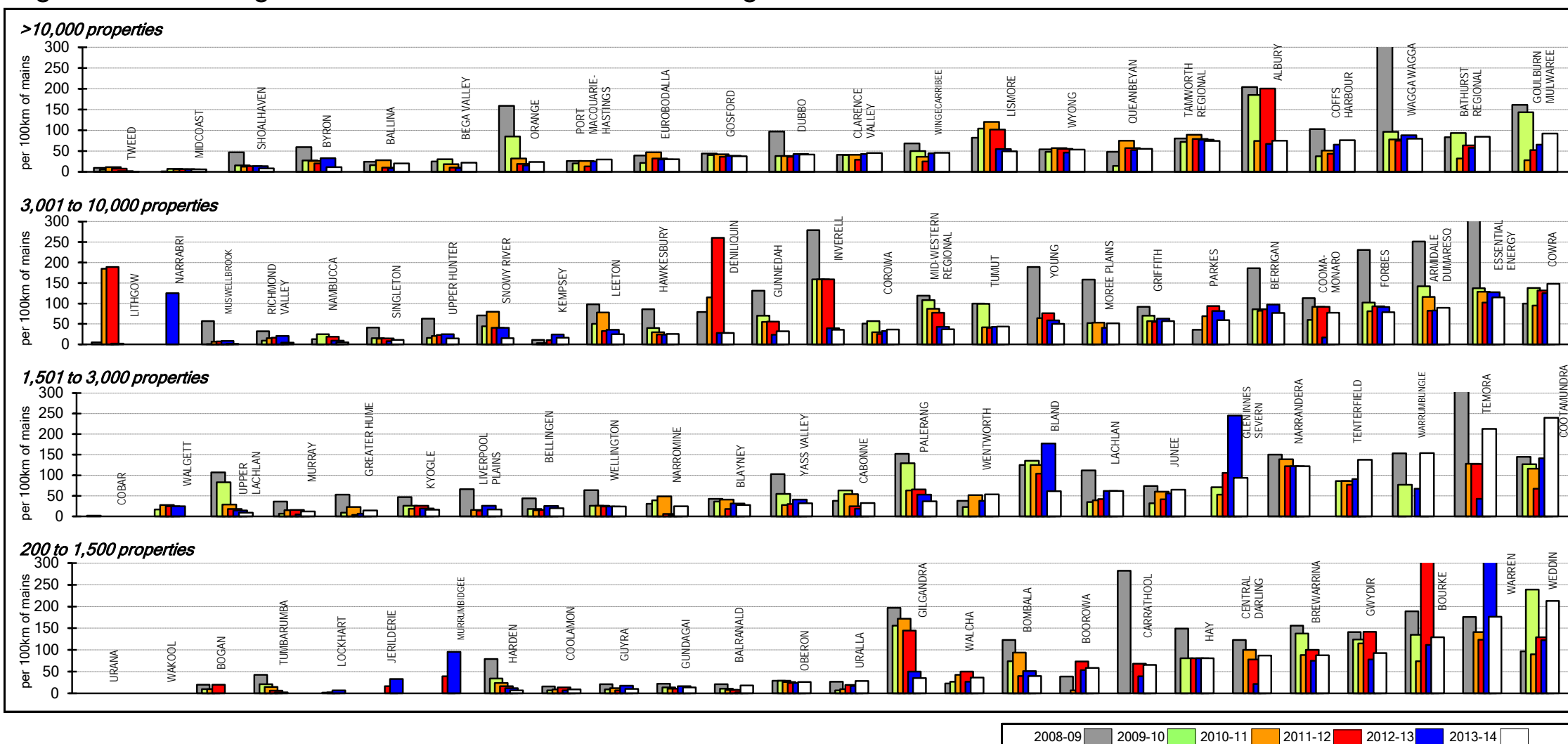


**Parameter:**  $\frac{(\text{No. of scheduled samples complying with all of the licence limits}) \times 100}{\text{Total No. of scheduled samples in reporting period}}$

**Note:**

1. Refer also to Table 17 on page 198, graph 21 on page 210 and figure 18 on page 113.
2. For general notes see page 32.

Figure 55: Sewerage main breaks and chokes - sewerage - A14

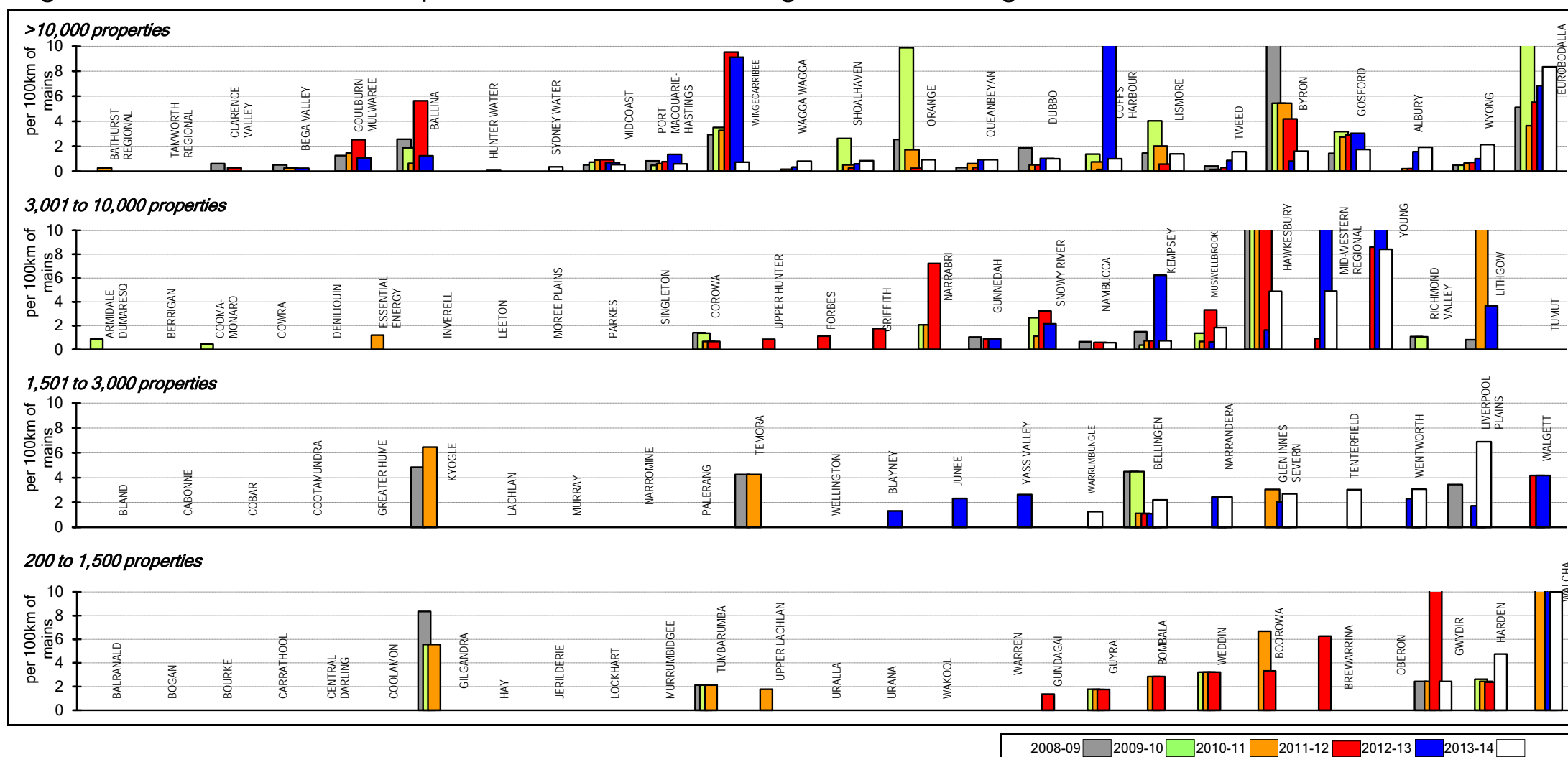


**Parameter:** Total No. of Sewerage Main Breaks and Chokes (Q64 + Q65) x 100  
Length of Reticulation/Gravity Mains (Q7) + Length of Rising Mains (Q8)

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 sewerage main breaks and chokes for the 27 LWUs shown ranges from nil to 148 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 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 37 per 100 km of sewer mains, which is significantly higher than the National Median of 20. The NSW median has fallen from 75 to 37 over the past 22 years, partly as a result of revision of the national definition for this indicator in 2009-10. Refer also to Table 5 on page 116, Table 15 on page 192, graph 20 on page 210 and figure 36 on page 113.
4. For general notes see page 32.

Figure 56: Sewer overflows reported to environmental regulator - sewerage - E13

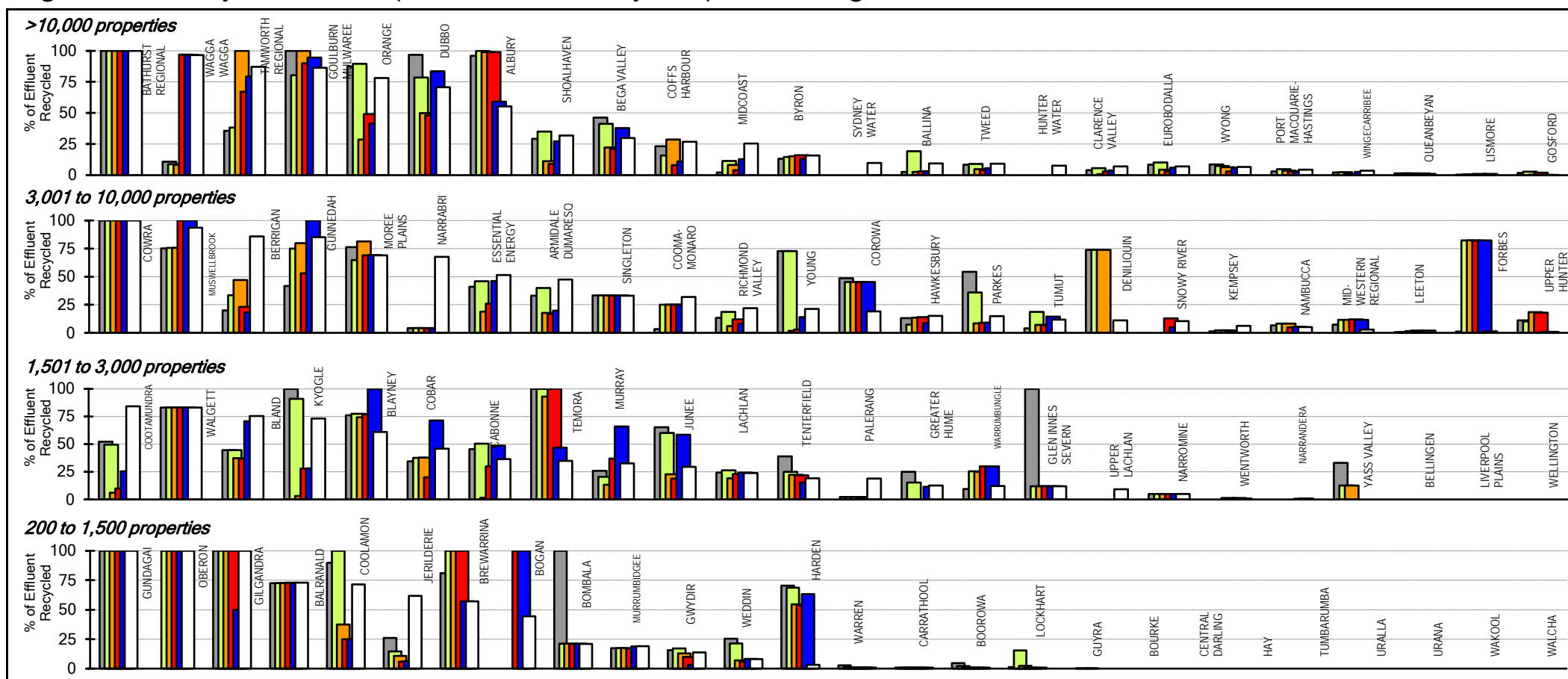


**Parameter:** Total No. of Sewage Overflows Reported to Regulator (Q63b) x 100  
Length of Reticulation/Gravity Mains (Q7) + Length of Rising Mains (Q8)

**Notes:**

1. This figure shows ranked values of the 2013-14 overflows reported to the environmental regulator 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 2013-14 overflows reported to the environmental regulator for the 24 LWUs shown ranges from nil to 8 overflows per 100 km of sewer mains. The 3 utilities on the right did not report this indicator for 2013-14. Results for the previous 5 years are also shown.
2. The Statewide median sewer overflows reported to the environmental regulator is 0.8 per 100 km of sewer mains [National Median is 0.4 per 100 km of sewer mains]. Refer also to Table 15 on page 192, graph 23 on page 210 and figure 37b on page 113.
3. 64% of reporting LWUs had no sewer overflows reported to the environmental regulator.
4. For general notes see page 32.

Figure 57: Recycled water (% of effluent recycled) - sewerage - W27



**Parameter:**  $\frac{\text{Total Volume Recycled (W Q158)} \times 100}{\text{Volume of Sewage Treated (Secondary Treatment) (STW Q18)}}$



#### Notes:

1. This figure shows ranked values of the 2013-14 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 2013-14 recycled water (% of sewage effluent recycled) for the 27 LWUs shown ranges from 100% to 0%.
2. The 2012-13 result has been adopted for any LWUs that did not report historically consistent effluent reuse (generally >25%). These LWUs are shown in *italics bold* in Table 15 on page 192 and Table 5 on page 116.
3. The Statewide median reuse of recycled water is 12% of effluent recycled.
4. The total volume of recycled water for regional NSW was 43,000 ML, which was 27% of the total volume of sewage collected [National Median is 17%]. Re-use was carried out by 84% of LWUs. 26% of LWUs recycled over 50% of their effluent.
5. Refer also to Table 5 on page 116, Table 15 on page 192, graph 16 on page 209, figure 27 on page 114 and to pages 10 and 19 of the 2013-14 NSW Water Supply and Sewerage Performance Monitoring Report ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).
6. For general notes see page 32.

Figure 58: Energy consumption per ML - sewerage

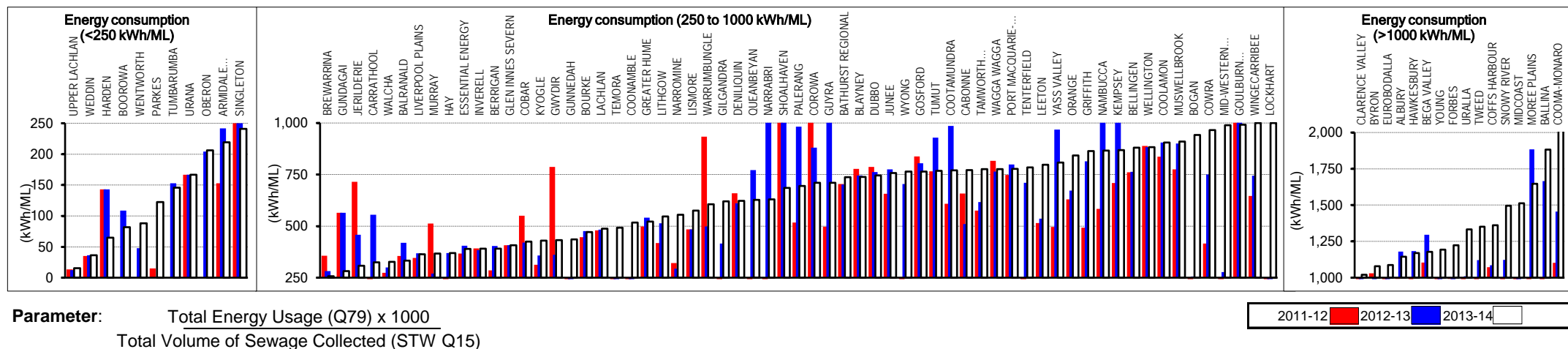


Figure 59: Energy consumption per property - sewerage

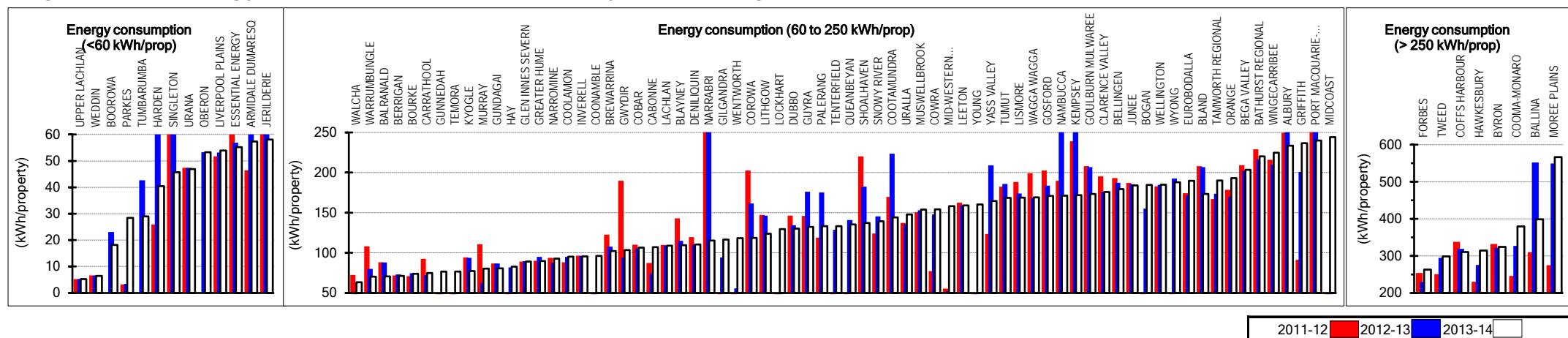
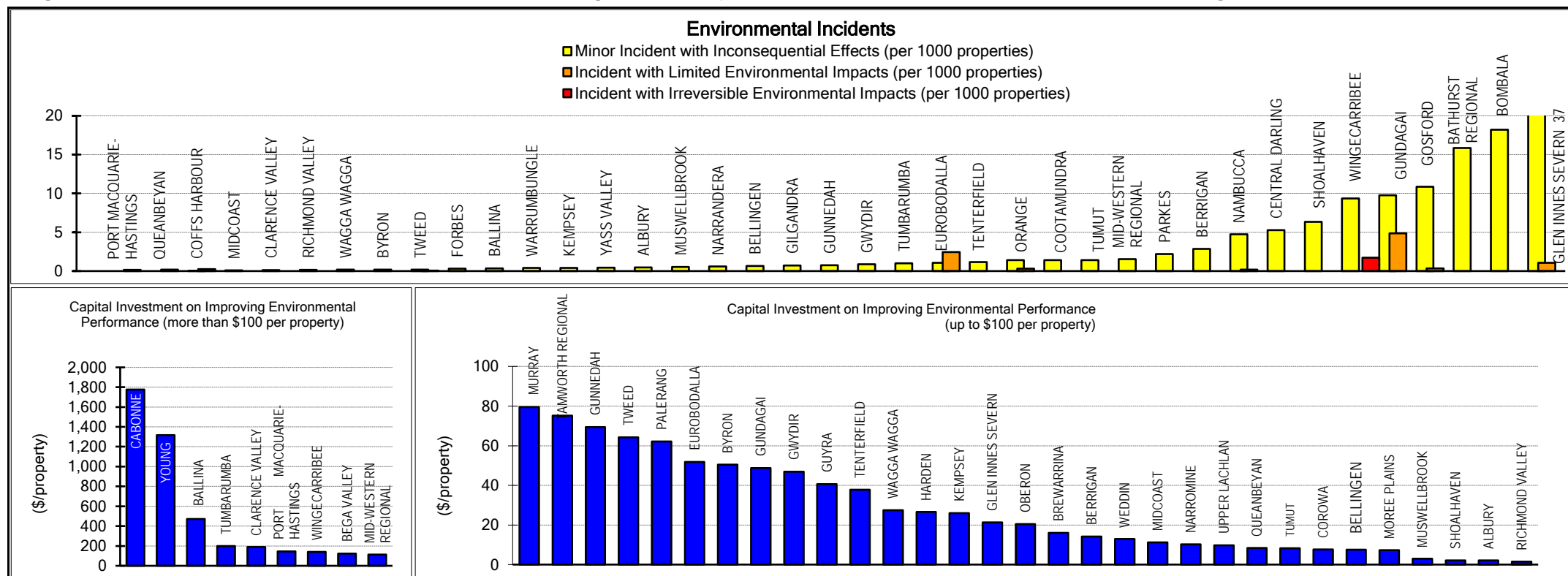


Figure 60: Environmental incidents, management systems, capital investment - sewerage



**Parameter:** Total number of minor incidents with inconsequential effects (Q69)  
 [No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

**Parameter:** Total number of incidents with limited environmental impacts (Q70)  
 [No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

**Parameter:** Total number of incidents with irreversible environmental impacts (Q71)  
 [No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

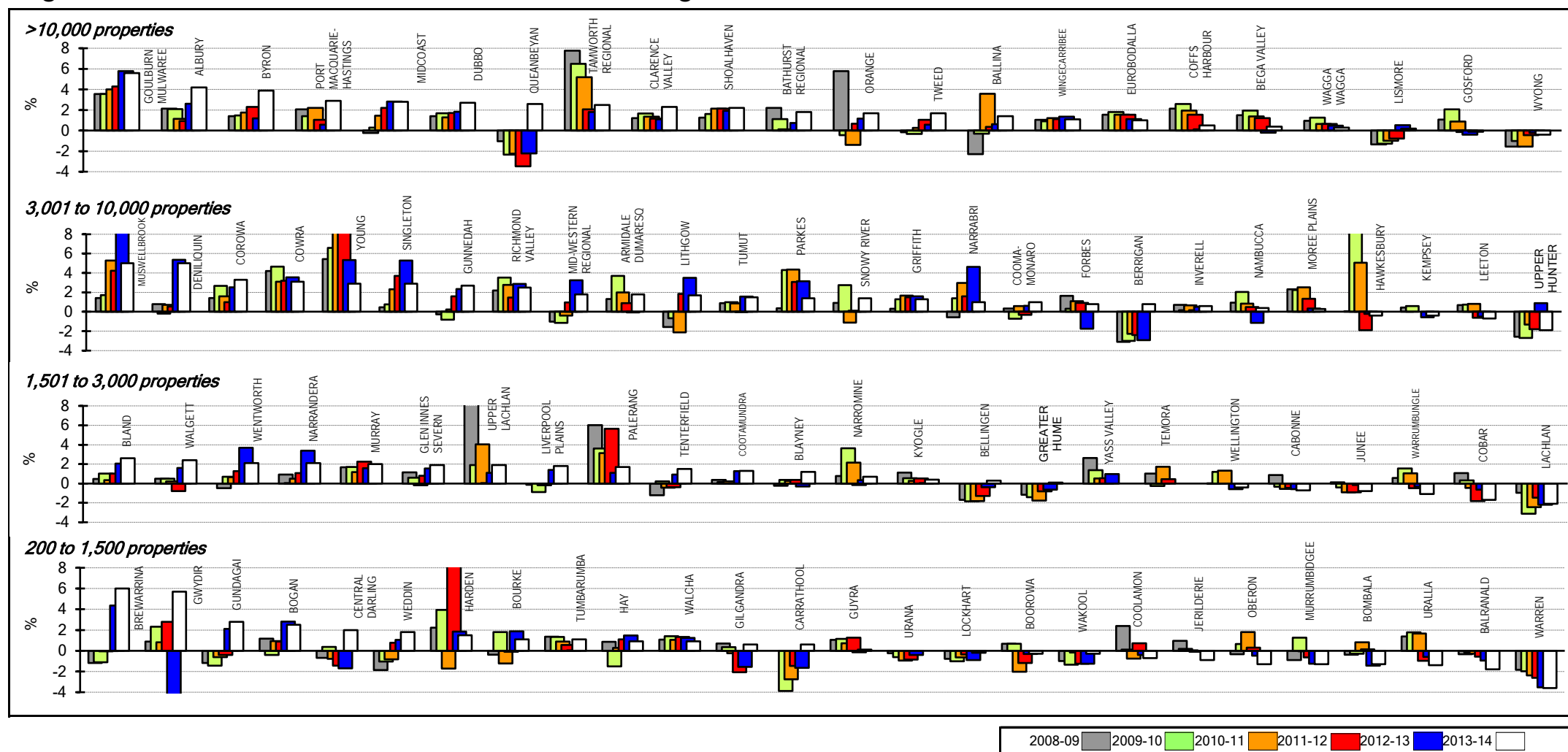
**Parameter:** Capital expenditure on improving environmental performance (\$) (Q76)  
 [No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

**Notes:**

- The following 2 utilities did not report for environmental incidents: Narrabri and Murrumbidgee. 41 utilities reported and are shown in the figure above, while 57 utilities reported zero environmental incidents.
- The following 55 LWUs have prepared a sewerage Environmental Management Plan:  
 Ballina, Balranald, Bathurst, Bellingen, Berrigan, Blayney, Bogan, Bombala, Boorowa, Byron, Cabonne, Carrathool, Central Darling, Clarence Valley, Cobar, Coonamble, Cootamundra, Cowra, Dubbo, Eurobodalla, Forbes, Glen Innes Severn, Gosford, Gunnedah, Guyra, Harden, Hawkesbury, Inverell, Jerilderie, Lismore, Mid-Western, Moree Plains, Murray, Muswellbrook, Nambucca, Narrabri, Narromine, Palerang, Parkes, Port Macquarie-Hastings, Queanbeyan, Shoalhaven, Singleton, Sydney Water, Tumbarumba, Tumut, Upper Hunter, Uralla, Wagga Wagga, Wakool, Walgett, Weddin, Wellington, Wentworth, Wyong.
- For general notes see page 32.



Figure 61: Economic real rate of return - sewerage - F18

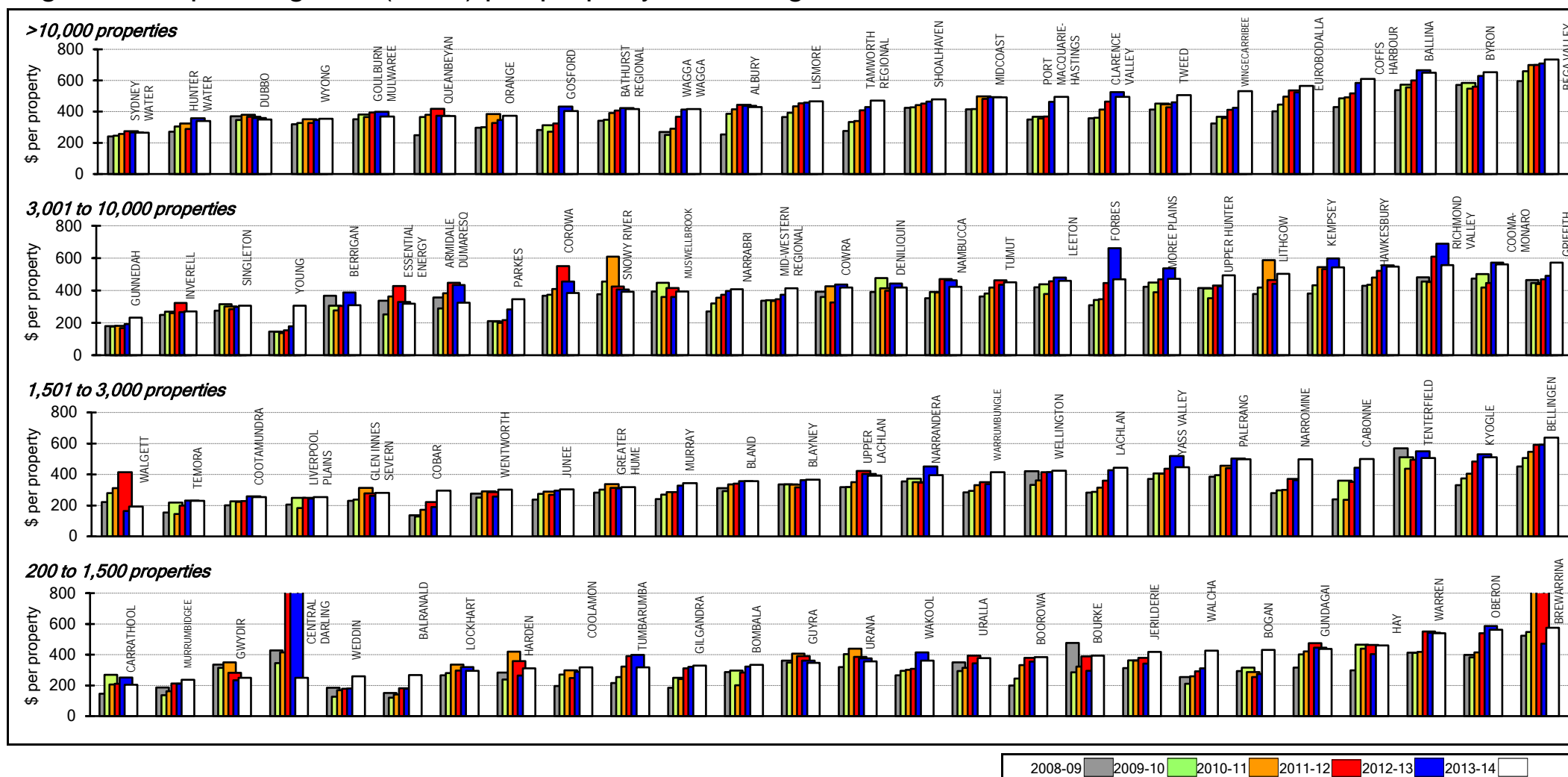


**Parameter:**  $\frac{[\text{Operating Result (S16)} + \text{Interest Expense (S4a)} - \text{Interest Income (S10)} - \text{Grants for Acquisition of Assets (S12a)}] \times 100}{\text{Written Down Replacement Cost of System Assets, Plant \& Equipment (S34)}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 sewerage real rate of return for the 26 LWUs shown ranges from 5% to -1.9%. Results for the previous 5 years are also shown.
2. The Statewide median sewerage ERRR is 1.5% [National Median is 2.6%]. Refer also to Table 5 on page 116, Table 7 on page 146 and figure 46 on page 113.
3. The ERRR includes developer provided assets and capital contributions from other LWUs.
4. For general notes see page 32.

Figure 62: Operating cost (OMA) per property - sewerage - F12



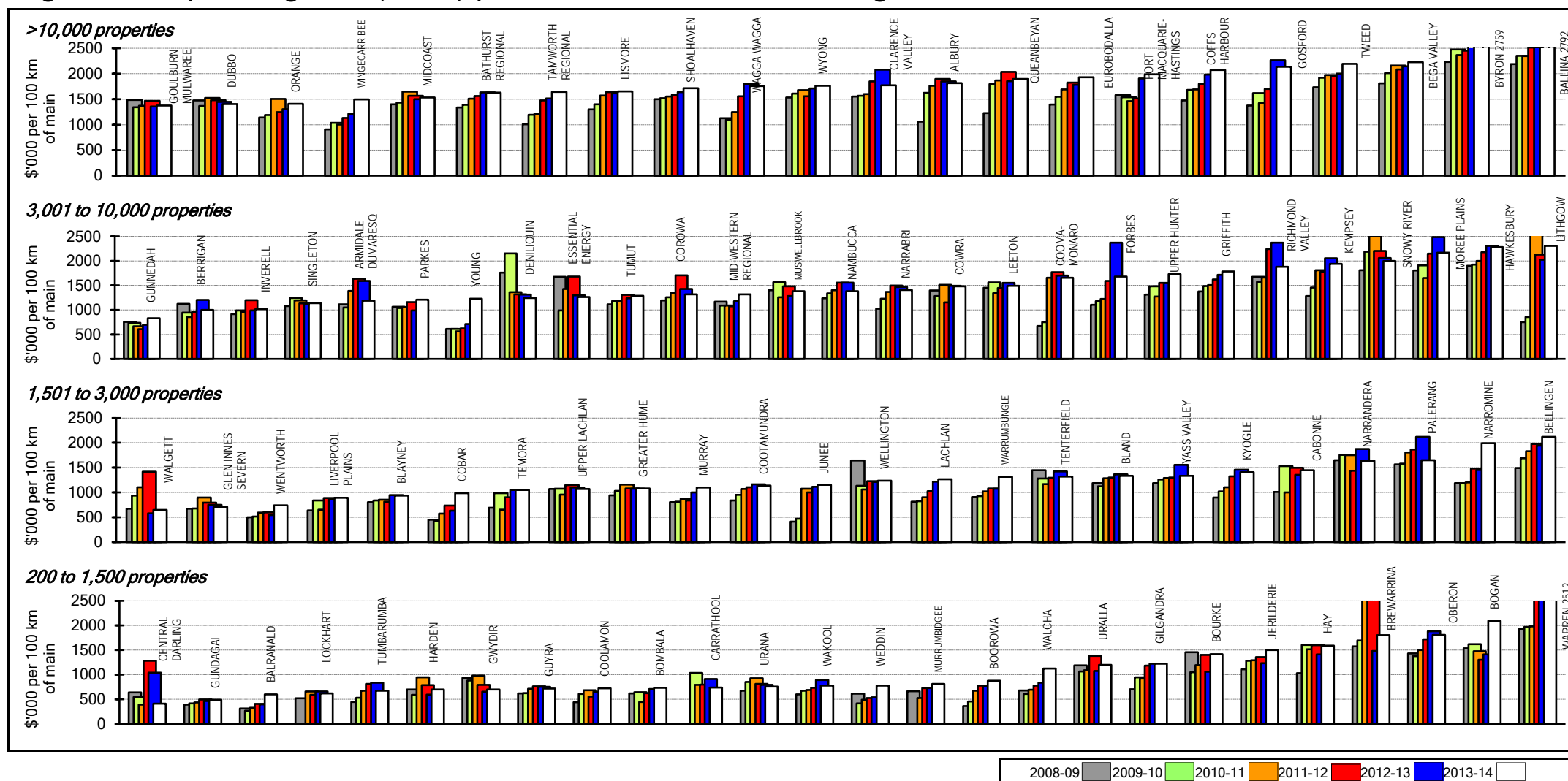
**Parameter:**  $\text{Management Expenses (S1)} + \text{Total Operations Expenses (S2)} - \text{Purchase of Water} + \text{Bulk Supplier's OMA}$

$\frac{[\text{No. of residential assessments (Q13)} + \text{No. of non-residential assessments (Q14)}] \times \text{No. of connected properties per assessment}}{\text{No. of connected properties per assessment}}$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 \$233 to \$570 per connected property. Results for the previous 5 years are also shown.
2. The Statewide median operating cost per connected property is \$430 [National Median is \$405]. Refer also to Table 5 on page 116, Table 16 on page 195, graph 26 on page 211, figure 50 on page 115 and pages 21, 23 and 27.
3. For general notes see page 32.

Figure 63: Operating cost (OMA) per 100 km of main - sewerage

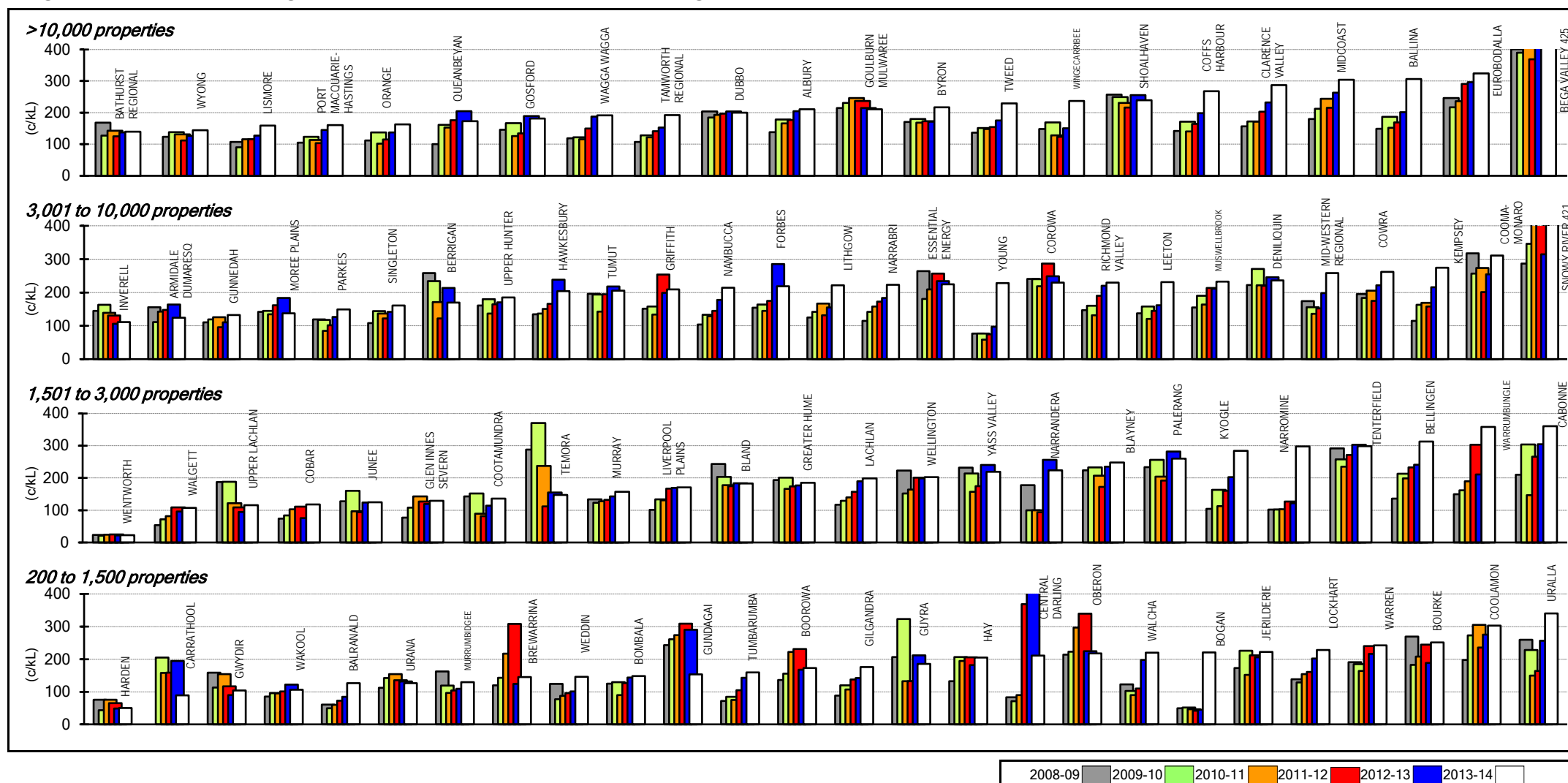


**Parameter:**  $\text{Management Expenses (S1) + Total Operations and Maintenance Expenses (S2)}$   
 $[\text{Length of Reticulation Mains (Q7) + Length of Rising Mains (Q8)}] \times 10$

**Notes:**

1. This figure shows ranked values of the 2013-14 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 \$0.83M to \$2.31M per 100 km of sewer main. Results for the previous 5 years are also shown.
2. The Statewide median operating cost is \$1.73M per 100 km of sewer main. Refer also to Table 16 on page 195 and Table 18 on page 201.
3. For general notes see page 32.

Figure 64: Operating cost (OMA) per kL - sewerage



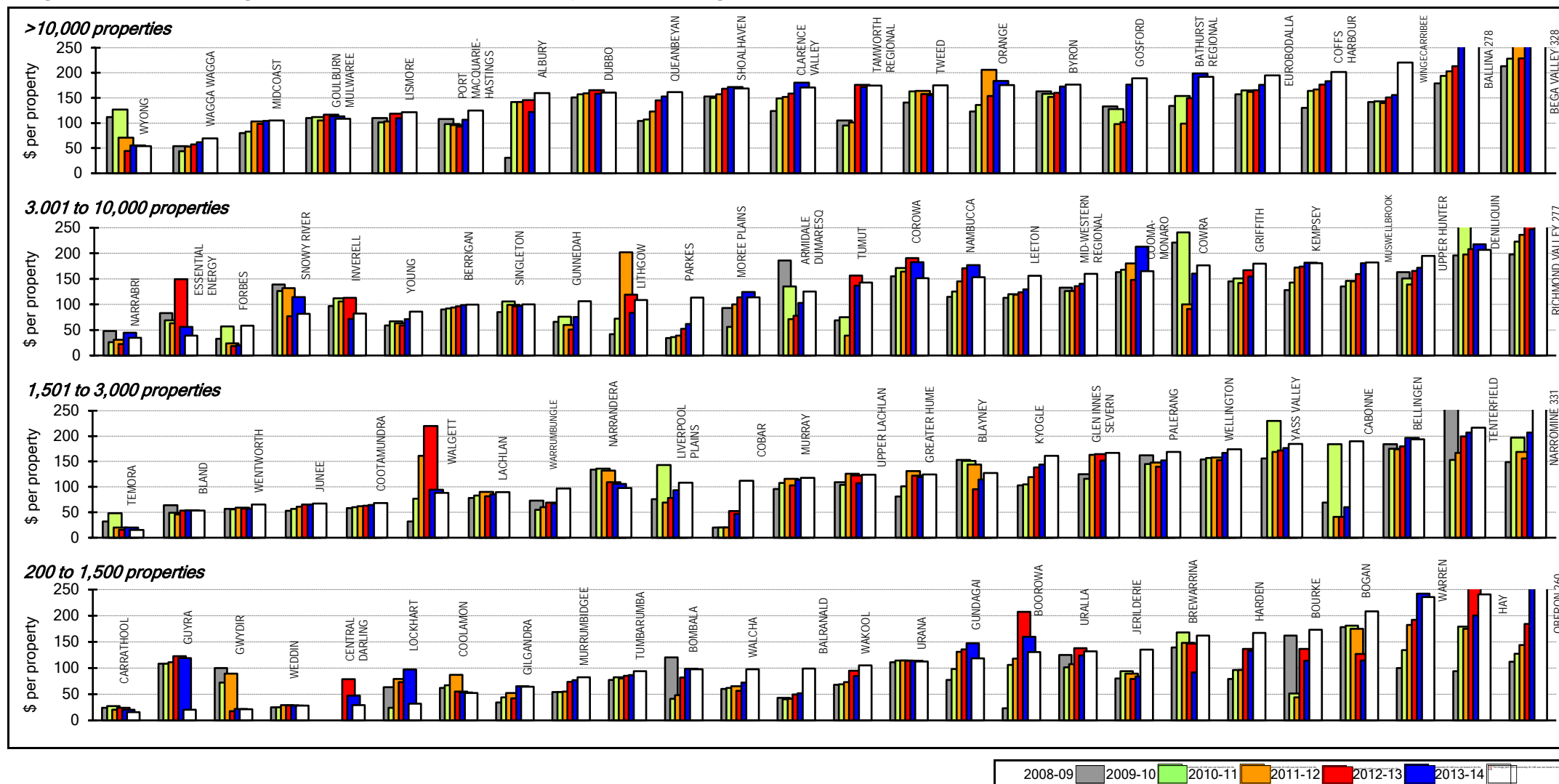
**Parameter:** Management Expenses (S1) + Total Operations and Maintenance Expenses (S2)

Volume of Sewage Treated (Secondary Treatment) (STW Q18) x 10

#### Notes:

1. This figure shows ranked values of the 2013-14 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 111c/kL to 421c/kL. Results for the previous 5 years are also shown.
2. The Statewide median operating cost is 206c/kL. Refer also to Table 7 on page 146.
3. For general notes see page 32.

Figure 65: Management cost per property - sewerage



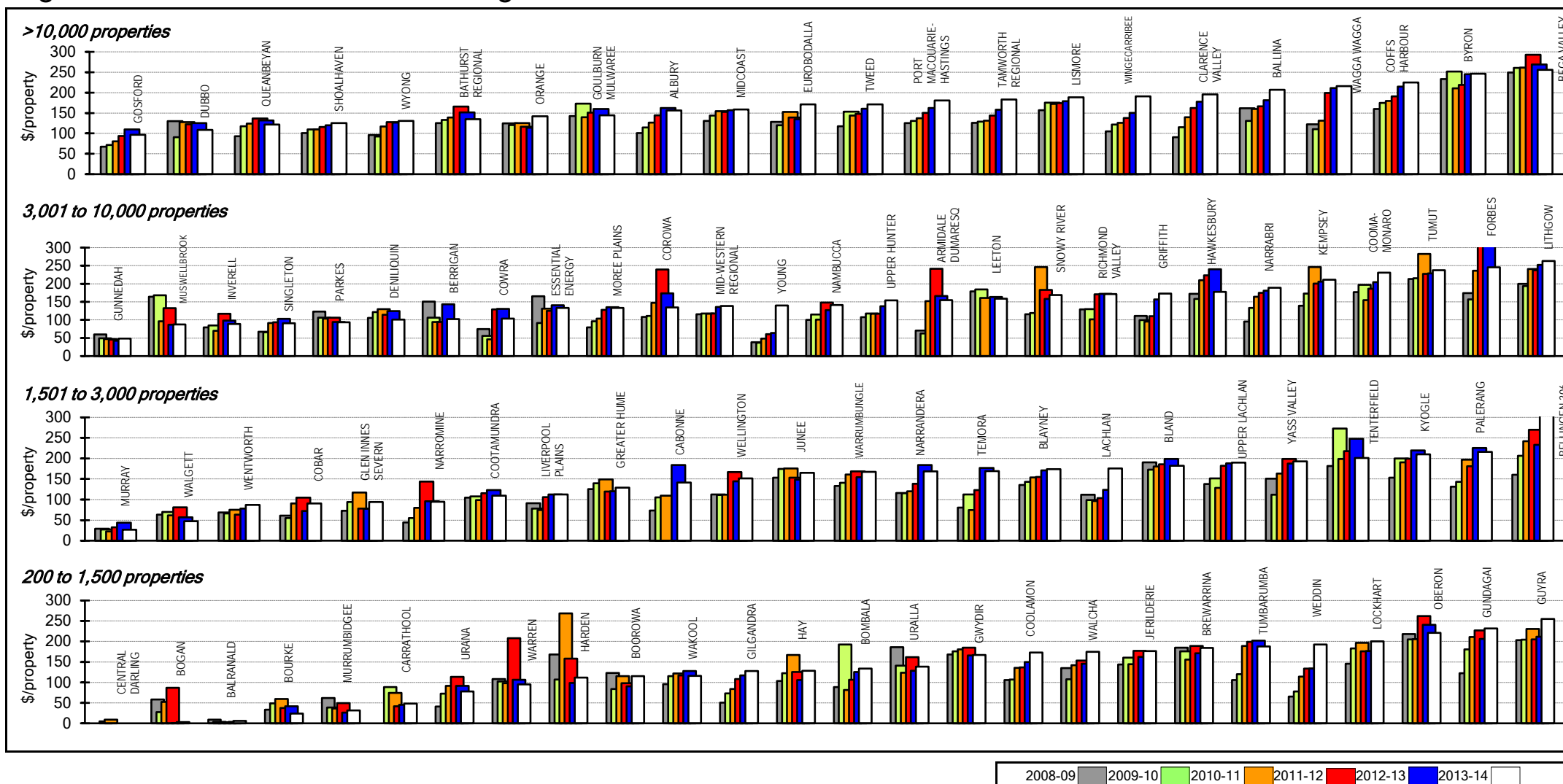
Parameter: Administration cost (S1a) + engineering cost (S1b)

[No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

#### Notes:

1. This figure shows ranked values of the 2013-14 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 2013-14 management costs for the 26 LWUs shown ranges from \$35 to \$277. Results for the previous 5 years are also shown.
2. The Statewide median management cost is \$161 per connected property. Refer also to Table 16 on page 195.
3. For general notes see page 32.

Figure 66: Treatment cost - sewerage



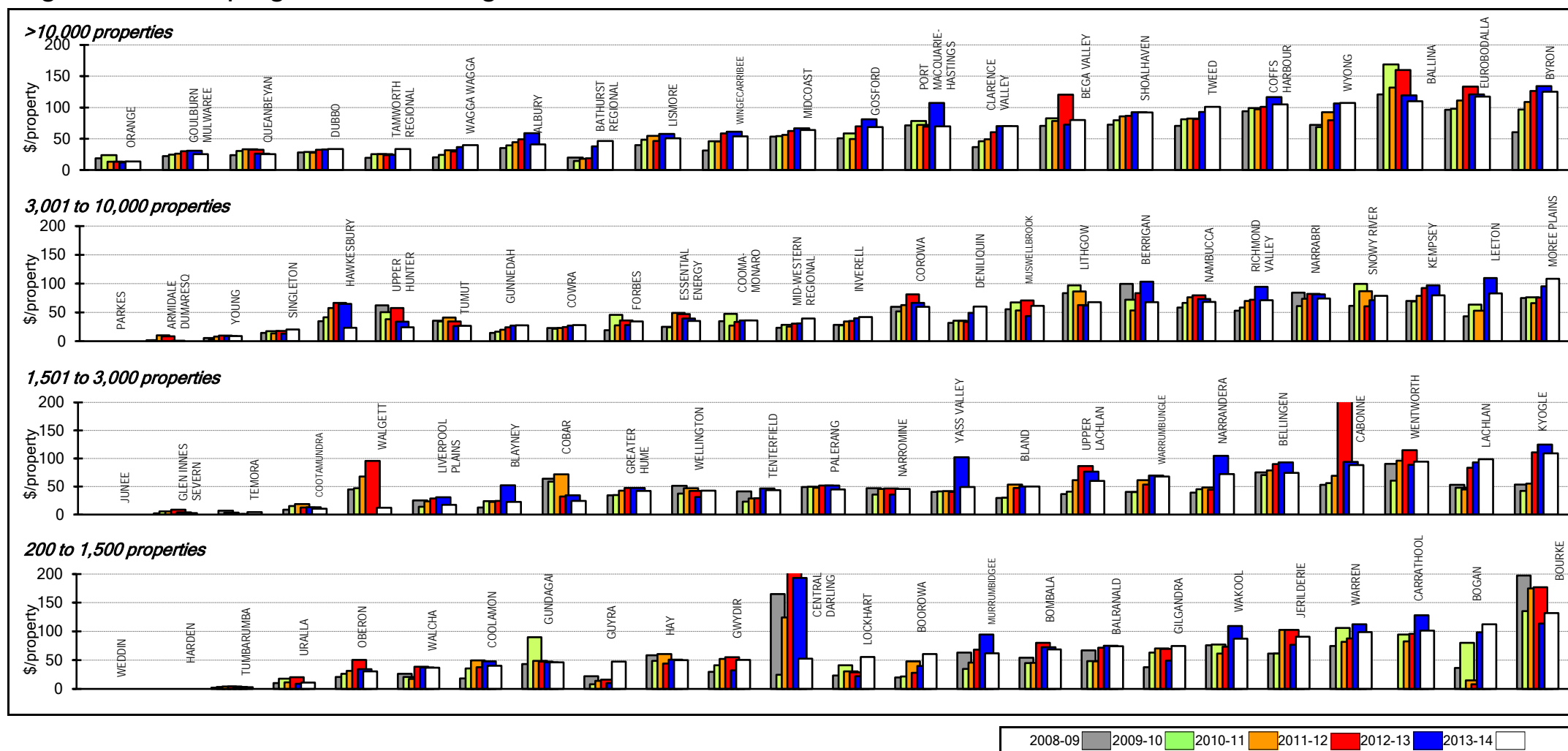
**Parameter** Treatment Operation Expenses (S2f) + Treatment Chemical Cost (S2g) + Energy Cost (S2h) + Treatment Maintenance Expenses (S2k)

[No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

#### Notes:

1. This figure shows ranked values of the 2013-14 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 2013-14 sewerage treatment cost for the 27 LWUs shown ranges from \$50 to \$263 per connected property. Results for the previous 5 years are also shown.
2. The Statewide median sewerage treatment cost is \$155 per connected property. Refer also to pages 21, 23, 27 and Table 18 on page 201.
3. For general notes see page 32.

Figure 67: Pumping cost - sewerage



**Parameter:** Pumping station operation expenses (S2c) + energy cost (S2d) + treatment cost (S2e)

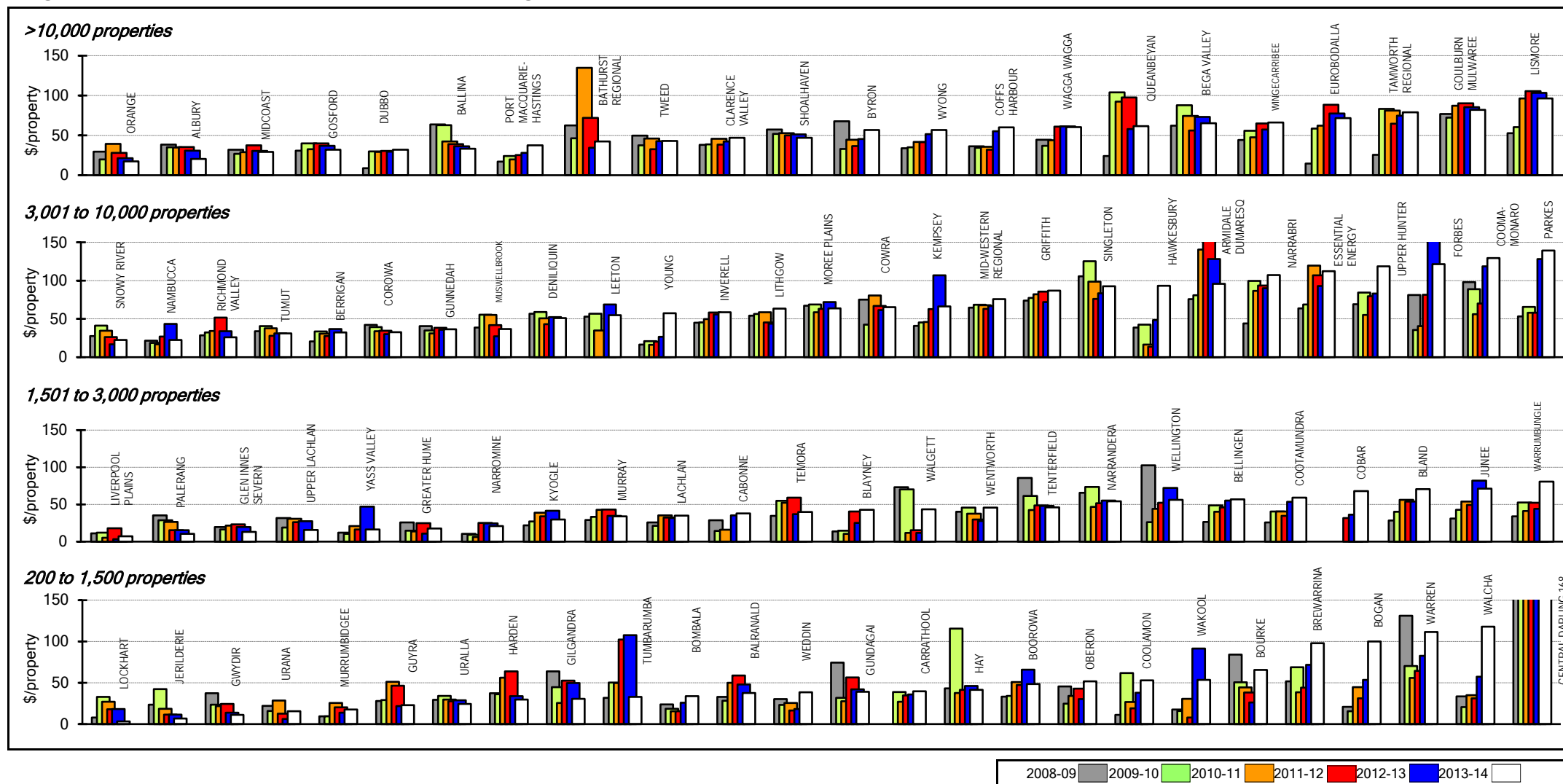
[No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 sewerage pumping cost for the 26 LWUs shown ranges from \$0 to \$110 per connected property. Results for the previous 5 years are also shown.
2. The Statewide median pumping cost is \$68 per connected property. Refer also to Table 18 on page 201.
3. For general notes see page 32.



Figure 68: Sewer main cost - sewerage



**Parameter:** Sewer main operation cost (S2a) + sewer main maintenance cost (S2b)

[No. of residential assessments (Q13) + No. of non-residential assessments (Q14) x No. of connected properties per assessment]

**Notes:**

1. This figure shows ranked values of the 2013-14 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 2013-14 sewer main cost for the 27 LWUs shown ranges from \$22 to \$139 per connected property. Results for the previous 5 years are also shown.
2. The Statewide median sewer main cost is \$47 per connected property. Refer also to Table 18 on page 201.
3. For general notes see page 32.

10. Tables

Table 1: NSW water supply statewide performance indicators 2013-14

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

NWI No.	NSW No.	UTILITY CHARACTERISTICS	20%	Statewide Median (50%)	80%		National Median Utilities with >10,000 props
	3	Residential connected properties (% of total)	95	91	88		
	4	New Residential Dwellings Connected to Water Supply (%)	1.3	0.9	0.4		
A3	5	Properties Served per km of Main	52	32	24	A3	35
	6	Rainfall (% of average annual rainfall)	93	77	65		
W11	7	Total Urban Water Supplied (at Master Meters - ML)	14,800	6,800	3,000	W11	10,280
	8	Peak Week to Average Consumption (%)	128	152	211		
	9	Renewals Expenditure (% of current replacement cost of system assets)	0.9	0.5	0.3		
	10	Employees (employees per 1000 properties)	1.2	1.5	1.9		
SOCIAL - Charges/Bills							
P1.3	12a	Residential Water Usage Charge (c/kL for 2013-14)	250	208	145	P1.3	185
	12	Residential Water Usage Charge (c/kL for 2014-15)	256	213	152		
P3	14a	Typical Residential Bill (\$/assessment for 2013-14)	474	550	654	P3	567
	14	Typical Residential Bill (\$/assessment for 2014-15)	502	582	686		
	15a	Typical Developer Charge (\$/equivalent tenement for 2013-14)	8,800	5,500	2,900		
	15	Typical Developer Charge (\$/equivalent tenement for 2014-15)	8,600	5,500	3,300		
F4	16	Residential Revenue from Usage Charges (% of residential revenue)	77	73	65	F4	68
F5	17	Revenue per property - Water (\$)	1,015	795	694	F5	849
SOCIAL - Health							
	18	Water Supply Coverage (% of Urban Population with reticulated WS)	100	99.6	97.3		
	19	Physical Water Quality Compliance (%)	100	100	98.5		
	19a	Chemical Water Quality Compliance (%)	100	100	100		
	20	Microbiological (E. coli) Water Quality Compliance (%)	100	100	99.7		
H3	20a	Percent Population with Microbiological Compliance	100	100	100	H3	100
SOCIAL - Levels of Service							
C9	25	Water Quality Complaints (per 1000 properties)	0.2	3.1	11	C9	1.7
C10	26	Water Service Complaints (per 1000 properties)	0.3	5.6	28	C10	0.7
C17	27	Incidence of unplanned interruptions (per 1000 properties)	3	50	72	C17	96
C15	28	Average Duration of Interruption (minutes)	110	150	200	C15	113
A8	30	Number of Main Breaks (per 100 km of main)	8	10	20	A8	13
	31	Drought Water Restrictions (% of time)	0	0	100		
	32	Total Days Lost (%)	0	3	4		
ENVIRONMENTAL							
W12	33	Average Annual Residential Supplied (kL/property)	155	173	281	W12	185
	33a	Average Annual Residential Supplied - COASTAL (kL/property)	148	157	169		
	33b	Average Annual Residential Supplied - INLAND (kL/property)	183	263	359		
	33c	Peak Day Water Supplied (kL/d/connected property)	1.0	1.4	2.5		
	33d	Total Urban Recycled Water Supplied (ML)	58	390	567		
A10	34	Real Loss (leakage) (L/service connection/d)	50	70	110	A10	79
	34a	Non Revenue Water (NRW) (L/service connection/d)	66	101	146		
	35	Energy Consumption (kWh/ML)	420	620	790		
	36	Renewable Energy Consumption (% of Total Energy)	6.0	0.0	0.0		
E12	36a	Net Greenhouse Gas Emissions - WS & Sge (net tonnes CO2 - equivalents/1000props)	310	370	440	E12	390
ECONOMIC - Financial							
	42	Current Replacement Cost per Assessment - Water (\$)	20,400	16,500	12,200		
F17	43	Economic Real Rate of Return - Water (%)	2.4	1.2	0.7	F17	1.9
	44	Return on Assets - Water (%)	2.5	1.1	0.0		
F9/C4	44a	Written Down Replacement Cost - Water (\$/property)	14,500	9,900	7,500		8,029
F22	45	Net Debt to Equity - WS & Sge(%)	10	1.0	-7	F22	11
F23	46	Interest Cover - WS & Sge	>100	4	1	F23	2
	47	Loan Payment - Water (\$/property)	248	64	0		
F30	47a	Net Profit After Tax Ratio - WS & Sge (%)	21	9	-5	F30	8
F24	47b	Net Profit After Tax - WS & Sge (\$'000)	9,310	1,180	-700	F24	5,345
ECONOMIC - Efficiency							
	48	Operating Cost (OMA) per 100 km of Main (\$'000)	860	1,290	1,810		
F11	49	Operating Cost (OMA) per property (\$/property)	330	400	530	F11	439
	50	Operating Cost (OMA) per kL (c/kL)	89	126	162		
	51	Management Cost (\$/property)	105	140	186		
	52	Treatment Cost (\$/property)	37	58	137		
	53	Pumping Cost (\$/property)	14	43	69		
	54	Energy Cost (\$/property)	12	25	50		
	55	Water Main Cost (\$/property)	49	74	101		
F28	56	Capital Expenditure - Water Supply (\$/property)	305	181	101	F28	175

Notes:

1. The above NSW performance indicators are Statewide Percentiles which are calculated on a percentage of connected properties basis as this best reveals statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs.
2. 20% is the top 20% of properties, Median (50%) is the median of properties (Statewide) and 80% is the bottom 20% of properties.
3. To compare the performance of one LWU with other LWUs, the calculation of percentiles on a percentage of LWUs basis is the most appropriate. Percentiles (on a percentage of LWUs basis) are shown on the Table on page 279 of Appendix C.
4. National Medians are from the National Performance Report 2013-14 which shows the performance indicators for 67 Australian urban water utilities providing reticulated water supply services to >10,000 properties [Note 14 on page 35]. The 7 bulk supply utilities are excluded.

Table 2. NSW sewerage statewide performance indicators 2013-14

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

NWI No.	NSW No.	UTILITY CHARACTERISTICS	20%	Statewide Median (50%)	80%		National Median Utilities with >10,000 props
	3	Residential connected properties (% of total)	95	93	90		
	4	New Residential Dwellings Connected to Sewerage (%)	1.9	1.0	0.4		
A6	5	Properties Served per km of Main	51	38	34	A6	41
W18	6	Volume of Sewage Collected (ML)	14,800	4,600	1,200	W18	5,723
	7	Renewals Expenditure (% of current replacement cost of system assets)	1.1	0.5	0.3		
	8	Employees (per 1000 properties)	1.2	1.6	2.1		
SOCIAL - Charges/Bills							
P4.1	11a	Residential Access Charge for 2013-14 (\$/assessment)	475	625	738	P4.1	573
	11	Residential Access Charge for 2014-15 (\$/assessment)	470	669	781		
P6	12a	Typical Residential Bill for 2013-14 (\$/assessment)	456	625	738	P6	683
	12	Typical Residential Bill for 2014-15 (\$/assessment)	470	669	791		
	13a	Typical Developer Charge for 2013-14 (\$/equivalent tenement)	9,100	4,700	2,800		
	13	Typical Developer Charge for 2014-15 (\$/equivalent tenement)	9,300	5,100	2,000		
	14	Non-residential sewer usage charge (c/kL)	211	136	100		
F6	15	Revenue per property - Sge (\$)	1,111	846	634	F6	938
SOCIAL - Health							
	16	Sewerage Coverage (% of Urban Population with Reticulated Sge Service)	99.5	97.9	94.0		
E3	17	Percent of sewage treated to a tertiary level (%)	100	97.5	25.6	E3	91
E4	18	Percent of sewage volume treated that was compliant (%)	100	100.0	82.6	E4	100
SOCIAL - Levels of Service							
	21	Odour Complaints (per 1000 properties)	0.0	1.0	1.9		
C11	22	Sewerage Service Complaints (per 1000 properties)	2	8	20	C11	1.0
C16	23a	Average Sewerage Interruption (min)	60	109	150	C16	105
	25	Total Days Lost	0.0	2.9	4.2		
ENVIRONMENTAL							
W19	26	Volume of Sewage Collected per property (kL)	250	221	175	W19	204
W26	26a	Total recycled water supplied (ML)	2,470	630	60	W26	1,638
W27	27	Recycled Water (% of effluent recycled)	57	12	2	W27	17
E8	28	Biosolids Reuse (%)	100	100	0	E8	100
	30	Energy Consumption - sewerage (kWh/ML)	630	770	1,090		
	31	Renewable Energy Consumption (% of total energy consumption)	0.0	0.0	0.0		
E12	32	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 propertie	310	370	440	E12	390
	33	90th 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		
A14	36	Sewerage Main Breaks and Chokes (per 100 km of main)	9	37	74	A14	20
	37a	Sewer Overflows (per 100 km of main)	2	13	33		
E13	37b	Sewer Overflows Reported to Environmental Regulator (per 100 km of main)	0.0	0.8	1.6	E13	0.4
	39	Non-residential percentage of sewage collected (%)	30	21	15		
ECONOMIC - Financial							
	43	Revenue from Non-residential and Trade Waste Charges (% of total rates & charges)	25	18	13		
	44	Revenue from Trade Waste Charges (% of total rates & charges)	5	2	1		
	45	Current Replacement Cost of Fixed Sewerage Assets (\$/assessment)	24,000	16,700	13,900		
F18	46	Economic Real Rate of Return - sewerage (%)	2.8	1.5	0.0	F18	2.6
	46a	Return on Assets - sewerage (%)	2.6	1.3	-0.2		
F10/C8	46b	Written Down Replacement Cost - sewerage (\$/property)	19,000	11,700	8,100		9,512
F22	47	Net Debt to Equity - WS & Sge (%)	10	1.0	-7	F22	11
F23	48	Interest Cover - WS & Sge	>100	4	1	F23	2
	48a	Loan Payment - sewerage (\$/property)	316	90	18		
F24	48b	Net Profit After Tax - WS & Sge (\$'000)	9,310	1,180	-700	F24	5,345
ECONOMIC - Efficiency							
	49	Operating Cost - sewerage (OMA) per 100 km of Main (\$'000)	1,380	1,730	2,120		
F12	50	Operating Cost - sewerage (OMA) per property (\$/property)	350	430	500	F12	405
	51	Operating Cost - sewerage (OMA) per kL (c/kL)	160	206	262		
	52	Management Cost - sewerage (\$/property)	99	161	185		
	53	Treatment Cost - sewerage (\$/property)	116	155	190		
	54	Pumping Cost - sewerage (\$/property)	34	68	99		
	55	Energy Cost - sewerage (\$/property)	34	42	58		
	56	Sewer Main Cost (\$/property)	31	47	66		
F29	57	Capital Expenditure - sewerage (\$/property)	456	193	108	F29	227

Notes:

1. The above NSW performance indicators are Statewide Percentiles which are calculated on a percentage of connected properties basis as this best reveals statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs.
2. 20% is the top 20% of properties, Median (50%) is the median of properties (Statewide) and 80% is the bottom 20% of properties.
3. To compare the performance of one LWU with other LWUs, the calculation of percentiles on a percentage of LWUs basis is the most appropriate. Percentiles (on a percentage of LWUs basis) are shown on the Table on page 280 of Appendix C.
4. National Medians are from the National Performance Report 2013-14 which shows the performance indicators for 66 Australian urban water utilities providing reticulated sewerage services to >10,000 connected properties [Note 14 on page 35].

Table 2A. NSW water supply and sewerage statewide performance indicators 2013-14

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

NWI No.	NSW No.	UTILITY CHARACTERISTICS	20%	Statewide Median (50%)	80%		National Median Utilities with >10,000 props
	1	Employees - WS & Sge (employees per 1000 properties)	2.4	3.1	4.0		
SOCIAL - Charges/Bills							
P8	2	Typical Residential Bill - WS & Sge for 2013-14 (\$/assessment)	930	1,175	1,392	P8	1,234
	2a	Typical Residential Bill - WS & Sge for 2014-15 (\$/assessment)	972	1,251	1,477		
	3	Typical Developer Charge - WS & Sge for 2013-14 (\$/equivalent tenement)	17,900	10,200	5,700		
	3a	Typical Developer Charge - WS & Sge for 2014-15 (\$/equivalent tenement)	17,900	10,600	5,300		
SOCIAL - Levels of Service							
C12	4	Billing and account complaints - WS & Sge (per 1000 properties)	0.1	0.7	2.4	C12	0.5
C13	5	Total Water and Sewerage complaints (no. per 1000 properties)	5	21	68	C13	6
C18	6	Customer Restrictions for Non Payment of Bill - WS & Sge (per 1000 properties)	0.0	0.0	0.8	C18	1.0
ENVIRONMENTAL							
E12	7	Net Greenhouse Gas Emissions - WS & Sge (net tonnes CO2 - equivalents/1000props)	310	370	440	E12	390
ECONOMIC - Financial							
F1+F2	8	Total Revenue - WS & Sge (\$'000)	82,900	36,600	11,400	F1+F2	59,302
F3	9	Total income for whole of utility- WS & Sge (\$'000)	79,900	33,900	9,800	F3	65,164
F5+F6	10	Total Revenue per property - WS & Sge (\$/property)	2,130	1,640	1,330	F5+F6	1,787
F7	11	Total income for whole of utility - WS & Sge (\$/property)	1,920	1,590	1,330	F7	1,718
F8	12	Revenue from Community Service Obligations (%)	1.6	1.3	0.9	F8	1.7
	13	Current Replacement Cost per Assessment - WS & Sge (\$)	44,400	33,200	26,100		
F19	14	Economic Real Rate of Return - WS & Sge (%)	2.4	1.3	0.2	F19	2.2
	15	Return on Assets - WS & Sge (%)	2.4	0.9	-0.1		
F22	16	Net Debt to Equity - WS & Sge(%)	10	1.0	-7	F22	11
F23	17	Interest Cover - WS & Sge	>100	4	1	F23	2.0
F24	18	Net Profit After Tax (NPAT) - WS & Sge (\$'000)	9,310	1,180	-700	F24	5,345
F30	19	NPAT Ratio - WS & Sge (%)	21	9	-5	F30	8
ECONOMIC - Efficiency							
F13	20	Operating Cost - WS & Sge (OMA) (\$/property)	680	830	1,030	F13	902
	21	Management Cost (\$/property)	204	301	371		
F16	22	Capital Expenditure - WS & Sge (\$'000)	26,400	10,000	3,200	F16	18,517
F28+F29	23	Capital Expenditure - WS & Sge (\$/prop)	761	374	209	F28+F29	402

- Notes
1. The above NSW performance indicators are Statewide Percentiles which are calculated on a percentage of connected properties basis as this best reveals statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs.
  2. 20% is the top 20% of properties, Median (50%) is the median of properties (Statewide) and 80% is the bottom 20% of properties.
  3. To compare the performance of one LWU with other LWUs, the calculation of percentiles on a percentage of LWUs basis is the most appropriate. Percentiles (on a percentage of LWUs basis) are shown on the Table on pages 279 and 280 of Appendix C.
  4. National Medians are from the National Performance Report 2013-14 which shows the performance indicators for 62 Australian urban water utilities providing reticulated water supply and sewerage services to >10,000 properties [Note 14 on page 35].
  5. Bulk supply utilities and single service utilities are excluded.



Table 3: 2013-14 best-practice management implementation

WATER UTILITY (sorted on connected properties)		WATER SUPPLY & SEWERAGE REVENUE (\$M)	WATER SUPPLY											SEWERAGE										
			IMPLEMENTATION OF BPM REQUIREMENTS (see Note 1)											IMPLEMENTATION OF BPM REQUIREMENTS (see Note 1)										
			(1) Strategic Business Plan	(2) Pricing and Developer Charges (Yes/No)					(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2) Pricing and Developer Charges (Yes/No)						(3)	(4)	(7)
Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Appropriate Residential Charges	(2c) Revenue from Residential Usage Charges >=75% (Note 8)	(2d) Appropriate Non-Residential Charges	(2e) DSP with Commercial Developer Charges	Sound Water Conservation Plan implemented (Yes/No)	Sound Drought Management Plan implemented (Yes/No)	Complete performance Reporting by 15 September each year (Yes/No)	Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall implementation of all 10 requirements (Note 2) (%)	Proposed Dividend from Surplus \$'000	Complete Current 20 to 30-year SBP & FP (Yes/No)	(2a) Full cost-recovery, minimal cross subsidies	(2b) Appropriate Residential Charges	(2c) Appropriate Non-Residential Charges	(2d) Appropriate Trade Waste Fees & Charges	(2e) DSP with commercial developer charges	(2f) Liquid trade waste regulation policy and approvals implemented	Complete performance Reporting by 15 September each year (Yes/No)	Integrated Water Cycle Management Strategy Commenced (Yes/No)	Overall implementation of all 9 requirements (Note 3) (%)	Proposed Dividend from Surplus \$'000		
LWUs with >10,000 Properties																								
1	Gosford	88.7	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	1,420	Yes+	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
2	Wyong	80.2	Yes*	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
3	Shoalhaven	63.6	Yes+	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesC	100		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
4	Rous (Bulk Supplier) (NO SGE)	22.5	Yes*	Yes			Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
5	MidCoast	69.2	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	940	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
6	Tweed	68.1	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
7	Port Macquarie-Hastings (Unfiltered)	62.1	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	YesE	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
8	Riverina (Groundwater) (NO SGE)	27.3	Yes	Yes	Yes	Yes		Yes	Yes	Yes	YesC	90												
9	Wagga Wagga (NO WS)	16.6												Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		
10	Coffs Harbour	47.7	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	83	Yes+	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	YesC	100	
11	Albury City	36.8	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
12	Fish River WS (Bulk Supplier, No Sge)	10.0	Yes*	Yes				Yes	Yes	Yes		83												
13	Tamworth Regional	43.1	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
14	Clarence Valley	30.4	Yes+	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90	133	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
15	Eurobodalla	34.3	Yes+	Yes	Yes	Yes**	Yes	Yes	Yes	Yes	YesC	100		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
16	Wingecarribee	28.3	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
17	Queanbeyan (Reticulator)	31.5	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	YesE	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
18	Dubbo	32.0	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	100	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
19	Orange	27.3	Yes*	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
20	Goulburn Mulwaree	20.9	Yes	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
21	Bathurst Regional	25.6	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
22	Lismore (Reticulator)	21.6	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesC	100	80	Yes	Yes	Yes		Yes	Yes	Yes*	Yes	YesC	89	
23	Bega Valley (Unfiltered)	26.8	Yes*	Yes*	Yes		Yes	Yes	Yes		Yes	80		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
24	Ballina (Reticulator)	26.8	Yes+	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
25	Kempsey (Groundwater)	18.1	Yes+	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90		Yes+	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
26	Essential Energy	21.3	Yes+	Yes*	Yes	Yes*	Yes	Yese	Yes	Yes	YesC	100	100	Yes+	Yes*	Yes	Yes	Yes	Yese	Yes*	Yes	YesC	100	
27	Byron (Reticulator)	24.4	Yes*	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
28A	Goldenfields (Reticulator) (NO SGE)	13.5	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes		90												
28B	Goldenfields (Bulk) (NO SGE)	4.9	Yes*	Yes			Yes	Yes	Yes	Yes		86												
% of LWUs 'Yes' (>10,000 connected properties)			100%	100%	100%	64%	96%	96%	100%	96%	100%	89%	94% Overall	100%	100%	100%	96%	100%	100%	100%	100%	100%	Overall	
LWUs with 3,001 - 10,000 Properties																								
29	Armidale Dumaresq	13.9	Yes*	Yes	Yes	Yes		Yes	Yes	Yes	Yes	90	100	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	Yes	89	
30	Griffith	16.1	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
30A	Hawkesbury (NO WS)	5.4												Yes*	Yes*	Yes	Yes	Yes	Yes*	Yes	Yes		89	
31	Lithgow	13.5	Yes*	Yes	Yes	Yes	Yes		Yes	Yes	YesE	90		Yes*	Yes	Yes	Yes	Yes		Yes	Yes	YesE	89	
32	Mid-Western Regional	12.8	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	100	Yes*	Yes	Yes	Yes		Yes		Yes	Yes	78	
33	Richmond Valley	12.7	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes+	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	YesC	100	
34	Nambucca (Groundwater)	9.4	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
35	Singleton	9.5	Yes*	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesE	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
36	Parkes	9.7	Yes+	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90	70	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
37	Inverell	6.7	Yes*	Yes	Yes		Yes	Yes	Yes	Yes		70		Yes*	Yes	Yes			Yes	Yes	Yes		67	
38	Moree Plains (Groundwater)	9.2	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
39	Cowra	8.6	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
40	Central Tablelands (NO SGE)	5.2	Yes	Yes	Yes		Yes	Yes	Yes	Yes	YesC	90	100											
41	Muswellbrook	11.4	Yes+	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	YesC	100		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
42	Corowa	8.1	Yes+	Yes	Yes	Yes	Yes		Yes	Yes	YesC	90		Yes+	Yes	Yes	Yes	Yes		Yes	Yes	YesC	89	
43	Tumut	6.8	Yes*	Yes	Yes		Yes	Yes	Yes	Yes	YesE	90		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
44	Gunnedah (Groundwater)	6.7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	100	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	YesC	100	
45	Upper Hunter	7.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
46	Narrabri (Groundwater)	8.0	Yes*	Yes	Yes		Yes	Yes	Yes	Yes		80		Yes*	Yes	Yes		Yes	Yes	Yes	Yes		78	
47	Bellingen (Unfiltered)	5.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100
48	Leeton	5.6	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	90	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
49	Young (Reticulator)	6.0	Yes	Yes*	Yes		Yes	Yes	Yes	Yes	Yes	90		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	89	

Table 3: 2013-14 best-practice management implementation

WATER UTILITY (sorted on connected properties)		WATER SUPPLY & SEWERAGE REVENUE  (\$M)	WATER SUPPLY											SEWERAGE											
			IMPLEMENTATION OF BPM REQUIREMENTS (see Note 1)											IMPLEMENTATION OF BPM REQUIREMENTS (see Note 1)											
			(1) Strategic Business Plan  Complete Current 20 to 30-year SBP & FP (Yes/No)	(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)	(7) Overall implementation of all 10 requirements (Note 2) (%)	(8) Proposed Dividend from Surplus \$'000	(1) Strategic Business Plan  Complete Current 20 to 30-year SBP & FP (Yes/No)	(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)	(7) Overall implementation of all 9 requirements (Note 3) (%)	(8) Proposed Dividend from Surplus \$'000
(2a) Full cost- recovery, minimal cross subsidies	(2b) Appropriate Residential Charges	(2c) Revenue from Residential Usage Charges >=75% (Note 8)	(2d) Appropriate Non- Residential Charges	(2e) DSP with Commercial Developer Charges	(2f) Liquid trade waste regulation policy and approvals implemented	(2a) Full cost- recovery, minimal cross subsidies	(2b) Appropriate Residential Charges	(2c) Appropriate Non- Residential Charges	(2d) Appropriate Trade Waste Fees & Charges	(2e) DSP with commercial developer charges	(2f) Liquid trade waste regulation policy and approvals implemented														
50	Cooma-Monaro	6.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
51	Forbes	5.0	Yes*	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	
52	Snowy River (Unfiltered)	6.6	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	YesC	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
53	Berrigan (Dual Supply)	4.7	Yes*	Yes	Yes	Yes*		Yes	Yes	Yes	Yes		80		Yes*	Yes	Yes			Yes		Yes		56	
54	Deniliquin	5.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
55	Warrumbungle	4.0	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	YesE	90		Yes	Yes*	Yes	Yes		Yes	Yes	Yes	YesE	89	
56	Yass Valley	5.3	Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
% of LWUs 'Yes' (3,001 - 10,000 connected properties)			100%	100%	100%	75%	86%	93%	100%	100%	100%	89%	94%	Overall	100%	100%	100%	81%	85%	93%	93%	100%	85%	93%	Overall
LWUs with 1,501 - 3,000 Properties																									
57	Wellington	4.7	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes*		Yes	Yes	Yes	Yes	Yes	Yes	YesC	89	
58	Cootamundra (Reticulator)	3.6	Yes*	Yes	Yes	Yes	Yes	Yes		Yes	Yes		80		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes		89	
59	Lachlan	4.0	Yes*	Yes*	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	Yes	100		Yes*	Yes*	Yes	Yes	Yes	Yes*	Yes	Yes	Yes	100	
60	Glen Innes Severn	3.2	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
61	Liverpool Plains	4.1		Yes	Yes		Yes	Yes	Yes	Yes	Yes	YesE	80			Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	89	
62	Narromine (Groundwater)	2.7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
63	Narrandera (Groundwater)	2.9	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		80		Yes*	Yes	Yes	Yes		Yes	Yes	Yes		67	
65	Murray (Dual Supply)	4.1	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
67	Cobar	3.8	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
66	Cobar WB	4.2	Yes*	Yes*							Yes		43												
68	Tenterfield	3.6	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	YesC	90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
69	Temora (NO WS)	0.7													Yes*	Yes	Yes	Yes			Yes	Yes		56	
70	Kyogle	2.4	Yes*	Yes*	Yes		Yes	Yes	Yes	Yes	Yes	YesC	90		Yes*	Yes	Yes	Yes	Yes	YesE	Yes	Yes	YesC	100	
71	Palerang	4.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		90		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		89	
72	Bland (NO WS)	1.2													Yes*	Yes	Yes		Yes	Yes	Yes	Yes		78	
73	Upper Lachlan	3.0	Yes*	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	90		Yes*	Yes	Yes	Yes		Yes	Yes	Yes	Yes	89	
74	Wentworth (Dual Supply)	3.7	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes*	Yes	Yes		Yes	Yes	Yes	Yes	YesE	89	
75	Coonamble (Groundwater)	1.6	Yes*	Yes	Yes	Yes	Yes	YesE		Yes	Yes		80		Yes*	Yes	Yes	Yes		YesE		Yes		67	
76	Harden (Reticulator)	2.8	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		90		Yes*	Yes	Yes	Yes	Yes	Yes*		Yes		78	
79	Walgett (Dual Supply)	2.4		Yes*	Yes	Yes	Yes		Yes	Yes	Yes	YesE	80			Yes	Yes				Yes	Yes	YesE	56	
80	Greater Hume	2.8	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesE	100	
% of LWUs 'Yes' (1,501 - 3,000 connected properties)			89%	100%	95%	79%	89%	84%	84%	95%	100%	68%	88%	Overall	94%	94%	100%	89%	78%	89%	83%	100%	61%	88%	Overall
LWUs with 200 - 1,500 Properties																									
77	Juneë (NO WS)	0.7													Yes*		Yes				Yes	Yes		44	
78	Blayney (NO WS)	1.5													Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	YesC	100	
81	Gwydir	2.2	Yes+	Yes	Yes	Yes	Yes		Yes	Yes	Yes	YesC	90		Yes+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	89	
83	Oberon (Reticulator)	2.1	Yes	Yes*	Yes	Yes			Yes	Yes	Yes	YesE	80		Yes	Yes*	Yes	Yes		Yes	Yes	Yes	YesE	89	
84	Gilgandra (Groundwater)	1.8	Yes*	Yes	Yes	Yes	Yes	YesE	Yes	Yes	Yes		90		Yes*	Yes*	Yes	Yes	Yes	YesE	Yes	Yes		89	
85	Uralla	1.4		Yes	Yes	Yes				Yes	Yes	YesC	60			Yes*	Yes	Yes	Yes			Yes	YesC	67	
86	Hay (Dual Supply)	2.0	Yes*	Yes*	Yes	Yes		YesE	Yes	Yes	Yes		80		Yes*	Yes	Yes	Yes		YesE	Yes	Yes		78	
87	Bourke (Dual Supply)	2.5	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes	Yes	Yes		Yes	YesE	Yes	Yes	YesC	89	
88	Wakool (Dual Supply)	2.2	Yes	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes		90		Yes	Yes	Yes	Yes		Yes*	Yes	Yes		56	
89	Bogan	2.4	Yes	Yes*	Yes	Yes	Yes	YesE	Yes	Yes	Yes	YesC	100		Yes	Yes	Yes	Yes	Yes	YesE	Yes	Yes	YesC	100	
90	Guyra	1.9	Yes*	Yes	Yes	Yes		YesE	Yes	Yes	Yes		80		Yes*	Yes	Yes		Yes	YesE	Yes	Yes		78	
91	Cabonne	2.5	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100		Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	YesC	100	
92	Carrathool (Groundwater)	2.0		Yes	Yes	Yes	Yes		Yes	Yes	Yes		70			Yes	Yes					Yes		33	
93	Tumbarumba	1.6	Yes*	Yes*	Yes	Yes	Yes	YesE	Yes	Yes	Yes	YesE	100		Yes*	Yes	Yes	Yes	Yes	YesE	Yes	Yes	YesE	100	
94	Gundagai	1.6	Yes*	Yes	Yes	Yes	Yes	Yes*	Yes	Yes	Yes		90		Yes*	Yes	Yes	Yes	Yes		Yes	Yes		67	
95	Weddin (NO WS)	0.4													Yes	Yes	Yes			Yes*	Yes*	Yes	YesC	78	
96	Warren (Dual Supply)	1.1	Yes	Yes*	Yes	Yes		YesE	Yes	Yes	Yes	YesC	90		Yes		Yes	Yes	Yes	YesE	Yes	Yes	YesC	89	
97	Bombala	1.0		Yes*	Yes					Yes	Yes	Yes	50			Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78	
98	Walcha	1.0	Yes*	Yes*	Yes	Yes	Yes				Yes	YesC	70		Yes*	Yes	Yes	Yes	Yes		Yes	Yes	YesC	89	
99	Coolamon (NO WS)	0.4													Yes*	Yes*	Yes			Yes		Yes		56	
100	Balranald (Dual Supply)	1.2	Yes*	Yes	Yes	Yes	Yes		Yes	Yes	Yes		80		Yes*		Yes	Yes	Yes			Yes		56	
101	Murrumbidgee (Groundwater)	0.7	Yes*	Yes*	Yes	Yes	Yes				Yes		60		Yes*						Yes	Yes		33	



Table 3: 2013-14 best-practice management implementation

WATER UTILITY (sorted on connected properties)		WATER SUPPLY & SEWERAGE REVENUE  (\$M)	WATER SUPPLY											SEWERAGE											
			IMPLEMENTATION OF BPM REQUIREMENTS (see Note 1)											IMPLEMENTATION OF BPM REQUIREMENTS (see Note 1)											
			(1) Strategic Business Plan  Complete Current 20 to 30-year SBP & FP (Yes/No)	(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)	(7) Overall implementation of all 10 requirements (Note 2) (%)	(8) Proposed Dividend from Surplus \$'000	(1) Strategic Business Plan  Complete Current 20 to 30-year SBP & FP (Yes/No)	(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)	(7) Overall implementation of all 9 requirements (Note 3) (%)	(8) Proposed Dividend from Surplus \$'000
(2a) Full cost- recovery, minimal cross subsidies	(2b) Appropriate Residential Charges	(2c) Revenue from Residential Usage Charges >=75% (Note 8)		(2d) Appropriate Non- Residential Charges	(2e) DSP with Commercial Developer Charges	(2a) Full cost- recovery, minimal cross subsidies	(2b) Appropriate Residential Charges	(2c) Appropriate Non- Residential Charges								(2d) Appropriate Trade Waste Fees & Charges	(2e) DSP with commercial developer charges	(2f) Liquid trade waste regulation policy and approvals implemented							
102	Lockhart (NO WS)	0.4													Yes	Yes	Yes	Yes			Yes	YesE	67		
103	Central Darling (Dual Supply)	2.8		Yes	Yes	Yes		Yes	Yes	Yes	Yes	80			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	78		
104	Boorowa	1.0	Yes	Yes*	Yes	Yes*		Yes	Yes	Yes	Yes	90		Yes	Yes	Yes		Yes	Yes	Yes*	Yes	Yes	89		
105	Brewarrina	1.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100		Yes	Yes	Yes			Yes	Yes	Yes	YesC	78		
106	Jerilderie (Dual Supply)	0.7	Yes*	Yes	Yes	Yes	Yes	Yes*			Yes	70		Yes*	Yes	Yes	Yes	Yes		Yes	Yes		78		
107	Urana (NO WS)	0.2												Yes*	Yes	Yes		Yes	Yes		Yes	YesE	67		
% of LWUs 'Yes' (200 - 1,500 connected properties)			82%	100%	100%	95%	64%	64%	77%	86%	100%	59%	83%	Overall	82%	86%	96%	61%	64%	64%	64%	100%	61%	75%	Overall
TOTAL 'YES' for large LWUs (>\$10M Revenue) <sup>6</sup>			33	33	31	22	29	31	33	32	33	31	19		30	30	30	28	29	29	29	30	30	26	
% of Large LWUs (33 WS LWUs and 30 SGE LWUs)			100%	100%	100%	67%	88%	94%	100%	97%	100%	94%	58%		100%	100%	100%	93%	97%	97%	97%	100%	100%	87%	
TOTAL 'YES' for remainder of LWUs (<\$10M Revenue) <sup>6</sup>			57	63	62	51	50	49	59	59	63	45	24		62	64	68	51	51	52	55	69	48	25	
% of Small LWUs (63 WS LWUs and 69 SGE LWUs)			90%	100%	100%	81%	79%	78%	94%	94%	100%	71%	38%		90%	93%	99%	74%	74%	75%	80%	100%	70%	36%	
TOTAL 'YES' for all LWUs			90	96	93	73	79	80	91	91	96	76	43		92	94	98	79	80	81	84	99	78	51	
% all LWUs			94%	100%	100%	78%	85%	83%	95%	95%	100%	79%	45%		93%	95%	99%	80%	81%	82%	85%	100%	79%	52%	

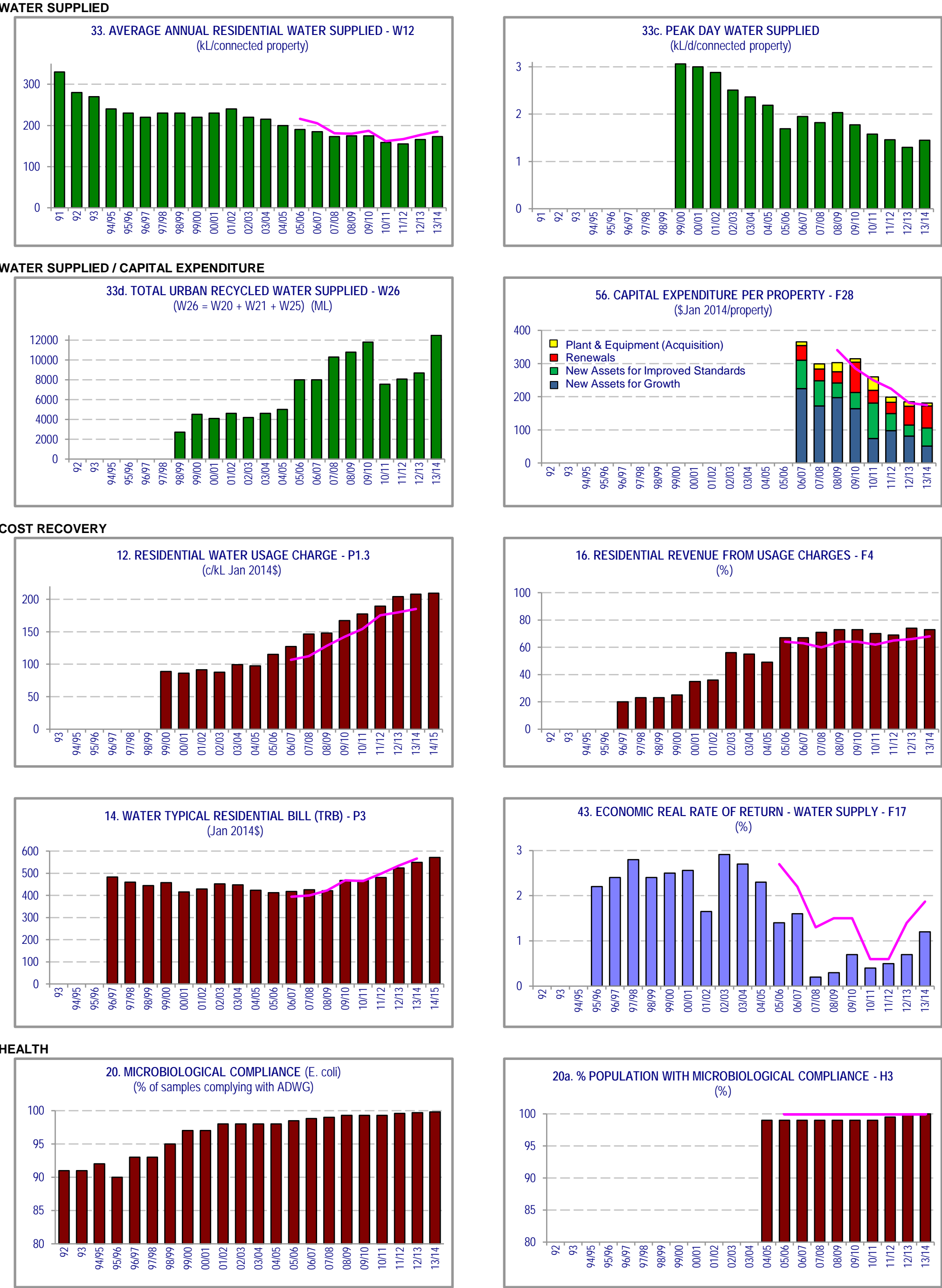
Overall Implementation for all WS Businesses 91%

Overall Implementation for all SGE Businesses 88%

- 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 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 sewerage. These are (1), (2a), (2b), (2c), (2d), (2e), (2f), (3) and (4) shown in the table above for sewerage.
  - The level of implementation of the 19 planning, pricing and management requirements of the BPMG shown in the table above is from Notes 2 or 3 of the Special Purpose Financial Statements reported by each LWU in their Annual Financial Statements (pages 253 to 255), supplemented by other data provided to the NSW Office of Water by the LWU. Documents which have met the requirements (including strategic business plans and IWCM evaluations and strategies) provided by LWUs to the NSW Office of Water by February 2015 are included in the results reported.
  - As shown above and in Table 8C on page 163, 48 LWUs have completed their 30-year IWCM Strategy (shown as 'YesC' in columns (6) and (4) above) for water supply and sewerage respectively. A further 21 LWUs have completed an IWCM Evaluation, and are shown as 'YesE' above. A further 12 LWUs are currently preparing their IWCM Evaluation and are shown as 'Yes' above. The 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 reviewed by the NSW Office of Water and 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.
  - For requirement (2c) utilities with 4,000 or more connected properties which obtained 70% to 74% of residential revenue from usage charges are shown as Yes\*. Yes\* is also shown for Wyong and Essential Energy, whose prices are determined by IPART. Yes\*\* is shown for Eurobodalla which obtained 64% 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 fewer than 4,000 connected properties serve 11% of the connected properties in regional NSW and are only required to achieve 50% for requirement (2c). Such utilities which have obtained 45% to 49% residential revenue from water usage charges are shown as Yes\*. 30 LWUs (65%) with 4,000 or more properties have met this requirement, as have 43 LWUs (91%) with fewer than 4,000 properties. Bulk water suppliers are not required to meet requirements (2b), (2c) or (2d) which refer to residential water tariffs.
  - Yes\* for requirement (1) indicates that as the strategic business plan and financial plan for these 55 LWUs are now over 4 years old, the LWU needs to prepare a new 30-year IWCM Strategy and financial plan in accordance with the July 2014 IWCM Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Similarly, the 16 LWUs whose IWCM Strategy is over 6 years old [shown as Yes<sup>†</sup>] need to prepare such a new IWCM Strategy, financial plan and report [column 34 on page 116]. Refer also to page 353.
  - Yes\* for requirement (2a) for water supply or for sewerage indicates that the LWU has significantly increased their 2014/15 charges in order to recover their costs.
  - Yes\* for requirement (2e) for water supply or for sewerage indicates that the LWU has commercial developer charges in place but is yet to complete and implement its Development Servicing Plan (DSP).  
Yes<sup>°</sup> for these requirements indicates the LWU is exempt from the requirement to prepare a DSP due to low growth (under 5 lots/a).
  - Yes\* for requirement (2f) for sewerage indicates that the LWU has adopted a trade waste policy before 2009, which needs significant updating.
  - As shown above, the overall levels of implementation of the requirements of the Best-Practice Management Guidelines for water supply (for all 10 requirements) were:  
94% for LWUs with >10,000 properties; 94% for LWUs with 3,001 - 10,000 properties; 88% for LWUs with 1,501 - 3,000 properties and 83% for LWUs with 200 - 1,500 properties respectively. The overall level of implementation for water supply for all LWUs was 91%.
  - As shown above, the overall levels of implementation of the requirements of the Best-Practice Management Guidelines for sewerage (for all 9 requirements) were:  
100% for LWUs with >10,000 properties; 93% for LWUs with 3,001 - 10,000 properties; 88% for LWUs with 1,501 - 3,000 properties and 75% for LWUs with 200 - 1,500 properties respectively. The overall level of implementation for sewerage for all LWUs was 88%.
  - The overall implementation of requirements for water supply and sewerage was 90%.

Table 4: Trends in statewide performance indicators - 1991 to 2013-14

WATER SUPPLY



HEALTH

20. MICROBIOLOGICAL COMPLIANCE (E. coli)  
(% of samples complying with ADWG)

Year	Value (%)
92	91
93	91
94/95	92
95/96	90
96/97	93
97/98	93
98/99	95
99/00	97
00/01	97
01/02	98
02/03	98
03/04	98
04/05	98
05/06	98
06/07	98
07/08	99
08/09	99
09/10	99
10/11	99
11/12	99
12/13	99
13/14	99

20a. % POPULATION WITH MICROBIOLOGICAL COMPLIANCE - H3  
(%)

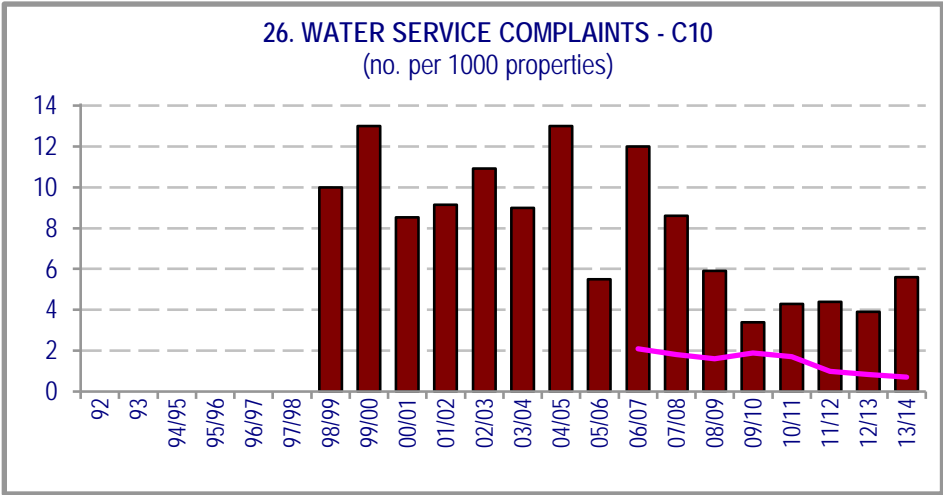
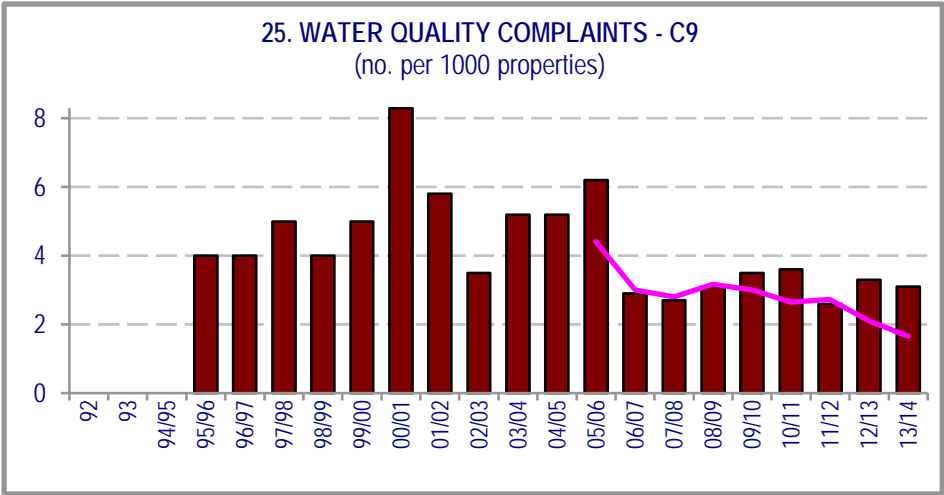
Year	Value (%)
92	0
93	0
94/95	0
95/96	0
96/97	0
97/98	0
98/99	0
99/00	0
00/01	0
01/02	0
02/03	0
03/04	0
04/05	99
05/06	99
06/07	99
07/08	99
08/09	99
09/10	99
10/11	99
11/12	99
12/13	99
13/14	99

Notes:

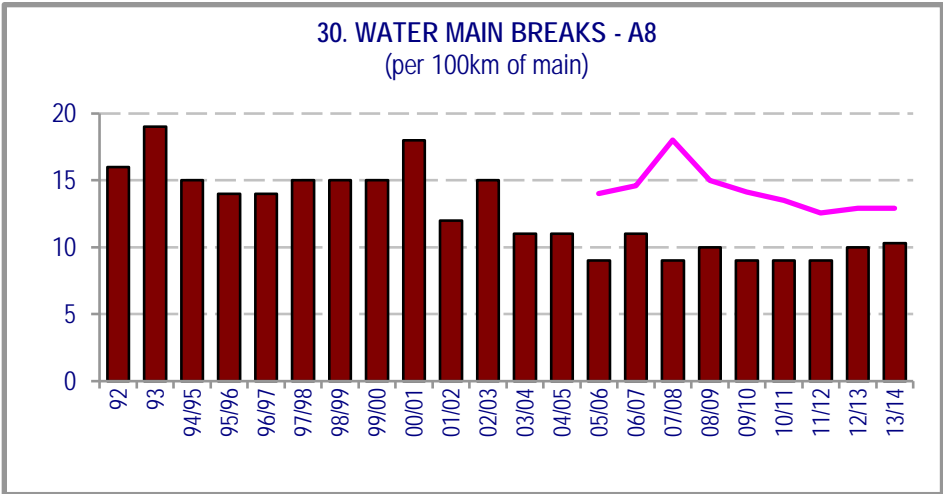
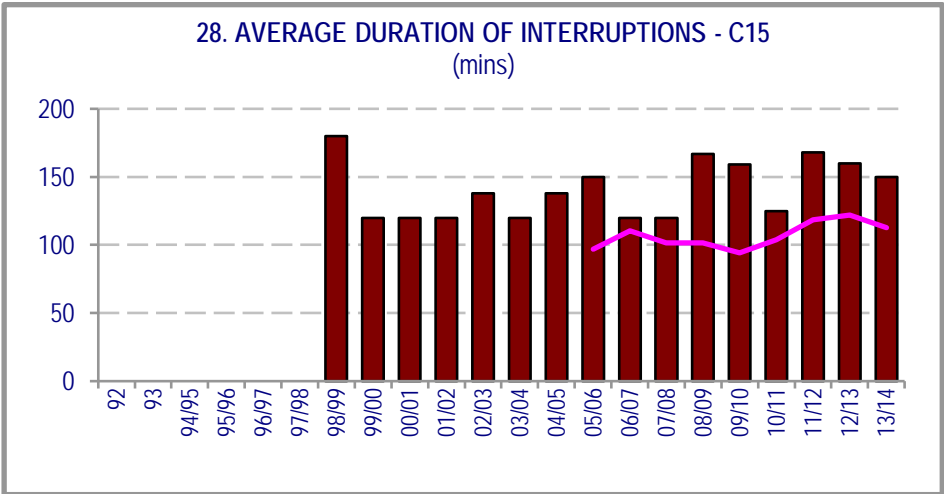
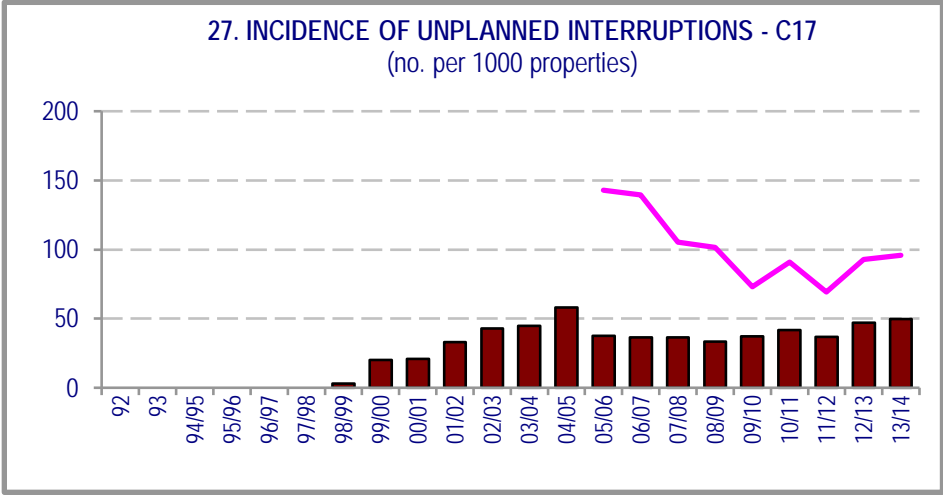
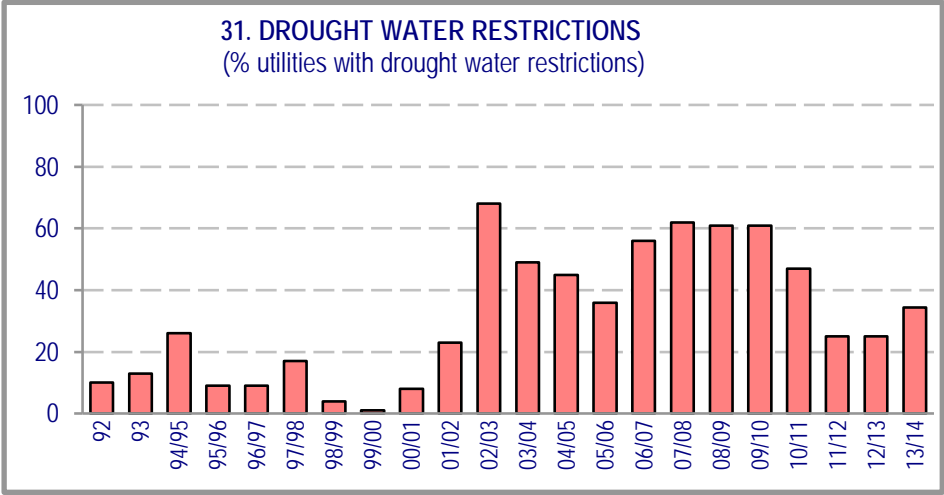
- 1 Costs are in Jan 2014\$.
- 2 The figure numbers (eg. 33. Average Annual Residential Water Supplied) correspond to the indicator number in the TBL reports and in Table 1 on page 105. Where there is an equivalent NWI indicator (eg. W12), this is shown in the title.
- 3 The figures show NSW Statewide medians (note 4 on page 32 ie. based on % of connected properties), except for figure 20 which is based on the total number of samples tested, figure 20a which is % of the 1.82m regional NSW population served by a potable water supply, figure 31 which is % of utilities, figure 33d which is total volume of recycled urban water supplied for regional NSW and figures 56, 49 and 49a which pro-rate the breakdown of the median on the basis of each year's expenditure by all LWUs.
- 4 The National Median for each financial year is the median value of the results published in the National Performance Report for Urban Water Utilities ([www.bom.gov.au](http://www.bom.gov.au)).

Table 4: Trends in statewide performance indicators - 1991 to 2013-14  
WATER SUPPLY (continued)

CUSTOMER SERVICE



RELIABILITY



EFFICIENCY

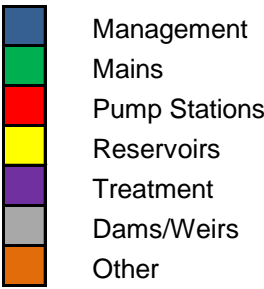
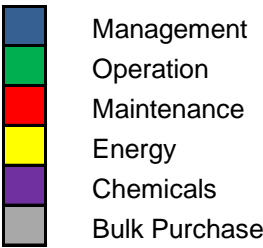
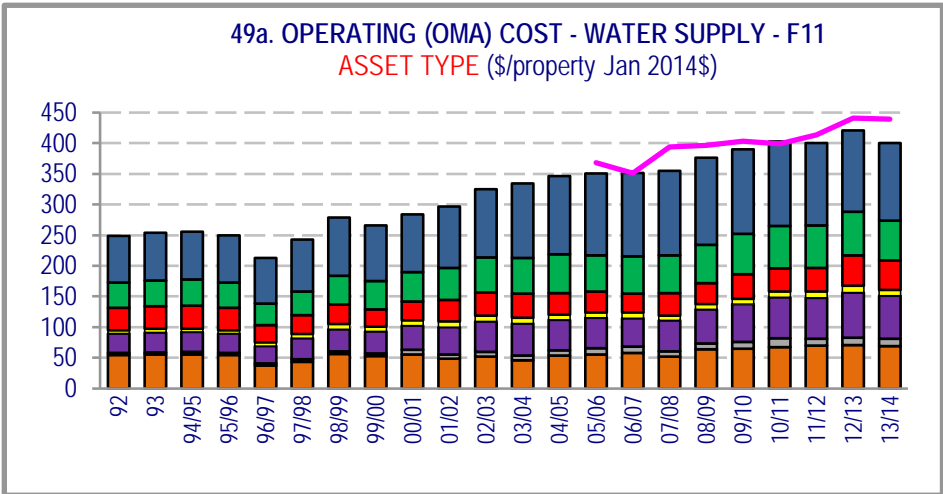
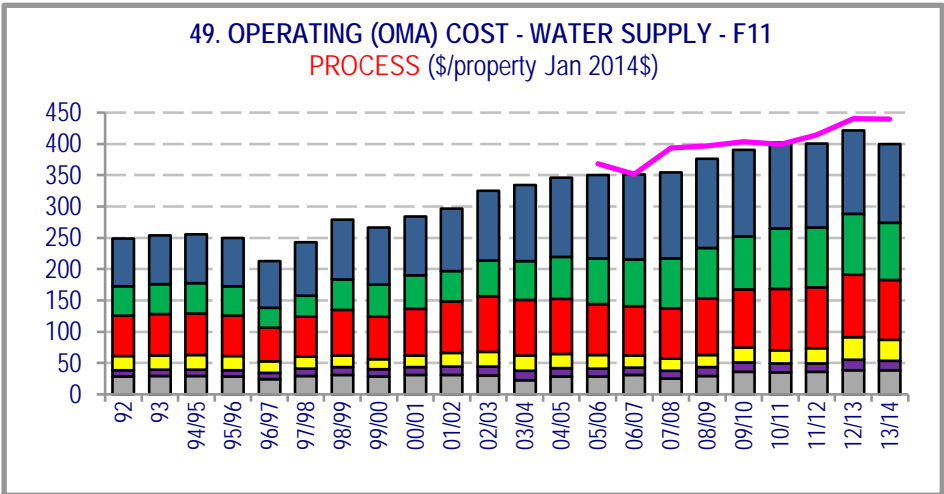
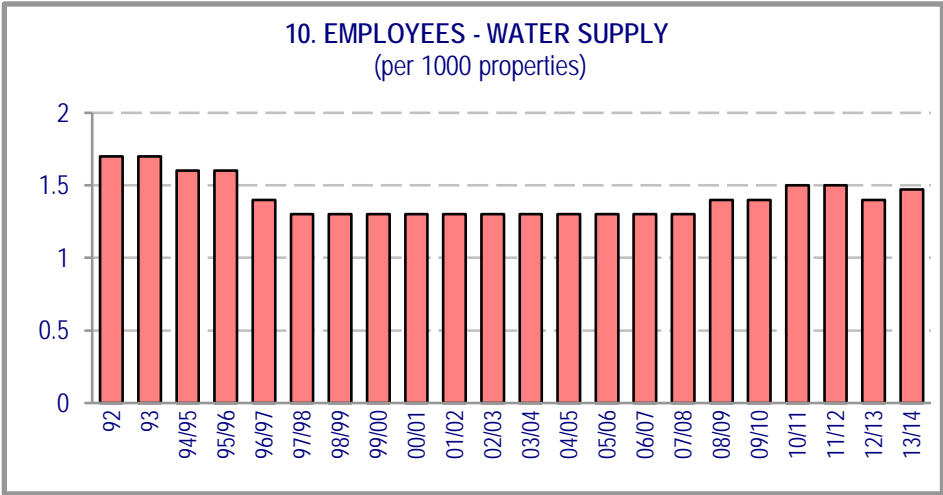
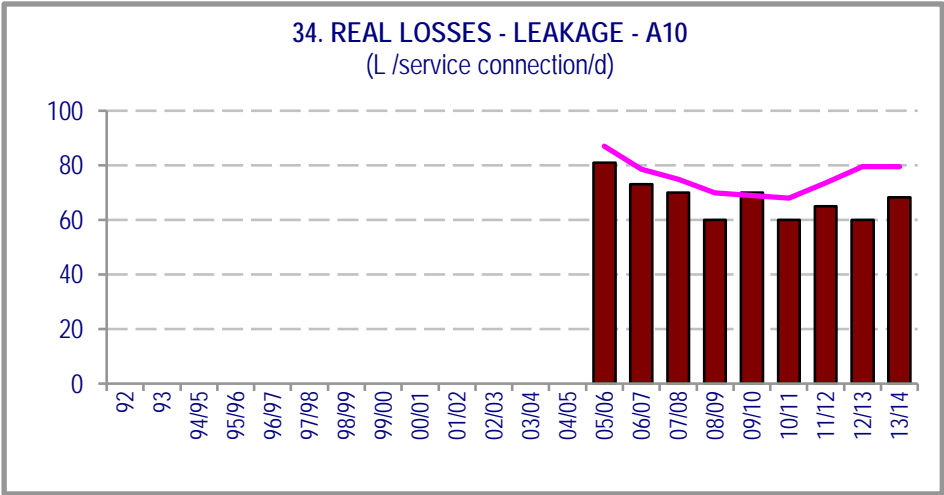
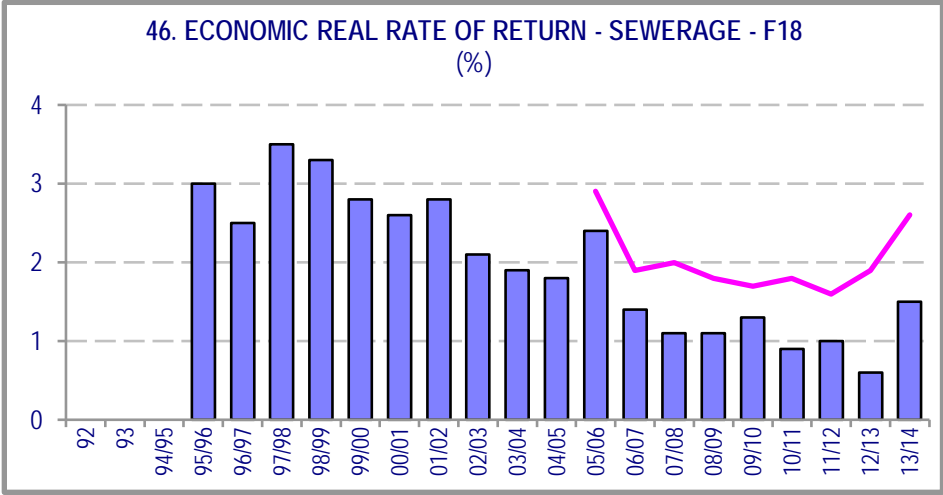
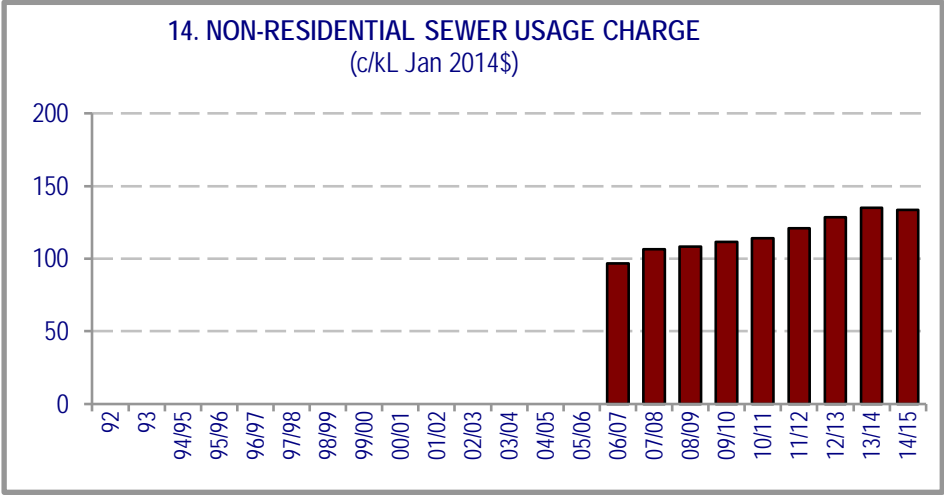
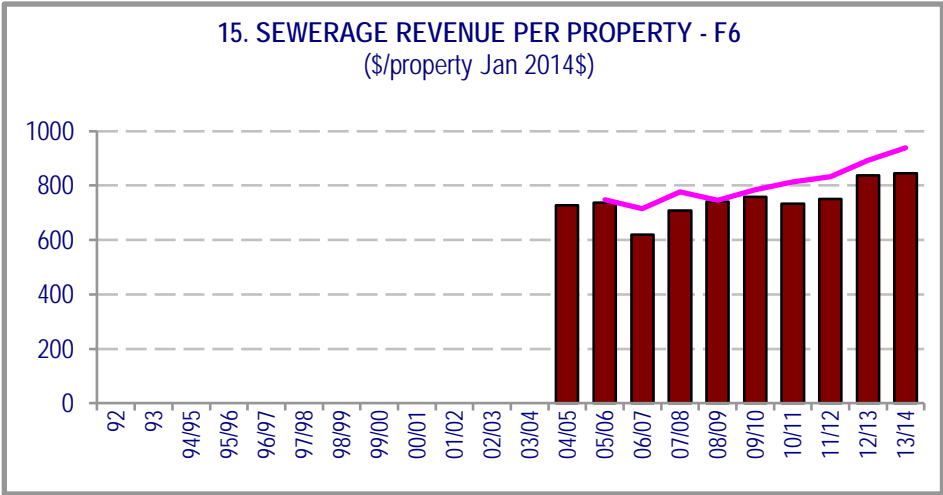
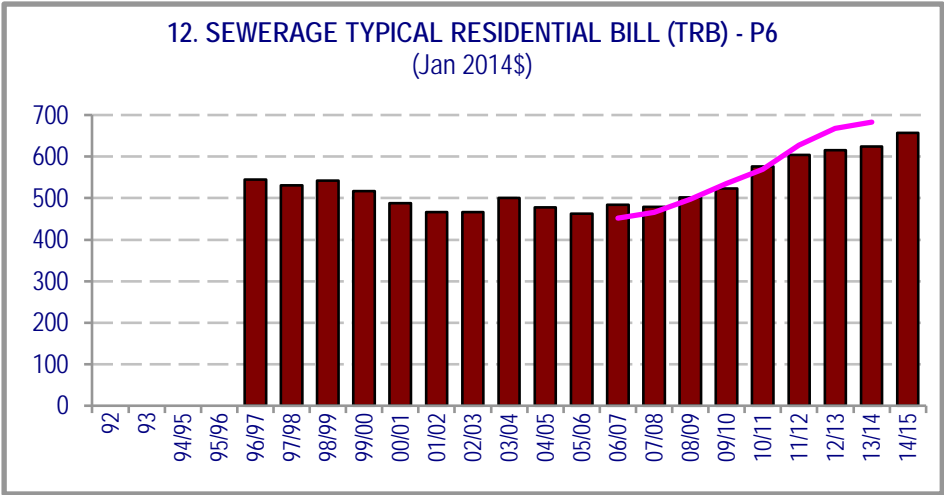




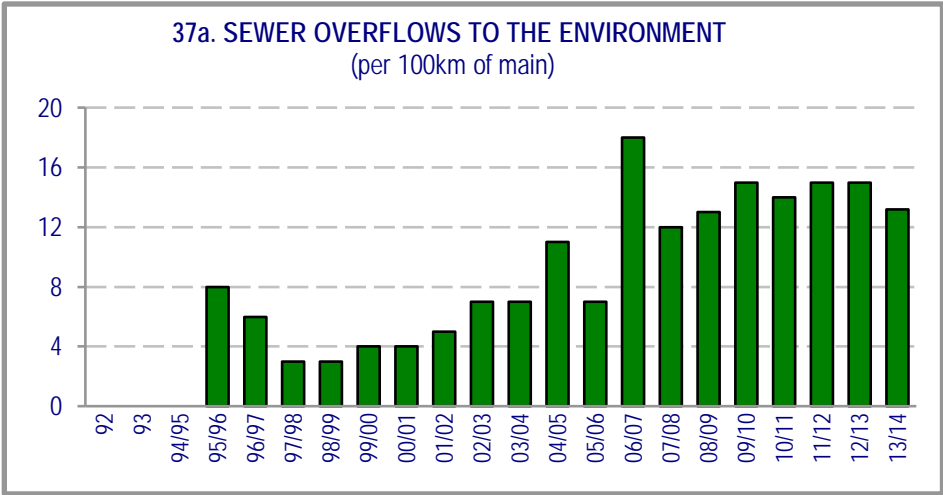
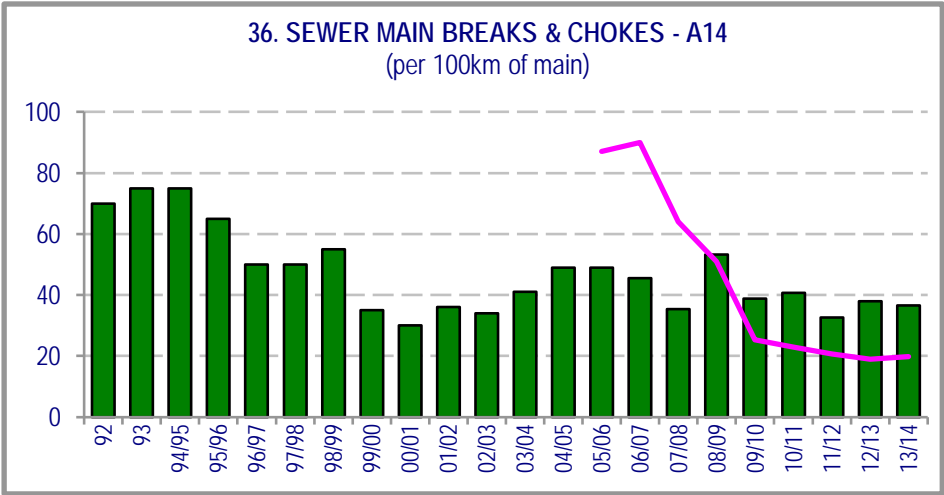
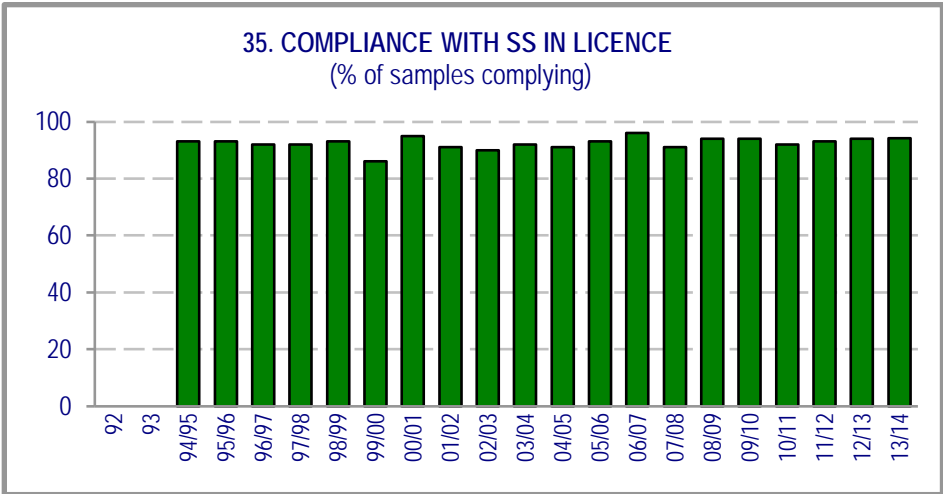
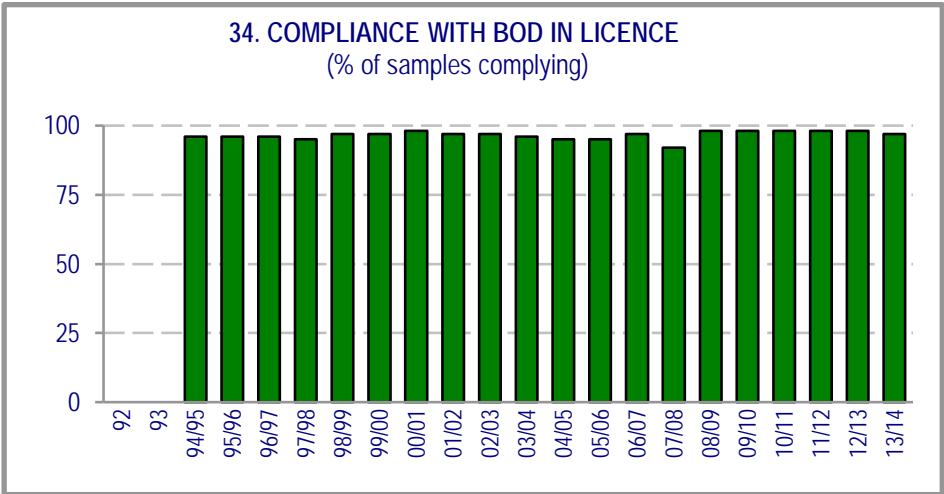
Table 4: Trends in statewide performance indicators - 1991 to 2013-14

SEWERAGE

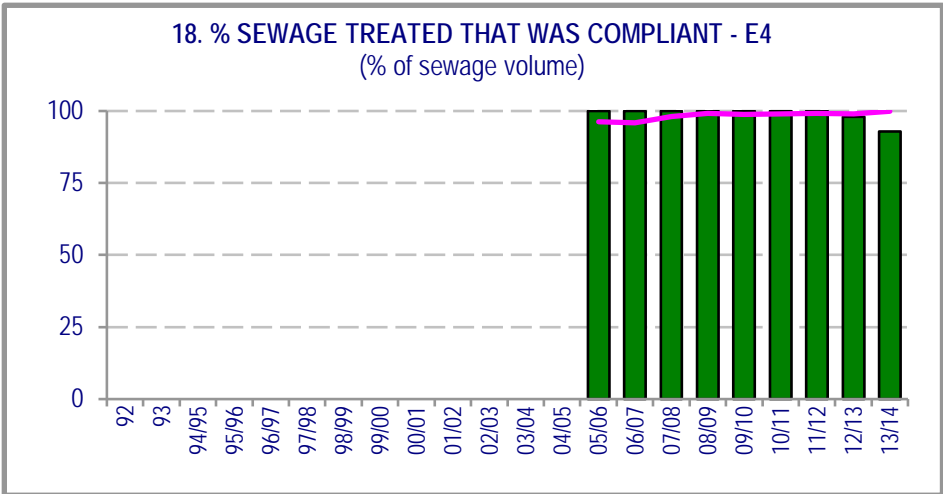
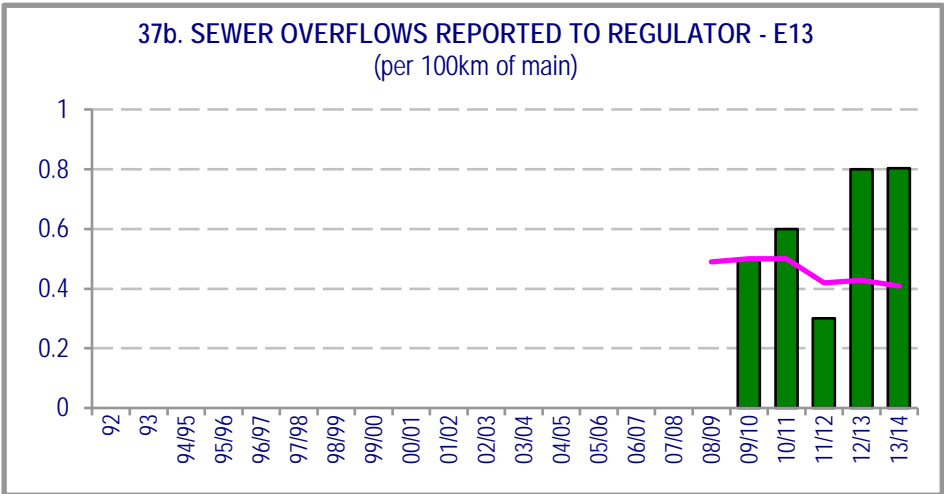
CHARGES/REVENUE



ENVIRONMENTAL COMPLIANCE



ENVIRONMENTAL/HEALTH

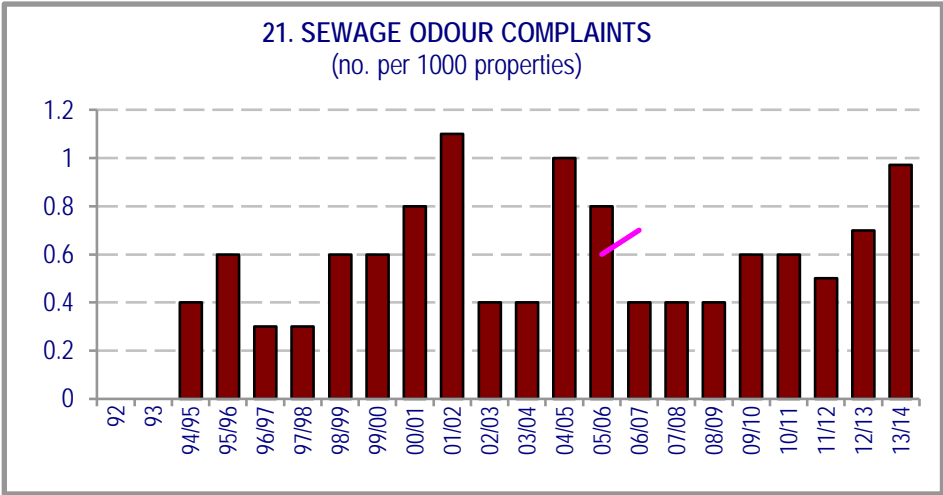
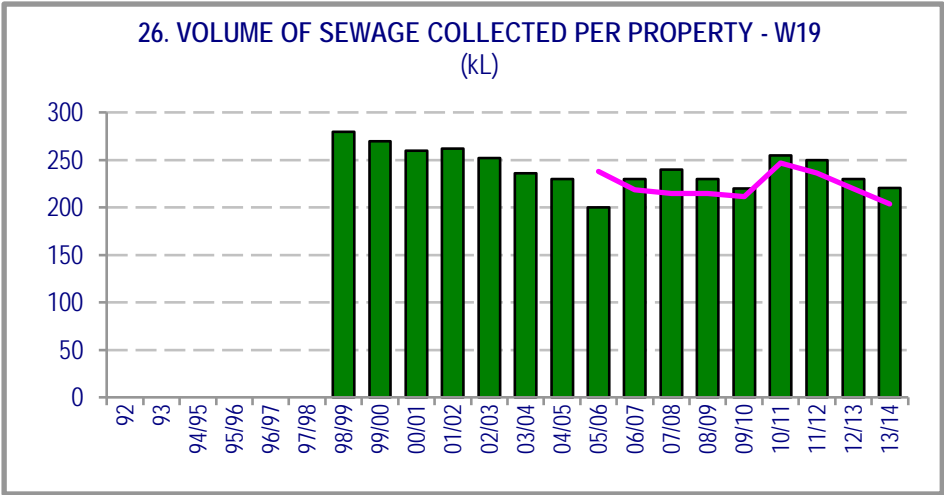


Notes:

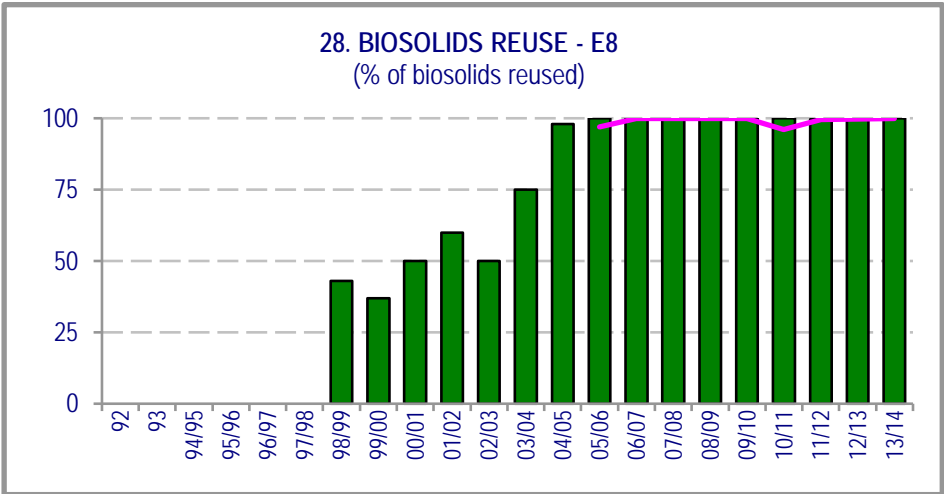
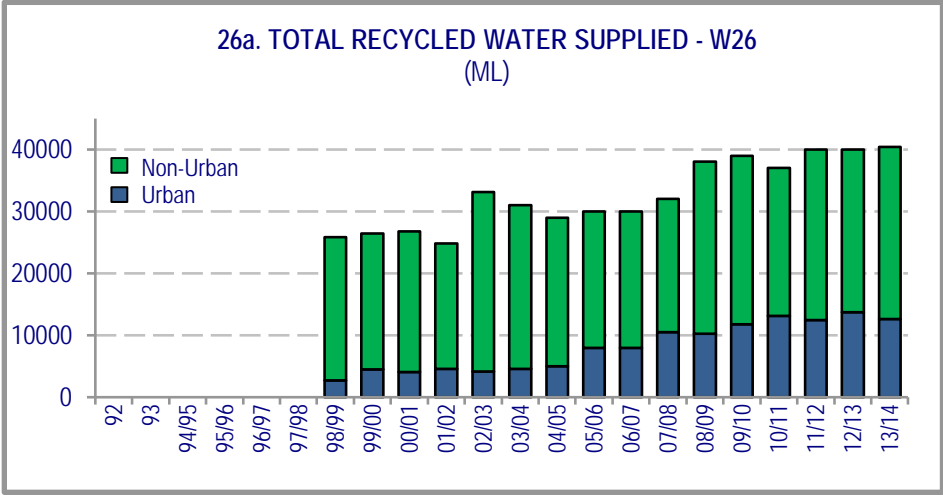
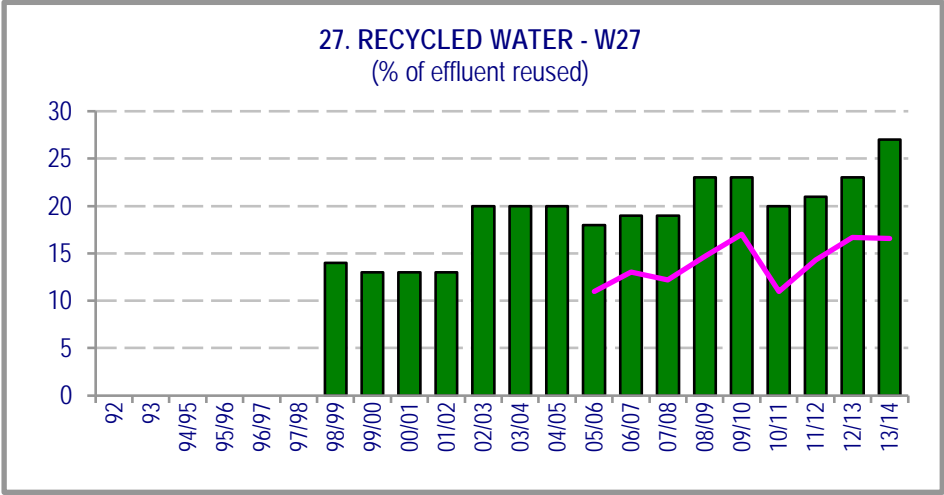
- 1 Costs are in Jan 2014\$ except for figure 14, which is in Jan 2015\$.
- 2 The figure numbers (eg. 12. Sewerage Typical Residential Bill) correspond to the indicator number in the TBL reports and in Table 2 on page 106. Where there is an equivalent NWI indicator (eg. P6), this is shown in the title.
- 3 The figures show NSW Statewide medians (note 4 on page 32, ie. based on % of connected properties), except for figures 34 & 35 which are % of samples tested, figure 26a which is the total volume of water recycled in regional NSW, figure 27 which is % of the total volume recycled in regional NSW as a percentage of the total volume of sewage collected and figures 56, 50 and 50a which pro-rate the breakdown of the median on the basis of each year's expenditure by all LWUs.
- 4 The National Median for each financial year is the median value of the results published in the National Performance Report for Urban Water Utilities ([www.bom.gov.au](http://www.bom.gov.au)).

Table 4: Trends in statewide performance indicators - 1991 to 2013-14  
**SEWERAGE (continued)**

CUSTOMER SERVICE



RESOURCE MANAGEMENT



EFFICIENCY/CAPITAL EXPENDITURE

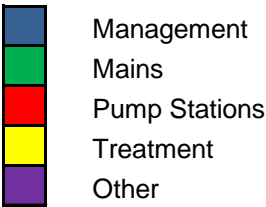
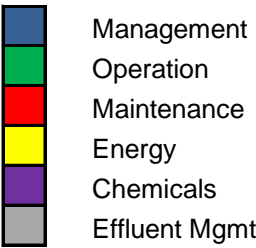
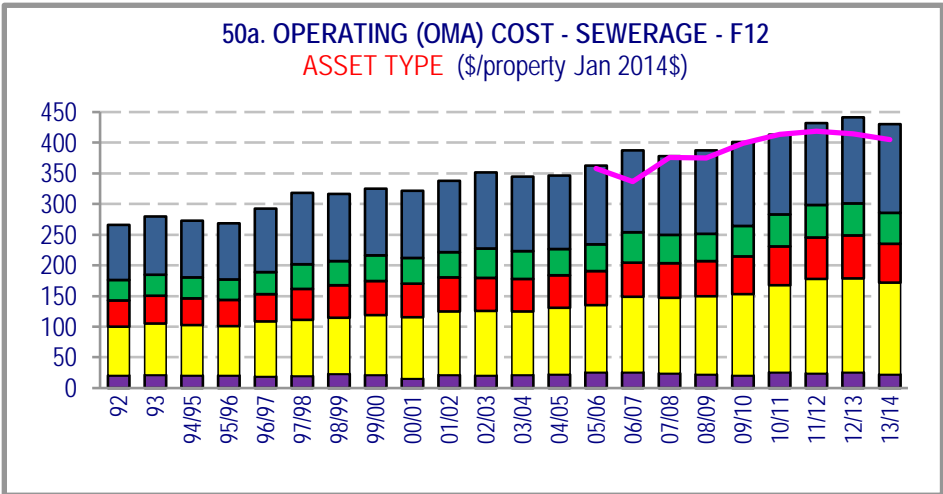
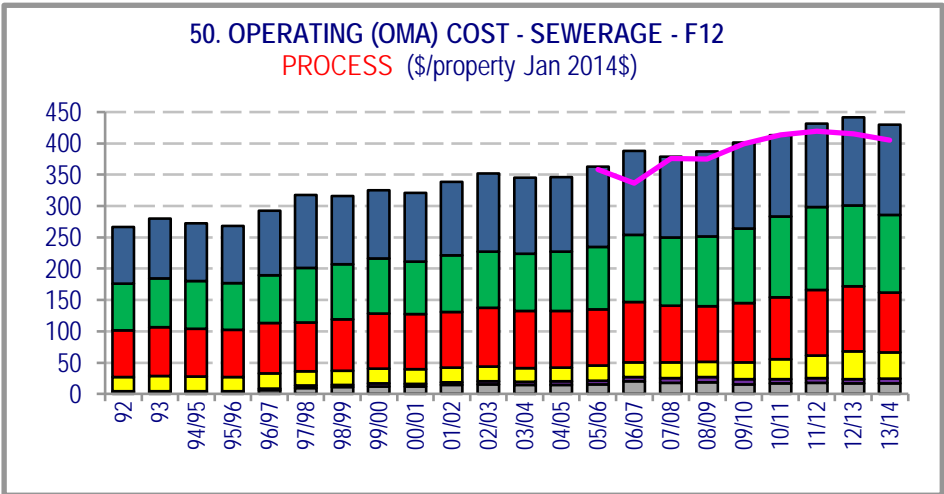
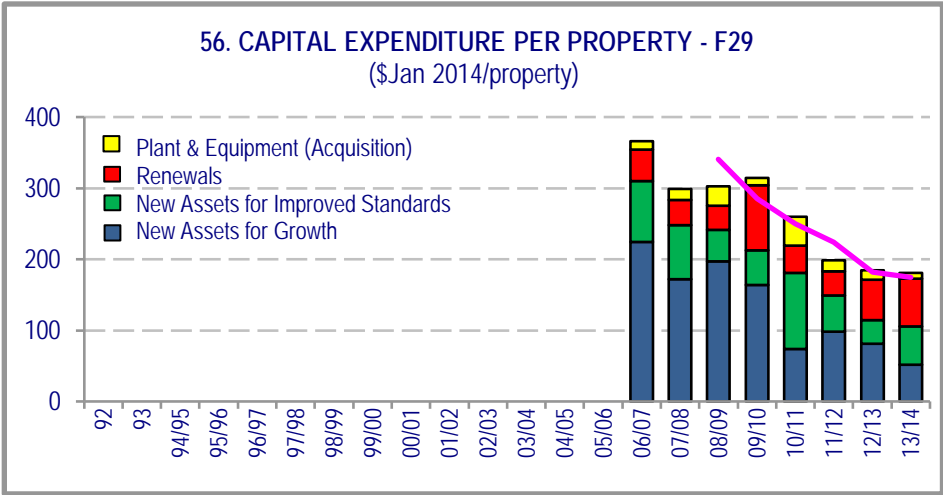
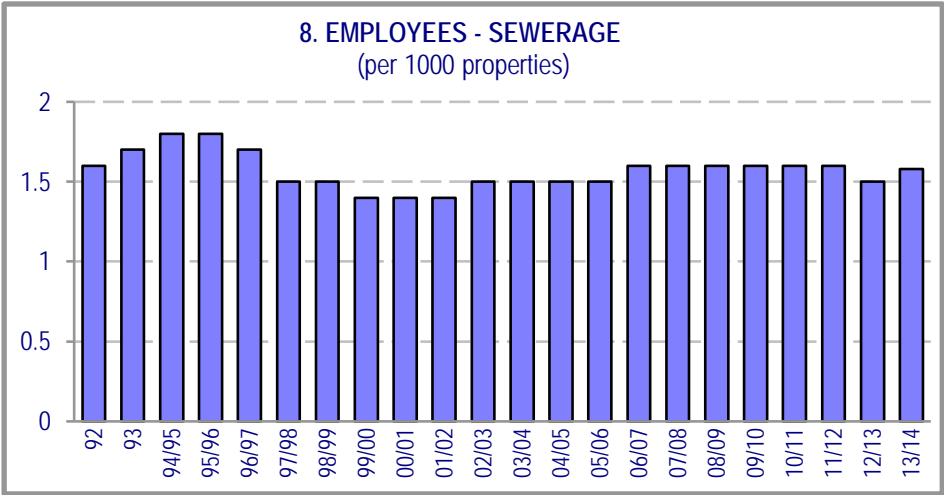
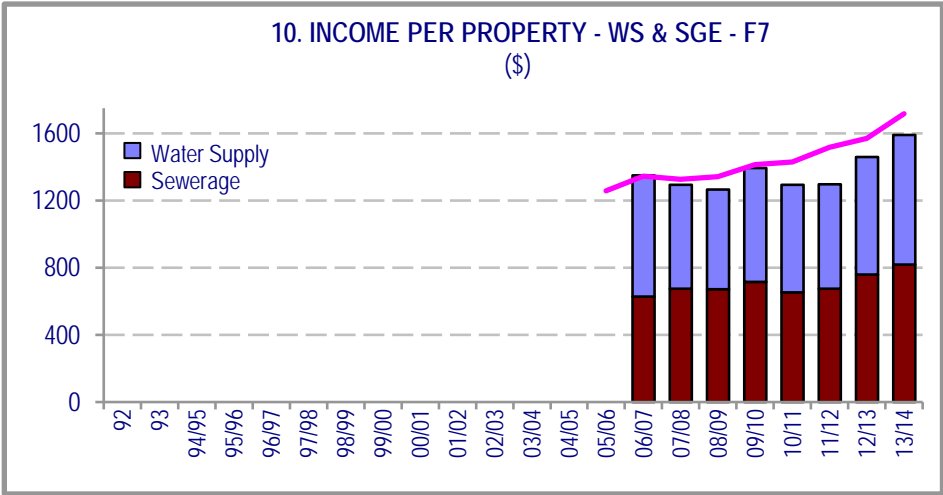
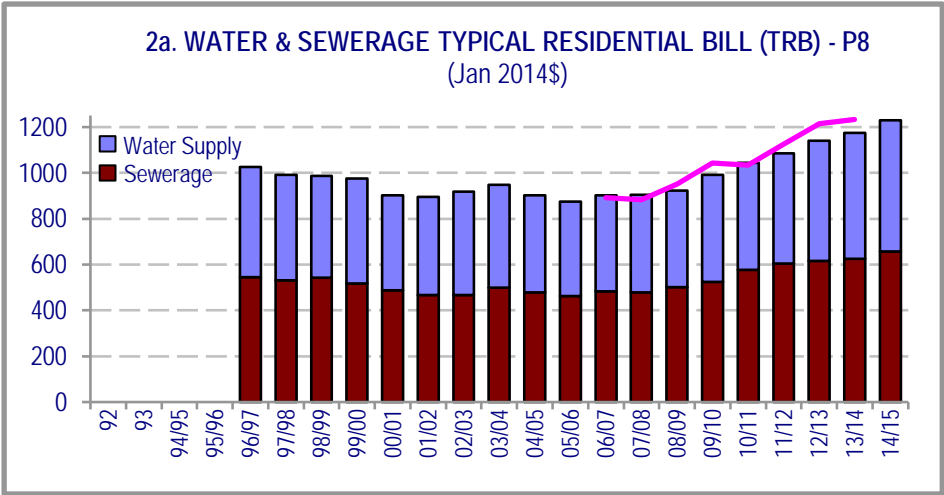


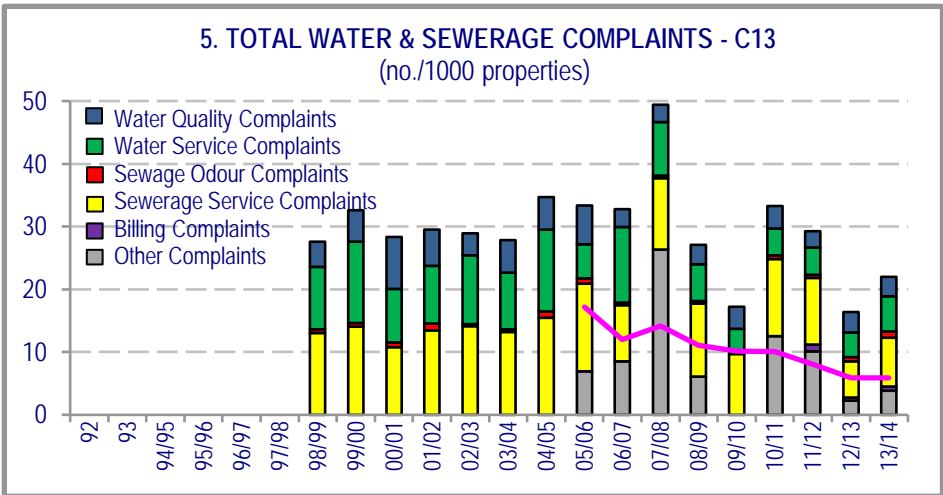
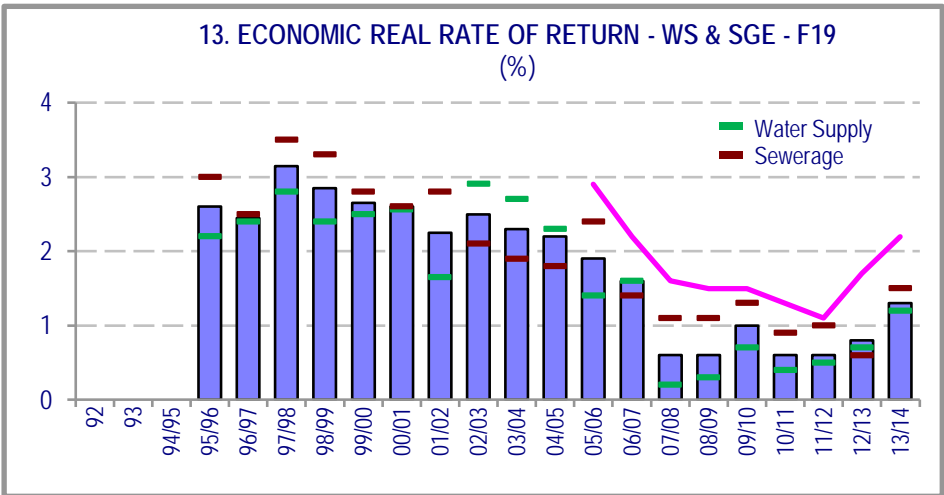
Table 4: Trends in statewide performance indicators - 1991 to 2013-14

WATER SUPPLY & SEWERAGE

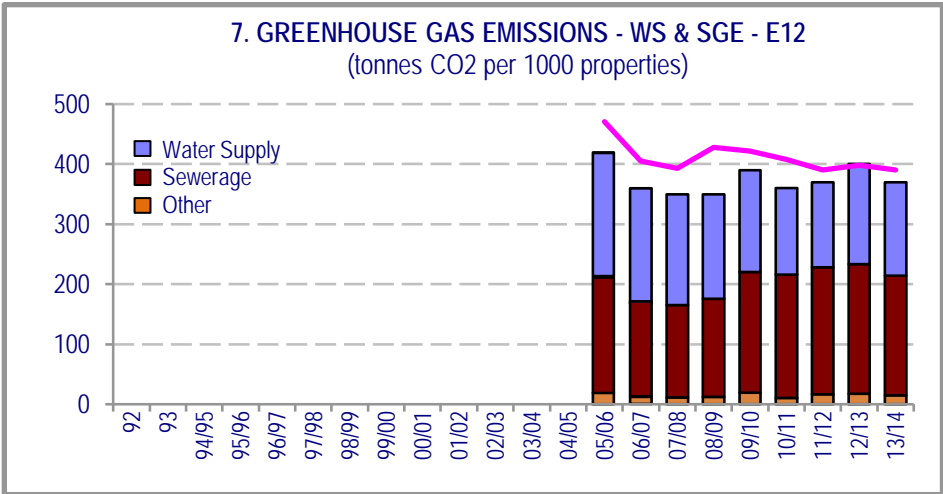
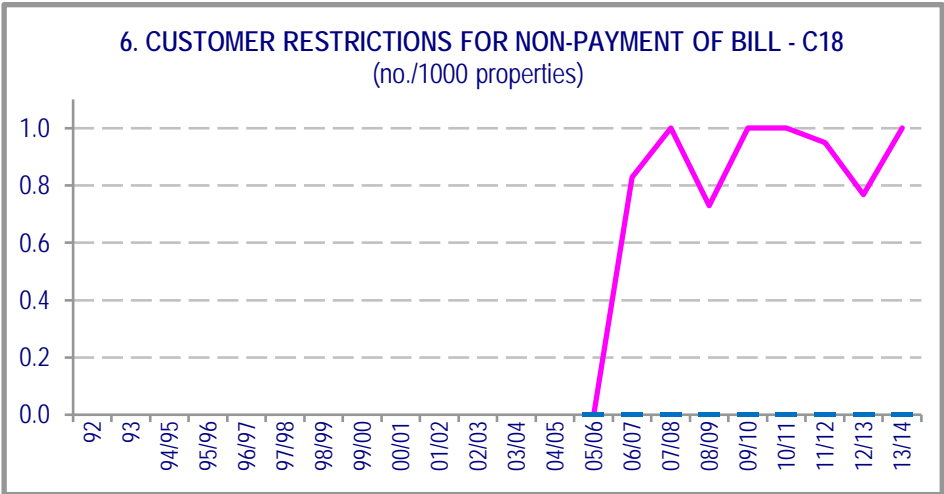
COST RECOVERY



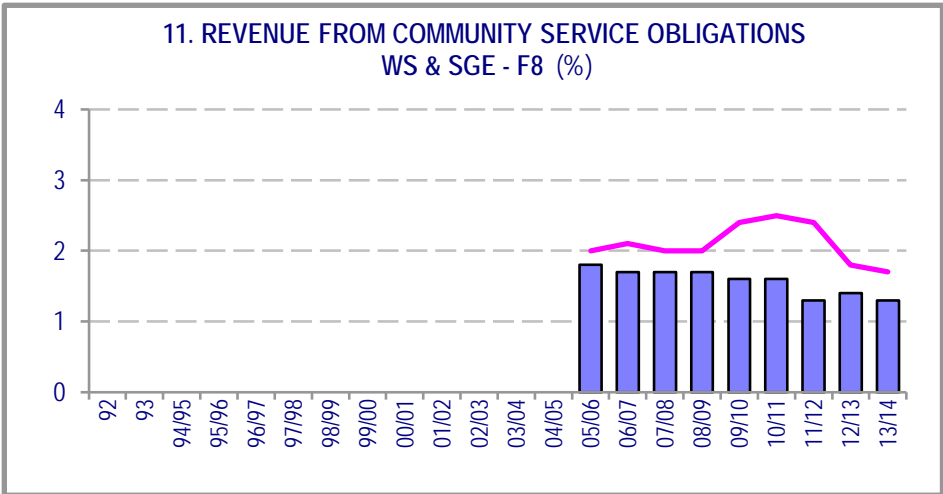
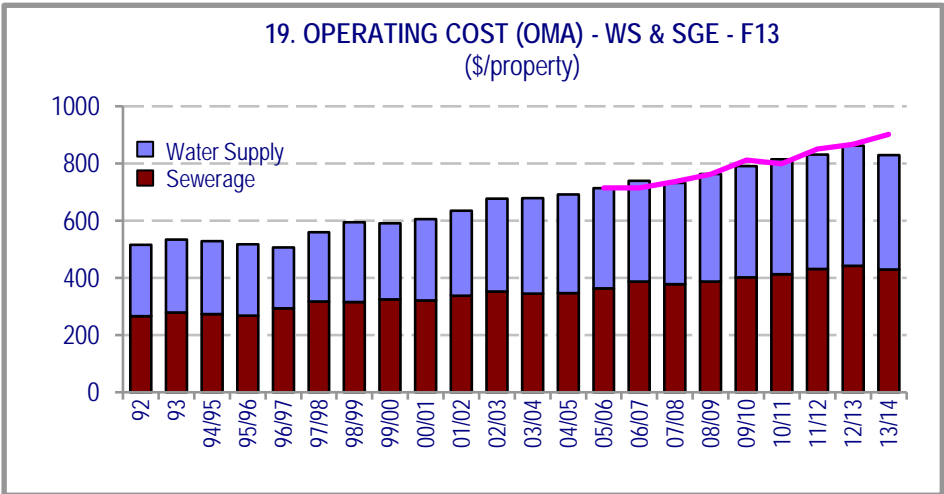
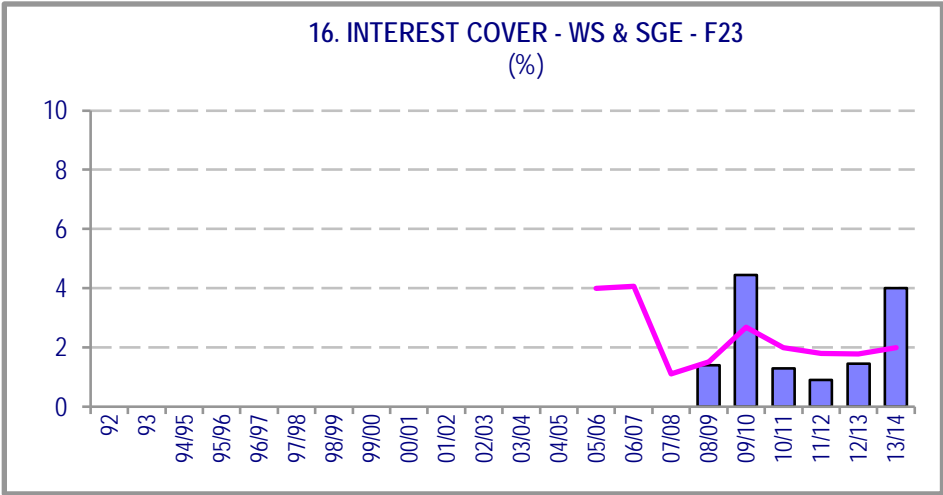
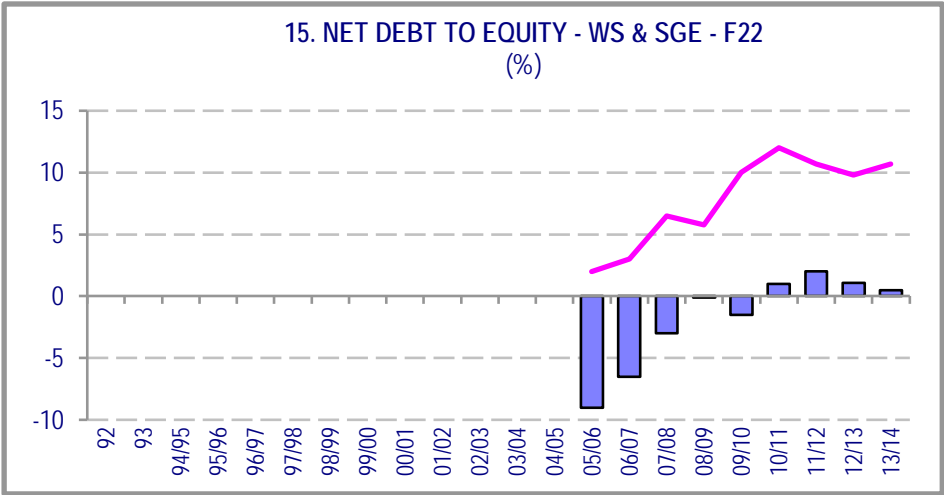
COST RECOVERY/CUSTOMER SERVICE



CUSTOMER SERVICE/ENVIRONMENTAL



EFFICIENCY



- Notes:
- 1 Costs are in Jan 2014\$.
  - 2 The figure numbers (eg. 2a Water & Sewerage Typical Residential Bill ) correspond to the indicator number shown in Table 2A on page 107. The equivalent NWI indicator (eg. P8) is shown in the title.
  - 3 The figures show NSW Statewide medians (ie. based on % of connected properties).
  - 4 The National Median for each financial year is the median value of the results published in the National Performance Report for Urban Water Utilities ([www.bom.gov.au](http://www.bom.gov.au)).
  - 5 Reporting of Total Complaints (C13) commenced in 2005-06 as Billing Complaints and Other Complaints had not been reported prior to this.

LEGEND

National Medians



Table 5: 2013-14 NSW Water Utility Performance Summary

WATER UTILITY		CHARACTERISTICS		BILLS / PRICING					HEALTH				LEVELS OF SERVICE				ENVIRONMENT							FINANCIAL						EFFICIENCY		BPM																												
		Water Supply Connected Properties  (No.) <sup>4</sup>  (1) C4	Total Urban Water Supplied  (ML) <sup>2,3</sup>  (2) W11	Residential Revenue from Usage Charges  (%)  (3) F4	Typical Residential Bill			Typical Developer Charge  WS & SGE  (\$/ET)  (7)	Current Replacement Cost  WS & SGE  (\$/assmnt)  (8)	Water Quality Compliance (2011 ADWG)				Water Quality Complaints  WS  (per 1000 props)  (13) C9	Avge Duration of Unplanned Interruption WS  (mins)  (14) C15	Water Main Breaks  WS  (per 100km of Main)  (15) A8	Total Complaints  WS & SGE  (No./1000 props)  (16) C13	Average Annual Residential Water Supplied  (kL/connected prop)  (17) W12	Real Water Loss  WS  (L / connection / d)  (18) A10	Sge Treated that was Compliant  (%)  (19) E4	Sge Mains Breaks & Chokes  (No. per 100km of main)  (20) A14	Effluent Recycled		Total Revenue  WS & SGE  (\$M) <sup>3,8</sup>  (23) F1+F2	Net Debt to Equity  WS & SGE  (%)  (24) F22	Capital Expenditure		Economic Real Rate of Return		Full Cost Recovery		Operating Cost OMA		Best Practice Implementation																										
					WS	SGE	WS & SGE			E.coli Compliance		Chemical Compliance										WS & SGE				WS	SGE	WS	SGE	WS	SGE	WS & SGE	WS & SGE	WS & SGE	WS	SGE	WS	SGE	WS	SGE	WS & SGE	Strategic Business Plans Completed ? Note 14 (Yes/No)																		
										Achieved?  Note 12	% Pop'n with Compliance	Achieved?  Note 11	% Pop'n with Compliance									WS	SGE																				WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE
						Sydney Water	1,848,000			541,492	79	572	571									1,142					Yes	100	Yes	100	0.4	151	30	3	206	81	100	61	10	46,943	2,530	96	323	587	1.9	1.4			401	264										
	Hunter Water	235,835	73,725	96	402	606	1,008			Yes	100	Yes	100	3.4	128	30	6	181	82	100	54	8	4,895	302	78	469	109	3.5	1.8			229	340																											
	Water NSW		551,686																																																									
LWUs with > 10,000 Properties																																																												
1	Gosford	71,480	16,530	76	475	576	1,051	4,160	43,800	Yes	100	Yes	100	15	311	22	17	161	120	100	37	0	32	88.7	6	577	40.5	0.8	-0.1	Y	Y*	367	404	100	Yes+																									
2	Wyong	61,430	14,800	67*	518	458	976	5,450	37,300	Yes	100	Yes	100	5	200	17	23	158	30	100	54	6	962	80.2	10	431	26.4	1.4	-0.4	Y	Y*	319	354	100	Yes*																									
3	Shoalhaven	46,980	14,700	74	317	714	1,031	14,900	26,100	Yes	100	Yes	100	0.3	220	10	1	148	60	95	8	32	2,352	63.6	0	538	23.7	0.9	2.2	Y	Y	274	478	100	Yes+																									
4	Rous (BS) (NO SGE)	46,780	1,480					8,860	9,300	Yes	100	Yes	100	0.6	195	12	1							22.5	4		5.5	1.7		Y		238		100	Yes*																									
5	MidCoast	38,560	9,560	75	565	920	1,485	15,000	35,300	Yes	100	Yes	94	3		8	7	150	60	96	6	25	1,439	69.2	23	302	11.3	0.7	2.8	Y	Y	411	491	100	Yes*																									
6	Tweed	31,840	9,770	77	553	691	1,244	18,600	42,500	Yes	100	Yes	100	5	149	8	40	184	60	83	1	9	604	68.1	2	418	13.1	2.4	1.7	Y	Y	423	505	100	Yes*																									
7	Port Macquarie-Hastings (UF)	30,100	6,670	69*	550	704	1,254	14,400	31,400	Yes	100	Yes	100	7	174	15	31	157	40	82	30	4	363	62.1	-5	316	8.9	1.7	2.9	Y	Y	386	494	95	Yes*																									
8	Riverina (GW) (NO SGE)	29,550	15,790	76	532			4,800	11,200	Yes	100	Yes	100	3	173	19	10	324	80					27.3	-7	209	6.2	5.3		Y		338		90	Yes																									
10	Coffs Harbour	24,890	6,530	76*	569	783	1,352	18,900	41,200	Yes	100	Yes	100	0	120	3	0	169	60	100	76	27	1,436	47.7	14	434	10.3	1.2	0.5	Y	Y	396	610	100	Yes+																									
11	Albury	23,590	7,880	79	349	561	910	7,560	31,500	Yes	100	Yes	100	3	124	10	5	232	60	73	75	55	2,468	36.8	-2	254	5.7	1.7	4.2	Y	Y	306	429	100	Yes*																									
12	Fish River WS (UF,BS) (NO SGE)	23,500	6,770							Yes	100	Yes	100	0	600	8	0							10.0	0		1.0	15.6		Y		143		83	Yes*																									
13	Tamworth Regional	21,420	10,280	64	638	738	1,376	6,390	31,500	Yes	100	Yes	100	0.2		7	78	287	90	100	74	87	4,128	43.1	-2	1,012	20.6	3.3	2.5	Y	Y	536	471	95	Yes*																									
14	Clarence Valley	21,410	6,550	67	427	907	1,334	12,500	39,000	Yes	100	Yes	100	23		13	101	161	110	73	45	7	176	30.4	10	694	10.8	0.7	2.3	Y	Y	380	495	95	Yes+																									
15	Eurobodalla	19,570	3,610	64	631	844	1,475	21,100	40,500	Yes	100	Yes	100	0.9	190	13	3	119	50	100	30	7	216	34.3	1	364	6.7	0.4	1.0	Y	Y	423	565	100	Yes+																									
16	Wingecarribee	18,960	5,450	69	474	711	1,185	14,300	33,200	Yes	100	Yes	100	12	108	12	103	200	130	100	46	4	124	28.3	-1	306	5.2	1.8	1.1	Y	Y	375	531	95	Yes*																									
17	Queanbeyan (R)	16,410	4,000	64	815	414	1,229	9,620	24,600	Yes	100	Yes	100	0.1	180	2	37	178	100	100	55	1	37	31.5	-19	427	7.1	0.9	2.6	Y	Y	589	372	95	Yes*																									
18	Dubbo	17,150	8,920	75	836	652	1,488	10,700	30,200	Yes	100	Yes	100	0.4	75	4	15	350	120	85	42	71	1,958	32.0	-4	272	4.5	3.3	2.7	Y	Y	504	349	100	Yes+																									
19	Orange	17,190	7,140	71	521	384	905	11,800	33,000	Yes	100	Yes	100	1	238	9	92	174	60	100	24	78	2,947	27.3	-14	1,638	28.1	2.9	1.7	Y	Y	383	374	100	Yes*																									
20	Goulburn Mulwaree	10,380	3,030	66*	678	699	1,377	8,100	42,900	Yes	100	Yes	100	8	180	11	66	165	80	100	92	86	1,593	20.9	-5	368	3.8	1.0	5.6	Y	Y	418	368	95	Yes																									
21	Bathurst Regional	15,570	7,030	83	503	456	959	9,770	32,500	Yes	100	Yes	100	35	120	8	82	227	60	100	84	100	3,942	25.6	-12	427	6.6	1.8	1.8	Y	Y	532	416	100	Yes+																									
22	Lismore (R)	14,300	3,190	70	606	738	1,344	10,300	35,100	Yes	100	Yes	100	0	120	37	19	155	40	79	49	1	34	21.6	-1	368	4.9	0.2	0.2	Y	Y	495	466	94	Yes																									
23	Bega Valley (UF)	14,390	3,770	63	520	1,081	1,601	18,000	43,600	Yes	100	Yes	100	13	95	9	17	134	50	92	22	30	626	26.8	-3	638	8.2	-0.6	0.4	Y*	Y	506	734	90	Yes*																									
24	Ballina (R)	14,180	4,130	68	549	734	1,283	12,000	33,500	Yes	100	Yes	100	4	120	6	12	194	140	75	20	9	273	26.8	11	779	10.9	0.3	1.4	Y	Y	510	649	95	Yes+																									
25	Kempsey (GW)	12,470	3,750	59	567	736	1,303	16,700	44,300	Yes	100	Yes	100	0.7	127	10	3	157	100	79	16	6	110	18.1	8	555	6.5	0.0	-0.4	Y	Y*	481	543	95	Yes+																									
26	Essential Energy	10,520	6,840	66	723	497	1,220			Yes	100	Yes	100	0		16	1	281	90	100	115	51	709	21.3		398	4.1			Y*	Y*	1281	319	100	Yes+																									
27	Byron (R)	11,150	3,240	74	550	1,060	1,610	16,000	26,000	Yes	100	Yes	100	1	120	9	7	181	70	97	11	16	478	24.4	17	184	2.0	1.6	3.9	Y	Y	479	652	100	Yes*																									
28A	Goldenfields																																																											



Table 5: 2013-14 NSW Water Utility Performance Summary

WATER UTILITY		CHARACTERISTICS		BILLS / PRICING						HEALTH				LEVELS OF SERVICE				ENVIRONMENT						FINANCIAL								EFFICIENCY		BPM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Water Supply Connected Properties  (No.) <sup>4</sup>  (1) C4	Total Urban Water Supplied  (ML) <sup>2,3</sup>  (2) W11	Residential Revenue from Usage Charges  (%)  (3) F4	Typical Residential Bill			Typical Developer Charge  WS & SGE (\$/ET)  (7)	Current Replacement Cost  WS & SGE (\$/assmnt)  (8)	Water Quality Compliance (2011 ADWG)				Water Quality Complaints  WS  (per 1000 props)  (13) C9	Avge Duration of Unplanned Interruption WS  (mins)  (14) C15	Water Main Breaks  WS  (per 100km of Main)  (15) A8	Total Complaints  WS & SGE  (No./1000 props)  (16) C13	Average Annual Residential Water Supplied  (kL/connected prop)  (17) W12	Real Water Loss  WS  (L / connection / d)  (18) A10	Sge Treated that was Compliant  (%)  (19) E4	Sge Mains Breaks & Chokes  (No. per 100km of main)  (20) A14	Effluent Recycled		Total Revenue  WS & SGE  (\$M) <sup>3,8</sup>  (23) F1+F2	Net Debt to Equity  WS & SGE  (%)  (24) F22	Capital Expenditure		Economic Real Rate of Return		Full Cost Recovery		Operating Cost OMA		Best Practice Implementation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
					WS	SGE	WS & SGE			E.coli Compliance		Chemical Compliance										WS & SGE				WS	SGE	WS & SGE		WS	SGE	WS	SGE	WS	SGE	WS & SGE	WS	SGE	WS & SGE	Strategic Business Plans Completed ? Note 14 (Yes/No)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
										Achieved?  Note 12	% Pop'n with Compliance	Achieved?  Note 11	% Pop'n with Compliance									WS & SGE	WS					SGE	WS												SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									



Table 5: 2013-14 NSW Water Utility Performance Summary

WATER UTILITY		CHARACTERISTICS		BILLS / PRICING					HEALTH				LEVELS OF SERVICE				ENVIRONMENT								FINANCIAL								EFFICIENCY		BPM																																																																																																																																																																																																																																																																																																																																													
		Water Supply Connected Properties  (No.) <sup>4</sup>  (1) C4	Total Urban Water Supplied  (ML) <sup>2,3</sup>  (2) W11	Residential Revenue from Usage Charges  (%)  (3) F4	Typical Residential Bill			Typical Developer Charge  WS & SGE  (\$/ET)  (7)	Current Replacement Cost  WS & SGE  (\$/assmnt)  (8)	Water Quality Compliance (2011 ADWG)				Water Quality Complaints  WS  (per 1000 props)  (13) C9	Avge Duration of Unplanned Interruption WS  (mins)  (14) C15	Water Main Breaks  WS  (per 100km of Main)  (15) A8	Total Complaints  WS & SGE  (No./1000 props)  (16) C13	Average Annual Residential Water Supplied  (kL/connected prop)  (17) W12	Real Water Loss  WS  (L / connection / d)  (18) A10	Sge Treated that was Compliant  (%)  (19) E4	Sge Mains Breaks & Chokes  (No. per 100km of main)  (20) A14	Effluent Recycled		Total Revenue  WS & SGE  (\$M) <sup>3,8</sup>  (23) F1+F2	Net Debt to Equity  WS & SGE  (%)  (24) F22	Capital Expenditure		Economic Real Rate of Return		Full Cost Recovery		Operating Cost OMA		Best Practice Implementation																																																																																																																																																																																																																																																																																																																																														
					WS	SGE	WS & SGE			E.coli Compliance		Chemical Compliance										WS & SGE				WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS & SGE	WS	SGE	WS & SGE	WS	SGE	WS & SGE	Strategic Business Plans Completed ? Note 14 (Yes/No)																																																																																																																																																																																																																																																																																																																																					
										Achieved? Note 12	% Pop'n with Compliance	Achieved? Note 11	% Pop'n with Compliance									WS & SGE	WS																					SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE																																																																																																																																																																																																																																																																																																																		
																																																															(\$/prop) (25) F28 + F29	(\$M) (26) F16	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE	WS	SGE



Notes

1. This table shows the key 2013-14 performance indicators for NSW water utilities. More detailed indicators are shown in Tables 6 to 18 and Figures 1 to 68.
2. **No WS** = not responsible for water supply; **No SGE** = not responsible for sewerage;  
**BS** = bulk supplier; **DS** = dual supply; **GW** = groundwater; **UF** = unfiltered; **R** = reticulator.  
For LWUs with No WS or No SGE, results are shown left justified and are not included in the median calculation for water supply and sewerage. NWI indicator numbers are shown in bold below the column number (eg. column (1), NWI indicator **C4**).
3. Where an LWU has not reported an item for 2013-14, the value previously reported has been used where available.  
Such values are shown in this table in ***italics bold*** .
4. The number of connected properties shown in column (1) for LWUs with "No WS" is the number of sewerage connected properties.
5. **NSW Water Utilities**  
In NSW there are 109 water utilities comprising:
- 4 metropolitan water utilities (Sydney and Hunter Water Corporations, Water NSW (from 1 January 2015, formerly Sydney Catchment Authority (SCA)) and Hawkesbury Council), and
  - 105 regional 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.
6. **Totals for Regional NSW**  
The totals shown below are for regional NSW and therefore exclude Sydney and Hunter Water Corporations, Water NSW and Hawkesbury Council. The totals exclude double-counting where bulk water suppliers are involved.
- Number of water supply connected properties** in regional NSW was 841,000 (col (1)).
  - Total annual urban water supplied** was 306,000 ML (column (2)).
  - Total revenue** for water supply and sewerage was \$1,360M (column (23)).
  - Total current replacement cost (CRC)** of WS and SGE assets was \$27,600M, with a median of \$33,200 per assessment (column (8)).
7. **Statewide medians (regional LWUs):**
- Residential revenue from water usage charges** - Median is 73% (column (3)), which has increased from 20% to 73% over the past 19 years due to LWU tariff reform and strong pricing signals to encourage efficient water use (page 111).
  - Typical residential bill (TRB)** for water and sewerage - \$1175/assessment for 2013-14 (column (6)).  
The water supply TRB was \$550 (column (4)) and the sewerage TRB was \$625 (column (5)).
  - Typical developer charge** for water and sewerage - \$10,200/ET for 2013-14 (column (7) and Tables 6 & 7).
  - Water quality complaints** - 3 per 1000 properties (column (13)).
  - Average duration of unplanned interruptions** for water supply - 150 minutes (column (14)).
  - Water main breaks** - 10 breaks per 100km of main (column (15)).
  - Total water supply and sewerage complaints** - 21 per 1000 properties (column (16)).
  - Average annual residential water supplied** - 173kL/connected property (col (17)). This has decreased by 48% since 1991 (page 111).
  - Real water loss** - 70 L/connection/d (column (18)).
  - Median sewage volume that was compliant** - 100% (column (19)).
  - Median sewerage main breaks and chokes** - 37 per 100km of main (column (20)).
8. **Statewide medians (financial):**
- Economic real rate of return (ERRR)** for water supply and sewerage was 1.3% (page 107).  
The water supply ERRR was 1.2% and the sewerage ERRR was 1.5% (columns (27) and (28)).  
100% of LWUs are achieving full cost recovery for water supply and 95% are achieving full cost recovery for sewerage (columns (29) & (30)).  
The remaining 5 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 1% (column (24)).

8. **Statewide medians (financial)** continued from left:
- Operation, maintenance & administration cost (OMA)** for water supply was \$400 and sewerage was \$430 (cols (31) & (32)).  
OMA includes part of the OMA cost of the bulk water supplier but excludes the purchase cost of water. However, NWI indicator F11 includes the purchase cost of water and therefore may differ from column (31). Refer to page 348 of Appendix H.
  - Management cost** for water supply and sewerage - \$301/connected property.  
Water supply management cost was \$140 and sewerage management cost was \$161 per connected property.
  - Capital expenditure** for water supply and sewerage - \$374/property (column (25)).  
The total capital expenditure for water supply and sewerage was \$400M (column (26)).
9. **Category 1 Businesses** - 67 LWUs are Category 1 businesses (ie. with an annual revenue of over \$2M) as defined in the *NSW Government's Policy Statement on Application of National Competition Policy to Local Government, June 1996* .  
66 such LWUs are responsible for water supply and 50 such LWUs are responsible for sewerage.
10. **Pay-for-use water supply tariff** - All of the 93 LWUs providing reticulated water have a pay-for-use water supply tariff (Table 6). (ie. a two-part tariff or an inclining block tariff). Such tariffs comply with IPART recommendations and the *COAG Strategic Framework for Water Reform* .
- 11 **Physical and chemical water quality** - 98.4% of the 4,600 physical samples and 99.4% of the 4,500 chemical samples tested for NSW LWUs achieved 100% compliance with the *2011 Australian Drinking Water Guidelines (ADWG)* .  
All LWUs complied with chemical quality (health related) and are shown as 'Yes' in column (11) (pages 54, 183 and 281).  
All LWUs complied with physical quality (pages 53, 183 and 281). The results shown for H4 in column 12 are based on population.
12. **Microbiological water quality** - E.coli contamination is the primary health-related indicator.
- E.coli** - 99.8% of the 20,200 samples tested for NSW LWUs achieved 100% compliance with the *2011 ADWG*.  
All LWUs complied with these guidelines and are shown as 'Yes' in column (9) (pages 55, 183 and 281).  
The public drinking water supply for 99.9% of the urban population in regional NSW complied with both the microbiological and chemical requirements of the *2011 ADWG* (columns (10) and (12)).
13. **Compliance with EPA Discharge Licence for Sewerage** (pages 198 and 289):
- BOD** - 97% of the 4,024 sampling days for NSW LWUs achieved 100% compliance with the 90-percentile limit of their EPA licence for BOD (Biochemical Oxygen Demand). 92% of LWUs complied with the EPA licence for BOD.
  - SS** - 94% of the 4,024 sampling days for NSW LWUs achieved 100% compliance with the 90-percentile limit of their EPA licence for SS (Suspended Solids). 82% of LWUs complied with their EPA licence for SS.  
16 LWUs had no EPA discharge licence limit.
14. **Best-Practice implementation** - overall the LWUs have implemented 90% of the requirements of the NSW Best-Practice Management Framework (column 33).
15. **Strategic Business Plans** (pages 7 & 8) - 98 LWUs (93%) have completed a sound 30-year water and/or sewerage Strategic Business Plan, which includes a 30-year total asset management plan and a 30-year financial plan (column 34). These LWUs have demonstrated the long term financial sustainability of their water supply and sewerage businesses to comply with National Competition Policy. These plans cover over 99% of the connected properties in regional NSW. As the plans of 55 of these utilities are now over 4 years old (shown as "Yes\*" in column 34), these utilities now need to prepare a 30-year IWCM Strategy, financial plan and report in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au). Similarly, the 16 LWUs whose IWCM Strategy is over 6 years old [shown as Yes<sup>+</sup>] need to prepare such a new IWCM Strategy, financial plan and report [column 34].
16. **Total Urban Water Supplied** of 306,000 ML(column (2)) comprises 269,000 ML potable water, 26,000 ML non-potable water and 12,000ML recycled water. Similarly, the average annual residential water supplied (column 3) includes non-potable & recycled water.
17. **Reuse of recycled water** comprised 43,000ML which is 27% of the volume of sewage collected and was carried out by 84% of utilities, mostly for agriculture (columns 21 & 22). Refer also to graph 16 on page 209 and Figure 57 on page 94.
18. **National Water Initiative (NWI) Indicators** - The 32 NSW water utilities with over 10,000 connected properties (3 metropolitan utilities and 29 regional 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 2013-14*. Refer also to Notes 14 and 15 on page 35. These results are shown in Appendix F on page 309.
19. The performance indicators for Sydney and Hunter Water Corporations and Water NSW were obtained from the *National Performance Report 2013-14 for Urban Water Utilities* (www.bom.gov.au).

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			WS & Sge (\$'000)			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	
		11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	11/12	12/13	13/14	12/13	13/14	12/13	13/14	12/13	13/14
	Sydney Water Corporation	647	675	665	1,516	1,376	1,386	2,750	2,540	2,560	426	377	323		1.9	1.5	1.6	94	100	96	1	2	2	254,342	298,472	252,000	70	54	157184	159,665	157,875	6	6	426,389	464,493	17	18		
	Hunter Water Corporation	539	608	570	1,191	1,287	1,283	274	300	302	541	400	469		2.0	2.5	2.4	59	75	78	2	1	2	21,882	16,021	36,300	62	72	13262	14,004	13,808	5	5	26,045	50,327	9	17		
	Water NSW														57	49	48							26,376	27,479	27,900	75	108						36,639	25,879	18	12		
LWUs with > 10,000 Properties																																							
1	Gosford	669	805	771	1007	1212	1257	71	85.7	89.8	620	657	577	-0.5	-0.3	-0.1	-0.2	-0.1	0.1	4	4.9	6.2	0	0	1						600	1,209	1,230	1.4	1.4	-7,577	-2,032	-9	-2
2	Wyong	645	665	673	1130	1239	1300	69	75.1	79.9	1469	427	431	-0.8	-0.2	-0.1	0.3	0.5	0.6	10	10.0	9.5	0	1	1						1337	1,385	1,375	1.8	1.7	-8,076	-5,219	-11	-7
3	Shoalhaven	731	746	752	1241	1344	1356	57	62.6	63.7	628	497	538	1.5	1.6	1.6	1.5	1.6	1.6	2	0.5	-0.3	65	>100	59	2591	2,599	2,673	20	21	1003	1,022	1,035	1.6	1.6	12,771	12,650	20	20
5	MidCoast	965	922	902	2546	1716	1647	98	66.0	63.5	2168	583	302	-1.2	-0.1	0.3	0.3	1.4	1.7	25	25.4	23.4	0	1	1						917	967	907	1.5	1.4	-6,635	-5,351	-10	-8
6	Tweed	820	888	929	1433	1528	2096	45	48.2	66.7	1180	434	418	0.5	0.2	1.6	0.8	0.6	2.0	4	3.4	2.3	2	2	5						738	733	739	1.5	1.1	-1,686	14,196	-3	21
7	Port Macquarie-Hastings	705	828	880	1377	1453	2001	41	43.2	60.2	449	478	316	1.0	0.2	2.1	0.8	-0.1	2.2	-2	-3.9	-5.3	>100	0	23	1601		940		11	707	713	719	1.7	1.2	-2,424	8,590	-6	14
10	Coffs Harbour	854	972	1006	1746	1849	1894	43	45.8	47.2	280	355	434	0.3	0.0	-0.3	1.5	0.8	0.8	17	14.8	13.7	1	1	1						485	495	499	1.1	1.1	-2,156	-3,197	-5	-7
11	Albury City	737	765	735	1062	1374	1562	24	32.0	36.8	107	256	254	-0.4	1.4	2.8	-0.2	1.5	2.9	3	1.1	-2.4	0	13	54						300	318	316	1.0	0.9	5,091	10,684	16	29
13	Tamworth Regional	913	946	1007	1771	1715	2011	37	36.4	43.1	502	608	1012	1.8	1.4	2.5	2.2	1.7	2.9	0	-2.4	-2.2	6	5	8						387	386	384	1.1	0.9	5,924	11,637	16	27
14	Clarence Valley	819	904	876	1179	1318	1444	26	28.1	30.9	1997	750	694	-0.3	-0.4	0.4	0.3	0.4	1.3	9	9.6	9.8	0	0	1						437	445	448	1.6	1.4	-3,772	1,706	-13	6
15	Eurobodalla	964	914	987	1487	1430	1731	29	27.8	33.9	911	358	364	0.5	0.1	0.4	0.8	0.3	0.7	3	2.4	1.1	2	1	3	750	529	133	-23	8	389	386	391	1.4	1.2	-2,279	1,674	-8	5
16	Wingecarribee	734	773	906	1220	1354	1494	23	25.4	28.3	1158	902	306	0.3	0.9	1.2	0.5	1.1	1.4	0	0.0	-1.3	3	5	8						316	331	339	1.3	1.2	196	4,626	1	16
17	Queanbeyan	883	870	961	1201	1342	1920	19	21.8	31.5	137	54	427	-1.7	-0.9	2.5	-2.7	-1.6	1.8	-18	-17.3	-18.7	0	0	>100						163	150	159	0.7	0.5	-3,984	4,718	-18	15
18	Dubbo	746	817	854	1277	1715	1755	22	29.1	30.1	337	446	272	1.7	2.2	3.0	1.9	2.4	3.0	2	0.0	-4.0	10	13	>100						190	188	190	0.6	0.6	6,099	7,340	21	24
19	Orange	643	691	756	1324	1524	1597	22	25.8	27.4	258	440	1638	2.1	3.3	3.1	1.3	2.6	2.4	-12	-12.7	-14.4	>100	>100	>100						249	253	257	1.0	0.9	9,085	9,307	35	34
20	Goulburn Mulwaree	778	806	786	1708	2035	2032	18	20.2	21.1	1215	438	368	1.3	2.1	2.1	1.6	2.4	2.4	1	-2.1	-4.6	4	8	10						182	186	182	0.9	0.9	5,429	5,972	27	28
21	Bathurst Regional	833	933	948	1194	1444	1644	18	22.0	25.6	381	439	427	0.6	1.1	2.1	0.3	0.9	1.8	-11	-11.1	-12.1	>100	>100	>100						200	202	206	0.9	0.8	1,944	4,718	9	18
22	Lismore	868	940	961	1388	1343	1461	20	19.1	20.9	908	677	368	-1.1	0.5	0.2	-1.3	0.1	0.2	-2	-0.9	-1.4	0	>100	>100						249	274	255	1.4	1.2	-521	-151	-3	-1
23	Bega Valley	1248	1228	1240	1754	1646	1859	25	23.6	26.7	485	330	638	0.6	-0.9	-0.2	0.7	-0.8	-0.1	-1	-1.7	-2.5	25	0	0						258	266	270	1.1	1.0	-3,155	-702	-13	-3
24	Ballina	984	1180	1159	1509	1558	1880	22	21.8	26.7	2282	2010	779	-0.1	-0.2	0.1	-0.2	0.2	1.1	2	8.0	10.7	0	1	1						298	305	303	1.4	1.1	-2,687	-54	-12	0
25	Kempsey	944	1032	1024	1228	1351	1377	16	17.0	17.2	349	600	555	-1.1	-0.7	-0.9	-0.5	-0.1	-0.2	7	7.7	8.3	0	0	0						253	255	253	1.5	1.5	-3,245	-4,596	-19	-27
26	Essential Energy	1675	1468	1600	1872	2203	2025	20	23.2	21.3	401	523	398																		258	250	357	1.1	1.7	2,910	420	13	2
27	Byron	956	1092	1131	1813	1895	2148	20	20.9	24.0	131	231	184	0.4	-1.1	1.5	2.0	0.7	3.3	21	20.9	17.2	1	0	2						156	156	154	0.7	0.6	-3,177	2,036	-15	9
Totals for >10,000 Properties								\$916M										3 LWUs paid a dividend										15 of 23 LWUs had a +ve NPAT											
LWUs with 3,001 - 10,000 Properties																																							
29	Armidale Dumaresq	1062	870	907	1404	1895	1756	12	16.1	15.1	274	267	471	1.1	2.0	1.3	1.0	1.8	1.2	-2	-3.8	-5.6	>100	>100	>100						123	156	161	1.0	1.1	4,760	3,543	29	23
30	Griffith	1143	1174	1198	1702	1866	1816	14	15.7	16.2	1753	424	297	0.8	0.8	0.7	0.6	1.0	1.0	6	4.9	-4.5	>100	4	3						127	116	68	0.7	0.4	1,999	1,856	13	11
31	Lithgow	968	967	1067	1346	1474	1674	11	11.9	13.5	689	353	72																										



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 (%)			WS & Sge (\$'000)			WS & Sge (%)		WS & Sge (\$'000)			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													
		11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	11/12	12/13	13/14	12/13	13/14	12/13	13/14	12/13	13/14												
44	Gunnedah	565	602	662	1098	1182	1496	5	5.5	6.7	210	277	316	2.8	2.8	4.0	1.6	2.0	3.2	-18	-19.5	-21.0	>100	>100	>100				80	78	78	1.4	1.2	1,822	2,809	33	42														
46	Narrabri	717	829	861	1036	1360	1774	5	6.1	8.0	44	124	222	5.0	8.4	4.3	3.1	6.2	3.2	-27	-31.1	-22.2	>100	>100	>100				69	68	68	1.1	0.9	2,229	2,519	37	32														
43	Tumut	854	830	862	1225	1437	1347	5	6.4	6.0	797	632	153	-0.1	1.2	0.7	-0.6	1.4	1.3	3	2.8	0.5	0	10	2				79	98	91	1.5	1.5	701	-315	11	-5														
49	Young	357	393	537	1143	1230	1270	5	5.8	6.0	285	4357	1921	6.4	2.8	0.4	4.8	2.8	1.3	-26	-7.7	5.8	>100	>100	1				83	85	85	1.5	1.4	1,122	54	19	1														
39	Cowra	955	1114	1140	1580	1810	1635	8	9.7	8.6	464	318	714	0.7	1.8	0.3	1.9	2.9	1.3	6	5.1	5.9	2	3	1				107	108	108	1.1	1.3	550	-612	6	-7														
45	Upper Hunter	911	960	1215	1232	1785	1674	6	8.3	7.4	3094	1296	434	1.4	3.7	0.8	0.0	3.2	0.5	-13	-9.2	-10.8	>100	>100	>100				83	76	82	0.9	1.1	2,788	600	34	8														
52	Snowy River	786	774	732	1052	1187	1255	6	6.1	6.6		703	735	0.5	0.3	1.2	0.2	0.2	1.2	-6	-4.2	-6.3	>100	>100	46				21	38	6	0.6	0.1	164	649	3	10														
51	Forbes	926	1258	1093	1055	1221	1366	4	4.5	5.0		584	567	0.1	-0.8	-0.1	-0.7	-1.4	-0.5	-16	-13.5	-15.3	>100	0	0				65	121	71	2.7	1.4	-497	-48	-11	-1														
50	Cooma-Monaro	924	1125	1160	1452	1710	1591	6	6.3	5.8	389	428	841	0.3	0.9	0.9	-0.1	0.6	0.6	-6	-7.4	-7.3	0	>100	>100				68	67	66	1.1	1.1	465	-39	7	-1														
53	Berrigan	756	861	764	1069	1214	1332	4	4.3	4.7	212	123	148	0.4	0.9	2.5	-0.4	0.4	1.9	-11	-13.3	-15.6	0	>100	>100				87	88	89	2.1	1.9	68	788	2	17														
Totals for 3,001 - 10,000 Props		\$198M																														No. of LWUs paying dividend is 0										18 of 22 LWUs had a +ve NPAT									
LWUs with 1,501 - 3,000 Properties																																																			
48	Leeton	988	1092	1093	1189	1558	1415	5	5.8	5.5	225	311	477	1.0	1.3	0.4	-0.2	0.2	-0.5	-19	-19.7	-19.7	0	>100	0				66	66	69	1.1	1.2	458	-17	8	0														
54	Deniliquin	849	951	968	1269	1605	1464	4	5.6	5.1	333	1500	137	2.1	3.8	2.2	1.1	3.5	1.9	-11	-7.4	-10.0	>100	>100	>100				74	73	73	1.3	1.4	1,371	727	24	14														
47	Bellingen	927	940	1001	1080	1172	1440	4	4.8	5.9	198	286	324	0.6	0.6	1.6	-0.4	0.0	0.9	-19	-18.8	-20.1	0	0	>100				92	78	94	1.6	1.6	241	1,260	5	21														
60	Glen Innes Severn	699	685	694	889	1063	1090	3	3.1	3.2	1333	391	544	-1.2	0.6	0.9	-0.9	1.1	1.5	4	3.8	5.7	0	2	3				56	73	74	2.3	2.3	157	263	5	8														
58	Cootamundra	468	483	481	1031	1080	1216	3	3.2	3.6			35	1.1	1.4	1.8	1.1	1.4	1.8	-10	-12.9	-14.6	39	84	>100				80	83	50	2.6	1.4	265	372	8	10														
57	Wellington	936	950	976	1256	1587	1654	4	4.6	4.8	39	34	30	-1.1	0.6	1.0	0.2	1.7	2.0	20	15.6	11.4	0	2	2				58	61	58	1.3	1.2	83	219	2	5														
91	Cabonne	916	1087	1056	1821	2044	2160	2	2.3	2.5	888	734	567	-0.6	-0.8	-0.4	-1.1	-1.1	-0.7	-7	-6.8	-3.6	0	0	0				0	41	39	1.8	1.6	-690	-283	-30	-11														
80	Greater Hume	750	795	822	1065	1366	1530	2	2.5	2.8	297	153	243	-0.6	-0.3	0.0	-0.9	-0.5	-0.2	-5	-5.1	-6.0	0	0	0				44	45	45	1.8	1.6	-149	-14	-6	0														
59	Lachlan	1053	1218	1292	1158	1417	1430	3	4.0	4.0	4441	334	284	-0.4	-0.4	-0.7	-1.3	-1.2	-1.5	-12	-12.8	-13.2	0	0	0				42	43	40	1.1	1.0	-326	-506	-8	-13														
65	Murray	665	774	786	1212	1285	1369	4	3.7	4.1	311	189	473	2.1	2.9	3.5	1.8	2.5	3.1	-8	-9.7	-10.0	>100	>100	>100				57	57	59	1.5	1.4	914	1,161	24	28														
62	Narromine	793	843	1013	1013	1239	1285	2	2.6	2.7	109	201	385	1.0	2.1	2.7	-0.2	1.3	1.9	-25	-27.8	-29.8	0	>100	>100				38	39	41	1.5	1.5	470	587	18	22														
56	Yass Valley	833	1114	894	1538	1651	1649	5	5.2	5.3	2012	2812	0	2.6	0.2	1.1	2.6	1.5	0.0	2	20.0	20.6	>100	1	2				44	44	47	0.8	0.9	-2	504	0	9														
61	Liverpool Plains	718	736	902	1128	1232	1487	3	3.4	4.1	447	2027	292	0.8	1.5	1.6	0.4	1.2	1.5	-8	-5.0	-6.7	>100	>100	>100				54	60	57	1.8	1.4	1,034	1,139		27														
55	Warrumbungle	827	889	1015	1012	1161	1203	3	3.9	4.0	126	127	149	-0.4	0.3	0.0	-0.5	0.0	-0.6	-6	-4.7	-6.6	0	0	0				69	86	56	2.2	1.4	36	-71	1	-2														
71	Palerang	886	1079	1093	2578	1733	2025	6	3.7	4.5	4167	2813	362	5.4	0.6	0.5	5.3	1.0	1.3	-5	4.2	2.5	>100	3	2				27	22	23	0.6	0.5	47	266	1	6														
63	Narrandera	724	959	845	1194	1669	1419	3	3.5	2.9		1107	645	6.3	8.1	5.5	3.7	6.4	3.8	-27	-30.0	-29.6	>100	>100	>100				45	59	44	1.7	1.5	1,464	933	42	32														
67	Cobar	821	1056	1521	1021	1423	1678	2	3.2	3.8	113	94	0	-0.3	1.1	-0.6	-0.4	1.1	-0.9	-5	-5.6	-8.6	0	>100	0				22	25	24	0.8	0.6	240	-128	7	-3														
74	Wentworth	748	719	784	1458	1548	1694	4	3.6	3.8	90	50	39	2.3	4.5	3.6	2.1	4.1	3.6	-5	-8.4	-12.1	>100	>100	>100				35	36	36	1.0	0.9	1,296	1,179	36	31														
75	Coonamble	547	593	531	675	859	958	1	1.5	1.6	255	2911	347	0.5	1.4	0.4	-1.6	-0.1	-0.6	-31	-19.5	-20.9	0	0	0				22	28	25	1.9	1.6	339	-58	23	-4														
Totals for 1,501 - 3,000 Props		\$75M																														No. of LWUs paying dividend is 0										12 of 19 LWUs had a +ve NPAT									
LWUs with 200 - 1,500 Properties																																																			
70	Kyogle	992	1034	1211	1083	1126	1243	2	2.1	2.4	741	326	195	0.3	-0.2	-0.5	0.5	0.1	-0.2	-1	1.5	1.1	3	0	0				52	53	53	2.5	2.2	-125	-237	-6	-10														
79	Walgett	1071	778	1946	1096	1218	1242	2	2.4	2.4	365	0	0	-1.3	0.1	-6.9	-1.9	0.2	-6.5	-12	-16.1	-14.7	0	2	0				24	22	43	0.9	1.8	-5	-2,141	0	-89														
68	Tenterfield	984	1041	1034	1329	1483	1773	3	3.0	3.6	484	357	331	-1.6	-0.3	1.2	-1.2	0.3	1.6	8	5.6	0.7	0	0	4				46	47	49	1.6	1.4	-195	443	-7	12														
84	Gilgandra	659	663	747	1001	1091	1336	1	1.5	1.8	282	198	330	-0.2	0.2	1.1	-0.9	-0.2	0.7	-12	-12.2	-11.8	0	0	>100				27	25	25	1.7	1.4	-88	-311	-6	-17														
73	Upper Lachlan	864	810	906	1205	1410	1463	2	2.8	2.9	273	1503	5095	0.3	3.2	2.0	0.1	2.7	1.8	-16	-16.7	-7.7	>100	>100	>100				34	34	35	1.2	1.2	452	532	16	18														
87	Bourke	1406	1220	1457	1712	1531	1812	2	2.0	2.5	121	471	41	-0.5	1.7	0.7	-1.6	0.9	-0.1	-17	-15.8	-16.9	0	0	0				11	11	11	0.5	0.4	-175	141	-9	6														



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			WS & Sge (\$'000)			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																		
		11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	11/12	12/13	13/14	12/13	13/14	12/13	13/14	12/13	13/14																	
		86	Hay	1010	1021	1110	1419	1462	1479	2	1.9	2.0	212	150	1.1	0.9	0.4	0.6	0.5	0.1	-13	-14.4	-15.7	>100	>100	>100				25	24	25	1.2	1.3	182	76	9	4																		
83	Oberon	1243	1438	1477	1329	1550	1534	2	2.1	2.1	91	160	120	0.4	-0.2	-0.9	0.1	-0.4	-1.0	-4	-4.0	-3.8	>100	0	0				21	20	21	1.0	1.0	-87	-171	-4	-8																			
81	Gwydir	672	723	706	1313	1369	1504	2	2.0	2.2	672	405	124	2.9	-5.9	5.4	3.1	-5.6	5.9	-3	-4.2	-6.2	21	0	12				45	45	45	2.2	2.0	-1,526	354	-76	16																			
85	Uralla	789	819	855	792	917	1013	1	1.3	1.4	27	81	0	-0.9	0.2	0.1	-1.0	-0.7	-0.3	-6	-7.3	-8.5	0	0	0				30	31	28	2.4	1.9	40	24	3	2																			
89	Bogan	1090	1320	1695	1366	1985	2146	2	2.2	2.4	46	0	171	-0.4	1.9	1.0	-0.8	1.4	0.4	-9	-11.8	-14.0	0	>100	>100				18	32	0	1.4	0.0	384	99	17	4																			
76	Harden	728	617	628	1219	1434	1436	2	2.6	2.8	201	117	27	0.4	1.2	1.4	2.5	0.8	1.1	-8	-9.3	-11.8	0	>100	>100				36	39	39	1.5	1.4	250	289	10	10																			
88	Wakool	857	1060	1009	1309	684	1439	2	1.0	2.2	479	1083	524	0.1	0.0	0.3	-0.3	-0.4	0.0	-7	-7.5	-8.0	0	0	0				28	27	27	2.7	1.3	-1,317	-61	-131	-3																			
93	Tumbarumba	764	790	761	1135	1291	1361	1	1.5	1.6	1354	748	976	0.7	0.1	0.4	0.3	0.0	0.3	-6	-5.3	-5.1	>100	>100	>100				19	20	20	1.3	1.3	-83	41	-6	3																			
94	Gundagai	1041	1012	1024	1168	1515	1640	1	1.4	1.6	77	63	69	-1.1	1.3	2.0	-1.4	0.9	1.6	-7	-8.2	-10.7	0	>100	>100				23	23	25	1.7	1.6	235	364	17	23																			
92	Carrathool	1169	1369	1187	1530	1750	1538	2	1.9	2.0	200	390	1027	-1.5	-1.4	0.9	-1.5	-1.4	0.8	3	2.7	3.8	0	0	>100				13	14	15	0.7	0.8	-897	178	-46	9																			
96	Warren	999	1124	1092	1042	1151	1184	1	1.1	1.1	148	187	314	-0.1	-1.2	-1.1	-1.6	-2.4	-2.1	-21	-19.9	-19.6	0	0	0				17	19	18	1.7	1.6	-207	-176	-19	-15																			
98	Walcha	899	983	1061	1351	1118	1103	1	1.0	1.0	31	76	76	1.1	0.0	-0.3	0.8	-0.3	-0.5	-6	-7.1	-7.6	>100	0	0				16	22	18	2.3	1.8	-9	-53	-1	-5																			
100	Balranald	736	745	846	945	1080	1331	1	1.0	1.2	179	106	0	-1.5	-1.1	0.1	-1.4	-0.9	0.2	-2	-2.4	-4.2	0	0	1				0	0	0.0	0.0	-147	-6	-15	0																				
97	Bombala	729	823	849	1025	1078	1152	1	1.0	1.0	58	138	162	0.8	-0.8	-0.8	0.0	-1.4	-1.3	-13	-13.3	-13.8	0	0	0				19	19	20	2.0	2.0	-187	-189	-19	-18																			
101	Murrumbidgee	591	577	666	664	806	832	1	0.6	0.7	127	107	53	-0.5	-0.1	-0.5	-1.3	-0.7	-1.1	-14	-14.7	-15.4	0	0	0				13	17	12	2.7	1.8	-12	-66	-2	-10																			
90	Guyra	858	874	1001	1044	1247	1699	1	1.7	2.1	114	80	65	0.6	0.2	0.3	0.4	-0.1	0.1	-3	-4.1	-6.0	>100	0	>100				29	30	30	1.8	1.4	48	329	3	16																			
104	Boorowa	1031	983	953	1283	1573	1577	1	1.0	1.0	34	459	116	-0.7	-0.2	-0.2	-1.2	-0.6	-0.5	-8	0.4	-10.5	0	0	0				15	15	17	1.5	1.7	-50	-158	-5	-15																			
105	Brewarrina	2565	1720	2033	3168	3531	4269	2	1.8	2.1	267	103	1066	0.2	5.2	0.0	0.1	5.1	6.2	-12	-13.6	-11.4	>100	>100	0				4	4	4	0.2	0.2	-59	-51	-3	-2																			
106	Jerilderie	940	1042	1125	1302	1298	1398	1	0.6	0.7	64	94	63	2.2	1.3	0.8	-0.2	-0.8	-0.9	-27	-28.4	-25.1	0	0	0				11	10	10	1.6	1.5	37	-24	6	-4																			
103	Central Darling	2143	1825	1716	1432	1268	3951	1	0.9	2.9	0	0	0	-1.1	-1.6	4.1	-1.2	-1.6	4.2	-2	-0.2	-3.0	0	0	>100				0	0	0.0	0.0	-435	1,071		37																				
Totals for 200 - 1,500 Props		\$37M											\$42M											\$50M											No. of LWUs paying dividend is 0											13 of 26 LWUs had a +ve NPAT										
LWUs with a single service (WS or Sge)																																																								
4	Rous (Bulk Supplier) (NO SGE)	192	234	238	423	430	475	20	19.6	22.2	60	55	0	0.3	0.8	1.2	1.0	1.1	1.7	8	6.2	4.2	2	4	3				10	10	10	0.1	0.0	559	1,890	3	9																			
8	Riverina (Groundwater) (NO SGE)	318	384	338	593	855	921	17	25.1	27.2	204	188	209	1.5	3.6	5.6	1.5	3.5	5.3	-2	-3.6	-7.0	>100	>100	>100				202	212	225	0.8	0.8	3,760	6,931	15	25																			
12	Fish River WS (Bulk Supplier, NO SGE)	164					427	7	8.8	10.0	238	17	0	1.6	10.9	15.6	1.6	10.9	15.6		0.0	0.0	>100							0	0	0.0	0.0	3,514	4,492	40	45																			
28A	Goldenfields (Reticulator) (NO SGE)	715	809	811	961	1159	1330	10	11.8	13.6			0	0.2	1.4	2.7	-0.1	1.1	2.3	-5	-8.6	-9.4	0	>100	>100				100	101	98	0.9	0.7	2,237	4,069	19	30																			
28B	Goldenfields (Bulk) (NO SGE)	185	147	146	204	251	252	4	4.8	4.9			0	-1.1	1.2	1.3	-1.8	0.7	0.9	-11	-10.1	-11.1	0	>100	>100				0	0	0	0.0	0.0	762	862	16	17																			
40	Central Tablelands (NO SGE)	464	565	552	686	950	963	4	5.2	5.2	124	199	87	-1.3	0.7	0.9	-1.0	0.7	1.0	2	-0.7	-3.8	0	64	9				56	58	57	1.1	1.1	385	284	7	5																			
9	Wagga Wagga (NO WS)	367	413	417	669	642	632	17	16.7	16.6	244	138	180	0.0	-0.3	-0.5	0.6	0.5	0.3	0	5.6	6.1	1	1	0				158	158	160	0.9	1.0	-825	-1,343	-5	-8																			
30A	Hawkesbury (NO WS)	523	555	549	668	726	718	5	5.6	5.5	629	464	188	-1.6	-0.1	-0.2	-1.9	-0.2	-0.4	6	-4.8	2.9	0	0	0				38	38	41	0.7	0.7	-160	-109	-3	-2																			
69	Temora (NO WS)	199	231	229	284	307	321	1	0.7	0.7	7	158	0	0.9	0.3	0.1	0.4	0.0	0.0	2	-7.5	-6.5	>100	0	0				26	26	25	4.0	3.6	33	24	5	3																			
72	Bland (NO WS)	341	357	357	579	618	647	1	1.1	1.2	123	76	0	18.2	2.2	2.7	1.0	2.1	2.6	1	-1																																			

Table 5B: Water Supply & 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)  (33) C12  11/12 12/13 13/14			% of calls Answered by Operator within 30 seconds  (%) (34) C14  11/12 12/13 13/14			Greenhouse Gas Emissions						Surface Water Supply						Groundwater		Bulk Supplier (potable water)  (41)	Coastal (C) or Inland (I)  (41a)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
								Water		Sewerage		Other		Total		Major Sources of Water  (36)				Storage Dams  (37)				Bulk Raw Water Supplier  (38)	>50% of Supply from Grnd Water	No. Bores																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
								(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(39)	(40)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Table 5B: Water Supply & 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)  (33) C12  11/12 12/13 13/14			% of calls Answered by Operator within 30 seconds  (%)  (34) C14  11/12 12/13 13/14			Greenhouse Gas Emissions						Surface Water Supply						Groundwater		Bulk Supplier (potable water)  (41)	Coastal (C) or Inland (I)  (41a)					
								Water		Sewerage		Other		Total		Major Sources of Water  (36)								Storage Dams		Bulk Raw Water Supplier  (38)	>50% of Supply from Grnd Water  (39)	No. Bores  (40)
								(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)	(tonnes CO2 per 1000 properties)															
								(35a) E9	(35b) E10	(35c) E11	(35d) E12																	
		11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	12/13	13/14	12/13	13/14	12/13	13/14	12/13	13/14											
37	Inverell	1	1	1	100	100	100	130	129	116	136	16	17	262	262	Gwydir R and groundwater (1ML/d) to supply Inverell, Yetman and Ashford.	Lk Inverell (1.5GL)	Water NSW		1		0.0						
38	Moree Plains	6	18	13	99	99	99	166	122	521	236			687	333	Groundwater (18ML/d) to supply Moree, Mungindi and Bogabilla.	2 dams (150ML)		Yes	14		0.0						
39	Cowra	2	1	2	100	100	100	220	301	84	138		0	304	394	Lachlan River and 2 bores to supply Cowra.	Koorawatha (200ML)	Water NSW		2		0.0						
41	Muswellbrook	0	0	1				0	0.2	37	41	12	15	50	56	Hunter River and groundwater (0.5ML/d) to supply Muswellbrook and Denman.		Water NSW		3		0.0						
42	Corowa	2	0	0	100	100	100		210	36	149			36	353	Murray River and Mulwala Lake to supply Corowa and Mulwala.		Water NSW		2		0.0						
43	Tumut	14	8	2	99	99	99	201	187	202	201	5	4	409	382	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)	Water NSW		3		0.0						
44	Gunnedah	0	0	1	95		95	222	316		67			222	375	Groundwater (26ML/d) & Namoi R to supply Gunnedah, Curlewis, Mullaley and Tambar Springs.			Yes	17		0.0						
45	Upper Hunter	4	4	6	99	99	99									Hunter River & groundwater (5ML/d) to supply Scone, Aberdeen, Merriwa, Cassilis, Murrurundi & Willow Tree.	Murrurundi (170ML)	Water NSW		9		0.0						
46	Narrabri	5	8	7	100	100	100		0		291		556		811	Namoi R & groundwater (34.5ML/d) to supply Narrabri, Wee Waa, Boggabri, Pilliga, Bellata & Gwabegar.			Yes	11		0.0						
47	Bellingen	14	2	1	95	95	95	139	169	181	357			320	434	Bellinger R to supply Dorrigo & groundwater (4ML/d) to supply Bellingen.	1 dam (54ML)		Yes	4		0.0						
48	Leeton	1	0	0	100	100	100									Murrumbidgee Irrigation Area Main Northern Canal to supply Leeton, Yanco, Murrami & Whitton.	Leeton, 2 others (270ML)	Water NSW				0.0						
49	Young	1	1	1	95	95	95	4	4	57	186	25	12	86	166	Council is a reticulator with a fully treated bulk water supply.						Goldenfields	0.0					
50	Cooma-Monaro	1	0	2	98	98	100	227	10	50	10	21		298	19	Murrumbidgee River & groundwater (0.7ML/d) to supply Cooma, Bredbo & Nimmitabel.	1 dam for Nimmitabel (100ML)			4		0.0						
51	Forbes	0	0	0	100	100	100	322	314	215	276	22	21	559	573	Lachlan River & groundwater (7.3ML/d) to supply Forbes & Ootha.		Water NSW		2		0.0						
52	Snowy River	10	10	10	96	99	99	155	151	144	146	5	5	304	289	Snowy River to supply Jindabyne, Berridale, Adaminaby, Dalgety & Kalkite.		Water NSW					0.0					
53	Berrigan	17	19	15	98	98	99	64	64	278	279		0	343	343	Mulwala Canal, DWR Channel & Murray River to supply Berrigan, Finley & Tocumwal.	4 dams (260ML)	Water NSW					0.0					
54	Deniliquin		0	4			85	240	303	386	425	27	30	653	719	Edward River to supply Deniliquin.		Water NSW		1			0.0					
55	Warrumbungle	0	33	8				201	185	121	141	17	15	339	309	Castlereagh R & groundwater (18.3ML/d) to supply Dunedoo, Coolah, Mendooran, Coonabarabran, Baradine, Binnaway, Bugaldie & Kenerbi.	Timor (1.14GL)			6		0.0						
56	Yass Valley	9	8	17	95	95	95	56	103	153	172	13	13	222	240	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		0.0						
LWUs with 1,501 - 3,000 Properties																												
57	Wellington	2	8	10	96	99	99	339	337	193	211	17	17	549	546	Macquarie River to supply Wellington.		Water NSW		2			0.0					
58	Cootamundra	4	2	8	95	98	98		8	225	175	5	5	230	178	Council is a reticulator with a fully treated bulk water supply.					Goldenfields	0.0						
59	Lachlan	4	6	8	100	100	100	359	358	88	115	16	16	464	462	Lachlan River and groundwater (2ML/d) to supply Lachlan, Tottenham and Lake Cargelligo.	5 dams (112ML)	Water NSW		4		0.0						
60	Glen Innes Severn	0	0	0	100	100	100	96	96	102	107	9	9	207	207	Beardy Waters and Mann River to supply Glen Innes and by a weir on the Mole River to supply Deepwater.	Beardy Waters (500ML)			1		0.0						
61	Liverpool Plains	55	56	51	90	90	95									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		0.0						
62	Narromine	14	4	2				165	171	72	119	1	51	237	333	Groundwater (18ML/d) to supply Narromine, Trangie and Tomingley.	2 dams (52ML)		Yes	8		0.0						
63	Narrandera	2	2	2	80	80	95		0		0		0			G/water (18ML/d) to supply Narrandera. A bulk water supply from Goldenfields is provided to part of Narrandera.			Yes	4	Goldenfields	0.0						
65	Murray	0	0	0	100	100	100	175	171	98	129			273	305	Murray River and Gulpa Creek to supply Moama and Mathoura.		Water NSW		1		0.0						
67	Cobar	2	7	5	90	90	95	91	122	106	138	7	7	204	235	Bulk water supply. Bogan River to supply Cobar.	Cobar (1.82GL), 4 others	Cobar WB		1		0.0						
68	Tenterfield	5	5	5	95	95	95	97	104	96	116			193	203	Tenterfield Creek and groundwater (1ML/d) to supply Tenterfield, Urbenville and Jennings.	Tenterfield Ck (1.15GL)			1		0.0						
70	Kyogle	2	1	0	100	100	100	231	231	89	81	23	23	344	326	Clarence River to supply Kyogle, Bonalbo and Woodenbong.	Bonalbo (47ML)			3		0.0						
71	Palerang	14	14	2		95	100	116	176	188	139		0	304	308	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)			5		0.0						
73	Upper Lachlan	3	0	0	90	90	90	102	127					102	127	Kentgrove Creek to supply Crookwell and groundwater (2ML/d) to supply Gunning and Dalton.	Crookwell (450ML), other (25ML)			6		0.0						
74	Wentworth	3		2			100		608		214				758	Murray R & Darling R to provide a dual supply for Wentworth, Buronga, Gol Gol, Dareton and Pooncarie.		Water NSW				0.0						
75	Coonamble			0		90	99		313		102		11		402	Groundwater (11.7ML/d) to supply Coonamble.			Yes	6		0.0						
76	Harden	16	15	7	99	99	100	12		494		3		509		Council is a reticulator with a fully treated bulk water supply.					Goldenfields	0.0						
79	Walgett	0	2			90										Namoi River and groundwater (5ML/d) to supply Walgett, Collarenibri and Lightning Ridge.		Water NSW		6		0.0						
80	Greater Hume	0	0	0	100	100	100	140	142	174	115	34	33	349	338	Council is mostly a reticulator serving Hume Villages with a fully treated bulk supply. G/water (4ML/d) to Culcairn.				2	Albury, Riverina	0.0						



Table 5B: Water Supply & 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)  (33) C12  11/12 12/13 13/14			% of calls Answered by Operator within 30 seconds  (%)  (34) C14  11/12 12/13 13/14			Greenhouse Gas Emissions						Surface Water Supply							Groundwater		Bulk Supplier (potable water)  (41)	Coastal (C) or Inland (I)  (41a)		
							Water  (tonnes CO2 per 1000 properties)  (35a) E9  12/13 13/14	Sewerage  (tonnes CO2 per 1000 properties)  (35b) E10  12/13 13/14	Other  (tonnes CO2 per 1000 properties)  (35c) E11  12/13 13/14	Total  (tonnes CO2 per 1000 properties)  (35d) E12  12/13 13/14	Major Sources of Water  (36)							Storage Dams  (37)		Bulk Raw Water Supplier  (38)	>50% of Supply from Grnd Water  (39)			No. Bores  (40)	
LWUs with 200 - 1,500 Properties																									
81	Gwydir	0	0	1				44	56			44	44	Gwydir R to supply Bingara & g/water (5ML/d) to supply Warialda, Gravesend & North Star. System is non-potable.		Water NSW	Yes	9			0.0				
83	Oberon	5	5	5	95	95	95	143	142	53	57		195	194	Council is a reticulator with a bulk water supply from Fish River.					Fish River WS	0.0				
84	Gilgandra	7	12	7	75	80	80	311	357	468	77	53	47	833	483	Groundwater (8.5ML/d) to supply Gilgandra			Yes	5		0.0			
85	Uralla	3	21	17	95	98	98	125	132	111	174	11	7	246	274	Kentucky Creek and Gwydir River to supply Uralla and Bundarra.	Kentucky Ck (500ML)				0.0				
86	Hay	2	2	2	50	50	50	40	41	131	137	40	41	212	213	Murrumbidgee River to supply Hay.	Water NSW				0.0				
87	Bourke	0	8	15	80	90	90	34	33	120	130	23	22	177	170	A weir on the Darling River to supply Bourke.				1		0.0			
88	Wakool	0	0	7	100	100	100									Murray River to supply Barham and Murray Downs.	1 dam (130ML)	Water NSW			0.0				
89	Bogan	0	0	0	90	90	90	153	168	185	194	31	28	369	361	Bogan River to supply Nyngan.	Water NSW				0.0				
90	Guyra	1	3	1	100	96	97	165	352	142	140	11	11	318	496	Gara River to supply Guyra.	Guyra (375ML), Tingha (90ML)				0.0				
91	Cabonne		13	9		100	100	94	159	204	117	3	3	301	378	Molong Creek, Buckinbah River, the Bell River and groundwater (0.4ML/d) to supply Molong, Cumnock and Yeoval.	Borenore Ck (230ML), Molong Ck (1GL), Cumnock (20ML)			7		0.0			
92	Carrathool	6	9	9	100	100	100	1239	1199	48	112		0	1,288	1,272	Murrumbidgee Irrig. Area Canal & g/water (15ML/d) to supply Hillston, Goolgowi, Rankins Springs & Carrathool.	3 dams (184ML)		Yes	8		0.0			
93	Tumbarumba	1	3	1	100	100	100	82	37	88	72	2	2	172	101	Murray River and groundwater (0.4ML/d) to supply Tumbarumba and Khancoban.	Tumbarumba (70ML)			1		0.0			
94	Gundagai	10	4	22	98	98	98	390	357	164	183	5	5	560	515	Murrumbidgee River to supply Gundagai.	Water NSW				0.0				
96	Warren	18	26	21	90	95	95		0		0		0			Macquarie River and groundwater (3.5ML/d).	Water NSW			5		0.0			
97	Bombala	0	0	11	100	100	100	93	96	141	169		0	234	242	Coolumbooka River, Delegate River and Snowy River to supply Bombala and Delegate.	Coolumbooka (215ML)					0.0			
98	Walcha	7	0	0	100	100	100	138	213	120	200	16	59	274	443	MacDonald River to supply Walcha.	Walcha (80ML)					0.0			
100	Balranald	0	0		100	100		134	174	73	200			208	360	Murrumbidgee R to supply Balranald & Euston.	Water NSW					0.0			
101	Murrumbidgee	0	0													Groundwater (13ML/d) to supply Darlington Point and Coleambally.		Yes	4			0.0			
103	Central Darling		54	80	95	95	95	271	270	115	224		0	386	385	Groundwater (1ML/d), Wallandra Creek and Darling River to supply Wilcannia, Ivanhoe and Whitecliffs.	4 dams (575ML)			3		0.0			
104	Boorowa	0	2	9	99	99		190	188	25	24	4	5	220	217	Boorowa River to supply Boorowa.	Boorowa (335ML)			2		0.0			
105	Brewarrina	4	19	6	100	100	100	385	418	115	98	6	8	506	527	Barwon River and groundwater (0.9ML/d) to supply Brewarrina and Goodooga.	1 dam (73ML)			1		0.0			
106	Jerilderie	0	0	0	95	95	100	145	120	60	51	11	12	216	178	Billabong Creek to supply Jerilderie.	Water NSW					0.0			
LWUs without Sewerage																									
4	Rous (Bulk Supplier) (NO SGE)			0	95	95	95	0	106			100	110	1	216	Rocky Ck, Duck Ck & Emigrant Ck to provide a fully treated bulk water supply to Byron, Richmond Valley, Lismore & Ballina.	Rocky Ck (14GL), Emigrant Ck (820ML)			3			0.0		
8	Riverina (Groundwater) (NO SGE)	4	3	4	98	98	98	351	353			15	19	365	372	Murrumbidgee River and groundwater (117ML/d) to supply Wagga Wagga, Holbrook, Lockhart and Henty.	3 dams (30ML)	Water NSW	Yes	28			0.0		
12	Fish River WS (Bulk Supplier) (NO SGE)			0	98	100	100	0	45					0	45	Oberon R & Duckmaloi R to provide a bulk water supply to Oberon & Lithgow councils, Pacific Power & Sydney Water.	Oberon (45GL), Duckmaloi Weir					0.0			
28A	Goldenfields (Reticulator) (NO SGE)							443	390			18	17	461	407	Council reticulates water to Bland, Coolamon, Junee, Temora and part of Narrandera.					Goldenfields	0.0			
28B	Goldenfields (Bulk) (NO SGE)							1	330			0	15	1	345	Murrumbidgee R & g/water (42.5ML/d) to supply Cootamundra, Harden, Young & Goldenfields Reticulation area.	Water NSW	Yes	6			0.0			
40	Central Tablelands (NO SGE)	0	0	0	98	98	98	332	280			5	4	336	285	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		0.0			
66	Cobar Water Board (Bulk) (NO SGE)					100										Bulk raw water is supplied to Cobar and the mines.	4 dams (1.1GL) Nyngan, Cobar					0.0			
LWUs without Water Supply																									
9	Wagga Wagga (NO WS)			0		100			176	177	0			176	177								0.0		
30A	Hawkesbury (NO WS)	0	0	0					297	54				297	54								0.0		
69	Temora (NO WS)	0	0	0		100			35	53	0	0		36	53								0.0		
72	Bland (NO WS)	0	0	0		95			68	68		0		68	68								0.0		
77	Junee (NO WS)	0	0	0		100			336	334				336	334								0.0		
78	Blayney (NO WS)	0	0	0		100			146	145				146	145								0.0		
95	Weddin (NO WS)	0	0	0		90			38	38		0		38	38								0.0		
99	Coolamon (NO WS)	0	0	0					83	83				83	83								0.0		
102	Lockhart (NO WS)	0	0	0		95			137	195	147	8		284	203								0.0		
107	Urana (NO WS)	0	0	0		99				0		0											0.0		

NOTE:

1. 61 LWUs have a storage dam (col 37), 34 LWUs receive a bulk raw water supply from Water NSW (col 38); 60 LWUs have a groundwater supply (col 40), of which 14 obtain >50% of their water supply from groundwater (col 39); 14 LWUs receive a bulk potable water supply from another urban water utility (col 41).



Table 5C: Water Supply - Infrastructure Asset Condition and Performance - 2013-14

WATER UTILITY		WATER SUPPLY INFRASTRUCTURE INDICATORS (including SPECIAL SCHEDULE 7 - Condition of Public Works - refer to note 2)																				SYSTEM PERFORMANCE												BPM				
		WDV CRC per property	Current Replacement Cost	Written Down Replacement Cost	Current Depreciation of System Assets	Capital Expenditure	Estimated Cost to Bring to Satisfactory Standard (BTS)	Actual Annual Maint-enance	Mains Maint-enance Cost	Rehabilitations			Asset Renewals			Assets in Condition as a % of WDV					Renewals Ratio	Backlog Ratio	Asset Maintenance Ratio	Capital Expenditure Ratio	Operating Cost	Net Debt to Equity	Economic Real Rate of Return	Water Main Breaks	Unplanned Inter-ruptions to Supply	Real Loss	Water Quality Complaints	Water Service Complaints	% Popn with micro Compliance	Typical Residential Bill	Drinking Water Mgmt System (DWMS)?	No. Water Treatment Operators Meeting Nat'l Cert'n Rqmts	Best-Practice Implementation	
										\$/property F9/C4	\$'000	\$'000 F9	\$'000	\$'000 F14	\$'000	\$'000	\$'000 per 100km of Main	Mains (% of Total Length)	Service Conn-ections (%)	Water Meters (%)																	\$'000	\$'000 per 100km of Main
(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	1	2	3	4	5	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(70a)	(70b)	(71)	(72)		
	Sydney Water Corporation	6,589		12,176,110		195,694																				401	96	2	30	183	81	0	0	100	572			
	Hunter Water Corporation	9,889		2,332,222		76,276																				229	78	4	30	303	82	3	0	100	402			
LWUs with > 10,000 Properties																																						
	Gosford	7,705	932,876	550,751	13,521	12,883	8,607	7,910	347	0.2	-	0.3	6,799	690	0.7	64	20	11	5	0	0.56	0.02	1.17	0.95	367	6	0.8	22	187	120	15	-	100	475	Yes	4	100	Yes+
2	Wyong	13,878	1,303,708	852,534	16,593	19,827	1,365	5,343	357	0.1	0.9	20.8	17,211	1,456	1.3	14	83	3	0	0	1.04	0.01	0.99	1.19	319	10	1.4	17	70	30	5	6	100	518	Yes	3	100	Yes*
3	Shoalhaven	7,407	601,653	347,993	6,989	10,629	0	3,276	76	0.5	0.2	9.9	2,406	161	0.4	60	40	0	0	0	0.49	0.00	0.99	1.48	274	0	0.9	10	65	60	0	0	100	317	Yes	6	100	Yes+
4	Rous (Bulk Supplier)	6,764	449,329	316,410	6,021	5,537	4,410	875	176	0.7		0.5	1,414	349	0.3	2	47	40	10	1	0.27	0.01	0.73	0.92	238	4	1.7	12	1		1	0	100		Yes	4	100	Yes*
5	MidCoast	11,864	693,431	457,488	11,206	7,507	2,893	3,884	221	0.2	-	3.2	2,795	201	0.4	50	38	11	1	0	0.25	0.01	0.94	0.67	411	23	0.7	8	2	60	3	2	100	565	Yes	14	100	Yes*
6	Tweed	15,449	648,362	491,889	6,933	8,628	22,526	1,582	145		0.1	3.5	3,515	493	0.5	73	20	6	1	1	1.63	0.05	0.83	1.12	423	2	2.4	8	50	60	5	28	100	553	Yes	4	100	Yes*
7	Port Macquarie-Hastings	15,037	557,169	452,627	10,978	2,426	1,690	2,683	92	1.1	0.0	4.2	712	89	0.1	30	44	24	3	0	0.22	0.00	0.51	0.56	386	-5	1.7	15	10	40	7	14	100	550	Yes	6	90	Yes*
8	Riverina	6,621	343,805	195,664	6,574	6,180	17,742	2,336	63	0.2	0.2	1.5	2,142	130	0.6	12	35	33	18	1	0.00	0.10	0.69	0.94	338	-7	5.3	19	63	80	3	3	100	532	Yes	4	90	Yes
10	Coffs Harbour	11,369	412,919	282,974	7,043	1,668	0	4,562	230	0.1	0.1	2.4	1,135	168	0.3	50	40	8	2	0	0.16	0.00	0.98	0.18	396	14	1.2	3	9	60	0	0	100	569	Yes	2	100	Yes+
11	Albury City	8,766	388,744	206,790	5,572	2,431	13,256	1,254	60	1.2	0.0	2.3	1,498	252	0.4	50	25	20	5	0	0.44	0.06	1.12	0.43	306	-2	1.7	10		60	3	1	100	349	Yes	3	100	Yes*
13	Tamworth Regional	9,596	353,762	205,537	3,854	10,949	8,912	2,882	239	0.4	0.0	6.6	1,880	266	0.5	40	35	25	0	0	0.49	0.04	1.05	2.84	536	-2	3.3	7		90	0	56	100	638	Yes	9	90	Yes*
14	Clarence Valley	18,039	445,434	386,222	3,773	2,159	36,200	2,107	144	0.2	0.1	3.5	473	42	0.1	50	46	4	0	0	0.14	0.09	1.12	0.57	380	10	0.7	13		110	23	57	100	427	Yes	2	90	Yes+
15	Eurobodalla	14,262	411,621	279,102	6,070	2,301	2,190	1,234	100	0.6	-	10.9	1,501	169	0.4	7	37	37	19	0	0.28	0.01	0.57	0.38	423	1	0.4	13	93	50	1	0	100	631	Yes	5	100	Yes+
16	Wingecarribee	8,391	263,603	159,096	3,508	2,383	10,893	4,297	205	0.3	-	10.2	1,474	223	0.6	69	17	12	1	0	0.56	0.07	0.92	0.21	375	-1	1.8	12	73	130	12	72	100	474	Yes	3	90	Yes*
17	Queanbeyan	5,782	159,498	94,881	2,327	2,070	362	1,056	249		0.1	6.1	1,255	443	0.8	34	38	28	0	0	0.00	0.00	0.81	0.87	589	-19	0.9	2	0	100	0	23	100	815	Yes		90	Yes*
18	Dubbo	9,584	217,381	164,362	3,709	1,669	1,441	1,623	217	0.2	-	6.7	875	175	0.4	65	25	8	1	0	0.22	0.01	1.03	0.45	504	-4	3.3	4	58	120	0	3	100	836	Yes	3	100	Yes+
19	Orange	12,061	318,422	207,330	3,001	27,215	832	200	155	0.2	0.1	6.4	237	38	0.1	28	43	28	1	0	0.47	0.01	0.26	9.07	383	-14	2.9	9	73	60	1	53	100	521	Yes	3	100	Yes*
20	Goulburn Mulwaree	19,588	287,659	203,326	3,615	2,546	4,350	905	438	0.7	0.4	10.9	805	286	0.3	20	39	27	12	2	0.23	0.02	0.84	0.70	418	-5	1.0	11	17	80	8	28	100	678	Yes	4	90	Yes
21	Bathurst Regional	10,162	284,759	158,217	3,350	3,628	25,495	2,820	287	0.3	0.5	2.0	1,102	281	0.4	36	22	38	4	0	0.34	0.16	0.32	1.08	532	-12	1.8	8	2	60	35	24	100	503	Yes	4	100	Yes+
22	Lismore	5,272	125,909	75,388	1,850	2,289	8,994	7,241		0.9	0.7	3.9	2,233	651	1.8	50	28	18	2	1	0.98	0.12	0.95	0.98	495	-1	0.2	37	32	40	0	1	100	606	Yes	3	100	Yes
23	Bega Valley	13,048	299,402	187,762	4,204	2,608	5,165	1,748	162	1.3	1.6	7.2	1,840	300	0.6	50	24	20	5	1	0.44	0.03	0.97	0.62	506	-3	-0.6	9	1	50	13	1	100	520	Yes	17	80	Yes*
24	Ballina	7,849	170,061	111,296	1,859	2,100	356	913	105		-	1.9	1,646	496	1.0	39	37	22	1	1	0.91	0.00	1.00	0.74	510	11	0.3	6	1	140	4	4	100	549	Yes	2	90	Yes+
25	Kempsey	15,186	260,316	189,371	4,032	5,044	24,483	4,228	197	0.4	0.8	4.7	2,699	550	1.0	42	32	17	9	0	0.73	0.13	0.67	1.25	481	8	0.0	10	72	100	1	0						



Table 5C: Water Supply - Infrastructure Asset Condition and Performance - 2013-14

WATER UTILITY		WATER SUPPLY INFRASTRUCTURE INDICATORS (including SPECIAL SCHEDULE 7 - Condition of Public Works - refer to note 2)																							SYSTEM PERFORMANCE												BPM		
		WDV CRC per property	Current Replacement Cost	Written Down Replacement Cost	Current Depreciation of System Assets	Capital Expenditure	Estimated Cost to Bring to Satisfactory Standard (BTS)	Actual Annual Maint- enance Cost	Mains Maint- enance Cost	Rehabilitations			Asset Renewals			Assets in Condition as a % of WDV					Renewals Ratio	Backlog Ratio	Asset Maintenance Ratio	Capital Expenditure Ratio	Operating Cost	Net Debt to Equity	Economic Real Rate of Return	Water Main Breaks	Unplanned Inter- ruptions to Supply	Real Loss	Water Quality Complaints	Water Service Complaints	% Popn with micro Compliance	Typical Residential Bill	Drinking Water Mgmt System (DWMS)?	No. Water Treatment Operators Meeting Nat'l Cert'n Rqmts	Best-Practice Implementation		
		\$/property F9/C4	\$'000	\$'000 F9	\$'000	\$'000 F14	\$'000	\$'000	\$'000 per 100km of Main	Mains (% of Total Length)	Service Conn- ections (%)	Water Meters (%)	\$'000	\$'000 per 100km of Main	% of CRC	WS Assets (56)					Asset Renewals / Depreciation	BTS / Value of Infrastructure	Actual maintenance / Required Maintenance	Capital expenditure / Depreciation	OMA \$/property F11	WS & SGE % F22	WS % F17	Per 100km of main A8	per 1000 properties C17	L/d/co nn A10	No. / 1000 props C9	No. / 1000 props C10	% of population H3	\$/ assessment P3	Yes/No	No.	Overall %	Strategic Business Plan (Yes/No)	
(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	1	2	3	4	5	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(70a)	(70b)	(71)	(72)			
40	Central Tablelands	9,799	119,879	53,402	1,710	472	22,150	740	64	-	8.3	0.7	145	26	0.1	0	28	72	0	0	0.15	0.41	1.00	0.17	552	-4	1.0	10	50	70	2	12	100	613	Yes	3	90	Yes	
41	Muswellbrook	8,379	83,085	48,514	1,423	887	5,881	1,600	204	1.8	0.2	2.6	326	200	0.4	15	40	25	11	8	0.24	0.12	1.45	0.62	715	-22	0.1	33	2	60	20	2	100	597	Yes	4	100	Yes+	
42	Corowa	7,133	56,637	38,873	879	450	11,698	927	152	1.7	0.1	0.6	343	196	0.6	11	50	33	5	1	0.68	0.31	1.47	0.51	479	-9	1.7	7	46	150	3	22	100	490		7	90	Yes+	
43	Tumut	9,030	61,415	40,183	1,146	276	0	556	91	0.5	0.0	8.9	36	20	0.1	97	3	0	0	0	0.00	0.00	1.00	0.24	411	1	1.2	13		70	3	5	100	487	Yes	4	90	Yes*	
44	Gunnedah	8,835	64,564	39,403	890	1,118	1,013	594	310	1.7	1.3	10.4	1,082	598	1.7	27	27	21	24	1	1.65	0.03	1.00	1.26	429	-21	3.6	6	7	70	0	24	99	570	Yes	1	100	Yes	
45	Upper Hunter	10,848	72,078	47,731	936	1,696	60	1,372	309	1.1	0.7	9.1	1,684	968	2.3	0	53	40	7	0	1.34	0.00	1.17	1.81	720	-11	2.0	21	25	90	2	49	100	1,005	Yes	5	100	Yes	
46	Narrabri	5,235	53,729	23,504	892	849	0	271	62	2.6	-	-	107	70	0.2	23	29	43	4	0	0.00	0.00	0.88	0.95	453	-22	6.8	118	4	290	32	113	100	607			80	Yes*	
47	Bellingen	10,743	56,425	43,832	780	287	200	76	22	1.8	0.3	5.3	65	39	0.1	7	75	16	1	0	0.09	0.00	1.00	0.37	363	-20	1.4	5	2	190	0	17	100	417	Yes	5	100	Yes	
48	Leeton	8,831	71,246	34,528	1,147	546	8,566	1,001	415	1.1	2.6	3.8	450	237	0.6	33	31	30	6	0	0.40	0.25	0.95	0.48	632	-20	-0.4	9	14	150	0	1	100	663		4	100	Yes*	
49	Young	3,532	49,601	16,704	675	216	650	326	130	0.7	0.2	6.5	174	117	0.4	0	10	15	75	0	0.26	0.04	1.00	0.32	230	6	-2.0	21	19	50	2	2	100	623	Yes		90	Yes	
50	Cooma-Monaro	10,653	78,993	39,098	1,086	1,333	20,090	1,432	26	1.5	5.8	5.8	561	419	0.7	24	24	21	28	3	0.53	0.52	0.97	1.13	599	-7	0.2	9	3	50	3	18	100	668	Yes	4	100	Yes	
51	Forbes	9,084	71,936	33,430	1,024	1,076	0	483	420	0.7	0.2	19.8	0			0	2	96	1	0	0.15	0.00	0.94	1.05	623	-15	-1.7	21	106	90	4	38	100	477	Yes	2	100	Yes*	
52	Snowy River	4,632	48,204	24,227	1,001	909	5,235	396	183		0.4	1.1	350	273	0.7	29	26	17	28	0	0.37	0.22	0.56	0.91	340	-6	1.1	21	26	80	2	17	100	546	Yes	3	90	Yes	
53	Berrigan	7,644	41,908	26,907	590	235	1,000	594		0.5	0.7	1.4	235	114	0.6	15	48	37	0	0	0.22	0.04	0.97	0.40	455	-16	2.6	14	14	90	3	3	100	773	Yes	8	80	Yes*	
54	Deniliquin	7,491	45,738	26,294	597	158	5,805	791		1.3	-	1.0	158	106	0.3	7	14	65	12	2	0.27	0.22	0.62	0.26	550	-10	-0.4	58	14	110	1	2	100	654	Yes	3	100	Yes	
55	Warrumbungle	8,401	60,219	27,722	828	360	4,692	695	268	-	0.1	0.8	34	23	0.1	4	55	35	6	0	0.04	0.16	1.21	0.06	601	-7	-0.2	22	1	230	2	8	100	736		11	90	Yes	
56	Yass Valley	12,647	60,100	40,724	764	0	3,000	396	22		0.6	7.6	0			79	14	5	0	1	0.00	0.08	0.51	0.00	448	21	0.0	7	50	80	22	14	100	934		3	100	Yes+	
Medians (% of LWUs basis) or totals for 3,001 - 10,000 Props		9,057							143	0.7	0.4	3.8		173	0.4	12	29	32	7	0	0.29	0.07	0.99	0.67	551	-7	1.0	14	19	90	2	17	100	617					
LWUs with 1,501 - 3,000 Properties																																							
57	Wellington	6,588	33,737	19,170	564	78	155	658	270	-	0.4	3.4	78	75	0.2	10	38	42	10	0	0.15	0.01	0.82	0.14	552	11	4.6	5	31	80	0	26	100	730	Yes	3	100	Yes*	
58	Cootamundra	1,361	15,032	4,082	212	18	750	263	161	-	1.7	5.9	0			0	0	96	4	0	0.22	0.18	0.99	0.08	227	-15	4.3	46	8	70	0	44	100	686	Yes		80	Yes*	
59	Lachlan	18,672	98,711	52,842	1,135	803	102,861	1,936	152	0.4	0.8	5.0	803	345	0.8	60	18	11	7	4	0.74	1.99	0.38	0.71	848	-13	-1.2			260	1	25	100	1,401	Yes	4	100	Yes*	
60	Glen Innes Severn	6,501	35,492	19,177	421	918	2,229	156	118		1.1	1.5	442	398	1.2	53	23	14	10	0	1.07	0.12	0.85	2.18	412	6	1.2	5	34	30	0	0	100	551		3	100	Yes*	
61	Liverpool Plains	15,374	57,435	42,894	593	570	550	480	91	-	-	-	271	208	0.5	56	23	13	7	0	0.00	0.01	2.14	0.86	648	-7	1.3	14	48	100	1	61	100	791		4	80		
62	Narromine	3,133	16,448	6,643	108	406	425	407	317	1.7	4.2	5.3	239	398	1.5	5	20	60	15	0	1.84	0.07	1.02	3.76	515	-30	4.8	20		100	0	16	100	700	Yes	3	100	Yes	
63	Narrandera	5,165	21,689	10,691	319	817	450	253	239	-	0.5	14.5	9	10	0.0	0	16	33	51	0																			



Table 5C: Water Supply - Infrastructure Asset Condition and Performance - 2013-14

WATER UTILITY		WATER SUPPLY INFRASTRUCTURE INDICATORS (including SPECIAL SCHEDULE 7 - Condition of Public Works - refer to note 2)																				SYSTEM PERFORMANCE												BPM					
		WDV CRC per property	Current Replacement Cost	Written Down Replacement Cost	Current Depreciation of System Assets	Capital Expenditure	Estimated Cost to Bring to Satisfactory Standard (BTS)	Actual Annual Maint-enance Cost	Mains Maint-enance Cost	Rehabilitations			Asset Renewals			Assets in Condition as a % of WDV					Renewals Ratio	Backlog Ratio	Asset Maintenance Ratio	Capital Expenditure Ratio	Operating Cost	Net Debt to Equity	Economic Real Rate of Return	Water Main Breaks	Unplanned Inter-ruptions to Supply	Real Loss	Water Quality Complaints	Water Service Complaints	% Popn with micro Compliance	Typical Residential Bill	Drinking Water Mgmt System (DWMS)?	No. Water Treatment Operators Meeting Nat'l Cert'n Rqmts	Best-Practice Implementation		
		\$/property F9/C4	\$'000	\$'000 F9	\$'000	\$'000 F14	\$'000	\$'000	\$'000 per 100km of Main	Mains (% of Total Length)	Service Conn-ections (%)	Water Meters (%)	\$'000	\$'000 per 100km of Main	% of CRC	WS Assets (56)					Asset Renewals / Depreciation	BTS / Value of Infrastructure	Actual maintenance / Required Maintenance	Capital expenditure / Depreciation	OMA \$/property F11	WS & SGE % F22	WS % F17	Per 100km of main A8	per 1000 properties C17	L/d/co nn A10	No. / 1000 props C9	No. / 1000 props C10	% of population H3	\$/ assessment P3	Yes/No	No.	Overall %	Strategic Business Plan (Yes/No)	
																1	2	3	4	5																			
(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)							(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(70a)	(70b)	(71)	(72)		
LWUs with 200 - 1,500 Properties																																							
81	Gwydir	7,344	15,634	10,796	153	149	465	423	136		0.9	0.7	134	151	0.9	59	31	2	8	0	0.02	0.58	2.00	-0.59	456	-6	6.0	30	3	100	19	0	100	861	Yes	4	90	Yes+	
83	Oberon	5,787	11,884	7,755	169	145	0	66	162	2.6	0.1	2.2	145	372	1.2	68	16	9	7	0	0.00	0.00	1.05	0.86	913	-4	-0.5	8	1	90	3	4	100	536		3	80	Yes	
84	Gilgandra	7,968	16,831	10,757	288	245	0	342	142	-	0.3	8.6	245	471	1.5	0	35	65	0	0	0.70	0.00	1.32	0.85	417	-12	0.8	21	8	140	13	36	100	664	Yes	2	90	Yes*	
85	Uralla	9,937	15,784	14,209	212	0	161	120	152	-	0.7	0.6	0			0	95	5	0	0	0.00	0.01	0.98	0.00	478	-9	0.1	8	35	20	4	10	100	682	Yes	2	60		
86	Hay	8,104	23,372	10,778	304	34	0	294	245		0.4	0.4	34	72	0.1	0	66	22	12	0	0.11	0.00	1.23	0.11	650	-16	-0.7	106	8	50	0	10	100	886		4	80	Yes*	
87	Bourke	7,384	22,644	10,190	378	57	8,100	415	332		0.2	5.4	36	88	0.2	0	24	76	0	0	0.00	0.79	1.00	0.15	1063	-17	-0.9	80	684	90	0	23	100	1,186		2	100	Yes	
88	Wakool	14,875	31,674	22,312	473	196	2,872	171	45	0.6	0.8	3.3	196	118	0.6	10	27	43	20	0	0.43	0.13	0.73	0.27	647	-8	0.1	7	10	50	5	10	100	885		4	90	Yes	
89	Bogan	12,106	31,718	13,801	418	187	330	311	623	2.1	1.9	4.9	187	390	0.6	10	44	13	33	0	0.69	0.02	0.96	0.45	1263	-14	-0.6	23	34	350	0	47	100	1,133	Yes	2	100	Yes	
90	Guyra	16,631	24,960	20,622	394	57	2,646	108		-	0.6	2.0	57	97	0.2	0	78	20	2	0	0.00	0.13	0.27	0.14	655	-6	0.1	5	52	110	8	32	100	682	Yes	2	80	Yes*	
91	Cabonne	19,726	42,950	22,882	469	531	730	522	223		0.4	1.5	0			16	33	51	0	0	1.25	0.03	3.14	1.13	555	-4	-0.8		7	80	1	1	100	488	Yes	2	100	Yes	
92	Carrathool	11,604	21,053	14,853	294	1,180	471	322	64	3.4	-	5.5	1,180	248	5.6	7	12	76	3	2	2.01	0.07	1.14	1.14	982	4	0.9	22	1	70	2	12	100	615	Yes	6	70		
93	Tumbarumba	16,716	31,436	19,390	451	450	143	267	27	1.5	6.4	1.5	441	668	1.4	36	40	23	1	0	0.95	0.01	1.02	1.00	443	-5	-0.2	3	22	90	0	1	76	727	Yes	2	100	Yes*	
94	Gundagai	9,866	17,969	9,669	264	7	85	128	75		0.5	12.0	7	19	0.0	10	65	20	5	0	0.19	0.01	0.98	0.03	586	-11	0.6	11	41	100	8	2	100	579	Yes	2	90	Yes*	
96	Warren	6,696	13,559	6,428	188	41	175	185	497		2.1	11.1	41	141	0.3	31	12	44	13	0	0.25	0.03	1.61	0.22	551	-20	-1.0	110	16	90	9	13	100	793	Yes	3	90	Yes	
97	Bombala	12,896	19,881	11,477	276	62	5,090	367	185	-	0.2	2.4	62	159	0.3	7	40	41	12	0	0.22	0.45	0.95	0.22	516	-14	-1.2	33		40	11	6	100	633		3	50		
98	Walcha	17,032	17,420	15,669	203	65	230	138		-	-	-	0			20	36	32	9	3	0.32	0.01	1.00	0.32	635	-8	-0.9			60	0	19	100	576		2	70	Yes*	
100	Bairanald	7,843	15,161	7,137	255	0	1,132	222	200	-	-	1.9	0			59	0	0	0	41	0.00	0.16	0.75	0.00	578	-4	2.2	33	66	30	0	-	100	664	Yes	5	80	Yes*	
101	Murrumbidgee	7,996	8,550	6,317	137	0	0	130	44		0.1	1.3	0			2	22	75	0	0	0.00	0.00	2.03	0.00	429	-15	-1.0	16		180	0	10	100	379			60	Yes*	
103	Central Darling	31,301	41,681	23,163	581	0	0	200	200		0.3	2.0	0			0	5	93	0	2	0.00	0.00	0.26	0.00	1466	-3	4.4	30	14	30	60	114	47	1,225	Yes	3	80		
104	Boorowa	15,368	21,175	9,989	311	36	0	200	177		0.8	7.7	36	75	0.2	2	86	0	0	12	0.19	0.00	0.97	0.12	568	-11	-0.6	8		160	49	5	100	827	Yes	1	90	Yes	
105	Brewarrina	11,251	14,224	5,513	264	484	1,360	232	324	2.6	1.6	83.9	414	1,089	2.9	0	7	42	51	0	1.61	0.25	1.25	1.83	1457	-11	6.4	55	20	130	4	10	100	1,810		5	100	Yes	
106	Jerilderie	7,206	8,448	3,531	123	7	0	166	107	-	1.2	1.6	0			0	0	99	1	0	0.00	0.00	1.36	0.01	706	-25	-0.8	12	6	50	20	20	100	1,516	Yes	2	70	Yes*	
Medians (% of LWUs basis) or totals for 200 - 1,500 Props		10,594								169	2.3	0.6	2.2		151	0.6	7	32	37	3	0	0.19	0.02	1.01	0.19	610	-10	-0.4	22	15	90	4	10	100	704				
Medians (% of LWUs basis)		9,590	Total (\$M)	Total (\$M)	Total (\$M)	Total (\$M)	Total (\$M)	Total (\$M)	155	0.7	0.5	3.6	Total (\$M)	195	0.4	20	31	26	5	0	0.27	0.04	0.98	0.67	514	-6	0.9	12	16	80	3	13	100	633	Total 71 (75%)	Total 339	Overall 91%	Total 89 (93%)	
Medians (Statewide basis)		9,900	13,900	8,890	189	219	524	106	183	0.4	0.2	3.9	80.0	237	0.5	40	36	17	2	0	0.47	0.02	0.95	0.95	400	1	1.2	10	50	70	3	6	100	550					
National Medians (% of LWUs basis)		8,030																								439	11	1.9	13	96	79	2	1	100	567				

Notes

1. Table 5C shows each NSW regional local water utility's [LWU] **water supply infrastructure asset condition** [col 56], **asset rehabilitations** [col 50 to 52], **asset renewal expenditure** [col 53 to 55], **financial performance** [col 42 to 49 and 57 to 63], water supply **system performance** [col 64 to 70b], typical residential bill [**TRB** - col 70], strategic business planning [**SBP** - col 72, this includes a 30-year total asset management plan [capital works plan identifying each of works for growth, improved standards and renewals, operation plan, including non-build solutions and maintenance plan] and 30-year financial plan] and its level of implementation of the Best-Practice Management [BPM] of Water Supply and Sewerage requirements [**BPM** - col 71].

In addition to showing the results for each LWU, Table 5C shows the Statewide median for each indicator, as well as the **2013-14 National Median** for the National Water Initiative [NWI] performance indicators [col 42, 44, 46 and 61 to 70].

2. The sources of data for Table 5C are:
- col 47, 48, 56 to 60 are from each council's reported Special Schedule 7;
  - col 42 to 46 and col 61 to 63 from each council's reported Special Schedules 3 and 4; and
  - col 64 to 72 are based on the results reported by each council in the NSW Water Supply and Sewerage Performance Monitoring Database.
- Note that minor errors identified in the reported results for column 56 for Gwydir, Lismore, Rous, Uralla, Wingecarribee & Wyong have been corrected.

3. **Totals for water supply in regional NSW:**
- o **Total current replacement cost of system assets** - \$13.9B [col 43],
  - o **Total written down replacement cost** - \$8.9B [col 44],
  - o **Total annual depreciation** - \$190M [col 45],
  - o **Total** estimated cost to Bring to Satisfactory Standard<sup>1</sup> (**BTS**) – **\$523M** [col 47],
  - o **Total annual maintenance expenditure** - \$105M [col 48],
  - o **Total capital expenditure** - \$214M [col 46],
  - o **Total asset renewal expenditure** - \$78M [col 53],
  - o **Drinking water management system [DWMS]** - 71 (75%) [col 70a],
  - o **No. of water treatment operators meeting national certification requirements** – 339 [col 70b],
  - o **Strategic Business Plan [SBP]** - 89 (93%) [col 72] and **Overall BPM implementation [WS]** – 91% [col 71].

The total \$523M for **BTS** is 2.8 times the annual depreciation of \$190M, 3.8% of the current replacement cost of system assets<sup>2</sup> of \$13.9B and 72% of the 2013-14 annual water supply revenue of \$731M.

4. **Statewide medians for water supply in regional NSW:**
- o **Written down current replacement cost per connected property** - \$9,900 [col 42] ; National Median \$8,030
  - o **Assets in condition 1** - 40% [col 56]
  - o **Assets in condition 2** - 36% [col 56]
  - o **Assets in condition 3** - 17% [col 56]
  - o **Assets in condition 4** - 2% [col 56]
  - o **Assets in condition 5** - 0% [col 56]
  - o **Water main rehabilitations** per 100 km of main – 0.4 km [col 50]
  - o **Service connection rehabilitations** – 0.2% [col 51]
  - o **Water meter rehabilitations** - 3.9% [col 52]
  - o **Asset renewals** per 100 km of main – \$237,000 [col 54]
  - o **Asset renewals** / current replacement cost of assets – 0.5% [col 55]
  - o **Renewals Ratio** [Asset Renewals/Depreciation] – 0.47 [col 57]
  - o **Backlog Ratio** [BTS/ Value of Infrastructure] – 0.02 [col 58]
  - o **Asset Maintenance Ratio** [Actual Maintenance/Required Maintenance] – 0.95 [col 59]
  - o **Capital Expenditure Ratio** [Capital expenditure/Depreciation] – 0.95 [col 60]
  - o **Operating Cost** [OMA cost/connected property – **F11**] - \$400 [col 61]; National Median \$439
  - o **Water Mains Maintenance cost** per 100 km of main - \$183,000 [col 49]
  - o **Net Debt to Equity** [WS & SGE – **F22**] – 1% [col 62]; National Median 11%
  - o **Economic Real Rate of Return** [**F17**] – 1.2% [col 63]; National Median 1.9%
  - o **Water Main breaks**/100km of main [**A8**] – 10 [col 64]; National Median 13

1 BTS - Estimated cost to bring to a satisfactory standard.  
2 This value of 3.8% is consistent with the col 58 value of 0.04 (ie. 4%) for the median LWU. The value of the Statewide median for col 58 is 0.02, which indicates a lower BTS proportion for the larger LWUs.

4. **Statewide medians for water supply in regional NSW:** (continued from left)
- o **Unplanned interruptions to supply** per 1000 properties [**C17**] – 50 [col 65]; National Median 96
  - o **Real Loss** [leakage/connection/d - **A10**] – 70 [col 66]; National Median 79
  - o **Water quality complaints**/1000 properties [**C9**] – 3 [col 67]; National Median 2
  - o **Water service complaints**/1000 properties [**C10**] – 6 [col 68]; National Median 1
  - o **% of Population with microbiological water quality compliance** [**H3**] – 100% [col 69]; National Median 100%
  - o **Typical Residential Bill**/assessment [2013-14 – **P3**] - \$550 [col 70]; National Median \$567.

The totals in note 3 above and the statewide medians in this note 4 provide useful information on the infrastructure asset condition, asset rehabilitations, asset renewal expenditure, financial performance, system performance, the typical residential bill and the extent of asset management and strategic business planning for water supply in regional NSW.

Disclosure of the 32 indicators shown for each LWU in Table 5C provides transparency and public accountability.

5. **LWU Planning:**
- As indicated on page 8 of the *NSW Water and Sewerage Strategic Business Planning Guidelines* (www.water.nsw.gov.au), the provision of water supply and sewerage services is highly capital intensive. Accordingly, sound planning, analysis and community involvement are essential.
- As noted on pages 3 and 22 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report*, each LWU needs to prepare a 30-year Integrated Water Cycle Management (IWCM) Strategy, financial plan and report in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au). This involves a 30-year total asset management plan (TAMP – refer to note 1 above), which includes a **sound 30-year renewals plan** in accordance with Item 7F of the Strategic Business Planning Check List (www.water.nsw.gov.au). Only ‘proven’ renewals projects should be included in the first 5 years of a LWU’s renewals plan.

6. **Comment on reported Asset Condition [col 56]:**
- Note 4 above shows that the Statewide medians for assets in condition 1, 2, 3, 4 and 5 are 40%, 36%, 17%, 2% and 0% respectively.

With regard to assets in **condition 5 (very poor)**, **65 LWUs** (68%) had a **0%** result.

- The performance of the following 5 LWUs, which had a result greater than 6% for condition 5 is analysed below using the results in Table 5C:
- o Balranald 41% - has a **relatively high TRB and OMA cost**, full cost recovery, reported no water quality complaints, 100% of reticulated population received a water supply which complied with the 2011 Australian Drinking Water Guidelines (ADWG), had a high level of water main breaks. Has rehabilitated 1.9% of its water meters in 2013-14. Has a strategic business plan over 4 years old and now needs to prepare an IWCM Strategy and financial plan. Has implemented 80% of the BPM requirements.
  - o Cobar 13% - has a **high TRB and a very high OMA cost**, full cost recovery, reported a high level of water quality and service complaints, 100% of reticulated population received a water supply which complied with the ADWG, had a high level of water main and breaks. Has rehabilitated 0.9 km of mains/100km and 1.3% of its water meters in 2013-14. Has a current strategic business plan and IWCM Strategy. Has implemented 100% of the BPM requirements.
  - o Boorowa 12% - has a relatively **high TRB and OMA cost**, full cost recovery, reported very high water quality complaints, 100% of reticulated population received a water supply which complied with ADWG, had a low level of water main and breaks. Asset renewals expenditure was \$75,000 per 100 km of main, a total of \$36,000 or 0.2% of CRC (the Current Replacement Cost of system assets). Has rehabilitated 0.8% of its service connections and 7.7% of its water meters in 2013-14. Has a strategic business plan and now needs to prepare an IWCM Strategy and financial plan. Has implemented 90% of the BPM requirements.
  - o Moree Plains 11% - has a **high TRB and OMA cost**, full cost recovery, reported a high level of water quality and service complaints, 93% of reticulated population received a water supply which complied with ADWG, had a very high level of water main and breaks. Asset renewals expenditure was \$150,000 per 100 km of main, a total of \$226,000 or 0.3% of CRC. Has rehabilitated 0.7 km per 100 km of mains and 1.0% of its water meters in 2013-14. Has a strategic business plan and an IWCM Evaluation study. Now needs to prepare an IWCM Strategy and financial plan. Has implemented 100% of the BPM requirements.
  - o Muswellbrook 8% - has a **moderate TRB and a high OMA cost**, full cost recovery, reported a very high level of water quality complaints, 100% of reticulated population received a water supply which complied with ADWG, had a high level of water main breaks. Asset renewals expenditure was \$200,000 per 100 km of main, a total of \$326,000 or 0.4% of CRC. Has rehabilitated 1.8 km of mains/100km, 0.2% of its service connections and 2.6% of its water meters in 2013-14. Has a strategic business plan and an IWCM Strategy over 6 years old. Now needs to prepare a new IWCM Strategy and financial plan. Has implemented 100% of the BPM requirements.



Table 5D: Sewerage - Infrastructure Asset Condition and Performance

WATER UTILITY		SEWERAGE INFRASTRUCTURE INDICATORS (including SPECIAL SCHEDULE 7 - Condition of Public Works - refer to note 2)																				SYSTEM PERFORMANCE										BPM							
		WDV CRC per property	Current Replacement Cost	Written Down Replacement Cost	Current Depreciation of System Assets	Capital Expenditure	Estimated Cost to Bring to Satisfactory Standard (BTS)	Actual Annual Maint-enance	Mains Maint-enance Cost	Rehabilitations		Asset Renewals			Assets in Condition as a % of WDV					Renewals Ratio	Backlog Ratio	Asset Maintenance Ratio	Capital Expenditure Ratio	Operating Cost	Net Debt to Equity	Economic Real Rate of Return	Sewer Main Breaks	Infiltration	Sewer Overflows	Sewerage Service Complaints	% Sge Treated that was compliant	Odour Complaints	Typical Residential Bill	Pollution Incident Response Mgmt Plan (PIRMP)?	No. of Wastewater Treatment Operators	Best-Practice Implementation			
		\$/property F10/C8	\$'000	\$'000 F10	\$'000	\$'000 F15	\$'000	\$'000	\$'000 per 100km of Main	Mains (% of Total Length)	Service Conn-ections %	\$'000	\$'000 per 100 km of Main	% of CRC	SGE Assets (86)					Asset Renewals / Depreciation	BTS / Value of Infrastructure	Actual maintenance / Required Maintenance	Capital expenditure / Depreciation	OMA \$/property F12	WS & SGE % F22	SGE % F18	Per 100km of main A14	ML per 100km of main	Per 100km of main	Per 1000 props C11	% E4	Per 1000 props	\$/ assessment P6	Yes/No	No.	Overall %	Strategic Business Plan (Yes/No)		
															1	2	3	4	5																				
(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)		(81)	(82)	(83)	(84)	(85)							(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)	(100)	(100a)	(100b)	(101)	(102)		
	Sydney Water Corporation	17,217			30,973,603																											571							
	Hunter Water Corporation	20,146			4,519,324																											606							
LWUs with > 10,000 Properties																																							
1	Gosford	21,563	1,973,111	1,504,642	17,781	27,660	33,557	5,995	120	0.3	-	26,395	2,000	1.3	76	10	9	5	0	1.49	0.02	0.93	1.56	404	6	-0.1	37		35	2	100	2	576	Yes	4*	100	Yes+		
2	Wyong	11,668	1,032,185	703,801	12,848	6,532	5,628	5,888	142	0.5	-	5,210	430	0.5	10	85	4	2	0	0.42	0.01	1.23	0.51	354	10	-0.4	54		37	12	100	1	458	Yes	4*	100	Yes*		
3	Shoalhaven	10,814	678,861	453,016	10,431	13,046	0	4,065	23	0.1	0.3	3,297	282	0.5	94	6	0	0	0	0.32	0.00	0.99	1.22	478	0	2.2	8	70	23	1	95	0	714	Yes	2*	100	Yes+		
5	MidCoast	13,324	658,868	466,861	8,359	3,777	10,258	2,891	87	0.3	-	2,286	204	0.3	45	42	10	2	1	0.27	0.02	0.90	0.45	491	23	2.8	6	21	4	2	96	1	920	Yes	3*	100	Yes*		
6	Tweed	19,744	799,775	599,624	10,102	4,452	15,229	2,352	184	0.4	0.0	2,895	414	0.4	65	24	10	1	0	0.23	0.03	0.78	0.38	505	2	1.7	1	62	7	7	83	1	691	Yes	3*	100	Yes*		
7	Port Macquarie-Hastings	10,859	400,316	298,624	9,594	6,480	0	3,857	103	0.1	0.1	622	91	0.2	14	55	21	9	1	0.13	0.00	1.00	1.20	494	-5	2.9	30	218	29	10	82	3	704		4*	100	Yes*		
9	Wagga Wagga	9,585	342,283	251,993	4,786	4,720	2,174	8,747	123	0.8	1.2	1,871	300	0.5	33	6	54	7	1	0.39	0.01	1.03	0.99	417	6	0.3	80	15	26	53	100	1	434	Yes	4*	100	Yes		
10	Coffs Harbour	19,614	647,006	461,702	10,836	8,638	2,439	7,888	155	0.3	0.2	739	107	0.1	55	17	23	5	1	0.03	0.01	0.98	0.78	610	14	0.5	76		9	0	100	0	783	Yes	2*	100	Yes+		
11	Albury City	8,054	322,943	176,710	3,662	3,314	10,728	2,239	87	1.2	0.0	2,308	445	0.7	50	25	20	5	0	1.00	0.06	1.18	0.89	429	-2	4.2	75		2	1	73	0	561	Yes	3*	100	Yes*		
13	Tamworth Regional	12,079	289,279	233,737	5,041	9,682	16,921	2,342	201	0.0	0.1	6,668	1,201	2.3	65	15	16	4	0	1.14	0.07	1.12	1.92	471	-2	2.5	74		11	21	100	0	738	Yes	4*	100	Yes*		
15	Eurobodalla	13,249	397,979	238,740	6,253	4,441	1,240	1,530	81	0.0	0.0	1,452	276	0.4	13	40	43	4	0	0.32	0.01	0.64	0.71	565	1	1.0	30	241	12	2	100	1	844	Yes	3*	100	Yes+		
17	Queanbeyan	6,991	235,779	116,546	3,383	5,022	1,450	1,089	92	0.0	0.0	1,273	389	0.5	35	44	17	3	1	0.00	0.01	0.85	1.41	372	-19	2.6	55	111	43	11	100	0	414	Yes	3	100	Yes*		
19	Orange	9,306	238,170	153,278	2,883	902	976	75	2	1.1	1.2	76	17	0.0	44	15	27	14	0	0.03	0.01	0.05	0.31	374	-14	1.7	24	105	12	30	100	1	384	Yes	2*	100	Yes*		
18	Dubbo	9,824	232,898	157,374	4,366	2,805	1,158	930		0.0	0.0	357	89	0.2	52	27	17	3	1	0.14	0.01	0.79	0.64	349	-4	2.7	42	40	2	11	85	1	652	Yes	2*	100	Yes+		
16	Wingecarribee	16,851	328,700	262,881	3,720	2,811	11,955	4,935	186	0.4	0.1	875	158	0.3	87	9	2	1	0	0.65	0.05	0.99	0.58	531	-1	1.1	46	91	31	20	100	2	711	Yes	2*	100	Yes*		
14	Clarence Valley	16,937	289,972	247,953	3,307	8,687	39,750	1,782	164	0.2	0.2	385	94	0.1	58	33	9	0	0	0.12	0.16	0.93	2.63	495	10	2.3	45	51	17	19	73	2	907	Yes	2*	100	Yes+		
21	Bathurst Regional	5,760	189,963	88,989	2,677	2,993	22,500	3,690	144	0.0	0.1	708	180	0.4	21	34	32	13	0	0.27	0.25	0.63	1.12	416	-12	1.8	84	18	62	24	100	0	456	Yes	4	100	Yes+		
24	Ballina	18,964	335,316	264,360	2,643	8,794	241	1,865	143	0.0	0.0	1,909	589	0.6	52	44	3	0	1	0.74	0.00	1.00	2.96	649	11	1.4	20		2	4	75	2	734	Yes	4*	100	Yes+		
22	Lismore	14,776	313,573	188,544	4,427	2,657	7,175	10,122	316	0.0	0.1	1,571	438	0.5	45	37	16	2	0	0.12	0.04	0.71	0.55	466	-1	0.2	49	226	1	16	79	1	738	Yes	4*	89	Yes		
23	Bega Valley	14,940	288,942	181,975	6,833	5,558	11,055	2,698	78	1.0	0.3	1,336	333	0.5	22	25	50	2	0	0.20	0.06	1.02	0.81	734	-3	0.4	22		23	2	92	1	1,081	Yes	1*	100	Yes*		
27	Byron	14,016	199,908	147,030	3,052	1,525	0	1,786	148	0.0	0.0	0			58	24	14	4	0	0.51	0.00	1.00	0.43	652	17	3.9	11	190	2	4	97	4	1,060	Yes	2*	100	Yes*		
20	Goulburn Mulwaree	7,987	147,444	84,426	1,974	1,297	22,500	1,217	306	1.4	2.7	1,236	437	0.8	19	25	21	31	4	0.56	0.27	0.90	0.66	368	-5	5.6	92	85	0	30	100	2	699	Yes	4*	100	Yes		
25	Kempsey	16,177	211,109	157,562	3,456	1,463	13,402	2,720	237	0.0	0.1	1,423	521	0.7	33	44	15	9	0	0.42	0.09	0.54	0.42	543	8	-0.4	16	162	14	2	79	2	736	Yes	2*	100	Yes+		
Medians (% of LWUs basis) or totals for >10,000		13,249							143	0.2	0.1				317	0.5	45	25	16	4	0	0.32	0.02	0.93	0.78	478	0	1.7	42	88	12	10	97	1	711				
LWUs with 3,001 - 10,000 Properties																																							
29	Armidale Dumaresq	7,200	86,166	60,332	1,300	1,675	2,733	1,374	351	5.2	0.5	1,298	567	1.5																									

Table 5D: Sewerage - Infrastructure Asset Condition and Performance

WATER UTILITY		SEWERAGE INFRASTRUCTURE INDICATORS (including SPECIAL SCHEDULE 7 - Condition of Public Works - refer to note 2)																				SYSTEM PERFORMANCE										BPM					
		WDV CRC per property	Current Replacement Cost	Written Down Replacement Cost	Current Depreciation of System Assets	Capital Expenditure	Estimated Cost to Bring to Satisfactory Standard (BTS)	Actual Annual Maint-ence Cost	Mains Maint-ence Cost	Rehabilitations		Asset Renewals			Assets in Condition as a % of WDV					Renewals Ratio	Backlog Ratio	Asset Maintenance Ratio	Capital Expenditure Ratio	Operating Cost	Net Debt to Equity	Economic Real Rate of Return	Sewer Main Breaks	Infiltration	Sewer Overflows	Sewerage Service Complaints	% Sge Treated that was compliant	Odour Complaints	Typical Residential Bill	Pollution Incident Response Mgmt Plan (PIRMP)?	No. of Wastewater Treatment Operators	Best-Practice Implementation	
		\$/property F10/C8	\$'000	\$'000 F10	\$'000	\$'000 F15	\$'000	\$'000	\$'000 per 100km of Main	Mains (% of Total Length)	Service Conn-ctions %	\$'000	\$'000 per 100 km of Main	% of CRC	SGE Assets (86)					Asset Renewals / Depreciation	BTS / Value of Infrastructure	Actual maintenance / Required Maintenance	Capital expenditure / Depreciation	OMA \$/property F12	WS & SGE % F22	SGE % F18	Per 100km of main A14	ML per 100km of main	Per 100km of main	Per 1000 props C11	% E4	Per 1000 props	\$/ assessment P6	Yes/No	No.	Overall %	Strategic Business Plan (Yes/No)
															1	2	3	4	5																		
															(73)	(74)	(75)	(76)	(77)																		
38	Moree Plains	6,778	55,172	27,656	1,004	128	0	682	292	1.1	0.5	74	83	0.1	26	7	47	13	7	0.69	0.00	0.68	0.13	473	9	0.3	52	101	7	23	100	0	565			100	Yes*
44	Gunnedah	7,357	50,236	29,135	687	260	6,276	399	130	2.7	0.3	260	234	0.5	20	25	14	41	0	0.39	0.22	1.00	0.38	233	-21	2.7	32	45	43	13	100	1	456	Yes	3*	100	Yes
46	Narrabri	9,324	88,124	36,736	1,459	130	0	377	157	8.8	0.8	0			28	45	15	12	0	0.00	0.00	0.90	0.09	408	-22	1.0	0		8	46	100	2	615	Yes	3*	78	Yes*
43	Tumut	7,896	49,377	33,323	828	384	700	395	89	0.7	0.1	210	142	0.4	76	19	6	0	0	0.00	0.02	1.00	0.46	451	1	1.5	44		22	23	100	0	620	Yes	2*	100	Yes*
49	Young	9,619	54,371	36,551	635	7,128	6,200	465	153	-	-	100	105	0.2	68	0	0	32	0	0.16	0.17	1.00	11.23	307	6	2.9	51	32	8	7	94	2	720	Yes	4*	89	Yes
39	Cowra	9,174	46,924	32,476	531	529	883	519	231	3.0	0.2	529	529	1.1	49	6	37	8	0	1.04	0.03	0.74	1.00	418	6	3.1	148		0	41	67	0	781	Yes	4	100	Yes*
45	Upper Hunter	7,407	63,501	30,293	865	198	310	630	368	0.9	0.3	160	137	0.3	0	21	63	16	0	0.20	0.01	1.21	0.23	495	-11	-1.9	15	98	0	14	100	0	454	Yes	3*	100	Yes
52	Snowy River	6,900	62,744	32,705	1,263	2,661	11,075	476	99	1.1	0.9	1,060	1,140	1.7	39	11	48	2	1	0.37	0.34	0.71	2.11	392	-6	1.4	15		0	8	79	0	840	Yes	2*	100	Yes
51	Forbes	9,607	44,935	30,551	544	872	7,904	1,110	434	3.4	0.2	872	980	1.9	24	2	55	18	0	1.53	0.26	3.60	1.60	470	-15	0.8	79	36	18	7	75	1	466	Yes	3	100	Yes*
50	Cooma-Monaro	9,937	54,626	32,296	900	1,552	14,745	1,165	36	2.7	2.4	1,256	1,142	2.3	4	80	7	7	1	1.82	0.46	0.97	1.20	561	-7	1.0	77		200	69	100	2	781	Yes	2*	100	Yes
53	Berrigan	4,760	37,506	16,756	593	287	1,610	464		0.9	0.4	287	263	0.8	0	20	80	0	0	0.02	0.10	0.94	0.48	309	-16	0.8	77	57	6	47	100	3	464		2*	56	Yes*
48	Leeton	7,457	55,181	24,385	734	1,104	8,072	508	177	5.0	7.6	1,021	1,011	1.9	29	46	19	5	0	1.44	0.33	0.95	1.50	461	-20	-0.7	25	10	0	0	100	0	480	Yes	4*	100	Yes*
54	Deniliquin	5,965	43,757	18,970	512	294	14,444	520	151	0.0	0.2	294	275	0.7	10	30	18	42	0	0.58	0.76	0.52	0.57	419	-10	5.0	28	41	0	13	100	0	750	Yes	3	100	Yes
Medians (% of LWUs basis) or totals for 3,001 - 10,000		8,146							157	0.9	0.3		269	0.6	28	21	19	8	0	0.51	0.10	0.97	0.92	418	-7	1.4	36	41	8	13	100	1	588				
LWUs with 1,501 - 3,000 Properties																																					
47	Bellingen	12,821	54,996	38,849	952	769	8,750	438	115	0.0	0.3	300	330	0.5	7	64	15	7	6	0.35	0.26	1.00	0.81	637	-20	0.3	20	62	3	7	100	1	725		3*	100	Yes
60	Glen Innes Severn	4,539	19,866	12,755	309	654	2,409	84	33	0.9	0.0	350	315	1.8	56	22	14	7	0	1.14	0.20	0.69	2.12	282	6	1.9	94	180	94	37	100	0	434	Yes	4*	100	Yes*
58	Cootamundra	6,962	36,138	19,633	394	83	310	382	240	0.0	0.7	0			0	10	84	6	0	0.00	0.02	1.66	0.21	254	-15	1.3	240	159	8	66	100	0	376	Yes	2	89	Yes*
57	Wellington	7,674	34,215	20,337	706	8	1,283	424	164	0.0	0.0	0			23	37	33	6	1	0.00	0.06	0.77	0.01	424	11	-0.4	24	5	0	11	100	0	574	Yes		89	Yes*
91	Cabonne	13,173	37,744	28,190	782	233	182	645	109	4.1	-	0			61	33	6	0	0	0.04	0.01	1.40	0.30	500	-4	-0.7	32	18	35	13	82	0	465	Yes	3*	100	Yes
80	Greater Hume	11,749	45,871	30,666	519	289	4,630	412	60	0.0	0.1	173	225	0.4	2	28	40	28	2	0.00	0.15	0.97	0.56	318	-6	0.1	14	19	0	4	100	0	445	Yes	4*	100	Yes
59	Lachlan	9,777	36,677	21,217	510	0	43,598	719	100	1.3	0.5	0			12	13	67	6	2	0.00	2.07	0.45	0.00	444	-13	-2.1	62	12	0	8	80	1	440	Yes	3*	100	Yes*
65	Murray	5,359	23,889	16,775	331	242	0	322	70	0.0	0.4	160	163	0.7	24	59	12	4	0	0.48	0.00	1.02	0.73	344	-10	2.0	12	30	0	4	100	0	381	Yes	1*	100	Yes*
62	Narromine	8,720	27,525	17,091	108	379	325	208	73	0.0	0.0	347	708	1.3	5	20	55	15	5	1.02	0.02	0.95	3.51	498	-30	0.7	24		0	9	100	0	534	Yes	3*	100	Yes
56	Yass Valley	7,793	36,034	18,157	566	0	2,100	174		0.0	0.4	0			47	38	10	0	5	0.00	0.13	0.32	0.00	446	21	0.0	32	15	3	20	67	0	580	Yes	3	100	Yes+
61	Liverpool Plains	12,754	28,092	26,019	170	179	401	251	21	8.6	0.3	121	209	0.4	34	30	16	14	6	0.00	0.02	1.37	0.72	254	-7	1.8	17	33	0	26	87	0	490	Yes	4*	89	
55	Warrumbungle	8,305	35,519	21,094	396	101	1,540	288	211	0.0	0.0	25	31	0.1	7	73	16	4	0	0																	



Table 5D: Sewerage - Infrastructure Asset Condition and Performance

WATER UTILITY		SEWERAGE INFRASTRUCTURE INDICATORS (including SPECIAL SCHEDULE 7 - Condition of Public Works - refer to note 2)																				SYSTEM PERFORMANCE										BPM					
		WDV CRC per property	Current Replacement Cost	Written Down Replacement Cost	Current Depreciation of System Assets	Capital Expenditure	Estimated Cost to Bring to Satisfactory Standard (BTS)	Actual Annual Maint- enance	Mains Maint- enance Cost	Rehabilitations		Asset Renewals			Assets in Condition as a % of WDV					Renewals Ratio	Backlog Ratio	Asset Maintenance Ratio	Capital Expenditure Ratio	Operating Cost	Net Debt to Equity	Economic Real Rate of Return	Sewer Main Breaks	Infiltration	Sewer Overflows	Sewerage Service Complaints	% Sge Treated that was compliant	Odour Complaints	Typical Residential Bill	Pollution Incident Response Mgmt Plan (PIRMP)?	No. of Wastewater Treatment Operators	Best-Practice Implementation	
		\$/property F10/C8	\$'000	\$'000 F10	\$'000	\$'000 F15	\$'000	\$'000	\$'000 per 100km of Main	Mains (% of Total Length)	Service Conn- ections %	\$'000	\$'000 per 100 km of Main	% of CRC	SGE Assets (86)					Asset Renewals / Depreciation	BTS / Value of Infrastructure	Actual maintenance / Required Maintenance	Capital expenditure / Depreciation	OMA \$/property F12	WS & SGE % F22	SGE % F18	Per 100km of main A14	ML per 100km of main	Per 100km of main	Per 1000 props C11	% E4	Per 1000 props	\$/ assessment P6	Yes/No	No.	Overall %	Strategic Business Plan (Yes/No)
															1	2	3	4	5																		
(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)						(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)	(100)	(100a)	(100b)	(101)	(102)		
LWUs with 200 - 1,500 Properties																																					
84	Gilgandra	5,985	17,388	8,199	364	203	3,000	305	114	0.0	0.1	203	549	1.2	0	20	52	28	0	0.48	0.38	1.13	0.56	330	-12	0.6	35	70	3	28	100	0	515	Yes	3	89	Yes*
73	Upper Lachlan	8,742	22,413	13,375	448	145	143	111	25	1.8	0.3	106	189	0.5	34	30	14	22	0	0.24	0.01	0.82	0.32	392	-8	1.9	9	304	0	5	100	0	705	Yes	2*	89	Yes*
87	Bourke	6,398	15,020	7,806	178	0	4,500	255	235	0.0	0.7	0			0	5	95	0	0	0.00	0.58	1.13	0.00	394	-17	1.1	129	44	0	84	60	0	618		89	Yes	
86	Hay	7,928	21,088	10,148	188	159	0	173		0.0	0.5	159	430	0.8	0	40	40	20	0	0.86	0.00	0.82	0.85	460	-16	0.9	81	54	0	39	100	0	634	Yes	4	78	Yes*
83	Oberon	9,545	18,364	11,645	175	14	0	92	166	0.0	0.2	0			43	38	19	0	0	0.00	0.00	1.37	0.08	563	-4	-1.3	26	39	13	5	100	0	446	Yes	3	89	Yes
81	Gwydir	5,228	8,946	6,012	85	26	3,637	273	32	0.0	0.2	0			7	64	1	29	0	0.63	0.42	1.36	1.52	250	-6	5.7	93	56	51	0	100	0	500		4*	89	Yes+
85	Uralla	5,717	7,621	6,346	206	0	157	103	77	0.0	0.1	0			0	88	12	0	0	0.00	0.02	0.99	0.00	377	-9	-1.4	29	46	0	3	54	0	495	Yes	2	67	
95	Weddin	6,590	12,163	6,129	39	0	0	45		0.0	0.0	0			0	100	0	0	0	0.11	0.00	0.19	0.00	259	-10	1.8	213	65	0	71	100	0	356	Yes	2	78	Yes
89	Bogan	7,307	10,819	7,088	83	7	0	132	425	5.0	0.2	7	35	0.1	14	18	68	0	0	0.37	0.00	0.88	0.08	432	-14	2.5	0	50	0	20	100	0	540	Yes	3	100	Yes
76	Harden	6,485	13,515	6,096	251	0		100	67	0.0	0.2	0			85	3	11	0	1	0.00	0.00	1.00	0.00	312	-12	1.5	7	12	5	13	50	0	600	Yes	1	78	Yes*
88	Wakool	12,219	25,949	12,341	420	397	4,582	83	87	2.1	0.0	397	845	1.5	11	17	36	36	0	0.95	0.38	0.79	0.95	361	-8	-0.3	0		0	50	100	0	561		1*	56	Yes
93	Tumbarumba	12,114	20,572	12,114	203	588	1,790	206		2.1	0.3	118	251	0.6	5	29	59	7	0	2.99	0.15	0.90	2.90	318	-5	1.1	0		0	7	100	3	541	Yes	1*	100	Yes*
94	Gundagai	10,068	14,756	8,256	116	51	100	73	44	0.0	0.5	51	70	0.3	10	35	45	10	0	0.07	0.01	0.48	0.44	438	-11	2.8	14	5	4	18	100	0	544	Yes	2	67	Yes*
92	Carrathool	7,075	6,952	5,872	76	87	402	108	143	0.0	0.0	87	378	1.3	10	63	25	2	0	0.01	0.03	1.10	3.18	205	4	0.6	65		0	54	100	8	375		2*	33	
96	Warren	5,549	13,319	4,384	229	214	320	159	512	5.9	1.9	140	824	1.1	3	34	50	13	0	0.70	0.07	1.18	0.93	541	-20	-3.6	176	12	0	53	52	0	485		3*	89	Yes
99	Coolamon	10,479	13,492	10,479	210	57	100	230	120	0.0	0.0	0			17	54	21	8	0	0.00	0.01	2.04	0.27	318	-10	-0.7	9	5	2	5	100	0	360	Yes	2*	56	Yes*
102	Lockhart	7,674	12,660	6,753	156	0	0	190	7	0.0	0.0	0			2	24	45	18	9			1.02	0.00	295	-23	-0.2	0		0	50	75	0	475	Yes	3*	67	
98	Walcha	5,489	5,326	4,336	0	4	1,054	61	310	0.0	0.0	0			21	39	20	12	8	0.38	0.25	1.00	0.00	427	-8	0.9	37	30	10	15	67	0	425	Yes	2	89	Yes*
100	Balranald	8,145	12,767	6,923	185	0	1,746	79		0.0	0.0	0			50	0	0	0	50	0.00	0.25	0.68	0.00	268	-4	-1.8	18		0	0	100	0	269		1*	56	Yes*
97	Bombala	17,527	28,869	13,496	357	71	8,060	182	74	0.0	0.3	71	203	0.2	4	37	54	5	0	0.20	0.60	1.10	0.20	334	-14	-1.3	40	3	0	18	44	0	543	Yes	2*	78	
101	Murrumbidgee	9,249	10,095	7,307	147	42	195	76	61	0.0	0.0	40	174	0.4	3	39	56	2	0	0.27	0.03	0.87	0.29	237	-15	-1.3	0		0	53	25	0	300	Yes	1*	33	Yes*
90	Guyra	15,590	21,428	18,396	223	22	520	89		0.0	0.0	22	39	0.1	12	83	3	2	0	0.00	0.03	0.30	0.10	347	-6	0.1	11	116	0	3	85	1	561	Yes	2*	78	Yes*
104	Boorowa	8,482	12,197	5,598	172	40	0	128	110	0.0	0.9	40	138	0.3	2	98	0	0	0	0.09	0.00	1.13	0.23	385	-11	-0.3	59	90	0	29	100	2	563	Yes	4	89	Yes
105	Brewarrina	10,694	11,040	5,347	153	39	722	67	306	0.0	1.0	39	244	0.4	0	22	45	34	0	0.27	0.14	1.56	0.25	576	-11	6.0	88	31	0	28	100	0	734		1*	78	Yes
106	Jerilderie	8,188	7,459	3,521	99	21	0	95	25	0.0	0.0	0			0	0	100	0	0	0.00	0.00	0.94	0.21	419	-25	-0.9	0	83	0	0	0	0	480	Yes	2	78	Yes*
103	Central Darling	7,526	4,746	2,860	76	0	0	123	278	0.0	1.3	0			0	0	99	0	1	0.00	0.00	1.09	0.00	250	-3	2.0	87		9	232	100	0	385			78	
107	Urana	21,809	8,336	6,979	76	0	5	64	33	0.0	0.0	0			0	100	0	0	0	0.00	0.00	0.68	0.01	356	-9	0.0	0		0	0	100	0	350		2*	67	Yes*
Medians (% of LWUs basis) or totals for 200 - 1,500 Props		8,145						99	0.0	0.2		223	0.4	4	35	36	2	0	0.10	0.03	1.00	0.21	356	-10	0.6	26	46	0	18	100	0	500					
Medians (% of LWUs basis)		9,249	Total (\$M)	Total (\$M)	Total (\$M)	Total (\$M)	Total (\$M)	126	0.0	0.2	Total (\$M)	244	0.5	20	27	20	5	0	0.24	0.05	0.96	0.48	408	-7	1.1	32	44	3	13	100	0	561	Total		Overall	Total	
Medians (Statewide basis)		11,700	13,550	9,279	183	180	514	112	120	0.4	0.1	84.1	315	0.5	45	25	15	5	0	0.32	0.03	0.93	0.72	430	1	1.5	37	62	13	8	100	1	625	81 (82%)	88%	93 (94%)	
National Medians (% of LWUs basis)		9,510																				405	11	2.6	20			1	100		683						



Notes

1. Table 5D shows each NSW regional local water utility's [LWU] **sewerage infrastructure asset condition** [col 86], **asset rehabilitations** [col 81, 82], **asset renewal expenditure** [col 83 to 85], **financial performance** [col 73 to 80 and 87 to 93], sewerage **system performance** [col 94 to 99], typical residential bill [**TRB** - col 100], strategic business planning [**SBP** - col 102, this includes a 20 to 30-year total asset management plan [capital works plan identifying each of works for growth, improved standards and renewals, operation plan, including non-build solutions and maintenance plan] and 20 to 30-year financial plan] and its level of implementation of the Best-Practice Management [BPM] of Water Supply and Sewerage requirements [**BPM** - col 101].

In addition to showing the results for each LWU, Table 5D shows the Statewide median for each indicator, as well as the **2013-14 National Median** for the National Water Initiative [NWI] performance indicators [col 72, 75, 77 and 91, 92, 93, 94, 97, 98, 100].

2. The sources of data for Table 5D are:
- col 78, 79, 86 to 90 are from each council's reported Special Schedule 7;
  - col 73 to 77 and col 91 to 93 from each council's reported Special Schedules 5 and 6; and
  - col 94 to 102 are based on the results reported by each council in the NSW Water Supply and Sewerage Performance Monitoring Database.
- Note that minor errors identified in the reported results for column 86 for Coonamble, Gwydir, Lismore, Port Macquarie, Tamworth, Uralla, Wagga Wagga, Wingecarribee and Wyong have been corrected.

3. **Totals for sewerage in regional NSW:**
- o **Total current replacement cost of system assets** - \$13.5B [col 74],
  - o **Total written down replacement cost** - \$9.3B [col 75],
  - o **Total annual depreciation** - \$183M [col 76],
  - o **Total** estimated cost to Bring to Satisfactory Standard<sup>1</sup> (**BTS**) – **\$514M** [col 78],
  - o **Total annual maintenance expenditure** - \$112M [col 79],
  - o **Total capital expenditure** - \$180M [col 77],
  - o **Total asset renewal expenditure** - \$84M [col 83],
  - o **Pollution Incident Response Management Plan (PIRMP)?** - 81 (82%) [col 100a]
  - o **No. of wastewater treatment operators** - [col 100b],
  - o **Strategic Business Plan [SBP]** - 93 (94%) [col 102] and **Overall BPM implementation [SGE]** – 88% [col 101].

The total \$514M for **BTS** is 2.8 times the annual depreciation of \$183M, 3.8% of the current replacement cost of system assets<sup>2</sup> of \$13.5B and 82% of the 2013-14 annual water supply revenue of \$629M.

4. **Statewide medians for sewerage in regional NSW:**
- o **Written down current replacement cost** per connected property - \$11,700 [col 73] ; National Median \$9,510
  - o **Assets in condition 1** - 45% [col 86]
  - o **Assets in condition 2** - 25% [col 86]
  - o **Assets in condition 3** - 15% [col 86]
  - o **Assets in condition 4** - 5% [col 86]
  - o **Assets in condition 5** - 0% [col 86]
  - o **Sewer main rehabilitations** % of total length – 0.4 km [col 81]
  - o **Service connection rehabilitations** – 0.1% [col 82]
  - o **Asset renewals** per 100 km of main – \$315,000 [col 84]
  - o **Asset renewals** / current replacement cost of assets – 0.5% [col 85]
  - o **Renewals Ratio** [Asset Renewals/Depreciation] – 0.32 [col 87]
  - o **Backlog Ratio** [BTS/ Value of Infrastructure] – 0.03 [col 88]
  - o **Asset Maintenance Ratio** [Actual Maintenance/Required Maintenance] – 0.93 [col 89]
  - o **Capital Expenditure Ratio** [Capital expenditure/Depreciation] – 0.72 [col 90]
  - o **Operating Cost** [OMA cost/connected property – **F12**] - \$410 [col 91]; National Median \$405
  - o **Sewer Mains Maintenance cost** per 100 km of main - \$120,000 [col 80]
  - o **Net Debt to Equity** [WS & SGE – **F22**] – 1% [col 92]; National Median 11%
  - o **Economic Real Rate of Return** [**F18**] – 1.5% [col 93]; National Median 2.6%
  - o **Sewer Main breaks**/100km of main [**A4**] – 37 [col 94]; National Median 20
  - o **Infiltration**/ML/100km of main – 62 [col 95]

1 BTS - Estimated cost to bring to a satisfactory standard.  
2 This value of 3.8% is consistent with the col 88 value of 0.05 (ie. 5%) for the median LWU. The value of the Statewide median for col 88 is 0.03, which indicates a lower BTS proportion for the larger LWUs.

4. **Statewide medians for sewerage in regional NSW:** (continued from left)
- o **Sewer Overflows**/100km of main – 13 [col 96]
  - o **Sewerage service complaints**/1000 properties [**C11**] – 8 [col 94]; National Median 1
  - o **% sewage treated that was compliant** – 100% [col 98]; National Median 100%
  - o **Sewage odour complaints**/1000 properties – 1 [col 99]
  - o **Typical Residential Bill**/assessment [2013-14 – **P6**] - \$625 [col 100]; National Median \$683.

The totals in note 3 above and the statewide medians in this note 4 provide useful information on the infrastructure asset condition, asset rehabilitations, asset renewal expenditure, financial performance, system performance, the typical residential bill and the extent of asset management and strategic business planning for sewerage in regional NSW.

Disclosure of the 32 indicators shown for each LWU in Table 5D provides transparency and public accountability.

5. **LWU Planning:**
- As indicated on page 8 of the *NSW Water and Sewerage Strategic Business Planning Guidelines* (www.water.nsw.gov.au), the provision of water supply and sewerage services is highly capital intensive. Accordingly, sound planning, analysis and community involvement are essential.
- As noted on pages 3 and 22 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* , each LWU needs to prepare a 30-year Integrated Water Cycle Management (IWCM) Strategy, financial plan and report in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au). This involves a 30-year total asset management plan (TAMP – refer to note 1 above), which includes a **sound 30-year renewals plan** in accordance with Item 7F of the Strategic Business Planning Check List (www.water.nsw.gov.au). Only ‘proven’ renewals projects should be included in the first 5 years of a LWU's renewals plan.

6. **Comment on reported Asset Condition [col 86]:**
- Note 4 above shows that the Statewide medians for assets in condition 1, 2, 3, 4 and 5 are 45%, 25%, 15%, 5% and 0% respectively.

With regard to assets in **condition 5 (very poor)**, **62 LWUs** (63%) had a **0%** result.

The performance of the following 6 LWUs, which had a result greater than 6% for condition 5 is analysed below using the results in Table 5D:

- o Balranald 50% - has a **very low TRB and OMA cost**, a negative economic real rate of return, without full cost recovery, reported no sewerage service or odour complaints, no sewer overflows, 100% of sewage complied with licence and had a low level of sewer main chokes and breaks. Has a strategic business plan over 4 years old and now needs to prepare an IWCM Strategy and financial plan. Has only implemented 56% of the BPM requirements.
- o Muswellbrook 18% - has a **relatively low TRB and OMA cost**; has full cost recovery, reported a low level of sewerage service and odour complaints, 63% of sewage complied with licence and had a very low level of sewer main chokes and breaks. Asset renewals expenditure was \$485,000 per 100 km of main, a total of \$791,000 or 1.0% of CRC (the Current Replacement Cost of system assets. Rehabilitated 0.1% of service connections in 2013-14. Has a strategic business and now needs to prepare an IWCM Strategy and financial plan as its existing IWCM Strategy is over 6 years old. Has implemented 100% of the BPM requirements.
- o Lockhart 9% - has a **very low TRB and OMA cost**; has full cost recovery, reported a high level of sewerage service complaints, 75% of sewage complied with licence and had a very low level of sewer main chokes and breaks. Has a strategic business plan and an IWCM Evaluation study. Now needs to prepare an IWCM Strategy and financial plan. Has implemented 78% of the BPM requirements.
- o Walcha 8% - has a **very low TRB and a moderate OMA cost**; has full cost recovery, reported a high level of sewerage service complaints, 67% of sewage complied with licence and had a moderate level of sewer main chokes and breaks. Has a strategic business plan over 4 years old and now needs to prepare an IWCM Strategy and financial plan. Has implemented 89% of the BPM requirements.
- o Moree Plains 7% - has a **moderate TRB and OMA cost**; has full cost recovery, reported a high level of sewerage service complaints, 100% of sewage complied with licence and had a moderate level of sewer main chokes and breaks. Asset renewals expenditure was \$83,000 per 100 km of main, a total of \$74,000 or 0.5% of CRC. Rehabilitated 1.1% of its sewer mains and 0.5% of service connections in 2013-14. Has a strategic business plan. Now needs to prepare an IWCM Strategy and financial plan. Has implemented 100% of the BPM requirements.
- o Wentworth 7% - has a **moderate TRB and a low OMA cost**; has full cost recovery, reported a high level of sewerage service and odour complaints, 100% of sewage complied with licence and had a high level of sewer main chokes and breaks. Asset renewals expenditure was \$18,000 per 100 km of main, a total of \$12,000 or 0.03% of CRC. Has a strategic business plan and an IWCM Evaluation study. Now needs to prepare an IWCM Strategy and financial plan. Has implemented 89% of the BPM requirements.

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Table 6: Water supply - residential charges, bills &amp; cost recovery

WATER UTILITY		RESIDENTIAL CHARGES																			COST RECOVERY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		Type of Tariff	Fixed Charge (or Minimum)			Special Levies	Usage Charge (for Step 1 and Step 2)												Billing (2006 National Guidelines)	Operating Cost (OMA)			Typical Developer Charge			Typical Residential Bill based on Col(14b)			Return on Assets			ERRR (Water Supply)			Residential Revenue from Usage Charges			Avge Annual Residential Water Supplied <sup>3</sup>					Full Cost Recovery?	Total Connected Properties																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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			(1) P1	(2) P1.2	(4) P1.12		Step (kL)			Charges (c/kL)			Step (kL)			Charges (c/kL)				(% Implementation) (5e)	(c/kL)	(\$/ET)	(Includes Special Levies) (8) P3	(%)	(%)	(% of residential bills) (13) F4	Potable		Potable + Non Potable		(FCR) (Y/Y*/N) (14d)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			13/14	14/15	12/13		13/14	14/15	14/15	12/13	13/14	14/15	12/13	13/14	14/15	12/13	13/14	14/15		12/13	13/14	11/12	12/13	13/14	12/13	13/14	14/15	12/13	13/14	14/15	11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	13/14	13/14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
43	Tumut	Inclining Block	Inclining Block	219	221	227		<300	<300	<300	122	123	126	>300	>300	>300	244	246	252	50	50	147	113	118	5,170	5,500	5,640	483	487	499	-0.8	0.5	-0.4	-1.1	1.2	1.2	63	58	216	216	221	225	0	Y	4,450																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
44	Gunnedah (Groundwater)	Inclining Block	Inclining Block	170	170	170		<400	<400	<400	96	100	104	>400	>400	>400	144	150	156			83	72	64	7,920	8,200	8,490	524	570	586	2.8	2.6	4.4	1.6	1.6	3.6	74	75	369	400	369	400	0	Y	4,460																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
45	Upper Hunter	Inclining Block	Inclining Block	290	300	258		<300	<300	<300	148	159	175	>300	>300	>300	212	228	262	75	100	91	108	123	6,550	7,650	6,920	884	1005	1045	2.8	4.9	2.0	1.4	4.8	2.0	68*	75*	371	400	371	400	0	Y	4,400																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
46	Narrabri (Groundwater)	Two Part	Two Part	280	293	323		All	All	All	79	83	87									155	70	71	3,100	3,360	3,460	526	607	652	9.5	13.0	8.7	5.7	8.6	6.8	54	62	312	378	312	378	0	Y	4,490																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
47	Bellingen (Unfiltered)	Inclining Block	Inclining Block	127	131	112		<365	<365	<365	168	175	152	>365	>365	>365	252	263	228	85	85	115	109	109	6,300	6,300	6,300	395	417	360	1.6	1.0	2.3	0.3	0.3	1.4	75	77	159	163	159	163	0	Y	4,080																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
48	Leeton	Inclining Block	Inclining Block	238	246	252		<300	<300	<300	81	84	86	300-600	300-600	300-600	119	123	126			92	85	89	4,500	4,500	4,600	704	663	679	0.9	1.5	0.3	0.1	0.7	-0.4	68	65	487	434	487	434	0	Y	3,910																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
49	Young (Reticulator)	Inclining Block	Inclining Block	200	225	250		<360	<480	<480	214	230	246	>360	>480	>480	321	345	369	50	50	99	83	67	1,020	1,050	1,100	578	623	675	1.1	-1.2	-1.8	-0.7	-1.8	-2.0	69	66	177	173	177	173	0	Y*	4,730																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
50	Cooma-Monaro	Inclining Block	Inclining Block	290	300	315		<300	<300	<300	140	147	154	>300	>300	>300	221	232	244	100	100	194	155	182	6,470	6,650	6,780	680	668	700	0.4	0.8	0.5	0.1	0.5	0.2	58*	55*	279	250	279	250	0	Y	3,670																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
51	Forbes	Inclining Block	Two Part	175	201	206		<600	<600	All	75	77	90	>600	>600		109	113		30	40	91	78	75	6,250	6,460	6,620	462	477	529	-0.9	-0.1	-1.0	-2.2	-1.1	-1.7	63	63	382	359	382	359	0	Y*	3,680																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
52	Snowy River (Unfiltered)	Inclining Block	Inclining Block	366	360	360		<300	<300	<300	175	200	210	>300	>300	>300	290	325	330	90	99	255	248	214	4,000	7,680	6,500	518	546	555	0.6	0.6	1.3	0.3	0.3	1.1	38	42	87	93	87	93	0	Y	5,230																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
53	Berrigan (Dual Supply)	Two Part	Two Part	446	461	474		All	All	All	94	94	94							25	25	119	86	63	5,500	5,500	5,600	720	773	786	1.3	2.7	2.9	1.0	2.4	2.6	37*	49*	142	237	441	427	0	Y	3,520																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
53	Berrigan (Non Potable)	Two Part	Two Part					All	All	All	47	47	47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																



Table 6: Water supply - residential charges, bills &amp; cost recovery

WATER UTILITY		RESIDENTIAL CHARGES																			COST RECOVERY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Type of Tariff		Fixed Charge (or Minimum)			Special Levies	Usage Charge (for Step 1 and Step 2)								Billing (2006 National Guidelines)		Operating Cost (OMA)			Typical Developer Charge			Typical Residential Bill based on Col(14b)			Return on Assets			ERRR (Water Supply)			Residential Revenue from Usage Charges			Avge Annual Residential Water Supplied <sup>3</sup>				Full Cost Recovery?	Total Connected Properties																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
								Step 1				Step 2																								Potable		Potable + Non Potable																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
								Step (kL)		Charges (c/kL)		Step (kL)		Charges (c/kL)																						(% Implementation)		kL/prop (14a)				kL/prop (14b)		L/c/d (14c)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		(1) P1	(2) P1.2	(4) P1.12	(5a) P1.3	(5b) P1.3	(5c) P1.4	(5d) P1.4	(5e)	(6)	(7)	(8) P3	(11)	(12) F17	(13) F4	P2.1	W12	(14c)	(14d)	(15) C4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
13/14	14/15	12/13	13/14	14/15	14/15	12/13	13/14	14/15	12/13	13/14	14/15	12/13	13/14	14/15	12/13	13/14	11/12	12/13	13/14	12/13	13/14	14/15	12/13	13/14	14/15	12/13	13/14	14/15	11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	14/15	13/14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
86	Hay (Non Potable)	Two Part	Two Part	309	320	327		All	All	All	31	32	33																										1,330																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
87	Bourke (Dual Supply)	Two Part	Two Part	159	164	168		All	All	All	205	216	216				100	100	95	82	91	760	830	830	1085	1186	1199	-2.4	0.8	-0.2	-3.3	0.2	-0.9	85*	86*	258	284	1056	1114	0	Y*	1,380																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
87	Bourke (Non Potable)	Unmetered	Unmetered	396	409	418		All	All	All																													798	830			1,380																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
88	Wakool (Dual Supply)	Inclining Block	Inclining Block	237	245	245		<600	<600	<600	95	95	99	>600	>600	>600	149	149	153	5	5	122	121	109	2,672	2,805	2,810	863	885	906	0.5	0.3	0.3	0.2	0.1	0.1	72*	73*	146	143	517	507	0	Y	1,500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
88	Wakool (Non-Potable)	Unmetered	Unmetered	487	504	519		All	All	All																														371	363			1,500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
89	Bogan	Two Part	Two Part	410	485	510		All	All	All	165	170	178				100	100	128	137	158																					1036	1133	1188	-1.4	1.0	-0.3	-1.7	0.6	-0.6	65	60	379	381	379	381	0	Y*	1,140																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
90	Guyra	Inclining Block	Inclining Block	290	300	300		<400	<400	<400	135	145	150	400-1000	400-1000	400-1000	165	175	180	75	190	133	127	650	1,040	1,070	561	682	695	0.2	0.5	0.6	-0.4	0.0	0.1	66	70	201	263	201	263	0	Y	1,240																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
91	Cabonne	Inclining Block	Inclining Block	234	258	283		<300	<300	<300	145	160	175	300-500	300-500	300-500	336	370	407	100	100	228	187	191	6,490	6,490	6,680	387	488	535	-1.2	-1.3	-0.3	-2.0	-1.8	-0.8	64	62	106	144	144	180	0	Y*	1,160																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
92	Carrathool (Groundwater)	Two Part	Two Part	360	380	390		All	All	All	80	84	87				100	100	123	97	106	1,010	1,050	1,050	615	615	663	-1.5	-1.4	0.9	-1.5	-1.4	0.9	62	57	447	313	532	392	0	Y	1,280																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
93	Tumbarumba	Inclining Block	Inclining Block	320	320	330		<200	<200	<200	173	199	205	>200	>200	>200	290	334	344			151	140	140	490	490	490	646	727	749	0.0	-0.3	-0.6	0.1	0.0	-0.2	54*	56*	188	203	188	203	0	Y*	1,160																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
94	Gundagai	Inclining Block	Inclining Block	135	150	165		<300	<300	<300	105	115	125	300-500	300-500	300-500	140	155	170	100	100	87	86	69	3,000	3,300	3,300	587	579	632	-1.8	0.5	1.1	-2.2	-0.1	0.6	77*	74*	398	354	398	354	0	Y	980																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
96	Warren (Dual Supply)	Inclining Block	Inclining Block	300	310	320		<450	<450	<450	94	97	100	>450	>450	>450	142	147	151	100	100	75	70	64																				782	793	817	-0.4	-1.3	-0.7	-0.8	-1.7	-1.0	67*	65*	330	302	804	797	0	Y*	960																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
96	Warren (Non Potable)	Inclining Block	Inclining Block					<450	<450	<450	35	36	37	>450	>450	>450	60	62	64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

**NOTES:** 1. **Residential Revenue from Usage Charges:** Where this is marked \*, it has been calculated from the projected typical residential bill for the 2014/15 financial year as this provides a higher value than the result for the 2013/14 financial year. 30 LWUs with 4,000 or more properties (65%) obtained at least 70% of residential revenue from water usage charges (column 13). This includes Wyong and Essential Energy, who have been granted a deemed compliance as their prices are regulated by IPART, and Eurobodalla, who has Ministerial approval for a 70% requirement due to their high incidence of unoccupied holiday houses (refer also to note 7 on page 110). 43 LWUs (91%) with fewer than 4,000 properties obtained at least 45% of their residential revenue from usage charges.

2. **The charges, bills and costs** shown for each financial year are those applicable at that time and involve no CPI adjustment. Column (5e) shows that 46% of LWUs now have residential water billing in accordance with the National Guidelines for Residential Customers' Water Accounts. A further 18% of LWUs have made significant progress towards such billing.

3. **Dual Water Supplies:** 11 LWUs had a dual water supply to over 50% of their residential customers with a potable supply for indoor use and a non-potable supply for outdoor use (refer to General Notes - Note 8 on page 33).

4. **Average Annual Residential Water Supplied (Dual Supplies):** The 11 Dual Supply LWUs are shown on two rows. The first row is labelled Dual Supply while the second row is labelled Non-Potable. The first row in column (14a) shows the **potable** average Annual Residential Water Supplied while the second row in column (14b) shows the **non-potable** Average Annual Residential Water Supplied (see also Note 8 on page 33). The total potable plus non-potable Average Annual Residential Water Supplied is shown in the first row in column (14b) and column (14c).

5. **Median Annual Residential Water Supplied:** The median Average Annual Residential Water Supplied (potable plus non-potable) has fallen by 48% over the last 23 years to 173 kL/property (169 L/person/d).

6. **Full Cost Recovery** has been achieved by all 96 LWUs. These comprise 75 utilities which had either an Economic Real Rate of Return or Return on Assets of  $\geq 0$  for the 2013/14 financial year (shown as "Y" in col (14d)). They also include 21 utilities which have significantly increased their 2014/15 charges in order to recover their costs (shown as "Y\*\*"). There has been a 4% increase in the Average Annual Residential Water Supplied since 2012-13 to 173kL/property which has increased the water supply revenue of some LWUs.



Table 6A: Water supply - 2014-15 residential multiple tariffs

WATER UTILITY		Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Usage Charge (c/kL)
			(1)	(2)	(3)	(4)	(5)	(6)
29	Armidale Dumaresq	Armidale	Inclining Block	215	Y	Nil	up to 400kL 401kL to 1000kL >1000kL	241 320 364
		Armidale, untreated	Inclining Block	215	Y	Nil	up to 400kL 401kL to 1000kL >1000kL	118 209 257
100	Balranald (Dual Supply)	Balranald & Euston, Filtered	Inclining Block	187	Y	Nil	up to 600 kL >600 kL	94 141
		Balranald & Euston, Raw	Inclining Block	198	Y	Nil	up to 600 kL >600 kL	52 78
21	Bathurst Regional	Filtered	Inclining Block	121	Y	Nil	up to 250 kL >250 kL	180 270
		Raw Water	Inclining Block	121	Y	Nil	up to 250 kL >250 kL	79 119
		Hillview Water	Inclining Block	134	Y	Nil	up to 250 kL >250 kL	189 378
53	Berrigan (Dual Supply)	Berrigan, Barooga, Finley (Potable)	Two Part	474	Y	Nil	All	94
		Berrigan, Barooga, Finley (Non-Potable)	Two Part	474	Y	Nil	All	47
		Tocumwal (Filtered)	Two Part	474	Y	Nil	All	62
89	Bogan	Nyngan	Two Part	510	Y	Nil	All	178
		Nyngan, Raw Water	Two Part	414			All	60
		Hermidale	Annual Charge	603	Y			
		Girilambone & Coolabah	Annual Charge	414	Y			
97	Bombala	Bombala	Inclining Block	538	Y	Nil	up to 350 kL >350 kL	120 175
		Delegate	Unmetered	412	Y			
87	Bourke (Dual Supply)	Bourke, Filtered	Two Part	168	Y	Nil	All	216
		Bourke, Raw	Unmetered	418	Y			
105	Brewarrina	Brewarrina	Two Part	421	Y	Nil	All	190
		Goodooga	Two Part	317	Y	Nil	All	190
91	Cabonne	Molong, Cumnock, Yeoval	Inclining Block	283	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	175 407 555
		North Yeoval Wellington	Inclining Block	192	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	260 340 540
92	Carrathool	Carrathool, Hillston, Goolgowi Potable Water, Merriwaga Town Water	Two Part	390	Y	Nil	All	87
		Melbergen	Two Part	1400	Y	Nil	All	185
		Goolgowi Raw Water, Rankins Springs Town Water	Two Part	370	Y	Nil	All	54

Table 6A: Water supply - 2014-15 residential multiple tariffs

WATER UTILITY		Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Usage Charge (c/kL)
			(1)	(2)	(3)	(4)	(5)	(6)
103	Central Darling	Wilcannia (Filtered)	Two Part	120	Y	Nil	All	350
		Wilcannia (Raw)	Unmetered	478	Y			
		White Cliffs, Raw	Two Part	455	Y	Nil	All	380
		Ivanhoe (Raw)	Two Part	235	Y	Nil	All	170
		Ivanhoe (Filtered)	Two Part	140	Y	Nil	All	390
67	Cobar	Cobar	Inclining Block	233	Y	Nil	up to 450kL 451kL to 550kL >550kL	205 300 390
		Nymagee, Euabalong, Euabalong West	Unmetered	565	Y			
		Mount Hope	Unmetered	660	Y			
75	Coonamble Shire	Coonamble	Inclining Block	170	Y	Nil	up to 370 kL >370 kL	55 90
		Gulargambone	Inclining Block	236	Y	Nil	up to 430 kL >430 kL	70 110
		Quambone	Inclining Block	237			up to 430 kL >430 kL	70 110
26	Essential Energy	Broken Hill, Sunset Strip, Menindi, Silverton (treated)	Two Part	313	Y	Nil	All	172
		Untreated Water	Two Part	313	Y	Nil	All	151
		Chlorinated Water	Two Part	313	Y	Nil	All	111
		Pipeline Customers	Two Part	313	Y	Nil	All	74
51	Forbes	Filtered	Two Part	206	Y	Nil	All	90
		Raw	Two Part				All	40
		Ootha	Two Part	243	Y	Nil	All	90
84	Gilgandra (Groundwater)	Gilgandra	Two Part	219	Y	Nil	All	98
		Tooraweenah	Two Part	114	Y	Nil	All	136
20	Goulburn Mulwaree Council	Goulburn	Inclining Block	235	Y	Nil	up to 292 kL >292 kL	280 378
		Marulan	Inclining Block	306	Y	Nil	up to 292 kL >292 kL	280 378
30	Griffith	Griffith (Filtered)	Inclining Block	129	Y	Nil	up to 200 kL >200 kL	65 125
		Yenda (Dual), Filtered	Inclining Block	201	Y	Nil	up to 200 kL >200 kL	65 125
		Yenda (Dual), Raw	Two Part		Y	Nil	All	33
44	Gunnedah (Groundwater)	Gunnedah	Inclining Block	170	Y	Nil	up to 400 kL >400 kL	104 156
		Curlewis	Inclining Block	190	Y	Nil	up to 400 kL >400 kL	109 164
		Mullaley	Inclining Block	310	Y	Nil	up to 400 kL >400 kL	162 200
		Tambar Springs	Inclining Block	360	Y	Nil	up to 400 kL >400 kL	259 320

Table 6A: Water supply - 2014-15 residential multiple tariffs

WATER UTILITY		Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Usage Charge (c/kL)
			(1)	(2)	(3)	(4)	(5)	(6)
86	Hay (Dual Supply)	Hay (Filtered)	Inclining Block	129	Y	Nil	up to 300 kL	108
		Hay (Unfiltered)	Unmetered	327			>300 kL	164
106	Jerilderie (Dual Supply)	Jerilderie, Filtered	Inclining Block	231	Y	Nil	up to 250 kL	144
		Jerilderie, Raw	Two Part	336	Y	Nil	>250 kL all	160 69
38	Moree Plains Shire	Moree, Mungindi, Boggabilla, Pallamallawa	Inclining Block, Potable	270	Y	Nil	up to 750 kL	144
		Garah, Boomi, Boggabilla, Gurley, Weemalah	Inclining Block, Non-Potable	270	Y	Nil	>750 kL up to 750 kL >750 kL	186 96 157
65	Murray	Murray, Filtered	Two Part	262	Y	Nil	All	91
		Murray, Raw	Two Part	97	Y	Nil	All (84c for stage 2 and 3, 85c for stage 4 water restrictions)	69
46	Narrabri (Groundwater)	Narrabri	Two Part	323	Y	Nil	All	87
		Narrabri, unmetered	Unmetered	472	Y			
		Gwabegar	Two Part	561	Y	Nil	All	115
		Wee Waa	Two Part	317	Y	Nil	All	88
		Boggabri	Two Part	346	Y	Nil	All	100
		Bellata	Two Part	491	Y	Nil	All	115
		Pilliga	Two Part	525	Y	Nil	All	115
35	Singleton	Singleton	Inclining Block	149	Y	Nil	up to 450 kL	122
							>450 kL	226
		Mt Thorley	Two Part	459	Y	Nil	All	209
13	Tamworth	Jerry's Plains /Broke Water	Inclining Block	149	Y	Nil	up to 450 kL	164
							>450 kL	226
		Tamworth	Inclining Block	248	Y	Nil	up to 400 kL	142
							401 to 800 kL	213
							>800 kL	320
		Calala Backwash Water	Two Part		Y	Nil	All	33
		Raw Water	Inclining Block		Y		up to 400 kL	97
93	Tumbarumba						401 to 800 kL	107
							>800 kL	118
		Dungowan Dam Raw Water (if main traverses property)	Inclining Block	124	Y	Nil	up to 400 kL	49
							401 to 800 kL	107
							>800 kL	118
		Tumbarumba	Inclining Block	330	Y	Nil	up to 200 kL	205
							>200 kL	344
		Khancoban, metered	Inclining Block	321	Y	Nil	up to 200 kL	200
							>200 kL	354

Table 6A: Water supply - 2014-15 residential multiple tariffs

WATER UTILITY		Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Usage Charge (c/kL)
			(1)	(2)	(3)	(4)	(5)	(6)
43	Tumut	Tumut	Inclining Block	227	Y	Nil	up to 300 kL	126
		Tumut Raw Water	Inclining Block	180	Y	Nil	>300 kL	252
		Cloverdale	Inclining Block	710			up to 300 kL	55
							>300 kL	110
45	Upper Hunter Shire Council	Murrurundi	Inclining Block	332	Y	Nil	up to 300 kL	175
							>300 kL	350
		Merriwa/Cassilis, Aberdeen/Scone	Inclining Block	258	Y	Nil	up to 300 kL	210
							>300 kL	245
88	Wakool (Dual Supply)	Barham, Tooleybuc, Moulamein (Filtered + Raw Water)	Inclining Block, Raw Water is unmetered	245+519	Y	Nil	up to 600 kL	99
		Wakool, Murray Downs, Koraleigh (Filtered)	Inclining Block	245	Y	Nil	>600 kL	153
					Y	Nil	up to 600 kL	99
					Y	Nil	>600 kL	153
79	Walgett	Walgett, Collarenebri (Filtered)	Inclining Block	423	Y	Nil	up to 500 kL	36
		Walgett, Collarenebri (Raw Water)	Inclining Block	423	Y	Nil	>500 kL	50
							up to 600 kL	12
		Lightning Ridge, Carinda, Rowena (Bore Water)	Inclining Block	279	Y	Nil	>600 kL	17
96	Warren (Dual Supply)	Warren Bore Water	Inclining Block	320	Y	Nil	up to 600 kL	10
							>600 kL	14
		Warren River Water	Inclining Block	320		Nil	up to 450 kL	100
							>450 kL	151
		Nevertire Bore Water	Inclining Block	435	Y	Nil	up to 450 kL	37
55	Warrumbungle	Collie Bore Water	Inclining Block	325	Y	Nil	>450 kL	64
							up to 450 kL	57
		Coonabarabran, Timore Dam (Raw), Baradine, Binnaway, Villages: Bugaldie & Kenebri, Southern, Coolah, Dunedoo, Village Mendooran	Two Part	360	Y	Nil	>450 kL	84
							up to 400 kL	124
74	Wentworth (Dual Supply)	Filtered	Inclining Block	265	Y	Nil	>400 kL	188
							All	180
		Raw	Inclining Block	140	Y	Nil	up to 250 kL	120
							>250 kL	280
56	Yass Valley	Yass, Bowning, Binalong & Rural Areas Murrumbateman	Two Part	450	Y	Nil	up to 700 kL	40
			Two Part	338	Y	Nil	>700 kL	110



Table 6B: Water supply - 2014-15 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	Implemented 2(d) of BPMF
			(1)	(\$) (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	113	Meter Size* (eg 40mm:\$450)	Y	Nil	up to 225kL 226 to 19999kL >19999	118 216 166	Y
29	Armidale Dumaresq	Armidale	Inclining Block	215	Uniform Access Charge	Y	Nil	up to 400 kL 401 kL to 1000 kL >1000 kL	241 320 364	N
		Armidale, Untreated Water	Inclining Block	215	Uniform Access Charge	Y	Nil	up to 400 kL 401 kL to 1000 kL >1000 kL	118 209 257	
24	Ballina (Reticulator)	Ballina	Inclining Block	189	Service Connection Size* (eg. 40mm \$756)	Y	Nil	up to 350 kL >350 kL	202 304	Y
100	Balranald (Dual Supply)	Balranald & Euston, Filtered	Inclining Block	187	Service Connection Size* (eg. 40mm \$748)	Y	Nil	up to 600 kL >600 kL	94 141	Y
		Balranald & Euston, Raw	Inclining Block	198	Service Connection Size* (eg. 40mm \$792)	Y	Nil	up to 600 kL >600 kL	52 78	
21	Bathurst Regional	Bathurst (Filtered)	Inclining Block	121	Service Connection Size* (eg. 40mm \$488)	Y	Nil	up to 250kL >250 kL	180 270	Y
23	Bega Valley (Unfiltered)	Bega Valley	Two Part	198	Service Connection Size* (eg. 40mm \$792)	Y	Nil	All	250	Y
47	Bellingen (Unfiltered)	Bellingen	Two Part	112	Service Connection Size* (eg. 40mm \$448)	Y	Nil	All	152	Y
53	Berrigan (Dual Supply)	Berrigan, Barooga, Finley (Potable)	Two Part	474	Uniform Access Charge	Y	Nil	All	94	N
		Berrigan, Barooga, Finley (Non-Potable)	Two Part	474	Uniform Access Charge	Y	Nil	All	47	
		Tocumwal (Filtered)	Two Part	474	Uniform Access Charge	Y	Nil	All	62	
89	Bogan	Nyngan	Two Part	510	Service Connection Size* (eg. 40mm \$2108)	Y	Nil	All	178	Y
		Nyngan, Raw Water	Two Part	414		Y	Nil	All	60	
		Hermidale	Annual Charge	603						
		Girilambone & Coolabah	Annual Charge	414						
97	Bombala	Bombala	Inclining Block	538	Uniform Access Charge	Y	Nil	up to 350 kL >350 kL	120 175	N
		Delegate	Unmetered	412	Uniform Access Charge	Y				
104	Boorowa	Boorowa	Inclining Block	458	Uniform Access Charge	Y	Nil	up to 200 kL >200 kL	205 410	N
87	Bourke (Dual Supply)	Bourke, Filtered	Two Part	168	Service Connection Size (eg. 40mm \$576)	Y	Nil	All	216	
		Bourke, Raw	Unmetered	418	Service Connection Size (eg. 40mm \$1320)					Y
105	Brewarrina	Brewarrina	Unmetered	421	Service Connection Size (eg. 40mm \$1685)	Y	Nil	All	190	
		Goodooga	Unmetered	317	Service Connection Size (eg. 40mm \$1269)	Y	Nil	All	190	Y
27	Byron (Reticulator)	Byron	Two Part	155	Service Connection* (40mm: \$618)	Y	Nil	All	253	
91	Cabonne	Molong, Cumnock, Yeoval	Inclining Block	283	Service Connection (40mm: \$566.60)	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	175 407 555	Y
		North Yeoval Wellington	Inclining Block	192	Service Connection (40mm: \$384)	Y	Nil	up to 300 kL 301 kL to 500 kL >500 kL	260 340 540	
92	Carrathool	Carrathool, Hillston, Goolgowi Potable Water	Two Part	390	Service Connection (40mm: \$450)	Y	Nil	All	87	
		Melbergen	Two Part	1400	Uniform Access Charge	Y	Nil	All	185	
		Merriwagga Town Water	Two Part	390	Uniform Access Charge	Y	Nil	All	87	Y
		Goolgowi Raw Water, Rankins Springs	Two Part	370	Service Connection (40mm: \$440)	Y	Nil	All	54	

Table 6B: Water supply - 2014-15 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	Implemented 2(d) of BPMF
			(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	(8)
103	Central Darling	Wilcannia (Filtered)	Two Part	120	Uniform Access Charge	Y	Nil	All	350	N
		Wilcannia (Raw)	Unmetered	478	Uniform Access Charge	Y	Nil			
		White Cliffs (Raw)	Two Part	455	Uniform Access Charge	Y	Nil	All	380	
		Ivanhoe (Raw)	Two Part	235	Uniform Access Charge	Y	Nil	All	170	
		Ivanhoe (Filtered)	Two Part	140	Uniform Access Charge	Y	Nil	All	390	
40	Central Tablelands	Central Tablelands, Quandialla	Two Part	200	Meter Size*(40mm:\$800)	Y	Nil	All	225	Y
14	Clarence Valley	Treated	Two Part	166	Service Connection Size (40mm:\$664)	Y		All	179	Y
		Raw Water	Two Part	83	Service Connection Size (40mm:\$332)	Y		All	89	
67	Cobar	Cobar	Inclining Block	338	Service Connection Size (40mm:\$745)	Y	Nil	up to 450 kL 451 - 550 kL >551 kL	205 300 390	Y
10	Coffs Harbour	Coffs Harbour, Nana Glen, Coramba	Two Part	143	Meter Size: 40mm \$572	Y	Nil	All	263	Y
50	Cooma-Monaro	Cooma, Bredbo, Nimmitabel	Two Part	309	Service Connection Size (40mm:\$1236)	Y	Nil	All	154	Y
75	Coonamble Shire	Coonamble	Inclining Block	170	Meter Size 40mm: \$680	Y	Nil	up to 370 kL >370 kL	55 90	Y
		Gulargambone	Inclining Block	236	Meter Size 40mm: \$944	Y	Nil	up to 430 kL >430 kL	70 110	
		Quambone	Inclining Block	237	Meter Size 40mm: \$948			up to 430 kL >430 kL	70 110	
58	Cootamundra (Reticulator)	Cootamundra	Two Part	368	Meter Size 40mm: \$1472	Y	Nil	All	203	Y
42	Corowa	Corowa, Mulwala, Howlong	Two Part	100	Service Connection (eg. 40mm \$400)	Y	Nil	All	160	Y
39	Cowra	Cowra, Rural, Commercial, Government	Two Part	304	Meter Size: 40mm \$1215	Y	Nil	All	214	Y
		Cowra, Industrial	Two Part	304	Meter Size: 40mm \$1215	Y	Nil	All	83	
		Raw Water	Two Part	304	Meter Size: 40mm \$1215		Nil	All	149	
54	Deniliquin	Deniliquin, Filtered	Two Part	268	Service connection (40mm: \$715)	Y	Nil	All	120	Y
		Deniliquin, Raw	Two Part	160	Uniform Access Charge	Y		All	50	
18	Dubbo	Dubbo	Two Part	242	Meter Size* (eg. 40mm \$967.80)	Y	Nil	All	185	Y
26	Essential Energy	Broken Hill, Sunset Strip, Menindi,	Two Part	313	Service Connection (eg. 40mm \$1250.69)	Y	Nil	All	172	Y
		Silverton, Treated								
		Chlorinated	Two Part	313	Service Connection (eg. 40mm \$1250.69)	Y	Nil	All	111	
		Untreated	Two Part	313	Service Connection (eg. 40mm \$1250.69)			All	151	
15	Eurobodalla	Pipeline Customers	Two Part	313	Service Connection (eg. 40mm \$1250.69)	Y	Nil	All	74	Y
		Eurobodalla	Two Part	282	Meter Size*: 40mm \$1128	Y	Nil	up to 3650 kL > 3650 kL	340 170	
			Bulk Tariff							
51	Forbes	Forbes	Two Part	206	Service Connection Size* (40mm: \$824)	Y	Nil	All	90	Y
84	Gilgandra (Groundwater)	Gilgandra	Two Part	219	Service Connection Size* (40mm: \$883)	Y	Nil	All	98	Y
		Tooraweenah	Two Part	114	Uniform Access Charge	Y	Nil	All	136	
60	Glen Innes Severn	Glen Innes, Deepwater	Two Part	270	Service Connection Size* (40mm: \$481)	Y	Nil	All	205	Y
28A	Goldenfields (Reticulator)	Retail	Two Part	304	Meter Size*(40mm: \$1217.20)	Y	Nil	All	176	Y
1	Gosford	Gosford	Two Part	150	Service Connection Size* (40mm: \$535.10)	Y	Nil	All	223	Y
20	Goulburn Mulwaree	Goulburn	Inclining Block	235	Meter Size*(40mm: \$934)	Y	Nil	up to 292 kL (for 20mm meter) >292 kL (for 20mm meter)	280 378	Y
		Marulan	Inclining Block	306	Meter Size*(40mm: \$1217)	Y	Nil	up to 292 kL (for 20mm meter) >292 kL (for 20mm meter)	280 378	
80	Greater Hume	Culcairn + Villages	Inclining Block	308	Service Connection Size (40mm: \$448)	Y	Nil	up to 200kL	140	Y
								>200kL	220	



Table 6B: Water supply - 2014-15 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	Implemented 2(d) of BPMF
			(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	(8)
30	Griffith	Griffith (Filtered)	Inclining Block	129	Meter Size*(40mm: \$516)	Y	Nil	up to 200 kL	65	Y
		Yenda (Dual, Filtered)	Inclining Block	201	Uniform Access Charge	Y	Nil	>200 kL	125	
		Yenda (Dual, Raw)	Two Part				Nil	up to 200 kL	65	
94	Gundagai	Gundagai	Two Part	165	Service Connection Size: 40mm: \$660	Y	Nil	>200 kL	125	
44	Gunnedah (Groundwater)	Gunnedah	Inclining Block	170	Service Connection Size: 20-40mm: \$170, 50mm: \$400	Y	Nil	All	33	
		Curlewis	Inclining Block	190	Service Connection Size: 20-40mm: \$190, 50mm: \$400	Y	Nil	up to 400 kL	104	Y
		Mullaley	Inclining Block	310	Service Connection Size: 20-40mm: \$310, 50mm: \$500	Y	Nil	>400 kL	156	
		Tambar Springs	Inclining Block	360	Service Connection Size: 20-40mm: \$360	Y	Nil	up to 400 kL	109	
								>400 kL	164	
90	Guyra	Guyra, Tingha	Inclining Block	300	Uniform Access Charge	Y	Nil	up to 400 kL	162	N
								401 to 1000 kL	200	
								> 1000 kL	259	
81	Gwydir	Gwydir	Inclining Block	390	Meter Size*(40mm: \$1560)	Y	Nil	up to 400 kL	320	
76	Harden (Reticulator)	Harden	Two Part	358	Service Connection Size: 40 mm: \$1430.99	Y	Nil	>400 kL	180	Y
7	Port Macquarie-Hastings (Unfiltered)	Hastings	Inclining Block	183	Meter Size* (eg. 40mm \$732)	Y	Nil	up to 600 kL	195	Y
86	Hay (Dual Supply)	Hay (Filtered)	Inclining Block	129	Uniform Access Charge	Y	Nil	>600 kL	215	N
		Hay (Unfiltered) - commercial users	Two Part	327	Uniform Access Charge	Y	Nil	up to 300 kL	108	
37	Inverell	Inverell/Ashford/Yetman, Filtered	Inclining Block	330	Uniform Access Charge	Y	Nil	> 300 kL	164	
								All	33	
106	Jerilderie (Dual Supply)	Jerilderie, Filtered	Inclining Block	231	Service Connection Size*(32mm: \$580)	Y	Nil	up to 500 kL	130	N
		Jerilderie, Raw	Two Part	336	Uniform Access Charge	Y	Nil	> 500 kL	150	
25	Kempsey (Groundwater)	Kempsey	Two Part	255	Meter Size: 40 mm: \$997	Y	Nil	up to 250 kL	144	Y
70	Kyogle	Kyogle, Bonalbo, Muli-Muli, Woodenbong	Inclining Block	340	Service Connection Size: 40mm: \$1360	Y	Nil	>250 kL	160	
59	Lachlan	Condoblin	Two Part	308	Service Connection Size: 40mm: \$1232.60	Y	Nil	All	69	Y
48	Leeton	Leeton, Whitton, Murrami	Inclining Block	252	Meter Size*(40mm: \$890)	Y	Nil	up to 300 kL	209	Y
22	Lismore (Reticulator)	Lismore, Nimbin	Two Part	204	Service Connection Size*(40mm: \$815.52)	Y	Nil	> 300 kL	126	
31	Lithgow	Lithgow	Two Part	645	Service Connection Size (50mm: \$854)	Y	Nil	All	299	Y
61	Liverpool Plains Shire Council	Quirindi, Werris Creek	Inclining Block	575	Service Connection Size (eg. 40mm \$1737)	Y	Nil	All	296	Y
		Villages	Inclining Block	575	Service Connection Size (eg. 40mm \$1219)	Y	Nil	up to 300 kL	125	Y
5	MidCoast	Great Lakes and Greater Taree, Gloucester	Inclining Block	205	Meter Size* (eg. 40mm \$820)	Y	Nil	>300 kL	203	
								up to 300 kL	125	
32	Mid-Western Regional Council	Mudgee, Gulgong, Rylstone	Two Part	140	Meter Size* (eg. 40mm \$560)	Y	Nil	>300 kL	203	Y
38	Moree Plains Shire	Moree, Mungindi, Boggabilla, Pallamallawa, (Potable)	Inclining Block	270	Service Connection Size (eg. 40mm \$1080)	Y	Nil	up to 200 kL	270	Y
		Garah, Boomi, Boggabilla, Gurley, Weemalah (Non-Potable)	Inclining Block	270	Service Connection Size (eg. 40mm \$1080)	Y	Nil	>200 kL	302	
								up to 750 kL	144	Y
								>750 kL	186	
								up to 750 kL	96	
								>750 kL	157	

Table 6B: Water supply - 2014-15 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	Implemented 2(d) of BPMF
			(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	(8)
65	Murray	Murray, Filtered Murray, Raw	Two Part Two Part	262 97	Service Connection Size (eg. 40mm \$1049.50) Service Connection Size (eg. 40mm \$386.69)	Y Y	Nil Nil	All All (88c for stage 2 and 3, 90c for stage 3 water restrictions)	91 69	Y
101	Murrumbidgee	Darlington Point, Coleambally	Inclining Block	185	Service Connection Size (eg. 40mm \$350)	Y	Nil	up to 500 kL 501 to 800 kL > 800 kL	36 42 50	Y
41	Muswellbrook	Muswellbrook, Denman, Sandy Hollow	Two Part	175	Service Connection Size* (eg. 40mm \$700)	Y	Nil	All	191	Y
34	Nambucca	Nambucca	Two Part	128	Service Connection Size (eg. 40mm \$512)	Y	Nil	All	290	Y
46	Narrabri (Groundwater)	Narrabri Narrabri, non - metered Gwabegar Wee Waa Boggabri Bellata Pilliga	Two Part Unmetered Two Part Two Part Two Part Two Part Two Part	323 472 561 317 346 491 525	Service Connection Size (eg. 40mm \$374) Service Connection Size (eg. 40mm \$1175) Service Connection Size* (eg. 40mm \$732) Service Connection Size* (eg. 40mm \$387) Service Connection Size* (eg. 40mm \$843) Service Connection Size* (eg. 40mm \$1122) Service Connection Size* (eg. 40mm \$699)	Y Y Y Y Y Y Y	Nil Nil Nil Nil Nil Nil Nil	All All All All All All All	87 115 88 100 115 115	Y
63	Narrandera (Groundwater)	Narrandera	Two Part	266	Meter Size (eg. 40mm \$1064)	Y	Nil	All	102	Y
62	Narromine (Groundwater)	Narromine, Trangie, Tomingley	Two Part	193	Service Connection Size* (eg. 40mm \$765)	Y	Nil	All	110	Y
83	Oberon (Unfiltered, Reticulator)	Oberon	Two Part	292	Uniform Access Charge	Y	Nil	All	213	N
19	Orange	Orange	Two Part	222	Service Connection Size* (eg. 40mm \$886.36)	Y	Nil	All	202	Y
71	Palerang	Bungendore, Braidwood, Captains Flat	Inclining Block	407	Service Connection Size* (eg. 40mm \$1629.20)	Y	Nil	up to 200 kL >200kL	214 337	Y
36	Parkes	Parkes	Two Part	215	Meter Size, eg : 40mm \$860	Y	Nil	All	200	Y
17	Queanbeyan (Reticulator)	Queanbeyan	Inclining Block	381	Meter Size, eg : 40mm \$1649	Y	Nil	up to 160 kL >160 kL	274 402	Y
33	Richmond Valley	All	Two Part	127	Service Connection Size* (eg. 40mm \$495)	Y	Nil	All	194	Y
8	Riverina	Wagga Wagga, Rural Towns & Villages	Inclining Block	180	Uniform Access Charge	Y	Nil	up to 500 kL >500 kL	133 200	N
4	Rous County Council	Bulk Supplier	Two Part	139	Service Connection Size* (eg. 40mm \$554.80)	Y	Nil	All	200	
3	Shoalhaven	Shoalhaven, treated	Inclining Block	81	Service Connection Size (40mm: \$324)	Y	Nil	All	160	Y
35	Singleton	Singleton Mt Thorley Jerry's Plains/Broke	Two Part Two Part Inclining Block	149 459 149	Meter Size* (eg. 40mm \$595) Meter Size* (eg. 40mm \$906) Uniform Access Charge	Y Y Y	Nil Nil Nil	All All up to 450 kL >450 kL	122 209 164 226	Y
52	Snowy River (Unfiltered)	Snowy River	Inclining Block	360	Meter Size, eg : 40mm \$1440	Y	Nil	up to 300 kL >300 kL	210 330	Y
13	Tamworth	Tamworth  Calala Backwash Water Raw Water  Dungowan Dam Raw Water (if main traverses property)	Inclining Block  Two Part Inclining Block  Inclining Block	248    124	Service Connection Size* (eg. 40mm \$1004)    Uniform Access Charge	Y   Y	Nil  Nil	up to 400 kL 401 to 800 kL >800 kL All up to 400 kL 401 to 800 kL >800 kL up to 400 kL 401 to 800 kL >800 kL	142 156 172 33 97 107 118 49 107 118	Y
68	Tenterfield	Tenterfield, Jennings, Urbenville	Inclining Block	149	Meter Size* (eg. 40mm \$597.24)	Y	Nil	up to 450 kL > 450 kL	207 238	Y



Table 6B: Water supply - 2014-15 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	Implemented 2(d) of BPMF
			(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	(8)
93	Tumbarumba	Tumbarumba	Inclining Block	330	Meter Size* (eg. 40mm \$1320)	Y	Nil	up to 200 kL	205	Y
		Khancoban	Inclining Block	321	Meter Size* (eg. 40mm \$1284)	Y	Nil	>200 kL up to 200 kL >200 kL	344 200 354	
43	Tumut	Tumut	Inclining Block	227	Meter Size* (eg. 40mm \$905)	Y	Nil	up to 300 kL >300 kL	126 252	Y
		Tumit Raw Water	Inclining Block	180	Meter Size (eg. 40mm \$460)			up to 300 kL >300 kL	55 110	
6	Tweed	Tweed	Two Part	148	Meter Size*(40mm: \$592)	Y	Nil	All	245	Y
45	Upper Hunter Shire Council	Murrurundi	Two Part	332	Meter Size (40mm: \$1106)	Y	Nil	All	244	Y
		Merriwa/Cassilis, Aberdeen/Scone	Two Part	258	Meter Size (40mm: \$1032)	Y	Nil	All	194	
73	Upper Lachlan Council	Crookwell, Taralga, Dalton, Gunning	Inclining Block	413	Uniform Access Charge	Y	Nil	up to 200 kL > 200 kL	256 339	N
85	Uralla	Uralla, Bundarra	Two Part	295	Uniform Access Charge	Y	Nil	All	210	N
88	Wakool (Dual Supply)	Barham, Tooleybuc, Moulamein (Filtered + Raw)	Two Part	245+519	Service Connection Size*(40mm: \$2076)	Y	Nil	All potable	99	Y
		Filtered	Two Part	245	Service Connection Size*(40mm: \$980)	Y	Nil	All	99	
98	Walcha	Walcha	Two Part	190	Service Connection Size (38mm:\$690)	Y	Nil	All	396	Y
79	Walgett (Dual Supply)	Walgett, Collarenebri (Filtered)	Inclining Block	423	Service Connection Size*(40mm: \$1693.32)	Y	Nil	up to 500 kL >500 kL	36 50	Y
		Walgett, Collarenebri (Raw Water)	Inclining Block	423	Service Connection Size*(40mm: \$1693.32)	Y	Nil	up to 600 kL >600 kL	12 17	
		Lightning Ridge, Carinda, Rowena (Bore Water)	Inclining Block	279	Service Connection Size*(40mm: \$1116.52)	Y	Nil	up to 600 kL >600 kL	10 14	
96	Warren (Dual Supply)	Warren Bore Water	Inclining Block	320	Uniform Access Charge	Y	Nil	up to 450 kL >450 kL	100 151	N
		Warren River Water	Inclining Block	320	Uniform Access Charge		Nil	up to 450 kL >450 kL	37 64	
		Nevertire Bore Water	Inclining Block	435	Uniform Access Charge	Y	Nil	up to 450 kL >450 kL	57 84	
		Collie Bore Water	Inclining Block	325	Uniform Access Charge	Y	Nil	up to 400 kL >400 kL	124 188	
55	Warrumbungle	Coonabarabran, Timore Dam (Raw), Baradine, Binnaway, Southern, Coolah, Dunedoo, Village, Villages: Bugaldie, Kenebri	Two Part	360	Uniform Access Charge	Y	Nil	All	180	N
		Mendooran	Two Part	816	Uniform Access Charge	Y	Nil	All	180	
57	Wellington	Wellington, Geurie	Inclining Block	444	Service Connection Size (40mm: \$1765.80)	Y	Nil	up to 300 kL 301 to 500 kL 500 to 10000kL >10000 kL	197 201 217 232	Y
74	Wentworth (Dual Supply)	Filtered	Inclining Block	265	Service Connection Size*(40mm: \$1090)	Y	Nil	up to 250 kL >250 kL	120 280	Y
		Raw	Inclining Block	140	Service Connection Size (40mm: \$550)	Y	Nil	up to 700 kL >700 kL	40 110	
16	Wingecarribee	Wingecarribee	Two Part	154	Meter Size*(40mm: \$615)		Nil	All	174	Y
2	Wyong	Wyong	Two Part	172	Service Connection Size (40mm: \$599.47)	Y	Nil	All	223	Y
56	Yass Valley	Yass, Bowning, Binalong & Rural Areas	Two Part	450	Meter Size (40mm: \$704)	Y	Nil	All	280	Y
		Murrumbateman	Two Part	338	Meter Size (40mm: \$422.40)	Y	Nil	All	280	
49	Young (Reticulator)	Young	Two Part	250	Meter Size* (40mm: \$1000)	Y	Nil	All	246	Y

Table 7: Sewerage - Residential Charges & Bills, Cost Recovery

WATER UTILITY		RESIDENTIAL CHARGES						NON-RESIDENTIAL CHARGES								Typical Residential Bill			COST RECOVERY															
		Fixed Charge (\$) (or Minimum)			Operating Cost (OMA)			Non-Res Sewer Usage Charge		Liquid Trade Waste Charges		Non-Res & Trade Waste		Typical Developer Charge					Return on Assets			Economic Real Rate of Return (Sewerage)			Full Cost Recovery?	Recycled Water Usage Charge	Sewage Collected	Connected Properties						
		(\$)			(c/kL)			(Not including SDF)		Usage Charge		Appropriate TW Charges ?		Charges (% of Annual Charges) (5)					Volume (% of sge collected) (6)		(\$/Equivalent Tenement [ET])				(\$/assessment)			(%)			(%)			(FCR) (Y/Y*N)
		(1) P4.1			(2)			(c/kL) (3a)		(c/kL) (3b)		(4)						(7)				(8) P6			(9)			(11) F18			(11a)	(11b)	(11c) W19	(12) C8
		12/13	13/14	14/15	11/12	12/13	13/14	13/14	14/15	13/14	14/15	13/14	14/15	13/14	13/14	12/13	13/14	14/15	12/13	13/14	14/15	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	13/14	13/14			
	Sydney Water	570	571	592				130	120		184	Y	Y					552	571	592				1.6	1.4	1.4	Y	178	261	1,799,000				
	Hunter Water	555	569	586				67	67			Y	Y					607	606	623				1.8	2.1	1.8	Y	190	289	224,326				
LWUs with > 10,000 Properties																																		
1	Gosford	535	576	612	134	189	181	107	99	162	167	Y	Y	18	18	2,650	2,850	1,940	535	576	612	-0.1	-0.4	-0.2	-0.1	-0.4	-0.1	Y*	163	223	69,780			
2	Wyong	463	516	471	112	126	144	86	83	83	126	Y	Y	12	25	2,500	2,610	4,990	463	458	471	-0.4	-0.2	-0.3	-0.4	-0.2	-0.4	Y*	112	246	60,320			
3	Shoalhaven	678	714	750	216	255	239	120	130	161	164	Y	Y	14	17	8,340	8,340	8,340	678	714	750	1.6	1.4	1.6	2.1	1.9	2.2	Y		200	41,890			
5	MidCoast (Combined)	920	920	948	215	263	304	238	245	243	250	Y	Y	15	21	8,890	9,150	9,400	920	920	948	0.9	1.3	1.3	2.2	2.8	2.8	Y		161	35,040			
6	Tweed	650	691	732	154	175	229	130	140	190	200	Y	Y	16	26	5,840	6,040	6,200	650	691	732	1.0	0.5	1.5	1.0	0.6	1.7	Y		221	30,370			
7	Port Macquarie-Hastings	674	704	736	103	145	160	106	111	150	155	Y	Y	5	6	4,450	4,650	3,530	674	704	736	1.4	0.7	2.6	1.1	0.6	2.9	Y	121	308	27,500			
9	Wagga Wagga	434	434	434	150	188	191	200	200	170	175	Y	Y	31	14	3,500	3,500	3,730	434	434	434	0.0	-0.3	-0.5	0.6	0.5	0.3	Y	89	218	26,290			
10	Coffs Harbour	760	783	806	164	199	267	200	206	158	163	Y	Y	21		8,790	9,260	9,940	760	783	806	0.6	-0.4	-0.4	1.6	0.1	0.5	Y		228	23,540			
11	Albury City	489	561	639	177	205	210	265	283	158	166	Y	Y	25	30	4,160	4,160	4,000	489	561	639	0.5	2.2	3.9	0.9	2.6	4.2	Y		204	21,940			
13	Tamworth Regional	716	738	758	141	152	192	112	115	168	172	Y	Y	24	55	1,830	1,880	1,930	716	738	758	1.0	0.9	1.6	2.1	1.8	2.5	Y	6	245	19,350			
15	Eurobodalla	816	844	865	291	296	324	166	170	133	136	Y	Y	13	13	9,590	9,830	10,080	816	844	865	1.0	0.7	0.6	1.6	1.1	1.0	Y		174	18,020			
17	Queanbeyan	365	414	470	176	205	172	83	94	180	204	Y	Y	14	16	1,310	1,330	1,390	365	414	470	-1.9	-1.0	3.6	-3.5	-2.2	2.6	Y		216	16,670			
19	Orange	349	384	423	115	137	163	179	202	179	202	Y	Y	23	24	3,960	4,500	4,600	349	384	423	1.6	2.2	2.7	0.7	1.2	1.7	Y		229	16,470			
18	Dubbo	615	652	690	197	204	200	187	198	161	165	Y	Y	3	35	5,180	5,340	5,450	615	652	690	2.1	2.3	3.4	1.7	1.8	2.7	Y		175	16,020			
16	Wingecarribee	662	711	739	123	151	237	135	130	161	165	Y	Y	14	24	7,830	8,030	8,250	662	711	739	0.5	0.8	0.6	1.1	1.4	1.1	Y		225	15,600			
14	Clarence Valley	829	907	988	203	232	287	275	299	255	260	Y	Y	17	10	7,300	7,480	7,670	829	907	988	0.2	-0.3	0.6	1.2	1.1	2.3	Y		172	14,640			
21	Bathurst Regional	433	456	479	125	137	139	125	135	200	210	Y	Y	36	34	4,680	4,820	4,970	433	456	479	0.4	1.1	2.2	0.0	0.7	1.8	Y		299	15,450			
24	Ballina	674	734	807	169	201	306	186	205	148	163	Y	Y	20		7,260	7,470	7,700	674	734	807	0.2	-0.2	-0.2	0.4	0.6	1.4	Y		212	13,940			
22	Lismore	701	738	772	116	128	159				103	Y	Y	20	23	8,080	8,310	10,330	701	738	772	-0.5	1.0	0.3	-0.8	0.5	0.2	Y		293	12,760			
23	Bega Valley	1045	1081	1109	369	455	425	321	369	100	100	Y	Y	9	35	9,450	10,500	11,070	1045	1081	1109	0.7	-0.7	-0.1	1.2	-0.2	0.4	Y		173	12,180			
27	Byron*	735	758	780	173	171	217	229	231	229	220	Y	Y	25	30	9,980	12,580	18,810	1013	1060	1093	0.0	-1.5	1.3	2.3	1.2	3.9	Y	1	300	10,490			
26	Essential Energy	497	497	511	257	234	225	119	122	190	196	Y	Y	22	40				497	497	511							Y*	17	142	9,720			
20	Goulburn Mulwaree	675	699	724	237	215	211	273	283	240	250	Y	Y	30	29	3,840	3,930	4,470	675	699	724	4.0	5.6	5.6	4.3	5.8	5.6	Y		175	10,570			
25	Kempsey	680	736	791	158	216	275	179	192	179	192	Y	Y	24	21	7,420	7,630	7,840	680	736	791	-0.6	-1.2	-1.1	0.0	-0.6	-0.4	Y*	81	198	9,740			
Medians (% of LWUs basis excl bulk suppliers) for >10,000 Properties		738			214			23 out of 24 have non-res sewer usage charges		24 out of 24 have trade waste charges		6,200				738			1.3			1.7			0 LWUs did not achieve FCR									
LWUs with 3,001 - 10,000 Properties																																		
29	Armidale Dumaresq	368	379	379	148	164	124			145	145	Y	Y	34	29	4,640	4,870	4,870	368	379	379	1.4	0.5	2.1	0.9	-0.1	1.8	Y		262	8,380			
31	Lithgow*	488	836	836	132	155	222	155	155	160	160	Y	Y	10		1,790	1,790	2,160	767	836	836	0.2	1.8	1.8	1.9	3.5	1.7	Y		226	7,480			
30A	Hawkesbury	570	584	602	166	238	204			119	123	Y	Y	27	31	8,050	8,250	8,460	570	584	602	-1.6	-0.1	-0.2	-1.9	-0.2	-0.4	Y*	163	269	7,650			
30	Griffith	708	729	750	254	199	209	141	144	116	119	Y	Y	23	14	2,050	3,100	3,620	708	729	750	1.6	0.6	0.3	1.5	1.6	1.3	Y		274	7,010			
33	Richmond Valley	829	870	896	190	220	230	191	197	146	157	Y	Y	17		24,320	8,000	8,000	829	870	896	0.1	1.6	0.9	1.5	2.9	2.5	Y		242	6,650			
32	Mid Western Regional	586	651	697	152	198	258	208	223					13	26	3,560	3,650	3,770	586	651	697	1.4	2.8	1.1	1.0	3.3	1.8	Y		160	7,150			
34	Nambucca	448	588	580	145	178	214	364	330	169	174	Y	Y	28	8	8,890	9,090	9,340	448	588	580	-0.1	-1.5	0.0	0.5	-1.1	0.4	Y		198				



Table 7: Sewerage - Residential Charges & Bills, Cost Recovery

WATER UTILITY		RESIDENTIAL CHARGES						NON-RESIDENTIAL CHARGES								Typical Residential Bill			COST RECOVERY													
		Fixed Charge (\$) (or Minimum)			Operating Cost (OMA)			Non-Res Sewer Usage Charge		Liquid Trade Waste Charges			Non-Res & Trade Waste		Typical Developer Charge				Return on Assets			Economic Real Rate of Return (Sewerage)			Full Cost Recovery?	Recycled Water Usage Charge	Sewage Collected	Connected Properties				
		(\$)			(c/kL)			(Not including SDF)		Usage Charge		Appropriate TW Charges ?	Charges (% of Annual Charges) (5)	Volume (% of sge collected) (6)	(\$/Equivalent Tenement [ET])				(\$/assessment)			(%)			(%)			(FCR) (Y/Y*1N)	(c/kL)	(kL/prop)	(No.)	
		(1) P4.1			(2)			(c/kL) (3a)		(c/kL) (3b)		(4)	(5)	(6)	(7)			(8) P6			(9)			(11) F18			(11a)	(11b)	(11c) W19	(12) C8		
		12/13	13/14	14/15	11/12	12/13	13/14	13/14	14/15	13/14	14/15	13/14	14/15	13/14	13/14	12/13	13/14	14/15	12/13	13/14	14/15	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	13/14	13/14	
38	Moree Plains	650	565	630	162	184	137	152	116	163	168	Y	Y	35	15	4,530	4,670	4,700	650	565	630	1.3	0.4	0.2	1.4	0.3	0.3	Y	10	344	4,080	
44	Gunnedah	422	456	492	96	111	133	146	152	135	146	Y	Y	28	18	6,580	6,810	7,050	422	456	492	2.7	3.2	3.5	1.6	2.3	2.7	Y		176	3,960	
46	Narrabri	590	615	677	173	184	223			200	200	Y	Y	7	28	4,680	5,080	5,210	590	615	677	2.2	5.5	1.5	1.6	4.6	1.0	Y		183	3,940	
43	Tumut	600	620	635	195	218	206	180	185			Y	Y	26		5,200	5,000	5,130	600	620	635	0.7	2.0	2.1	0.0	1.6	1.5	Y		219	4,220	
49	Young	700	720	720	75	97	229			156	156	Y	Y	21	33	1,250	1,280	1,350	700	720	720	12.8	5.1	1.3	11.5	5.3	2.9	Y		134	3,800	
39	Cowra	755	781	781	175	222	262	73	73	155	159	Y	Y	22		5,190	5,360	5,360	755	781	781	0.7	1.3	1.5	3.2	3.5	3.1	Y		160	3,540	
45	Upper Hunter	439	454	477	165	170	185	88	92			Y	Y	17	7	2,300	2,300	1,540	439	454	477	-0.5	1.9	-1.0	-1.8	0.9	-1.9	Y*		267	4,090	
52	Snowy River	780	840	900	432	315	421	288	308	175	175	Y	Y	35	41	5,400	5,400	5,160	780	840	900	0.5	0.1	1.2	0.1	0.0	1.4	Y	100	93	4,740	
51	Forbes	452	466	644	175	285	219	141	147	65	67	Y	Y	22	36	3,850	3,980	4,080	452	466	644	1.1	-1.6	0.9	0.9	-1.8	0.8	Y		215	3,180	
50	Cooma-Monaro	751	781	820	201	255	311			170	170	Y	Y	15		6,800	7,000	7,170	751	781	820	0.2	1.1	1.4	-0.3	0.6	1.0	Y		180	3,250	
53	Berrigan	382	464	477	122	214	170							18	10	1,750	1,800	1,850	382	464	477	-1.0	-2.0	1.9	-2.4	-2.9	0.8	Y	26	182	3,520	
48	Leeton	465	480	492	145	162	231	78	80	171	177	Y	Y	32	18	5,000	5,000	5,100	465	480	492	1.0	1.0	0.4	-0.6	-0.5	-0.7	Y		199	3,270	
54	Deniliquin	750	750	770	220	246	236	130	130	162	166	Y	Y	21	7	4,580	4,700	4,650	750	750	770	1.1	5.5	4.7	0.5	5.3	5.0	Y		177	3,180	
Medians (% of LWUs basis excl bulk suppliers) for 3,000 to 10,000 Properties		640						220		18 out of 24 have non-res sewer usage charges			21 out of 24 have trade waste charges			4,675			640			1.4			1.5			0 LWUs did not achieve FCR				
LWUs with 1,501 - 3,000 Properties																																
47	Bellingen	677	725	842	233	241	313	91	94	136	140	Y	Y	7	13	4,450	4,790	4,680	677	725	842	-0.6	0.0	0.9	-1.3	-0.4	0.3	Y		204	3,030	
60	Glen Innes Severn	420	434	450	127	120	129	95	98	162	162	Y	Y	6	8	2,500	2,850	2,930	420	434	450	0.8	1.3	1.7	0.8	1.5	1.9	Y		218	2,810	
58	Cootamundra	328	376	388	82	114	136	204	211	135	140	Y	Y	25	14	2,960	4,030	4,260	328	376	388	0.0	1.3	1.3	0.0	1.3	1.3	Y		187	2,820	
57	Wellington	555	574	587	201	199	203	82	84	148	151	Y	Y	23	9	1,910	1,910	1,650	555	574	587	-0.7	-1.3	-1.2		-0.6	-0.4	N		209	2,650	
91	Cabonne	450	465	475	266	305	361	120	120	160	160	Y	Y	17	42	5,060	5,300	6,280	450	465	475	-0.1	-0.5	-0.5	-0.5	-0.6	-0.7	Y*		139	2,140	
80	Greater Hume	386	445	489	174	177	185	120	132	160	160	Y	Y	25	15	3,000	3,000	4,020	386	445	489	-0.5	-0.4	0.4	-0.8	-0.6	0.1	Y	60	172	2,610	
59	Lachlan	422	440	458	157	190	199	117	120	134	140	Y	Y	5	23	7,750	7,750	7,750	422	440	458	0.2	-0.7	-0.7	-1.5	-2.2	-2.1	Y*		223	2,170	
65	Murray	377	381	389	132	143	157	52	53	162	166	Y	Y	27	28	2,050	1,160	1,190	377	381	389	2.9	2.2	2.6	2.3	1.6	2.0	Y		219	3,130	
62	Narromine	508	534	548	127	122	298	195	200	195	200	Y	Y	22		4,010	4,110	3,670	508	534	548	0.5	0.8	1.3	-0.2	0.3	0.7	Y		167	1,960	
56	Yass Valley	570	580	595	175	240	220	220	225	150	160	Y	Y		31	5,050	5,650	5,790	570	580	595	1.1	1.4	1.7	0.6	1.0	0.0	Y		203	2,330	
61	Liverpool Plains	475	490	504	167	170	171	165	170	300	300	Y	Y	13	28	2,780	2,860	2,910	475	490	504	0.5	2.0	2.2	0.0	1.4	1.8	Y		149	2,040	
55	Warrumbungle	432	445	458	303	211	358	75	77		160			22	30	1,320	1,280	1,300	432	445	458	-0.2	0.4	0.0	-0.5	-0.3	-1.1	Y*		116	2,540	
69	Temora	282	296	311	112	155	147	32	34					22	6				282	296	311	0.9	0.3	0.1	0.4	0.0	0.0	Y	80	156	2,150	
71	Palerang	892	922	946	192	282	260	262	269	170	200	Y	Y	6		10,440	10,800	11,200	892	922	946	5.5	0.3	0.6	5.7	1.1	1.7	Y	150	191	2,090	
72	Bland	598	614	669	175	184	183	20	22	20	85	Y	Y	5		1,690	1,760	2,120	598	614	669	1.2	2.2	2.7	1.0	2.1	2.6	Y		195	1,830	
63	Narrandera	490	505	505	94	256	224	120	120					18			1,300	650	490	505	505	2.5	3.9	2.8	1.1	3.4	2.1	Y	20	177	1,700	
67	Cobar	300	310	320	111	76	118	170	175	165	170	Y	Y	11	7	800	920	920	300	310	320	-1.6	-0.6	-1.3	-1.8	-0.6	-1.7	Y*	35	250	1,740	
74	Wentworth	670	690	705	25	22	23				165	Y	Y	10		5,770	5,670	6,250	670	690	705	1.1	3.7	2.4	1.3	3.7	2.1	Y		1,339	1,590	
75	Coonamble	426	440	465	135	143	132	82	85					18	12				426	440	465	0.2	0.4	0.5	-1.4	-1.0	-0.3	Y		186	1,280	
70	Kyogle	606	625	643	160	202	284	96	100	100	100	Y	Y	18	30	1,900	1,900	2,130	606	625	643	0.3	-0.2	0.1	0.5	0.1	0.4	Y		180	1,710	
77	Junee	365	378	365	94	124	125							11	14	1,650																

Table 7: Sewerage - Residential Charges & Bills, Cost Recovery

WATER UTILITY		RESIDENTIAL CHARGES						NON-RESIDENTIAL CHARGES								Typical Residential Bill			COST RECOVERY													
		Fixed Charge (\$) (or Minimum)			Operating Cost (OMA)			Non-Res Sewer Usage Charge		Liquid Trade Waste Charges		Non-Res & Trade Waste		Typical Developer Charge					Return on Assets			Economic Real Rate of Return (Sewerage)			Full Cost Recovery?	Recycled Water Usage Charge	Sewage Collected	Connected Properties				
		(\$)	(c/kL)	(Not including SDF)	Usage Charge	Appropriate TW Charges ?	Charges (% of Annual Charges) (5)	Volume (% of sge collected) (6)	(\$/Equivalent Tenement [ET])	(\$/assessment)	(%)	(%)	(FCR) (Y/Y*N)	(c/kL)	(kL/prop)				(No.)													
(1) P4.1	(2)	(c/kL) (3a)	(c/kL) (3b)	(4)	(5)	(6)	(7)	(8) P6	(9)	(11) F18	(11a)	(11b)	(11c) W19	(12) C8																		
12/13	13/14	14/15	11/12	12/13	13/14	13/14	14/15	13/14	14/15	13/14	14/15	13/14	13/14	12/13	13/14	14/15	12/13	13/14	14/15	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	13/14				
LWUs with 200 - 1,500 Properties																																
84	Gilgandra	476	515	557	138	142	176	124	136	195	215	Y	Y	21	20		476	515	557	-1.8	-1.5	0.8	-2.1	-1.6	0.6	Y*	7	188	1,370			
73	Upper Lachlan	665	705	737	109	94	116	240	256					19	6	3,760 3,900 3,970	665	705	737	0.1	1.4	2.5	0.0	1.1	1.9	Y		339	1,530			
87	Bourke	598	618	632	245	189	252			177	177	Y	Y	14	3	930 930 930	598	618	632	1.1	3.0	2.0	-0.1	1.9	1.1	Y		157	1,220			
86	Hay	613	634	649	206	182	205	106	108					15	5		613	634	649	1.7	2.0	1.3	1.1	1.5	0.9	Y		224	1,280			
83	Oberon	388	446	513	340	225	218	148	195					39	17	1,570 1,660 1,710	388	446	513	0.7	-0.1	-0.9	0.3	-0.5	-1.3	Y*		258	1,220			
81	Gwydir	500	500	500	117	90	104	245	245	130	130	Y	Y	53	16	2,000 2,000 2,000	500	500	500	4.9	-15.2	7.0	2.8	-16.4	5.7	Y	12	239	1,150			
85	Uralla	479	495	520	164	257	341	100	100	120	120	Y	Y		5	590 490 510	479	495	520	-0.8	1.0	-0.7	-1.0	-0.6	-1.4	Y*		111	1,110			
95	Weddin	297	356	427	96	101	146							5	9	2,800 3,040 3,730	297	356	427	0.9	1.2	1.9	0.8	1.0	1.8	Y		178	930			
89	Bogan	465	540	540	42	45	221	196	196	157	157	Y	Y	35	19		465	540	540	1.6	3.7	3.4	0.9	2.8	2.5	Y		196	970			
76	Harden	589	600	614	65	49	50	210	215	210	215	Y	Y	18	26	3,000 824 830	589	600	614	1.3	2.6	2.2	9.4	1.8	1.5	Y		623	940			
88	Wakool	543	561	578	101	122	106							6	9	2,672 2,810 2,810	543	561	578	-0.6	-0.7	0.2	-1.3	-1.3	-0.3	Y		339	1,010			
93	Tumbarumba	506	541	579	105	143	160	111	119	135	135	Y	Y	21	27	430 430 430	506	541	579	1.9	0.9	2.0	0.6	0.0	1.1	Y		199	1,000			
94	Gundagai	484	544	612	309	291	153	233	262	281	316	Y	Y	40	26	580 600 600	484	544	612	-0.3	2.3	3.1	-0.4	2.1	2.8	Y		285	820			
92	Carrathool	363	375	405	159	194	89									660 680 680	363	375	405	-1.5	-1.6	0.6	-1.5	-1.6	0.6	Y		230	830			
96	Warren	485	485	485	240	217	243		180	177	177	Y	Y	23			485	485	485	0.3	-1.0	-1.6	-2.6	-3.5	-3.6	N		223	790			
99	Coolamon	350	360	380	236	275	303								4	4,500 4,500 4,500	350	360	380	1.3	0.1	-0.3	0.7	-0.4	-0.7	Y*	23	105	1,000			
102	Lockhart	464	475	490	161	202	228	185	191	75	75	Y	Y			1,200 1,250 1,290	464	475	490	0.6	0.0	0.4	-0.4	-0.9	-0.2	Y	62	130	880			
98	Walcha	416	425	440	110	198	220	96	99	146	150	Y	Y	22	10		416	425	440	2.5	2.1	1.8	1.3	1.2	0.9	Y		194	790			
100	Balranald	269	269	269	73	85	127	15	15	125	130	Y	Y	16		610 630 630	269	269	269	0.4	-0.1	-1.0	-0.6	-0.9	-1.8	N		212	850			
97	Bombala	525	543	562	127	144	149	21	22	21	22	Y	Y	20		2,200 2,270 2,330	525	543	562	0.8	-0.9	-0.8	0.1	-1.4	-1.3	Y*		225	770			
101	Murrumbidgee	300	300	309	104	110	130									1,000 1,000 1,000	300	300	309	0.3	-0.5	-0.5	-0.7	-1.2	-1.3	N		182	790			
90	Guyra	545	561	580	133	212	186					Y	Y	14	7	450 1,500 1,540	545	561	580	1.2	-0.2	0.0	1.3	-0.2	0.1	Y	11	186	1,180			
104	Boorowa	544	563	620	231	168	173					Y	Y	11	7	740 520 530	544	563	620	-0.2	0.6	0.3	-1.2	-0.3	-0.3	Y		223	660			
105	Brewarrina	734	734	756	308	124	145							10			734	734	756	0.0	4.5	-0.1	0.0	4.4	6.0	Y		396	500			
106	Jerilderie	480	480	480	212	206	222	75	75		162		Y	33		930 930 930	480	480	480	2.9	2.6	1.3	-0.1	0.0	-0.9	Y		188	430			
103	Central Darling	385	385	390	369	597	211					Y	Y			400 400 400	385	385	390	-1.1	-1.7	1.4	-1.4	-1.7	2.0	Y		118	380			
107	Urana	290	350	385	136	132	127									4,100 4,100 4,100	290	350	385	-0.4	-0.2	0.2	-0.9	-0.4	0.0	Y		281	320			
Medians (% of LWUs basis excl bulk suppliers) for 200 to 1,500 Properties		520			168 173			16 out of 27 have non-res sewer usage charges				17 out of 27 have trade waste charges				1,000			520			0.6			0.6			3 LWUs did not achieve FCR				
Median All LWUs (% of LWUs basis)		Access Charge		\$580	OMA (c/kL)		210	Non-Res Usage Charge		\$140						Developer Charge		\$3900	TRB		\$600	ROA		1.3%	ERRR		1.1%	94 LWUs had 'FCR' (80 'Y', 14 'Y')				
Median All LWUs (Statewide basis)		\$669			206			Non-Res Charge		\$136						\$5100				\$669		1.3%		1.5%			5 LWUs did not achieve FCR					
78 out of 99 LWUs have non-residential usage charges and 80 out of 99 have appropriate trade waste charges																																

**NOTES:** 1. 78 LWUs have non-residential sewerage charges which substantially meet the requirements of the Best-Practice Management Guidelines (Table 3, page 108) and 79 LWUs have appropriate trade waste fees and charges.

2. The charges, bills and costs shown for each financial year are those applicable at that time and involve no CPI adjustment.

3. Full Cost Recovery for sewerage has been achieved by 94 utilities. These comprised 80 utilities which had either an Economic Real Rate of Return or Return on Assets of >=0 for the 2013/14 financial year, shown as 'Y' in col (11a). In addition they include 14 utilities which have significantly increased their 2014/15 charges in order to recover all their costs which are shown as "Y\*". A total of 5 LWUs did not achieve full cost recovery. These are shown as "N".

4. Byron also has a residential sewer usage charge of 173c/kL. Lithgow removed their sewer usage charge in 2013/14.



Table 7A: Sewerage - 2014-15 residential multiple tariffs

WATER UTILITY		Town	Access Charge (or Minimum) (\$) (1)	Access Charge Independent of Land Value ? (2)
87	Bombala	Bombala	562	Y
		Delegate	456	Y
105	Brewarrina	Brewarrina	756	Y
		Goodooga	328	Y
91	Cabonne	Molong	229	Y
		Canowindra, Cudal, Manildra, Cumnock, Yeoval	470	Y
		Eugowra	399	Y
92	Carrathool	Hillston	405	Y
		Goolgowi	355	Y
75	Coonamble	Coonamble	465	Y
		Gulargambone	640	Y
60	Glen Innes Severn	Glen Innes	450	Y
		Deepwater	360	Y
20	Goulburn Mulwaree Council	Goulburn	724	Y
		Marulan	874	Y
44	Gunnedah	Gunnedah	492	Y
		Curlewis	675	Y
90	Guyra	Guyra	580	Y
		Tingha	410	Y
102	Lockhart	Lockhart	490	Y
		The Rock	430	Y
		Yerong Creek	417	Y
101	Murrumbidgee	Darlington Point	309	N
		Coleambally	258	N
46	Narrabri	Narrabri	677	Y
		Wee Waa	693	Y
		Boggabri	534	Y
88	Wakool	Barham, Moulamein, Murray Downs	578	Y
		Wakool, Tooleybuc	536	Y
79	Walgett	Walgett	443	Y
		Lightening Ridge	395	Y
		Collarenebri	483	Y
96	Warren	Warren	485	Y
		Nevertire	510	Y
57	Wellington	Wellington, Geurie	587	Y
		Mumbil	547	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: 2014-15 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)	Substantially Implemented 2(c) of BPF  Yes/No  (5)
11	Albury	Albury	241	Y	Meter Size (40mm: \$965.28 x SDF)	283 c/kL	Y
29	Armidale Dumaresq	Armidale	379	Y	Uniform Access Charge Multiple Units: \$337.40/WC; Hotels, Motels: \$124.15/WC, \$53.05/Urinals		N
24	Ballina	Ballina	608	Y	Service connection size* (40mm \$2440)	205 c/kL	Y
100	Balranald	Balranald	269	Y	Service connection size* (40mm \$1076)	15 c/kL	Y
21	Bathurst Regional	Bathurst	432	Y	Service connection size* (40mm: \$1726)	135 c/kL	Y
23	Bega Valley	Bega Valley	1109	Y	Meter size* (eg. 40mm \$4436)	369 c/kL	Y
47	Bellingen	Bellingen, Urunga, Dorrigo	842	Y	Meter size* (eg. 40mm \$3368)	94 c/kL	Y
53	Berrigan	Berrigan, Finley, Tocumwal, Barooga	477	Y	Uniform Access Charge After two WCs \$103/WC		N
72	Bland	Bland	669	Y	Uniform Access Charge \$135/WC, \$70/Urinal		N
78	Blayney	Blayney, Millthorpe	528	Y	Service connection size* (40mm \$1732)	115 c/kL	Y
89	Bogan	Nyngan	648	Y	Service connection size* (40mm \$2592)	196 c/kL	Y
97	Bombala	Bombala	562	Y	Uniform Access Charge	22 c/kL	Y
		Delegate	456	Y	Uniform Access Charge	92 c/kL	
104	Boorowa	Boorowa	620	Y	Uniform Access Charge		N
87	Bourke	Bourke	632	Y	Uniform Access Charge		N
105	Brewarrina	Brewarrina	756	Y	Uniform Access Charge	\$64/Urinals, Additional WCs (2-5) \$191, additional WC \$64/WC	N
		Goodooga	328	Y	Uniform Access Charge	\$64/Urinals, Additional WCs (2-5) \$191, additional WC \$64/WC	
27	Byron	Byron	780	Y	Service connection size* (40mm \$3122)	231 c/kL	Y
91	Cabonne	Molong	229	Y	Service connection size (40mm \$643.70)	120 c/kL	Y
		Canowindra, Manildra, Cudal	470	Y	Service connection size (40mm \$651.40)	120 c/kL	
		Eugowra	399	Y	Service connection size (40mm \$632.10)	120 c/kL	
		Cumnock, Yeoval	-		\$500 pre-construction levy frozen		
92	Carrathool	Hillston	405 + \$41/unit	Y	Uniform Access Charge Motels:Base+10% Base charge/unit; Service Station:1.5 Base Charge;laundromat, Clubs & Hotels:2xBase Charge	\$129/WC, \$65/Urinal	N
		Goolgowi	355 + \$36/unit		Uniform Access Charge Motels:Base+10% Base charge/unit; Service Station:1.5 Base Charge;laundromat, Clubs & Hotels:2xBase Charge	\$129/WC, \$65/Urinal	
103	Central Darling	Wilcannia	390	Y	Uniform Access Charge After two fittings, \$135/additional fitting		Y
14	Clarence Valley		571	Y	Service connection size* (40mm: \$2284)	299 c/kL	Y
67	Cobar		320	Y	Service connection size* (40mm: \$1280)	175 c/kL	Y
10	Coffs Harbour	Coffs Harbour	789 x MF x SDF	Y	MF - meter factor = [water meter size (mm)/20]^2 SDF - sewage discharge factor	206 c/kL	Y
99	Coolamon	Coolamon, Gainmain	380	Y	Uniform Access Charge	for >2 Pedestals, \$101/Pedestal	N
50	Cooma-Monaro	Cooma, Nimmitabel	875 for usage <100kL	Y	Sliding Access Charge \$875 for consumption < 100 kL, increasing to \$20715 for consumption > 8,000 kL		Y
75	Coonamble	Coonamble	465	Y	Uniform Access Charge	85 c/kL	Y
		Gulgambone	640	Y	Uniform Access Charge	101 c/kL	
58	Cootamundra	Cootamundra	228	Y	Meter Size* 40mm: \$912	211 c/kL	Y
42	Corowa	Corowa, Howlong, Mulwala	385	Y	Service connection size (40mm: \$1540)	128 c/kL	Y
39	Cowra	Cowra	639	Y	Service connection size* (40mm: \$699)	73 c/kL	Y
54	Deniliquin	Deniliquin	770	Y	Uniform Access Charge	130 c/kL	Y

Table 7B - Sewerage: 2014-15 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)	Substantially Implemented 2(c) of BPMF  Yes/No  (5)
18	Dubbo	Dubbo	364	Y	Service connection size* (40mm: \$1455.36)	198 c/kL	Y
26	Essential Energy	Broken Hill	730	Y	Service connection size* (40mm: \$2919.86)	122 c/kL	Y
15	Eurobodalla	Eurobodalla	865	Y	Meter Size (Availability Factor based)* (eg. 40mm \$3460)	170 c/kL	Y
51	Forbes	Forbes	485	Y	Service Connection Size* (40mm: \$1940)	147 c/kL	Y
84	Gilgandra	Gilgandra	253	Y	Service Connection Size*(40mm: \$1006)	136 c/kL	Y
60	Glen Innes Severn	Glen Innes, Deepwater	181	Y	Service Connection Size*(40mm: \$720)	98 c/kL	Y
1	Gosford	Gosford	612	Y	Meter Size*(40mm \$2980.50)	99 c/kL	Y
20	Goulburn Mulwaree	Goulburn	450	Y	Meter Size* (40mm: \$1597)	283 c/kL	Y
		Marulan	643	Y	Meter Size* (40mm: \$2352)	283 c/kL	
80	Greater Hume	Burrumbuttock, Jindera, Holbrook, Culcairn, Henty, Walla Walla	247	Y	Service Connection Size (40mm: \$379)	132 c/kL	Y
30	Griffith	Griffith	432	Y	Service Connection Size* (40mm: \$1434)	144 c/kL	Y
94	Gundagai	Gundagai	165	Y	Service Connection (40mm: \$660)	262 c/kL	Y
44	Gunnedah	Gunnedah	192	Y	Service Connection Size (40mm: \$769.60)	152 c/kL	Y
		Curlewis	208	Y	Service Connection Size (40mm: \$832)	238 c/kL	
90	Guyra	Guyra	580	Y	Uniform Access Charge	Ist WC/Urinal covered by rate, 2 to 6: \$245/WC or Urinal, All additional: \$128/WC or Urinal	N
		Tingha	410	Y	Uniform Access Charge		
81	Gwydir	Bingara, Warialda	425	Y	Meter Size (eg 40mm: \$1695)	245 c/kL	Y
76	Harden	Harden	230	Y	Service Connection*(eg 40mm: \$921.01)	200 c/kL	Y
7	Port Macquarie-Hastings	Hastings	706	Y	Uniform Access Charge	111 c/kL	Y
30A	Hawkesbury	Category 1, Vol < 1kL/d	700	Y	Uniform Access Charge	for waste > 20 kL/d, 251c/kL	Y
		Category 2, Vol : 1kL to 5 kL/d	3512	Y	Uniform Access Charge		
		Category 3, Vol < 5kL to 10 kL/d	6997	Y	Uniform Access Charge		
		Category 4, Vol : 10kL to 20 kL/d	13951	Y	Uniform Access Charge		
		Category 5, Vol > 20 kL/d	13951	Y	Uniform Access Charge		
86	Hay	Hay	529	Y	Uniform Access Charge	108 c/kL	Y
37	Inverell	Inverell, Ashford, Delungra, Gilgai	454	Y	Uniform Access Charge		N
106	Jerilderie	Jerilderie	480	Y	Service Connection*(eg 32mm:\$1280)	75 c/kL	Y
77	Junee	Junee	365	Y	Uniform Access Charge \$91.70/WC, \$35.30/Urinal		N
25	Kempsey	Kempsey	731	Y	Meter Size (eg 40mm: \$2605)	192 c/kL	Y
70	Kyogle	Kyogle	254	Y	Service Connection Size*(40mm: \$1016)	100 c/kL	Y
59	Lachlan	Lachlan	300	Y	Service Connection*(eg 40mm: \$1198.20)	120 c/kL	Y
48	Leeton	Leeton	492	Y	Uniform Access Charge	80 c/kL	Y
22	Lismore	Lismore, Nimbin, Perradenya	772	Y	Uniform Access Charge		N
31	Lithgow	Lithgow, Wallerawang, Portland	720	Y	Service Connection Size (50mm: \$954)	155 c/kL	Y
61	Liverpool Plains	Quirindi, Werris Creek	326	Y	Service Connection Size*(40mm: \$1147)	170 c/kL	Y
102	Lockhart	Lockhart	168	Y	Service Connection Size*(40mm: \$646)	191 c/kL	Y
		The Rock	288	Y	Service Connection Size*(40mm: \$1117)	82 c/kL	
5	MidCoast	Great Lakes, Greater Taree Area, Gloucester	716	Y	Meter Size*(eg 40mm: \$2864)	245 c/kL	Y
32	Mid-Western Regional	Mudgee, Gulgong, Rylstone	389	Y	Uniform Access Charge	223 c/kL	Y
38	Moree Plains Shire	Moree, Mungindi, Balone, Bogabilla, Gurly	630	Y	Service Connection Size (40mm: \$1220.68)	116 c/kL	Y
65	Murray	Moama, Mathoura	280	Y	Service Connection Size*(40mm: \$1118.94)	53 c/kL	Y
101	Murrumbidgee	Darlington Point	309	N	Land Value Land Value		N
		Coleambally	258	N			
41	Muswellbrook	Muswellbrook, Denman	242	Y	Service Connection Size*(40mm: \$968)	191 c/kL	Y



Table 7B - Sewerage: 2014-15 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)	Substantially Implemented 2(c) of BPMF  Yes/No  (5)
34	Nambucca	Nambucca	239	Y	Service Connection Size (40mm: \$956)	330 c/kL	Y
46	Narrabri	Narrabri	677	Y	Uniform Access Charge \$105/Pedestal, Cistern		N
		Wee Waa	693	Y	Uniform Access Charge \$105/Pedestal, Cistern		
		Bogabri	534	Y	Uniform Access Charge \$84/Pedestal/Cistern		
63	Narrandera	Narrandera	366	Y	Service Connection Size* (40mm: \$1463)	120 c/kL	Y
62	Narromine	Narromine, Trangie	196	Y	Service Connection Size*(40mm: \$783)	200 c/kL	Y
83	Oberon	Oberon	138	Y	Service Connection Size*(38mm: \$500)	195 c/kL	Y
19	Orange	Orange	136	Y	Service connection Size 40mm: \$545.80	202 c/kL	Y
71	Palerang	Bungendore, Braidwood, Captains Flat	1086	Y	Service connection Size 40mm: \$4344	269 c/kL	Y
36	Parkes	Parkes	238	Y	Meter Size* (40mm: \$952)	120 c/kL	Y
17	Queanbeyan	Queanbeyan	381	Y	Service Connection Size (40mm: \$1661)	94 c/kL	Y
33	Richmond Valley	All	134	Y	Service Connection Size*(40mm: \$537)	197 c/kL	Y
3	Shoalhaven	Shoalhaven	750	Y	Meter Size (40mm: \$2126)	130 c/kL	Y
35	Singleton	Singleton	220	Y	Service connection Size* 40mm: \$880	161 c/kL	Y
52	Snowy River	Snowy River	840	Y	Meter Size (40mm: \$3360)	308 c/kL	Y
13	Tamworth	Tamworth	489	Y	Meter Size (40mm: \$1954)	115 c/kL Strata lot availability: \$758	Y
69	Temora	Temora	245	Y	Meter Size* (40mm: \$981.80)	34 c/kL	Y
68	Tenterfield	Tenterfield, Urbenville	432	Y	Service Connection Size*(40mm: \$1728)	104 c/kL	Y
93	Tumbarumba	Tumbarumba	334	Y	Meter Size (40mm: \$1336)	119 c/kL	Y
		Khancoban	314	Y	Meter Size (40mm: \$1256)	112 c/kL	
43	Tumut	Tumut	600	Y	Meter Size* (40mm: \$2410)	185 c/kL	Y
6	Tweed	Tweed	732	Y	Service Connection Size*(40mm: \$2928)	140 c/kL for >60 kL/y	Y
45	Upper Hunter	Murrurundi, Merriwa, Aberdeen, Scone	574	Y	Meter Size (40mm \$1155)	92 c/kL	Y
73	Upper Lachlan	Crookwell, Gunning, Taralga	737	Y	Uniform Access Charge	256 c/kL	Y
85	Uralla	Uralla	364	Y	Uniform Access Charge	100 c/kL	Y
107	Urana		385	Y	Uniform Access Charge		N
9	Wagga Wagga	Wagga Wagga	81	Y	Meter Size (40mm \$325.60)	200 c/kL	Y
88	Wakool	Barham, Moulamein, Murray Downs	634	Y	Uniform Access Charge Hotels: SC+20%SC/Cistern+10%SC/Room, Clubs: SC+20%SC/Cistern, Shops/Motels/Units: SC+10%SC		N
		Wakool, Tooleybuc	592	Y	Uniform Access Charge Hotels: SC+20%SC/Cistern+10%SC/Room, Clubs: SC+20%SC/Cistern, Shops/Motels/Units: SC+10%SC		
98	Walcha	Walcha	440	Y	Service Connection Size*(40mm: \$1760)	99 c/kL	Y
79	Walgett	Walgett	443	Y	Uniform Access Charge Additional SC/Pedestal, \$69.49/Cistern		N
		Lightening Ridge	395	Y	Uniform Access Charge Additional SC/Pedestal, \$61.80/Cistern		
		Collarenebri	483	Y	Uniform Access Charge Additional SC/Pedestal, \$62.54/Cistern		
96	Warren	Warren, Nevertire	460	Y	Uniform Access Charge	180 c/kL	Y
55	Warrumbungle	Coolah, Dunedoo, Coonabarabran, Baradine	294	Y	Meter Size* (40mm \$1174)	77 c/kL	Y
95	Weddin	Grenfell	468	Y	Uniform Access Charge		N
57	Wellington	Wellington, Mumbil, Geurie	322	Y	Meter Size* (40mm \$1293)	84 c/kL	Y
74	Wentworth	Wentworth, Nimatjira	705	Y	Uniform Access Charge Additional SC/Pedestal, \$100/Cistern		N
16	Wingecarribee	Wingecarribee	608	Y	Meter Size* (40mm: \$2433)	130 c/kL	Y
2	Wyong	Wyong	471	Y	Meter Size* (40mm: \$1034.46)	83 c/kL	Y
56	Yass Valley	Yass	595	Y	Uniform Access Charge	225 c/kL	Y
49	Young	Young	720	Y	Uniform Access Charge		N



Table 7C: Sewerage - Liquid trade waste fees and charges (2014-15)

WATER UTILITY			Does LWU have appropriate Liquid Trade Waste Policy <sup>1,2</sup> ?	Appropriate Trade Waste Fees & Charges (Yes/No)	All liquid trade waste approvals (Yes/No)	ANNUAL TRADE WASTE FEE (\$)			Reinspection Fee \$/inspection Cat/1/2/3	Category 2 Trade Waste Usage Charge (c/kL)	Category 2 Non Compliance Trade Waste Usage Charge (\$/kL)	Excess Mass Charge (c/kg)			Non Compliance Excess Mass Charge for BOD (Yes/No)
						Category 1	Category 2	Category 3				BOD	Suspended Solids	Oil & Grease	
			(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(9A)	(10)	(11)	(12)	(13)
			2013-14												
11	Albury City		Yes	Yes	Yes	76	76	327		166		34	23	57	
29	Armidale Dumaresq		Yes*	Yes	Yes	85	170	424	170	145	13.5				Yes
24	Ballina		Yes	Yes	Yes	85	175	580	120	163	12.7	74	94	131	
100	Balranald			Yes		113	113	510	77	130	12.9	65	80	115	
21	Bathurst Regional		Yes	Yes		98	98	653	92	210	17.2	86	109	152	
23	Bega Valley		Yes	Yes		121	121	121	58	100	9.0				Yes
47	Bellingen		Yes	Yes		196			132	140	14.6				
53	Berrigan			No											
72	Bland		Yes	Yes		45	85	282	40	85	7.2	35	45	60	Yes
78	Blayney		Yes	Yes	Yes	82	82	308	75	155	16.5	77	97	140	Yes
89	Bogan		Yes	Yes		83	165		83	157	14.7				Yes
97	Bombala			Yes		98	98	649		22					
104	Boorowa		Yes*	Yes		134	134	134	62						
87	Bourke		Yes	Yes						177	14.5				
105	Brewarrina		Yes	No											
27	Byron		Yes	Yes	Yes	150	250	420		220	14.0	149	149	175	Yes
91	Cabonne		Yes	Yes		90	180	606	83	160	15.4	60	80	110	
92	Carrathool			No											
103	Central Darling			Yes											
14	Clarence Valley		Yes	Yes		134	134	957	145	260	22.7				
67	Cobar		Yes	Yes	Yes	90	180	603	84	170	15.5	72	95	123	
10	Coffs Harbour		Yes	Yes		190	380	855	130	163	15.0	73	94	131	
99	Coolamon			No											
50	Cooma-Monaro		Yes*	Yes		95	95	95	123	170	15.5	235	209	109	
75	Coonamble			No											
58	Cootamundra		Yes	Yes		111	221	333	111	140	12.2	62	81	108	
42	Corowa		Yes	Yes		89	178	598	83	166	15.3				
39	Cowra		Yes*	Yes		85	175	590	79	159	14.6	71	91	128	Yes
54	Deniliquin		Yes	Yes		90	180	600	85	166	15.3	75	96	135	
18	Dubbo		Yes	Yes	Yes	89	179	598	83	165	15.3	75	97	136	Yes
26	Essential Energy		Yes	Yes		105	701		98	196	18.0	88	112	157	Yes
15	Eurobodalla		Yes	Yes	Yes	92	92	496		136	12.7	80	100	130	
51	Forbes		Yes	Yes		462	462		129	67					
84	Gilgandra		Yes	Yes	Yes	101	101	101	101	215		70	115		
60	Glen Innes Severn		Yes	Yes		87	174	584	81	162	14.9	73	94	132	
1	Gosford		Yes	Yes	Yes	72	228	1917	115	167	14.2	74	95	133	
20	Goulburn Mulwaree		Yes	Yes	Yes	97	106	354	229	250	22.5	77	100	139	Yes
80	Greater Hume		Yes	Yes		84	170	570	80	160	13.5	70	95	130	
30	Griffith		Yes	Yes	Yes	81	180	486	65	119	7.0	139	134		
94	Gundagai			Yes		174	174	174		316					
44	Gunnedah		Yes	Yes		173	173	335	104	146	12.5	67	83	114	
90	Guyra		Yes*	Yes	Yes	147	147	147							
81	Gwydir		Yes	Yes		77	77	430	60	130	15.0				
76	Harden			Yes		165	165	165	165	215					
7	Port Macquarie-Hastings		Yes*	Yes	Yes	184	184	567	97	155	14.1	70	85	125	
30A	Hawkesbury		Yes	Yes		700	3512	6997	85	123		270	235	321	Yes
86	Hay		Yes	No	Yes										
37	Inverell		Yes*	No											
106	Jerilderie		Yes	Yes		75	150	300	75	162	14.9	73	94	132	
77	Junee		Yes	No											
25	Kempsey		Yes	Yes	Yes	113	113	113	134	192	17.5	118	227	227	
70	Kyogle		Yes	Yes	Yes	84	84	480	68	100	11.0	54	69	97	

Table 7C: Sewerage - Liquid trade waste fees and charges (2014-15)

	WATER UTILITY	Does LWU have appropriate Liquid Trade Waste Policy <sup>1,2</sup> ?	Appropriate Trade Waste Fees & Charges (Yes/No)	All liquid trade waste approvals (Yes/No)	ANNUAL TRADE WASTE FEE (\$)			Reinspection Fee \$/inspection Cat/1/2/3	Category 2 Trade Waste Usage Charge (c/kL)	Category 2 Non Compliance Trade Waste Usage Charge (\$/kL) (9A)	Excess Mass Charge (c/kg)			Non Compliance Excess Mass Charge for BOD (Yes/No)
					Category 1	Category 2	Category 3				BOD	Suspended Solids	Oil & Grease	
		(1) <i>2013-14</i>	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(9A)	(10)	(11)	(12)	(13)
59	Lachlan	Yes	Yes	Yes	145	145	145	145	140	14.5				
48	Leeton	Yes*	Yes		156	156	597	88	177	16.1	66	102	143	
22	Lismore	Yes*	Yes	Yes	95	95	95	95	103		72	98	120	
31	Lithgow	Yes*	Yes	Yes	150	223	409	85	160	17.0	75	96	135	
61	Liverpool Plains	Yes*	Yes		85	85	573	81	300	14.0	200	200	300	
102	Lockhart		Yes		69	162	462	65	75	6.2	110	112		
5	MidCoast	Yes	Yes	Yes	121	151	540	103	250	14.9	49	49	68	Yes
32	Mid Western Regional		No	Yes										
38	Moree Plains	Yes	Yes		91	181	604	84	168	15.4	76	97	136	
65	Murray	Yes	Yes		89	179	598	83	166	15.3	76	96	135	
101	Murrumbidgee	Yes	No											
41	Muswellbrook	Yes	Yes	Yes	110	171	573	157	128	15.5	61	82	112	Yes
34	Nambucca	Yes	Yes	Yes	92	153	153	134	174	15.6	111	111		
46	Narrabri	Yes*	Yes	Yes	580	830	860	130	200		200			
63	Narrandera	Yes	No											
62	Narromine	Yes	Yes		88	88	568	82	200					
83	Oberon	Yes	No											
19	Orange	Yes	Yes	Yes	77	77	519	72	202	14.5	162	149	355	Yes
71	Palerang	Yes	Yes		92	184	614	87	200	17.0	100	150	150	
36	Parkes	Yes	Yes	Yes	186	186	665	93	180	14.4				
17	Queanbeyan	Yes	Yes	Yes	106	106	687	93	204	17.4	250	230	160	
33	Richmond Valley	Yes*	Yes		88	163	550	154	157	14.4	71	91	127	
3	Shoalhaven	Yes	Yes	Yes	118	146	568	73	164	15.4	73	92	132	
35	Singleton	Yes	Yes	Yes	89	89	89	100	148	14.9	61	79	108	
52	Snowy River	Yes	Yes		197	767	1595	130	175	20.0	320	240	180	
13	Tamworth Regional	Yes	Yes	Yes	140	140	618	94	172	15.0	77	100	140	
69	Temora		No											
68	Tenterfield	Yes	Yes	Yes	127	127	574	75	145	14.5				
93	Tumbarumba	Yes	Yes	Yes	69	69	69	65	135	11.9	75	105	176	
43	Tumut	Yes	Yes	Yes	140	290	610	136		14.0	160	145	260	
6	Tweed	Yes	Yes	Yes	101	145	753	94	200	14.0	85	105	160	
45	Upper Hunter	Yes	Yes		379	379	379	114		17.0	72	90	120	
73	Upper Lachlan	Yes	No											
85	Uralla		Yes	Yes	68	68	68		120	11.0				
107	Urana		No											
9	Wagga Wagga	Yes	Yes	Yes	95	95	620	89	175	15.9	76	100	139	
88	Wakool		No											
98	Walcha	Yes	Yes		78	156		79	150	13.9				
79	Walgett	Yes	No											
96	Warren	Yes	Yes		85	169	568	79	177	14.5	71	92	128	
55	Warrumbungle	Yes	No		85	85	200	80	160	14.5				Yes
95	Weddin	Yes*	No											
57	Wellington	Yes	Yes	Yes	79	79	79	72	151	14.6				
74	Wentworth	Yes	Yes		89	177	594	83	165	15.0	75	96	134	
16	Wingecarribee	Yes	Yes	Yes	51	159	538	76	165	14.6	69	85	127	
2	Wyong	Yes	Yes	Yes	89	355	597	83	126	14.2	74	95	133	Yes
56	Yass Valley	Yes	Yes	Yes	91	283	508		160					
49	Young	Yes	Yes		99	177	587	99	156	14.4	71	91	127	Yes

Notes:

- 1. Yes\* in column 1 indicates that the LWU has adopted a trade waste policy before 2009, which needs significant updating.
- 2. 85% of LWUs have an appropriate trade waste policy and 81% of LWUs have appropriate trade waste fees and charges.
- 3. The non-residential sewer usage charges and trade waste usage charges over the last 6 years are shown on Figures 44 and 45 respectively (page 81 and 82).



Table 8: 2013-14 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	BULK WATER EXPORTS (Potable + Non-potable)  See Table 8A <sup>11</sup>	RECYCLED WATER		WATER SOURCES FOR URBAN WATER USE (ML)													
		REVENUE WATER (Potable)						NON-REVENUE WATER (Potable) See Table 8A				Total Potable Urban Water Supplied  Revenue + Non-Revenue Water	Recycled <sup>11</sup>		Non-potable excluding recycled		Total Non-Potable  Including Recycled	NON-URBAN  See Table 8A <sup>11</sup>			TOTAL (Urban + Non-Urban) see also Table 15	Surface Water	Ground Water	Recycled Water	Bulk Purchase	Total Sourced Water  Excluding Non Urban Recycled  =Sum (15) to (17)										
		Residential	Commercial	Industrial	Rural	Institutional	Public Parks & Gardens	Total Revenue Water	Losses		Unbilled		Total Non- Revenue Water	W10.1	Res	Non Res											Total Non Potable	W20	W21 + W25- W25.1	W20+W21+W2 5-W25.1	W8.2 W9.2 + W10.2	W11.2 = W8.2 +W9.2+W1 0.2	W20+W21 +W25-W25.1 +W11.2	W22+W23+ W24+ W25.1	W26	Urban Use Only
W8.1	W9.1					W8.1 + W9.1	Real Loss (Leakage) <sup>8</sup>	Apparent Loss (illegal use, meter error)	(Fire Fighting, Flushing, Public Amenities)	W10.1	(7) + (9)	(11)	(11a)	(11b)	(12a)	(12b)	(12c)	(12d)	(13)	(14)	(11c)	(11d)	(15) W1	(16) W2	(16b) W4	(17) W5	(17b) W7									
(1)	(2)	(3)	(4)	(5)	(6)	Sum (1) to (6) (7)	(8)	(8a)	(8b)	(9)	(10)	(11)	(11a)	(11b)	(12a)	(12b)	(12c)	(12d)	(13)	(14)	(11c)	(11d)	(15) W1	(16) W2	(16b) W4	(17) W5	(17b) W7									
	Sydney Water	352,740					467,435					467,435	2,137	10,205	12,342	0	1639	1639	13981	541,492	0		46,943	6,862	0	41,543	523,725	572,129								
	Hunter Water	40,150					61,456				9,995	71,451	0	2,274	2,274	0	0		2274	73,725	299		4,895	67,253	4,230	2,505	267	74,255								
	Water NSW																		551,686	536,435			824,365	0		2,524	826,889									
LWUs with > 10,000 Properties																																				
1	Gosford	10,967	1,287	556	12	443	196	13,461	2,560	282	80	2,922		16,383	32	32		117	117	149	16,532	149		32	14,512	123	32	1,598	16,265							
2	Wyong	9,302	3,300	0				12,602	710	711		1,421		14,023	51	683	734		1	1	735	14,758	1,890		962	15,449	6	962	465	16,882						
3	Shoalhaven	6,455	1,762	1,125	666	286	64	10,358	986	220	74	1,280		11,638	644	644	8	2,405	2,413	3,057	14,695		1,708	2,352	13,963		194	86	14,243							
4	Rous (Bulk Supplier) (NO SGE)	0	38	0	786			824	369	229	54	652		1,476							1,476	10,045			11,521				11,521							
5	MidCoast	5,365	1,652	444	0	170	106	7,737	749	371	181	1,301		9,038	519	519				519	9,557			920	8,124	542	372		9,038							
6	Tweed	5,685	1,516	135	139	272	274	8,021	552	585	46	1,183		9,204	563	563				563	9,767			41	9,802		563	6	10,371							
7	Port Macquarie-Hastings (Unfiltered)	4,296	971	29	40	234	48	5,618	375	222	28	625		6,243	289	289		141	141	430	6,673			74	6,090		142		6,232							
8	Riverina (Groundwater) (NO SGE)	8,741	2,145	1,059	946	833	488	14,212	947	558	74	1,579		15,791							15,791				2,625	11,819		56	14,500							
10	Coffs Harbour	3,929	1,199	91		46	86	5,351	544	0	63	607		5,958	567	567		9	9	576	6,534	63		869	5,957				5,957							
11	Albury	5,002	593	267	37	636	392	6,927	456	266	37	759		7,686			1	193	194	194	7,880	392		2,467	7,599				7,599							
12	Fish River WS (Unfiltered, Bulk Supplier)	0		0	72	0	0	72	1,694		0	1,694		1,766				5,000	5,000	5,000	6,766	3,912			10,713				10,713							
13	Tamworth Regional	5,532	1,066	1,819	186	27	496	9,126	710	304	0	1,014		10,140				140	140	140	10,280			4,128	9,358	579			9,937							
14	Clarence Valley	3,051	822	432	517		95	4,917	850	245	300	1,395		6,312	176	176		63	63	239	6,551			176	6,199		176		6,375							
15	Eurobodalla	2,204	489	5	23	139	19	2,879	342	180	17	539		3,418	190	190				190	3,608			26	3,055	363	216		3,634							
16	Wingecarribee	3,437	552	0	175	265	52	4,481	854	95	18	967		5,448							5,448			124	1,352		124	4,319	5,795							
17	Queanbeyan (Reticulator)	2,757	212	163	0	110	164	3,406	472	72	45	589		3,995							3,995							3,995	3,995							
18	Dubbo	5,292	1,071	42	36	572	777	7,790	692	129	44	865		8,655				269	269	269	8,924			1,958	6,406	1,934			8,340							
19	Orange	2,695	713	76	68	159	68	3,779	382	80	0	462		4,241	2,903	2,903				2,903	7,144			44	4,557	59	2,903		7,519							
20	Goulburn Mulwaree	1,516	274	286	11	307	43	2,437	298	51	0	349		2,786	204	204		37	37	241	3,027	2		1,389	2,707			52	2,759							
21	Bathurst Regional	3,227	1,081	1,040	0	46	46	5,440	298	240	0	538		5,978			9	1,040	1,049	1,049	7,027	6		3,942	6,354	9	638		7,001							
22	Lismore (Reticulator)	1,975	774	0	120	0	0	2,869	191	128	0	319		3,188							3,188			34	168			3,258	3,426							
23	Bega Valley (Unfiltered)	1,765	472	57	134	188	94	2,710	227	257	50	534		3,244	461	461		66	66	527	3,771			165	1,756	1,489	623		3,868							
24	Ballina (Reticulator)	2,483	395	13	50	98	15	3,054	671	115	19	805		3,859	273	273				273	4,132				156		257	3,684	4,097							
25	Kempsey (Groundwater)	1,686	389	197	418	118	11	2,819	402	290	145	837		3,656	90	90				90	3,746	31		20		3,627	97		3,724							
26	Essential Energy	2,697	300	1,328		303	36	4,664	342	171		513		5,177	709	709		957	957	1,666	6,843				760		515	4,940	6,215							
27	Byron (Reticulator)	1,754	821	0	0	0	0	2,575	247	29	0	276		2,851	390	390				390	3,241			88	408		390	2,429	3,227							
28A	Goldenfields (Reticulator) (NO SGE)	1,986	689	7	2,376	276	145	5,479	365	181	63	609		6,088			23	109	132	132	6,220							5,794	5,794							
28B	Goldenfields (Bulk Supplier) (NO SGE)	0	0	0	0	0	0		440		0	440		440							440	8,875			3,781	4,644		450	8,875							
Totals (excluding bulk suppliers) for LWUs with >10,000 Properties														178,680	51	8,693	8,744	41	10,547	10,588	19,332	197,570	25,365		18,225	153,372	25,194	8,204	31,132	217,902						
LWUs with 3,001 - 10,000 Properties																																				
29	Armidale Dumaresq	1,767	248	0	103	486	86	2,690	418	54	0	472		3,162			67	8	75	75	3,237			1,039	3,237				3,237							
30	Griffith	3,672	1,349	0	468	137	136	5,762	348	212	43	603		6,365			142	569	711	711	7,076						6,666		6,666							
31	Lithgow	1,406	262	24				1,692	113	75		188		1,880			1		1	1	1,881						789		789							
32	Mid-Western Regional	1,460	493	48	7	156	46	2,210	180	170	12	362	<																							



Table 8: 2013-14 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	BULK WATER EXPORTS (Potable + Non-potable)  See Table 8A <sup>11</sup>	RECYCLED WATER		WATER SOURCES FOR URBAN WATER USE (ML)																
		REVENUE WATER (Potable)							NON-REVENUE WATER (Potable) See Table 8A				Total Potable Urban Water Supplied  Revenue + Non-Revenue Water	Recycled <sup>11</sup>			Non-potable excluding recycled		Total Non-Potable  Including Recycled			NON-URBAN  See Table 8A <sup>11</sup>	TOTAL (Urban + Non-Urban) see also Table 15	Surface Water  Ground Water  Recycled Water  Bulk Purchase  Urban Use Only  Total Sourced Water  Excluding Non Urban Recycled  =Sum (15) to (17)																
		Residential	Commercial	Industrial	Rural	Institutional	Public Parks & Gardens	Total Revenue Water	Losses		Unbilled	Total Non-Revenue Water		Res	Non Res	Total Recycled Urban Water	Res	Non Res											Total Non Potable	W20	W21 + W25-W25.1	W20+W21+W25-W25.1	W8.2	W9.2 + W10.2	W11.2 = W8.2 + W9.2+W10.2	W20+W21+W25-W25.1+W11.2	W11 =W11.1+W11.2+W20+W21+W25-W25.1+W28.4	W14 =W14.1+W14.2+W15+W28.1	W22+W23+W24+W25.1	W26
																								Real Loss (Leakage) <sup>8</sup>	Apparent Loss (illegal use, meter error)	(Fire Fighting, Flushing, Public Amenities)	W10.1	(7) + (9)												
																								(1)	(2)	(3)	(4)	(5)												
38	Moree Plains (Groundwater)	2,380	370	0	0	0	45	2,795	288	120	25	433	3,228				38	13	51	51	3,279	20			352	2,132	800		3,284											
39	Cowra	941	588	156		15	41	1,741	240	0	808	1,048	2,789				67		67	67	2,856	5			2,734	15		112	2,861											
40	Central Tablelands (NO SGE)	774	203	189	282	45	32	1,525	146	2	56	204	1,729								1,729	144			1,755	118			1,873											
41	Muswellbrook	1,533	352	43		83	95	2,106	140	83	11	234	2,340		905	905					3,245			905	2,250	38			2,288											
42	Corowa	1,283	291	819	4	34	78	2,509	307	400	0	707	3,216					776	776		3,992		166	166	3,963	29			3,992											
43	Tumut	844	105	206	50	28	37	1,270	112	23	4	139	1,409		105	105	35		35		1,549		5	110	1,439		158		1,597											
44	Gunnedah (Groundwater)	1,611	789	0	52	189	90	2,731	119	119	0	238	2,969								2,969		580	580		2,645			2,645											
45	Upper Hunter	1,631	381	0	5	10	121	2,148	143	95	0	238	2,386								2,386				1,801	380			2,181											
46	Narrabri (Groundwater)	1,435	956	0				2,391	484	0		484	2,875								2,875		487	487		3,094			3,094											
47	Bellingen (Unfiltered)	595	114	91	107	31	42	980	298	41	21	360	1,340					16	16		1,356	2			135	1,223			1,358											
48	Leeton	1,475	175	180	45	50	360	2,285	232	60	0	292	2,577								2,577				2,285				2,285											
49	Young (Reticulator)	701	159	0	0		63	923	74	18	10	102	1,025		100	100					1,125		9	109			102	1,096	1,198											
50	Cooma-Monaro	805	140	49	68	13	13	1,088	73	48		121	1,209								1,209		184	184	1,482	110			1,592											
51	Forbes	1,189	526	5	0	107	28	1,855	125	58	48	231	2,086					322	322		2,408	362	10	10	2,596	253			2,849											
52	Snowy River (Unfiltered)	446	106	49	7	37	1	646	88	0	0	88	734		58	58		32	32		824	6		58	778		32		810											
53	Berrigan (Dual Supply)	733	110	0	25	127	52	1,047	112	11	0	123	1,170		540	540	589	253	842	1,382	2,552			540	1,890				1,890											
54	Deniliquin	1,450	220	0	0	44	25	1,739	150	41	0	191	1,930								1,930		54	54	2,315				2,315											
55	Warrumbungle	614	256	0				870	261	13	0	274	1,144				4		4		1,148		36	36	591	557			1,148											
56	Yass Valley	510	133	0	0	0	35	678	90	8	105	203	881								881	4			853	32			885											
Totals (excluding bulk suppliers) for 3,000 - 10,000 Properties													62,570	0	1,893	1,893	965	4,081	5,046	6,939	69,510	668	3,077	4,970	41,100	13,962	1,092	11,951	68,105											
LWUs with 1,501 - 3,000 Properties																																								
57	Wellington	500	145	13	0	30	20	708	90	156	3	249	957								957				950	36			986											
58	Cootamundra (Reticulator)	573	55	10	4	31	6	679	81	16	4	101	780		193	193					973		250	443			764		764											
59	Lachlan	1,196	248	0	142	27	46	1,659	256	38	17	311	1,970				29	2	31	31	2,001	23			1,039	518	119	94	1,770											
60	Glen Innes Severn	377	88	0	0	30	1	496	39	16	1	56	552								552				536	3			539											
61	Liverpool Plains	510	78	51	18	26	70	753	97	29	5	131	884					9	9		893	45			262	775			1,037											
62	Narromine (Groundwater)	915	135	0	7	63	66	1,186	79	45	8	132	1,318					95	95		1,413				95	1,269			1,364											
63	Narrandera (Groundwater)	886	150	0	15	5	300	1,356	130	230	422	782	2,138								2,138					1,778			1,778											
65	Murray (Dual Supply)	454	180	4	2	10	1	651	55	17	0	72	723				303	146	449	449	1,172		224	224	1,616				1,616											
66	Cobar WB (NO SGE)		0		0	0	0		300		0	300	300				37	2,337	2,374	2,374	2674	1,301			4,172				4,172											
67	Cobar	734	95	47	20	12	63	971	65	43	0	108	1,079				156		156		1,235		200	200			100	1,400	1,500											
68	Tenterfield	260	62	2	2	2	4	332	22	15	0	37	369		56	56					425	58		56	436		15		451											
70	Kyogle	237	42	24	30	21	7	361	24	16	0	40	401		213	213					614			213	328	35		61	424											
71	Palerang	322	73	0	0	0	20	415	50	15	33	98	513		52	52					565		24	76	221	292			513											
73	Upper Lachlan	238	25	0	0	15	30	308	23	30	15	68	376								376		60	60	404	20			424											
74	Wentworth (Dual Supply)	157	118	0				275	18	12		30	305				704		704		1,009				2,555				2,555											
76	Harden (Reticulator)	576	486	0	189	10	0	1,261	84	50	6	140	1,401		15	15					1,416			15			8	486	494											
75	Coonamble (Groundwater)	548	55	0	60	25	130	818	55	26	10	91	909								909	3	71	71		1,043	61		1,104											
79	Walgett (Dual Supply)	1,160	875	0				2,035	140	0	230	370	2,405				1,000		1,000	1,000	3405				1,470	300			1,770											
80	Greater Hume	350	72	0	50	4	6	482	65	17	30	112	594		57	57					651			57		171	57	393	621											
Totals (excluding bulk suppliers) for 1,500 - 3,000 Properties													17,970	0	586	586	2,229	2,589	4,818	5,404	23,380	1,430	829	1,415	14,084	6,240	345	3,213	23,882											



Table 8: 2013-14 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	BULK WATER EXPORTS (Potable + Non-potable)  See Table 8A <sup>11</sup>	RECYCLED WATER		WATER SOURCES FOR URBAN WATER USE (ML)																										
	REVENUE WATER (Potable)							NON-REVENUE WATER (Potable) See Table 8A				Total Potable Urban Water Supplied  Revenue + Non-Revenue Water	Recycled <sup>11</sup>			Non-potable excluding recycled				Total Non-Potable  Including Recycled	NON-URBAN  See Table 8A <sup>11</sup>	TOTAL (Urban + Non-Urban) see also Table 15	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	Commercial	Industrial	Rural	Institutional	Public Parks & Gardens	Total Revenue Water	Losses		Unbilled	Total Non- Revenue Water		W8.1 + W9.1	Real Loss (Leakage) <sup>8</sup>	Apparent Loss (illegal use, meter error)	(Fire Fighting, Flushing, Public Amenities)	W10.1											W11.1 = W8.1 + W9.1 + W10.1	W20	W21 + W25- W25.1	W20+W21+W2 5-W25.1	W8.2	W9.2 + W10.2	W11.2 = W8.2 +W9.2+W1 0.2	W20+W21 +W25-W25.1 +W11.2	W11 =W11.1+W11.2+ W20+W21+W25- W25.1+W28.4	W14 =W14.1+W14.2 +W15+W28.1	W22+W W23+W W24+W W25.1	W26									
																																								Sum (1) to (6) (7)	(8)	(8a)	(8b)	(8) + (8a) + (8b) (9)	(7) + (9)	(11b)+(12c)	(10)+(12d)	(11b)+(11c)
LWUs with 200 - 1,500 Properties																																																
81	Gwydir	500	89	0	15	54	202	860	59	15	43	117	977	38	38					38	1015				38	494	432	38		964																		
83	Oberon (Reticulator)	164	14	350	5		14	547	44	21	15	80	627					12	12	12	639	15				595				595																		
84	Gilgandra (Groundwater)	575	100	7	0	7	11	700	70	20	4	94	794					19	2	21	21	815		257	257		793			793																		
85	Uralla	256	35	0	0	1	16	308	10	6	20	36	344									344				340				340																		
86	Hay (Dual Supply)	182	137	0	0	0	0	319	44	0	0	44	363					1,017	50	1,067	1,067	1430				1,336				1,336																		
87	Bourke (Dual Supply)	325	7	0	0	0	0	332	35	2	0	37	369					950	285	1,235	1,235	1604				1,388				1,388																		
88	Wakool (Dual Supply)	160	118	0	44	0	8	330	26	11	0	37	367					405		405	405	772				685		103		788																		
89	Bogan	378	153	0	0	0	10	541	138	12	166	316	857					10		10	10	867		80	80	1,603				1,603																		
90	Guyra	295	33	229	0	0	8	565	51	4	21	76	641									641				528		58		586																		
91	Cabonne	141	16	4	0	0	0	161	37	2	2	41	202	90	90	90	36	9	45	135	337		17	107	249	16			265																			
92	Carrathool (Groundwater)	279	31	0	0	0	2	312	36	11	0	47	359					70	434	504	504	863	269				1,110	866		1,976																		
93	Tumbarumba	208	38	7		18	2	273	44	0	50	94	367									367				438				438																		
94	Gundagai	300	150	0	50	9	4	513	41	30	5	76	589	234	234	234					234	823	4		234	560				560																		
96	Warren (Dual Supply)	255	30	0	0	0	0	285	31	23	5	59	344					417	25	442	442	786				515	255			770																		
97	Bombala	140	7	6	0	7	1	161	11	7	0	18	179									179				400				400																		
98	Walcha	116	27	0	2	10	7	162	20	0	1	21	183						5	5	5	188	2			180				180																		
100	Balranald (Dual Supply)	101	40	0	0	0	0	141	9	6	0	15	156					292	127	419	419	575				1,014				1,014																		
101	Murrumbidgee (Groundwater)	400	250	0			52	702	55	23		78	780									780					722			722																		
103	Central Darling (Dual Supply)	95	12	0	0	0		107	7	5	0	12	119					240	36	276	276	395				910	375	515		1,800																		
104	Boorowa	113	19	0	1	2	9	144	40	3	1	44	188									188				195	43			238																		
105	Brewarrina	250	100	0	0	0	0	350	27	12	0	39	389					250	150	400	400	789				750	80			830																		
106	Jerilderie (Dual Supply)	90	44	0	0	1	0	135	9	6	0	15	150	50	50	50	345	13	358	408	558			50	493					493																		
Totals (excluding bulk suppliers) for 200 - 1,500 Properties													9,340	0	412	412	4,041	1,158	5,199	5,611	14,960	1,720	354	766	12,673	3,826	38	1,542		18,079																		
LWUs without Water Supply																																																
9	Wagga Wagga (NO WS)													251	251						251	251			5,272	5,523		251		251																		
30A	Hawkesbury													20	20						20	20			255	275		20		20																		
69	Temora													117	117						117	117				117				117																		
72	Bland													250	250						250	250				250				250																		
77	Junee													100	100						100	100				100				100																		
78	Blayney													175	175						175	175				175				175																		
95	Weddin																																															
99	Coolamon																																															
102	Lockhart																							75	75																							
107	Urana																																															
Total for the 93 LWUs reporting cols (1) & (2) or cols (1) & (3)		154,000	38,900	13,400	8,100	8,000	6,600		23,200			35,500	265,000	50	12,500	12,550	7,200	11,000	18,200	30,800	295,000	4,000	27,800	40,360	191,000	44,600	10,600	47,400		294,000																		
% of Total Potable Supply (Col(10))		58%	15%	5%	3%	3%	2%		9%			13%																																				
TOTAL for all LWUs (excluding double counting for bulk water exports) <sup>3</sup>													269,000	50	12,500	12,550	7,300	18,400	25,700	38,200	306,000	29,200	27,800	40,400	221,000	49,200	10,600	47,800		329,000																		

Table 8: 2013-14 NSW urban water supplied

Notes:

- Source:** Data provided by the 105 regional NSW water utilities for the *2013-14 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.
- The volumes of water supplied by Sydney and Hunter Water Corporations and Water NSW (from January 2015, formerly Sydney Catchment Authority) were obtained from the *National Performance Report 2013-14* and have not been included in the totals shown above.
- The total water supplied for all regional 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.
- 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 58% 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. These values are shown in *italics bold* (see also Note 6).
- Where a 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 58% of the Total Urban Water Supplied shown in Note 8 below, and is shown in italics bold.
- Non-Revenue Water:** Non-Revenue Water includes Unbilled Water (Unbilled Authorised Supply - fire fighting and mains flushing - refer also to Notes 9 and 10 on pages 33 and 34), 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 below.  
In such a case, the adopted value for Non-Revenue Water is the reported Leakage plus 4%.
- 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 (see Table 10 on page 172)), reported Leakage of less than 6% (column (8)) has been increased to 6% (shown in *italics bold*).
- Potable Water Supplied:** The above analysis shows that the total 2013-14 urban water supplied for regional NSW was 306,000 ML (column (13)), of which 269,000 ML (i.e. 88%) (column (10)) was potable water. The average uses as a percentage of the total **potable** water supplied were:
  - ◆ Residential - 58% (column (1))
  - ◆ Commercial - 15% (column (2))
  - ◆ Industrial - 5% (column (3))
  - ◆ Non-Revenue Water (NRW) - 13% (column (9))In addition, the rural, institutional and public parks and gardens uses were 3%, 3% and 2% of the total potable water supplied respectively (columns (4), (5) and (6)). The components of industrial and rural urban water supplied are shown in Table 8D on page 166.
- Non-Potable Water Supplied:** The total non-potable urban water supplied was 38,000 ML (column (12c)) which included 12,530 ML recycled urban water supply (column (11)+(11a)). These volumes are 14% and 4.7% respectively of the 306,000 ML **total urban water** supplied (column (13)). The non-potable urban supply was mainly for outdoor uses in dual water supplies, but also includes supplies to industry and other outdoor uses.
- 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)).
- 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 regional 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 350). This results in a volume of recycled water of 43,000 ML (see also Table 15 on page 192) which is 27% of the total volume of sewage collected. Refer also to Figure 55 on page 92, figures 27 and 26a of Table 4 on page 111 and graph 13 on page 208.
- All LWUs reported 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 - 2013-14 Total Urban Potable Water Supplied/Produced

WATER UTILITY		NON-REVENUE POTABLE WATER SUPPLIED <sup>2</sup> - (ML)												REVENUE WATER <sup>1</sup> Potable (ML) Excl Bulk	TOTAL URBAN WATER SUPPLIED Potable (ML)		TOTAL URBAN WATER PRODUCED Potable (ML)	BULK WATER EXPORTS			RECYCLED WATER (ML)						
		REAL LOSS <sup>4</sup> (Leakage)			APPARENT LOSS			UNBILLED WATER <sup>2</sup>	APPARENT LOSS + UNBILLED WATER				TOTAL NON-REVENUE WATER (Real Loss + Apparent Loss + Unbilled)			Revenue + Non-revenue water		Adopted	W14			NON URBAN		TOTAL			
		Reported	Adopted		Reported			Reported	Reported		Adopted		Reported	Adopted		Reported	Adopted		Adopted	Potable <sup>1</sup>	Non Potable	Recycled	Agricultural	Environmental	On-site	Mngd Aquifer Recharge	URBAN + NON URBAN
		(1)	(2)	(3)	(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(18)	(19)		(19a)	(20a)	(20b)	(20c)	(21)	(22)	(23)	(24)	(24)
	Sydney Water Corporation Hunter Water Corporation													446,061 59,396	446,061 68,594	509,790 68,623	0 29				5,175 2,445	15,142 0	14,026 180				
LWUs with > 10,000 Properties																											
1	Gosford City Council	2,560	2,560	16%	16	266	282	80	362	2%	362	2%	2,922	2,922	18%	13,461	16,383	16,383	14,934	149					32		
2	Wyong Shire Council	710	710	5%	711		711		711	5%	711	5%	1,421	1,421	10%	12,602	14,023	14,023	15,448	1,890			228		962		
3	Shoalhaven City Council	986	986	8%	13	207	220	74	294	3%	294	3%	1,280	1,280	11%	10,358	11,638	11,638	11,638		1,708				2,352		
4	Rous County Council	369	369		11	218	229	54	283		283		652	652		824	1,476	1,476	11,521	10,045							
5	MidCoast County Council	749	749	8%	190	181	371	181	552	6%	552	6%	1,301	1,301	14%	7,737	9,038	9,038	9,038				99		1,439		
6	Tweed Shire Council	552	552	6%	471	114	585	46	631	7%	631	7%	1,183	1,183	13%	8,021	9,204	9,204	9,198				3		604		
7	Port Macquarie-Hastings (Unfiltered)	337	375	6%	6	112	118	28	146	2%	250	4%	483	625	10%	5,618	6,101	6,243	6,243				7		363		
8	Riverina Water County Council	239	947	6%	15	284	299	74	373	2%	632	4%	612	1,579	10%	14,212	14,824	15,791	15,735								
10	Coffs Harbour City Council	544	544	9%				63	63	1%	63	1%	607	607	10%	5,351	5,958	5,958	5,958		63		255		1,436		
11	Albury City Council	456	456	6%	8	100	108	37	145	2%	303	4%	601	759	10%	6,927	7,528	7,686	8,078	392			1,664		2,468		
12	Fish River Water Supply	1,694	1,694										1,694	1,694		72	1,766	72	862	790	3,122						
13	Tamworth Regional Council	269	710	7%	6	100	106		106	1%	304	3%	375	1,014	10%	9,126	9,501	10,140	10,140				60		4,128		
14	Clarence Valley Council	850	850	13%	5	240	245	300	545	9%	545	9%	1,395	1,395	22%	4,917	6,312	6,312	6,312						176		
15	Eurobodalla Shire Council	342	342	10%	3	177	180	17	197	6%	197	6%	539	539	16%	2,879	3,418	3,418	3,418				26		216		
16	Wingecarribee Shire Council	854	854	16%	5	90	95	18	113	2%	113	2%	967	967	18%	4,481	5,448	5,448	5,448						124		
17	Queanbeyan City Council	472	472	12%	3	69	72	45	117	3%	117	3%	589	589	15%	3,406	3,995	3,995	0								
18	Dubbo City Council	241	692	8%	9	51	60	44	104	1%	173	2%	345	865	10%	7,790	8,135	8,655	8,655				74		1,958		
19	Orange City Council	247	382	9%	4	76	80		80	2%	80	2%	327	462	11%	3,779	4,106	4,241	4,241				44		2,947		
20	Goulburn Mulwaree Council	298	298	11%	2	49	51		51	2%	51	2%	349	349	13%	2,437	2,786	2,786	2,788	2					1,593		
21	Bathurst Regional Council	298	298	5%							240	4%	298	538	9%	5,440	5,738	5,978	5,984	6			745		3,942		
22	Lismore City Council	172	191	6%	28	57	85		85	3%	128	4%	257	319	10%	2,869	3,126	3,188	0				34		34		
23	Bega Valley Shire Council	227	227	7%	31	226	257	50	307	9%	307	9%	534	534	16%	2,710	3,244	3,244	3,244						626		
24	Ballina Shire Council	671	671	17%	4	111	115	19	134	3%	134	3%	805	805	21%	3,054	3,859	3,859	175						273		
25	Kempsey Shire Council	342	402	11%	145	145	290	145	435	12%	435	12%	777	837	23%	2,819	3,596	3,656	3,687	31			7		110		
26	Essental Energy	342	342	7%	5	93	98		98	2%	171	3%	440	513	10%	4,664	5,104	5,177	5,177						709		
27	Byron Shire Council	247	247	9%	5	10	15		15	1%	29	1%	262	276	10%	2,575	2,837	2,851	422						478		
28A	Goldenfields Water Reticulator	76	365	6%	8	27	35	63	98	2%	244	4%	174	609	10%	5,479	5,653	6,088	294								
28B	Goldenfields Water County Council	440	440										440	440		0	440	440	9,006	8,875							
Medians (% of LWUs basis) for LWUs with >10,000 Properties				8%						4%				11%													
LWUs with 3,001 - 10,000 Properties																											
29	Armidale Dumaresq Council	418	418	13%		54	54		54	2%	54	2%	472	472	15%	2,690	3,162	3,162	3,162						1,039		
30	Griffith City Council	348	348	5%		116	116	43	159	2%	255	4%	507	603	9%	5,762	6,269	6,365	6,365								
31	Lithgow City Council		113	6%						4%	75	4%		188	10%	1,692	1,692	1,880	1,091								
32	Mid-Western Regional Council	164	180	7%	3	167	170	12	182	7%	182	7%	346	362	14%	2,210	2,556	2,572	2,572				9		35		
33	Richmond Valley Council	259	259	9%	3	55	58	15	73	2%	73	2%	332	332	11%	2,673	3,005	3,005	2,382						425		
34	Nambucca Shire Council	155	155	11%	2	16	18		18	1%	18	1%	173	173	12%	1,279	1,452	1,452	1,452						59		
35	Singleton Council	299	299	10%	3	43	46	15	61	2%	61	2%	360	360	12%	2,576	2,936	2,936	2,936								
36	Parkes Shire Council	412	412	17%	2		2	45	47	2%	47	2%	459	459	19%	1,924	2,383	2,383	2,147	125					173		
37	Inverell Shire Council	100	107	6%		100	100		100	6%	100	6%	200	207	12%	1,575	1,775	1,782	1,782								
38	Moree Plains Shire Council	288	288	9%	50	70	120	25	145	4%	145	4%	433	433	13%	2,795	3,228	3,228	3,248	20							
39	Cowra Shire Council	240	240	9%				808	808	29%	808	29%	1,048	1,048	38%	1,741	2,789	2,789	2,682	5							
40	Central Tablelands Water	146	146	8%	2		2	56	58	3%	58	3%	204	204	12%	1,525	1,729	1,729	1,873	144							
41	Muswellbrook Shire Council	127	140	6%	2	42	44	11	55	2%	94	4%	182	234	10%	2,106	2,288	2,340	2,340						905		
42	Corowa Shire Council	307	307	10%	100	300	400		400	12%	400	12%	707	707	22%	2,509	3,216	3,216	3,216						166		
43	Tumut Council	112	112	8%	1		1	4	5	0%	27	2%	117	139	10%	1,270	1,387	1,409	1,409				5		110		



Table 8A - 2013-14 Total Urban Potable Water Supplied/Produced

WATER UTILITY		NON-REVENUE POTABLE WATER SUPPLIED <sup>2</sup> - (ML)													REVENUE WATER <sup>1</sup> Potable (ML) Excl Bulk	TOTAL URBAN WATER SUPPLIED Potable (ML)  Revenue + Non-revenue water		TOTAL URBAN WATER PRODUCED Potable (ML)	BULK WATER EXPORTS			RECYCLED WATER (ML)				
		REAL LOSS <sup>4</sup> (Leakage)			APPARENT LOSS			UNBILLED WATER <sup>2</sup>	APPARENT LOSS + UNBILLED WATER				TOTAL NON-REVENUE WATER (Real Loss + Apparent Loss + Unbilled)						W14			NON URBAN				TOTAL
		Reported	Adopted		Reported			Reported	Reported		Adopted		Reported	Adopted				Adopted	Potable <sup>1</sup>  Non Potable	Recycled	W14=W14.1+W14.2+W15  (20a) W14.1 (20b) W14.2 (20c) W15	Agricultural  (21) W22	Environmental  (22) W23	On-site  (23) W24	Mngd Aquifer Recharge  (24) W25.1	URBAN + NON URBAN  (24) W26
				See note 5	% of Total Potable (2)/(19)	Illegal Use	Under-registr'n of meters	Total (4)+(5)	Fire Fighting, Mains Flushing	Col(6) + Col(9)	% of Total Potable (10)/(19)	See note 5		% of Total Potable (12)/(19)	(1) + (10)	(2) + (12)	% of Total Potable (15)/(19)									
		(1)	(2)	(3)	(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(15) W10.1	(16)	(17) W8.1+W9.1	(18)	(19) W11.1	(19a) W11.3							
44	Gunnedah Shire Council	48	119	4%	23	20	43		43	1%	119	4%	91	238	8%	2,731	2,822	2,969			580			580		
45	Upper Hunter Shire Council	5	143	6%	5	25	30		30	1%	95	4%	35	238	10%	2,148	2,183	2,386								
46	Narrabri Shire Council	484	484	17%						0	0%		17%	484	484	2,391	2,875	2,875			487			487		
47	Bellingen Shire Council	298	298	22%	20	21	41	21	62	5%	62	5%	360	360	27%	980	1,340	1,340	1,342	2						
48	Leeton Shire Council	150	232	9%	10	50	60		60	2%	60	2%	210	292	11%	2,285	2,495	2,577								
49	Young Shire Council	74	74	7%	1	14	15	10	25	2%	28	3%	99	102	10%	923	1,022	1,025	0		7		2	109		
50	Cooma-Monaro Council		73	6%						48	4%		10%	121	10%	1,088	1,088	1,209	1,209			184		184		
51	Forbes Shire Council	21	125	6%	13	45	58	48	106	5%	106	5%	127	231	11%	1,855	1,982	2,086	2,448	362		10		10		
52	Snowy River Shire Council	45	88	12%					0	0%	0	0%	45	88	12%	646	691	740	740	6				58		
53	Berrigan Shire Council	112	112	10%	6	5	11		11	1%	11	1%	123	123	11%	1,047	1,170	1,170	1,170					540		
Medians (% of LWUs basis) for 3,000 to 10,000 Properties		9%							4%						12%											
LWUs with 1,501 - 3,000 Properties																										
54	Deniliquin Council	150	150	8%		20	20		20	1%	41	2%	170	191	10%	1,739	1,909	1,930	1,930		54				54	
55	Warrumbungle Shire Council	261	261	23%	5	8	13		13	1%	13	1%	274	274	24%	870	1,144	1,144	1,144		36				36	
56	Yass Valley Council	90	90	10%	3	5	8	105	113	13%	113	13%	203	203	23%	678	881	881	885	4						
57	Wellington Council	90	90	9%	6	150	156	3	159	17%	159	17%	249	249	26%	708	957	957	957							
58	Cootamundra Shire Council	81	81	10%	1	15	16	4	20	3%	20	3%	101	101	13%	679	780	780	0		250			443		
59	Lachlan Shire Council	106	256	13%	2	36	38	17	55	3%	55	3%	161	311	16%	1,659	1,820	1,970	1,899	23						
60	Glen Innes Severn Shire Council	35	39	7%	1	6	7	1	8	1%	17	3%	43	56	10%	496	539	552	552							
61	Liverpool Plains Shire Council	85	97	11%	10	19	29	5	34	4%	34	4%	119	131	15%	753	872	884	929	45						
62	Narromine Shire Council	63	79	6%	1	11	12	8	20	2%	53	4%	83	132	10%	1,186	1,269	1,318	1,318							
63	Narrandera Shire Council	130	130	6%	10	220	230	422	652	30%	652	30%	782	782	37%	1,356	2,138	2,138	2,138							
65	Murray Shire Council	55	55	8%	1	15	16		16	2%	17	2%	71	72	10%	651	722	723	723		224			224		
66	Cobar Water Board	300															0									
67	Cobar Shire Council	40	65	6%						43	4%		40	108	10%	971	1,011	1,079	1,079		200			200		
68	Tenterfield Shire Council		22	6%						15	4%		37	10%	332	332	369	412	58					56		
70	Kyogle Council	13	24	6%		7	7		7	2%	16	4%	20	40	10%	361	381	401	340					213		
71	Palerang Council	50	50	10%	5	10	15	33	48	9%	48	9%	98	98	19%	415	513	513	513			24		76		
73	Upper Lachlan Council	15	23	6%	5	25	30	15	45	12%	45	12%	60	68	18%	308	368	376	376		60			60		
74	Wentworth Shire Council		18	6%					12	4%		4%		30	10%	275	275	305	305							
75	Coonamble Shire Council	10	55	6%	2	1	3	10	13	1%	36	4%	23	91	10%	818	841	909	912	3				71		
Medians (% of LWUs basis) for 1,500 to 3,000 Properties		7%							4%						12%											
LWUs with 200 - 1,500 Properties																										
76	Harden Shire Council		84	6%				6	6	0%	56	4%	6	140	10%	1,261	1,267	1,401	0						15	
79	Walgett Shire Council	140	140	6%				230	230	10%	230	10%	370	370	15%	2,035	2,405	2,405	2,405							
80	Greater Hume Shire Council	35	65	11%	11	6	17	30	47	8%	47	8%	82	112	19%	482	564	594	201						57	
81	Gwydir Shire Council	46	59	6%	1	14	15	43	58	6%	58	6%	104	117	12%	860	964	977	977						38	
83	Oberon Council	25	44	7%	1	20	21	15	36	6%	36	6%	61	80	13%	547	608	627	642	15						
84	Gilgandra Shire Council	70	70	9%	9	11	20	4	24	3%	24	3%	94	94	12%	700	794	794	794		257				257	
85	Uralla Shire Council	6	10		1	5	6	20	26	8%	26	8%	32	36	10%	308	340	344	344							
86	Hay Shire Council	3	44	12%						0	0%		3	44	12%	319	322	363	363							
87	Bourke Shire Council	35	35	9%						2	1%		35	37	10%	332	367	369	369							
88	Wakool Shire Council	4	26	7%						11	3%		4	37	10%	330	334	367	264							
89	Bogan Shire Council	138	138	16%	1	11	12	166	178	21%	178	21%	316	316	37%	541	857	857	857		80				80	
90	Guyra Shire Council	18	51	8%	1	3	4	21	25	4%	25	4%	43	76	12%	565	608	641	583							
91	Cabonne Council	37	37	18%		2	2	2	4	2%	4	2%	41	41	20%	161	202	202	202							
92	Carrathool Shire Council	1	36	10%	1	10	11		11	3%	11	3%	12	47	13%	312	324	359	359	269					107	



Table 8A - 2013-14 Total Urban Potable Water Supplied/Produced

WATER UTILITY		NON-REVENUE POTABLE WATER SUPPLIED <sup>2</sup> - (ML)												REVENUE WATER <sup>1</sup> Potable (ML) Excl Bulk	TOTAL URBAN WATER SUPPLIED Potable (ML)  Revenue + Non-revenue water	TOTAL URBAN WATER PRODUCED Potable (ML)	BULK WATER EXPORTS			RECYCLED WATER (ML)																
		REAL LOSS <sup>4</sup> (Leakage)			APPARENT LOSS			UNBILLED WATER <sup>2</sup>	APPARENT LOSS + UNBILLED WATER				TOTAL NON-REVENUE WATER (Real Loss + Apparent Loss + Unbilled)				W14			NON URBAN				TOTAL												
		Reported	Adopted		Reported			Reported	Reported		Adopted		Reported	Adopted			Potable <sup>1</sup>	Non Potable	Recycled	Agricultural	Environmental	On-site	Mngd Aquifer Recharge	URBAN + NON URBAN												
			See note 5	% of Total Potable (2)/(19)	Illegal Use	Under-registr'n of meters	Total (4)+(5)	Fire Fighting, Mains Flushing	Col(6) + Col(9)	% of Total Potable (10)/(19)	See note 5	% of Total Potable (12)/(19)	(1) + (10)	(2) + (12)		% of Total Potable (15)/(19)	(20a) W14.1	(20b) W14.2	(20c) W15	(21) W22	(22) W23	(23) W24	(24) W25.1	(24) W26												
		(1)	(2)	(3)	(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(15) W10.1	(16)	(17) W8.1+W9.1	(18)	(19) W11.1	(19a) W11.3																	
93	Tumbarumba Shire Council	9	44	12%			50	50	14%	50	14%	59	94	26%	273	332	367	367																		
94	Gundagai Shire Council	22	41	7%	10	20	30	5	35	6%	35	6%	57	76	13%	513	570	589	593	4				234												
96	Warren Shire Council	31	31	9%	2	21	23	5	28	8%	28	8%	59	59	17%	285	344	344	344																	
97	Bombala Council	2	11	6%		1	1		1	1%	7	4%	3	18	10%	161	164	179	179																	
98	Walcha Council		20	11%				1	1	1%	1	1%	1	21	11%	162	163	183	185	2																
100	Balranald Council		9	6%						6	4%		15	10%	141	141	156	156																		
101	Murrumbidgee Shire Council		55	7%						23	3%		78	10%	702	702	780	780																		
103	Central Darling Shire Council	2	7	6%	1	1	2		2	2%	5	4%	4	12	10%	107	111	119	0																	
104	Boorowa Council	40	40	21%	1	2	3	1	4	2%	4	2%	44	44	23%	144	188	188	188																	
105	Brewarrina Shire Council	2	27	7%						12	3%	2	39	10%	350	352	389	389																		
106	Jerilderie Shire Council		9	6%					6	4%			15	10%	135	135	150	150					50													
Medians (% of LWUs basis) for 200 to 1,500 Properties		8%							4%				12%																							
LWUs without Water Supply																																				
9	Wagga Wagga (NO WS)																						225			5,047	5,523									
30A	Hawkesbury																						255			275										
69	Temora																									117										
72	Bland																									250										
77	Junee																									100										
78	Blayney																									175										
95	Weddin																																			
99	Coolamon																						75			75										
102	Lockhart																									1										
107	Urana																																			
Median All LWUs (% of LWUs basis)		Real Loss (leakage)			8%			Non-revenue Water				12%																								
Median All LWUs (Statewide basis)					6%							10%																								
Total for all LWUs															38,000			230,000			267,000			262,000			23,000			3,000	0	15,800	10,200	1,900	0	40,400

Table 8B: 2013-14 water supplied from source catchments in regional NSW

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	For Urban Water Supply	For Non-urban Water Supply			Bulk Water Exports	Surface Water	Ground Water	Desalination	Recycling	Bulk Purchases	Bulk Recycled Water Purchased
	(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	= SUM (1) to (9) (10)	(11)	(11b)			(14)	W1 (15)	W2 (16)	W3 (17)	W4 (18)	W5 (19)	W6 (20)
Bega	1,770	472	57	134	188	94	50	534	3,299	461	165	66	3,826		1,760	1,490		623		
Bellinger	595	114	91	107	31	42	21	360	1,361			16	1,377	2	135	1,220				
Castlereagh/Macquarie	16,870	4,350	1,580	255	1,060	1,190	267	5,255	30,827	2,900	6,423	7,380	41,107	3,940	35,560	6,440		3,600		
Clarence	7,220	2,060	547	547	67	188	363	2,042	13,034	956	869	72	14,062	63	12,480	35		176	61	
Clyde	2,200	489	5	23	139	19	17	539	3,431	190	26		3,621		3,060	363		216		
Darling	4,010	532	1,380	20	315	99		700	7,056	709	200	3,330	11,095	1,300	9,790	375		615	6,860	
Gwydir	4,360	727	529	15	55	421	109	869	7,085	38		51	7,174	20	1,800	2,580		838	2,360	
Hastings	4,300	971	29	40	234	48	28	625	6,275	289	74	141	6,705		6,090			142		
Hawkesbury (Country Towns only)	17,330	2,380	866	198	1,020	291	98	4,426	26,609	256	1,768	155	27,020	151	18,570	123		176	6,760	
Hunter (Country Towns only)	4,920	1,180	139	36	337	216	26	832	7,686	905		78	8,669		7,070	418				
Lachlan	5,900	1,810	354	542	353	361	992	2,406	12,718	805	87	2,430	15,953	659	11,660	2,400		661	567	
Macleay	3,570	664	197	523	614	104	146	1,330	7,148	90	1,059	80	7,318	33	3,420	3,630		97		
Manning	5,370	1,650	444		170	106	181	1,301	9,222	519	920		9,741		8,120	542		372		
Moonie/Macintyre	637	150	2	2	32	5	1	93	922	56			978	58	972	3			15	
Murray	9,730	1,670	1,100	162	874	564	117	2,110	16,327	647	2,911	3,020	19,994	392	19,000	200		057	496	
Murrumbidgee	26,920	6,750	2,000	2,030	1,420	1,840	814	6,058	47,832	1,050	5,819	2,870	51,752	9,150	15,600	20,500		620	20,200	
Nambucca	781	320	36	83	57	2		173	1,452		59		1,452			1,490				
Namoi	10,250	3,760	1,870	256	242	656	235	2,237	19,506		5,195	1,150	20,656	45	11,090	7,390				
Shoalhaven	6,455	1,762	1,125	666	286	64	74	1,280	11,712	644	1,708	2,410	14,766		13,960			194	86	
Snowy	586	113	55	7	44	2		106	913	58		32	1,003	6	1,180			32		
Tuggerah Lake	9,300	3,300						1,421	14,021	683	228	1	14,705	1,890	15,450	6		962	465	
Tweed/Richmond	12,940	3,950	1,370	1,110	370	290	134	3,567	23,731	1,240	576		24,971	10,050	24,480			1,210	10,000	
Totals	156,000	39,200	13,800	6,800	7,900	6,600	3,700	38,300	272,000	12,500	28,100	23,300	308,000	28,000	221,000	49,000	0	11,000	48,000	0

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



Table 8C: 2013-14 water conservation initiatives

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	Water Loss Management Program	Other Demand Management Measures	Sound Water Conservation Implemented?	Sound Drought Management Implemented?	Full Pay-For-Use Pricing?	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			
													Step 1 (c/kL)	Step 2 (c/kL)					(ML)	(ML)	(ML)	(L/d/ connection)	Evaluation	Strategy
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)	(10)	(11)	(11a)	(12)	(13)	(14) F4	(15) W12	(16) W11	(17) W10.1	(18)	(19) A10	(20)	(21)				
11	Albury City	Yes	Yes	No	No		Yes	Yes	Waterwise program, water conservation strategy, separate metering (new & existing multi-unit developments), monitoring programs & customer surveys, free water audits (non-residential), review of conservation initiatives, grey water reuse guidelines, rainwater tank guidelines.	Yes	Yes	Yes	118	216	79	232	7,880	759	456		Y	Y		
29	Armidale Dumaresq	Yes	No	No	No		Yes	Yes		Yes	Yes	Yes	241	320	78	223	3,237	472	418					
24	Ballina (Reticulator)	Yes	Yes	Yes	Yes	1500	Yes	Yes	Voluntary permanent water saving measures, water saving tips on Council's website.	Yes	Yes	Yes	202	304	68	194	4,132	805	671		Y	Y		
100	Balranald (Dual Supply)	No	No	No	No		Yes	No		Yes	Yes	Yes	94	141	74*	133	575	15	9					
21	Bathurst Regional	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	180	270	83	227	7,027	538	298		Y	Y		
23	Bega Valley (Unfiltered)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance.	Yes		Yes	250		63	134	3,771	534	227					
47	Bellingen (Unfiltered)	Yes	No	No	No		No	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	152	228	77	163	1,356	360	298		Y	Y		
53	Berrigan (Dual Supply)	Yes	No	No	No		Yes	Yes	Permanent water saving rules.	Yes	Yes	Yes	94		49*	237	2,552	123	112					
72	Bland (No WS)						Yes	No									250							
78	Blayney (No WS)						Yes	No									175			Y	Y			
89	Bogan	Yes					Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	178		60	381	867	316	138		Y	Y		
97	Bombala	No	No	No			Yes	No			Yes	Yes	120	175	30*	188	179	18	11					
104	Boorowa	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	205	410	46*	193	188	44	40					
87	Bourke (Dual Supply)	Yes	No	No	No		No	No	Member of the Savewater! Alliance, waterwise program with local schools.	Yes	Yes	Yes	216		86*	284	1,604	37	35		Y	Y		
105	Brewarrina	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, installation of water meters in residential properties, water saving tips on Council's website, smart irrigation system on sporting fields.	Yes	Yes	Yes	190		58*	581	789	39	27		Y	Y		
27	Byron (Reticulator)	Yes	Yes	Yes	Yes	1800	Yes	Yes	Pressure reduction	Yes	Yes	Yes	232	348	74	181	3,241	276	247		Y	Y		
91	Cabonne	Yes	Yes	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	175	407	62	144	337	41	37		Y	Y		
92	Carrathool (Groundwater)	No	No	No	No		Yes	Yes		Yes	Yes	Yes	87		57	313	863	47	36					
103	Central Darling (Dual Supply)	Yes	No	No	No		No	Yes	Water saving tips on Council's website.	Yes	Yes	Yes	350		90*	179	395	12	7					
40	Central Tablelands (No Sge)	Yes	No	No	No		No	No	Member of the Savewater! Alliance, water saving tips on Council's website, billing inserts on water saving techniques.	Yes	Yes	Yes	225		68	192	1,729	204	146		Y	Y		
14	Clarence Valley	Yes	Yes	Yes	Yes	1,100	Yes	Yes	Member of the Savewater! Alliance, school waterwise program, permanent water conservation measures, showerhead exchange, dual flush toilet rebate, water saving tips on Council's website.	Yes	Yes	Yes	179	268	67	161	6,551	1,395	850		Y	Y		
67	Cobar	Yes	Yes	Yes	No		Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	205	300	79	382	1,235	108	65		Y	Y		
66	Cobar WB (Bulk Supplier) (No S)	No	No	No	Yes		No	No									2,674							
10	Coffs Harbour	Yes	Yes	Yes	No		Yes	Yes	Rebate for water audits, separate metering of new and existing multi-unit developments, review of conservation measures, new for old showerhead replacement, showerhead and dual flush toilet rebates, Specialised Schools Education Program (Licenced by Water Corp), member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	263	395	76*	169	6,534	607	544		Y	Y		
99	Coolamon (No WS)						Yes	No																
50	Cooma-Monaro	Yes	Yes	No	No		Yes	Yes	Member of the Savewater! Alliance, rebate for water audits, separate metering for new multi-unit developments, monitoring to review effectiveness of conservation measures, water saving tips on Council's website.	Yes	Yes	Yes	154	244	55*	250	1,209	121	73		Y			
75	Coonamble (Groundwater)	No	Yes	No	No		Yes	No			Yes	Yes	55	90	63	399	909	91	55					
58	Cootamundra (Reticulator)	No	Yes	No	No		Yes	Yes			Yes	Yes	184		56*	216	973	101	81					
42	Corowa	No	No	No	No		Yes	Yes	Water saving tips on Council's website.	Yes	Yes	Yes	160	240	81*	261	3,992	707	307		Y	Y		
26	Essential Energy	Yes	No	Yes	No		Yes	Yes	Rebates for dual flush toilets and specified garden products, water saving tips on Council's website.	Yes	Yes	Yes	172		66	281	6,843	513	342		Y	Y		
39	Cowra	Yes	Yes	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	286		77	223	2,856	1,048	240					
54	Deniliquin	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	80	120	54*	476	1,930	191	150		Y			
18	Dubbo	Yes	No	No	No		Yes	Yes	Water saving tips on Council's website.	Yes	Yes	Yes	185		75	350	8,924	865	692		Y	Y		
15	Eurobodalla	Yes	Yes	Yes	Yes	1500	Yes	Yes	Member of the Savewater! Alliance, integrated water cycle management study, WaterSmart Business Program, commercial water audits and financial incentives, dual flush toilet rebates, water usage calculator, water saving tips on Council's website, meter replacement program.	Yes	Yes	Yes	340		64	119	3,608	539	342		Y	Y		
12	Fish River WS (Bulk Supplier) (No S)	No	No	No	No		No	No		Yes	Yes						6,766	1,694	1,694					
51	Forbes	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website, free garden mulch.	Yes	Yes	Yes	90		63	359	2,408	231	125					
84	Gilgandra (Groundwater)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	98		68*	476	815	94	70					
60	Glen Innes Severn	Yes	No	No	No		Yes	Yes	Water saving tips on Council's website.	Yes	Yes	Yes	205	308	53	147	552	56	39		Y	Y		
28B	Goldenfields (Bulk Supplier) (No S)						No	No		Yes	Yes						440	440	440					
28A	Goldenfields (Reticulator) (No S)	Yes	No	No	No		No	Yes	Separate metering of new multi-unit developments. Trial Automatic Remote Meter reading.	Yes	Yes	Yes	212		79	284	6,220	609	365					

Table 8C: 2013-14 water conservation initiatives

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	Water Loss Management Program	Other Demand Management Measures	Sound Water Conservation Implemented?	Sound Drought Management Implemented?	Full Pay-For-Use Pricing?	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			
													Step 1 (c/kL)	Step 2 (c/kL)					(ML)	(ML)	(ML)	(L/d/ connection)	Evaluation	Strategy
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)	(10)	(11)	(11a)	(12)	(13)	(14) F4	(15) W12	(16) W11	(17) W10.1	(18)	(19) A10	(20)	(21)				
1	Gosford	Yes	No	No	Yes	500	Yes	Yes	Mandatory rain water tanks for new houses and extensions, major water user audits, promoting effluent reuse schemes, main replacement program, water saving tips on Council's website.	Yes	Yes	Yes	223		76	161	16,532	2,922	2,560		Y	Y		
20	Goulburn Mulwaree	Yes	Yes	Yes	No		Yes	Yes	Showerhead and dual flush toilet rebates.	Yes	Yes	Yes	280	378	66*	165	3,027	349	298		Y	Y		
80	Greater Hume	Yes	No	No	No		Yes	Yes	Water saving tips on Council's website.	Yes	Yes	Yes	140	220	60	235	651	112	65		Y			
30	Griffith	Yes	Yes	Yes	No		No	Yes	Water saving tips on Council's website, rebates for 4 star toilets and 3 star shower roses.	Yes	Yes	Yes	65	125	80*	505	7,076	603	348		Y			
94	Gundagai	Yes	No	No	No		Yes	Yes	Water Restriction information on website and in news articles	Yes	Yes	Yes	125	170	74*	354	823	76	41					
44	Gunnedah (Groundwater)	No	No	No	No		Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	104	156	75	400	2,969	238	119		Y	Y		
90	Guyra	No	No	No	No		No	Yes		Yes	Yes	Yes	150	180	70	263	641	76	51					
81	Gwydir	Yes	No	No	No		Yes	Yes		Yes	Yes	Yes	125	195	75	393	1,015	117	59		Y	Y		
76	Harden (Reticulator)	Yes	Yes	No	No		Yes	Yes	Water saving tips on Council's website.	Yes	Yes	Yes	215	321	73*	454	1,416	140	84					
7	Port Macquarie-Hastings (Unfiltered)	Yes	No	No	No		Yes	Yes	Encourage use of rainwater tank, separate metering for new and encourage separate metering for existing multi-unit development, permanent water conservation measures, meter replacement program, water saving tips on Council's website.	Yes	Yes	Yes	255	510	69*	157	6,673	625	375		Y			
30A	Hawkesbury (No WS)						Yes	No									20							
86	Hay (Dual Supply)	Yes	No	No	No		No	Yes		Yes	Yes	Yes	108	164	86*	155	1,430	44	44					
37	Inverell	No	No	No	No		No	No	Member of the Savewater! Alliance.	Yes	Yes	Yes	130	150	49	183	1,782	207	107					
106	Jerilderie (Dual Supply)	Yes	No	No	No		Yes	No	Water saving tips on Council's website.			Yes	144	160	85*	246	558	15	9					
77	Junee (No WS)						Yes	No									100							
25	Kempsey (Groundwater)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, reviewing Demand Management Policy, website links to water saving tips	Yes	Yes	Yes	209	301	59	157	3,746	837	402		Y	Y		
70	Kyogle	Yes	Yes	No	Yes	670	Yes	No	Member of the Savewater! Alliance	Yes	Yes	Yes	130	180	42	143	614	40	24		Y	Y		
59	Lachlan	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website. Participate in WIN and Channel TEN summer water wise campaigns.	Yes	Yes	Yes	203	305	79*	541	2,001	311	256					
48	Leeton	Yes	No	No	No		Yes	Yes	Separate metering of new multi-unit developments, converting town parks to raw water, restricting all new residential meters to 20mm.	Yes	Yes	Yes	86	126	65	434	2,577	292	232		Y			
22	Lismore (Reticulator)	Yes	Yes	Yes			Yes	No	Rebate on water audits (special projects), separate metering of new and some existing multi-unit developments, monitoring program, review water conservation measures every 2 years, voluntary permanent water saving measures, water saving tips on Council's website.	Yes	Yes	Yes	299		70	155	3,188	319	191		Y	Y		
31	Lithgow	Yes	No	Yes	Yes	300	No	No	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	296	445	81	186	1,881	188	113		Y			
61	Liverpool Plains	Yes	No	No	No		No	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	125	203	44	193	893	131	97		Y			
102	Lockhart (No WS)						Yes	No									1				Y			
5	MidCoast	Yes	Yes	Yes	Yes	1500	Yes	Yes	Water saving tips on Council's website and in customer newsletters.	Yes	Yes	Yes	270	302	75	150	9,557	1,301	749		Y	Y		
32	Mid Western Regional	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	275		80*	204	2,645	362	180					
38	Moree Plains (Groundwater)	No	No	No			Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	144	186	76*	608	3,279	433	288		Y			
65	Murray (Dual Supply)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	91		56*	172	1,172	72	55		Y			
101	Murrumbidgee (Groundwater)	No	No	No	No		Yes	Yes	Rainwater tank guidelines, encouraging retrofit program.			Yes	36	42	63	571	780	78	55					
41	Muswellbrook	Yes	No	No			Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website. Continued application of 2 tier billing system.	Yes	Yes	Yes	152	228	71	287	3,245	234	140		Y	Y		
34	Nambucca (Groundwater)	No	No	Yes	Yes	1500	Yes	Yes	Member of the Savewater! Alliance, rainwater tank rebates, water saving tips on Council's website.	Yes	Yes	Yes	290		79	135	1,452	173	155		Y	Y		
46	Narrabri (Groundwater)	Yes	Yes	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	87		62	378	2,875	484	484					
63	Narrandera (Groundwater)	No	No	No	Yes		Yes	No	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	102		66*	499	2,138	782	130					
62	Narromine (Groundwater)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	110		74	493	1,413	132	79		Y	Y		
83	Oberon (Reticulator)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	213		57	140	639	80	44		Y			
19	Orange	Yes	Yes	No	Yes	650	Yes	Yes	Showerhead replacement program	Yes	Yes	Yes	202	303	71	174	7,144	462	382		Y	Y		
71	Palerang	Yes	Yes	Yes	Yes	830	Yes	Yes	Mandatory water conservation measures.	Yes	Yes	Yes	214	337	50	161	565	98	50					
36	Parkes	Yes	Yes	Yes	No		Yes	Yes	Member of the Savewater! Alliance, non-potable supply for stock, roadworks and swimming pools, IWCM Strategy, water saving tips on Council's website.	Yes	Yes	Yes	165	310	67	247	4,519	459	412		Y	Y		



Table 8C: 2013-14 water conservation initiatives

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	Water Loss Management Program	Other Demand Management Measures	Sound Water Conservation Implemented?	Sound Drought Management Implemented?	Full Pay-For-Use Pricing?	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			
													Step 1 (c/kL)	Step 2 (c/kL)					(ML)	(ML)	(ML)	(L/d/ connection)	Evaluation	Strategy
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)	(10)	(11)	(11a)	(12)	(13)	(14) F4	(15) W12	(16) W11	(17) W10.1	(18)	(19) A10	(20)	(21)				
17	Queanbeyan (Reticulator)	Yes	Yes	Yes	Yes	1100	Yes	Yes	Subsidised garden mulch, free water audits, free home tune-up, free AAA shower rose, free dual flush toilet, subsidies for commercial properties.	Yes	Yes	Yes	274	402	64	178	3,995	589	472		Y			
33	Richmond Valley	Yes	Yes	Yes	Yes	670	Yes	Yes	Rebates for water efficient showerheads and dual flush toilets, water saving tips on Council's website, voluntary permanent water saving measures.	Yes	Yes	Yes	194	292	76	166	3,017	332	259		Y	Y		
8	Riverina (Groundwater) (No Sge)	Yes	Yes	No	No		No	Yes	Member of the Savewater! Alliance, separate metering of new & existing multi-unit developments, monitoring program, permanent water conservation measures, meter replacement program, water saving tips on Council's website.	Yes	Yes	Yes	133	200	76	324	15,791	1,579	947		Y	Y		
4	Rous (Bulk Supplier) (No Sge)	Yes	Yes	Yes	Yes	1500	No	No	Member of the Savewater! Alliance, school grants, rebates for water efficient showerheads and dual flush toilets, water saving tips on Council's website.	Yes	Yes						1,476	652	369		Y	Y		
3	Shoalhaven	Yes	Yes	No	Yes	150	Yes	Yes	Monitoring demand, participation in National Water Week (Competitions, Treatment Plant Tours, Tapstar show, Community display), Marketing & Education activities at Local Community Events, water saving tips on Council's website.	Yes	Yes	Yes	160		74	147	14,695	1,280	986		Y	Y		
35	Singleton	Yes	Yes	Yes	Yes	450	Yes	No	Member of the Savewater! Alliance, rebates for dual flush toilets, water saving tips on Council's website.	Yes	Yes	Yes	122	226	71*	297	3,014	360	299		Y			
52	Snowy River (Unfiltered)	Yes	No	No			Yes	Yes	Member of the Savewater! Alliance, DCP rainwater tanks and dual flush toilets required in new residential developments, water saving tips on Council's website.	Yes	Yes	Yes	210	330	42	93	824	88	88		Y	Y		
13	Tamworth Regional	Yes	Yes	Yes	Yes	500	Yes	Yes	Member of the Savewater! Alliance, separate metering for new multi-unit developments, water management plan for premises, Residential Water Saver Rebate Scheme, water saving tips on Council's website.	Yes	Yes	Yes	142	213	64	287	10,280	1,014	710		Y	Y		
69	Temora (No WS)						Yes	No									117							
68	Tenterfield	Yes	No	No	No		Yes	Yes		Yes	Yes	Yes	207	238	44*	150	425	37	22		Y	Y		
93	Tumbarumba	Yes	Yes	No	No		No	Yes	Council guidance and support with planning and installation of rainwater systems. Town night flow trend is monitored to find out major leaks.	Yes	Yes	Yes	205	344	56*	203	367	94	44		Y			
43	Tumut	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	126	252	58	216	1,549	139	112		Y			
6	Tweed	Yes	No	Yes	No		Yes	Yes	Member of the Savewater! Alliance, residential rebates for water efficient toilets, showers, spouts, aerators and flow controllers.	Yes	Yes	Yes	245	370	77	184	9,767	1,183	552		Y	Y		
45	Upper Hunter	Yes	Yes	Yes	Yes	400	Yes	Yes	Member of the Savewater! Alliance, water saving tips on Council's website.	Yes	Yes	Yes	175	262	75*	400	2,386	238	143					
73	Upper Lachlan	Yes	No	No	No		Yes	No	Member of the Savewater! Alliance.	Yes	Yes	Yes	256	339	54	137	376	68	23					
85	Uralla	No	No	No	No		No	Yes			Yes	Yes	210		59	199	344	36	10		Y	Y		
107	Urana (No WS)						No	No													Y			
9	Wagga Wagga (No WS)						Yes	No	Water saving tips on Council's website.								251				Y			
88	Wakool (Dual Supply)	Yes	Yes	Yes			No	Yes	Permanent water saving rules, water saving tips on Council's website.	Yes	Yes	Yes	99	153	73*	143	772	37	26					
98	Walcha	Yes	Yes	No	No		No	Yes				Yes	272	396	69	154	188	21	20		Y	Y		
79	Walgett (Dual Supply)	No	No	No	No		Yes	No	Member of the Savewater! Alliance, installation of water meters in residential properties,water use restrictions throughout the year.	Yes	Yes	Yes	36	50	65*	720	3,405	370	140		Y			
96	Warren (Dual Supply)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	100	151	65*	302	786	59	31		Y	Y		
55	Warrumbungle	No	No	No	No		Yes	No	Voluntary water restrictions.	Yes	Yes	Yes	180		53*	224	1,148	274	261		Y			
95	Weddin (No WS)						Yes	No													Y	Y		
57	Wellington	Yes	No	No	No		No	Yes	Member of the Savewater! Alliance.	Yes	Yes	Yes	197	201	55	193	957	249	90		Y	Y		
74	Wentworth (Dual Supply)	No	No	No			Yes	No		Yes	Yes	Yes	120	280	58*	74	1,009	30	18		Y			
16	Wingecarribee	Yes	No	No	No		Yes	Yes	Water Wise Initiatives on Council's website.	Yes	Yes	Yes	174	261	69	200	5,448	967	854		Y	Y		
2	Wyong	Yes	No	No	No		Yes	Yes	Industrial/commercial water usage audits, 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, stormwater harvesting for golf course irrigation, water saving tips on Council's website.	Yes	Yes	Yes	223		67*	157	14,758	1,421	710		Y	Y		
56	Yass Valley	Yes	Yes	No	Yes	200	No	Yes	Higher access charges for larger services, free supply of water restrictors, compulsory rainwater tanks for new dwellings and encourages retrofitting.	Yes	Yes	Yes	280		54	173	881	203	90		Y	Y		
49	Young (Reticulator)	Yes	No	No	No		Yes	Yes	Member of the Savewater! Alliance, some stormwater use, separate metering of new and some existing multi-unit developments, water saving tips on Council's website.	Yes	Yes	Yes	246	369	66	173	1,125	102	74					
Total LWUs		76	33	22	19	18	83	75		91	91	93	Median		Median	Median	Median	Median			69	48		
Percent "Yes" (Retail)		83%	36%	24%	21%	20%	84%	82%		Percent "Yes"	95%	95%	100%	213	73	173	6,800	70			66%	46%		

Table 8D: 2013-14 Components of commercial, industrial, rural and municipal water supplied

WATER UTILITY		COMMERCIAL		INDUSTRIAL										RURAL		MUNICIPAL (Institutional, Public Parks and Gardens)				VOLUME OF WATER SUPPLIED NON-RES (Commercial, Industrial, Rural, Municipal)			TOTAL VOLUME of WATER PRODUCED	RECYCLED	URBAN STORMWATER
		Potable (ML)	Non- potable (ML)	Potable (ML)					Non-potable (ML)					Potable (ML)	Non- potable (ML)	Potable (ML)		Non-potable (ML)		Potable (ML)	Non-potable (ML)	Volume Supplied (ML)	Potable (ML)	Commercial, Industrial, Municipal (ML)	Total Volume Used (ML)
		(55)	(63a)	Total Industrial Potable	Mining (56a)	Manufacturing (56b)	Electricity Generation (56c)	Other (56d)	Total Industrial Non Potable	Mining (63b)	Manufacturing (63c)	Electricity Generation (63d)	Other (63e)	(57)	(63f)	Excluding Parks & Gardens (58)	Parks & Gardens (60)	Excluding Parks & Gardens (63g)	Parks & Gardens (63h)	W9.1  Sum(55), (56a to d), (57), (58), (60)	W9.2  Sum (63a to h) (63i)	W9 =W9.1+W9.2	=W11.1+W14.1 - W5.1	W21  (151)	W28.4  (63j)
	Sydney Water Hunter Water Water NSW																			527,511 71,483			527,511 71,483	10,205 2,274	0
LWUs with > 10,000 Properties																									
1	Gosford	1,287		556	373	2	181							12		443	196			2,494		2,494	14,934	18	
2	Wyong	3,300													1					3,300	1	3,301	15,448	683	
3	Shoalhaven	1,762	8	1,125	1,125				2,367	2,367				666	30	286	64			3,903	2,405	6,308	11,638	644	
4	Rous (Bulk Supplier) (NO SGE)	38												786						824		824	11,521		
5	MidCoast	1,652		444				444								170	106			2,372		2,372	9,038	519	
6	Tweed	1,516		135	70			65						139		272	274			2,336		2,336	9,198	563	
7	Port Macquarie-Hastings (Unfiltered)	971	25	29				29						40		234	48	111	5	1,322	141	1,463	6,243	289	
8	Riverina (Groundwater) (NO SGE)	2,145		1,059	1,052		7							946		833	488			5,471		5,471	15,735		
10	Coffs Harbour	1,199		91				91							9	46	86			1,422	9	1,431	5,958	567	
11	Albury	593	186	267				267	4				4	37		636	392	1	2	1,925	193	2,118	8,078		
12	Fish River WS (Unfiltered, Bulk Supplier) (NO SGE)								4,975	4,975				72	25					72	5,000	5,072	862		
13	Tamworth Regional	1,066		1,819				1,819						186	140	27	496			3,594	140	3,734	10,140		
14	Clarence Valley	822		432				432						517	63		95			1,866	63	1,929	6,312	176	
15	Eurobodalla	489		5	5									23		139	19			675		675	3,418	190	
16	Wingecarribee	552												175		265	52			1,044		1,044	5,448		
17	Queanbeyan (Reticulator)	212		163				163								110	164			649		649	0		
18	Dubbo	1,071		42				42						36		572	777	35	234	2,498	269	2,767	8,655		
19	Orange	713		76	76									68		159	68			1,084		1,084	4,241	2,903	
20	Goulburn Mulwaree	274	21	286				286						11	16	307	43			921	37	958	2,788	204	
21	Bathurst Regional	1,081		1,040	1,040				1,040				1,040			46	46			2,213	1,040	3,253	5,984		
22	Lismore (Reticulator)	774												120						894		894	0		
23	Bega Valley (Unfiltered)	472		57	7			50						134	66	188	94			945	66	1,011	3,244	461	
24	Ballina (Reticulator)	395		13	10		1	2						50		98	15			571		571	175	273	
25	Kempsey (Groundwater)	389		197	197									418		118	11			1,133		1,133	3,687	90	
26	Essential Energy	300	31	1,328	1,328				456	456					115	303	36	135	220	1,967	957	2,924	5,177	709	
27	Byron (Reticulator)	821																		821		821	422	390	
28A	Goldenfields (Reticulator) (NO SGE)	689	8	7				7						2,376	85	276	145	6	8	3,493	107	3,600	294		
28B	Goldenfields (Bulk Supplier) (NO SGE)																				0	9,006			
Totals for LWUs with >10,000 Properties		24,583	279	9,171	1,328	3,955	10	3,878	8,842	456	2,367	4,975	1,044	6,812	550	5,528	3,715	288	469	49,809	10,428	60,237	177,644	8,679	0
LWUs with 3,001 - 10,000 Properties																									
29	Armidale Dumaresq	248	2											103	6	486	86			923	8	931	3,162		
30	Griffith	1,349	361											468	11	137	136	99	98	2,090	569	2,659	6,365		
31	Lithgow	262		24	24															286		286	1,091		
32	Mid-Western Regional	493	3	48	10	18		20						7	3	156	46	2	64	750	72	822	2,572		
33	Richmond Valley	401		1,217	1,217									10			1			1,629		1,629	2,382	12	
34	Nambucca (Groundwater)	320		36		21		15						83		57	2			498		498	1,452		
35	Singleton	451		96	96									31	63	244				822	63	885	2,936		
36	Parkes	182							1,942	1,942				117		142	175			616	1,942	2,558	2,147	173	
37	Inverell	200		300				300									150			650		650	1,782		



Table 8D: 2013-14 Components of commercial, industrial, rural and municipal water supplied

WATER UTILITY		COMMERCIAL		INDUSTRIAL										RURAL		MUNICIPAL (Institutional, Public Parks and Gardens)				VOLUME OF WATER SUPPLIED NON-RES (Commercial, Industrial, Rural, Municipal)			TOTAL VOLUME of WATER PRODUCED	RECYCLED	URBAN STORMWATER		
		Potable (ML)	Non- potable (ML)	Potable (ML)					Non-potable (ML)					Potable (ML)	Non- potable (ML)	Potable (ML)		Non-potable (ML)		Potable (ML)	Non-potable (ML)	Volume Supplied (ML)	Potable (ML)	Commercial, Industrial, Municipal (ML)	Total Volume Used (ML)		
		(55)	(63a)	Total Industrial Potable	Mining (56a)	Manufacturing (56b)	Electricity Generation (56c)	Other (56d)	Total Industrial Non Potable	Mining (63b)	Manufacturing (63c)	Electricity Generation (63d)	Other (63e)	(57)	(63f)	Excluding Parks & Gardens (58)	Parks & Gardens (60)	Excluding Parks & Gardens (63g)	Parks & Gardens (63h)	W9.1  Sum(55), (56a to d), (57), (58), (60)	W9.2  Sum (63a to h) (63i)	W9 =W9.1+W9.2	W11.3 =W11.1+W14.1 - W5.1	W21  (151)	W28.4  (63j)		
38	Moree Plains (Groundwater)	370														45			13	415	13	428	3,248				
39	Cowra	588		156		156										15	41			800		800	2,682				
40	Central Tablelands (NO SGE)	203		189	7	162		20						282		45	32			751		751	1,873				
41	Muswellbrook	352		43	28			15								83	95			573		573	2,340	905			
42	Corowa	291		819		53		766	747				747	4	29	34	78			1,226	776	2,002	3,216				
43	Tumut	105		206				206						50		28	37			426		426	1,409	105			
44	Gunnedah (Groundwater)	789												52		189	90			1,120		1,120	2,969				
45	Upper Hunter	381												5		10	121			517		517	2,386				
46	Narrabri (Groundwater)	956																		956		956	2,875				
47	Bellingen (Unfiltered)	114		91				91	16				16	107		31	42			385	16	401	1,342				
48	Leeton	175		180				180						45		50	360			810		810	2,577				
49	Young (Reticulator)	159															63			222		222	0	100			
50	Cooma-Monaro	140		49				49						68		13	13			283		283	1,209				
51	Forbes	526	10	5				5							12	107	28	212	88	666	322	988	2,448				
52	Snowy River (Unfiltered)	106		49				49						7		37	1			200		200	740	58			
53	Berrigan (Dual Supply)	110	85											25		127	52		168	314	253	567	1,170	540	50		
54	Deniliquin	220														44	25			289		289	1,930				
55	Warrumbungle	256																		256		256	1,144				
56	Yass Valley	133															35			168		168	885				
Totals for 3,000 - 10,000 Properties		9,880	461	3,508	141	1,651	0	1,716	2,705	1942	0	0	763	1,464	124	2,035	1,754	313	431	18,641	4,034	22,675	60,332	1,893	50		
LWUs with 1,501 - 3,000 Properties																											
57	Wellington	145		13				13								30	20			208		208	957				
58	Cootamundra (Reticulator)	55		10				10						4		31	6			106		106	0	193			
59	Lachlan	248	2											142		27	46			463	2	465	1,899				
60	Glen Innes Severn	88														30	1			119		119	552				
61	Liverpool Plains	78		51				51						18		26	70		9	243	9	252	929				
62	Narromine (Groundwater)	135												7		63	66	16	79	271	95	366	1,318				
63	Narrandera (Groundwater)	150												15		5	300			470		470	2,138				
65	Murray (Dual Supply)	180	97	4				4	1				1	2		10	1		48	197	146	343	723				
66	Cobar WB (NO SGE)								2,337	2,337											2,337	2,337	0				
67	Cobar	95		47	31	6		10						20		12	63			237		237	1,079				
68	Tenterfield	62		2				2						2		2	4			72		72	412	56			
70	Kyogle	42		24				24						30		21	7			124		124	340	213			
71	Palerang	73															20			93		93	513	26			
73	Upper Lachlan	25														15	30			70		70	376				
74	Wentworth (Dual Supply)																					0	305				
76	Harden (Reticulator)	486												189		10				685		685	0	15			
75	Coonamble (Groundwater)	55												60		25	130			270		270	912				
79	Walgett (Dual Supply)	875																		875		875	2,405				
80	Greater Hume	72												50		4	6			132		132	201	57			
Totals for 1,500 - 3,000 Properties		2,864	99	151	31	6	0	114	2,338	2337	0	0	1	539	0	311	770	16	136	4,635	2,589	7,224	15,059	560	0		

Table 8D: 2013-14 Components of commercial, industrial, rural and municipal water supplied

WATER UTILITY		COMMERCIAL		INDUSTRIAL								RURAL		MUNICIPAL (Institutional, Public Parks and Gardens)				VOLUME OF WATER SUPPLIED NON-RES (Commercial, Industrial, Rural, Municipal)			TOTAL VOLUME of WATER PRODUCED	RECYCLED	URBAN STORMWATER		
		Potable (ML)	Non- potable (ML)	Potable (ML)				Non-potable (ML)				Potable (ML)	Non- potable (ML)	Potable (ML)		Non-potable (ML)		Volume Supplied (ML)	Potable (ML)	Commercial, Industrial, Municipal (ML)	Total Volume Used (ML)				
		(55)	(63a)	Total Industrial Potable	Mining (56a)	Manufacturing (56b)	Electricity Generation (56c)	Other (56d)	Total Industrial Non Potable	Mining (63b)	Manufacturing (63c)	Electricity Generation (63d)	Other (63e)	(57)	(63f)	Excluding Parks & Gardens (58)	Parks & Gardens (60)	Excluding Parks & Gardens (63g)	Parks & Gardens (63h)	W9.1  Sum(55), (56a to d), (57), (58), (60)	W9.2  Sum (63a to h) (63i)	W9 =W9.1+W9.2	W11.3 =W11.1+W14.1 - W5.1	W21  (151)	W28.4  (63j)
LWUs with 200 - 1,500 Properties																									
81	Gwydir	89											15		54	202			360		360	977	38		
83	Oberon (Reticulator)	14		350		220		130					5			14			383		383	642			
84	Gilgandra (Groundwater)	100		7		7									7	11		2	125	2	127	794			
85	Uralla	35													1	16			52		52	344			
86	Hay (Dual Supply)																50			50	50	363			
87	Bourke (Dual Supply)	7	150											20			100	7	270	277	369				
88	Wakool (Dual Supply)	118											44			8			170		170	264			
89	Bogan	153														10	10	163	10	173	857				
90	Guyra	33		229				229								8		270		270	583				
91	Cabonne	16	9	4		4												20	9	29	202	90			
92	Carrathool (Groundwater)	31												432		2		33	434	467	359				
93	Tumbarumba	38		7		7									18	2		65		65	367				
94	Gundagai	150											50		9	4		213		213	593	234			
96	Warren (Dual Supply)	30															25	30	25	55	344				
97	Bombala	7		6				6							7	1		21		21	179				
98	Walcha	27											2	5	10	7		46	5	51	185				
100	Balranald (Dual Supply)	40	49														78	40	127	167	156				
101	Murrumbidgee (Groundwater)															52		52		52	780				
103	Central Darling (Dual Supply)	12	30											1			5	12	36	48	0				
104	Boorowa	19											1		2	9		31		31	188				
105	Brewarrina	100	150															100	150	250	389				
106	Jerilderie (Dual Supply)	44							10			10			1		3	45	13	58	150	50			
Totals for 200 - 1,500 Properties		1,063	388	603	0	238	0	365	10	0	0	0	10	117	458	109	346	0	275	2,238	1,131	3,369	9,085	412	0
LWUs without Water Supply																									
9	Wagga Wagga (NO WS)																					251			
30A	Hawkesbury																					20			
69	Temora																					117			
72	Bland																					250			
77	Junee																					100			
78	Blayney																					175			
95	Weddin																								
99	Coolamon																								
102	Lockhart																					1			
107	Urana																								
Totals for LWUs without water supply																						914			
Totals for all LWUs		38,390	1,230	13,400	1,500	5,850	10	6,070	13,900	4,700	2,370	4,980	1,820	8,930	1,130	7,980	6,590	620	1,310	75,300	18,200	93,500	262,000	12,500	50



Table 9: Water supply - utility characteristics

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			Headworks Transfer Mains (raw water)	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		
		(Single + Mult + Non-res Dwellings + Fire) To Calc Losses	(Ratio of Connected Properties to Assessments)	Connected Properties (18) x (19)	(Ratio of Res Assessments to Total Assessments)	(Ratio of Res Connected Props to Res Assessments)	Connected Residential Properties (18)x(21)x(22)	(%)	(Permanent)	(Peak) (% of Permanent)	(km)	(km)	(20) / (25a)	(Providing Full Treatment) (No.)	(No.)	(No.)	(No.)	(30) / ((25a) / 100)	\$/prop	Total \$M	(\$'000)	Employees /1000 properties	(2 or more days per year)	(% of Maintenance Cost)	No.	Total (%)	Due to Injuries No.	(%)						
		(18)	(18a)	(19)	(20) C4	(21)	(22)	(22a) C2	(22b)	(23) C1	(24)	(25)	(25a) A2	(26) A3	(27) A1	(28)	(29)	(30)	(30a)	(31) F28	(31a) F14	(31b) F26	(32)	(34)	(37)	(38)	(39)	(40a)	(40b)					
2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14
	Sydney Water					1,848,000							4,626,000	4,657,000	4,755,000			22,105	84	9				106	196	0								
	Hunter Water					235,835							540,000	545,000	550,000			4,893	48	6				323	76	276								
	Water NSW																									32								

LWUs with > 10,000 Properties

1	Gosford	67,380	67,460	67,730	60,320	1.05	71,480	0.95	1.05	68,137	0.2	0.2	0.2	163,200	163,200	165,200		48	986	72	2	2	22	24	2	180	12.9	1,050	1.4	71	8	6	4	56	0	
2	Wyong	62,530	62,550	63,370	57,240	0.97	61,430	0.96	0.97	59,138	0.9	1.2	0.3	145,400	149,900	153,700	160		1,182	52	1	1	12	24	2	323	19.8	950	1.3	100	0	6	1	94	1	
3	Shoalhaven	50,220	50,660	51,070	47,100	0.92	46,980	0.92	0.93	43,780	1.0	0.9	1.2	93,400	90,000	89,400	370	42	1,492	31	4	4		26	2	226	10.6	0	1.9	70	0	2	3	11	0	
4	Rous (Bulk Supplier) (NO SGE)	49,720	47,440	48,550		0.96	46,780	0.89	0.96	41,544	0.0		0.0	113,100	113,100	105,700			405		2	2	3	4			5.5	0		79	0	3	4	25	0	
5	MidCoast	39,960	40,090	40,170	35,940	0.96	38,560	0.93	0.96	35,859	0.8	0.7	0.9	81,500	81,700	82,500	120	21	1,393	28	5	2	15	27	2	195	7.5	0	1.5	100		1	3	26	0	
6	Tweed	34,470	34,680	34,990	24,760	0.91	31,840	0.95	0.93	30,834	0.6	0.5	0.8	78,600	79,200	78,400	130	3	713	45	3	1		27	4	271	8.6	917	1.9	96	10	1	4	4	0	
7	Port Macquarie-Hastings (Unfiltered)	31,590	31,300	31,680	27,570	0.95	30,100	0.91	0.95	27,447	1.1	1.1	1.3	79,700	80,200	80,500	140		802	38	4	2	1	19	2	81	2.4	1,333	1.3	62	10	3	0	0	0	
8	Riverina (Groundwater) (NO SGE)	30,500	30,570	30,780	32,190	0.96	29,550	0.91	0.96	26,998	0.9	0.8	1.2	59,800	70,200	70,700	110	60	1,652	18	17	3	28	37	2	209	6.2	0	3.1	54	0	4	4	104	0	
10	Coffs Harbour	26,260	26,330	26,480	23,580	0.94	24,890	0.94	0.94	23,277	1.1	1.1	1.3	68,200	69,200	70,200	120	14	676	37	2	2		7	1	67	1.7	0	1.7	93	0	1	3	2	0	
11	Albury City	22,240	22,590	22,910	21,960	1.03	23,590	0.91	1.03	21,557	1.1	1.0	1.7	53,200	49,400	49,700	110	7	594	40	1			20	3	103	2.4	0	0.7	58	69	0	0	0	0	
12	Fish River WS (Unfiltered, Bulk Supplier)	25,000	25,000	25,000		0.94	23,500	0.88	0.94	20,680	0.0		0.1	62,000	62,000	62,000		10	241		1	1		3			1.0	0		100	0	0	2	0	0	
13	Tamworth Regional	20,970	21,240	21,420	21,420	1.00	21,420	0.90	1.00	19,292	1.4	1.5	2.3	43,900	44,000	44,600	180	87	707	30	5	2	12	19	3	511	10.9	5,174	2.0	62	0	6	2	39	0	
14	Clarence Valley	22,680	21,790	21,840	20,760	0.98	21,410	0.88	0.98	18,907	0.5	0.6	0.6	45,700	45,700	45,700	130	104	1,118	19	0	1		19	2	101	2.2	0	1.4	65	0	4	0	2	0	
15	Eurobodalla	20,760	20,700	20,820	18,800	0.94	19,570	0.95	0.94	18,574	0.8	0.7	0.9	38,600	31,300	31,200	320	36	886	22	2	1	5	14	2	118	2.3	0	1.5	100	0	1	4	24	0	
16	Wingecarribee	19,580	19,720	19,960	17,600	0.95	18,960	0.90	0.96	17,182	0.9	0.6	1.5	39,300	39,600	40,200	120	7	660	29	3	2		15	2	126	2.4	0	1.2	38	26	3	6	27	1	
17	Queanbeyan (Reticulator)	15,570	15,810	15,930	12,630	1.03	16,410	0.93	1.04	15,460	0.7	1.4	7.9	35,400	38,100	38,500	110		283	58	0			4	1	126	2.1	0	0.6	100	5	0	0	0	0	
18	Dubbo	15,170	15,260	15,450	15,250	1.11	17,150	0.88	1.11	15,142	1.2	0.7	1.1	34,100	34,500	34,800	110	8	501	34	1		7	9	2	97	1.7	0	0.6	64	0	1	5	11	0	
19	Orange	16,790	16,930	17,190	17,420	1.00	17,190	0.90	1.00	15,515	1.7	1.7	1.7	40,100	40,100	40,900	100	3	621	28	1	3	6	8	1	1,583	27.2	26,295	1.1	100		0	0	0	0	
20	Goulburn Mulwaree	10,460	9,640	10,080	9,940	1.03	10,380	0.89	1.03	9,204	1.8	1.5	3.0	22,500	22,500	22,500	100	94	281	37	2	2		9	3	245	2.5	315	1.9	100	8	2	5	7	0	
21	Bathurst Regional	14,400	14,500	14,830	13,320	1.05	15,570	0.90	1.07	14,242	1.2	1.5	1.3	33,100	33,600	34,000	180	15	392	40	1	2	2	11	3	233	3.6	0	1.3	100	4	4	0	8	0	
22	Lismore (Reticulator)	13,510	13,560	13,620	13,350	1.05	14,300	0.89	1.06	12,778	0.7	0.9	0.4	30,000	30,700	30,800	100		343	42	0	1		5	1	160	2.3	357	1.2	100	5	3	0	16	0	
23	Bega Valley (Unfiltered)	14,620	14,630	14,680	11,810	0.98	14,390	0.91	0.98	13,140	0.7	0.6	0.9	28,800	24,200	24,400	160	114	613	23	0	3	11	20	3	181	2.6	0	1.7	100	0	0	3	0	0	
24	Ballina (Reticulator)	15,600	15,030	15,250	12,680	0.93	14,180	0.90	0.93	12,770	0.9	1.1	1.2	36,700	37,100	37,500	130	0	332	43	1	1	2	4	1	148	2.1	0	0.8	91	26	0	8	0	0	
25	Kempsey (Groundwater)	12,110	12,130	11,990	11,510	1.04	12,470	0.87	1.03	10,717	0.5	0.4	0.7	25,200	25,300	25,000	150	119	491	25	4	1	37	22	4	404	5.0	800	1.5	98	26	1	3	3	0	
26	Essential Energy	10,520	10,510	10,520	10,390	1.00	10,520	0.91	1.00	9,602	0.1	0.0		18,800	19,200	19,000	100	156	382	28	3	3		11	3	295	3.1	0	6.4	22	0	0	0	0	0	
27	Byron (Reticulator)	11,440	11,500	11,620	9,940	0.96	11,150	0.87	0.96	9,695	0.9	0.8	0.9	29,200	20,700	20,700	170	1	237	47	1			8	3	38	0.4	0	0.9	100	1	1	3	10	0	
28A	Goldenfields (Reticulator) (NO SGE)	10,630	10,800	10,850	10,870	0.94	10,200	0.69	0.94	7,004	0.5	0.4	0.8	22,900	22,900	22,900	100		1,834	6	1			37	2		0		4.2	56	3	13	4	1	0	
28B	Goldenfields (Bulk Supplier) (NO SGE)	19,840	20,230	20,900		0.94	19,640	0.76	0.94	14,870	0.0			37,600	37,600	37,600			315		3		6				0									
Medians (% of LWUs basis excl bulk suppliers) or Totals for >10,000 Properties		Total 615,230			Total 603,690									Total 1,353,000						Total 949	Total 19,171	Median 34	Total 70	Total 42	Total 169	Total 433	Median 181		Total 149	Median 1.4		Median 3.0				

LWUs with 3,001 - 10,000 Properties

29	Armidale Dumaresq	8,670	8,690	8,770	7,990	0.98	8,590	0.92	0.98	7,938	0.6	0.5	0.9	21,100	21,200	21,200	110	62	279	31	2	3		11	4	271	2.3	0	2.1	22	5	2	3	8	0
30	Griffith	9,860	9,870	10,470	9,830	0.85	8,900	0.83	0.84	7,268	1.2	0.9	0.8	25,300	24,600	25,600	100	1	509	17	2			4	1	177	1.6	0	2.5	45	0	2	0	23	0
31	Lithgow	8,210	8,230	8,240	8,320	0.98	8,070	0.94	0.98	7,576	0.3	0.5	0.7	16,800	20,900	20,900	100	5	117	69	1	1		4	3	267	2.2	417	1.5	100		5	51	1394	51
32	Mid-Western Regional	7,300	7,630	7,780	7,580	1.02	7,930	0.89	1.03	7,155	2.5	3.0	2.4	15,200	16,400	16,700	140	17	306	26	3	1	28	13	4	136	1.1	600	1.2	100	2	1	5	6	0
33	Richmond Valley	7,350	7,350	7,370	6,850	0.97	7,150	0.88	0.97	6,301	0.7	0.1		16,200	16,500	16,700	110	2	188	38	1			7	4	276	2.0	0	1.7	100	5				
34	Nambucca (Groundwater)	6,620	6,650	6,680	5,940	0.95	6,340	0.91	0.95	5,765	0.8	0.8	1.2	14,300	14,400	14,400	140	1	211	30	1		10	2	1	3,676	23.3	8,158	1.5		7		3	41	2
35	Singleton	6,810	6,940	7,100	7,020	0.95	6,740	0.88	0.95	5,909	0.7	2.1	1.3	18,500	18,700	19,200	100	25	246	27	1		12	9	4	131	0.9	0	1.4	65	30	1	3	12	1
36	Parkes	6,500	6,190	6,250	6,550	0.95	5,940	0.89	0.95	5,292	0.3	0.0	1.0	11,200	14,000	14,000	130	70	461	13	1	2	7	12	3	408	2.4	2,506	1.7	30	0	0	0	0	0
37	Inverell	5,540	5,590	5,610	5,650	0.98	5,500	0.91	0.99	5,041	1.0	1.0	1.0	11,900	11,900	12,000	110		259	21	2		1	7	3	64	0.4	0	1.5	50	10	0	0	0	0
38	Moree Plains (Groundwater)	4,740	4,750	4,710	4,790	0.97	4,570	0.87	0.96	3,913	0.3	0.3	0.0	10,500	10,600	10,600	100	9	151	30	4	2	14	4	3	50	0.2	0	2.4	100	10	1	0	2	0



Table 9: Water supply - utility characteristics

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			Headworks Transfer Mains (raw water)	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)	(19)	(20) C4	(21)	(22)	(22a) C2	(22b)	(23) C1	(24)	(25)	(25a) A2	(26) A3	(27) A1	(28)	(29)	(30)	(30a)	(31) F28	(31a) F14	(31b) F26	(32)	(34)	(37)	(38)	(39)	(40a)	(40b)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Table 9: Water supply - utility characteristics

WATER UTILITY				ASSESSMENTS - CONNECTIONS - POPULATION												ASSETS												WORKFORCE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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(18)	(18a)	(19)	(20) C4	(21)	(22)	(22a) C2	(22b)	(23) C1	(24)	(25)	(25a) A2	(26) A3	(27) A1	(28)	(29)	(30)	(30a)	(31) F28	(31a) F14	(31b) F26	(32)	(34)	(37)	(38)	(39)	(40a)	(40b)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Notes: 1. In addition to these 154 water treatment works, the LWUs also have 85 chlorinators/aerators (see Appendix D1 on page 281).



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

WATER UTILITY		ASSET MANAGEMENT																		WATER RESOURCE MANAGEMENT																						
		Real Losses (Leakage) (see also columns 2 and 3 of Table 8A, column 8 of Table 8 and columns 10, 13, 15 and 16 of Table 10A)							Non-Revenue Water (NRW)-Potable			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 Day to Average Day Water Supplied		Peak Week to Average Water Supplied		Average Annual Residential Water Supplied							
		(L/d per connection)	(kL/km/d)	(ILI)	Leakage Test (RDT#, WM#, NF#, Z#, L#, P) (See note 6)			see col 9 of Table 8 & Cols 15 & 16 of Table 8A (L/d per connection)			(per 100km of Main)			(per '000 properties)			Mains (% of Total Length)	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, industry excl agric (Including Recycled) (ML) (from Table 8)			(Total Vol Recycled (Urban + Ag Use)/Total Urban Water Supplied (%)	(%)	(%)	From Tables 6 & 8 [(1)+(22a)] Potable (kL/property)			From Tables 6 & 8 [(1)+(11)+(12a)]÷(22a) Potable+Nonpotable (kL/property)							
		(41) A10	(41a) A11	(41b) A9	Type & Extent (41c)	Year (41d)	Result % (41e)	(41f)	(42) A8	(43) C17	(44)	(45)	(45a)	(46)	(47)	(48)	(49) W11	(50)	(51)	(52)	(53)	(56a) P2.1	(56) W12																			
		2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14		
	Sydney Water	85	87	81	5.0	1.4					22	29	30	147	160	183						495,120	523,509	541,492										193	198	206	193	198	206			
	Hunter Water	75	75	82	3.6	1.2					25	32	30	206	236	303						65,060	70,238	73,725										163	176	181	163	176	181			
LWUs with > 10,000 Properties																																										
1	Gosford	40	30	120	7.1	1.4	L1, P1	2011	60	58	112	27	23	22	153	171	187	0.2	-	0.3	690	0.7	347	13,240	14,400	16,500	66	123	117	0	0	141	158	126	137	145	156	161	145	156	161	
2	Wyong	30	30	30	1.6	1.0	Z5	2004	5	55	72	63	8	10	17	64	86	70	0.1	0.9	20.8	1456	1.3	357	13,230	14,200	14,800	447	658	1	6	7	164	167	124	120	151	155	157	151	166	158
3	Shoalhaven	40	40	60	1.8	1.0	L15	2010	8	61	68	75	10	10	10	36	82	65	0.5	0.2	9.9	161	0.4	76	12,790	14,300	14,700	2,413	2,609	2,413	14	16	303	260	209	169	130	147	147	130	148	148
4	Rous (Bulk Supplier) (NO SGE)												9	11	12	2	2	1	0.7		0.5	349	0.3	176	3,180	1,370	1,480															
5	MidCoast	80	60	60	1.5	1.0	NF	2014	7	124	97	92	5	8	8		2	2	0.2	-	3.2	201	0.4	221	8,320	8,700	9,560		133		10	15	170	166	163	140	131	143	150			
6	Tweed	60	60	60	2.1	1.0	L9, RDT	2011	6	136	131	102	5	4	8	9	27	50		0.1	3.5	493	0.5	145	8,610	9,090	9,770	336	382		5	6	187	186	133	129	163	176	184			
7	Port Macquarie-Hastings (Unfiltered)	60	40	40	1.3	1.0	L6	2011		73	62	57	2	3	15	6	11	10	1.1	0.0	4.2	89	0.1	92	6,010	6,470	6,670	188	300	141	4	5	204	209	128	125	144	155	157	144	155	157
8	Riverina (Groundwater) (NO SGE)	60	80	80	1.6	1.0	Z4, L3	2011	6	106	135	146	14	14	19	53	55	63	0.2	0.2	1.5	130	0.6	63	12,400	15,900	15,800					239		219	256	330	324	256	330	324		
10	Coffs Harbour	60	70	60	2.2	1.0	Z77, L13	2010	5	69	95	67	9	10	3	73	35	9	0.1	0.1	2.4	168	0.3	230	5,620	6,150	6,530	71	265	9	13	22	127	147	124	126	156	161	169	156	161	169
11	Albury City	50	60	60	2.1	1.0		2006		83	96	88	6	8	10				1.2	0.0	2.3	252	0.4	60	6,480	7,940	7,880	1	4	194	34	31	250	276	210	240	203	250	232	203	250	232
12	Fish River WS (Unfiltered, Bulk Supplier)												4	5	8	1	1	0	-		0.1	412	0.4		4,870	7,380	6,770	4,191	5,905	5,000			186		177							
13	Tamworth Regional	70	80	90	2.8	3.2	Z5, L7	2011	7	106	124	130	13	8	7		1		0.4	0.0	6.6	266	0.5	239	8,220	9,990	10,300	34	195	140	36	40	186	215	169	205	204	258	287	204	258	287
14	Clarence Valley	130	100	110	2.1	1.1				199	126	179	10	12	13				0.2	0.1	3.5	42	0.1	144	6,180	5,920	6,550	153	192	63	2	3	152	145	146	128	137	155	161	139	155	161
15	Eurobodalla	60	50	50	1.1	1.0	Z59	2007	8	119	89	75	12	11	13	131	57	93	0.6	-	10.9	169	0.4	100	3,440	3,570	3,610	77	170		5	6	242	203	184	162	104	116	119	104	116	119
16	Wingecarribee	70	120	130	3.5	1.5	Z10, L12	2010	9	89	139	140	6	6	12	40	53	73	0.3	-	10.2	223	0.6	205	4,110	5,080	5,450	35	98		2	2	169	161	136	128	157	184	200	157	184	200
17	Queanbeyan (Reticulator)	90	120	100	4.6	1.3	RDT44	2007		110	155	98	23	5	2	5	0	0		0.1	6.1	443	0.8	249	3,890	3,830	4,000					1	343	219	173	185	185	172	178	185	172	178
18	Dubbo	70	100	120	3.8	2.5	L44	2011	8	107	168	138	3	4	4	11	27	58	0.2	-	6.7	175	0.4	217	6,100	9,600	8,920	114	260	269	23	22	224	265	206	237	249	365	350	249	365	350
19	Orange	70	60	60	1.7	1.0	L98	2011	9	87	76	74	5	9	9	32	66	73	0.2	0.1	6.4	38	0.1	155	5,890	5,860	7,140	2,218	1,573		29	41	222	231	191	199	160	178	174	160	178	174
20	Goulburn Mulwaree	50	70	80	2.9	1.0	NF	2014	11	65	86	92	11	11	11		276	17	0.7	0.4	10.9	286	0.3	438	2,420	2,830	3,030	119	227	37	55	53	195	210	156	152	138	159	165	138	159	165
21	Bathurst Regional	60	80	60	2.1	1.0	Z5	2007	5	109	121	95	8	5	8	2	1	2	0.3	0.5	2.0	281	0.4	287	6,190	6,990	7,030	967	1,006	1,049	68	56	275	254	218	221	180	257	227	180	257	227
22	Lismore (Reticulator)	50	40	40	1.5	1.0				90	62	61	10	25	37	39	123	32	0.9	0.7	3.9	651	1.8		3,180	3,010	3,190			1	181	163	133		143	151	155	143	151	155		
23	Bega Valley (Unfiltered)	50	140	50	1.0	1.0		2010	7	154	257	102	4	8	9		3	1	1.3	1.6	7.2	300	0.6	162	3,700	4,460	3,770	408	511	66	15	17			160	156	130	139	134	130	139	134
24	Ballina (Reticulator)	120	160	140	5.5	2.5	L7, P, RDT	2010	10	138	172	156	2	12	6		1	1		-	1.9	496																				



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

WATER UTILITY		ASSET MANAGEMENT																		WATER RESOURCE MANAGEMENT																						
		Real Losses (Leakage) (see also columns 2 and 3 of Table 8A, column 8 of Table 8 and columns 10, 13, 15 and 16 of Table 10A)							Non-Revenue Water (NRW)-Potable			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 Day to Average Day Water Supplied	Peak Week to Average Water Supplied	Average Annual Residential Water Supplied									
		(L/d per connection)			(kL/km/d)	(ILI)	Leakage Test (RDT#, WM#, NF#, Z#, L#, P) (See note 6)		see col 9 of Table 8 & Cols 15 & 16 of Table 8A (L/d per connection)			(per 100km of Main)			(per '000 properties)			Mains (% of Total Length)	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, industry excl agric (Including Recycled) (ML) (from Table 8)	(Total Vol Recycled (Urban + Ag Use)/Total Urban Water Supplied (%))	(%)	(%)	From Tables 6 & 8 [(1)÷(22a)] Potable (kL/property)	From Tables 6 & 8 [(1)+(11)+(12a)]÷(22a) Potable+Nonpotable (kL/property)												
		(41) A10	(41a) A11	(41b) A9	Type & Extent (41c)	Year (41d)	Result % (41e)	(41f)	(42) A8	(43) C17	(44)	(45)	(45a)	(46)	(47)	(48)	(49) W11	(50)	(51)	(52)	(53)	(56a) P2.1	(56) W12																			
		2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14		
41	Muswellbrook	60	90	60	2.4	1.2	L12	2010	6	92	117	111	14	33	33	1	2	2	1.8	0.2	2.6	200	0.4	204	2,980	3,220	3,250	1,053	943	29	28	224	287	218	268	287	218	268	287			
42	Corowa	90	130	150	4.8	4.5	Z57	2011	5	141	183	355	9	9	7	38	168	46	1.7	0.1	0.6	196	0.6	152	3,390	4,430	3,990	954	1,000	776	9	4	223	261	202	227	218	302	261	218	302	261
43	Tumut	40	50	70	1.7	1.0	L67	2011	8	65	80	86	5	7	13	11			0.5	0.0	8.9	20	0.1	91	1,170	1,540	1,550	41	156	35	9	7	185	237	154	188	168	216	216	168	221	225
44	Gunnedah (Groundwater)	40	70	70	1.8	1.0	L63	2010	4	81	138	146	11	5	6	5		7	1.7	1.3	10.4	598	1.7	310	2,210	2,670	2,970	653			22	20	164	285		248	207	369	400	207	369	400
45	Upper Hunter	90	90	90	2.3	1.2	Z52	2009	6	142	144	148	21	24	21	24	26	25	1.1	0.7	9.1	968	2.3	309	2,420	2,300	2,390	190		0	0		100			364	371	400	364	371	400	
46	Narrabri (Groundwater)	100	100	290	8.7	7.7	Z18	2011		103	427	295	103	115	118	12		4	2.6	-	-	70	0.2	62	980	2,730	2,880			1	17	201	165		107	223	312	378	223	312	378	
47	Bellingen (Unfiltered)	80	150	190	4.9	2.4	VAD	2010	10	152	218	242	5	5	5		2	2	1.8	0.3	5.3	39	0.1	22	1,180	1,310	1,360	6	3	16			169	191	124	121	149	159	163	149	159	163
48	Leeton	100	110	150	3.3	3.7	L93	2011	9	144	180	205	21	13	9	29	20	14	1.1	2.6	3.8	237	0.6	415	2,310	2,690	2,580			1	1	227	249	186	224	411	487	434	411	487	434	
49	Young (Reticulator)	40	50	50	1.4	1.0	RDT	2011	7	64	68	59	17	13	21	21	17	19	0.7	0.2	6.5	117	0.4	130	960	1,200	1,130	26	78	7	10	276	214	232	204	151	177	173	151	177	173	
50	Cooma-Monaro	40	60	50	1.5	1.0	VAD	2013	6	67	94	90	13		9		3		1.5	5.8	5.8	419	0.7	26	930	1,300	1,210			14	15	255	369	168	211	149	279	250	149	279	250	
51	Forbes	70	100	90	2.5	2.4	NF	2014		116	202	172	16	22	21	113	118	106	0.7	0.2	19.8			420	1,690	2,420	2,410	195	224	322	25	0.4	291	295	244	245	276	382	359	276	382	359
52	Snowy River (Unfiltered)	40	40	80	1.9	1.0	L29, RDT	2011	12	60	68	46	5	7	21		15	26		0.4	1.1	273	0.7	183	700	760	820	65	27	32	4	7	250	264	193	151	82	87	93	82	87	93
53	Berrigan (Dual Supply)	100	100	90	1.5	2.3	L76	2011	9	105	104	96	24	15	14	57	34	14	0.5	0.7	1.4	114	0.6		1,330	1,930	2,550	627	1,174	842	7	21	509	343	346	223	133	142	237	246	441	427
54	Deniliquin	80	150	110	2.8	3.0	L100	2011	6	139	163	149	34	101	58		428	14	1.3	-	1.0	106	0.3		2,170	2,290	1,930	375	373		3	295	306	286	300	390	468	476	390	483	476	
55	Warrumbungle	40	210	230	4.8					67	222	227	18	34	22		1		-	0.1	0.8	23	0.1	268	770	1,090	1,150		4	4	11	3	337	223	192	178	181	214	224	181	215	226
56	Yass Valley	70	80	80	1.5	1.8	RDT94	2011	6	130	157	173	9	5	7	33	44	50		0.6	7.6			22	680	810	880					202	249	116	213	139	165	173	139	165	173	
Medians (% of LWUs basis) for 3,000 to 10,000 Properties		90	2	2	Note: ILI < 1.0 is meaningless & has been increased to 1.0							12	12	14	26	26	19				173		143	58,000	69,300	#N/A			8	8			183	240	231	201	270	245				
LWUs with 1,501 - 3,000 Properties																																										
57	Wellington	90	80	80	2.4	1.3	L91	2010	7	240	234	234	6	5	5	32	31	31	-	0.4	3.4	75	0.2	270	950	960	960					191	267	136	207	191	196	193	191	196	193	
58	Cootamundra (Reticulator)	70	70	70	3.2	1.4	NF	2010	8	78	84	92	50	77	46	8	8	8	-	1.7	5.9			161	670	940	970	78	202		21	46	204	187	177		154	205	216	154	205	216
59	Lachlan	140	120	260	3.0	3.4	RDT	2011	13	201	187	301	5	7		8	9		0.4	0.8	5.0	345	0.8	152	1,680	1,990	2,000	143	147	31	6	6	212	221	173	146	406	541	541	406	554	554
60	Glen Innes Severn	140	140	30	1.0	1.0	L81, P	2010	7	166	157	52	5	2	5	35	34	34		1.1	1.5	398	1.2	118	650	660	550			11	16	195	271	143	184	137	133	147	137	133	147	
61	Liverpool Plains	90	90	100	2.0	1.4	L13	2011	11	120	127	129	18	19	14	63	55	48	-	-	-	2																				



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

WATER UTILITY		ASSET MANAGEMENT																		WATER RESOURCE MANAGEMENT																											
		Real Losses (Leakage) (see also columns 2 and 3 of Table 8A, column 8 of Table 8 and columns 10, 13, 15 and 16 of Table 10A)								Non-Revenue Water (NRW)-Potable			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 Day to Average Day Water Supplied		Peak Week to Average Water Supplied		Average Annual Residential Water Supplied									
		(L/d per connection)			(kL/km/d)	(ILI)	Leakage Test (RDT#, WM#, NF#, Z#, L#, P) (See note 6)			see col 9 of Table 8 & Cols 15 & 16 of Table 8A (L/d per connection)			(per 100km of Main)			(per '000 properties)			Mains (% of Total Length)	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, industry excl agric (Including Recycled) (ML) (from Table 8)			(Total Vol Recycled (Urban + Ag Use)/Total Urban Water Supplied (%)		(%)	(%)	From Tables 6 & 8 [(1)+(22a)] Potable (kL/property)			From Tables 6 & 8 [(1)+(11)+(12a)]÷(22a) Potable+Nonpotable (kL/property)									
		(41) A10	(41a) A11	(41b) A9	Type & Extent (41c)	Year (41d)	Result % (41e)	(41f)	(42) A8	(43) C17	(44)	(45)	(45a)	(46)	(47)	(48)	(49) W11	(50)	(51)	(52)	(53)	(56a) P2.1	(56) W12																								
		2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14				
89	Bogan	90	300	350	7.9	9.7	L99	2011	10	155	680	759	32	19	23	42	47	34	2.1	1.9	4.9	390	0.6	623	720	850	870	100	5	10	6	9	212	213		183	512	379	381	512	379	381					
90	Guyra	50	70	110	2.4	1.5	RDT80	2009	8	81	116	168	8	6	5	26	45	52	-	0.6	2.0	97	0.2		330	520	640						183	240	111	172	175	201	263	175	201	263					
91	Cabonne	50	130	80	1.9	1.8	RDT	2013	10	58	139	97	37	19				7		0.4	1.5			223	280	390	340	112	138	45	59	31	216	361	165	207	106	106	144	119	144	180					
92	Carrathool (Groundwater)	50	60	70	0.2	1.0	Z77	2009	10	90	99	101	21	24	22	58	72	1	3.4	-	5.5	248	5.6	64	850	1,020	860	499	533	504		0	282	451	276		269	447	313	311	532	392					
93	Tumbarumba		40	90	1.8	1.0	Z73	2011	12		135	222	5	8	3	4	26	22	1.5	6.4	1.5	668	1.4	27	290	320	370						230	220	145		214	188	203	214	188	203					
94	Gundagai	90	90	100	3.1	1.2		2011	7	179	180	212	17	17	11	13	13	41		0.5	12.0	19	0.0	75	590	590	820				20	29	234	256		256	392	398	354	392	398	354					
96	Warren (Dual Supply)	90	90	90	2.9	3.2	L94	2011	5	163	168	168	90	103	110	5	10	16		2.1	11.1	141	0.3	497	570	800	790	254	426	442	0	0	216	212	141	152	266	330	302	567	804	797					
97	Bombala	30	30	40	0.8	1.0				55	55	55	33	33	33				-	0.2	2.4	159	0.3	185	340	340	180				21	24	131	223	125	127	180	175	188	363	352	188					
98	Walcha	40	30	60	1.0	4.4	RDT95	2010	11	65	44	63	5	0		2			-	-	-				220	160	190	6	4	5			330	224	202	224	178	107	154	178	107	154					
100	Balranald (Dual Supply)		60	30	0.8	1.0					97	45	10	3	33			66	-	-	1.9			200	560	1,100	580	354	795	419	12	23			103		232	351	133	697	1,396	516					
101	Murrumbidgee (Groundwater)	60	130	180	4.7	6.1	Z78	2011	7	91	221	271	22	59	16					0.1	1.3			44	330	700	780				4	4	261	312		119	398	513	571	398	513	571					
103	Central Darling (Dual Supply)	30	30	30	0.3	1.0		2010		48	48	44	33	18	30	82	14	14		0.3	2.0			200	380	360	400	264	246	276			247	329	221	235	181	179	179	638	632	632					
104	Boorowa		50	160	2.3	2.0		2010	4		53	185	19	15	8	6	3			0.8	7.7	75	0.2	177	190	130	190	11	1		1	1	362	194	318	166	224	161	193	224	163	193					
105	Brewarrina	50	60	130	1.9	2.3	RDT	2012	7	111	131	218	58	68	55	9	6	20	2.6	1.6	83.9	1089	2.9	324	840	780	790	550	400	400	26	14	126	207	111	133	356	552	581	1,530	1,103	1163					
106	Jerilderie (Dual Supply)	40	40	50	0.6	1.0				58	73	84	12	7	12	21	20	6	-	1.2	1.6			107	350	510	560	243	372	358	1	9	129	270		116	183	229	246	824	1,242	1187					
Medians (% of LWUs basis) for 200 to 1,500 Properties		90	2	2	Note: ILI < 1.0 is meaningless & has been increased to 1.0						22	18	22	21	13	15	2				151		169	12,000	14,500	#N/A				12	12					209	215	224	302	440	392						
Median All LWUs (% of LWUs basis)		Leakage	80	2.1	1.2	Main Breaks per 100km of main					12	Interruptions				16	Mains				0.7	Renewals 0.4% of CRC					Median % Water Recycled				10%	Av Annual Res Water Supplied						235									
Median All LWUs (Statewide basis)		70											10				50	Rehabilitations				0.5%																									173
Totals for all LWUs (excluding bulk suppliers)		75 LWUs reported recent leakage testing															#N/A										Non-potable Water (Urban) (incl recycled) 38,000 ML																				

+ There are 11 LWUs with a dual water supply in 2013-14; Balranald, Berrigan, Bourke, Central Darling, Hay, Jerilderie, Murray, Wakool, Walgett, Warren, Wentworth.  
For these 11 LWUs, note 8 on page 33 reports the approximate total potable annual residential water supplied per property, which is shown in column 56a above. This is lower than the value reported in Column 56 as it is calculated only for those towns with a dual supply.

- Notes:**
- Table 10A shows the results for leakage testing for 68 LWUs under the Regional NSW Water Loss Management Program (WLMP) in columns 10 (before leakage detection and repair) and 13 (after leakage detection and repair). Table 10A shows that following leakage detection and repair, the average leakage for these utilities has decreased from 16% to 10% of the potable water supplied (from 164 L/d to 92 L/d per connection). Column 41c above shows the type and extent of leakage testing (Note 6 below) by each utility. This column shows that the leakage testing covered 90% of the service connections for Coffs Harbour (77% of the connections were covered by zoning and flow metering (Z77) and 13% were covered by leakage detection and repair (L13)). Similarly for Mid-Western Regional, 59% of the connections were covered by leakage detection and repair (L59). Column 41d shows the latest reported year of leakage testing for the utility and has been updated from column 18 of Table 10A. In addition, where a utility has not previously reported its result for column 41e, the result in column 13 of Table 10A has been included, subject to the NSW Office of Water's acceptance test in the next paragraph.  
However, the zones covered for many other utilities was a small percentage, eg. only 9% of the service connections for Byron (Z9) and 5% for Wyong (Z5). Leakage results of under 6% for a utility have only been accepted as a valid indicator of the utility's performance by the NSW Office of Water if the leakage testing covered at least 30% of the utility's service connections. The accepted results are shown in column 41e above and indicate the following 13 utilities have valid leakage test results of under 6% (Bathurst, Boorowa, Brewarrina, Coffs Harbour, Corowa, Griffith, Gunnedah, Moree Plains, Murray, Uralla, Warren, Wyong and Young).
  - The reported Real Losses shown above for NWI indicator A10 (column 41 above) 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 above) for comparison purposes. LWUs with <20 connections/km should use Real Losses (L/km water main/day) (column 41a above) for comparison purposes.
  - Leakage** relates only to Total Urban Water Supplied (potable) and excludes bulk water exports and non-potable water supplied. **Non Revenue Water** (NRW) comprises **Real Losses** (mostly leakage), **Apparent Losses** (under-registration of customer meters and illegal use) and **Unbilled Water** supplied (eg. mains flushing).  
As indicated on page 33, Non-Revenue Water (L/connection/d) should be used for tracking system performance over time. Use of Unaccounted for water (UFW) is not appropriate (see page 33) and should no longer be used by LWUs.
  - 75 LWUs have reported carrying out recent leakage testing and/or leakage detection and repair (columns 41c, 41d, 41e above).
  - Reservoir Drop Test (**RDT#**), Waste Metering (**WM#**), Night Flow Metering (**NF#**), Zoning and Flow Metering (**Z#**), Leakage Detection and Repair (**L#**), Pressure Reduction (**P**), where # is the percentage of service connections covered.  
Eg. L95 for Gwydir (column 41c above) indicates that the leakage detection and repair project carried out covered 95% of the utility's service connections.



Table 10A: Estimated Real Water Losses from Regional NSW Water Loss Management Program

WATER UTILITY		Zone	Utility Connections 2009-10 (No.)	Zone Connections	Connection Ratio Zone:Utility	ILI Before (6) A9	Utility Potable Annual Water Supplied (ML) 2009-10 (7) W11.1	Estimated Water Loss - Before			Estimated Water Loss - After			Annual Water Savings (ML) (14)	Test (15)	Test Year (16)	Page (17)	Comments (MNF refers to Minimum Night Flow) (18)
								(L/c/d) (8) A10	(ML) (9)	(%) (10)	(L/c/d) (11) A10	(ML) (12)	(%) (13)					
29	Armidale Dumaresq	Kentucky St	7740	400	5%	2.7	2594	136	19.9	15%	65	9.5	7%	10.4	L5	2008	20	
	Ballina	Coastal Strip		450	4%	2.4		186	30.6	18%	131	21.5	13%	9.1				Pressure managed, ILI hasn't changed Wide Bay Water job - big leak found
	Ballina	Jameson Ave		370	3%	18.8		905	122	89%	54	7.3	5%	115				
24	Ballina	2 Zones	10960	820	7%		4050	511	153	50%			10%	124	L7, P	2010	22	
21	Bathurst	Eglington	13980	630	5%	1.4	5999	75	17.3	6%					Z5	2007	24	Projected water savings insignificant
	Bega Valley	Quaama		97	1%	0.3		17	0.6	2%								Tiny zone, MNF of 0.05 L/s measured Tiny zone, MNF of 0.1 L/s measured Tiny zone, MNF of 0.1 L/s measured
	Bega Valley	Wallaga		105	1%	0.5		24	0.9	3%								
	Bega Valley	Pambula South		160	1%	0.4		19	1.1	2%								
	Bega Valley	Pambula North		298	3%	5.4		365	39.7	43%								
	Bega Valley	Eden North		407	4%	0.4		24	3.6	3%								
	Bega Valley	Pambula Beach		507	4%	4.8		292	54.1	34%								
	Bega Valley	Eden South		907	8%	0.7		46	15.2	5%								
	Bega Valley	Bega		2000	17%	1.5		83	60.9	10%								
	Bega Valley	Tura		589	5%	4.2		192	41.3	22%	16	3.5	2%	37.8				
	Bega Valley	Merimbula		1709	15%	3.7		241	151	28%	110	68.6	13%	82.0				
23	Bega Valley	10 Zones	11530	6779	59%		3600	149	368	17%			12%	120	WM20, Z39	2008	27	
	Bellingen	Yellow Rock		140	3%	0.8		31	1.6	4%	27	1.4	3%	0.2				PM only PM only
	Bellingen	Newry Island		130	3%	1.0		76	3.6	9%	13	0.6	2%	3.0				
	Bellingen	Urunga		923	22%	3.6		89	30.1	11%	69	23.2	8%	6.9				Estimated reduction for leak results Estimated reduction for leak results Includes trunk and retic leak detection
	Bellingen	Mylestom		185	4%	3.8		178	12.0	22%	43	2.9	5%	9.1				
	Bellingen	North Bellingen PMZ		670	16%	1.9		137	33.4	17%	28	6.9	3%	26.5				
47	Bellingen	5 Zones	4260	2048	48%		1279	108	80.7	13%			6%	45.7	L48, P	2011	29	
	Berrigan	Barooga		671	21%	1.3		29	7.2	4%				9.4				
	Berrigan	Berrigan		470	14%	2.1		73	12.6	11%	19	3.2	3%	28.4				
	Berrigan	Finley		1018	31%	3.5		116	43.2	17%	40	14.8	6%	91.4				
	Berrigan	Tocumwal		974	30%	9.3		389	138	57%	131	46.7	19%					
53	Berrigan	4 Zones	3250	3133	96%		811	176	201	26%			9%	129	L76	2011	30	
89	Bogan	Nyngan	1080	1074	99%	16.6	582	512	201	35%	351	138	24%	63.1	L99	2011	32	Interim result
105	Brewarrina	Brewarrina	540	435	81%	12.8	226	384	61.0	34%					RDT81	2009	36	No project undertaken
	Byron	Kolora Way DMA		880	9%	0.7		46	14.7	5%								No impact from leak repairs here
	Byron	Orana Rd DMA		240	3%	2.4		159	13.9	19%	58	5.1	7%	8.8				
	Byron	Balemo Dr DMA (Net)		480	5%	6.7		455	79.7	54%	20	3.5	2%	76.2				Updated flow results August 11
27	Byron	3 Zones	9590	1600	17%		2954	185	108	22%			5%	85.0	Z9, L8	2009	38	
91	Cabonne	Molong High & Low	1110	780	70%	4.1	232	225	64.1	39%	70	20.0	12%	44.1	L70	2011	40	
	Carrathool	Goolgowi Raw		127	12%	5.9		382	17.7	15%								Lack of Council funds to proceed Lack of Council funds to proceed Lack of Council funds to proceed
	Carrathool	Goolgowi Potable		143	13%	0.9		50	2.6	2%								
	Carrathool	Hillston		553	52%	9.3		276	55.8	11%								
92	Carrathool	3 Zones	1070	823	77%		1028	253	76.1	10%			10%	0.0	Z77	2010	40	
	Clarence Valley	Iluka & Woody Head		1140	5%	0.5		35	14.5	4%								No leak detection done as ILI low already
	Clarence Valley	Maclean		1629	8%	1.4		83	49.1	10%	61	36.4	7%	12.7				
	Clarence Valley	Yamba & surrounds		3613	17%	2.1		134	176	16%	73	96.7	9%	79.4				Big leak found
	Clarence Valley	Grafton		7878	37%	3.5		329	945	40%	171	492	21%	453				
14	Clarence Valley	4 Zones	21430	14260	67%		6503	228	1185	27%			15%	545	L61, Z5	2011	44	
	Coffs Harbour	Sawtell		1433	6%	0.4		25	12.9	3%								No significant leakage No significant leakage Council not willing to pursue this zone No significant leakage No significant leakage No significant leakage Total predicted savings low - 2.2ML/y
	Coffs Harbour	Toormina		4669	21%	0.5		18	30.3	2%								
	Coffs Harbour	South Coffs		4148	18%	1.6		95	143	12%								
	Coffs Harbour	North Coffs - Red Hill		4978	22%	0.8		42	75.9	6%								
	Coffs Harbour	Sandy Beach		745	3%	0.7		30	8.1	4%								
	Coffs Harbour	Sapphire Beach		552	2%	0.1		5	1.0	1%								
	Coffs Harbour	Moonee		207	1%	1.7		78	5.9	10%								
	Coffs Harbour	Emerald Beach		693	3%	1.2		66	16.7	9%								
	Coffs Harbour	North Coffs - Macauley		3047	13%	0.7		41	45.2	5%	16	17.9	2%	27.2				
10	Coffs Harbour	9 Zones	22620	20472	91%		6273	45	339	6%			5%	27.2	Z77, L13	2010	48	
	Cooma-Monaro	CH Yallakool		285	8%	2.5		146	15.2	16%								
	Cooma-Monaro	Pine Range		520	14%	1.8		106	20.1	12%								
	Cooma-Monaro	Church Hill South		1053	28%	2.3		141	54.0	16%	91	35.0	10%	19.0				
	Cooma-Monaro	Snowy Reservoir		1166	31%	2.0		131	55.8	15%	39	16.7	4%	39.1				
50	Cooma-Monaro	4 Zones	3780	3024	80%		1227	131	145	15%			9%	58.1	L59	2011	50	
58	Cootamundra	Cootamundra	3010	2790	93%	2.0	707	138	140	21%	85	86.4	13%	53.7	L93	2010	52	

Table 10A: Estimated Real Water Losses from Regional NSW Water Loss Management Program

WATER UTILITY		Zone	Utility Connections 2009-10 (No.)	Zone Connections	Connection Ratio Zone:Utility	ILI Before (6) A9	Utility Potable Annual Water Supplied (ML) 2009-10 (7) W11.1	Estimated Water Loss - Before			Estimated Water Loss - After			Annual Water Savings (ML) (14)	Test (15)	Test Year (16)	Page (17)	Comments (MNF refers to Minimum Night Flow) (18)
								(L/c/d) (8) A10	(ML) (9)	(%) (10)	(L/c/d) (11) A10	(ML) (12)	(%) (13)					
42	Corowa	Howlong		952	19%	0.8		35	12.2	3%								
	Corowa	Corowa LL		1844	38%	1.9		68	45.4	6%								
	Corowa	2 Zones	4900	2796	57%		2183	56	57.6	5%			5%	0.0	Z57	2008	54	
39	Cowra	ICL1		18	0.3%	NA		0	0.0	0%								New Zone with zero MNF. ILI calc not possible No major change in night flow
	Cowra	Low Level		1746	32%	1.2		89	56.4	6%								
	Cowra	High & Intermediate		2459	45%	4.2		221	198	16%	171	154	12%	44.1				
	Cowra	3 Zones	5470	4223	77%		2790	165	254	12%			10%	44.1	L42	2011	58	
54	Deniliquin	Deniliquin	3560	3613	100%	3.9	2430	151	199	8%	118	155	6%	44.2	L100	2011	60	High industrial usage overnight
18	Dubbo	Spears Drive		344	2%	1.0		38	4.7	3%	5	0.6	0%	4.1				Very low meter readings Pressure managed
	Dubbo	Wheeler's Lane		861	6%	4.3		229	71.8	16%	56	17.6	4%	54.2				
	Dubbo	Snake Pit		2800	19%	2.8		125	128	9%	14	14.0	1%	114				
	Dubbo	Myall/Sheraton		267	2%	6.0		357	34.8	25%	260	25.3	18%	9.5				
	Dubbo	Websdale		835	6%	2.5		175	53.2	12%	140	42.7	10%	10.5				
	Dubbo	Luna Park		622	4%	10.7		566	129	40%	399	90.7	28%	37.8				
	Dubbo	Davidson		763	5%	6.7		422	117	30%	252	70.1	18%	47.3				
	Dubbo	7 Zones	14830	6492	44%		7692	227	538	16%			8%	277	L44	2011	64	
26	Essential Water	Broken Hill South	10370	1867	18%	0.9	4747	28	19.1	2%					WM18	2011	56	No significant leakage
15	Eurobodalla	Mystery Bay		139	1%	0.5		32	1.6	5%								
	Eurobodalla	North Narooma/HL		300	2%	0.6		38	4.2	6%								
	Eurobodalla	Bodalla		301	2%	1.0		91	10.0	15%								
	Eurobodalla	Moruya Heads		464	3%	0.9		51	8.7	8%								
	Eurobodalla	Lilli Pilli		569	3%	0.1		3	0.7	1%								
	Eurobodalla	Long Beach		670	4%	0.9		36	8.7	6%								
	Eurobodalla	South Narooma		847	5%	0.1		8	2.6	1%								
	Eurobodalla	Denhams Beach Res		862	5%	0.5		30	9.5	5%								
	Eurobodalla	Surf Beach Res Low		1042	6%	3.0		129	49.2	21%								
	Eurobodalla	Moruya T2		1162	6%	1.3		86	36.4	14%								
	Eurobodalla	Mossy Point		1313	7%	0.5		31	14.8	5%								
	Eurobodalla	Dalmeny		1445	8%	1.1		42	22.0	7%								
	Eurobodalla	Tuross Heads		1466	8%	0.4		23	12.3	4%								
	Eurobodalla	Catalina 2		3471	19%	1.1		79	101	13%	65	82.9	11%	17.7				
	Eurobodalla	14 Zones	17880	14051	79%		4034	55	281	9%			8%	17.7	Z59	2007	66	
51	Forbes	Forbes	3540	3433	97%	5.2	1793	296	371	21%	155	194	11%	177	RDT, L97	2011	68	Estimated post project MNF
60	Glen Innes Severn	Glen Innes	3320	2700	81%	1.4	655	129	127	24%	37	36.1	7%	91.1	L81, P	2010	70	4 zones created, 2 pressure managed
1	Gosford	Patonga		244	0.4%	8.8		717	63.9	115%	9	0.8	1%	63.1				Pressure reduced from 74mH to 50m Pressure reduced from 78mH to 50m
	Gosford	St Huberts		530	1%	3.0		219	42.4	35%	8	1.5	1%	41.0				
	Gosford	2 Zones	59510	774	1%		13594	376	106	60%			1%	104	L1, P	2011	72	
20	Goulburn Mulwaree	Goulburn	9100	6973	77%	4.7	2213	296	752	44%	70	177	10%	575	L77	2011	74	
80	Greater Hume	Culcairn		600	34%	2.9		89	19.4	12%								
	Greater Hume	Jindera		675	39%	0.5		81	20.0	11%								
	Greater Hume	2 Zones	1740	1275	73%		488	85	39.4	11%			11%	0.0	L73, RDT	2008	76	
30	Griffith	DMA 6 South		3282	37%	2.8		282	337	13%	71	85.1	3%	252				
	Griffith	Wyangan		251	3%	1.9		388	35.5	18%	78	7.1	4%	28.4				
	Griffith	Upper Collina		737	8%	2.3		116	31.2	5%	22	6.0	1%	25.2				
	Griffith	3 Zones	8970	4270	48%		6988	259	404	12%			3%	306	L48, P	2011	78	
44	Gunnedah	Low Zone		1210	27%	1.2		49	21.4	3%								No significant leakage Reservoir repairs were expensive
	Gunnedah	Mid Zone		2826	63%	1.4		98	101	7%	60	62.1	4%	39.3				
	Gunnedah	2 Zones	4460	4036	90%		2299	83	123	6%			4%	39.3	L63	2011	84	
90	Guyra	Guyra	1120	900	80%	1.4	491	92	30.1	8%					RDT80	2009	86	Lack of resources
81	Gwydir	Bingara		872	52%	2.3		142	45.3	14%	105	33.5	10%	11.8				One leak already found and fixed
	Gwydir	Warialda		721	43%	11.5		458	121	45%	19	5.0	2%	116				
	Gwydir	2 Zones	1670	1593	95%		626	285	166	28%			6%	127	L95	2011	88	
76	Harden	Jugiong Low		70	4%	NA		0	0.0	0%								MNF is zero, ILI calc not possible MNF is zero, ILI calc not possible MNF is zero, ILI calc not possible
	Harden	Jugiong High		104	6%	NA		0	0.0	0%								
	Harden	Galong		214	12%	NA		0	0.0	0%								
	Harden	Harden		800	43%	1.6		118	34.3	11%	101	29.6	9%	4.7				
	Harden	4 Zones	1850	1188	64%		747	79	34.3	7%			6%	4.7	L43	2011	90	
86	Hay	Hay potable		1200	49%	3.9		102	44.6	23%	66	28.8	15%	15.8				
	Hay	Hay raw		1200	49%	4.1		131	57.4	30%	37	16.4	9%	41.0				
	Hay	2 Zones	2430	2400	99%		388	116	102	27%			12%	56.8	L98	2011	92	



Table 10A: Estimated Real Water Losses from Regional NSW Water Loss Management Program

WATER UTILITY		Zone	Utility Connections 2009-10 (No.)	Zone Connections	Connection Ratio Zone:Utility	ILI Before (6) A9	Utility Potable Annual Water Supplied (ML) 2009-10 (7) W11.1	Estimated Water Loss - Before			Estimated Water Loss - After			Annual Water Savings (ML) (14)	Test (15)	Test Year (16)	Page (17)	Comments (MNF refers to Minimum Night Flow) (18)
								(L/c/d) (8) A10	(ML) (9)	(%) (10)	(L/c/d) (11) A10	(ML) (12)	(%) (13)					
25	Kempsey	Kempsey	11370	11500	100%		3734	152	638	17%	146	613	16%	25.2	L100	2008	94	No meters were installed during this project, so there is no mechanism for monitoring water loss
48	Leeton	Leeton	4340	4027	93%	8.5	2956	274	403	15%	161	236	9%	167	L93	2011	96	Large industrial component
61	Liverpool Plains	Wallabadah		137	5%	3.0		148	7.4	15%	22	1.1	2%	6.3				Updated June 2011
	Liverpool Plains	Willow Tree		190	7%	16.9		880	61.0	89%	198	13.7	20%	47.3				
	Liverpool Plains		2540	327	13%		920	573	68.4	58%			12%	53.6	L13	2011	102	
5	MidCoast Water	Hawks Nest	32910	2346	7%	2.3	9163	175	150	23%	122	105	16%	45.3	P7	2010	106	Pressure managed only, no leak detection
32	Mid-Western	Mudgee High		1664	26%	1.3		132	80.2	12%	79	48.1	7%	32.1				
	Mid-Western	Mudgee Low		2147	33%	2.2		132	103	12%	67	52.7	6%	50.8				
	Mid-Western		6490	3811	59%		2536	132	184	12%			7%	82.8	L59	2011	108	
38	Moree Plains	Moree	4790	4554	95%	4.4	3183	129	215	7%	56	93.2	3%	122	L95	2011	110	
65	Murray	Moama potable		2263	86%	0.6		20	16.2	3%								
	Murray	Mathoura potable		424	16%	4.4		111	17.2	15%	30	4.6	4%	12.6				
	Murray		2640	2687	100%		711	34	33.4	5%			3%	12.6	Z86, L16	2011	112	
101	Murrumbidgee	Coleambally		373	38%	5.4		176	24.0	9%								
	Murrumbidgee	Darlington Point		398	40%	1.9		72	10.4	4%								
	Murrumbidgee		990	771	78%		672	122	34.4	7%			7%	0.0	Z78	2010	114	
41	Muswellbrook	Denman		620	11%	4.9		182	41.1	15%	70	15.8	6%	25.3				
	Muswellbrook	Sandy Hollow		60	1%	5.5		315	6.9	26%	87	1.9	7%	5.0				
	Muswellbrook		5410	680	13%		2385	193	48.0	16%			6%	30.3	L12	2010	116	
34	Nambucca	North Macksville		720	12%	1.3		30	7.8	4%								No significant leakage No significant leakage No significant leakage
	Nambucca	Valla Beach		500	9%	0.4		9	1.6	1%								
	Nambucca	Scotts Head		615	11%	1.7		37	8.3	5%								
	Nambucca	South Macksville		440	8%	1.6		79	12.7	11%	42	6.7	6%	6.0				
	Nambucca	Bowraville		504	9%	2.8		86	15.9	12%	35	6.5	5%	9.4				
	Nambucca	Nambucca Heads		2502	43%	2.9		101	91.8	14%	51	46.8	7%	45.0				
	Nambucca		5820	5281	91%		1534	72	138	10%			6%	60.4	Z32, L59	2010	118	
46	Narrabri	Mooloolbar St	3980	716	18%	2.2	2295	63	16.4	4%					Z18		120	No significant leakage
62	Narromine	Narromine	2220	1758	79%	4.6	1111	145	92.7	11%	81	51.7	6%	41.0	L79	2011	124	After data estimated
83	Oberon	HL & LL combined	1360	1314	97%	5.7	568	223	107	19%	78	37.6	7%	69.4	L97	2011	126	
19	Orange	Orange	15370	15055	98%	2.2	3896	152	836	22%	61	335	9%	501	L98	2011	128	
71	Palerang	Captains Flat East		250	12%	0.3		26	2.4	4%								
	Palerang	Braidwood		692	34%	0.6		22	5.5	3%								
	Palerang	Bungendore		1051	52%	2.9		113	43.5	17%	55	21.1	8%	22.4				
	Palerang		2030	1993	98%		490	71	51.4	11%			6%	22.4	L91	2011	130	
36	Parkes	East Zone		615	9%	3.1		232	52.1	8%								No significant results. Costs in High Zone
	Parkes	High Zone		1004	15%	4.3		227	83.2	8%	29	10.6	1%	72.6				
	Parkes		6500	1619	25%		6606	229	135	8%			4%	72.6	Z9, L15	2011	132	
7	Port Macquarie-Hastings	Mill Hill	26210	1486	6%	3.0	6391	134	72.9	20%	94	50.9	14%	22.0	L6	2011	134	
17	Queanbeyan	Crest		4251	37%	4.8		288	447	28%								Project not undertaken Project not undertaken Project not undertaken
	Queanbeyan	Greenleigh		235	2%	1.9		124	10.6	12%								
	Queanbeyan	East Queanbeyan		574	5%	2.3		223	46.7	22%								
	Queanbeyan		11470	5060	44%		4279	273	504	27%			27%	0.0	RDT44	2007	136	
33	Richmond Valley	Broadwater-Rileys		282	4%	2.2		108	11.1	8%								Leak detection/repairs done but no savings Leak detection/repairs done but no savings
	Richmond Valley	Woodburn		303	4%	1.6		100	11.1	8%								
	Richmond Valley	Coraki		525	8%	3.6		96	18.3	8%	67	12.9	5%	5.4				
	Richmond Valley	South Casino		1494	22%	1.2		57	31.3	5%	32	17.4	3%	13.9				
	Richmond Valley	Evans Head		1205	18%	2.5		91	40.1	7%	56	24.7	4%	15.4				
	Richmond Valley	North Casino		3051	45%	3.4		167	186	13%	126	140	10%	45.7				
	Richmond Valley		6850	6860	100%		3180	119	297	9%			7%	80.4	L92	2011	138	
8	Riverina Water	Lockhart		480	2%	3.9		122	21.3	8%								No savings achieved from leak repairs?
	Riverina Water	Henty		525	2%	0.8		46	8.8	3%								
	Riverina Water	Morven		35	0%	0.9		791	10.1	55%								
	Riverina Water	Uranquinty		308	1%	0.6		87	9.8	6%								
	Riverina Water	Boree Creek		54	0%	6.3		167	3.3	12%	56	1.1	4%	2.2				
	Riverina Water	Oakland		171	1%	4.2		181	11.3	13%	55	3.4	4%	7.9				
	Riverina Water	Walla Walla		263	1%	2.7		74	7.1	5%	13	1.2	1%	5.9				
	Riverina Water	Gregadoo		278	1%	1.8		208	21.1	14%	161	16.3	11%	4.8				
	Riverina Water		30110	2114	7%		15853	120	92.8	8%			6%	20.8	Z4, L3	2011	140	

Table 10A: Estimated Real Water Losses from Regional NSW Water Loss Management Program

WATER UTILITY		Zone	Utility Connections 2009-10 (No.)	Zone Connections	Connection Ratio Zone:Utility	ILI Before (6) A9	Utility Potable Annual Water Supplied (ML) 2009-10 (7) W11.1	Estimated Water Loss - Before			Estimated Water Loss - After			Annual Water Savings (ML) (14)	Test  (15)	Test Year (16)	Page (17)	Comments  (MNF refers to Minimum Night Flow)  (18)
								(L/c/d) (8) A10	(ML) (9)	(%) (10)	(L/c/d) (11) A10	(ML) (12)	(%) (13)					
3	Shoalhaven	Berry		899	2%	3.4		356	117	46%	221	72.5	29%	44.2		2008		
	Shoalhaven	Shoalhaven Heads		1287	3%	2.9		143	67.1	18%	59	27.7	8%	39.4		2008		
	Shoalhaven	FM 23 (Nowra)		1919	4%	1.5		122	85.2	16%	58	40.4	7%	44.8		2010		
	Shoalhaven	FM 14 (Nowra CBD/Manildra)		2807	6%	4.7		390	400	50%	326	334	42%	66.2		2010		
	Shoalhaven	4 Zones	45670	6912	15%		12902	265	669	34%			24%	195	L15	2010	144	
52	Snowy River	High Level		940	34%	1.7		110	37.8	13%								
	Snowy River	Berridale		541	20%	2.5		173	34.2	21%	62	12.2	7%	22.0				
	Snowy River	Jindabyne Low Level		245	9%	17.3		1230	110	146%	172	15.4	20%	94.6				
	Snowy River	3 Zones	2750	1726	63%		846	289	182	34%			12%	117	L29, RDT	2011	146	Big leak found
13	Tamworth	Barraba		1004	5%	2.2		86	31.6	7%								
	Tamworth	Manilla		1339	7%	3.6		164	80.1	12%	89	43.5	7%	36.6				
	Tamworth	2 Zones	19430	2343	12%		9354	131	112	10%			7%	36.6	Z5, L7	2011	148	
68	Tenterfield	Tenterfield	2050	1740	85%	1.7	418	90	56.9	16%	35	21.9	6%	35.0	L85	2010	150	
93	Tumbarumba	Tumbarumba	1100	800	73%	0.7	302	87	25.3	12%					Z73	2009	152	
43	Tumut	Brungle		47	1%	NA		0	0.0	0%								MNF is zero, ILI calc not possible
	Tumut	HL		150	3%	0.6		44	2.4	6%								
	Tumut	Talbingo		320	7%	NA		0	0.0	0%								
	Tumut	Adelong		450	9%	0.6		43	7.1	6%								
	Tumut	Tumut LL		762	16%	2.1		131	36.3	18%	108	30.0	15%	6.3				
	Tumut	Batlow LL		447	9%	2.4		153	25.0	21%	105	17.2	14%	7.8				
	Tumut	Tumut ML		2071	42%	1.1		71	53.3	10%	37	28.1	5%	25.2				
	Tumut	7 Zones	4900	4247	87%		1302	80	124	11%			8%	39.3	L67	2011	154	
	Tweed	Hartigans Hill		740	3%	0.3		13	3.6	1%								No significant leakage, no project undertaken
6	Tweed	Walmsleys		1807	8%	0.9		41	26.8	4%								No significant leakage, no project undertaken
	Tweed	Razorback		2107	9%	2.7		174	134	16%	115	88.2	10%	45.6				
	Tweed	Cudgen High Level		100	0%	26.3		2260	82.5	204%	200	7.3	18%	75.2				Big leak found
	Tweed	4 Zones	23880	4754	20%		9674	142	247	13%			7%	121	L9, RDT	2010	156	
	Tweed																	
45	Upper Hunter	Scone	3900	2031	52%	1.8	2910	121	89.6	6%					Z52	2009	158	Project not completed
85	Uralla	Uralla	1160	1308	100%	1.8	300	94	45.0	15%	18	8.8	3%	36.2	L100	2011	162	
98	Walcha	Walcha	930	880	95%	0.8	213	68	21.9	11%					RDT95	2009	164	No significant leakage
96	Warren	Warren	1000	944	94%	7.2	385	139	47.9	13%	51	17.7	5%	30.3	L94	2011	166	
57	Wellington	Wellington	3080	2800	91%	2.6	1184	180	184	17%	69	70.4	7%	114	L91	2010	168	
16	Wingecarribee	Kimberley		72	0%	0.5		61	1.6	8%								
	Wingecarribee	Old Berrima		171	1%	0.9		66	4.1	8%								
	Wingecarribee	New Berrima		271	2%	0.4		27	2.7	4%								
	Wingecarribee	Bundanoon		1241	7%	0.6		36	16.1	5%								
	Wingecarribee	Mt Gil HL		201	1%	3.1		327	24.0	42%	70	5.1	9%	18.9				
	Wingecarribee	Reservoir St		84	0%	8.1		564	17.3	73%	444	13.6	57%	3.7				
	Wingecarribee	Spencer St		860	5%	1.5		108	33.8	14%	57	18.0	7%	15.8				
	Wingecarribee	Burrawang		840	5%	3.1		303	93.0	39%	116	35.6	15%	57.4				
	Wingecarribee	8 Zones	16920	3740	22%		4789	141	193	18%			9%	95.8	Z10, L12	2010	170	
2	Wyong	Gwandalan	57050	2666	5%	7.9	12960	406	395	65%					Z5		172	Project not undertaken
	Wyong*	Warnervale trunk main		1		6.9		26400	9.6		7300	2.7		7.0				Trunk Main - Single connection
56	Yass Valley	O'Connel A		320	11%	0.5		33	3.9	4%								
	Yass Valley	O'Connel B		140	5%	1.9		174	8.9	22%								
	Yass Valley	Yass LL		1977	67%	0.4		23	16.3	3%								
	Yass Valley	Moreton LL		350	12%	1.9		125	16.0	16%								
	Yass Valley	4 Zones	2950	2787	94%		838	44	45.1	6%			6%	0.0	RDT94	2009	174	
49	Young	Young	3960	3180	80%	1.5	1523	89	104	8%	34	39.2	3%	64.5	L80	2011	176	
Totals			644,800	238,500	37%		224,600	154	13,400	16%	92	8,000	10%	5,500	68 LWUs			

Table 10A: Estimated Real Water Losses from Regional NSW Water Loss Management Program

Notes

1. The estimated real water losses in Table 10A are from the Water Loss Management Program (WLMP) for Regional NSW Water Utilities – Final Progress and Evaluation Report 2006-2011, Australian Government, NSW Water Directorate and Local Government and Shires Associations of NSW.
2. Columns 1, 2, 4, 6, 8 and 18 of Table 10A have been obtained from Appendices 3 and 4 of the above WLMP Report. Columns 11, 14 and 15 have been obtained from Appendix 4 of the Report. Column 17 has been obtained from Appendix 1 of the Report. Columns 3 and 7 have been obtained from Table 9 (Column 18a) and Table 8 (Column 10) of the *2009-10 NSW Water Supply and Sewerage Benchmarking Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Columns 5, 9, 10, 12 and 13 have been calculated as indicated in Note 6 below. Columns 15 and 16 show the type, the extent of leakage testing (Note 8 below) carried out by each utility and the year of testing and have been determined from Appendices 1, 3 and 4 of the WLMR Report and Column 5.  
  
Eg. for Clarence Valley, Column 15 indicates leakage detection and repair (L) was carried out for 3 zones covering 61% of the utility's service connections (calculated from columns 3 and 4 -  $[(1629 + 3613 + 7878) / 21430 = 61\%]$  and is shown as L61) and that zoning and district metering was carried out for a zone covering 5% of the connections (shown as Z5) – Column 15 thus shows L61, Z5 for Clarence Valley, resulting in a coverage of 67% (column 3). Similarly, for Coffs Harbour, the testing carried out is shown in column 15 as Z77 and L13, and the overall estimated water loss is shown as 5% in column 13. This is calculated as the values in column 9 for the first 8 Zones plus the value in column 12 for Zone 9, divided by the product of the totals in columns 7 and 5, ie.  $(12.9 + 30.3 + 143.2 + 75.9 + 8.1 + 1.0 + 5.9 + 16.7 + 17.9) / (6273 \times 0.91) = 5.4\%$ .
3. Column 15 shows that leakage testing has been carried out for a total of 68 utilities. The estimated total annual water loss (ML) from the 110 zones where water loss management was undertaken (ie. leakage detection and repair and/or pressure reduction), eg. the Kentucky St zone for Armidale, is shown in Column 12. The estimated water losses **after** leakage detection and repair, as a percentage of the annual potable water supplied are shown in Column 13. The estimated water losses **before** leakage detection and repair are shown in columns 8 to 10. Note that columns 8 to 10 show the estimated water losses for 75 zones for a total of 27 water utilities, for which leakage detection and repair was not undertaken, mostly because it was not warranted as the magnitude of the identified water losses was small, eg. 8 such zones are reported above for Coffs Harbour, each with losses of 1% to 12% (column 10). However, also included are some zones with high leakage levels where a leakage reduction project was not undertaken, eg. Bega - Pambula South and Pambula Beach due to high project costs and Brewarrina due to lack of resources.  
  
Taking the Kentucky Street zone in Armidale as an example, the table shows that the leakage was 136 L/c/d, 19.9ML and 15% of the potable water supplied (columns 8 to 10 above) before undertaking water loss management and that the leakage was reduced to 65L/c/d, 9.5ML and 7% of the potable meter supplied (columns 11 to 13) after completion of leakage detection and repair. Similarly, the final row of this table shows that overall leakage for the zones examined for the 68 utilities was 154L/c/d, 13,400ML and 16% of the potable water supplied (columns 8 to 10) before undertaking water loss management and that the leakage was reduced to 92L/c/d, 8,000ML and 10% of the potable water supplied (columns 11 to 13) after completion of leakage detection and repair and/or pressure reduction. The total water saving was 5,500ML (with rounding, column 14).
4. Harden (3 Zones) and Tumbarumba (2 Zones) obtained a Minimum Night Flow (MNF) of zero. The water loss for these zones has therefore been shown as "0" in columns 8 to 10 above.
5. Results shown in columns 4, 8, 11 and 14 to 18 for Kempsey are from page 94 of Appendix 1 of the WLMR. Volumes for the other columns have been calculated by the NSW Office of Water in accordance with Note 6 below.
6. Calculations for columns:  $(10) = [(9) \times 100] / (7)$ .  $(13) = [(11) \times 100] / (7)$ .  $(9) = (8) \times (3) \times 365 / 10^6$ .  $(12) = (11) \times (3) \times 365 / 10^6$ .  $(5) = [(4) \times 100] / (3)$ .
7. Minor discrepancies in the number of service connections between columns 3 and 4 have been corrected in column 5 for Deniliquin, Kempsey, Murray and Uralla.
8. The following acronyms are used in the tables: Reservoir Drop Test (RDT#), Waste Metering (WM#), Night Flow Metering (NF#), Zoning and Flow Metering (Z#), Leakage Detection and Repair (L#), Pressure Reduction (P), where # is the percentage of service connections covered.  
Eg. L95 for Gwydir indicates that the leakage detection and repair project carried out covered 95% of the utility's service connections.
9. It is noted that only 9 LWUs in Table 10A have reported leakage of over 12%. 3 of these utilities, which have not carried out leakage detection and repair reported the following leakage results: Brewarrina (34% - project not undertaken); MidCoast Water (16% - pressure management only undertaken at Hawks Nest); and Queanbeyan (27% - project not undertaken). 6 utilities had leakage of over 12% following completion of their water loss management projects: Bogan - Leakage reduced from 38% to 24% of potable water supplied (99% of connections covered); Clarence Valley - Leakage reduced from 27% to 15% of potable water supplied (67% of connections covered); Cootamundra - Leakage reduced from 21% to 13% of potable water supplied (93% of connections covered); Kempsey - Leakage reduced from 17% to 16% of potable water supplied (100% of connections covered); Port Macquarie-Hastings - Leakage reduced from 20% to 14% of potable water supplied (6% of connections covered); and Shoalhaven - Leakage reduced from 34% to 24% of potable water supplied (16% of connections covered).
10. 30% coverage is considered to be the minimum coverage needed to adequately characterise a utility's leakage performance. Caution is therefore warranted in interpreting the results reported above for the following 17 utilities which have tested zones covering under 30% of their service connections: Armidale (5% of service connections); Ballina (7%); Bathurst (5%); Byron (17%); Essential Water (18%); Gosford (1%); MidCoast Water (7%); Muswellbrook (12%); Narrabri (18%); Parkes (26%); Port Macquarie-Hastings (6%); Riverina Water (7%); Shoalhaven (18%); Tamworth (12%); Tweed (20%); Wingecarribee (22%); and Wyong (5%). The reported leakage results accepted as a valid indicator of the utility's performance by the NSW Office of Water are shown in column 41e of Table 10. Refer also to Note 1 of Table 10 on page 172.



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 of System Assets (CRC)			Net Debt to Equity WS & Sge			WDV CRC per Property	ERRR			Return on Assets			Operating Result		Cross Subsidies		Externalities (Fees to Water NSW)	Loan Payment			Operating Cost (OMA)				Management Cost																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
				(\$'000)	(\$)	Percent of rates & charges (%)*	Res Water Supplied (% of water supplied excluding losses)	Percent from Usage Charges (%)	Written Down CRC (\$M)	CRC (\$M)	CRC per Assessment (\$/assmnt)	(%)	(\$/prop)	(%) see also Table 6 Col (12)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)



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 of System Assets (CRC)			Net Debt to Equity WS & Sge			WDV CRC per Property	ERRR			Return on Assets			Operating Result		Cross Subsidies		Externalities (Fees to Water NSW)	Loan Payment			Operating Cost (OMA)				Management Cost																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
					Percent of rates & charges	Res Water Supplied (% of water supplied excluding losses)	Percent from Usage Charges (%)	Written Down CRC (\$M)	CRC (\$M)	CRC per Assessment (\$/assmnt)													Annual Fees & Charges (\$/assessment)	Developer Charge (\$/ET)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		(\$'000)	(\$)	(%)*							(%)	(\$/prop)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

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 of System Assets (CRC)			Net Debt to Equity WS & Sge			WDV CRC per Property	ERRR			Return on Assets			Operating Result		Cross Subsidies		Externalities (Fees to Water NSW)	Loan Payment			Operating Cost (OMA)				Management Cost								
				Percent of rates & charges	Res Water Supplied (% of water supplied excluding losses)	Percent from Usage Charges (%)	Written Down CRC (\$M)	CRC (\$M)	CRC per Assessment (\$/assmnt)					see also Table 6 Col (12)	%	%	%	(\$/property)	Annual Fees & Charges (\$/assessment)	Developer Charge (\$/ET)	(\$/property)	(\$/property)	(\$/property)		(\$/property)	(\$/property)	(\$/property)													
				(\$'000)	(\$)																																			
(57) F1	(57a) F5	(58)	(59)	(58a) F4	(60) F9	(61)	(62)	(63) F22	(62a) F9/C4	(63a) F17	(63b)	(65)	(64a)	(64b)	(66)	(66a)	(67) F11**	(68) <sup>+</sup>																						
12/13	13/14	13/14	13/14	13/14	13/14	13/14	13/14	11/12	12/13	13/14	13/14	11/12	12/13	13/14	11/12	12/13	13/14	12/13	13/14	13/14	13/14	11/12	12/13	13/14	10/11	11/12	12/13	13/14	10/11	11/12	12/13	13/14								
LWUs with 200 - 1,500 Properties																																								
81	Gwydir	1,290	1,495	1,017	41	58	75	11	16	10,086	-3	-4	-6	7,344	3.2	3.0	6.0	2.2	1.7	4.5	-59	74		11.1	287	159	261	514	389	490	456	222	21	32	32					
83	Oberon (Reticulator)	1,270	1,353	1,010	42	30	57	8	12	8,935	-4	-4	-4	5,787	-0.2	-0.4	-0.5	-0.2	-0.4	-0.8	-60	-48		0.0	81	20	27	661	703	851	913	121	97	147	123					
84	Gilgandra (Groundwater)	810	934	692	79	82	68*	11	17	12,196	-12	-12	-12	7,968	0.1	0.8	0.8	1.0	1.5	1.4	78	-79		19.8	0	0	4	330	346	341	417	64	63	53	60					
85	Uralla	780	917	641	90	83	59	14	16	11,115	-6	-7	-9	9,937	-0.9	-0.8	0.1	-0.9	-0.1	0.4	-19	48		2.3	0	0	0	400	395	475	478	156	168	193	210					
86	Hay (Dual Supply)	1,090	1,095	823	85	57	86*	11	23	17,185	-13	-14	-16	8,104	0.1	-0.4	-0.7	0.4	-0.1	-0.5	-10	-44		9.1	0	0	0	540	545	618	650	216	226	249	265					
87	Bourke (Dual Supply)	1,590	1,752	1,270	90	98	86*	10	23	16,409	-17	-16	-17	7,384	-3.3	0.2	-0.9	-2.4	0.8	-0.2	-26	-11		17.0	48	49	49	992	1017	925	1063	143	259	225	290					
88	Wakool (Dual Supply)	1,430	1,477	985	71	48	73*	22	32	20,047	-7	-8	-8	14,875	0.2	0.1	0.1	0.5	0.3	0.3	16	-30		6.3	58	37	37	485	548	644	647	80	85	88	95					
89	Bogan	1,670	1,770	1,553	90	70	60	14	32	28,320	-9	-12	-14	12,106	-1.7	0.6	-0.6	-1.4	1.0	-0.3	117	-124		37.1	0	0	0	902	835	1045	1263	256	179	226	354					
90	Guyra	1,070	1,230	992	90	52	70	21	25	19,053	-3	-4	-6	16,631	-0.4	0.0	0.1	0.2	0.5	0.6	89	241		5.5	17	16	16	466	468	512	655	137	150	124	126					
91	Cabonne	810	924	797	77	88	62	23	43	35,205	-7	-7	-4	19,726	-2.0	-1.8	-0.8	-1.2	-1.3	-0.3	-334	-66		5.2	0	2	0	538	563	643	555	169	169	130	105					
92	Carrathool (Groundwater)	1,670	1,686	1,317	90	89	57	15	21	15,595	3	3	4	11,604	-1.5	-1.4	0.9	-1.5	-1.4	1.0	-666	109		13.2	35	34	30	792	958	1118	982	63	107	94	102					
93	Tumbarumba	900	928	800	74	76	56*	19	31	25,558	-6	-5	-5	16,716	0.1	0.0	-0.2	0.0	-0.3	-0.6	-120	-141		7.4	56	82	108	334	373	391	443	138	144	149	163					
94	Gundagai	760	898	916	51	58	74*	10	18	15,625	-7	-8	-11	9,866	-2.2	-0.1	0.6	-1.8	0.5	1.1	53	112		4.9	0	0	0	559	566	566	586	204	203	196	213					
96	Warren (Dual Supply)	620	651	678	89	89	65*	6	14	12,913	-21	-20	-20	6,696	-0.8	-1.7	-1.0	-0.4	-1.3	-0.7	-131	-84		12.5	4	0	0	361	447	581	551	141	145	197	186					
97	Bombala	560	594	667	74	87	30*	11	20	21,150	-13	-13	-14	12,896	-0.2	-1.4	-1.2	0.7	-0.6	-0.6	-78	-83		2.4	0	0	0	373	445	501	516	83	82	88	100					
98	Walcha	610	641	697	90	72	69	16	17	19,143	-6	-7	-8	17,032	0.6	-0.7	-0.9	0.8	-0.6	-0.8	-115	-141		2.2	0	0	0	549	607	671	635	141	139	155	150					
100	Balranald (Dual Supply)	710	902	991	75	72	74*	7	15	15,793	-1	-2	-4	7,843	-2.1	-0.8	2.2	-3.3	-2.0	1.1	-155	71		10.2	129	137	87	512	554	567	578	128	161	96	153					
101	Murrumbidgee (Groundwater)	420	415	525	90	57	63	6	9	11,104	-14	-15	-15	7,996	-2.1	-0.1	-1.0	-1.5	0.4	-0.4	28	-35		9.3	0	0	0	251	379	365	429	105	120	154	146					
103	Central Darling (Dual Supply)	730	2,696	3,643	90	89	90*	23	42	56,326	-2	0	-3	31,301	-1.2	-1.6	4.4	-1.1	-1.6	4.4	-522	1392		12.4		0	404	783	799	1466	75	26	22	11						
104	Boorowa	620	617	949	87	78	46*	10	21	30,688	-8	0	-11	15,368	-1.2	-0.8	-0.6	-1.0	-0.6	-0.5	-117	-229		0.8	75	53	0	631	651	627	568	194	309	259	143					
105	Brewarrina	1,180	971	1,982	83	71	58*	6	14	24,954	-12	-14	-11	11,251	0.3	5.8	6.4	0.5	6.0	0.1	-80	-57		15.3	0	21	67	1393	1507	1248	1457	265	263	299	473					
106	Jerilderie (Dual Supply)	410	439	896	66	67	85*	4	8	15,940	-27	-28	-25	7,206	-0.3	-1.5	-0.8	1.5	0.0	0.3	-80	-86		6.6	0	0	0	616	560	698	706	108	119	139	171					
Medians (% of LWUs basis) for 200 to 1,500 Properties		24,385									-7	-7	-10				-0.6	-0.4	-0.4				-69	-46				526	557	623	610	139	145	148	148					
Median All LWUs (% of LWUs basis)					Current Replacement Cost \$/Assessment			16,170			Net D/E			-6			ERRR			0.9			Loan payment \$/prop			OMA \$ per property			\$520			Management Cost			\$150					
Median All LWUs (Statewide basis)								16,500			1						1.2						\$64						\$400						\$140					
Totals for all LWUs (including bulk suppliers)		\$731 M Total Water Supply Revenue			Total WS CRC \$14,300M			Total WDC			\$9,000M																													

\* 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 348.

+ 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																			
		Drinking Water Management System		Water Quality Compliance (%)														Water Quality Complaints			Water Service Complaints			Customer Inquiries	Customers with Restrictions or Legal Action for non-payment of Bills per 1000 props		Incidence of Unplanned Interruptions			Average Duration of Interruptions			Drought Water Restrictions				
				Physical				Chemical				Microbiological (E. coli)																									
				(69)		(69a)	(70)		(70a)	No. zones compliant	% Pop'n with Compliance	(71)		(71a)	No. zones compliant	% Pop'n with Compliance	(73) C9	(74) C10	(74a)	Restrictions (75a) C18	Legal Action (75b) C19	(77) C17	(78) C15		(78a)												
				Basis (68a)	External Assmnt (68b)	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	(70b) H4	(70c)	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	(71b) H2	(71c) H3	(11/12 12/13 13/14)	(11/12 12/13 13/14)	(13/14)	(13/14)	(11/12 12/13 13/14)	(13/14)	(11/12 12/13 13/14)	(11/12 12/13 13/14)	(11/12 12/13 13/14)	(11/12 12/13 13/14)												
	Sydney Water	ISO9001	Yes					100	100	100	Yes	13 of 13	100	100	100	100	Yes	13/13	100	0.5	0.5	0.4		5.68	0.51	147	160	183	155	153	151						
	Hunter Water	ADWG	No					100	100	100	Yes	5 of 5	100	100	100	100	Yes	5 of 5	100	3	3	3		7.58	0.81	206	236	303	122	142	128						
	Water NSW																																				
LWUs with > 10,000 Properties																																					
1	Gosford	ADWG		100	100	100	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	14	25	15	-	-	-	-	0	12	153	171	187	196	199	311	79	0	0
2	Wyong	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	8	18	5	4	5	6	-	0	2	64	86	70	180	204	200	100	100	100
3	Shoalhaven	HACCP		99	99	99	Yes	100	100	100	Yes	4 of 4	100	100	100	100	Yes	4 of 4	100	1	0	0	0	0	0	-	0.6	1.1	36	82	65	177	194	220	0	0	0
4	Rous (Bulk Supplier) (NO SGE)	ADWG		100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	0	0	1	-	-	0	7	0	0	2	2	1	180	180	195	0	0	0
5	MidCoast	ADWG	Yes	90	99	99	Yes	100	97	99	Yes	4 of 5	94	100	99	100	Yes	5 of 5	100	4	3	3	1	1	2	73	0.8	3	-	2	2				0	0	9
6	Tweed	ADWG		99	100	100	Yes	100	100	100	Yes	3 of 3	100	100	98	100	Yes	3 of 3	100	5	4	5	21	24	28	76	0.0	7	9	27	50	53	160	149	0	0	0
7	Port Macquarie-Hastings (Unfiltered)	ADWG		99	99	99	Yes	100	100	100	Yes	5 of 5	100	100	100	100	Yes	5 of 5	100	3	9	7	14	8	14	3	0.5	0	6	11	10	205	163	174	100	100	100
8	Riverina (Groundwater) (NO SGE)	HACCP	Yes	99	100	94	Yes	100	100	100	Yes	14 of 14	100	100	100	100	Yes	14 of 14	100	3	4	3	2	2	3	0	1	0.4	53	55	63	281	308	173	0	0	0
10	Coffs Harbour	ADWG		100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	1	0	0	53	0	0	1	6	0	73	35	9	120	120	120	0	0	0
11	Albury City	ADWG		98	100	100	Yes	100	100	100	Yes	1 of 1	100	99	99	100	Yes	1 of 1	100	1	4	3	5	2	1	20	0	27	-	-	-	100	104	124	0	0	0
12	Fish River WS (Unfiltered, Bulk Supplier)	ADWG		97	100	100	Yes	99	100	100	Yes	1 of 1	100	100	100	98	Yes	1 of 1	100	0	0	0	0	0	0	-	0	0	1	0.5	0.2	4080	1640	600	0	0	0
13	Tamworth Regional	ADWG		99	96	89	Yes	100	100	100	Yes	7 of 7	100	100	100	99	Yes	7 of 7	100	0	1	0	55	47	56	-	0	0	-	1	-				0	0	60
14	Clarence Valley	ADWG		99	100	100	Yes	100	100	100	Yes	6 of 6	100	98	96	100	Yes	6 of 6	100	7	8	23	27	28	57	4	0	6	-	-	-	120	120		0	0	0
15	Eurobodalla	ADWG		92	95	94	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	0	0.5	0.9	0	0	0	83	0	25	131	57	93	181	240	190	0	0	0
16	Wingecarribee	ADWG		100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	10	13	12	66	72	72	0	1	6	40	53	73	120	91	108	100	100	100
17	Queanbeyan (Reticulator)	ADWG		100	100	98	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0	0	0	27	31	23	19	0	0	5	0	0	180	180	180	100	100	100
18	Dubbo	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	99	100	100	Yes	1 of 1	100	0	1	0.4	2	4	3	36	0	0	11	27	58	168	152	75	0	0	0
19	Orange	ADWG		100	100	100	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	2	2	1	56	59	53	-	0.4	0	32	66	73	240	240	238	100	100	100
20	Goulburn Mulwaree	ADWG		97	95	92	Yes	100	100	100	Yes	2 of 2	100	100	99	100	Yes	2 of 2	100	1	3	8	28	28	28	-	5	0.1	-	276	17	180	180	180	100	100	100
21	Bathurst Regional	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	99	100	99	Yes	1 of 1	100	29	38	35	50	45	24	-	0	0	2	1	2	120	120	120	0	0	0
22	Lismore (Reticulator)	ADWG		50	98	99	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	1	1	0	4	0	1	-	0	1.3	39	123	32	190	288	120	0	0	0
23	Bega Valley (Unfiltered)	ADWG		99	100	100	Yes	100	100	100	Yes	8 of 8	100	100	100	100	Yes	7 of 8	100	5	9	13	16	5	1	4	0	2	-	3	1	120	120	95	0	0	0
24	Ballina (Reticulator)	ADWG		80	99	99	Yes	100	100	100	Yes	3 of 3	100	100	99	99	Yes	3 of 3	100	0	0.4	4.3	0	0	4	-	0	0.7	-	1	1	120	120	120	0	0	0
25	Kempsey (Groundwater)	NHMRC		100	100	100	Yes	100	100	100	Yes	7 of 7	100	100	100	100	Yes	7 of 7	100	0	0	0.7	0	0	0.3	143	2	0	35	68	72	132	165	127	0	0	30
26	Essential Energy	ADWG		100	100	92	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	0	8	0	0	1	0.0	-	27	0	-	-	-				0	0	0
27	Byron (Reticulator)	ADWG		99	100	98	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	0	1	1	0	0	0	4	1	0.1	14	14	14	120	120	120	0	0	0
28A	Goldenfields (Reticulator) (NO SGE)	ADWG		100	100	100	Yes	99	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	7	10	7	58	39	1	60	1	0	88	95	77	235	235	192	0	0	0
28B	Goldenfields (Bulk Supplier) (NO SGE)	ADWG		99	100	98	Yes	99	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	-	-	0	0	0	-	-			-	-	-				0	0	0
Medians (% of LWUs basis excl bulk suppliers) for >10,000 Properties																			2	3	3	5	5	5				36	35	41	147	163	138	0	0	0	
LWUs with 3,001 - 10,000 Properties																																					
29	Armidale Dumaresq	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	98	100	Yes	1 of 1	100	1.6	0.0	5	0	0	1	-	0	0	86	115	136	114	134	139	0	0	0
30	Griffith	ADWG		98	100	100	Yes	99	100	100	Yes	2 of 2	100	100	100	99	Yes	2 of 2	100	8	3	2	33	43	27	0	2	114	24	24	23	90	90	90	0	0	0

Table 12: Water supply - health and levels of service

WATER UTILITY		HEALTH																LEVELS OF SERVICE																				
		Drinking Water Management System		Water Quality Compliance (%)														Water Quality Complaints			Water Service Complaints			Customer Inquiries (per 1000 properties)	Customers with Restrictions or Legal Action for non-payment of Bills per 1000 props		Incidence of Unplanned Interruptions			Average Duration of Interruptions			Drought Water Restrictions					
				Physical				Chemical				Microbiological (E. coli)																										
				(69)		(69a)	(70)		(70a)	No. zones compliant	% Pop'n with Compliance	(71)		(71a)	No. zones compliant	% Pop'n with Compliance	(73) C9	(74) C10	(74a)	Restrictions (75a) C18	Legal Action (75b) C19	(77) C17	(78) C15		(78a)													
				Basis (68a)	External Assmnt (68b)	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	(70b) H4	(70c)	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	(71b) H2	(71c) H3	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14		13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14				
38	Moree Plains (Groundwater)	ADWG		100	98	99	Yes	100	100	100	Yes	6 of 6	100	100	100	99	Yes	5 of 6	93	0	0	6	38	88	90	121	0.0	0	-	22	613	90	60	0	0	0		
39	Cowra			99	100	95	Yes	99	100	100	Yes	1 of 1	100	98	99	99	Yes	1 of 1	100	8	24	5	40	20	20	0	9	0.0	-	-	-	180	180	180	0	0	0	
40	Central Tablelands (NO SGE)	ADWG		100	100	100	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	6	3	2	20	6	12	26	10	0	44	48	50	180	180	180	0	0	0	
41	Muswellbrook	ADWG		95	94	91	Yes	100	100	100	Yes	3 of 3	100	99	100	100	Yes	3 of 3	100	8	16	20	48	1	2	83	0	0	1	2	2	160	163	234	0	0	0	
42	Corowa			100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	99	100	Yes	3 of 3	100	4	6	3	9	17	22	0	0	12	38	168	46	120	120	120	0	0	0	
43	Tumut	ADWG		98	100	99	Yes	100	100	100	Yes	4 of 4	100	98	100	100	Yes	4 of 4	100	2	2	3	16	2	5	22	0.2	32	11	-	-	120	120	120	50	41	41	
44	Gunnedah (Groundwater)	ADWG		78	89	92	Yes	100	100	98	Yes	3 of 4	99	99	100	99	Yes	2 of 4	99	0	0	0	-	-	24	0	0	0	5	-	7	225	104	180	100	100	100	
45	Upper Hunter	ADWG		96	97	98	Yes	99	100	100	Yes	4 of 4	100	100	100	100	Yes	4 of 4	100	0	1	2	62	44	49	-	0	0	24	26	25	45	45	50	0	0	65	
46	Narrabri (Groundwater)			99	100	99	Yes	100	100	100	Yes	6 of 6	100	100	100	100	Yes	6 of 6	100	24	25	32	29	36	113	8	4	15	12	-	4	120	110	90	0	0	0	
47	Bellingen (Unfiltered)	ADWG		99	98	97	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	2.9	3.9	0	11	10	17	2	0	0	-	2	2	120	120	120	0	0	68	
48	Leeton			100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	0	0	0	1	1	1	1	0	0	29	20	14	120	120	120	0	0	0	
49	Young (Reticulator)	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0	2	2	21	11	2	11	4	1	21	17	19	120	120	120	78	0	0	
50	Cooma-Monaro	ADWG		98	97	96	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	0	0	3	6	-	18	0	0	0	-	-	3	150		180	100	100	100	
51	Forbes	ADWG		97	100	98	Yes	100	100	100	Yes	1 of 1	100	98	100	100	Yes	1 of 1	100	1	1	4	1	3	38	2	4	0.0	113	118	106	120	120	120	100	100	36	
52	Snowy River (Unfiltered)	ADWG		100	100	100	Yes	100	100	100	Yes	5 of 5	100	100	100	100	Yes	5 of 5	100	0	1.2	2	4	6	17	2	0	0	-	15	26	120	120	120	0	0	0	
53	Berrigan (Dual Supply)	ADWG		98	98	100	Yes	100	100	100	Yes	4 of 4	100	100	100	100	Yes	4 of 4	100	0	3	3	17	19	3	6	0	10	57	34	14	120	90	60	0	0	0	
54	Deniliquin	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	99	100	99	Yes	1 of 1	100	-	2	1	-	3	2	16	0	0	-	428	14	240	60	65	0	0	0	
55	Warrumbungle			90	80	90	Yes	100	100	100	Yes	8 of 8	100	99	100	100	Yes	8 of 8	100	3	3	2	0	0	8	35	0	0	-	-	1	120	120	104	0	0	46	
56	Yass Valley			88	85	95	Yes	100	100	100	Yes	1 of 1	100	100	99	100	Yes	1 of 1	100	2	10	22	10	10	14	7	5	0.3	33	44	50	220	240	240	100	100	0	
Medians (% of LWUs basis) for 3,000 to 10,000 Properties																		2	2	2				25	26	19	120	120	120	0	0	0						
LWUs with 1,501 - 3,000 Properties																																						
57	Wellington	ADWG		98	100	100	Yes	100	100	100	Yes	2 of 2	100	100	100	99	Yes	2 of 2	100	0	0	0	21	26	26	-	3	0	32	31	31	120	120	120	0	0	0	
58	Cootamundra (Reticulator)	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0.0	-	0.0	38	48	44	2	0	2	8	8	8	120	120	90	0	0	0	
59	Lachlan	ADWG		98	100	100	Yes	100	100	100	Yes	3 of 3	100	100	99	100	Yes	3 of 3	100	0.0	1	1	1	2	25	47	19	0	9	9	-	110	100	100	0	0	0	
60	Glen Innes Severn			95	100	96	Yes	71	100	100	Yes	2 of 2	100	99	100	100	Yes	2 of 2	100	0	0	0	0	0	0	-	4	0	35	34	34	180	180	180	0	0	0	
61	Liverpool Plains			100	100	87	Yes	100	100	100	Yes	3 of 3	41	100	100	100	Yes	3 of 3	100	0.0	-	0.7	74	63	61	5	0	0	63	55	48	50	45	40	0	0	0	
62	Narromine (Groundwater)	ADWG		100	100	100	Yes	100	98	100	Yes	1 of 1	100	100	98	100	Yes	1 of 1	100	0	7	0	144	3	16	154	0	7	1	-	0	60	60	60	0	0	0	
63	Narrandera (Groundwater)			100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0	-	48	67	12	26	-	0	0	48	24	73	120	120	120	0	0	0	
65	Murray (Dual Supply)			100	100	100	Yes	100	100	100	Yes	2 of 2	100	100	100	99	Yes	2 of 2	100	0	0	0	0	0	0	-	0	5	27	14	6	90	90	90	100	100	100	
67	Cobar	ADWG		93	95	100	Yes	100	100	100	Yes	1 of 1	100	98	100	100	Yes	1 of 1	100	13	12	13	13	22	23	-	0	0	1	2	3	60	60	90	100	100	100	
66	Cobar WB (Bulk Supplier Raw Wa																			-	-	-	-	-	-	-	-	-	-	-	-	120	60	60	0	0	0	
68	Tenterfield	ADWG		92	100	100	Yes	100	100	100	Yes	3 of 3	100	99	99	99	Yes	3 of 3	100	10	7	5	4	3	20	2	4	0	10	7	13	125	120	180	0	0	0	
70	Kyogle	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	98	99	99	Yes	1 of 1	100	7	7	5	4	6	16	-	0	0	13	13	-	90	90		0	0	0	
71	Palerang	ADWG		100	100	100	Yes	100	100	100	Yes	3 of 3	100	99	100	100	Yes	3 of 3	100	1	3	1	41	54	2	26	0	0	28	5	5	100	90	90	0	0	0	
73	Upper Lachlan	ADWG		98	90	83	Yes	100	100	100	Yes	4 of 4	100	100	99	100	Yes	4 of 4	100	11	1	0	0	0	0	-	0	0	3	1	2	100	100	120	0	0	0	
74	Wentworth (Dual Supply)	ADWG	Yes	84	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	2	0	0	22	-	22	11			-	-	132		30	0	0	0		
75	Coonamble (Groundwater)			100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	0	-	5	-	-	26	3	0	0	-	-	3		60	60		0	0	0
76	Harden (Reticulator)			100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	6	9	5	12	8	8	4	0	0	1	2	1	60	60	60	0	0	0	
79	Walgett (Dual Supply)			95	88	85	Yes	100	100	100	Yes	3 of 3	100	94	99	99	Yes	3 of 3	100	3	1	3	-	2	-	-	0	0	-	1	-				49	100	100	
80	Greater Hume			100	100	100	Yes	75	97	97	Yes	2 of 2	70	100	100	100																						



Table 12: Water supply - health and levels of service

WATER UTILITY		HEALTH																LEVELS OF SERVICE																					
		Drinking Water Management System		Water Quality Compliance (%)														Water Quality Complaints			Water Service Complaints			Customer Inquiries	Customers with Restrictions or Legal Action for non-payment of Bills per 1000 props		Incidence of Unplanned Interruptions			Average Duration of Interruptions			Drought Water Restrictions						
				Physical				Chemical				Microbiological (E. coli)																											
				(69)		(69a)	(70)		(70a)	No. zones compliant	% Pop'n with Compliance	(71)		(71a)	No. zones compliant	% Pop'n with Compliance	(73) C9	(74) C10	(74a)	Restrictions (75a) C18	Legal Action (75b) C19	(77) C17	(78) C15		(78a)														
				Basis (68a)	External Assmnt (68b)	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	(70b) H4	(70c)	% Samples complying with 2011 NHMRC/NRMMC Guidelines	Complied ?	(71b) H2	(71c) H3	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14						
LWUs with 200 - 1,500 Properties																																							
81	Gwydir	ADWG		97	99	100	Yes	100	99	99	Yes	3 of 3	100	100	100	99	Yes	3 of 3	100	4	8	19	0	0	0	-	0	0	3	3	3	180	180	180	0	16	16		
83	Oberon (Reticulator)			100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	3	0	3	3	4	4	4	1	0	32	11	2	240	120	120	0	0	0		
84	Gilgandra (Groundwater)	ADWG		90	100	100	Yes	100	100	100	Yes	1 of 1	100	98	98	100	Yes	1 of 1	100	13	8	13	26	22	36	10	0	0	37	11	8	100	90	90	0	0	0		
85	Uralla	ADWG		100	100	100	Yes	100	99	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	4	11	4	4	9	10	0	0	0	96	106	35	90	100	120	0	0	12		
86	Hay (Dual Supply)			100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0	2	0	9	8	10	4	0	0	9	38	8	300	120	120	100	0	0		
87	Bourke (Dual Supply)			100	100	80	Yes	100	100	100	Yes	1 of 1	100	100	100	98	Yes	1 of 1	100	0	0	0	26	17	23	0	0	15	618	713	684	60	60	45	0	0	9		
88	Wakool (Dual Supply)			100	100	100	Yes	100	100	100	Yes	5 of 5	100	100	100	100	Yes	5 of 5	100	0	0	5	0	0	10	-	0	0	3	3	10			60	0	0	0		
89	Bogan	ADWG		100	90	100	Yes	100	100	96	Yes	1 of 1	100	98	100	98	Yes	1 of 1	100	1	0	0	0	50	47	123		0	42	47	34	120	90	95	0	0	33		
90	Guyra	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0	2	8	6	11	32	0	0	0	26	45	52	80	180	180	0	0	40		
91	Cabonne	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	98	100	Yes	1 of 1	100	0	3	1	-	3	1	10	0	3	-	-	7	150		150	0	0	0		
92	Carrathool (Groundwater)	ADWG		100	100	100	Yes	100	100	100	Yes	3 of 3	100	100	100	100	Yes	3 of 3	100	0	4	2	54	79	12	70	0	0	58	72	1	510	60	180	100	100	100		
93	Tumbarumba	ADWG		100	100	95	Yes	100	100	100	Yes	2 of 2	100	100	100	98	Yes	1 of 2	76	0.9	1.7	0.0	4	2	1	5	0	0	4	26	22	120	120	180	0	0	0		
94	Gundagai	ADWG		90	70	85	Yes	100	98	99	Yes	1 of 1	100	98	100	100	Yes	1 of 1	100	0	-	8	4	2	2	2	0	20	13	13	41	60	60	60	100	100	100		
96	Warren (Dual Supply)	ADWG		93	100	100	Yes	100	100	100	Yes	2 of 2	100	95	100	100	Yes	2 of 2	100	4	27	9	60	24	13	10	0	2	5	11	16	120	120	120	0	0	0		
97	Bombala			93	95	87	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	1	15	11	6	6	6	-	0	0	-	-	0	40	40	40	0	55	55		
98	Walcha			100	100	100	Yes	100	100	100	Yes	1 of 1	100	100	100	100	Yes	1 of 1	100	0	1	0	0	0	19	-	0	0	-	2	-		120		0	0	16		
100	Balranald (Dual Supply)	ADWG		78	80	96	Yes	100	100	100	Yes	2 of 2	100	100	100	100	Yes	2 of 2	100	0.0	-	0.0	4	3	-	-	0	0	-	-	66	60	60	90	100	100	0		
101	Murrumbidgee (Groundwater)			100	100	100	Yes	100	100	100	Yes	2 of 2	100	98	100	100	Yes	2 of 2	100	0	0	0	-	20	10	-			-	-	0	60	120	200	0	0	0		
103	Central Darling (Dual Supply)	ADWG		89	80	97	Yes	100	100	98	Yes	2 of 2	100	100	100	98	Yes	1 of 2	47	27	60	60	30	54	114	141	0	0	82	14	14	180	180	240	0	0	0		
104	Boorowa	ADWG		70	70	60	Yes	100	100	100	Yes	1 of 1	100	100	98	100	Yes	1 of 1	100	0	3	49	3	0	5	77	0	0	6	3	0	90	75	90	100	42	38		
105	Brewarrina			90	93	95	Yes	96	100	100	Yes	2 of 2	100	98	96	99	Yes	2 of 2	100	0	-	4	8	4	10	6	0	0	9	6	20	15	15	15	0	0	0		
106	Jerilderie (Dual Supply)	ADWG		100	100	100	Yes	100	100	100	Yes	1 of 1	100	96	100	100	Yes	1 of 1	100	21	21	20	0	0	20	0	0	0	21	21	6	120	120	120	0	0	0		
Medians (% of LWUs) for 200 to 1,500 Properties																			1	2	4																		
Median All LWUs (% of LWUs basis)				Physical		100	Chemical		100	Microbiological		100	Quality Complaints		3	Service		13	Interruption Incidence		14	Duration		120	Restrictions		0												
Median All LWUs (Statewide basis)				100		100		100		100		3		Complaints		6	50		150		0																		
Totals for all LWUs (including bulk suppliers)		Physical 95 LWUs complied (100% of 95 LWUs)				Chemical 95 LWUs complied (100% of 95 LWUs)				E. coli 95 LWUs complied (100% of 95 LWUs)				29 LWUs applied restrictions for non payment of bills				32 LWUs applied drought water restrictions (ie. 33% of the LWUs)																					
		98.4% of 4600 samples complied				99.4% of 4500 samples complied				99.8% of 20200 samples complied																													
71 LWUs (75%) have a Drinking Water Management System																																							

NOTES:

1. Where chemical water quality is compliant (column 70 - health related) the 95th percentile of results does not exceed the guideline value for each chemical. Refer also to pages 348 and 349 and to Note 7 on page 289.
2. Where the compliance for microbiological water quality (column 71 - health related) is equal to or greater than 98%, the LWU is compliant. Refer also to pages 348 and 349 and to Note 7 on page 289.
3. Physical water quality (column 69 - aesthetic) is compliant if the mean of results is within the Guideline values. Refer also to pages 348 and 349 and to Note 7 on page 289.
4. In both 2012-13 and 2013-14 the public drinking water supply for 99.9% of the urban population in regional NSW complied with the 2011 ADWG for both microbiological and chemical water quality (cols 70c and 71c).

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  \$/prop (79a)	Components (1) - Process						Components (2) - Type of Asset					Components			Total OMA Cost  \$/prop (91b)	Components		PUMPING STATION					WATER MAIN				TREATMENT					
				Maintenance  (79)	Operation  (80)	Energy  (81)	Chemicals  (82)	Bulk Purchase  (82a)	Dams & Weirs  (83)	Mains  (84)	Reservoirs  (85)	Pumping Stations  (86)	Water Treatment  (87)	Other Excl Bulk Purchas  (88)	Admin  (\$/property) (89)	Engineering & Supervision  (90)	Total Management Cost		Head works  (92)	Distri- bution  (93)	O&M Cost  (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)	Maintenance Cost  (106)	Chemical  (107)		
																	(\$/prop) (91a)																	(c/kL) (91)	
2013/14						2013/14						2013/14			2013/14		2013/14					2013/14				2013/14									
LWUs with > 10,000 Properties																																			
1	Gosford	245	112	90	25	15	3	27	56	13	44	65	37	109	13	122	52	367	202	165	19	130	33	21	76	24	405	58	347	28	37	13	15		
2	Wyong	224	92	105	15	10	2	8	109	9	33	58	6	57	38	95	35	319	67	252	12	85	24	21	39	40	566	209	357	21	42	5	10		
3	Shoalhaven	142	35	76	19	11	0	3	49	6	23	38	23	97	34	131	42	274	41	233	7	42	3	4	35	16	154	78	76	12	21	6	11		
4	Rous (Bulk Supplier) (NO SGE)	133	36	58	23	16		5	15	5	27	43	37	80	25	104	42	238	226	12	11	314	18	25	272	6	176		176	18	15	12	16		
5	MidCoast	311	105	143	51	12	0	1	87	13	58	51	103	68	31	99	40	411	164	247	23	82	2	7	73	35	240	20	221	20	29	10	12		
6	Tweed	247	97	80	37	32	1	14	33	7	45	82	66	126	50	176	57	423	224	199	15	53	5	4	44	11	147	1	145	27	41	9	32		
7	Port Macquarie-Hastings (Unfiltered)	236	89	103	28	10	6	14	54	10	45	40	66	102	48	150	68	386	116	270	20	72	1	26	44	24	203	111	92	18	16	13	10		
8	Riverina (Groundwater) (NO SGE)	216	91	28	89	8	1		53	11	98	29	24	62	60	122	23	338	240	98	18	78	0	7	71	10	94	31	63	5		21	8		
10	Coffs Harbour	252	104	114	12	19	2	32	91	18	15	76	19	97	48	144	55	396	210	186	6	52	6	3	42	34	334	104	230	29	45	11	19		
11	Albury City	194	35	64	83	8	5		26	10	92	45	17	104	8	112	32	306	165	141	26	108	0	10	98	7	104	43	60	13	28	10	8		
12	Fish River WS (Unfiltered, Bulk Supplier)	100	57	43	0	0	0	100	0	0	0	0	0	26	17	43	9	143	14	129	0	0				0	0			0					
13	Tamworth Regional	339	135	149	7	16	32	46	95	15	13	137	1	70	128	198	41	536	316	220	3	15	4	3	8	20	288	50	239	29	97	24	16		
14	Clarence Valley	223	99	96	4	14	9	13	76	17	9	28	71	122	35	157	51	380	19	361	3	10	3	2	5	25	145	1	144	9	11	2	14		
15	Eurobodalla	212	63	111	27	12		5	101	13	35	37	22	210		210	114	423	76	347	19	49	6	6	38	55	223	122	100	20	23	2	12		
16	Wingecarribee	235	97	26	32	15	65	0	71	11	34	44	10	98	41	139	48	375	266	109	12	43	1	2	40	25	205		205	15	15	14	15		
17	Queanbeyan (Reticulator)	400	50	48	6		296		81	12	8		3	142	47	189	78	589		589	3	33	3	4	26	33	471	222	249						
18	Dubbo	346	99	184	15	49	0	0	69	10	21	208	37	134	24	159	30	504	348	156	4	40	6	5	28	13	237	19	217	40	136	23	49		
19	Orange	242	75	108	45	15		28	88		52	64	11	86	54	141	34	383	195	187	12	111	14		97	21	243	87	155	15	43	7	15		
20	Goulburn Mulwaree	303	163	114	6	20	0	54	122	6	8	72	41	82	33	115	39	418	150	267	3	9		2	7	42	452	15	438	25	45	7	20		
21	Bathurst Regional	378	116	209	12	41		38	137	6	14	183		87	68	154	34	532	319	213	3	19	0	2	17	30	546	259	287	40	112	30	41		
22	Lismore (Reticulator)	369	19	123	7	0	220	0	100	2	9	0	37	101	25	127	57	495		495	4	27	3	4	20	45	419	419		0					
23	Bega Valley (Unfiltered)	241	122	85	35			36	112	16	42	35		116	149	265	101	506	223	284	16	30	0	5	25	43	263	102	162	14	21	15			
24	Ballina (Reticulator)	360	62	44	4	0	251	0	38	4	8	11	48	130	20	150	51	510	5	505	3	28	15		14	13	163	58	105	4	11				
25	Kempsey (Groundwater)	292	123	104	49	12	5	10	79	5	66	116	11	95	93	188	62	481	216	264	22	37	0	10	28	26	201	4	197	38	85	20	12		
26	Essential Energy	1215	455	385	290	85	0	0	268	38	433	476	0	43	23	66	10	1281	769	512	67	414	28	109	277	41	739	143	596	73	286	104	85		
27	Byron (Reticulator)	349	76	57		5	210		28	16		20	74	112	18	130	45	479	24	455						10	134	57	77	7	11	4	5		
28A	Goldenfields (Reticulator) (NO SGE)	599	167	62	186	10	173	0	100	13	235	26	51	106	106	212	35	811	413	397	39	65	1	13	51	16	56	19	37	4	11	5	10		
28B	Goldenfields (Bulk Supplier) (NO SGE)	96	20	19	44	10	1		11	2	50	24	9	25	25	50	11	146			11					2	66	27	39	5	10	4	10		
Medians (% of LWUs basis excl bulk suppliers) for >10,000 Properties		249	97	104	22	12	2	7	80	11	33	48	22	100	36	143	47	420	199	249	12	42	3	5	38	25	239	58	197	19	37	11	14		
LWUs with 3,001 - 10,000 Properties																																			
29	Armidale Dumaresq	397	329	36	12	21	0	36	180	25	15	106	36	52	133	185	49	581	262	320	4	12		3	9	48	553		553	28		85	21		
30	Griffith	345	51	193	8	26	68		91	1	11	142	31	242	38	280	35	625	281	344	1	25	2	5	18	11	159	124	35	18	105	12	26		
31	Lithgow	418	215	0	4	12	187	0	123	13	7	88	0	110	37	147	63	565	113	452	3	14		7	8	53	848		848	38		76	12		
32	Mid-Western Regional	352	167	118	17	35	15		99	34	35	170		39	118	157	47	509	270	239	10	21	6	4	11	30	256		256	51	94	40	35		
33	Richmond Valley	273	70	80	22	17	84	0	37	10	32	96	14	170	117	287	68	561	325	235	8	33		11	22	9	141	16	126	23	64	14	17		
34	Nambucca (Groundwater)	214	99	70	44				52	15	58	13	75	63	50	113	49	327	196	131	25	184		43	141	23	155		155	6		13			
35	Singleton	341	59	218	33	20	11	0	80	3	51	155	40	76	75	151	34	492	59	433	11	38	3	11	25	18	220	159	61	35	116	19	20		
36	Parkes	471	117	119	157	32	46	41	40	9	194	72	70	149	14</																				



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  \$/prop (79a)	Components (1) - Process					Components (2) - Type of Asset						Components			Total OMA Cost  \$/prop (91b)	Components		PUMPING STATION					WATER MAIN				TREATMENT										
			Maintenance  (79)	Operation  (80)	Energy  (81)	Chemicals  (82)	Bulk Purchase  (82a)	Dams & Weirs  (83)	Mains  (84)	Reservoirs  (85)	Pumping Stations  (86)	Water Treatment  (87)	Other Excl Bulk Purchas  (88)	Admin  (\$/property)  (89)	Engineering & Supervision  (90)	Total Management Cost		Head works  (92)	Distri- bution  (93)	O&M Cost  (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)	Maintenance Cost  (106)	Chemical  (107)							
																(\$/prop)  (91a)																	(c/kL)  (91)	(c/kL)  (94)	(\$'000/pumping station)  (96)	(c/kL)  (100)	(\$'000/100km)  (102)	(c/kL)  (104)	(\$/property)  (106)
40	Central Tablelands (NO SGE)	288	142	72	41	33	20	66	10	57	120	16	229	34	263	77	552	265	287	17	10	2	1	7	19	64		64	35	43	44	33							
41	Muswellbrook	467	309	31	48	54	25	0	60	4	70	220	88	137	110	248	44	715	443	272	13	45	1	14	31	11	213	9	204	39	9	157	54						
42	Corowa	278	176	51	24	16	11		49	3	35	170	10	68	134	201	27	479	359	120	5	24		8	16	7	152		152	23	47	107	16						
43	Tumut	310	214	23	48	24	0	0	38	17	59	149	47	88	13	101	29	411	189	222	17	22	1	3	18	11	91		91	43	18	107	24						
44	Gunnedah (Groundwater)	267	177	2	87	1			126	12	125	2	2	88	74	162	24	429	107	322	19	26		8	18	19	310		310	0		1	1						
45	Upper Hunter	508	224	147	73	11	53	77	167	18	121	32	40	86	127	213	39	720	108	612	22	41	7	9	25	31	422	113	309	6	15	6	11						
46	Narrabri (Groundwater)	261	198		63				21	7	143		90	144	48	192	30	453	272	181	22	53		30	24	3	62		62										
47	Bellingen (Unfiltered)	177	39	78	50	10	0	0	22	3	52	50	51	151	35	186	56	363	55	309	16	36		1	34	7	55	33	22	15	34	6	10						
48	Leeton	492	293	73	50	31	45		202	3	57	182	3	71	69	140	21	632	379	253	9	37		4	33	31	415		415	28	73	78	31						
49	Young (Reticulator)	167	51	42	3	0	71	0	63	4	4	0	26	22	41	63	26	230	18	212	2	7		2	4	26	199	68	130	0									
50	Cooma-Monaro	334	167	145	7	15			78	35	13	142	66	126	139	266	81	599	330	270	4	16	2	5	9	24	213	187	26	43	24	104	15						
51	Forbes	552	251	203	1	42	56	0	157	6	2	293	37	50	20	70	9	623	448	174	0	2		1	1	21	420		420	39	166	86	42						
52	Snowy River (Unfiltered)	228	88	82	49	9			48	13	87	40	39	64	49	112	71	340	68	272	55	24	7	4	13	30	197	14	183	25	22	10	9						
53	Berrigan (Dual Supply)	337	2	335	0	0	0	0	79	2	12	240	3	47	71	118	16	455	91	364	2	5	5			11	135	135		33	240								
54	Deniliquin	298	5	220	72			85			77	135		195	57	252	46	550	401	148	14	54		4	51					25	135								
55	Warrumbungle	458	211	144	74	29	0	4	123	28	90	188	26	61	82	143	41	601	343	258	26	37	4	3	31	35	274	7	268	54	106	52	29						
56	Yass Valley	221	11	145	35	30		4	11	17	43	109	38	118	109	227	82	448	246	202	16	17	3		14	4	22		22	40	79		30						
Medians (% of LWUs basis) for 3,000 to 10,000 Properties		339	157	100	43	21	5	0	72	9	55	133	36	87	53	162	39	551	263	271	13	25	3	5	18	19	178	50	143	27	75	40	25						
LWUs with 1,501 - 3,000 Properties																																							
57	Wellington	349	127	168	15	21	17		99	9	37	187		110	93	203	62	552	331	221	11	15		9	6	30	278	8	270	57	166		21						
58	Cootamundra (Reticulator)	169	53	38	0	0	78	0	38	6	0	0	47	21	38	59	18	227	36	191	0	0				12	163	1	161	0									
59	Lachlan	696	198	286	126	61	25		125	16	153	254	122	51	102	152	21	848	484	365	21	27		5	22	17	152		152	36	194		61						
60	Glen Innes Severn	213	146	0	40	27	0	0	44	1	47	91	29	20	179	199	106	412	165	247	25	69		11	59	24	118		118	49		64	27						
61	Liverpool Plains	293	218	17	47	10		20	43	9	106	65	51	352	3	356	106	648	389	259	32	25	1	13	11	13	92	1	91	19	6	48	10						
62	Narromine (Groundwater)	296	185	25	86	0	0	0	90	14	154	26	13	171	48	219	33	515	258	258	23	109	4	43	61	13	317		317	4	10	16							
63	Narrandera (Groundwater)	371	105	89	165	12			101	3	254	12		61	17	79	8	450	261	189	25	132	46		85	10	239		239	1			12						
65	Murray (Dual Supply)	316	146	101	39	20	10	0	70	8	63	155	10	68	57	126	32	441	300	141	16	24	4	5	15	18	129	45	84	40	57	78	20						
67	Cobar	1122	433	617		73			193	58		871		51	52	103	19	1225	613	613						35	376	78	297	159	568	230	73						
66	Cobar WB (Bulk Supplier)																11		0	0	44	585		88	497	14				0									
68	Tenterfield	333		268	9	42	14	11	77	0	19	202	9	173	20	194	81	527	211	316	8	10	5		5	32	225	225		84	160		42						
70	Kyogle	550	114	320	30	17	68	0	65	10	70	338	0	115	36	150	47	701	609	91	22	27		15	12	20	221		221	105	320		17						
71	Palerang	464	71	288	70	35		34	23	7	146	137	118	68	63	131	51	595	351	244	57	81	36	6	39	9	69	34	35	53	84	18	35						
73	Upper Lachlan	392	64	237	64	27	0	10	89	10	139	110	34	58	64	122	64	514	257	257	73	69	27	10	32	47	273	247	27	57	66	17	27						
74	Wentworth (Dual Supply)	409	119	200	73		17		92		90	182	28	51	22	73	16	482	241	241	20	17	1	2	14	21	115		115	41	175	7							
75	Coonamble (Groundwater)	223	136	52	35	0	0	0	47	39	85	0	52	37	26	63	11	286	143	143	15	71		42	29	9	115		115	0									
76	Harden (Reticulator)	170	55	27	3	7	77		37	4	4	21	27	147		147	20	316		316	0	2		1	2	5	42		42	3	14		7						
79	Walgett (Dual Supply)	1306	629	461	123	93	0	0	223	35	355	326	366	379	68	447	25	1753			20	98	12	52	34	13	423	84	338	19	181	52	93						
80	Greater Hume	364	101	30	45	4	183		73	14	74	16	3	53	87	140	39	503	262	242	21	68		27	42	21	88	36	52	5		12	4						
Medians (% of LWUs basis) for 1,500 to 3,000 Properties		356	123	135	42	18	5																																

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  \$/prop (79a)	Components (1) - Process						Components (2) - Type of Asset					Components				Total OMA Cost  \$/prop (91b)	Components		PUMPING STATION					WATER MAIN				TREATMENT												
			Maintenance  (79)	Operation  (80)	Energy  (81)	Chemicals  (82)	Bulk Purchase  (82a)	Dams & Weirs  (83)	Mains  (84)	Reservoirs  (85)	Pumping Stations  (86)	Water Treatment  (87)	Other Excl Bulk Purchas  (88)	Admin  (89)	Engineering & Supervision  (90)	Total Management Cost			Head works  (92)	Distri- bution  (93)	O&M Cost  (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)	Maintenance Cost  (106)	Chemical  (107)									
																(\$/property)	(\$/prop) (91a)																	(\$/prop) (91)	(c/kL)	(\$/property)	(c/kL)	(\$'000/pumping station)	(c/kL)	(\$'000/100km)	(c/kL)	(\$/property)
LWUs with 200 - 1,500 Properties																																										
81	Gwydir	424	147	110	132	35	0	0	121	8	205	90	0	32	0	32	5	456	246	210	30	302	93	15	194	18	200	64	136	13	8	46	35									
83	Oberon (Reticulator)	790	51	210		36	494		47	3		246		49	74	123	25	913	502	411					10	162		162	50	210	1	36										
84	Gilgandra (Groundwater)	357	183	139	22	13	0	0	55	4	156	136	7	56	4	60	10	417	146	271	26	105	21	69	15	9	142		142	22	101	21	13									
85	Uralla	268	180		1	87		9	66	1	5	187		141	69	210	87	478	353	124	2	4		3	1	27	152		152	78		100	87									
86	Hay (Dual Supply)	384	249	18	72	34	11	0	86	16	124	129	18	251	14	265	25	650	442	208	12	55		23	32	8	245		245	12		95	34									
87	Bourke (Dual Supply)	773	773						99	1	48	461	165	188	102	290	25	1063	213	850	4	33		33		8	332		332	40		461										
88	Wakool (Dual Supply)	552	116	264	69	17	85	6	58	0	101	274	28	55	40	95	19	647			20	19	2	4	13	11	52	8	45	53	225	31	17									
89	Bogan	910	431	220	81	117	61	1	455	1	234	117	40	354		354	46	1263	253	1011	31	267	31	144	92	60	1081	458	623	15			117									
90	Guyra	529	0	504	25	0	0	34	131	0	40	256	69	126	0	126	24	655	314	341	8	50	19		31	25	275	275		49	256											
91	Cabonne	450	450					49	100	28	69	119	84	105		105	36	555	278	278	24	20		20		34	223		223	41		119										
92	Carrathool (Groundwater)	880	252	199	370	12	47	0	238	13	539	43	0	59	44	102	12	982	295	687	61	33	10		23	27	64		64	5	30	1	12									
93	Tumbarumba	280	164	106	10				74	169	18	19		59	104	163	51	443	155	288	6	11	4	1	6	23	130	103	27	6		19										
94	Gundagai	372	148	145	60	19	0	0	44	26	60	232	11	120	93	213	25	586	264	322	7	30			30	5	119	44	75	27	129	84	19									
96	Warren (Dual Supply)	365	183	75	63	19	25		193	20	86	29	11	125	61	186	23	551	220	331	11	42	2	10	30	24	638	141	497	4	10		19									
97	Bombala	416	174	160	46	36	0	12	81	0	90	230	2	100	0	100	50	516			45	27		13	14	40	185		185	115	160	35	36									
98	Walcha	485	208	188	62	27		5	85	10	197	188		77	73	150	73	635	476	159	95	60	29	12	19	41	137	137		91		161	27									
100	Balranald (Dual Supply)	425	308	0	53	49	15	0	66	11	204	49	79	153	0	153	24	578	329	249	32	37		28	10	10	200		200	8			49									
101	Murrumbidgee (Groundwater)	284	144		108	32			18	14	115	37	100	9	137	146	15	429			12	30		2	28	2	44		44	4		5	32									
103	Central Darling (Dual Supply)	1455	331	972	86	66	0	31	188	0	138	1093	5	11	0	11	2	1466	616	850	26	13	1	4	8	35	211	11	200	205	930	97	66									
104	Boorowa	425	325	8	69	23		8	131	20	74	191	2	120	23	143	49	568	108	460	26	48		3	45	45	177		177	66		168	23									
105	Brewarrina	984	343	412	86	143	0	0	276	27	227	443	12	367	106	473	29	1457	510	947	14	56	22	13	21	17	355	32	324	28	261	39	143									
106	Jerilderie (Dual Supply)	535	347	12	120	45	10		98	29	151	214	33	73	98	171	15	706	247	459	13	74		15	59	9	112	5	107	19	2	167	45									
Medians (% of LWUs basis) for 200 to 1,500 Properties		438	195	124	62	29	0	0	92	10	108	187	11	103	42	148	25	610	278	331	17	35	19	13	23	20	181	64	169	27	144	65	35									

- NOTES:
1. 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).

2. 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		% Undergoing Training		Outsourcing		Injuries		Days Lost		
		(1)	(2)	(3) C8	(4)	(5)	(5a) C6	(6) C5	(7)	(8) A5	(9) A6	(10) A4	(11)	(12)	(13) F29	(13a) F15	(13b) F27	(14)	(15)	(16)	(19)	(20)	(21)	(22)	(22a)													
2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14		
	Sydney Water				1,799,000		1,687,000		4,644,000		24,786	73	24				217	391	15,672																			
	Hunter Water				224,326		212,956		528,000		4,903	46	19				145	33	0																			
LWUs with > 10,000 Properties																																						
1	Gosford	65960	65,650	65,770	1.05	69,780	0.95	1.05	66,535	161,300	1,320	53	2	184	14	396	27.7	0	1.4	17	71	5	5	4	56	0												
2	Wyong	61170	61,090	61,870	0.98	60,320	0.96	0.97	57,618	151,700	1,212	50	6	142	12	108	6.5	0	1.3	5	100	0	6	1	95	1												
3	Shoalhaven	46030	46,420	47,280	0.89	41,890	0.94	0.90	40,056	78,600	1,169	36	13	217	19	311	13.0	0	2.4	10	100	0	52	3	3	0												
5	MidCoast	36270	36,380	36,500	0.96	35,040	0.92	0.96	32,224	81,000	1,123	31	13	208	19	108	3.8	0	1.6	19	100		1	3	26	0												
6	Tweed	34080	33,050	33,370	0.91	30,370	0.95	0.93	29,406	76,200	700	43	8	185	26	147	4.5	320	2.3	6	95	10	1	4	4	0												
7	Port Macquarie-Hastings	28340	28,690	28,940	0.95	27,500	0.93	0.95	25,552	75,000	684	40	5	156	23	236	6.5	0	1.5	10	100	5	0	0	0	0												
9	Wagga Wagga	24280	25,050	25,280	1.04	26,290	0.93	1.05	24,674	62,100	623	42	6	38	6	180	4.7	0	1.2	9	100	10	3	4	41	1												
10	Coffs Harbour	25040	25,160	25,310	0.93	23,540	0.94	0.93	22,068	69,200	693	34	5	117	17	367	8.6	1,002	1.8	5	93	0	5	7	356	4												
11	Albury	21510	21,850	22,160	0.99	21,940	0.92	0.99	20,161	48,300	519	42	4	58	11	151	3.3	0	0.6	0	16	47	0	0	0	0												
13	Tamworth Regional	18900	19,170	19,350	1.00	19,350	0.92	1.00	17,705	44,600	555	35	4	24	4	500	9.7	0	2.1	10	37	0	5	1	28	0												
15	Eurobodalla	19010	19,060	19,170	0.94	18,020	0.95	0.94	17,053	29,300	527	34	5	130	25	246	4.4	0	2.0	3	100	0	0	5	24	0												
17	Queanbeyan	15570	15,810	16,180	1.03	16,670	0.93	1.04	15,584	38,400	327	51	1	15	5	301	5.0	0	0.6	19	67	2	4	0	4	0												
19	Orange	15860	16,200	16,470	1.00	16,470	0.92	1.00	15,119	40,900	437	38	2	26	6	55	0.9	0	1.0	13	100		1	0	1	0												
18	Dubbo	14150	14,270	14,430	1.11	16,020	0.90	1.12	14,619	34,700	399	40	2	13	3	175	2.8	0	0.7	9	55	0	1	5	11	0												
16	Wingecarribee	15470	15,460	16,420	0.95	15,600	0.93	0.96	14,651	38,200	555	28	6	73	13	180	2.8	300	2.3	3	38	21	9	5	130	2												
14	Clarence Valley	15530	15,580	15,570	0.94	14,640	0.93	0.94	13,589	30,400	409	36	6	93	23	593	8.7	2,733	2.1	3	65	0	4	0	2	0												
21	Bathurst Regional	13860	14,000	14,300	1.08	15,450	0.89	1.08	13,825	33,300	394	39	1	31	8	194	3.0	0	0.7	9	100	4	1	0	2	0												
24	Ballina	14350	14,770	14,990	0.93	13,940	0.90	0.93	12,592	36,100	324	43	4	116	36	631	8.8	0	1.6	5	100	56		3	5	0												
22	Lismore	12020	12,060	12,150	1.05	12,760	0.91	1.06	11,713	28,200	359	36	3	33	9	208	2.7	0	2.0	0	100	5	0	0	0	0												
23	Bega Valley	12440	12,390	12,430	0.98	12,180	0.93	0.98	11,291	21,000	401	30	10	58	14	456	5.6	0	2.0		100	7	0	3	0	0												
27	Byron	10910	10,800	10,930	0.96	10,490	0.87	0.96	9,129	20,500	248	42	4	80	32	145	1.5	0	1.9	0	100	0	2	4	5	0												
26	Essential Energy	9720	9,720	9,720	1.00	9,720	0.93	1.00	9,040	19,000	246	40	2	11	4	103	1.0	0	0.8		100	0	0	0	0	0												
20	Goulburn Mulwaree	10030	9,340	10,260	1.03	10,570	0.90	1.03	9,522	22,100	283	37	2	26	9	123	1.3	300	1.8	10	95	8	2	10	22	0												
25	Kempsey	8650	8,970	9,360	1.04	9,740	0.92	1.04	8,955	20,700	273	36	8	83	30	150	1.5		2.2	14	75	9	0	2	0	0												
Medians (% of LWUs basis)		550,940			558,210			1,260,800			13,780		38				187		138		2		7		1		3											
and totals for >10,000 Properties																																						
LWUs with 3,001 - 10,000 Properties																																						
29	Armidale Dumaresq	8440	8,500	8,550	0.98	8,380	0.93	0.98	7,775	20,400	229	37	1	1	0	200	1.7	0	1.9	6	19	3	3	6	58	2												
31	Lithgow	7620	7,630	7,640	0.98	7,480	0.94	0.98	7,019	20,900	163	46	3	36	22	462	3.5	853	1.5		100		1	17	437	17												
30A	Hawkesbury	7810	7,830	7,830	0.98	7,650	0.88	0.99	6,815	24,000	184	42	2	24	13	188	1.4	0	2.0	0	80	0	1	4	6	0												
30	Griffith	9260	9,250	8,250	0.85	7,010	0.90	0.84	6,216	25,600	225	31	3	29	13	120	0.8		3.1	5	45	0	2	0	18	0												
33	Richmond Valley	6960	6,960	7,000	0.95	6,650	0.90	0.95	5,979	16,700	197	34	4	31	16	232	1.5	0	2.5		100	0																
32	Mid-Western Regional	6730	6,990	7,150	1.00	7,150	0.90	1.00	6,446	15,100	224	32	4	14	6	361	2.6	1,715	1.3	11	100	1	4	5	22	1												
34	Nambucca	5870	5,980	6,010	0.95	5,710	0.90	0.95	5,143	12,700	175	33	4	52	30	153	0.9	0	1.8	10		9	1	3	2	0												
35	Singleton	5690	5,790	5,850	0.96	5,620	0.92	0.93	5,006	15,800	151	37	1	15	10	73	0.4		1.8	20	56	20	0	3	0	0												
37	Inverell	4810	4,830	4,850	0.97	4,710	0.96	0.97	4,520	11,600	126	37	4	21	17	75	0.4	0	1.5	14	29	10	0	0	0	0												

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	% Undergoing Training	Outsourcing	Injuries	Days Lost										
		(Ratio of Connected Properties to Assessments)	Connected Properties (1) x (2)	(Ratio of Residential Assessments to Total Assessments)	(Ratio of Res Conncted Props to Res Assessments)	Connected Residential Properties (1)x(4)x(5)	Permanent	Peak (% of Permanent)	(km)	(3) / (8)	(No.)												(No.)	(11) / [(8) / 100]	\$/prop	\$M	(\$'000)	(Employees /1000 props)	(%)	(2 or more days per year)	(% of Maintenance Cost)	(No.)	Total (%)	Due to Injury (No.)	(%)
		(1)	(2)	(3) C8	(4)	(5)	(5a) C6	(6) C5	(7)	(8) A5	(9) A6												(10) A4	(11)	(12)	(13) F29	(13a) F15	(13b) F27	(14)	(15)	(16)	(19)	(20)	(21)	(22)
2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14											
41	Muswellbrook	5590	5,910	5,990	0.96	5,720	0.94	0.96	5,399	12,700		163	35	2	13	8	1,199	6.9		1.7	10	61	10	1	6	4	0								
36	Parkes	5570	5,280	5,290	0.95	5,030	0.88	0.95	4,404	12,200	130	144	35	4	2	1	150	0.8	0	3.1	25	96	2	0	0	0	0								
42	Corowa	4860	4,910	5,490	0.95	5,210	0.90	0.95	4,665	10,100	190	152	34	3	64	42	51	0.3		2.1		100	0	1	4	30	1								
38	Moree Plains	4150	4,210	4,200	0.97	4,080	0.87	0.96	3,511	9,800	100	89	46	4	28	31	31	0.1	0	1.5	17	100	20	0	0	0	0								
44	Gunnedah	3860	3,870	3,850	1.03	3,960	0.91	1.03	3,618	9,200	120	111	36	2	2	2	66	0.3		1.8		100	5	0	7	0	0								
46	Narrabri	3970	4,030	4,020	0.98	3,940	0.86	0.98	3,410	11,400	100	114	35	3	22	19	33	0.1	0	1.8	0	100		9	1	3	0								
43	Tumut	4390	4,420	4,440	0.95	4,220	0.89	0.95	3,746	8,600	130	148	29	5	20	14	91	0.4		1.5		92	0	0	3	0	0								
49	Young	3620	3,630	3,650	1.04	3,800	0.89	1.04	3,397	8,800	110	95	40	1	5	5	1,876	7.1	664	1.6	17	100	10	0	4	0	0								
39	Cowra	3730	3,600	3,730	0.95	3,540	0.92	0.95	3,259	8,700	110	100	35	1	7	7	149	0.5	16	1.1		100	0	0	2	0	0								
45	Upper Hunter	4550	4,610	4,450	0.92	4,090	0.91	0.92	3,706	12,300	100	117	35	4	13	11	48	0.2	0	0.9	0	100	5	1	1	8	1								
52	Snowy River	3360	3,290	3,310	1.43	4,740	0.93	1.43	4,397	4,100	390	93	51	4	18	19	561	2.7		1.5	14	72	30	0	3	0	0								
51	Forbes	3170	3,190	3,180	1.00	3,180	0.89	1.00	2,817	7,900	110	89	36	1	17	19	274	0.9	0	1.9	33	50	30	0	1	0	0								
50	Cooma-Monaro	4590	3,440	3,430	0.95	3,250	0.89	0.95	2,885	7,200	130	110	30	2	7	6	478	1.6		2.5		100	0	0	9	0	0								
53	Berrigan	3420	3,420	3,590	0.98	3,520	0.88	0.98	3,097	6,800	110	109	32	4	49	45	82	0.3	18	1.6	0	36	15	1	3	3	0								
48	Leeton	3410	3,480	3,480	0.94	3,270	0.86	0.94	2,829	7,900	100	101	32	3	44	44	338	1.1		1.8		67	0	0	0	0	0								
54	Deniliquin	3300	3,300	3,310	0.96	3,180	0.88	0.95	2,766	6,600	150	107	30	1	24	22	92	0.3	280	1.9	0	17	0	0	1	0	0								
Medians (% of LWUs basis) and totals for 3,000 to 10,000 Properties		120,520120,710									283,100	3,332	35					1501	25					0	3										
LWUs with 1,501 - 3,000 Properties																																			
47	Bellingen	3170	3,150	3,190	0.95	3,030	0.90	0.95	2,729	7,700	100	91	33	3	27	30	254	0.8	0	2.3	0	100	20	1	6	14	1								
60	Glen Innes Severn	3080	3,080	3,090	0.91	2,810	0.86	0.91	2,424	6,200	120	111	25	2	6	5	233	0.7		1.2		100	5	0	0	0	0								
58	Cootamundra	2860	2,890	2,880	0.98	2,820	0.89	0.98	2,505	5,600	120	63	45	1	4	6	29	0.1	0	0.7	0	100	1	0	1	0	0								
57	Wellington	2750	2,710	2,700	0.98	2,650	0.88	0.98	2,327	5,900	100	91	29	1	13	14	3	0.0		0.8		50	7	0	0	0	0								
91	Cabonne	2590	2,460	2,320	0.92	2,140	0.88	0.92	1,875	4,400	87	74	29	5	11	15	109	0.2	3,329	3.3	14	100	5	0	3	0	0								
80	Greater Hume	2720	2,730	2,740	0.95	2,610	0.86	0.95	2,252	6,000	100	77	34	6	21	27	111	0.3		1.3		100	10	1	3	4	0								
59	Lachlan	2110	2,110	2,110	1.03	2,170	0.88	1.03	1,897	5,000	110	76	29	3	21	28	0	0.0	0	1.8	0	100	8	0	0	0	0								
65	Murray	2970	3,120	3,300	0.95	3,130	0.88	0.95	2,753	6,700	210	98	32	2	43	44	77	0.2		1.0		100	0	0	0	0	0								
62	Narromine	2060	2,060	2,060	0.95	1,960	0.87	0.95	1,695	5,200	130	49	40	2	13	27	193	0.4	0	1.5	33	100	3	0	0	0	0								
56	Yass Valley	2410	2,430	2,480	0.94	2,330	0.91	0.94	2,119	6,000	110	78	30	1	10	13				1.3		33	20	1	1	5	1								
61	Liverpool Plains	2110	2,110	2,080	0.98	2,040	0.90	0.98	1,843	4,900	110	58	35	2	9	16	88	0.2	0	1.5	0	100	0												
55	Warrumbungle	2490	2,570	2,560	0.99	2,540	0.83	0.92	1,957	4,900	100	80	32	4	9	11	40	0.1		1.3	31	100	6	0	5	0	0								
69	Temora	2130	2,130	2,150	1.00	2,150	0.86	1.00	1,843	4,600	270	47	46	1	4	9	0	0.0	0	0.5	0	100	0	0	0	0	0								
71	Palerang	2190	2,260	2,200	0.95	2,090	0.91	0.95	1,912	4,700	99	63	33	3	15	24	89	0.2	100	1.7		57	0	0	0	0	0								
72	Bland	1930	1,930	1,930	0.95	1,830	0.86	0.95	1,585	3,800	110	49	37	3	10	20	0	0.0	0	1.1	0	100	10	0	0	0	0								
63	Narrandera	1850	1,850	1,850	0.92	1,700	0.88	0.92	1,502	4,800	110	41	41	1	4	10	251	0.4	42	1.8		100	0	0	9	0	0								
67	Cobar	1830	1,830	1,830	0.95	1,740	0.91	0.95	1,582	5,000	120	52	33	1	5	10	0	0.0	0	1.1	0	100	0	0	0	0	0								
74	Wentworth	1920	1,930	1,680	0.95	1,590	0.88	0.95	1,403	3,500	140	65	24	5	27	42	8	0.0		2.5		100			3										
75	Coonamble	1370	1,350	1,260	1.02	1,280	0.92	1.02	1,176	2,900	170	46	28	2	12	26	42	0.1	0	2.3	0	100	0	0	4	0	0								
70	Kyogle	1790	1,800	1,800	0.95	1,710	0.90	0.95	1,530	3,600	120	62	28	3	9	15	109	0.2		3.5	17	100	10	2	2	0	0								



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		Undergoing Training		Outsourcing		Injuries		Days Lost		
			(1)	(2)	(3) C8	(4)	(5)	(5a) C6	(6) C5	(7)	(8) A5	(9) A6	(10) A4	(11)	(12)	(13) F29	(13a) F15	(13b) F27	(14)	(15)	(16)	(19)	(20)	(21)	(22)	(22a)													
2011/12	2012/13	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14	2013/14				
77	Junee	1690	1,700	1,710	0.95	1,630	0.93	0.95	1,507	4,600	120	43	38	1	0	0	33	0.1	0	1.2	0	50	20	0	0	0	0	0	0	0	0	0	0	0	0				
78	Blayney	1900	1,930	1,880	1.03	1,940	0.85	1.03	1,639	3,900	100	76	26	1	7	9	63	0.1	38	1.0		100	8	0	0	0	0	0	0	0	0	0	0	0	0				
79	Walgett	1930	2,000	1,900	0.85	1,610	0.94	0.85	1,512	6,500	180	48	34	3	9	19	0	0.0	0	2.5	0	50		0	0	0	0	0	0	0	0	0	0	0	0				
68	Tenterfield	1790	1,800	1,810	0.95	1,720	0.85	0.95	1,467	3,700	99	66	26	2	5	8	123	0.2		2.0		100	5	0	0	0	0	0	0	0	0	0	0	0	0				
Medians (% of LWUs basis) and totals for 1,500 to 3,000 Properties			53,930	53,510						120,100		1,604	33				53	4		1	0			0	0														
LWUs with 200 - 1,500 Properties																																							
84	Gilgandra	1400	1,400	1,400	0.98	1,370	0.89	0.98	1,222	2,900	110	37	37	1	17	46	148	0.2		2.0		73		0	2	0	0	0	0	0	0	0	0	0					
73	Upper Lachlan	1530	1,530	1,530	1.00	1,530	0.85	1.00	1,307	2,800	140	56	27	3	8	14	95	0.1	0	2.0	0	100	0	0	0	0	0	0	0	0	0	0	0	0					
87	Bourke	1230	1,220	1,220	1.00	1,220	0.90	1.00	1,092	2,100	120	34	36	1	8	24				2.5		100	0	0	0	0	0	0	0	0	0	0	0	0					
86	Hay	1300	1,320	1,300	0.98	1,280	0.86	0.98	1,097	2,400	100	37	35	1	8	22	124	0.2	0	1.6	0	100	30	0	0	0	0	0	0	0	0	0	0	0					
83	Oberon	1190	1,200	1,200	1.02	1,220	0.85	1.02	1,032	3,200	130	38	32	1	4	11	11	0.0		2.5		100	5	0	0	0	0	0	0	0	0	0	0	0					
81	Gwydir	1210	1,210	1,210	0.95	1,150	0.90	0.95	1,034	2,600	140	41	28	2	8	20	23	0.0	1	2.6	33	100	8	0	0	0	0	0	0	0	0	0	0	0					
85	Uralla	1090	1,100	1,110	1.00	1,110	0.91	1.01	1,028	2,400	100	35	32	1	6	17			1	1.4		100	10	0	1	0	0	0	0	0	0	0	0	0					
95	Weddin	970	990	990	0.94	930	0.88	0.93	809	2,000	120	31	30	1	0	0	0	0.0	0	1.3	0	100	0	0	0	0	0	0	0	0	0	0	0	0					
89	Bogan	1020	1,020	960	1.01	970	0.89	1.01	860	2,300	150	20	49	1	4	20	7	0.0		3.1		33	0	0	0	0	0	0	0	0	0	0	0	0					
76	Harden	970	990	990	0.95	940	0.85	0.94	790	2,100	100	42	22	1	0	0	0	0.0	0	1.1	0		0		0	0	0	0	0	0	0	0	0	0					
88	Wakool	1180	1,060	1,060	0.95	1,010	0.86	0.95	863	2,100	120	47	21	4	14	30	393	0.4		5.9		33	10	0	0	0	0	0	0	0	0	0	0	0					
93	Tumbarumba	1030	1,040	1,060	0.95	1,000	0.85	0.95	856	1,700	120	47	21	2	3	6	588	0.6	0	1.0	100	100	0	0	0	0	0	0	0	0	0	0	0	0					
94	Gundagai	900	900	960	0.85	820	0.87	0.84	704	2,400	130	73	11	1	5	7	62	0.1		2.4		100	5	0	0	0	0	0	0	0	0	0	0	0					
92	Carrathool	880	880	880	0.95	830	0.85	0.95	711	1,900	120	23	36	3	11	48	105	0.1	0	2.8	0	100		0	0	0	0	0	0	0	0	0	0	0					
96	Warren	880	880	860	0.92	790	0.90	0.92	711	1,800	140	17	46	2	8	47	271	0.2		3.8		100	2	0	0	0	0	0	0	0	0	0	0	0					
99	Coolamon	1040	1,050	1,060	0.95	1,000	0.89	0.95	891	2,400	100	44	23	2	8	18	57	0.1	0	1.0	0	50	0	0	0	0	0	0	0	0	0	0	0	0					
102	Lockhart	880	910	920	0.95	880	0.88	0.95	769	1,800	100	42	21	3	6	14				1.5		100			2	0	0	0	0	0	0	0	0	0					
98	Walcha	790	800	790	1.01	790	0.87	1.01	687	1,700	110	30	26	1	1	3	5	0.0	0	2.5	50	100	0	0	0	0	0	0	0	0	0	0	0	0					
100	Balranald	900	900	900	0.95	850	0.86	0.95	735	1,600	160	38	22	2	10	26				2.4		100	0	0	0	0	0	0	0	0	0	0	0	0					
97	Bombala	810	810	810	0.95	770	0.84	0.95	651	1,800	110	35	22	2	5	14	92	0.1	0	2.6	0	100	0	0	0	0	0	0	0	0	0	0	0	0					
101	Murrumbidgee	770	770	770	1.03	790	0.94	1.05	760	1,600	110	23	34	2	12	52	53	0.0		5.1		100	0	0	0	0	0	0	0	0	0	0	0	0					
90	Guyra	1180	1,250	1,240	0.95	1,180	0.89	0.95	1,051	2,400	110	57	21	2	2	4	19	0.0	0	1.3	0	100	5	0	6	0	0	0	0	0	0	0	0	0					
104	Boorowa	650	690	700	0.94	660	0.90	0.94	594	1,500	430	29	23	1	4	14	61	0.0		2.6		100	10	0	4	145	37												
105	Brewarrina	580	580	590	0.86	500	0.89	0.85	443	1,500	110	16	31	3	8	50	78	0.0	0	2.0	0	100	0	0	0	0	0	0	0	0	0	0	0	0					
106	Jerilderie	450	450	450	0.95	430	0.77	0.95	332	780	120	12	36	1	5	42	49	0.0		2.3			0	0	0	0	0	0	0	0	0	0	0	0					
103	Central Darling	220	230	380	1.00	380	0.92	1.00	346	580	110	23	17	1	4	17	0	0.0	0	2.6	0	100	0	1	2	5	2												
107	Urana	330	330	330	0.95	320	0.87	0.95	276	720	200	15	21	2	9	60				7.8	40	80	0	0	0	0	0	0	0	0	0	0	0	0					
Medians (% of LWUs basis) and totals for 200 to 1,500 Properties			25,510	25,670						53,080		942	27				49	2		2	0			0	0														
Median All LWUs (% of LWUs basis)												Properties served per km of main				34	Capital Expenditure \$110 per property				1.8 employees per 1000 properties																		
Median All LWUs (Statewide basis)												38				\$193 per property				1.6 employees per 1000 properties																			
Totals for all LWUs			Connected Sge properties		742,000		Total Sge populaton 1.72M			19,660 km of Sge mains			Total Capital Expenditure \$180M			Total Days Lost Due to Injury 1,573																							
99 LWUs with Sge services			Total no. of Sge Assessments		758,000		Total No. of Sewage Treatment Works			300			Pumping Stations			3123	Total No. of Sge Employees			1,221																			





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)			Mains (% of Total Length)	Service Connections (%)	(\$'000 per 100 km of Main)	(% of CRC)	(\$'000 per 100 km of Main)	(No. per 100km of main)		(Res, NonRes + Trade Waste)			(ML)	(%)	(33a) E4	(33b) E5	Infiltration /inflow	Res	Non-Res	Trade Waste	Other	Primary Level	Secondary Level	Tertiary Level	(kL/property)			(%)			Total Volume Recycled (ML)	Volume Recycled for Urban Water (ML)	% of Total Effluent that is Recycled																																																																																																																																																																																																																																																																																																																																																																										
		(23)			(24) A14			(25)			(27)	(28)	(29)	(30)	(31)	(31a) E13		(32) W18			(32a) W17	(33)	(33a) E4	(33b) E5	(34)	(35)	(36)	(37)	(38)	(39a) E1	(39b) E2	(39c) E3	(39) W19			(40) E8			(41a) W26	(41b) W20+W21+W 25-W25.1	(41c) W27																																																																																																																																																																																																																																																																																																																																																																										
11/12 12/13 13/14			11/12 12/13 13/14			11/12 12/13 13/14			13/14	13/14	13/14	13/14	13/14	12/13 13/14		11/12 12/13 13/14			13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	13/14	1



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)	Mains (% 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) E4	(33b) E5	Infiltration /inflow	Res	Non-Res	Trade Waste	Other	Primary Level	Secondary Level	Tertiary Level	(kL/property)	(%)	Total Volume Recycled (ML)	Volume Recycled for Urban Water (ML)	% of Total Effluent that is Recycled																
(23)	(24) A14	(25)	(27)	(28)	(29)	(30)	(31)	(31a) E13	(32) W18	(32a) W17	(33)	(33a) E4	(33b) E5	(34)	(35)	(36)	(37)	(38)	(39a) E1	(39b) E2	(39c) E3	(39) W19	(40) E8	(41a) W26	(41b) W20+W21+W 25-W25.1	(41c) W27																	
11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	13/14	12/13	13/14	11/12	12/13	13/14	13/14	13/14	13/14	13/14	13/14	13/14	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	11/12	12/13	13/14										
LWUs with 200 - 1,500 Properties																																											
84	Gilgandra	139	139	70	144	50	35	8	3	3	0.0	0.1	549	1.2	114	0.0	0.0	310	310	257		100	100	1 of 1	10	70	20			100	227	226	188	-		257		100	50	100			
73	Upper Lachlan	532	541	304	18	14	9	0	0	0	1.8	0.3	189	0.5	25	0.0	0.0	592	652	519		100	100	3 of 3	33	61	6			100	388	428	339	-		60		0	0	9			
87	Bourke		44	44	394	112	129	0	0	0	0.0	0.7			235	0.0	0.0	195	191	191	1	94	60	0 of 1	8	89	3	1		94		159	156	157	-			0	0	0			
86	Hay	54	54	54	81	81	81	0	0	0	0.0	0.5	430	0.8		0.0	0.0	287	287	287	5	97	100	1 of 1	7	88	3	2		97		225	222	224	-			0	0	0			
83	Oberon	39	53	39	24	24	26		47	13	0.0	0.2			166	0.0	0.0	192	318	315	45	100	100	1 of 1	5	73	3	14	5			100	159	261	258	-		350		100	100	100	
81	Gwydir	66	68	56	141	78	93	63	49	51	0.0	0.2			32	0.0	2.4	277	299	275		100	100	2 of 2	8	76	16			100	241	260	239	10	10	10	38	38	10	3	14		
85	Uralla	194	86	46	19	17	29	39	6	0	0.0	0.1			77	0.0	0.0	262	147	123	3	100	54	0 of 1	13	82	2	2	1			100	241	134	111				0	0	0		
95	Weddin	77	65	65	129	123	213	3	0	0	0.0	0.0				0.0	0.0	170	165	165		100	100	1 of 1	12	79	9		0	100		186	178	178	-		14		6	8	8		
89	Bogan	50	50	50	20	0	0	0	0	0	5.0	0.2	35	0.1	425	0.0	0.0	622	622	190		95	100	1 of 1	5	76	19			95		606	606	196	-		80		100	100	44		
76	Harden	190	190	12	17	12	7		0	5	0.0	0.2			67	0.0	4.8	510	510	586		77	50	0 of 1	1	73	26			26	26	26	552	541	623	90	90	90	15	15	54	63	3
88	Wakool				0	0	0	0	0	0	2.1	0.0	845	1.5	87	0.0	0.0	342	343	343		100	100	5 of 5		91	9			43	6	51	306	340	339	6	100	6			0	0	0
93	Tumbarumba				6	2	0	0	0	0	2.1	0.3	251	0.6		0.0	0.0	364	275	199	32	83	100	2 of 2		73	11	16			83		372	279	199	-	-	-			0	0	0
94	Gundagai	3	3	5	11	16	14	3	3	4	0.0	0.5	70	0.3	44	0.0	0.0	117	117	234		100	100	1 of 1	2	73	26			100		154	154	285	-		234	234	100	100	100		
92	Carrathool				68	39	65	5	4	0	0.0	0.0	378	1.3	143	0.0	0.0	111	108	191		100	100	3 of 3		100				100		134	129	230	-	-	-	2		1	1	1	
96	Warren		12	12	124	388	176	0	0	0	5.9	1.9	824	1.1	512	0.0	0.0	186	203	176		99	52	1 of 2	1	99				99		230	251	223	-		2		1	1	1		
99	Coolamon	2	5	5	14	7	9	2	2	2	0.0	0.0			120	0.0	0.0	104	105	105		100	100	2 of 2	2	94	4			29	71	105	105	105	-		75		25	25	71		
102	Lockhart				2	7	0	0	0	0	0.0	0.0			7	0.0	0.0	154	137	114		96	75	1 of 3		100				43	54	184	158	130	-		1	1	1	1	1		
98	Walcha	130	67	30	50	27	37	50	27	10	0.0	0.0			310	26.7	10.0	212	127	153	8	100	67	0 of 1	6	84	5	5			100		264	158	194	-		-			0	0	0
100	Balranald	11	11		8	3	18	0	0	0	0.0	0.0				0.0	0.0	211	179	180		100	100	2 of 2		100				100		248	210	212	-		131		73	73	73		
97	Bombala	3	3	3	40	51	40	3	0	0	0.0	0.3	203	0.2	74	0.0	0.0	173	173	173		100	44	1 of 2	1	2	1			96		100		224	224	225	-		43		21	21	21
101	Murrumbidgee				39	96	0	0	0	0	0.0	0.0	174	0.4	61	0.0	0.0	161	153	144		100	25	1 of 2		100				47	53		204	193	182	-	-	-	27		17	19	19
90	Guyra		14	116	7	18	11	9	5	0	0.0	0.0	39	0.1		0.0	0.0	328	203	220		100	85	1 of 2	30	63	7			100		294	171	186	-					0	0	0	
104	Boorowa	10	60	90	73	53	59	3	0	0	0.0	0.9	138	0.3	110	0.0	0.0	101	138	147	1	75	100	1 of 1	18	75	7	1			75		165	212	223	-		1		1.0	1	1	
105	Brewarrina	56	69	31	100	75	88	6	0	0	0.0	1.0	244	0.4	306	0.0	0.0	171	191	198		98	100	3 of 3	3	97				98		343	380	396	-		111		100	57	57		
106	Jerilderie	83	83	83	17	33	0	0	0	0	0.0	0.0			25	0.0	0.0	77	72	81		100	0	0 of 1	12	88				100		179	167	188	-		50	50	6	6	62		
103	Central Darling				78	22	87	9	9	9	0.0	1.3			278	0.0	0.0	80	40	45		100	100	1 of 1		100				100		369	172	118	-					0	0	0	
107	Urana				0	0	0	0	0	0	0.0	0.0			33	0.0	0.0	90	90	90		100	100	1 of 2		100				100		284	284	281	-					0	0	0	
Medians (% of LWUs basis) for 200 to 1,500 Properties		46			26			0			0	0	223	0	99																	212			212	Total Vol			1,491	1			3
Median All LWUs (% of LWUs basis)		Breaks & Chokes			35	Overflows			3	Renewals 0.5% of CRC												Median % sge treated that was compliant was 100%												Median % of Effluent Recycled			15						
Median All LWUs (Statewide basis)		37			13			Renewals 0.5% of CRC																											9								
Totals for all LWUs															Total volume of sewage collected = 163,000 ML																No. of LWUs Reporting Biosolids Reuse 25 (ie. 25% of LWUs)					Total volume of effluent recycled = 43,000 ML							
																															No. of LWUs Reporting Recycling for Urban use 39 (ie. 39% of LWUs)					Effluent Recycled % of total volume collected = 27%							
																															No. of LWUs Reporting Effluent Recycling 83 (ie. 84% of LWUs)												



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 of System Assets (CRC)			Net Debt to Equity WS & Sge			Return on Assets			ERRR			Cross Subsidies		Operating Result	WDV CRC per Property	Externalities (Annual Fees to EPA)	Loan Payment			Operating Cost (OMA)				Management Cost					
		(42) F2	(42a) F6	(43)	(44)	(45) F10	(46)	(47)	(48) F22	(48a)	(48b) F18	(49a)	(49b)	(50)	(47a) F10/C8	(51)	(51a)	(52) F12	(54)																	
12/13	13/14	13/14	13/14	13/14	13/14	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	12/13	13/14	13/14	13/14	11/12	12/13	13/14	10/11	11/12	12/13	13/14	10/11	11/12	12/13	13/14				
	Sydney Water	1,250,000	1,250,000	696			30,974			94	100	96				1.6	1.4	1.4					17,217						275	288	274	264				
	Hunter Water	161,921	157,965	704			4,519			59	75	78				1.8	2.1	1.8					20,146						347	303	368	340				
LWUs with > 10,000 Properties																																				
1	Gosford	41,620	44,253	634	82	81	1,505	1,973	30,000	4	5	6	-0.1	-0.4	-0.2	-0.1	-0.4	-0.1			-76	-29	21,563	0.7	8	10	46	272	325	432	404	98	102	176	189	
2	Wyong	31,450	31,739	526	88	75	704	1,032	16,683	10	10	10	-0.4	-0.2	-0.3	-0.4	-0.2	-0.4			-35	-39	11,668	0.9	45	67	44	350	327	345	354	71	44	55	54	
3	Shoalhaven	38,310	40,465	966	82	81	453	679	14,358	2	1	0	1.6	1.4	1.6	2.1	1.9	2.2			146	174	10,814	1.1	171	148	183	442	451	465	478	157	168	172	169	
5	MidCoast	39,290	38,528	1,100	85	77	467	659	18,051	25	25	23	0.9	1.3	1.3	2.2	2.8	2.8			140	58	13,324	1.3	341	366	651	498	482	493	491	103	98	104	105	
6	Tweed	26,920	35,735	1,177	83	72	600	800	23,967	4	3	2	1.0	0.5	1.5	1.0	0.6	1.7			38	262	19,744	1.6	207	211	206	447	427	460	505	164	158	155	175	
7	Port Macquarie-Hastings	23,640	31,945	1,162	90	90	299	400	13,833	-2	-4	-5	1.4	0.7	2.6	1.1	0.6	2.9			-19	128	10,859	1.5	110	127	145	356	369	463	494	96	93	107	125	
9	Wagga Wagga	16,720	16,616	632	69	86	252	342	13,540	0	6	6	0.0	-0.3	-0.5	0.6	0.5	0.3			-30	-49	9,585	0.7	123	117	115	291	367	413	417	53	58	62	70	
10	Coffs Harbour	25,950	27,493	1,168	79	90	462	647	25,563	17	15	14	0.6	-0.4	-0.4	1.6	0.1	0.5			-109	-43	19,614	0.7	672	654	652	491	516	584	610	167	177	183	202	
11	Albury City	17,580	20,466	933	75	70	177	323	14,573	3	1	-2	0.5	2.2	3.9	0.9	2.6	4.2			165	309	8,054	0.9	46	52	45	414	444	437	429	142	146	122	160	
13	Tamworth Regional	18,440	20,485	1,059	76	45	234	289	14,950	0	-2	-2	1.0	0.9	1.6	2.1	1.8	2.5			107	203	12,079	0.7	295	282	297	339	409	429	471	101	176	172	175	
15	Eurobodalla	17,730	18,797	1,043	87	77	239	398	20,761	3	2	1	1.0	0.7	0.6	1.6	1.1	1.0			15	66	13,249	1.1	165	340	352	497	536	523	565	162	165	176	195	
17	Queanbeyan	6,870	12,605	756	86	82	117	236	14,572	-18	-17	-19	-1.9	-1.0	3.6	-3.5	-2.2	2.6			-98	219	6,991		0	0	0	380	417	373	372	123	145	153	161	
19	Orange	10,290	11,694	710	77	73	153	238	14,461	-12	-13	-14	1.6	2.2	2.7	0.7	1.2	1.7			208	269	9,306	0.5	0	0	0	384	327	346	374	206	154	184	176	
18	Dubbo	12,920	14,221	888	90	63	157	233	16,140	2	0	-4	2.1	2.3	3.4	1.7	1.8	2.7			216	240	9,824	0.5	19	19	18	379	367	359	349	159	165	158	161	
16	Wingecaribee	13,190	14,888	954	86	72	263	329	20,018	0	0	-1	0.5	0.8	0.6	1.1	1.4	1.1			-13	97	16,851	2.0	233	225	235	359	412	424	531	140	151	156	220	
14	Clarence Valley	14,640	15,947	1,089	83	88	248	290	18,624	9	10	10	0.2	-0.3	0.6	1.2	1.1	2.3			-96	265	16,937	2.2	373	453	488	413	465	524	495	152	159	180	171	
21	Bathurst Regional	9,570	10,784	698	64	65	89	190	13,284	-11	-11	-12	0.4	1.1	2.2	0.0	0.7	1.8			63	129	5,760	0.5	0	0	0	391	406	423	416	99	149	199	192	
24	Ballina	13,560	15,481	1,111	80	90	264	335	22,369	2	8	11	0.2	-0.2	-0.2	0.4	0.6	1.4			-164	-42	18,964	1.5	197	341	541	555	601	665	649	203	213	308	278	
22	Lismore	10,990	10,768	844	80	71	189	314	25,808	-2	-1	-1	-0.5	1.0	0.3	-0.8	0.5	0.2	94		61	31	14,776	1.3	63	62	61	434	452	458	466	103	119	109	122	
23	Bega Valley	14,770	16,467	1,352	90	65	182	289	23,246	-1	-2	-3	0.7	-0.7	-0.1	1.2	-0.2	0.4			-98	-9	14,940	1.5	191	192	191	698	698	708	734	284	229	293	328	
27	Byron	13,530	15,655	1,492	75	65	147	200	18,290	21	21	17	0.0	-1.5	1.3	2.3	1.2	3.9			-276	105	14,016	2.3	479	497	491	547	560	629	652	152	160	173	176	
26	Essential Energy	6,240	6,323	651	78	60															313	331			0	0	0	363	429	329	319	63	149	56	39	
20	Goulburn Mulwaree	10,740	10,774	1,019	70	67	84	147	14,371	1	-2	-5	4.0	5.6	5.6	4.3	5.8	5.6			471	476	7,987	0.7	191	187	155	365	394	399	368	105	117	113	108	
25	Kempsey	7,670	8,165	838	76	71	158	211	22,554	7	8	8	-0.6	-1.2	-1.1	0.0	-0.6	-0.4			-259	-264	16,177	2.6	204	197	208	545	533	599	543	172	174	182	181	
Medians (% of LWUs basis) for >10,000 Properties							18,051			1	0		1	1		1	2			1	117	13,249			168	169		448	475			165	173			
LWUs with 3,001 - 10,000 Properties																																				
29	Armidale Dumaresq	4,990	5,150	615	66	67	60	86	10,078	-2	-4	-6	1.4	0.5	2.1	0.9	-0.1	1.8			119	220	7,200	0.9	0	0	0	383	449	434	325	71	78	103	125	
31	Lithgow	6,280	7,042	941	90	90	61	102	13,414	14	10	12	0.2	1.8	1.8	1.9	3.5	1.7			90	219	8,146	1.8	180	198	409	588	464	442	503	202	119	83	109	
30A	Hawkesbury	5,610	5,429	710	72	63	87	162	20,712	6	-5	3	-1.6	-0.1	-0.2	-1.9	-0.2	-0.4			-21	-14	11,355	1.9	0	0	0	480	523	555	549				254	
30	Griffith	7,470	7,592	1, <																																

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 of System Assets (CRC)			Net Debt to Equity WS & Sge			Return on Assets			ERRR			Cross Subsidies		Operating Result	WDV CRC per Property	Externalities (Annual Fees to EPA)	Loan Payment			Operating Cost (OMA)				Management Cost									
		(42) F2	(42a) F6	(43)	(44)	(45) F10	(46)	(47)	(48) F22	(48a)	(48b) F18	(49a)	(49b)	(50)	(47a) F10/C8	(51)	(51a)	(52) F12	(54)																					
12/13	13/14	13/14	13/14	13/14	13/14	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	12/13	13/14	13/14	13/14	11/12	12/13	13/14	10/11	11/12	12/13	13/14	10/11	11/12	12/13	13/14								
38	Moree Plains	3,240	3,023	741	65	84	28	55	13,136	9	7	9	1.3	0.4	0.2	1.4	0.3	0.3		28	9	6,778	1.9	91	90	90	389	470	537	473	100	114	124	114						
44	Gunnedah	2,130	2,416	610	72	81	29	50	13,048	-18	-20	-21	2.7	3.2	3.5	1.6	2.3	2.7		236	268	7,357	0.8	0	0	0	181	168	192	233	60	51	76	106						
46	Narrabri	2,800	3,437	872	90	72	37	88	21,921	-27	-31	-22	2.2	5.5	1.5	1.6	4.6	1.0		255	139	9,324	0.8	22	23	10	356	373	397	408	31	23	45	35						
43	Tumut	3,250	3,298	782	74	90	33	49	11,121	3	3	1	0.7	2.0	2.1	0.0	1.6	1.5		121	68	7,896		0	34	126	419	464	436	451	39	157	137	143						
49	Young	2,780	2,866	754	79	65	37	54	14,896	-26	-8	6	12.8	5.1	1.3	11.5	5.3	2.9		372	282	9,619	0.7	11	75	316	138	154	179	307	63	59	71	86						
39	Cowra	3,210	3,098	875	78	90	32	47	12,580	6	5	6	0.7	1.3	1.5	3.2	3.5	3.1		119	131	9,174	0.8	296	1191	380	427	326	437	418	100	91	160	176						
45	Upper Hunter	2,920	2,299	562	83	90	30	64	14,270	-13	-9	-11	-0.5	1.9	-1.0	-1.8	0.9	-1.9		133	-79	7,407	1.7	0	0	0	353	431	427	495	139	166	172	195						
52	Snowy River	3,140	3,580	755	65	59	33	63	18,956	-6	-4	-6	0.5	0.1	1.2	0.1	0.0	1.4		4	70	6,900	1.5	4	86	85	610	426	407	392	132	77	115	82						
51	Forbes	2,110	2,292	721	77	59	31	45	14,131	-16	-14	-15	1.1	-1.6	0.9	0.9	-1.8	0.8		-148	87	9,607	2.4	46	41	36	346	447	661	470	24	19	20	58						
50	Cooma-Monaro	2,980	3,056	940	85	90	32	55	15,926	-6	-7	-7	0.2	1.1	1.4	-0.3	0.6	1.0		91	-20	9,937	1.1	34	42	44	418	447	572	561	180	148	213	165						
53	Berrigan	1,390	1,807	513	82	89	17	38	10,447	-11	-13	-16	-1.0	-2.0	1.9	-2.4	-2.9	0.8		-153	49	4,760	0.0	0	0	0	277	306	388	309	94	97	99	100						
48	Leeton	2,160	2,074	634	68	82	24	55	15,857	-19	-20	-20	1.0	1.0	0.4	-0.6	-0.5	-0.7		17	0	7,457	1.8	3	33	1	378	457	480	461	119	124	130	156						
54	Deniliquin	2,810	2,784	875	79	90	19	44	13,220	-11	-7	-10	1.1	5.5	4.7	0.5	5.3	5.0		269	334	5,965	0.9	0	0	25	414	399	444	419	198	208	218	207						
Medians (% of LWUs basis) for 3,000 to 10,000 Properties		13,339							-7			-7		2		1		2		1		119		109		8,021		37			40		435		416		127		134	
LWUs with 1,501 - 3,000 Properties																																								
47	Bellingen	2,510	3,018	996	90	86	39	55	17,240	-19	-19	-20	-0.6	0.0	0.9	-1.3	-0.4	0.3		-30	91	12,821	2.3	4	0	0	546	592	591	637	174	180	196	194						
60	Glen Innes Severn	1,360	1,343	478	90	88	13	20	6,429	4	4	6	0.8	1.3	1.7	0.8	1.5	1.9		70	75	4,539	1.0	87	87	87	314	278	262	282	163	165	152	167						
58	Cootamundra	1,200	1,375	488	74	83	20	36	12,548	-10	-13	-15	0.0	1.3	1.3	0.0	1.3	1.3		76	73	6,962	1.1	17	9	9	223	228	258	254	62	63	65	68						
57	Wellington	1,680	1,732	654	77	90	20	34	12,672	20	16	11	-0.7	-1.3	-1.2		-0.6	-0.4		-120	-128	7,674	1.1	148	150	150	361	414	415	424	158	153	167	174						
91	Cabonne	1,520	1,582	739	83	56	28	38	16,269	-7	-7	-4	-0.1	-0.5	-0.5	-0.5	-0.6	-0.7		-137	1459	13,173	2.8	30	106	44	236	352	444	500	41	41	60	190						
80	Greater Hume	1,130	1,392	533	75	85	31	46	16,741	-5	-5	-6	-0.5	-0.4	0.4	-0.8	-0.6	0.1		-46	42	11,749	2.2	15	1	1	338	314	311	318	131	122	119	125						
59	Lachlan	980	1,018	469	90	78	21	37	17,382	-12	-13	-13	0.2	-0.7	-0.7	-1.5	-2.2	-2.1		-67	-66	9,777	3.2	0	0	0	314	360	427	444	90	82	85	90						
65	Murray	1,560	1,741	556	72	71	17	24	7,239	-8	-10	-10	2.9	2.2	2.6	2.3	1.6	2.0		115	136	5,359	1.0	38	27	0	286	286	328	344	116	103	114	118						
62	Narromine	1,170	1,205	615	78	90	17	28	13,362	-25	-28	-30	0.5	0.8	1.3	-0.2	0.3	0.7		70	105	8,720	1.5	0	0	0	301	371	363	498	169	156	207	331						
56	Yass Valley	1,920	1,830	785	90	68	18	36	14,530	2	20	21	1.1	1.4	1.7	0.6	1.0	0.0		83	126	7,793	1.3	0	0	0	405	437	519	446	169	172	176	185						
61	Liverpool Plains	1,050	1,064	522	87	69	26	28	13,506	-8	-5	-7	0.5	2.0	2.2	0.0	1.4	1.8		252	279	12,754	2.9	0	0	0	184	250	245	254	69	78	93	108						
55	Warrumbungle	1,190	1,217	479	78	70	21	36	13,875	-6	-5	-7	-0.2	0.4	0.0	-0.5	-0.3	-1.1		30	-4	8,305	3.0	0	0	0	331	351	338	415	60	69	67	97						
69	Temora	650	690	321	77	90	11	18	8,580	2	-8	-7	0.9	0.3	0.1	0.4	0.0	0.0		15	11	4,973	1.3	0	0	0	145	199	231	229	20	16	20	15						
71	Palerang	2,120	2,386	1,142	90	90	29	41	18,780	-5	4	3	5.5	0.3	0.6	5.7	1.1	1.7		-64	135	13,899	3.3	196	373	369	456	440	503	498	148	140	152	169						
72	Bland	1,130	1,184	647	90	90	10	22	11,476	1	-1	-2	1.2	2.2	2.7	1.0	2.1	2.6		126	159	5,578	1.6	0	0	0	337	341	357	357	46	53	54	54						
63	Narrandera	1,280	1,099	646	82	90	11	20	10,966	-27	-30	-30	2.5	3.9	2.8	1.1	3.4	2.1		216	129	6,618	1.8	0	0	0	351	347	452	395	132	109	106	98						
67	Cobar	630	724	416	89	90	9	17	9,484	-5	-6	-9	-1.6	-0.6	-1.3	-1.8	-0.6	-1.7		-35	-69	5,330	1.7	0	0	0	172	221	190	295	20	52	47	112						
74	Wentworth	1,360	1,384	870	90	16	17	37																																



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 of System Assets (CRC)			Net Debt to Equity WS & Sge			Return on Assets			ERRR			Cross Subsidies		Operating Result	WDV CRC per Property	Externalities (Annual Fees to EPA)	Loan Payment			Operating Cost (OMA)				Management Cost						
		(42) F2	(42a) F6	(43)	(44)	(45) F10	(46)	(47)	(48) F22	(48a)	(48b) F18	(49a)	(49b)	(50)	(47a) F10/C8	(51)	(51a)	(52) F12	(54)																		
12/13	13/14	13/14	13/14	13/14	13/14	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	13/14	13/14	12/13	13/14	13/14	11/12	12/13	13/14	10/11	11/12	12/13	13/14	10/11	11/12	12/13	13/14						
LWUs with 200 - 1,500 Properties																																					
84	Gilgandra	660	869	634	79	78	8	17	12,420	-12	-12	-12	-1.8	-1.5	0.8	-2.1	-1.6	0.6		-142	-149	5,985	2.2	53	50	0	242	312	322	330	52	42	65	64			
73	Upper Lachlan	1,180	1,303	852	81	90	13	22	14,649	-16	-17	-8	0.1	1.4	2.5	0.0	1.1	1.9		-108	220	8,742	2.6	373	64	28	351	422	404	392	126	123	108	124			
87	Bourke	690	742	608	86	90	8	15	12,311	-17	-16	-17	1.1	3.0	2.0	-0.1	1.9	1.1		-115	128	6,398	2.4	9	7	7	322	389	296	394	44	136	114	173			
86	Hay	860	872	681	83	90	10	21	16,222	-13	-14	-16	1.7	2.0	1.3	1.1	1.5	0.9		151	105	7,928	0.5	0	0	0	440	465	403	460	175	254	200	241			
83	Oberon	840	703	576	61	77	12	18	15,303	-4	-4	-4	0.7	-0.1	-0.9	0.3	-0.5	-1.3		-6	-88	9,545	2.4	0	0	0	415	539	587	563	144	184	281	260			
81	Gwydir	720	716	623	47	83	6	9	7,393	-3	-4	-6	4.9	-15.2	7.0	2.8	-16.4	5.7		-1250	214	5,228	3.4	6	1	6	351	283	234	250	89	17	22	21			
85	Uralla	520	532	479	90	90	6	8	6,866	-6	-7	-9	-0.8	1.0	-0.7	-1.0	-0.6	-1.4		61	-39	5,717	2.7	0	0	0	314	395	344	377	107	138	124	132			
95	Weddin	330	392	422	90	90	6	12	12,286	0	-8	-10	0.9	1.2	1.9	0.8	1.0	1.8		46	103	6,590	3.2	0	0	0	169	178	180	259	29	28	28	28			
89	Bogan	560	676	697	65	80	7	11	11,270	-9	-12	-14	1.6	3.7	3.4	0.9	2.8	2.5		247	247	7,307	3.1	0	0	0	287	254	275	432	175	127	114	208			
76	Harden	620	638	679	80	74	6	14	13,652	-8	-9	-12	1.3	2.6	2.2	9.4	1.8	1.5		178	145	6,485	3.2	76	89	0	421	358	265	312	96	136	133	167			
88	Wakool	680	751	744	90	90	12	26	24,480	-7	-8	-8	-0.6	-0.7	0.2	-1.3	-1.3	-0.3		-1331	-16	12,219		5	47	3	302	309	416	361	73	95	84	105			
93	Tumbarumba	600	651	651	78	73	12	21	19,408	-6	-5	-5	1.9	0.9	2.0	0.6	0.0	1.1		58	205	12,114	3.9	0	0	1	323	390	399	318	80	85	86	94			
94	Gundagai	620	709	865	59	74	8	15	15,371	-7	-8	-11	-0.3	2.3	3.1	-0.4	2.1	2.8		246	310	10,068	3.6	0	0	0	422	475	446	438	131	135	147	118			
92	Carrathool	270	282	340	90	90	6	7	7,900	3	3	4	-1.5	-1.6	0.6	-1.5	-1.6	0.6		-191	46	7,075		0	0	0	207	211	252	205	20	24	20	16			
96	Warren	490	489	619	77	90	4	13	15,487	-21	-20	-20	0.3	-1.0	-1.6	-2.6	-3.5	-3.6		-101	-120	5,549	3.5	0	0	0	418	552	543	541	182	192	242	235			
99	Coolamon	440	441	441	90	90	10	13	12,728	0	-10	-10	1.3	0.1	-0.3	0.7	-0.4	-0.7		-80	-111	10,479	0.6	0	0	0	298	248	289	318	87	55	53	52			
102	Lockhart	370	401	456	90	90	7	13	13,761	0	-24	-23	0.6	0.0	0.4	-0.4	-0.9	-0.2		-18	25	7,674	2.2	0	0	0	336	297	319	295	79	73	97	32			
98	Walcha	370	374	473	78	89	4	5	6,742	-6	-7	-8	2.5	2.1	1.8	1.3	1.2	0.9		113	97	5,489	3.8	7	6	1	259	292	312	427	65	56	72	97			
100	Balranald	270	272	320	84	90	7	13	14,186	-2	-2	-4	0.4	-0.1	-1.0	-0.6	-0.9	-1.8		-7	-84	8,145	0.0	0	0	0	141	182	178	268	41	49	52	99			
97	Bombala	400	431	560	80	2	13	29	35,641	-13	-13	-14	0.8	-0.9	-0.8	0.1	-1.4	-1.3		-151	-149	17,527	3.9	19	54	0	202	284	322	334	48	82	98	97			
101	Murrumbidgee	220	242	306	90	90	7	10	13,110	-14	-15	-15	0.3	-0.5	-0.5	-0.7	-1.2	-1.3		-43	-48	9,249	1.2	0	0	0	163	213	212	237	55	73	77	82			
90	Guyra	620	647	548	85	90	18	21	17,281	-3	-4	-6	1.2	-0.2	0.0	1.3	-0.2	0.1		-54	31	15,590	2.5	109	178	97	407	390	362	347	111	123	119	20			
104	Boorowa	390	408	618	89	90	6	12	17,424	-8	0	-11	-0.2	0.6	0.3	-1.2	-0.3	-0.3		38	-14	8,482	0.9	34	34	35	332	380	356	385	118	207	160	130			
105	Brewarrina	620	423	846	87	90	5	11	18,712	-12	-14	-11	0.0	4.5	-0.1	0.0	4.4	6.0		-36	-46	10,694		8	6	6	835	1058	472	576	148	147	92	162			
106	Jerilderie	240	246	572	66	90	4	7	16,576	-27	-28	-25	2.9	2.6	1.3	-0.1	0.0	-0.9		176	42	8,188	2.2	0	0	0	362	380	343	419	89	79	83	135			
103	Central Darling	210	107	282	90	90	3	5	12,489	-2	0	-3	-1.1	-1.7	1.4	-1.4	-1.7	2.0		-215	108	7,526		0	0	0	415	1359	1026	250		78	47	29			
107	Urana	170	187	584	90	90	7	8	25,261	-1	-8	-9	-0.4	-0.2	0.2	-0.9	-0.4	0.0		-35	34	21,809		237	234	213	439	386	376	356	114	114	114	113			
Medians (% of LWUs basis) for 200 to 1,500 Properties					14,186			-10			0.6			0.6						-35		34	8,145		0			0	343		356	97			105		
Median All LWUs (% of LWUs basis)		Revenue/prop		\$680		CRC \$/Assessment		\$14550		Net D/E		-7		1.3		ERRR		1.1				Loan Payment per property		\$10		OMA \$ per property		\$400		Mngmnt \$/prop		\$130					
Median All LWUs (Statewide basis)		\$846				\$16700		1		1.3		1.5										\$90				\$430				\$161							
Totals for all LWUs		Total Sge Revenue \$629 M			Total Sge CRC \$13,400M																																
					Total Sge WDC \$9,200M																																

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			STWs Compliant at all times	Fully Complied with Environmental Regulator	Odour Complaints			Service Complaints			Total Sewerage Complaints (Odour, service, Other, Billing)			Customer Inquiries	Average Sewerage Interruption						
		BOD				SS				N	P	Oil & Grease	Faecal Coliform	%			%			%			%			%			%						
Compliance		90 %-ile Limit		Compliance		90 %-ile Limit		(59e)						(59f)			(60)			(61)			(62)			(62a)			(63)			(65)			
	Sydney Water																																		
	Hunter Water																																		

LWUs with > 10,000 Properties

1	Gosford	100	100	100	30	100	100	100	50	100	100	100	100	100	100	100	2 of 2	No	2.6	2.2	1.9	3	2	2	3	2	2	-	224	209
2	Wyang	100	100	100	NL	100	100	100	50	100	100	100	100	100	100	100	6 of 6	Yes	0.6	0.9	1.4	12	10	12	12	10	12	-	143	152
3	Shoalhaven	100	100	100	40	86	95	95	40	100	100	100	100	86	94	95	12 of 13	No	0.2	0.2	0.2	1	0	1	1	1	0.6	-	92	90
5	MidCoast	100	100	99	30	100	100	99	30	99	100	100	100	99	98	96	10 of 13	No	1.1	1.1	1.1	1	2	2	1	2	2	16		
6	Tweed	100	100	100	15	98	97	93	20	100	100	100	100	98	97	83	4 of 8	No	0.4	0.5	1.3	6	6	7	6	6	7	0	182	130
7	Port Macquarie-Hastings	100	100	100	10	100	100	100	15	100	84	100	84	88	89	82	3 of 5	No	1.0	2.3	2.5	5	8	10	5	8	10	3	60	60
9	Wagga Wagga	100	100	100	10	100	100	100	15	100	100	100	100	100	100	100	6 of 6	Yes	0.0	1.0	0.8	50	54	53	50	54	53	-	50	49
10	Coffs Harbour	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	5 of 5	Yes	0.8	0.0	0.0	22	0	0	22	0	0	-	91	99
11	Albury City	100	69	80	15	100	71	100	20	100	100	93	100	71	19	73	2 of 4	No	0.1	0.3	0.3	33	1	1	33	1	1	31	87	84
13	Tamworth Regional	99	100	100	20	100	87	100	20	100	100	100	100	99	87	100	4 of 4	No	0.0	0.2	0.1	22	22	21	22	22	21	-		
15	Eurobodalla	92	72	100	20	100	100	100	30	100	100	100	100	92	72	100	5 of 5	Yes	0.9	0.7	1.2	1	1	2	1	1	2	2		180
17	Queanbeyan	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	0.0	0.1	0.0	18	10	11	18	10	11	0	120	120
19	Orange	100	100	100	30	100	100	100	30	100	100	100	100	75	83	100	2 of 2	Yes	0.9	0.7	1.0	48	26	30	48	26	30	-	100	41
18	Dubbo	100	100	100	30	100	100	100	30	85	100	100	100	83	100	85	1 of 2	No	0.4	0.4	0.7	9	11	11	9	11	11	-	99	109
16	Wingecarribee	100	100	100	10	100	100	100	15	100	100	100	100	93	100	100	6 of 6	Yes	2.2	1.1	1.9	24	21	20	24	21	20	0	120	120
14	Clarence Valley	100	100	100	15	100	99	94	20	92	100	100	100	85	85	73	0 of 6	No	0.9	1.5	1.6	24	23	19	24	23	20	15	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	0.0	0.0	20	18	24	20	18	24	5	120	120
24	Ballina	100	100	80	10	92	88	81	15	100	97	100	100	76	76	75	1 of 4	No	0.5	1.0	1.9	3	1	4	3	1	4	-	120	120
22	Lismore	100	100	100	15	100	100	100	20	100	79	100	100	100	88	79	2 of 3	No	0.0	2.7	0.6	22	3	16	22	3	17	-	112	69
23	Bega Valley	100	100	100	10	100	100	98	20	100	100	100	94	93	69	92	8 of 10	No	0.8	1.2	1.3	9	2	2	9	2	2	1	120	120
27	Byron	100	100	100	10	100	100	100	15	100	97	100	100	94	88	97	3 of 4	No	1.2	2.1	3.7	1	2	4	7	3	5	-	60	60
26	Essential Energy	100	100	100	50	100	100	100	50	100	100	100	100	100	100	100	2 of 2	Yes	0.2	0.5	0.4	0	1	1	0	1	1	-		
20	Goulburn Mulwaree	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	2 of 2	Yes	0.1	1.8	1.9	28	21	30	28	21	30	0	90	90
25	Kempsey	100	100	100	15	80	79	80	20	95	89	100	89	80	79	79	4 of 7	No	0.4	1.3	1.6	1	2	2	1	2	2	117	170	119
Medians (% of LWUs basis) for >10,000 Properties		100	100			88	94							96	99			0.9	1.2		8	10		22	7	11		116	119	

LWUs with 3,001 - 10,000 Properties

29	Armidale Dumaresq	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	1.6	0.0	1.0	2	0	1	2	0	1.1	-	95	95
31	Lithgow	97	100	92	10	100	73	92	15	78	59	78	78	73	72	73	1 of 2	No	1.9	0.4	0.1	43	1	0	43	1	0	-	90	
30A	Hawkesbury	100	94	100	10	100	94	93	15	94	100	100	94	100	83	87	0 of 2	No	0.3	0.7	0.5	19	20	18	19		18	0	60	60
30	Griffith	100	100	100	10	53	98	99	15	100	100	100	99	52	98	99	2 of 3	No	0.5	0.6	1.4	17	19	20	17	19	20	0	60	60
33	Richmond Valley	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	4 of 4	Yes	0.0	0.2	0.0	0	0	0	0	0	0	36		
32	Mid-Western Regional	75	99	93	10	100	94	84	10	79	49	100	58	68	48	29	0 of 5	No	0.1	1.7	1.4	48	48	54	48	48	54	-		
34	Nambucca	95	96	100	10	92	95	92	15	100	48	100	88	92	57	46	1 of 4	No	1.1	0.9	1.9	8	9	9	8	9	9	-	60	60
35	Singleton	100	100	100	30	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	1.6	0.9	0.0	16	9	12	16	9	12	10	60	60
37	Inverell	97	100	100	20	64	97	99	30	100	100	100	100	64	97	99	2 of 4	No	0.0	0.0	0.0	43	43	11	43	43	11	2	50	50
41	Muswellbrook	86	100	98	20	64	51	63	30	100	100	87	100	64	51	63	0 of 2	No	2.6	0.5	1.4	48	1	3	48	1	3	48	94	116
36	Parkes	100	100	100	30	82	82	74	50	100	100	100	100	82	82	74	3 of 4	No	0.4	0.2	0.0	18	20	34	18	20	34	-	60	60
42	Corowa	100	95	100	NL	100	100	100	NL	100	100	100	100	100	95	100	3 of 3	Yes	0.2	1.1	1.0	17	20	14	17	20	14	0	120	120

Table 17: Sewerage - environmental and levels of service

WATER UTILITY		ENVIRONMENTAL																	LEVELS OF SERVICE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		EPA DISCHARGE LICENCE COMPLIANCE												Sewage Treated that was Compliant			STWs Compliant at all times	Fully Complied with Environmental Regulator	Odour Complaints			Service Complaints			Total Sewerage Complaints (Odour, service, Other, Billing)			Customer Inquiries	Average Sewerage Interruption																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		BOD				SS				N	P	Oil & Grease	Faecal Coliform	(%)			(per 1000 properties)			(per 1000 properties)			(per 1000 properties)			(per 1000 properties)	(minutes)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Compliance		90 %-ile Limit		Compliance		90 %-ile Limit		(%)	(%)					(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)



Table 17: Sewerage - environmental and levels of service

WATER UTILITY		ENVIRONMENTAL																	LEVELS OF SERVICE														
		EPA DISCHARGE LICENCE COMPLIANCE												Sewage Treated that was Compliant			STWs Compliant at all times	Fully Complied with Environmental Regulator	Odour Complaints			Service Complaints			Total Sewerage Complaints (Odour, service, Other, Billing)			Customer Inquiries	Average Sewerage Interruption				
		BOD				SS				N	P	Oil & Grease	Faecal Coliform																				
		Compliance		90 %-ile Limit		Compliance		90 %-ile Limit																									
		(%) (55)	(mg/L) (56)	(%) (57)	(mg/L) (58)	(%) (59a)	(%) (59b)	(%) (59c)	(%) (59d)	(%) (59e) E4	(%) (59f) E5	(%) (60) E7	(per 1000 properties)  (61)	(per 1000 properties)  (62) C11	(per 1000 properties)  (62a) [C13]	(per 1000 properties)  (63)	(minutes)  (65) C16																
11/12	12/13	13/14	13/14	11/12	12/13	13/14	13/14	13/14	13/14	13/14	13/14	11/12	12/13	13/14	13/14	13/14	11/12	12/13	13/14	11/12	12/13	13/14	11/12	12/13	13/14	13/14	12/13	13/14					
LWUs with 200 - 1,500 Properties																																	
84	Gilgandra	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	0.0	1.5	0.0	53	42	28	56	45	31	0	90	90			
73	Upper Lachlan	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	3 of 3	Yes	0.0	0.0	0.0	7	5	5	7	5	5	0	40	40			
87	Bourke	33	40	70	15	29	33	60	20	80	100	100	100	29	33	60	0 of 1	No	0.0	5.7	0.0	109	84	84	109	86	84	0	60	60			
86	Hay	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	0.0	0.0	0.0	39	39	39	39	39	39	0	300	300			
83	Oberon	100	100	100	20	100	100	100	25	100	100	100	100	10	100	100	1 of 1	Yes	0.0	0.0	0.0	7	6	5	8	7	7	-	120	120			
81	Gwydir	100	100	100	20	88	100	100	30	100	100	100	100	88	100	100	2 of 2	Yes	0.0	0.0	0.0	0	0	0	0	0	0	-					
85	Uralla	100	100	100	15	100	100	100	20	100	100	100	100	83	42	54	0 of 1	No	5.5	0.0	0.0	19	1	3	19	1	3	0	120	120			
95	Weddin	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	0.0	0.0	0.0	44	41	71	44	41	71	11	120	120			
89	Bogan	100	100	100	30	100	100	100	30	100	100	100	100	100	100	100	1 of 1	Yes	0.0	0.0	0.0	26	27	20	26	27	20	-	180	80			
76	Harden	100	100	100	20	56	100	75	30	100	100	100	100	56	100	50	0 of 1	No	0.0	0.0	0.0	8	5	13	8	5	14	11	40	30			
88	Wakool	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	5 of 5	Yes	0.0	0.0	0.0	4	4	50	4	4	50	-	60	60			
93	Tumbarumba	100	100	100	20	100	100	100	30	100	100	100	100	100	100	100	2 of 2	Yes	0.0	1.0	3.0	3	4	7	3	6	7	1	120	120			
94	Gundagai	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	1.3	0.0	0.0	13	16	18	17	16	20	2	60	60			
92	Carrathool	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	3 of 3	Yes	0.0	4.8	8.4	70	72	54	70	72	54	0	120	120			
96	Warren	100	100	76	45	100	100	52	65	100	100	100	100	100	100	52	1 of 2	No	0.0	0.0	0.0	27	106	53	27	106	53	4	120	120			
99	Coolamon	100	100	100	30	100	100	100	20	100	100	100	100	100	64	100	2 of 2	Yes	0.0	0.0	0.0	7	4	5	7	4	5	-	180	180			
102	Lockhart	100	100	100	20	100	91	75	30	100	100	100	100	100	91	75	1 of 3	No	0.0	0.0	0.0	48	27	50	48	27	50	-	90	90			
98	Walcha	100	82	100	20	100	100	67	30	100	100	100	100	100	82	67	0 of 1	No	0.0	0.0	0.0	0	10	15	0	10	15	-	90	90			
100	Balranald	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	2 of 2	Yes	0.0	0.0	0.0	9	4	0	9	4	0	-	60	60			
97	Bombala	79	79	79	20	44	44	44	30	100	100	100	100	44	44	44	1 of 2	No	0.0	0.0	0.0	18	13	18	18	13	18	-	120	120			
101	Murrumbidgee	100	86	87	10	50	73	73	15	100	100	100	87	50	50	25	1 of 2	No	0.0	0.0	0.0	18	57	53	18	57	53	-	90	120			
90	Guyra	100	100	100	15	100	100	100	20	100	100	100	100	100	100	85	1 of 2	No	0.0	0.0	0.8	4	8	3	4	8	3	0	120	150			
104	Boorowa	100	100	100	20	85	100	100	30	100	100	100	100	85	100	100	1 of 1	Yes	0.0	1.5	1.5	38	28	29	38	28	29	0	75	90			
105	Brewarrina		100	100	20		100	100	30	100	100	100	100		100	100	3 of 3	Yes	0.0	0.0	0.0	32	24	28	32	24	28	0	30	30			
106	Jerilderie	50	0	0	20	50	0	0	30	100	100	100	100	50	0	0	0 of 1	No	0.0	0.0	0.0	0	0	0	0	0	0	0	300	300			
103	Central Darling	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 1	Yes	0.0	0.0	0.0	304	223	232	304	309	284	-	180	120			
107	Urana	100	100	100	NL	100	100	100	NL	100	100	100	100	100	100	100	1 of 2	Yes	0.0	0.0	0.0	0	0	0	0	0	0	0	60	60			
Medians (% of LWUs basis) for 200 to 1,500 Properties		100	100			100	100							100	100				0.0	0.0		13	18	22	12	15		105	105				
Median All LWUs (% of LWUs basis)		BOD	100	%		SS	100	%											Odour	0.0		Service	12.8					Duration	90				
Median All LWUs (Statewide basis)		100	%			100	%												1.0			8							109				
Totals for all LWUs		91 LWUs complied with BOD licence (92% of LWUs complied) 97% of sampling days complied (4024 sampling days)				81 LWUs complied with SS licence (82% of LWUs complied) 94% of sampling days complied with SS licence (4024 sampling days)				51 LWUs fully complied with regulator 300 STWs were reported to be in use by LWUs 217 of these STWs were compliant at all times				18 LWUs had no discharge licence.																			

- 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 (66)	Operation (67)	Energy (68)	Chemicals (69)	Effluent & Biosolids (69a)	Mains (70)	Pumping Stations (71)	Sewage Treatment (72)	Other (73)	Admin (74)	Engineering & Supervision (75)	Total Management Cost			Treatment (77)	Reticulation (78)	O&M Cost (c/kL) (79)	O&M Cost (80)	Operation Cost (\$'000/pumping station) (81)	Maintenance Cost (82)	Energy Cost (83)	O&M Cost (c/kL) (85)	O&M Cost (86)	Operation Cost (\$'000/100km) (87)	Maintenance Cost (88)	O&M Cost (c/kL) (89)	Operation Cost (90)	Maintenance Cost (91)	Chemical (92)
													(\$/prop) (76a)	(c/kL) (76)																
2013/14					2013/14				2013/14				2013/14	2013/14		2013/14					2013/14	2013/14				2013/14	2013/14			
LWUs with > 10,000 Properties																														
1 Gosford	215	85	89	36	5	0	32	69	97	18	179	10	189	85	404	97	101	31	26	2	16	8	14	169	48	120	43	58	18	5
2 Wyong	301	99	157	42	2		57	107	131	6	54		54	22	354	131	164	44	46	21	18	7	23	282	141	142	53	75	27	2
3 Shoalhaven	309	59	195	35	5	16	47	92	125	45	131	38	169	84	478	125	139	46	18	9	5	3	23	169	146	23	62	69	18	5
5 MidCoast	386	94	177	62	7	46	29	64	159	134	77	28	105	65	491	159	93	40	11	2	5	4	18	92	5	87	98	43	23	7
6 Tweed	330	124	91	72	18	26	43	101	172	15	119	56	175	79	505	172	144	46	17	3	9	4	19	186	2	184	78	58	23	18
7 Port Macquarie-Hastings	369	133	124	60	4	48	38	70	181	81	71	54	125	40	494	181	107	23	12	2	7	4	12	151	48	103	59	21	68	4
9 Wagga Wagga (NO WS)	347	34	297	12	0	4	60	40	216	31	70	0	70	32	417	216	100	18	28	17	3	7	28	255	132	123	99	210		
10 Coffs Harbour	408	132	128	76	13	58	60	105	225	18	131	71	202	88	610	225	165	46	21	9	8	5	26	204	50	155	99	56	44	13
11 Albury City	270	69	86	58	4	53	21	41	156	52	153	6	160	78	429	156	62	20	16	0	7	9	10	87		87	77	35	29	4
13 Tamworth Regional	296	121	88	46	7	35	79	34	183		58	117	175	71	471	183	113	14	27	7	16	4	32	276	74	201	75	58	43	7
15 Eurobodalla	370	85	214	52	19	0	72	117	171	9	195	0	195	112	565	171	189	67	16	8	5	3	41	245	164	81	98	102	23	19
17 Queanbeyan	211	36	113	24	28	10	61	25	122	2	120	41	161	75	372	122	87	12	28	12	7	9	29	313	221	92	56	57	12	28
19 Orange	198	20	122	38	18	0	18	14	142	25	144	32	176	77	374	142	31	6	9	4	2	3	8	66	65	2	62	74	17	18
18 Dubbo	189	26	124	38	1		32	34	109	14	148	13	161	92	349	109	66	19	42	18	10	14	18	129	129		62	66	15	1
16 Wingecarribee	311	101	142	45	8	15	66	54	191	0	118	103	220	98	531	191	120	24	12	4	3	4	29	186		186	85	125	19	8
14 Clarence Valley	324	122	92	53	23	35	47	70	196	11	113	58	171	99	495	196	117	41	11	2	5	4	27	168	4	164	114	64	43	23
21 Bathurst Regional	224	65	113	44	2	1	42	46	135	0	177	15	192	64	416	135	89	16	23	15	6	2	14	166	22	144	45	78	15	2
24 Ballina	371	139	126	92		14	33	110	207	20	236	42	278	131	649	207	143	52	13	1	9	3	16	143		143	98	107	19	
22 Lismore	344	176	64	38	28	39	96	51	189	8	85	37	122	41	466	189	147	17	20	1	13	6	33	343	27	316	64	53	45	28
23 Bega Valley	405	62	342			1	65	80	256	4	121	207	328	190	734	256	145	46	17	9	8		38	199	121	78	148	255		
27 Byron	476	185	169	74	31	17	57	125	247	47	153	24	176	59	652	247	182	42	16	4	9	4	19	240	91	148	82	85	69	31
26 Essential Energy	280	197	60	21	2		112	35	133		25	14	39	27	319	133	147	25	31	0	22	9	79	444	2	442	94	59	60	2
20 Goulburn Mulwaree	260	102	80	37	3	38	82	25	144	8	79	29	108	62	368	144	107	15	10	5	2	3	47	306		306	83	61	13	3
25 Kempsey	362	133	136	56	12	25	66	80	211	5	74	107	181	91	543	211	146	40	9	3	3	3	34	237	0	237	107	111	33	12
Medians (% of LWUs basis)		100	124	44	6	15	57	66	171	13	119	34	173	77	475	171	119	28	17	4	7	4	25	192	57	143	80	65	23	7
LWUs with 3,001 - 10,000 Properties																														
29 Armidale Dumaresq	200	167	-52	13	0	71	96	1	155	-52	94	31	125	48	325	155	97	0	9		9		37	351		351	59		70	
31 Lithgow	394	293		33		68	63	68	263		82	27	109	48	503	263	131	30	14		9	5	28	291		291	116		186	
30A Hawkesbury (NO WS)	295	23	228	0	0	44	93	23	177	1	68	185	254	94	549	177	117	9	7		7		35	388	388		66	133		
30 Griffith	392	54	252	68	15	4	87	110	173	22	139	41	180	66	572	173	197	40	27	19	3	5	32	271	228	43	63	79	26	15
33 Richmond Valley	280	125	102	38	3	12	26	71	172	12	176	101	277	114	557	172	97	29	15	4	8	3	11	87	69	18	71	61	72	3
32 Mid-Western Regional	254	113	96	38	7		76	39	138		48	112	160	100	414	138	115	25	20	9	4	7	47	242		242	86	77	29	7
34 Nambucca (Groundwater)	271	160	39	61	0	10	23	68	141	39	103	50	153	77	424	141	91	35	8		5	3	11	74		74	71		94	
35 Singleton	206	112	62	30	2		93	20	91	3	46	54	100	53	306	91	113	11	8	0	7	0	49	344	48	296	48	46	13	2
37 Inverell	190	59	93	38	0	0	59	42	89	0	31	51	82	34	272	89	101	17	9	5		4	24	219		219	36	70		
41 Muswellbrook	211	146	40	23	2		37	61	87	26	84	98	182	108	394	87	98	36	27	5	12	10	22	129		129	52	16	70	2
36 Parkes	233	148	77	5	0	3	139	0	94	0	105	9	114	49	346	94	139	0	0				60	486	23	463	40	70	16	
42 Corowa	233	125	37	41	17	12	33	60	134	6	32	119	151	90	384	134	93	36	5		3	2	20	112		112	80	37	51	17

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)  2013/14	Components		Pumping					Sewer Main				Treatment			
		Maintenance  (66)	Operation  (\$/property) (67)	Energy  (68)	Chemicals  (69)	Effluent & Biosolids  (\$/prop) (69a)	Mains  (70)	Pumping Stations  (\$/property) (71)	Sewage Treatment  (72)	Other  (73)	Admin  (\$/property) (74)	Engineering & Supervision  (\$/property) (75)	Total Management Cost			Treatment  (\$/property) (77)	Reticulation  (78)	O&M Cost  (c/kL) (79)	O&M Cost  (80)	Operation Cost  (\$'000/pumping station) (81)	Maintenance Cost  (82)	Energy Cost  (83)	O&M Cost  (c/kL) (85)  2013/14	O&M Cost  (86)	Operation Cost  (\$'000/100km) (87)	Maintenance Cost  (88)	O&M Cost  (c/kL) (89)  2013/14	Operation Cost  (90)	Maintenance Cost  (\$/property) (91)	Chemical  (92)
													(\$/prop) (76a)	(c/kL) (76)																
2013/14					2013/14				2013/14				2013/14	2013/14		2013/14					2013/14	2013/14				2013/14	2013/14			
38 Moree Plains	359	174	91	93	0	1	64	108	133	54	91	23	114	33	473	133	172	31	16	4	8	4	19	292		292	39	11	53	
44 Gunnedah	127	109		18			36	28	48	14	69	37	106	61	233	48	64	16	55		19	36	21	130		130	28		48	
46 Narrabri	373	98	241	34	0	0	107	74	189	3	13	22	35	19	408	189	181	41	13	6	3	4	59	370	213	157	103	146	32	
43 Tumut	308	208	10	49	39	3	31	27	237	13	124	19	143	65	451	237	58	12	6	1	4	1	14	89		89	108	8	145	39
49 Young	221	52	112	42	13	3	57	9	140	15	28	58	86	64	307	140	66	7	7		6	1	43	229	77	153	104	78	6	13
39 Cowra	242	88	90	42	16	6	65	28	103	45	85	92	176	110	418	103	93	18	14	5	5	5	41	231		231	65	36	13	16
45 Upper Hunter	300	133	98	43	2	23	119	24	154	3	65	130	195	73	495	154	143	9	8	3	2	3	44	415	47	368	58	71	22	2
52 Snowy River	310	100	123	46	7	34	22	79	169	40	62	19	82	88	392	169	101	85	21	8	7	5	24	114	15	99	182	49	54	7
51 Forbes	411	129	184	68	30	0	121	34	245	10	36	23	58	27	470	245	156	16	6	0	1	5	56	434		434	114	173		30
50 Cooma-Monaro	396	33	245	92	13	13	130	36	230		99	66	165	92	561	230	166	20	17	10	2	5	72	383	346	36	128	106	16	13
53 Berrigan	209	0	209	0	0	0	32	68	102	7	40	60	100	55	309	102	100	37	5	5			18	105	105		56	102		
48 Leeton	305	157	70	53	24		55	83	159	8	80	76	156	78	461	159	138	42	6		5	1	27	177		177	80	64	37	24
54 Deniliquin	212	160	0	48	0	3	51	60	101	0	183	24	207	117	419	101	111	34	8		5	3	29	151		151	57		72	
Medians (% of LWUs basis) for 3,000 to 10,000 Properties		125	91	42	2	3	61	51	140	7	81	51	134	65	416	140	106	27	9	5	5	4	28	230	73	157	68	70	48	13
LWUs with 1,501 - 3,000 Properties																														
47 Bellingen	444	150	129	57	25	83	57	75	306	6	164	29	194	95	637	306	131	37	8	3	3	2	28	189	74	115	150	81	79	25
60 Glen Innes Severn	115	79		36			13	3	94	5	0	167	167	77	282	94	16	1	1		1	0	6	33		33	43		59	
58 Cootamundra	185	97	16	45	4	23	59	11	109	6	20	48	68	37	254	109	70	6	8		2	5	32	265	25	240	58	4	40	4
57 Wellington	250	86	108	43	13		56	43	151		71	103	174	83	424	151	99	20	9		6	3	27	164		164	72	108	0	13
91 Cabonne	311	298	1	12	0	0	38	88	142	43	76	114	190	137	500	142	126	64	17	0	15	2	27	109		109	102		142	
80 Greater Hume	194	157		22	5	10	18	43	129	5	40	85	125	73	318	129	60	25	5		4	1	10	60		60	75		103	5
59 Lachlan	354	35	278	41	0	0	35	99	176	44	47	43	90	40	444	176	134	44	10	6		4	16	100		100	79	176		
65 Murray	227	103	82	38		4	34	151	27	15	46	71	118	54	344	27	185	69	11	4	5	2	15	108	38	70	12	7	8	
62 Narromine	167	31	105	32	0	0	21	46	94	6	267	64	331	198	498	94	67	27	7	7	0		13	84	10	73	56	57	6	
56 Yass Valley	262		198	51	13		16	49	193	3	100	84	185	91	446	193	66	24	12	9		3	8	49	49		95	141		13
61 Liverpool Plains	146	119	14	12	0	0	7	18	112	8	105	3	108	73	254	112	25	12	4	0	3	1	5	26	5	21	76	6	98	
55 Warrumbungle	318	114	163	31	5	6	81	68	167	2	62	35	97	84	415	167	149	59	19	6	7	7	70	256	45	211	145	128	22	5
69 Temora (NO WS)	214	38	44	27	0	105	40	5	169	0	15	0	15	10	229	169	45	3	3	2		1	26	183	183		109		38	
71 Palerang	329	73	190	52	13		11	45	216	57	79	89	169	88	498	216	56	23	6	3	2	1	5	35	6	29	113	110	51	13
72 Bland (NO WS)	303	130	126	48	0	0	70	50	183	0	54	0	54	27	357	183	121	26	9	8		1	36	263	263		94	11	130	
63 Narrandera	298	128	137	33			54	72	169	2	71	27	98	55	395	169	126	41	31	0	30	0	31	224		224	96	136		
67 Cobar	183	90	53	3	3	34	68	25	91	0	33	79	112	45	295	91	93	10	9		8	1	27	227		227	36	53		3
74 Wentworth	237	62	53	42		81	46	94	87	10	47	19	65	5	303	87	140	7	6	1	2	2	3	112	75	37	6		4	
75 Coonamble	222	123	85	14	0	0	55	55	113	0	11	13	23	13	245	113	109	29	6	2	3	0	29	152		152	61	63	38	
70 Kyogle	349	30	276	33	11		30	109	210		127	34	161	90	511	210	139	61	21	17		4	17	82		82	117	189		11
77 Junee (NO WS)	236	191	0	33	0	13	71	0	165	0	50	18	67	28	304	165	71	0	0				29	270		270	68		120	
78 Blayney (NO WS)	240		194	34	11		43	23	174		127		127	86	367	174	65	15	6	4		2	29	109	109		118	137		11
79 Walgett	105	25	71	9	0	0	43	12	47	2	44	44	88	49	193	47	56	7	2	1		1	24	146	108	38	26	31	14	
68 Tenterfield	291		213	40	35	3	46	44	201		196	20	216	127	507	201	90	26	15	13		2	27	120	120		118	128		35
Medians (% of LWUs basis) for 1,500 to 3,000 Properties		88	95	33	0	0	43	45	158	3	58	39	115	73	362	158	91	25	8	3	3	2	26	116	61	100	77	94	40	11

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																																																																																																																																																																																																																																																																																																																																																																																												
													(\$/property)																	(\$/prop)	(c/kL)	(c/kL)	(\$'000/pumping station)	(c/kL)	(\$'000/100km)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	(\$/property)	(c/kL)	

\* 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).



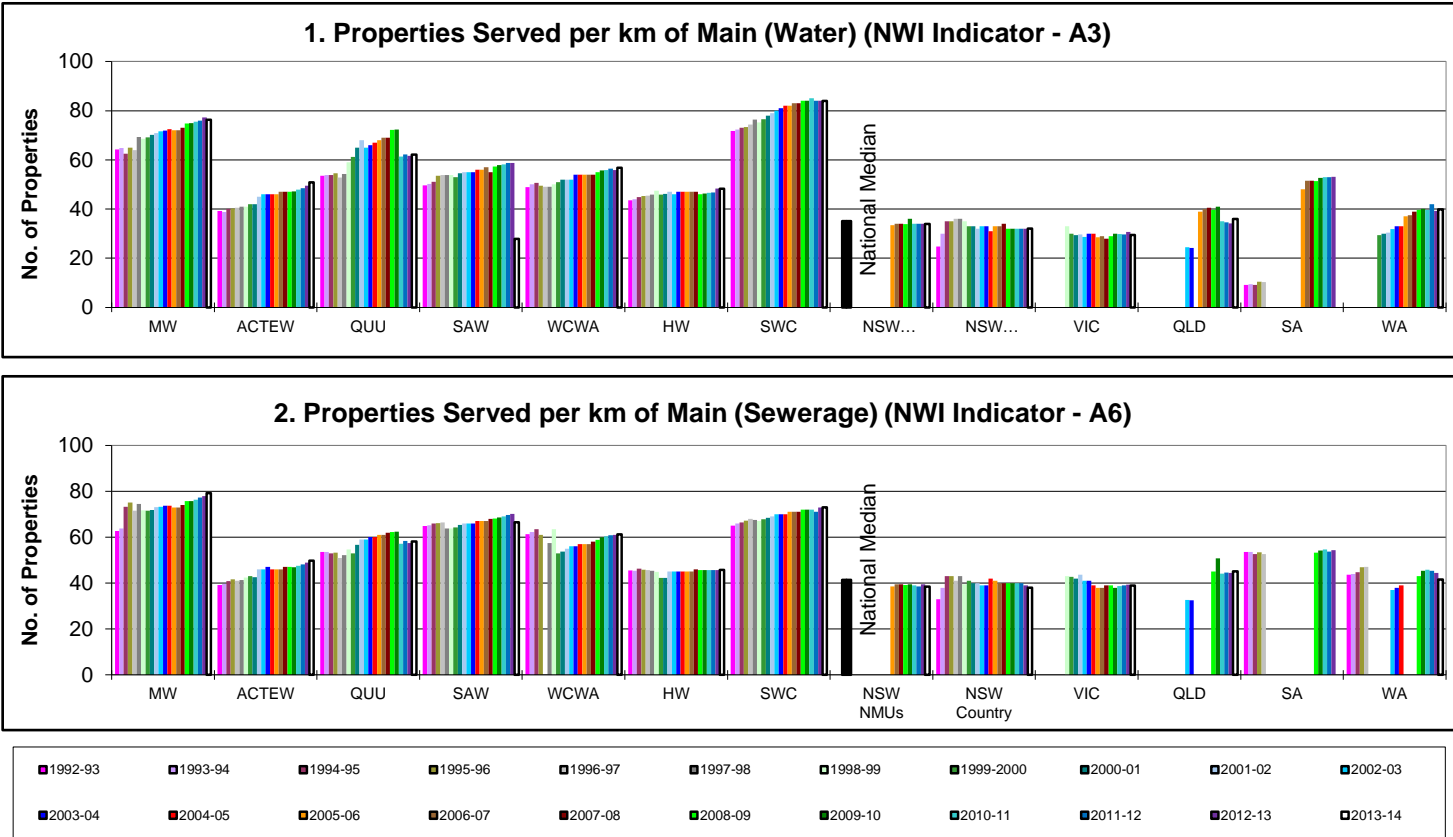
# Appendix A

## National performance comparisons 1992-93 to 2013-14

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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

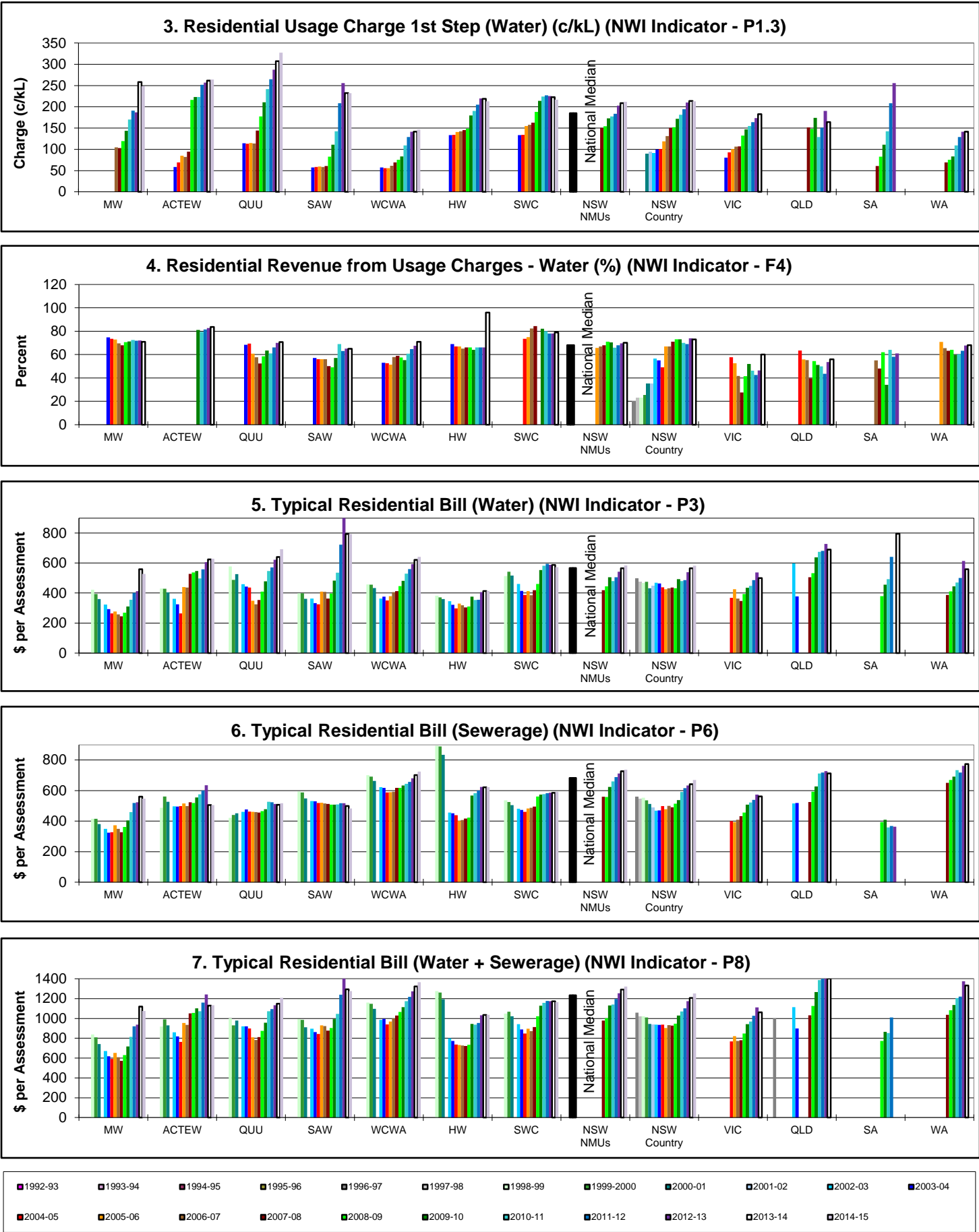
Country Water Utilities

NSW NMUs	Median of NSW regional LWUs with > 10,000 connected properties
NSW Country	Statewide median for all NSW regional 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:

1. Melbourne Water was disaggregated into 4 constituent utilities in 1994. Melbourne Water Consolidated results for 1994-95 to 2013-14 are either aggregated results of the constituent utilities or consolidated results reported in the *National Performance Report 2013-14*, *WSAA Facts* (note 2) or reported in *Urban Water Review* (note 4).
2. Metropolitan Utilities - *National Performance Report 2013-14* used to obtain results from 2001-02 to 2013-14 ([www.bom.gov.au](http://www.bom.gov.au)). *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.
3. 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.
4. 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 2013-14 obtained from median of Victorian utilities (excluding Melbourne Water and its constituents) published in the *2013-14 National Performance Report*.
5. 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 2012-13 obtained from median of SA NMUs (Whyalla and Mt Gambier) published in the *National Performance Report 2012-13*. **The results shown from 2005-06 do not report the overall performance of SA country utilities.** The 2012-13 results are for 2 utilities. Country SA was not reported separately in 2013-14 and the 2013-14 results for SAW (Adelaide) include SA Country.
6. 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 2013-14 obtained from median of QLD NMUs (Cairns, Mackay, Gold Coast, Gympie, Logan, Rockhampton, Toowoomba, Townsville, Unity Water, Wide Bay Water) published in the *National Performance Report 2013-14*. **The results shown for 2005-06 to 2011-12 report a maximum of 7 of the approximately 70 Queensland country utilities.** The 2013-14 results are for 10 utilities.
7. 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 2013-14 obtained from median of WA NMUs (Albany, Australind/Eaton, Bunbury, Busselton, Geraldton, Kalgoorlie-Boulder, Mandurah) published in the *National Performance Report 2013-14*. **The results shown from 1999 do not report the overall performance of WA country utilities.** The 2013-14 results are for water supply and sewerage utilities for the above 7 regions.
8. Except for Graphs 3 and 5 to 7, which are in 2014-15 dollars, financial data is presented in 2013-14 dollars.
9. The National Median is the median value of the 2013-14 results published in the *National Performance Report 2013-14*.
10. Hobart and Darwin results have not been included in the graphs due to space limitations and the limited data coverage by these utilities. For Darwin, 2013-14 results for NWI indicators W12, P8, F13, A8, C9 and H3 are 407, 1784, 1005, 20, 2 and 100% respectively. For Tasmanian Water and Sewerage Corporation, which includes Hobart, results are available for only 1 of these indicators - H3 (99%).

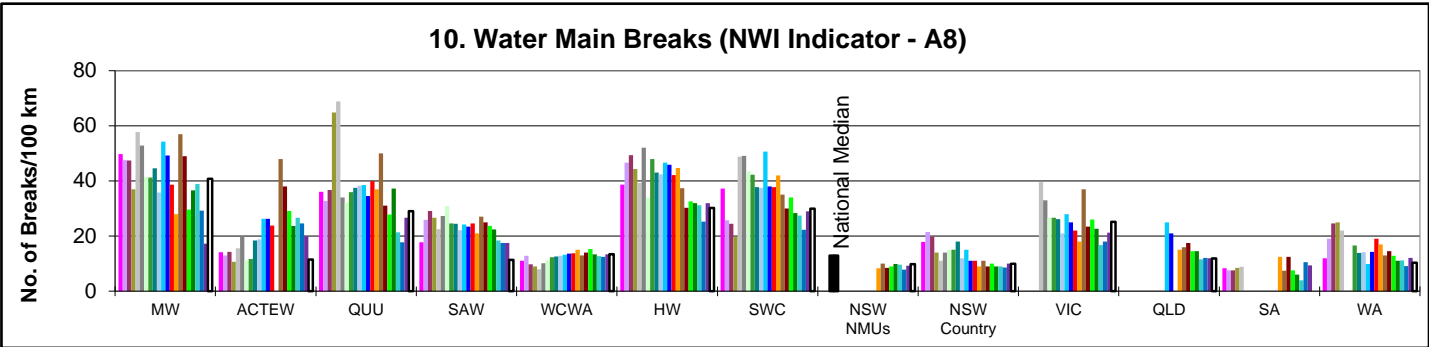
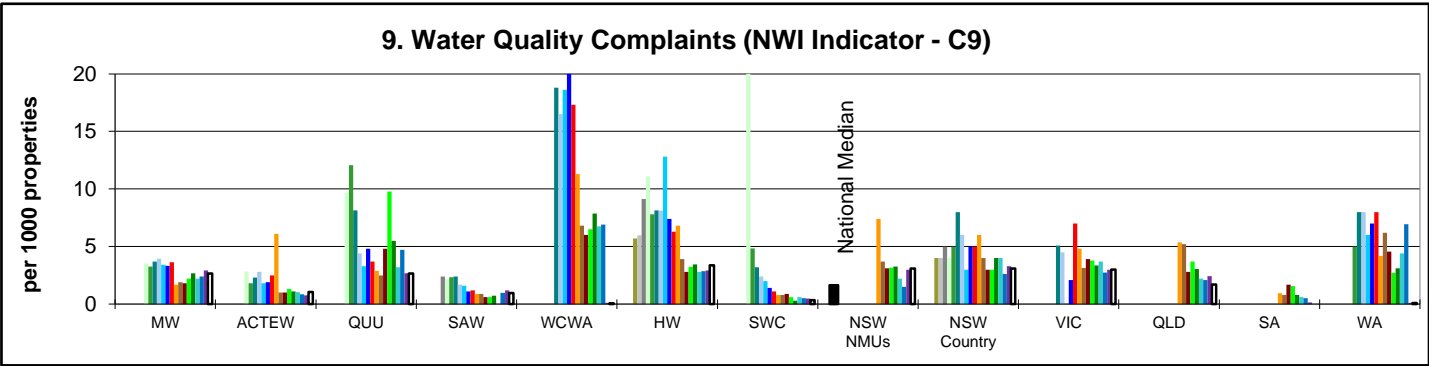
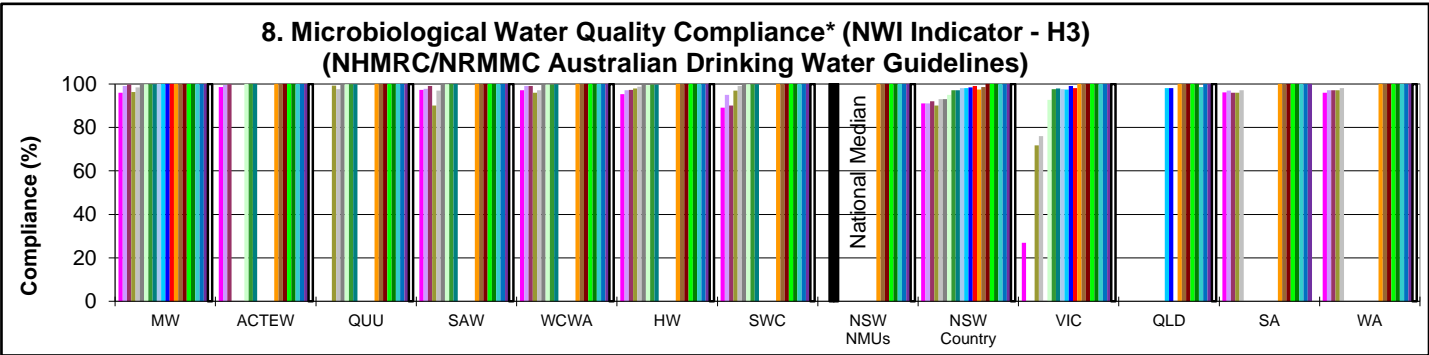
PERFORMANCE COMPARISONS - Social



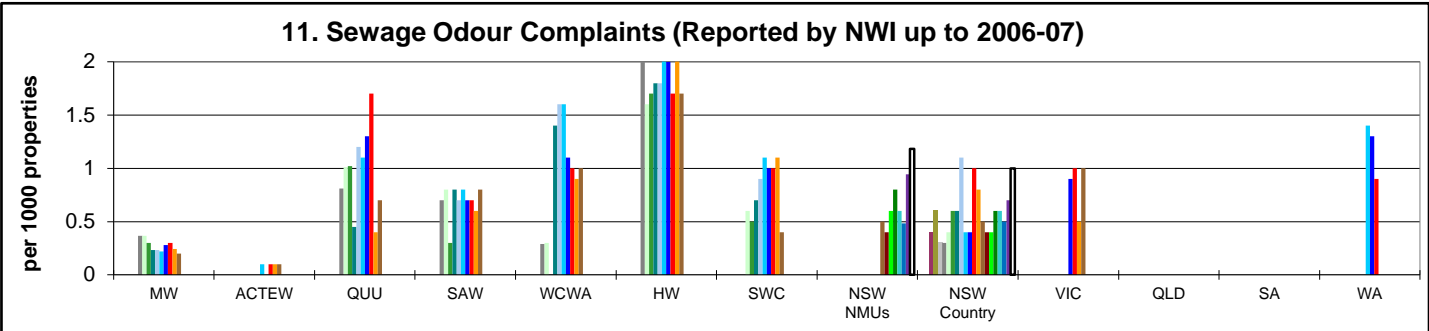
- NOTES**
- 1. The Typical Residential Bill (TRB) is the annual bill paid by a residential customer using the utility's average annual residential water supplied.
  - 2. The TRB is the principal indicator of the overall cost of a water supply or sewerage system.
  - 3. The 2014-15 Usage Charge and TRB (graphs 3 and 5 to 7) for the metropolitan water utilities have been determined from data published on each utility's website.
  - 4. As the 2009-10 to 2013-14 values for Indicator F4 were not reported by ACTEW, they have been conservatively estimated in graph 4 from the utility's reported TRB and fixed charge for these years: (TRB - Fixed Charge)/TRB x 100.



PERFORMANCE COMPARISONS - Social (Water)



PERFORMANCE COMPARISONS - Social (Sewerage)



1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14

**\* Microbiological Water Quality Compliance**

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

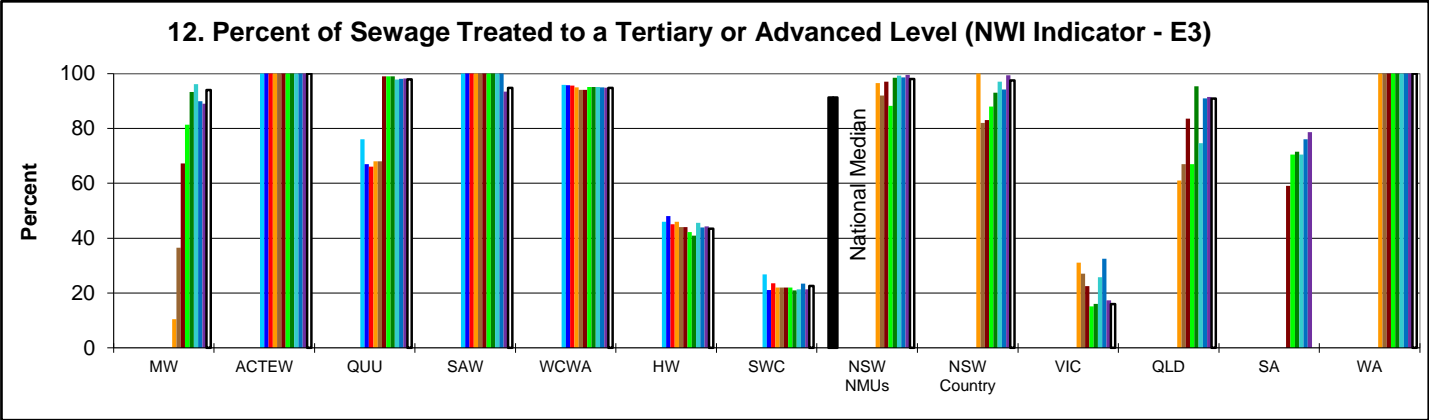
1998-99 and subsequent results are generally on the basis of E. coli in the more stringent 1996 NHMRC/ARMCANZ and 2004 NHMRC/NRMMC Australian Drinking Water Guidelines (ADWG) [refer also to page 8] .

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 were subsequently on the basis of the 2004 ADWG.

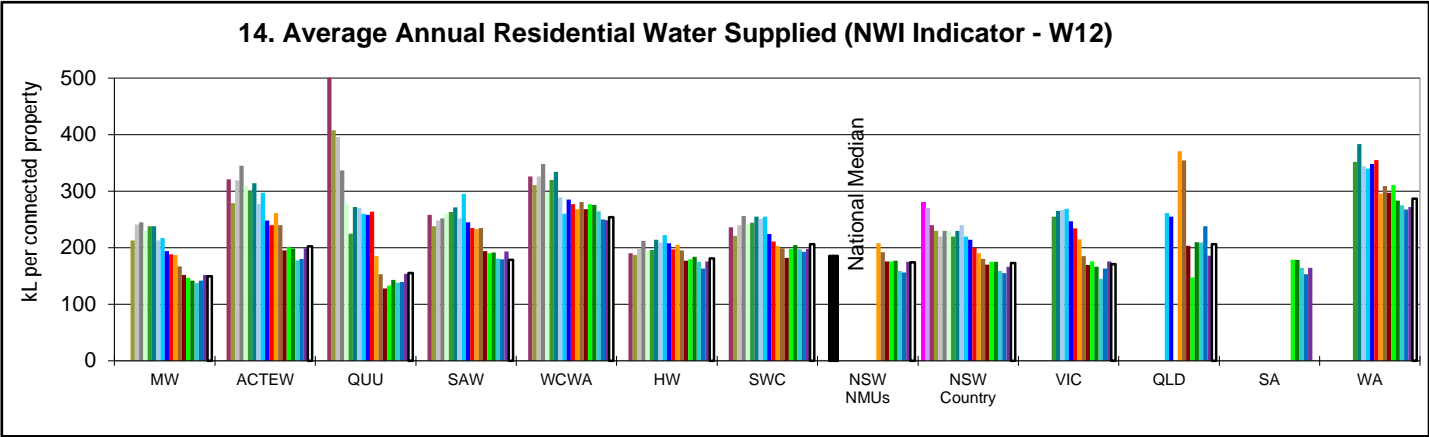
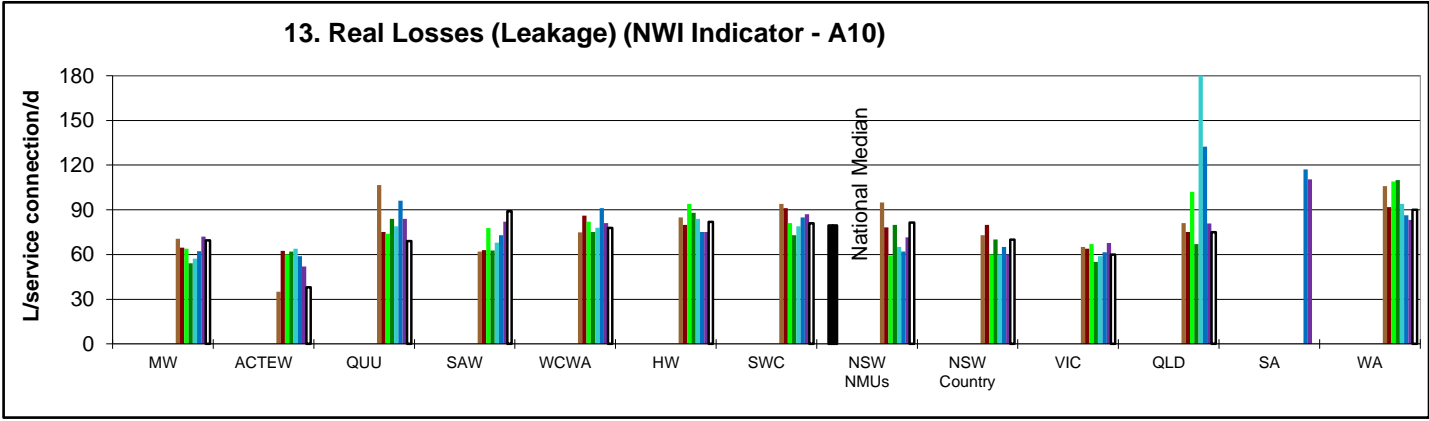
For 2005-06 to 2013-14, the results shown are for "% of population where microbiological compliance was achieved", in accordance with NWI Indicator H3.

As noted on page 8 of the 2013-14 NSW Water Supply and Sewerage Performance Monitoring Report (www.water.nsw.gov.au), in 2013-14 the public drinking water supply for 99.9% of the urban population in regional NSW complied with 2011 ADWG for both microbiological and chemical water quality. 99.8% of the 20,200 samples tested complied for microbiological water quality (health related) and 99.4% of the 4,500 samples tested complied for chemical water quality (health related).

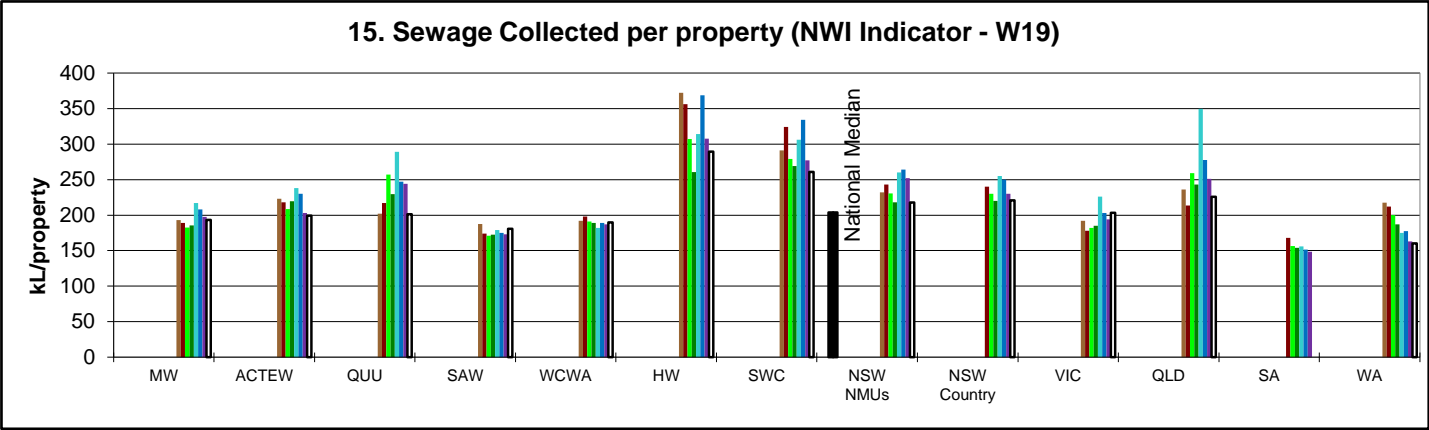
PERFORMANCE COMPARISONS - Social (Sewerage)



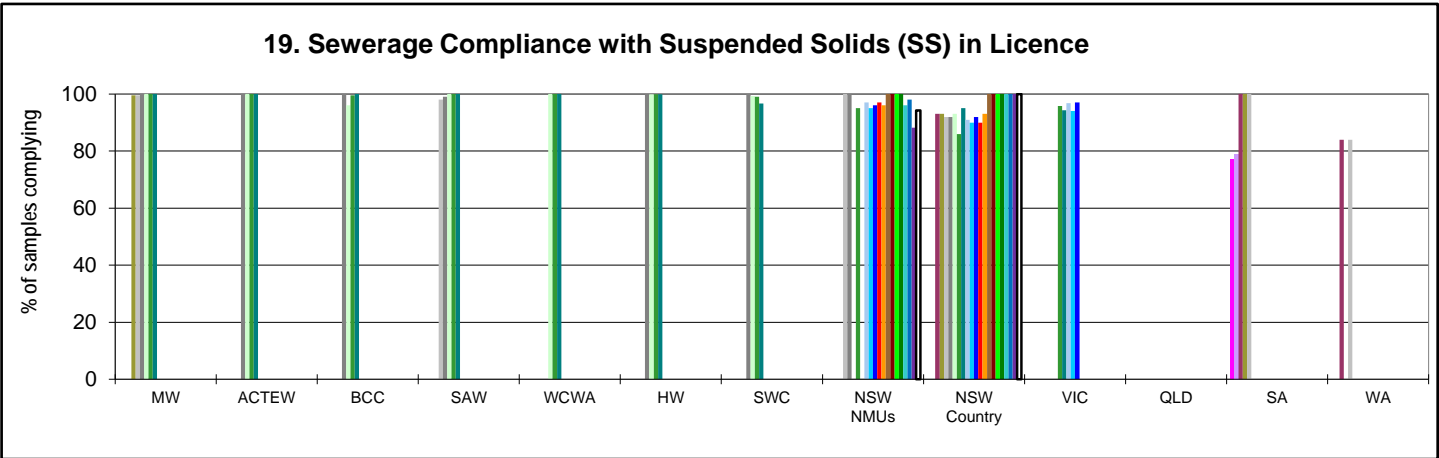
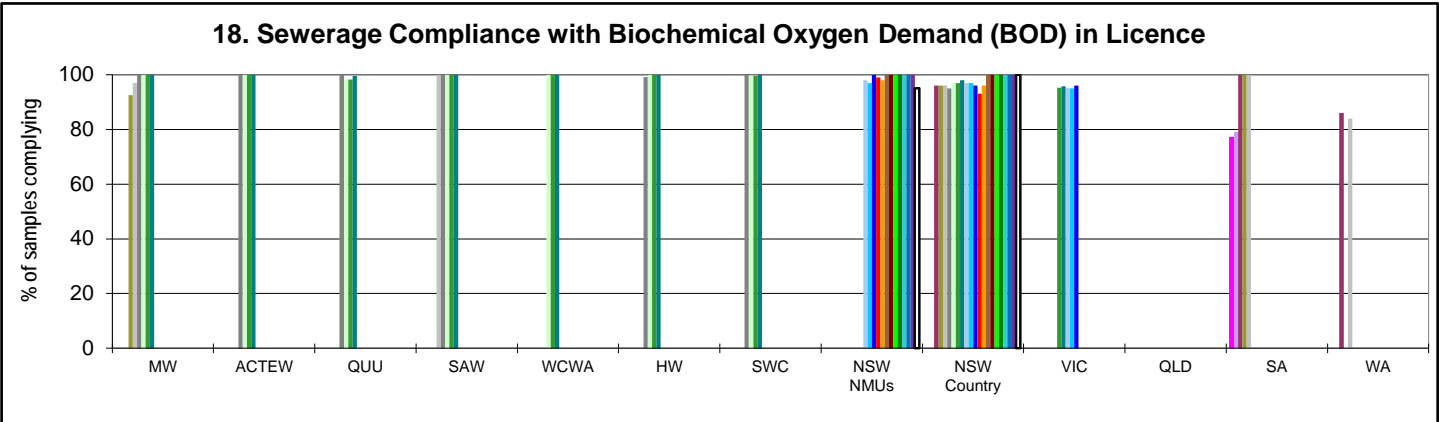
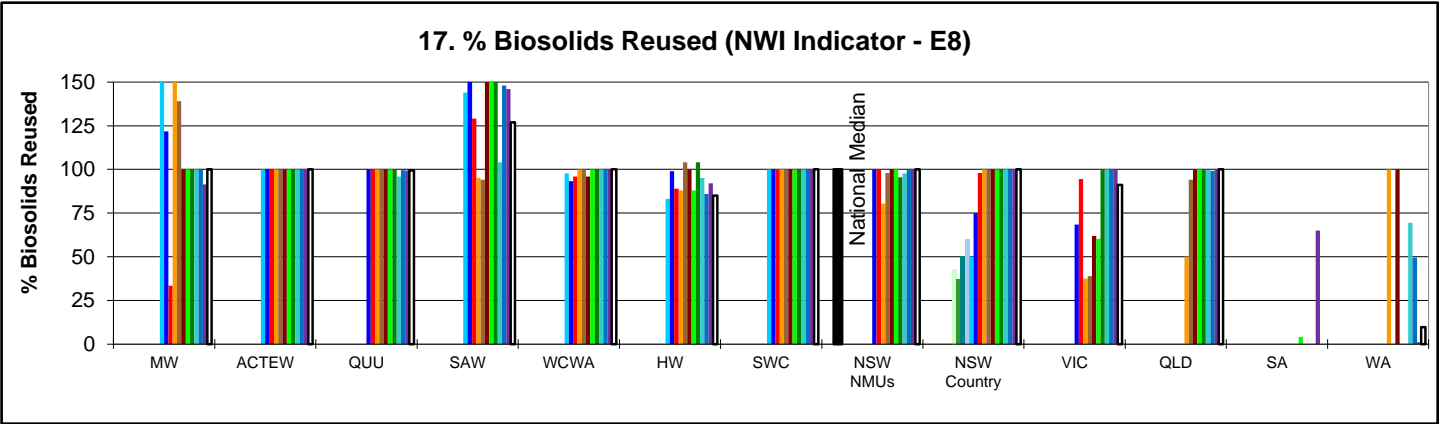
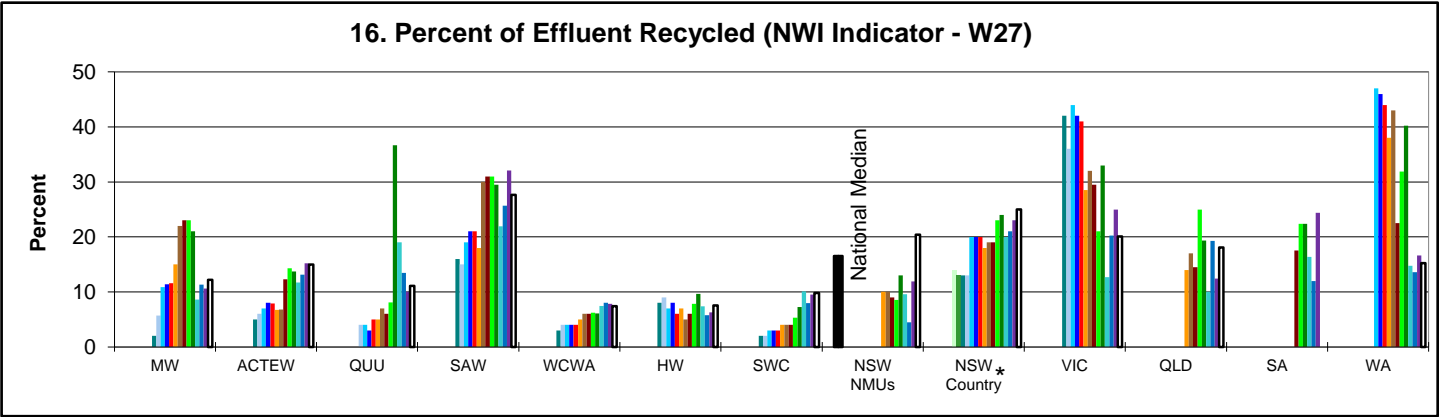
PERFORMANCE COMPARISONS - Environmental (Water)



PERFORMANCE COMPARISONS - Environmental (Sewerage)



PERFORMANCE COMPARISONS - Environmental (Sewerage)

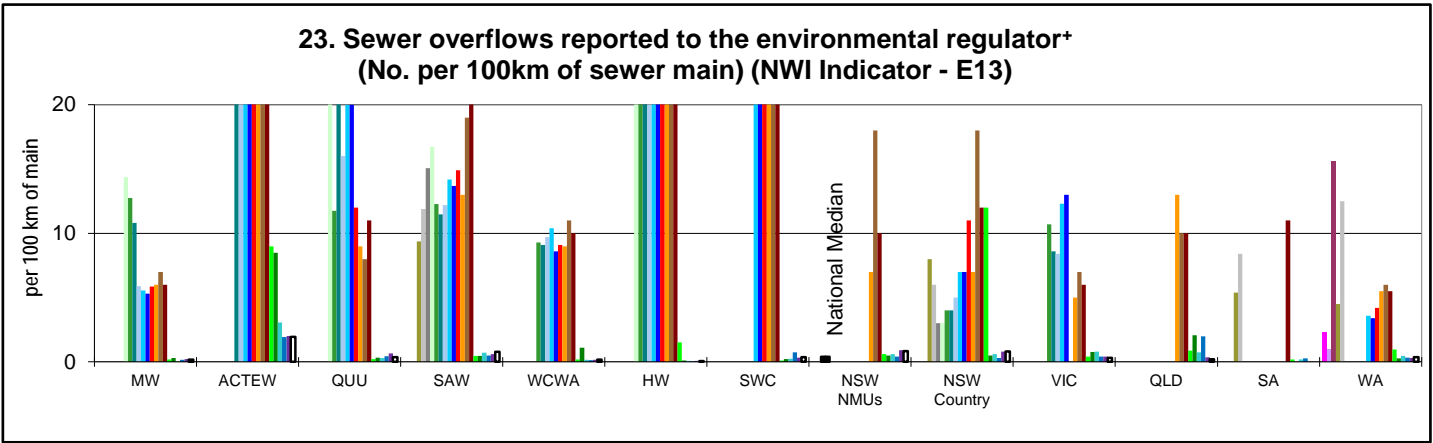
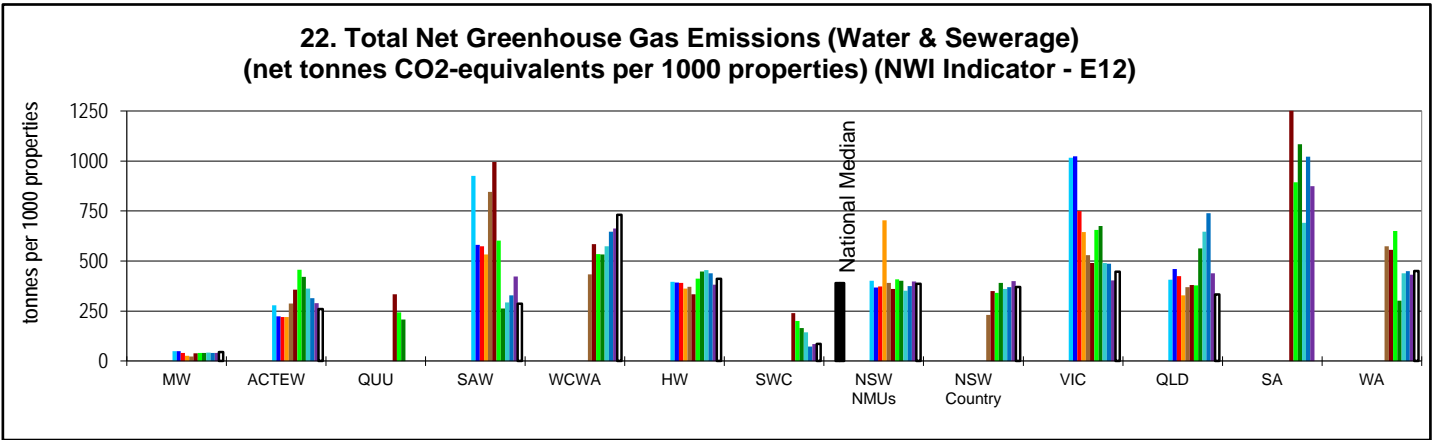
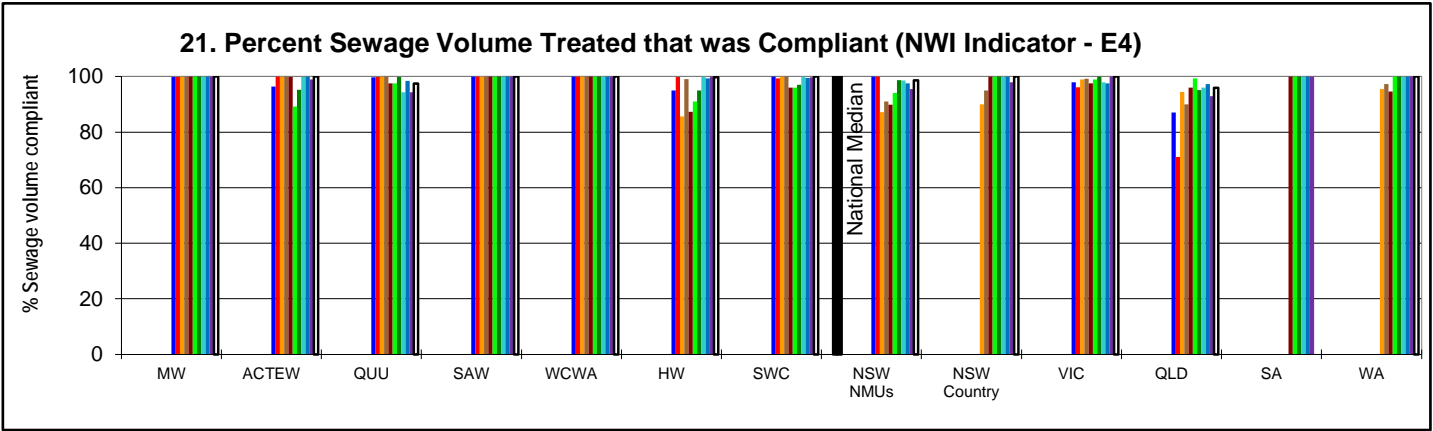
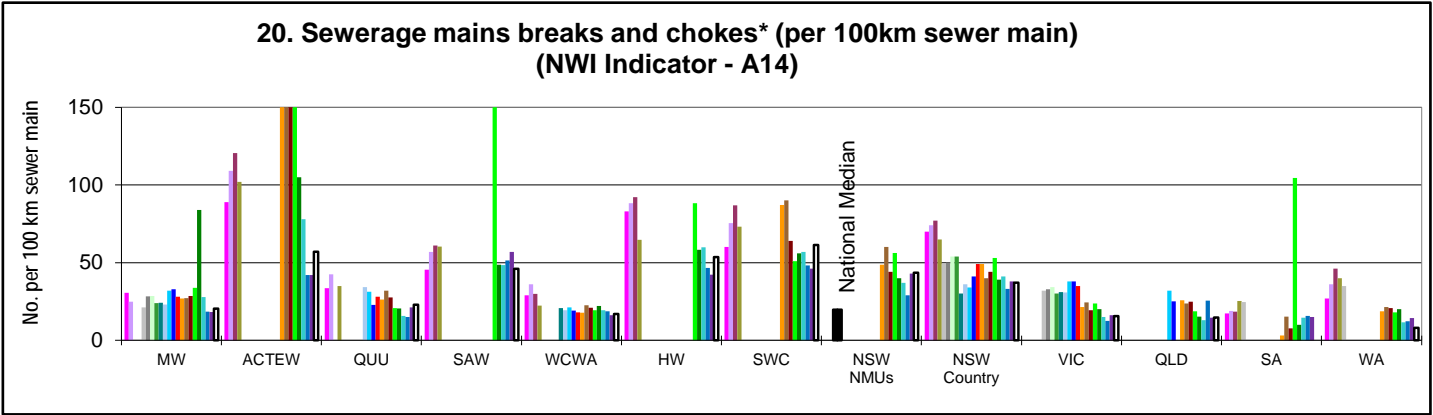


\* NSW Effluent Result

The values shown for country NSW are the percentages of total volume of sewage collected in regional NSW that was recycled.  
For country NSW, 43,000 ML of wastewater was recycled in 2013-14, which is 27 per cent of the total volume of sewage collected and was carried out by 84 per cent of the utilities, mostly for agriculture.



PERFORMANCE COMPARISONS - Environmental (Sewerage)

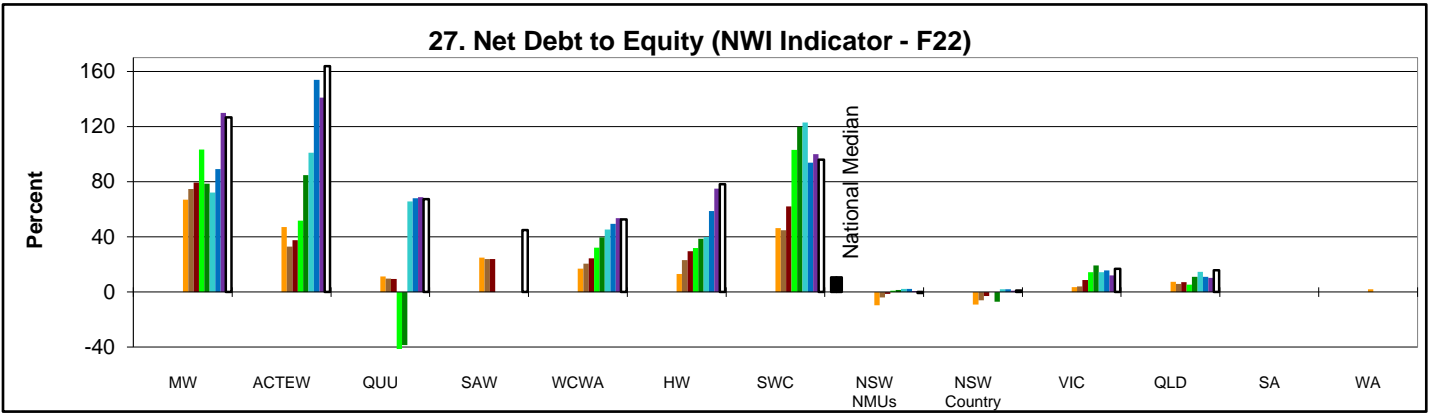
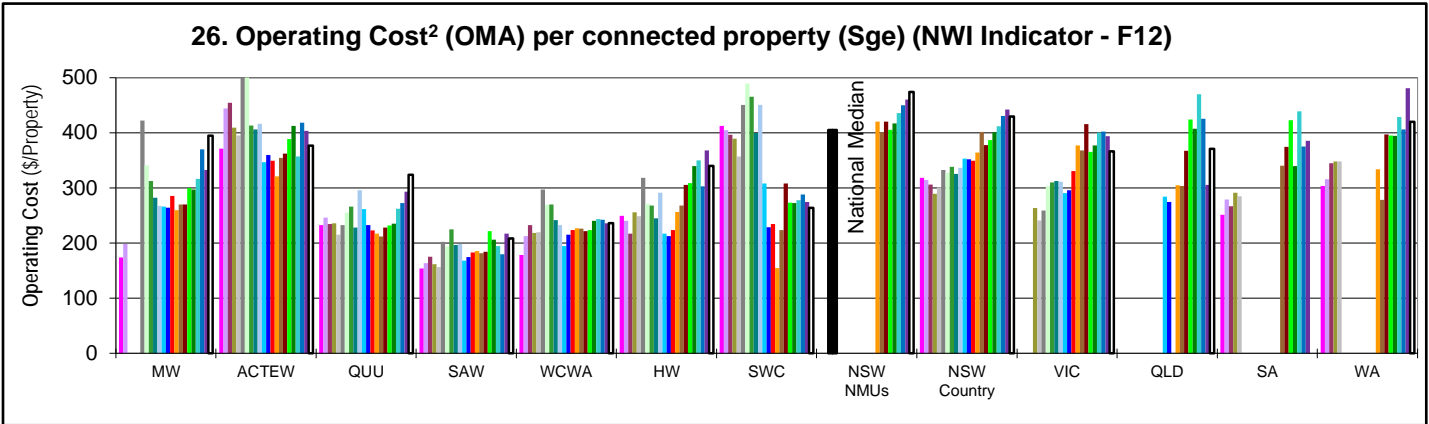
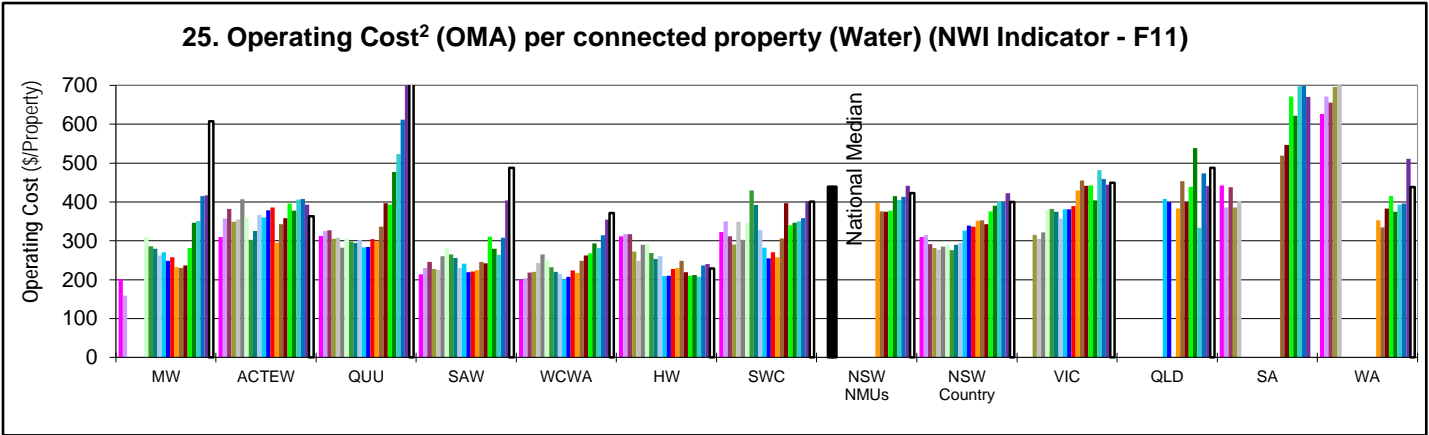
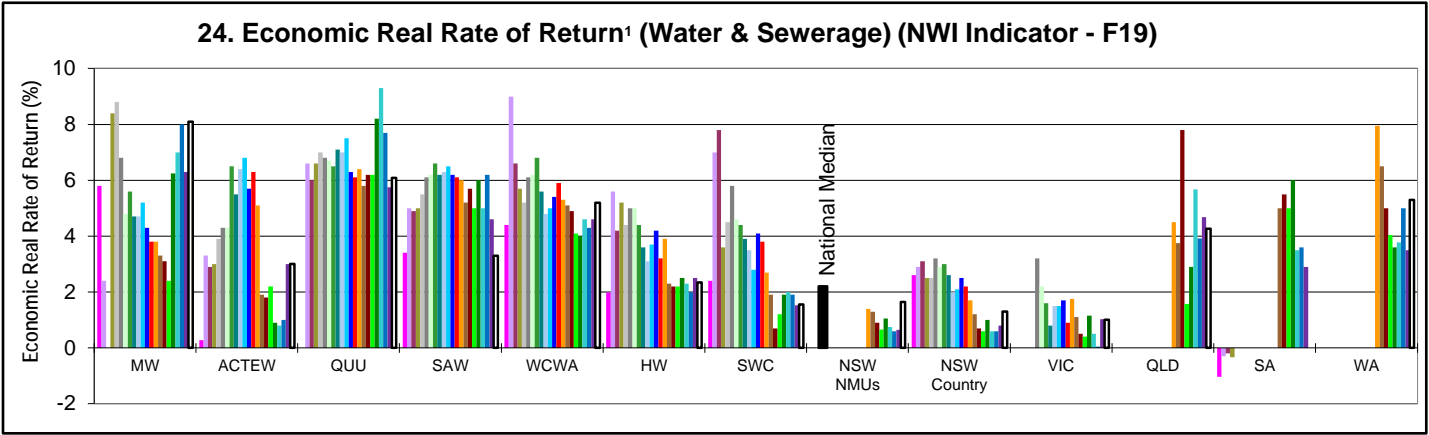


1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14

\* The values shown prior to 2010-11 are the reported values for sewerage breaks and chokes for indicator A12 in the National Performance Framework 2008-09 Urban Water Performance Indicators and Definitions Handbook.

+ 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.

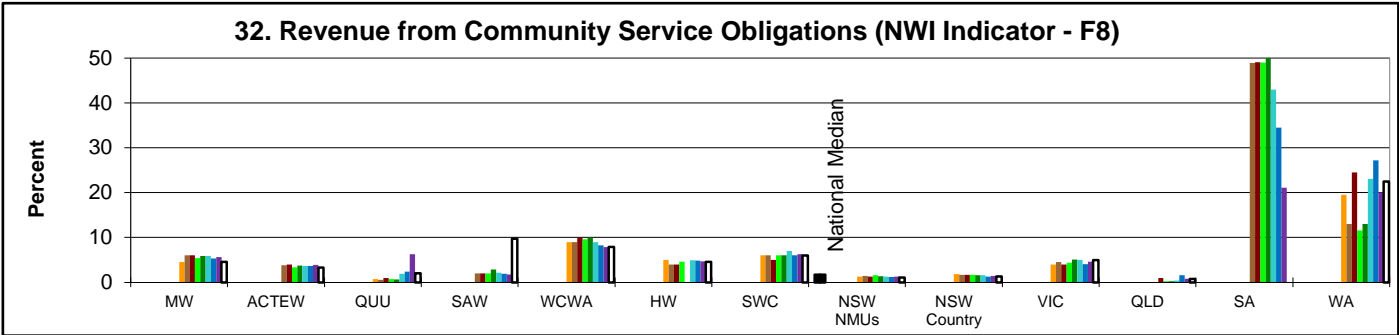
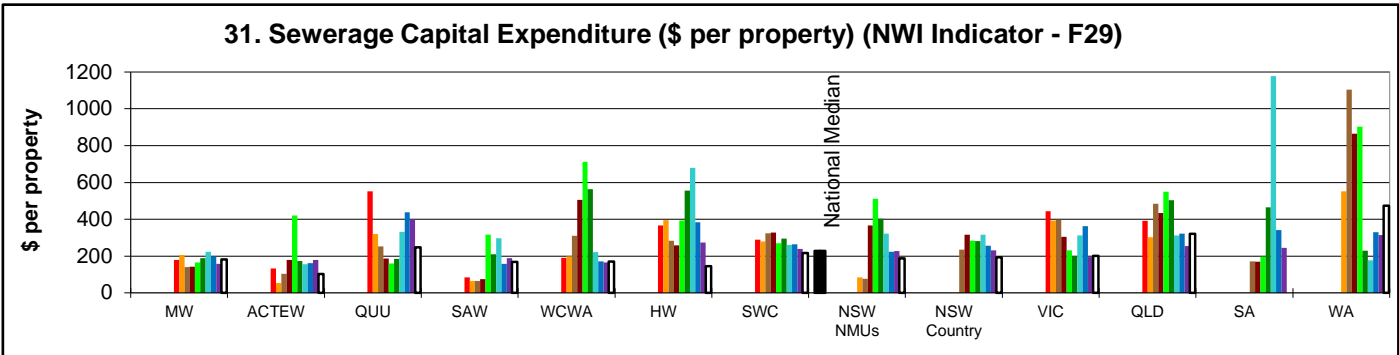
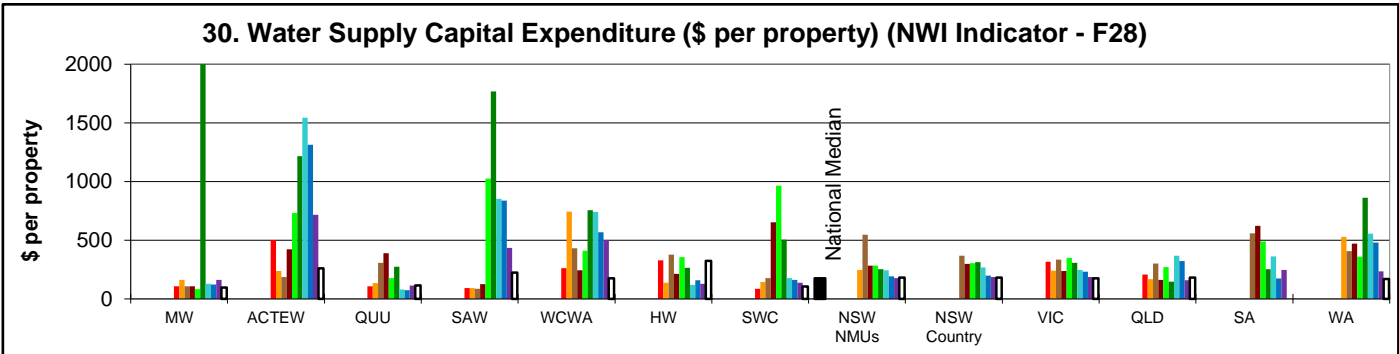
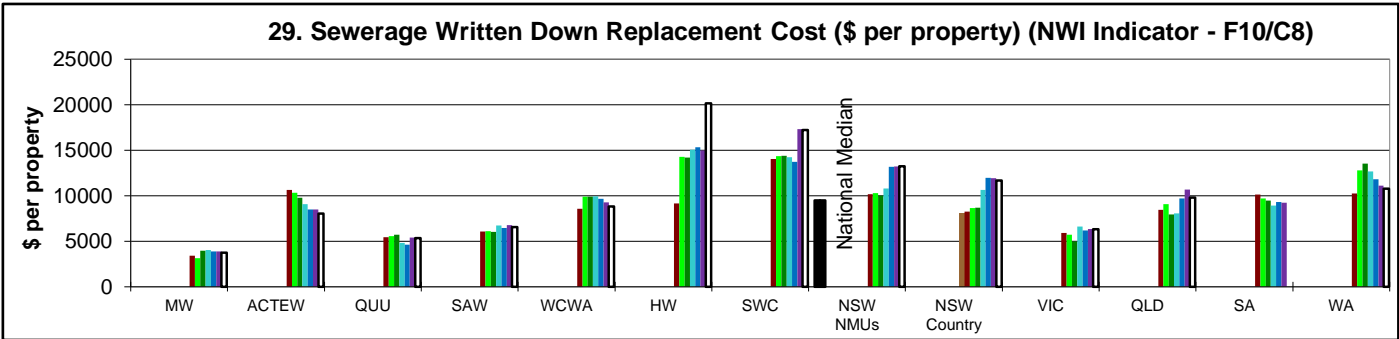
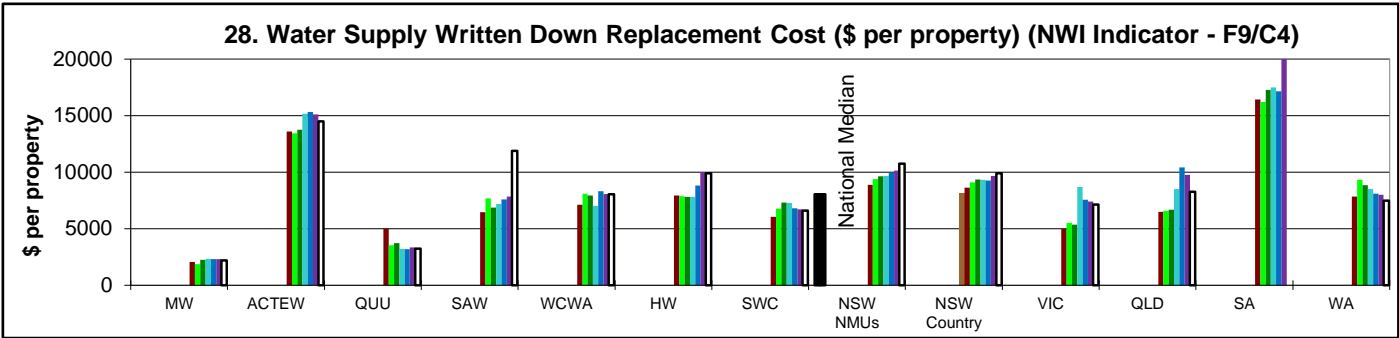
PERFORMANCE COMPARISONS - Economic



■ 1992-93	■ 1993-94	■ 1994-95	■ 1995-96	■ 1996-97	■ 1997-98	■ 1998-99	■ 1999-2000	■ 2000-01	■ 2001-02	■ 2002-03
■ 2003-04	■ 2004-05	■ 2005-06	■ 2006-07	■ 2007-08	■ 2008-09	■ 2009-10	■ 2010-11	■ 2011-12	■ 2012-13	■ 2013-14

**NOTES:** 1. 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 24 for all the other utilities for these years.  
2. Operating Cost (OMA) is the Operation, Maintenance and Administration Cost in 2013-14\$.

PERFORMANCE COMPARISONS - Economic



1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14

**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	2013/14	Unit	Indicator Definition	Instruction
<b>Population</b>							
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.
<b>Infrastructure</b>							
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 fluoridation 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 raw water either from scheme to scheme or to treatment works. Bulk suppliers should include trunk mains delivering raw water 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	Transfer main length		km	A transfer main delivering treated water from a treatment works or service reservoir to a distribution area or other urban centre.	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). Refer also to page 66 of the NSW Water and Sewerage Strategic Business Planning Guidelines, 2011 ( <a href="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</a> ).
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.	
<b>Connections</b>							
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). For utilities with a dual supply, only the potable service connections should be reported.	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.
30a		Service connections	Connections to recycled non-potable supplies		n	The number of accounts for metered and unmetered recycled non-potable supplies. Exclude accounts for non-potable raw water supplies.	Include connections to wastewater and stormwater recycling systems such as those associated with Water Sensitive Urban Design developments. Exclude connections to non-potable raw water sources (dual supplies). Exclude greywater connections.

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NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
31		New residential connections	New residences connected		n	Number of new residences connected this reporting year. Excludes vacant subdivided lots.	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).	
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 lots 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.	
<b>Water Data (Losses)</b>							
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 (54a) 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) - (54a) 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).
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 private pipeline		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 2008 to 2010, enter 2010).
76		Leakage testing	Result of leakage test		%	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).	
<b>Water Data (Sourced)</b>							
41	[W1]	Water sourced	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 sourced	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.

# Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
43	[W1]	Water sourced	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 sourced	River release from Water NSW dams		ML	Volume of water drawn as a release from a Water NSW dam (from January 2015, formerly State Water).	
44a	W1	Water sourced	Total surface water		ML	Sum of (41) + (42) + (43) + (44) + (46c).	Includes surface water desalination.
45	[W2]	Water sourced	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).
45a	W2	Water sourced	Total groundwater		ML	Sum of (45) + (46b).	Includes groundwater desalination.
46a	W3.1	Water sourced	Marine desalination		ML	Volume of seawater sourced for desalination. Exclude desalinated surface and groundwater.	
46b	W3.2	Water sourced	Groundwater desalination		ML	Volume of groundwater sourced for desalination. Exclude desalinated seawater and surface water.	
46c	W3.3	Water sourced	Surface water desalination		ML	Volume of surface water sourced for desalination. Exclude desalinated seawater and groundwater.	
46d	W3	Water sourced	Total desalinated water		ML	Includes marine, surface water and groundwater desalination. Sum of (46a) + (46b) + (46c) or W3.1+W3.2+W3.3	
47	W4	Water sourced	Recycling		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 (153). Excludes managed aquifer recharge, both where potable (or untreated water in storage) would normally be used (156). Excludes urban stormwater use. This differs from (158) where any agricultural or on-site uses are counted.
48		Water sourced	Total water from utility's sources		ML	Sum of (41) + (42) + (43) + (44) + (45) + (46d) + (47) + (174) or W1+W2+W3+W4+W28.4	
49	W5.1	Water sourced	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 sourced	Bulk purchase - non-potable		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).	
52a	W6	Water sourced	Bulk purchase - recycled		ML	Volume of recycled water (potable and non-potable) received from another utility outside your utility's geographic area of responsibility. This is a component of (52b).	
52b	W5	Water sourced	Total bulk water purchased		ML	Sum of (49) + (50) + (52a) + (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 sourced	Total water sourced		ML	Sum of (48) + (52b) or W1+W2+W3.1+W4+W5+W28.4	
51		Water sourced	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 for rectification (9842 8505).
52		Water sourced	Purchase price potable bulk water		c/kL		
<b>Water Data (Supplied Non Potable)</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.  See potable water supplied indicator (54a) for definition of Residential.
63a	[W9.2]	Authorised non-potable supply	Commercial		ML	Total metered and estimated non-metered non-potable water supplied to commercial customers. Excludes recycled water and urban stormwater use.	Include offices, shops, clubs, hotels, motels, mobile home villages, caravan parks (including long stay/holiday parks) etc.
63b	[W9.2]	Authorised non-potable supply	Industrial - mining		ML	Total metered and estimated non-metered non-potable 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 non-potable water outside of urban zoned land.  See potable water supplied indicator (56a) for definition of Mining.
63c	[W9.2]	Authorised non-potable supply	Industrial - manufacturing		ML	Total metered and estimated non-metered non-potable 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 non-potable water outside of urban zoned land.  See potable water supplied indicator (56b) for definition of Manufacturing.
63d	[W9.2]	Authorised non-potable supply	Industrial - electricity generation		ML	Total metered and estimated non-metered non-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 non-potable water outside of urban zoned land.  See potable water supplied indicator (56c) for definition of Industrial - Electricity Generation.



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NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
63e	[W9.2]	Authorised non-potable supply	Industrial - other		ML	Total metered and estimated non-metered non-potable 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 non-potable water outside of urban zoned land.  See potable water supplied indicator (56d) for definition of Industrial - Other.
63f	[W9.2]	Authorised non-potable supply	Rural		ML	Total metered and estimated non-metered non-potable water supplied to farms and hobby farms outside urban zoned land. Exclude recycled and urban stormwater use.	See potable water supplied indicator (57) for definition of Rural.
63g	[W9.2]	Authorised non-potable supply	Municipal - (excluding public parks)		ML	Total metered and estimated non-metered non-potable water supplied to municipal customers. Exclude recycled and urban stormwater use.	See potable water supplied indicator (58) for definition of Municipal.
63h	[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 use.	See potable water supplied indicator (60) for definition of Municipal - Public Parks.
63i	W9.2	Authorised non-potable supply	Total non-residential		ML	Sum of (63a) + (63b) + (63c) + (63d) + (63e) + (63f) + (63g) + (63h).	
63j	W14.2	Authorised non-potable supply	Bulk water exports		ML	Total volume of water (non-potable) supplied to other utilities or entities outside your utility's geographic area of responsibility. Exclude recycled water and urban stormwater use.	
63k	W10.2	Authorised non-potable supply	Unbilled		ML	Metered and estimated unmetered non-potable authorised supply for which a bill is not issued to the consumer. Exclude recycled and urban stormwater use.	See potable water supplied indicator (61) for definition of Unbilled.
63l	W10.3	Authorised non-potable supply	Managed aquifer recharge		ML	Non-potable water supplied to managed aquifer recharge. Excludes recycled water and urban stormwater use.	
63m	W10.4	Authorised non-potable supply	Agricultural irrigation		ML	Non-potable water supplied to agricultural irrigation. Excludes recycled water and urban stormwater use.	
64	W11.2	Authorised non-potable supply	Total authorised non-potable supply		ML	Sum of (63)+(63a)+(63b)+(63c)+(63d)+(63e)+(63f)+(63g)+(63h)+(63k) or W8.2+W9.2+W10.2	Include metered and estimated unmetered supply. Exclude recycled water (158) and urban stormwater use (174).
<b>Water Data (Supplied Potable)</b>							
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.	
54a	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.	Include retirement villages. Exclude caravan parks (long term stay/holiday parks) and mobile home villages.
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, mobile home villages, caravan parks (including long stay/holiday parks) etc.
56a	[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.	For industrial customers within urban zoned land or industrial customers that are supplied with potable water outside of urban zoned land.  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.  Mining is distinguished by two basic activities: mine operation and mining support activities.  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.  Mining support activities include units that perform mining services on a contract or fee basis, and exploration (except geophysical surveying).  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.

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NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
56b	[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.	For industrial customers within urban zoned land or industrial customers that are supplied with potable water outside of urban zoned land.  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.  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.
56c	[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.
56d	[W9.1]	Authorised potable supply	Industrial - other		ML	Total metered and estimated non-metered potable water supplied to other industrial customers (excludes mining, manufacturing and electricity generation). 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 non-potable water supplied.
58	[W9.1]	Authorised potable supply	Municipal - excluding public parks		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, public pools, gaols etc. Include metered and estimated unmetered water supplied. Exclude public parks.
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.
60a	W9.1	Authorised potable supply	Total non-residential		ML	Sum of (55) + (56a) + (56b) + (56c) + (56d) + (57) + (58) + (60).	
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 use.	
61	[W10.1]	Authorised potable supply	Unbilled water		ML	Volume of unbilled water is the potable water supplied, excluding residential, commercial, municipal and industrial water. 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 (54a) + (55) + (56a) + (56b) + (56c) + (56d) + (57) + (58) + (60) + (61) or W8.1+W9.1+ [W10.1]	Excludes losses, recycled water (158), urban stormwater used (174) and bulk water exports (59).
<b>Water Data (Supplied Recycled)</b>							
150	W20	Authorised recycled supply	Residential		ML	Recycled water for potable and non-potable town water supply reticulated to residential customers. Excludes urban stormwater use.	Include metered and estimated unmetered recycled water supplied. Note that recycled water components should now be reported at the sewage treatment works level. These are then aggregated across each of the treatment works and imported into the existing water business indicators for recycled water supplied.
151	W21	Authorised recycled supply	Commercial, Industrial, Municipal		ML	Recycled water supplied to commercial, industrial, municipal properties. Includes golf courses. Excludes urban stormwater use.	
152	W22	Authorised recycled supply	Agricultural		ML	Recycled water supplied for agricultural purposes. Includes irrigation, forestry and livestock. Excludes urban stormwater use.	
153	W23	Authorised recycled supply	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	On-site		ML	Recycled water used on-site external to the treatment process.	
155	W25	Authorised recycled supply	Other		ML	Recycled water supplied to other users including managed aquifer recharge, firefighting, mains flushing, losses and leakage.	
156	W25.1	Authorised recycled supply	Managed aquifer recharge		ML	Recycled water supplied for managed aquifer recharge, excluding environmental water and urban stormwater use.	
157	W15	Authorised recycled supply	Bulk recycled water exports		ML	Recycled water supplied to other utilities or entities outside your utility's geographic area of responsibility. Excludes urban stormwater.	
158	W26	Authorised recycled supply	Total recycled supplied		ML	Total treated effluent excluding evaporation and urban stormwater use. Sum of (150) +(151) +(152) +(153) +(154) + (155). or W20+W21+W22+W23+W24+W25	
<b>Water Data (Urban Stormwater)</b>							
170	W28	Urban stormwater	Total discharge		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.

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NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
171	W28.1	Urban stormwater	Supplied to other utilities		ML	Includes water for potable and non-potable urban stormwater supplied to other utilities.	
172	W28.2	Urban stormwater	Received from other utilities		ML	Includes water for potable and non-potable urban stormwater received from other utilities.	This is a component of (52b) (volume of water received from bulk supplier).
173	W28.3	Urban stormwater	Supplied for managed aquifer recharge		ML		
174	W28.4	Urban stormwater	Urban stormwater used		ML	Includes potable and non-potable 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 - W7) and Total urban water supplied - W11.
<b>Demand Management</b>							
84		Demand management initiatives	Customer education program		Y/N		
85		Demand management initiatives	Permanent water saving measures		Y/N	Permanent water saving measures in place to conserve water.	Example: no hosing of concrete or hard surfaces at any time.
86		Demand management initiatives	Effluent or stormwater use		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			Other demand management initiatives the utility has in place, such as 'Water saving tips on Council's website' or 'Member of the Savewater! Alliance'.	Exclude initiatives that are already mentioned in indicators (84) to (89) - customer education program, permanent water saving measures, effluent or stormwater use, leakage reduction program, retrofit program, rebates for water efficient appliances.
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.	
<b>Service Levels</b>							
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 and requests for information on efficient water use and 'water saving'.	<p>Include bursts, leaks, service interruptions, adequacy of service, water pressure, affordability, behaviour of staff or agents.</p> <p>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.</p> <p>Exclude complaints about planned service interruptions unless the customer expresses dissatisfaction about the interruption. Australian Standard AS ISO 10002-2006 refers.</p> <p>Examples: Include complaints about pressure when found to be caused by a leaking mains or when a customer expresses dissatisfaction with the normal pressure.</p> <p>If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.</p>
97		Complaints	Frequent 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.



# Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
98		Complaints	Frequent service complaint 2				
98a		Complaints	Customer contacts/inquiries		n	A request by a customer for information about a product or service provided by the water utility (eg. 'tips on water saving') that does not indicate customer dissatisfaction. The customer may also call to advise the utility of asset condition (eg. a 'weep' at their water meter).	
99	[C12]	Complaints	Billing complaints		n	Complaints concerning account payment, financial loss or overcharging and billing errors. Exclude queries (98a).	<p>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.</p> <p>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 inquiry but remains dissatisfied or the inquiry identifies an error in the bill, this should be recorded as a complaint.</p> <p>If a customer makes repeated contact on the same billing issue this should be recorded as a complaint. If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.</p>
100	[C10]	Complaints	Other complaints		n	Complaints other than water quality, service or billing. Exclude queries (98a).	<p>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.</p> <p>If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.</p>
101a	C9	Complaints	Water quality complaints (bulk supplies)		n	Customer complaints concerning the quality of reticulated bulk potable supplies. Exclude queries (98a).	<p>Water quality complaints for areas where your utility did not carry out water treatment (ie. where the supply is obtained from a bulk supplier).</p> <p>If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.</p>
101b	[C9]	Complaints	Water quality complaints (treated supplies)		n	Complaints relating to water treated by your utility's treatment plants. Exclude queries (98a).	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) + (99) + (100) + (101a) + (101b).	
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.	<p>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.</p> <p>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 dont need to speak to an operator, the call is not counted.</p>
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 discernible impact on customers, property or the environment.
106	[C17]	Unplanned supply interruptions	Incidence of unplanned interruptions		n	Incidence of unplanned interruptions is the number of connected properties affected by a total loss of the potable water supply service due to failure of the water asset. An unplanned interruption is 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.

# Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
107	[C15]	Unplanned supply interruptions	Average duration		min	<p>The average duration for which a customer is without potable water supply for the reporting period due to an unplanned interruption.</p> <p>A water supply interruption is any event causing a total loss of water supply due to any cause. Interruptions do not include those caused by bursts or leaks in the property service (mains to meter connection) unless the burst or leak requires the mains to be shut down for repair.</p> <p>An unplanned water supply interruption is when the customer has NOT received at least 24 hours notification (or as otherwise prescribed by regulatory requirements) of the interruption. It also includes situations where the duration of a planned interruption exceeds that which was originally notified. In this circumstance the length of the entire interruption is counted. All un-notified interruptions caused by third parties should be included.</p> <p>An interruption commences when the water utility is aware that 'water is no longer available at the customer's first cold water tap and ceases 'when "normal" service is restored'.</p> <p>Where the utility is aware of a water supply interruption through its internal systems alarms, the duration commences when the alarm is raised.</p> <p>If a customer notifies the water utility they are without water, the duration commences at the time of notification. If the water utility is responding to a notification of a broken main, unless this notification also indicates a loss of supply, the duration commences once the break is isolated (if repairs are not being done under pressure).</p>	<p>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.</p> <p>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.</p>
<b>Health</b>							
113	H6	Water quality management	Risk-based drinking water quality plan?		Y/N	<p>Minimum requirement for answering 'yes' is a documented water quality management system in accordance with page 2-1 of the Australian Drinking Water Quality Guidelines 2011. Any other more rigorous plans are also satisfactory.</p> <p>Note: Commencing in the 2014-15 financial year, the minimum requirement will be a Drinking Water Quality System in accordance with the 'NSW Guidelines for drinking water systems, NSW Health and NSW Office of Water', 2013 (<a href="http://www.health.nsw.gov.au/publichealth/environment">www.health.nsw.gov.au/publichealth/environment</a>).</p> <p>The Drinking Water Quality System will need to be independently audited in order to comply with the Public Health Act 2010 and to report 'Yes' for 'Externally Assessed - NWI Indicator H5' (115).</p>	
113a		Water quality management	Specify planning framework			State the basis for your Drinking Water Management System.	Examples: NSW Guidelines for Drinking Water Management Systems, 2013; 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. Commencing in the 2014-15 financial year, assessments must be independently audited in accordance with NSW Guidelines for Drinking Water Management Systems, 2013.
114a		Water quality management	Water Supply distribution system integrity examination?		Y/N	Did your LWU carry out a detailed examination of the integrity of your water supply distribution systems in accordance with Circular LWU 18 of 4 June 2014 in this financial year? Note that a detailed examination is required at least every 4 years (or more frequently if warranted by your LWU's risk assessment or if the free chlorine residual at the extremities of a distribution system is below 0.2mg/L).	Refer also to Appendix E of 2012-13 NSW Benchmarking Report ( <a href="http://www.water.nsw.gov.au">www.water.nsw.gov.au</a> ). LWU Circulars can be accessed in the Trade Waste section of the NSW Performance Monitoring Database.
114b		Water quality management	Summary of Distribution System Deficiencies identified			Examples of deficiencies are shown in the Instructions. Indicate the name of the distribution system in each case.	Examples: (1) Mesh openings are too large or the reservoir roof design is deficient, allowing entry of small birds, vermin, rain water and windblown material to contaminate the stored water. The roof design and/or the mesh must be modified to rectify. - refer to page 10 of the 2012-13 NSW Benchmarking Report ( <a href="http://www.water.nsw.gov.au">www.water.nsw.gov.au</a> ). (2) Rain can enter the reservoir from the roof drainage system or a leaking reservoir roof, holes in the reservoir wall or gaps around the openings on the roof – rectify. (3) Inspection hatches not closed and locked at all times or the reservoir site and roof are not secured from unauthorised access – rectify. Refer also to Appendix E of 2012-13 NSW Benchmarking Report ( <a href="http://www.water.nsw.gov.au">www.water.nsw.gov.au</a> ).
114c		Water quality management	Distribution System Deficiencies Rectified?		Y/N	Indicate the name of the distribution system in each case in Indicator 114b.	Any deficiencies in distribution system integrity identified in Indicator 114b should be rectified as a matter of priority in accordance with Circular LWU 18 of 4 June 2014.

# Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
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 227 of the 2012-13 NSW Water Supply and Sewerage Benchmarking Report ( <a href="http://www.water.nsw.gov.au/ArticleDocuments/36/utilities_performance_nsw_water_supply_and_sewerage_benchmarking_report_2012_13.pdf.aspx">http://www.water.nsw.gov.au/ArticleDocuments/36/utilities_performance_nsw_water_supply_and_sewerage_benchmarking_report_2012_13.pdf.aspx</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, 2011 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).
<b>Workforce</b>							
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, sick leave 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
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.
<b>Expenses, Charges And Bills</b>							
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 towards implementing the National Guidelines for Residential Customers' Water Accounts, 2006 (available at <a href="http://www.environment.gov.au">www.environment.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



# Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
133		Operation and Maintenance expenses	Headworks		%	Financial data is provided by your utility in Special Schedule No.3 to the Annual Financial Statements, specifically 'Operation and Maintenance Expenses'. Divide this total into 'headworks' and 'distribution and reticulation'.	Headworks and reticulation OMA are percentages estimated from your operations over the last year. Special Schedule 3 can be used to estimate this by assigning part or all of each OMA expense to either headworks or reticulation.
134		Operation and Maintenance expenses	Distribution and reticulation		%		See (133).
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		\$		
Environment							
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
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		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	Environmental flows supplied	Environmental flows		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) + (146).	
148a	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 on page 307 of the 2012-13 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).	See (148a).
Integrated Water Cycle Management							
94a		Rainwater tanks	Number of residential rainwater tanks		No.	Total number of residential rainwater tanks in your area used as a supplementary water supply for serving urban areas (towns and villages) serviced by your water utility.	Excludes commercial, industrial and municipal premises. Excludes reticulated urban stormwater use and greywater collection tanks. Excludes rainwater tanks used for stormwater attenuation.
94b		Rainwater tanks	Typical rainwater tank volume		kL	Typical volume of residential rainwater tanks in your area (94a).	
94c		Rainwater tanks	Total volume of rainwater tanks - Commercial		kL	Total volume of rainwater tanks for commercial premises in your area.	
94d		Rainwater tanks	Total volume of rainwater tanks - Industrial		kL	Total volume of rainwater tanks for industrial premises in your area.	

## Water business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
94e		Rainwater tanks	Number of rainwater tanks used for stormwater attenuation		No.	Total number rainwater tanks where 'emptiness' is provided for stormwater attenuation.	Eg. tanks remain empty, or not more than say 50% full in order to provide capacity for stormwater attenuation. Excludes reticulated urban stormwater use.
94f		Rainwater tanks	Percentage of rainwater tank 'emptiness' for stormwater attenuation		%	Typical percentage of rainwater tank 'emptiness' for stormwater attenuation for the rainwater tanks in (94c).	
95a		Water Sensitive Urban Design	WSUD implementation – new lots – residential		No.	Total number of lots in new residential subdivisions where Water Sensitive Urban Design (WSUD) has been implemented by your Council.	Includes WSUD implementation of stormwater filtration devices (bio-retention gardens, sediment basins, rain gardens, sand filters, swales, wetlands, infiltration trenches, porous paving), urban stormwater harvesting and use, ponds, stormwater outlet protection, buffer strips, dispersal trenches, urban creek design with habitat value, planting of natural vegetation, impervious area minimisation, and rainwater tanks for public parks and gardens.
95b		Water Sensitive Urban Design	WSUD implementation – new lots – commercial		No.	Total number of lots in new commercial subdivisions where Water Sensitive Urban Design (WSUD) has been implemented by your Council.	See (95a). Includes car parks.
95c		Water Sensitive Urban Design	WSUD implementation – new lots – industrial		No.	Total number of lots in new industrial subdivisions where Water Sensitive Urban Design (WSUD) has been implemented by your Council.	See (95a). Includes car parks.
95d		Water Sensitive Urban Design	WSUD implementation – existing lots – residential		No.	Total number of lots in existing residential development areas where Water Sensitive Urban Design (WSUD) has been implemented retrospectively.	See (95a) for information on WSUD implementation.
95e		Water Sensitive Urban Design	WSUD implementation – existing lots – commercial		No.	Total number of lots in existing commercial development areas where Water Sensitive Urban Design (WSUD) has been implemented retrospectively.	See (95a). Includes car parks.
95f		Water Sensitive Urban Design	WSUD implementation – existing lots – industrial		No.	Total number of lots in existing industrial development areas where Water Sensitive Urban Design (WSUD) has been implemented retrospectively.	See (95a). Includes car parks.
95g		Water Sensitive Urban Design	Stormwater channels managed under WSUD principles		km	Total length of urban creeks and trunk stormwater drainage channels within the stormwater catchment that are managed under 'liveable towns and cities' or Water Sensitive Urban Design (WSUD) principles. See (95a) for information on WSUD implementation.	Includes urban creeks and trunk stormwater drainage channels within the stormwater catchment upstream of the stormwater discharge point. The stormwater discharge point includes discharge points into watercourses and marine water bodies and points where stormwater is exported to another stormwater drainage system operator.
95h		Water Sensitive Urban Design	Development Control Plan for WSUD?		Y/N	Does your Council have a Regional Development Control Plan which requires 'liveable towns and cities' development or Water Sensitive Urban Design (WSUD) for new developments?	See (95a) for information on WSUD implementation.
95i		Water Sensitive Urban Design	Development Control Plan details		-	If 'Yes' was answered for 95h, provide the name, date and web link of the Development Control Plan.	
95j		Water Sensitive Urban Design	Stormwater Harvesting		Y/N	Does your Council have infrastructure in place for urban stormwater harvesting? Uses may include irrigation of sports fields and parks, agriculture or industrial uses.	Excludes stormwater supplied for managed aquifer recharge.
95k		Water Sensitive Urban Design	Price for urban stormwater use		c/kL	Price (c/kL) for urban stormwater use in your utility's area.	Guidance on suitable water pricing for urban stormwater use is available in the NWI Pricing Principles (2010) [ <a href="http://www.environment.gov.au/water/publications/action/nwi-pricing-principles.html">http://www.environment.gov.au/water/publications/action/nwi-pricing-principles.html</a> ].
95l		Water Sensitive Urban Design	Annual budget for maintaining WSUD systems		\$		
95m		Water Sensitive Urban Design	Are your WSUD systems maintained at the required frequency?		Y/N	The required frequency may have been determined at the project design phase, or is determined as the frequency required for proper functioning of the WSUD system.	
95n		Water Sensitive Urban Design	No. of staff (FTE) maintaining your WSUD systems		No.		
95o		Water Sensitive Urban Design	What is your annual stormwater levy per assessment?		\$		

# Water treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
<b>Works Parameters</b>							
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				
T6		Volume treated	Volume treated		ML	Volume treated by this treatment works this reporting year.	
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	Fluoride		tonnes	For this treatment works only.	
<b>Operator Training</b>							
T7i		Qualifications	Operator 1 name			The name of the operator.	This information is needed in view of the National Certification of Water Treatment Operators being developed by the National Water Commission ( <a href="http://nwc.gov.au/_data/assets/pdf_file/0019/25345/Proposed-National-Certification-Framework.pdf">http://nwc.gov.au/_data/assets/pdf_file/0019/25345/Proposed-National-Certification-Framework.pdf</a> ).
T7a		Qualifications	Operator 1 qualification			Highest qualification obtained by this operator. 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.	
T7e		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7j		Qualifications	Operator 1 qualification level			Qualification level obtained by this operator. A – Office of Water Certificate Part 1 (Chemical Dosing Systems) and Certificate Part 2 (Water Treatment Operator) or another Acceptable* Certificate III qualification; B – Office of Water Certificate Part 1 (Chemical Dosing Systems) and a supplementary chlorination safety training course or an Acceptable** Certificate II qualification; C – Operator in training.  * Such a certificate must include at least 9 of the 11 Units offered in the Water Treatment Operator Course on the Office of Water's website (page 6 of NOW Training Booklet – <a href="http://www.water.nsw.gov.au/ArticleDocuments/36/water_industry_training_non_metro_nsw.pdf">http://www.water.nsw.gov.au/ArticleDocuments/36/water_industry_training_non_metro_nsw.pdf</a> ).  ** Such a certificate must include relevant chemical dosing subjects and a supplementary chlorination safety training course.	
T7k		Qualifications	Operator 2 name			The name of the operator.	See (T7i).
T7b		Qualifications	Operator 2 qualification			Highest qualification obtained by this operator. See (T7a).	See (T7a).
T7f		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7l		Qualifications	Operator 2 qualification level			Qualification level obtained by this operator. See (T7j).	
T7m		Qualifications	Operator 3 name			The name of the operator.	See (T7i).
T7c		Qualifications	Operator 3 qualification			Highest qualification obtained by this operator. See (T7a).	
T7g		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7n		Qualifications	Operator 3 qualification level			Qualification level obtained by this operator. See (T7j).	
T7o		Qualifications	Operator 4 name			The name of the operator.	See (T7i).
T7d		Qualifications	Operator 4 qualification			Highest qualification obtained by this operator. See (T7a).	
T7h		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7p		Qualifications	Operator 4 qualification level			Qualification level obtained by this operator. See (T7j).	



Water treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
Sampling Results							
T26		E.coli	Number of system samples		n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring.	<p>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 page 225 of the 2012-13 NSW Water Supply and Sewerage Benchmarking Report and ADWG 2011.</p> <p>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.</p> <p>In the reporting up to and including 2011-12, the reporting of additional samples to those reported in the NSW Health Drinking Water Quality Program has been accepted for those LWUs that have confirmed that they have undertaken additional sampling to that required by the Drinking Water Program.</p> <p>Commencing in the 2012-13 financial year, the reported results are restricted to those tested by NSW Health or by a NATA accredited laboratory. [Refer also to the final sentence of Note 4 on page 269 of the 2012-13 NSW Water Supply and Sewerage Benchmarking Report (<a href="http://www.water.nsw.gov.au/ArticleDocuments/36/utilities_performance_nsw_water_supply_and_sewerage_benchmarking_report_2012_13.pdf.aspx">http://www.water.nsw.gov.au/ArticleDocuments/36/utilities_performance_nsw_water_supply_and_sewerage_benchmarking_report_2012_13.pdf.aspx</a>)].</p>
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.	See (T26).
T17		Physical	Percent complying		%	Number of samples taken for system compliance monitoring divided by the total number of such samples.	See (T27).
T18		Chemical	Number of system samples		n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring.	See (T26).
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.	See (T27).
T22		pH	Number of system samples		n	Include samples taken at this treatment works for system performance monitoring. Exclude samples for operational monitoring.	<p>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 page 225 of the 2012-13 NSW Water Supply and Sewerage Benchmarking Report and ADWG 2011. 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.</p> <p>THE RESULTS OF THE SAMPLES TESTED BY YOUR UTILITY SHOULD CONTINUE TO BE INCLUDED.</p>
T23		pH	Percent complying		%	Number of samples taken for system compliance monitoring divided by the total number of such samples.	See (T22).
T8		Colour	Raw water maximum		HU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T9		Colour	Raw water average		HU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T10		Colour	Treated water maximum		HU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T11		Colour	Treated water average		HU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T24		Colour	Number of system performance samples		n	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T25		Colour	Percent complying		%	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T12		Turbidity	Raw water maximum		NTU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T13		Turbidity	Raw water average		NTU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T14		Turbidity	Treated water maximum		NTU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.

Water treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
T15		Turbidity	Treated water average		NTU	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T20		Turbidity	Number of system performance samples		n	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T21		Turbidity	Percent complying		%	For this treatment works only.	The results of the samples tested by your utility should continue to be included.
T30		Non-compliance	Most frequent reason for non-compliance				
Service Levels							
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	Frequent complaint 1			Most frequent water quality complaint from customers supplied by this treatment works only.	
T39		Water quality complaints	Frequent complaint 2				

# Sewerage business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
<b>Population</b>							
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.
<b>Infrastructure</b>							
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	Sum of (7) + (8).	
10		Renewals	Mains renewed or 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). Refer also to page 66 of the NSW Water and Sewerage Strategic Business Planning Guidelines, 2011 ( <a href="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</a> ).
11		Renewals	Property connections renewed or 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.	
<b>Connections</b>							
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) + (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		Unserved in reporting year	Unserved 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		Unserved in reporting year	Unserved urban population		n	Estimated permanent population in unserved urban properties.	
<b>Service Levels</b>							
34	[C11]	Complaints	Sewage chokes		n	Complaints relating to sewage chokes. Exclude odour, billing and sewerage service complaints. Exclude queries.	Exclude complaints relating to property connections.  If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.
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.  If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.



# Sewerage business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
35		Complaints	Frequent service complaint 1			Most frequent service complaints should be entered in these two fields.	
36		Complaints	Frequent service complaint 2				
36a		Complaints	Customer contacts/inquiries		n	A request by a customer for information about a product or service provided by the sewerage utility (eg. 'an inquiry on their dual flush toilet') that does not indicate customer dissatisfaction. The customer may also call to advise the utility of asset condition (eg. report that a 'red light' is on at sewage pump station No. 200).	
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.  If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.
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 Indicators (T68) and (T69).  If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.
40	[C13]	Complaints	All complaints		n	Sum of complaints: (34) + (37) + (38) + (39).	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.  If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.
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 dialing, 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 break or choke repair time		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	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.
<b>Health</b>							
44		Public health incidents	Category 1 incidents		n	Incidents with no or inconsequential public health effects.	Example: minor failure of sewage 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).

# Sewerage business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
<b>Workforce</b>							
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, sick leave 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.
<b>Charges and Bills</b>							
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.	
62		Developer charges	Typical developer charge for next reporting year		\$		
<b>Environment</b>							
63a		Overflows	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	Reported overflows		n	Overflows/surcharges required to be reported to the environmental regulator.	Exclude overflows/surcharges not required to be reported to the environmental regulator.
64	[A14]	Breaks and chokes	Gravity (reticulation) main chokes and breaks		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	[A14]	Breaks 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		Breaks and chokes	Sewer chokes and breaks attended within 5 hours		n		
67	[A15]	Breaks and chokes	Chokes or breaks in property connections		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.

Sewerage business data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
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) + (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 on page 307 of the 2012-13 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 Indicator (148b).	See (80a).



# Sewerage treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
<b>Works Parameters</b>							
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.	
T25a		Charge for recycled town water from this works	Usage charge for recycled town water		c/kL		
<b>Operator Training</b>							
T7a		Qualifications	Operator 1 qualification			Highest qualification obtained by this operator. 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.	
T7e		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7b		Qualifications	Operator 2 qualification			Highest qualification obtained by this operator. See (T7a).	
T7f		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7c		Qualifications	Operator 3 qualification			Highest qualification obtained by this operator. See (T7a).	
T7g		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
T7d		Qualifications	Operator 4 qualification			Highest qualification obtained by this operator. See (T7a).	
T7h		Qualifications	Year of qualification or update		year	Year qualification obtained or updated.	
<b>Trade Waste</b>							
T36		Large trade waste dischargers serviced by this works	Number of large trade waste dischargers		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 serviced by this works	Maximum daily volume		kL/d		
T38		Large trade waste dischargers serviced by this works	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 serviced by this works	Equivalent TSS load		EP	Total approved trade waste SS concentration converted to EP.	EP = (concentration (mg/L) x discharge volume (kL/d))/70.
<b>Service Levels</b>							
T67		Malfunctions at this works	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.

# Sewerage treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
T68	[C11]	Odour complaints relating to this works	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.  If the operator is uncertain whether the customer is DISSATISFIED, the operator should ask 'Do you wish to report a complaint on this matter?'.
T69	[C11]	Odour complaints relating to this works	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.	See (ST68).
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 enviromental regulator.	
T66		Compliance summary	Details of penalty or litigation			Provide brief details of penalties and litigation.	
Sampling Results							
T63		Sampling days	Number of scheduled sampling days		days	The scheduled sampling days are those specified in the treatment work's licence.	
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	
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	
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	
T55		Ammonia	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. Many licences specifiy that where a limit is not specified, no concentration of the pollutant is authorised to be released.	
T56		Ammonia	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	
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	
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	
T61		Faecal coliforms	90th percentile limit		cfu/100 mL	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	
T71		pH	Percent compliance			The limit shown is reproduced from this treatment works' EPA licence. 100 percentile limits are shown where 90th percentiles are not specified. Many licences specify that where a limit is not specified, no concentration of the pollutant is authorised to be released.	

# Sewerage treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
T72		pH	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%.	
T73		Overall	Percent compliance		%	Overall sampling result covering all pollutants applicable in the treatment works' EPA licence – BOD, SS, Total Nitrogen, Ammonia, Oil & Grease, Total Phosphorus, Faecal Coliforms, pH. Results at the 50th percentile limit should be taken into account in the overall result.	
<b>Water Data</b>							
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.	
T31	[W16]	Volumes collected by this works	Network infiltration - inflow		ML	Estimated groundwater infiltration and stormwater inflow.	
T33a	W18.2	Volumes collected by this works	Sewage received from other utilities		ML	Bulk volume of sewage received from other utilities outside your utility's geographic area of responsibility.	
T33b	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.	
T12	[W16]	Volumes collected by this works	Tankered septic tank effluent		kL	Enter volume in kilolitres not Megalitres.	
T13	[W16]	Volumes collected by this works	Tankered septic sludge - pan		kL	Enter volume in kilolitres not Megalitres.	
T34	W17	Volumes collected by this works	Network trade waste		ML	Estimated non-metered and metered network trade waste.	
T14	[W16]	Volumes collected by this works	Tankered grease trap waste		kL	Enter volume in kilolitres not Megalitres.	
T15	W18	Volumes collected by this works	Total sewage collected		ML	Sum of all volumes collected: (T31) + (T32) + (T33) + (T70) + (T33a) + (T33b) + (T34) + (T12) + (T13) + (T14).	
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.
T80	[W20]	Volumes recycled and supplied by this works	Residential		ML	Recycled water for potable and non-potable town water supply reticulated to residential customers. Excludes urban stormwater use.	Include metered and estimated unmetered recycled water supplied.
T81	[W21]	Volumes recycled and supplied by this works	Commercial, Industrial, Municipal		ML	Recycled water supplied to commercial, industrial, municipal properties. Includes golf courses. Excludes urban stormwater use.	
T82	[W22]	Volumes recycled and supplied by this works	Agricultural		ML	Recycled water supplied for agricultural purposes. Includes irrigation, forestry and livestock. Excludes urban stormwater use.	
T83	[W23]	Volumes recycled and supplied by this works	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.	
T84	[W24]	Volumes recycled and supplied by this works	On-site		ML	Recycled water used on-site external to the treatment process.	
T85	[W25]	Volumes recycled and supplied by this works	Other		ML	Recycled water supplied to other users including managed aquifer recharge, firefighting, mains flushing, losses and leakage.	
T86	[W25.1]	Volumes recycled and supplied by this works	Managed aquifer recharge		ML	Recycled water supplied for managed aquifer recharge, excluding environmental water and urban stormwater use.	
T87	[W15]	Volumes recycled and supplied by this works	Bulk recycled water exports		ML	Recycled water supplied to other utilities or entities outside your utility's geographic area of responsibility. Excludes urban stormwater.	



# Sewerage treatment data

NSW No.	NWI No.	Indicator Group	Reported Indicator	2013/14	Unit	Indicator Definition	Instruction
T88	[W26]	Volumes recycled and supplied by this works	Total recycled supplied		ML	Total treated effluent excluding evaporation and urban stormwater use. ST88 = ST80 + ST81 + ST82 + ST83 + ST84 + ST85 or NWI Indicator W26 = W20 + W21 + W22 + W23 + W24 + W25.	
T40		Volumes disposed by this works	Volume disposed to ocean		ML	Include effluent disposed within estuaries.	
T41		Volumes disposed by this works	Volume disposed to river - creek		ML	Include effluent disposed to wetlands connected to a river or creek. Exclude disposal within estuaries. Exclude volumes recycled for environmental purposes.	
T42		Volumes disposed by this works	Volume disposed to land		ML	Include effluent disposed to evaporation basins, dunes and exfiltration beds. Exclude recycled water (ie. reuse farms etc).	
T70	W18.1	Volume exported 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.	
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.	
T26	[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.	

## Australian Drinking Water Guidelines 2011 and NSW Health Drinking Water Monitoring Program – Sampling location and frequency

### Guidelines

*The Australian Drinking Water Guidelines 2011* (NHMRC/NRMMC) supersede the 2004 Guidelines. The 2011 Guidelines continue to emphasise the need to implement a framework for good management of drinking water supplies in order to assure safety at point of use.

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*). LWUs need to prepare and implement a risk based drinking water management system by 1 September 2014 in accordance with the *NSW guidelines for drinking water management systems*, NSW Health and NSW Office of Water, 2013. Refer also to pages 9 and 10 of the *2013-14 NSW Water Supply and Sewerage Benchmarking Report*. The management systems must include verification monitoring of drinking water quality. 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. NSW Health advises each LWU of the recommended minimum number of samples to be tested annually. See the NSW Health *Drinking Water Monitoring Program* booklet for more information.

Table 1 indicates the number of microbiological samples recommended annually for systems supplying populations of varying sizes. See note to Table 1.

### Sampling location

Samples for verification monitoring should be taken at representative locations throughout the drinking water distribution system. Suggested locations for each characteristic are shown on pages 9-19 (page numbers refer to the 2011 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. For more information refer to the NSW Health Drinking Water Monitoring Program (<http://www.health.nsw.gov.au/environment/water/Page/drinkwater-nsw.aspx>).

### Sampling frequency

The frequency of sampling is dependent on the type of characteristic. The suggested sampling frequency for various drinking water characteristics are shown on pages 9-20 to 9-21.

The sampling frequency required for microbiological quality is provided in Table 9.4 on page 9-20 and summarised in Table 1 below. 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 Sampling Frequency**

<b>Discrete Systems (supplying a single town and surrounds)</b>	
<b>Town Population</b>	<b>Recommended minimum number of samples<sup>+</sup></b>
<100	12 samples per year (1 per month)
<500	26 samples per year (1 per fortnight)
500 – 5,000	52 samples per year (1 per week)
5,000 – 100,000	52 samples per year (1 per week), plus one additional sample per month for each 5,000 above 5,000
>100,000	6 samples per week, plus one additional sample per month for each 10,000 above 100,000

+ Note: The above indicates that for a system supplying a population of under 100, under 500, 5,000, 50,000, 100,000 and 150,000, the recommended minimum number of samples per year are 12, 26, 52, 160, 280 and 380 respectively.

### **Complex Systems (supplying more than one town and surrounds)**

*Note: the sample numbers apply to each town or zone within the system and the total number of samples must be not less than 52*

<1,000	12 samples per year (1 per month)
1,000 – 5,000	26 samples per year (1 per fortnight)
5,000 – 100,000	52 samples per year (1 per week), plus one additional sample per month for each 5,000 above 5,000

The sampling frequency required for physical, chemical and radiological quality is provided in NSW Health *Drinking Water Monitoring Program* and Table 9.5 on page 9-21 and summarised in Tables 2 and 3 on page 236.

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<sup>+</sup>**

Characteristic	Sampling frequency
pH, Turbidity, Colour, total dissolved solids (or conductivity)	Weekly at water treatment works or chlorinator. Monthly sample to lab in systems serving a population of 5,000 or more, otherwise biannually.
Hardness	Monthly or more frequent at treatment works (or lab) if treating for hardness. Otherwise as above.

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

NSW Health recommends monthly physical/chemical sampling for systems serving a population of 5,000 or more, otherwise biannually. NSW Health recommends a minimum set of characteristics to be tested (see Table 3). 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<sup>#</sup>**

Characteristic	Sampling frequency
Fluoride	Daily at treatment works and monthly sample to lab if the water supply is fluoridated
Antimony, arsenic, cadmium, chromium, copper, fluoride, iodine, iron, lead, manganese, mercury, nickel, nitrate, nitrite, sulfate	Monthly in systems serving a population of 5,000 or more, otherwise biannually.

<sup>#</sup> NSW Health may agree to vary this list where indicated by a risk assessment. NSW Health Forensic and Analytical Science service test for a wider range of characteristics than listed above.

The need for radiological (Radionuclides) sampling should be assessed annually. New supplies should be assessed quarterly for one year, then every 2 years (groundwater) or 5 years (surface water). Increase frequency to quarterly if guideline screening levels are exceeded (page 9-21).

Water utilities should assess risks and, if necessary, monitor to satisfy themselves of the safety of their supply with respect to pesticides, disinfection by-products and other organic chemicals. Pesticide and organic toxicants – monthly or quarterly sampling if previously (or potentially) detected; seasonally annually, or event-related (e.g. storm events, spills) for other pesticides/organic toxicants.

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 measure for *Escherichia coli* within the distribution system is summarised in Table 4.

**Table 4 – Microbiological performance**

Indicator	Guideline value
<i>E.coli</i>	Should not be detected in a minimum 100mL sample of drinking water. If detected, immediate corrective action must be taken <sup>1</sup> .

<sup>1</sup> Such action is needed to determine whether there is a real problem with drinking water quality in accordance with the NSW Health Protocol:  
<http://www.health.nsw.gov.au/environment/water/Pages/nsw-hrp-microbiological.aspx>

Microbiological compliance is achieved if the required number of samples has been tested and at least 98% of the samples had no *E. coli*. This value (98%) has been determined by NSW Health in accordance with section 10.3.1 on page 10-11 of 2011 ADWG and is the same value as applied for the 2004 ADWG.

Tables 10.4 and 10.5 on pages 10-19 to 10-32 of the guidelines summarise the guideline values for microbial, chemical and physical characteristics, to provide a ready reference when monitoring results are being evaluated. More detailed information on each characteristic can be found in the relevant fact sheet in the guidelines.



## Examples of environmental and public health incidents

### WATER SUPPLY

**Environmental incidents** (NSW Indicator Nos 137 to 140 on page 222)

#### 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 221)

#### 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 2011 NHMRC/NRMMC Australian Drinking Water Guidelines (ADWG) 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 > 2 days (if > 7 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 pages 229 to 230)

#### 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 228)

### **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 2014 \$'000

		2014	2013
<b>A</b>	<b>Expenses and Income</b>		
	<b>Expenses</b>		
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		
	d. Impairment system assets		
	e. Impairment plant and equipment		
	f. Aboriginal Communities Water & Sewerage Program		
5.	<b>Total expenses</b>		
	<b>Income</b>		
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		
10a.	Aboriginal Communities Water and Sewerage Program		
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 Income Statement (Gross including Internal Transactions) for the year ended 2014 \$'000

2014

2013

#### A Expenses and Income (continued)

- 12. Contributions
  - a. Developer charges
  - b. Developer provided assets
  - c. Other contributions
- 13. **Total income**
- 14. Gain or loss on disposal of assets
- 15. Operating result
- 15a. **Operating result** (less grants for acquisition of assets)

#### B Capital transactions

##### Non-operating expenditures

- 16. Acquisition of Fixed Assets
  - a. New assets for Improved Standards
  - b. New assets for Growth
  - c. Renewals
  - d. Plant and equipment
- 17. Repayment of debt
  - a. Loans
  - b. Advances
  - c. Finance leases
- 18. Transfer to sinking fund

##### 19. Totals

##### Non-operating funds employed

- 20. Proceeds from disposal of assets
- 21. Borrowing utilised
  - a. Loans
  - b. Advances
  - c. Finance leases
- 22. Transfer from sinking fund

##### 23. Totals

#### C Rates and charges

- 24. Number of assessments
  - a. Residential (occupied)
  - b. Residential (unoccupied ie vacant lot)
  - c. Non-residential (occupied)
  - d. Non-residential (unoccupied ie vacant lot)
- 25. Number of ETs for which developer charges were received
- 26. Total amount of pensioner rebates

ET

\$

# NSW Council

## Special Schedule No. 3 (continued)

### Water Supply – Cross-subsidies

as at 30 June 2014

\$'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="text"/>	<input type="text"/>	
If Yes, go to 28a.			
If No, please report if council has removed <b>land value</b> from access charges (ie rates)?	<input type="text"/>	<input type="text"/>	
<p>* 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 involve significant cross-subsidies.</p>			
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="text"/>	<input type="text"/>	
b. Total cross-subsidy in water supply developer charges for 2013/14 (page 47 of Guidelines)			
<p>** In accordance with page 9 of <i>Developer Charges Guidelines for Water Supply, Sewerage and Stormwater</i>, NSW Office of Water, December, 2002.</p>			
<b>29. Disclosure of cross-subsidies</b>			
<b>Total of cross-subsidies (27b +27c + 27d + 28b)</b>			

# 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 – Statement of Financial Position (Gross including Internal Transactions) as at 30 June 2014 \$'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. User charges			
d. 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 2014 \$'000

	2014	2013
<b>A Expenses and Income</b>		
<b>Expenses</b>		
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)		
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		
d. Impairment of system assets		
e. Impairment of plant and equipment		
f. Aboriginal Communities Water and Sewerage Program		
5. <b>Total expenses</b>		
<b>Income</b>		
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		
11a. Aboriginal Communities Water and Sewerage Program		
12. Grants		
a. Grants for acquisition of assets		
b. Grants for pensioner rebates		
c. Other grants		

## NSW Council

### Special Schedule No. 5 (continued) Sewerage Income Statement (Gross including Internal Transactions) as at 30 June 2014 \$'000

2014

2013

#### A Expenses and Income (continued)

- 13. Contributions
  - a. Developer charges
  - b. Developer provided assets
  - c. Other contributions
- 14. **Total income**
- 15. Gain or loss on disposal of assets
- 16. Operating result
- 16a. **Operating result** (less grants for acquisition of assets)

#### B Capital transactions

##### Non-operating expenditures

- 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. Totals

##### Non-operating funds employed

- 21. Proceeds from disposal of assets
- 22. Borrowing utilised
  - a. Loans
  - b. Advances
  - c. Finance leases
- 23. Transfer from sinking fund

#### 24. Totals

#### C Rates and charges

- 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
- 27. Total amount of pensioner rebates

ET

\$

## NSW Council

### Special Schedule No. 5 (continued)

#### Sewerage – Cross-subsidies

as at 30 June 2014

\$'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="text"/>	<input type="text"/>	
If Yes, go to 29a.			
If No, please report if council has removed <b>land value</b> from access charges (ie rates)?	<input type="text"/>	<input type="text"/>	
<p>* 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 involve significant cross-subsidies.</p>			
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="text"/>	<input type="text"/>	
b. Total cross-subsidy in sewerage developer charges for 2013/14 (page 47 of Guidelines)			
<p>** In accordance with page 9 of <i>Developer Charges Guidelines for Water Supply, Sewerage and Stormwater</i>, NSW Office of Water, December, 2002.</p>			
<b>30. Disclosure of cross-subsidies</b>			
<b>Total of cross-subsidies (28b +28c + 29b)</b>			

# 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 – Statement of Financial Position (Gross including Internal Transactions) as at 30 June 2014 \$'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. User charges			
d. 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.

**Impairment losses** (items 4d and 4e of Special Schedules 3 and 5) are to be used when the carrying amount of an asset exceeds its recoverable amount (refer to page D-31).

**Aboriginal Communities Water and Sewerage Program** (item 4f of Special Schedules 3 and 5) is to be used when operation and maintenance work has been undertaken on behalf of the Aboriginal Communities Water and Sewerage Program. Similarly, income for item 11a of Special Schedule 3 and item 12a of Special Schedule 5 are for services provided to the Aboriginal Communities Water and Sewerage Program and is not part of Council's water supply and sewerage revenue.

**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.

## NSW Council Special Schedule No. 7: Report on Infrastructure Assets as at 30 June 2014

Asset class	Asset category	Estimated cost to bring to a satisfactory standard \$'000	Required annual maintenance \$'000	2013/14 Actual maintenance \$'000	Written Down Value (WDV) \$	Assets in Condition as a % of WDV*				
						1	2	3	4	5
Buildings	Council Offices/ Administration Centres									
	Council Works Depot									
	Council Public Halls									
	Libraries									
	Cultural Facilities									
	Other Buildings									
	Specialised Buildings									
	Sub total									
Other Structures	Other Structures									
	Sub total									
Roads	Sealed Roads Surface									
	Sealed Roads Structure									
	Unsealed Roads									
	Bridges									
	Footpaths									
	Cycle ways									
	Kerb and Gutter									
	Other Road Assets									
	Sub total									
Water Supply Network	Dams/Weirs									
	Mains									
	Reservoirs									
	Pumping Station/s									
	Treatment									
	Buildings									
	Other									
	Sub total									



## NSW Council

### Special Schedule No. 7: Report on Infrastructure Assets as at 30 June 2014 (continued)

Asset class	Asset category	Estimated cost to bring to a satisfactory standard	Required annual maintenance	2013/14 Actual maintenance	Written Down Value (WDV)	Assets in Condition as a % of WDV*				
		\$'000	\$'000	\$'000	\$	1	2	3	4	5
Sewerage Network	Mains									
	Pumping Station/s									
	Treatment									
	Buildings									
	Other									
	Sub total									
Stormwater Drainage	Retarding Basins									
	Outfalls									
	Stormwater Conduits									
	Inlet and Junction Pits									
	Head Walls									
	Outfall Structures									
	Stormwater Converters									
	Other									
	Sub total									
Open Space/Recreational Assets	Swimming pools									
	Other Open Space/Recreational Assets									
Other Infrastructure Assets										
	Sub total									
<b>Total classes</b>	<b>Total – all assets</b>									

\* In accordance with Note 9.

#### Infrastructure Asset Condition Assessment

Level	Condition	Description
1	Excellent	No work required (normal maintenance)
2	Good	Only minor maintenance work required
3	Average	Maintenance work required
4	Poor	Renewal required
5	Very Poor	Urgent renewal/upgrading required

## NSW Council

### Special Schedule No. 7: Report on Infrastructure Assets as at 30 June 2014

#### Infrastructure Asset Performance Indicators – Consolidated

\$'000	Amounts	Current year indicators	2013	2012
<b>Building and infrastructure renewals ratio</b>				
<u>Asset renewals (building and infrastructure)</u>	\$ _____.			
Depreciation, amortisation and impairment (building and infrastructure)	\$ _____.			
<b>Infrastructure backlog</b>				
<u>Estimated cost to bring assets to a satisfactory condition</u>	\$ _____.			
Total value * of infrastructure, building, other structures and depreciable land improvement assets	\$ _____.			
<b>Asset maintenance ratio</b>				
<u>Actual asset maintenance</u>	\$ _____.			
Required asset maintenance	\$ _____.			
<b>Capital expenditure ratio</b>				
<u>Annual capital expenditure</u>	\$ _____.			
Annual depreciation	\$ _____.			

#### Infrastructure Asset Performance Indicators – General, Water & Sewer Funds

Current year \$'000	General	Water	Sewer
<b>Building and infrastructure renewals ratio</b>			
<u>Asset renewals (building and infrastructure)</u>			
Depreciation, amortisation and impairment (building and infrastructure)			
<b>Infrastructure backlog</b>			
<u>Estimated cost to bring assets to a satisfactory condition</u>			
Total value* of infrastructure, building, other structures and depreciable land improvement assets			
<b>Asset maintenance ratio</b>			
<u>Actual asset maintenance</u>			
Required asset maintenance			
<b>Capital expenditure ratio</b>			
<u>Annual capital expenditure</u>			
Annual depreciation			

\*Written down value

## Commentary – Report on Infrastructure Assets

The Report on Infrastructure Assets provides information on a council's assets in addition to that contained in Note 9 Infrastructure, Property, Plant and Equipment. The nature of the information in the Report on Infrastructure Assets is related to the condition, maintenance and renewal of infrastructure assets.

### Asset Condition

Asset condition assessment is the process of continuous or periodic inspection, assessment, measurement and interpretation of the data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Councils are strongly encouraged to use the asset condition rankings as set out in the Asset Condition Assessment table in the Integrated Planning and Reporting Manual for local government in NSW. Asset conditions are assessed using a scale of one to five. Assets in condition one are considered to be excellent and that there is no work required (other than normal maintenance) while assets in condition five are considered to be very poor with urgent renewal or upgrading being required.

Asset condition should be based on up to date asset condition assessments rather than an engineering estimates.

**WDV** is the written down value of the assets.

### Estimated cost to bring to a satisfactory standard (BTS)

Satisfactory is defined as “satisfying expectations or needs, leaving no room for complaint, causing satisfaction, adequate”<sup>1</sup>. The estimated cost to bring assets to a satisfactory standard is the amount of money that is required to be spent on an asset to ensure that it is in a satisfactory standard. This should not include any planned enhancements.

Unless Council has undertaken consultation with their community and has agreed to a level of service from councils assets the BTS should be measured against the second condition rating of Good as stated in the Integrated Planning and Reporting Manual for local government in NSW.

**Renewal** is defined by the IIMM as “works to upgrade, refurbish or replace existing facilities with facilities of equivalent capacity or performance capability”.

**Enhancement** means to “heighten, intensify or improve the facilities”.

**Required annual maintenance** is “what should be spent to maintain assets in a satisfactory standard”.

### Actual maintenance

Actual maintenance, previously referred to as current annual maintenance is what has been spent in the current year to maintain the assets (This figure should be sourced from Note 4). This may be higher or lower than the required annual maintenance due to the timing of when the maintenance actually occurs.

For further information, councils should consult the Integrated Planning and Reporting Guidelines and Manual for local government in NSW located on the Office of Local Government's website ([www.olg.nsw.gov.au](http://www.olg.nsw.gov.au)).

### Asset Classes

It should be noted that within the Buildings asset class 'Other Buildings' Category may include assets such as childcare centres, aged care facilities and multi-purpose centres for example.

Cultural Facilities may include assets such as museums, art galleries and entertainment centres.

Open Space/Recreational Assets may include assets such as playground equipment, BBQ's and outdoor fitness facilities. Other infrastructure assets may include jetties, boat ramps, sea/rock/retaining walls etc.

### Infrastructure Asset Performance Indicators.

The Office of Local Government requires a minimum number of prescribed indicators in relation to infrastructure asset management, to be presented as follows:

#### Building and infrastructure renewal ratio

##### *Purpose*

To assess the rate at which these assets are being renewed against the rate at which they are depreciating.

##### Asset renewals (building and infrastructure)

Depreciation, amortisation and impairment (building and infrastructure)

(Expressed as a ratio)



**Infrastructure backlog ratio***Purpose*

This ratio shows what proportion the backlog is against the total value of a Council's infrastructure.

Estimated cost to bring assets to a satisfactory condition

Total value\* of infrastructure, building, other structures and depreciable land improvement assets

**Asset maintenance ratio***Purpose*

This ratio compares actual versus required annual asset maintenance. A ratio of above 1.0 indicates that the Council is investing enough funds within the year to stop the Infrastructure Backlog from growing. The benchmark is greater than 1.0.

Actual asset maintenance

Required asset maintenance

**Capital expenditure ratio***Purpose*

This indicates the extent to which a Council is forecasting to expand its asset base with capital expenditure spent on both new assets, and replacement and renewal of existing assets. The benchmark is greater than 1.1.

Annual capital expenditure

Annual depreciation

**Infrastructure Asset Performance Indicators by Fund**

General Fund refers to all Council activities except Water and Sewer.

Where Councils do not have Water and Sewer Funds this is not required.

1. The Australian Concise Oxford Dictionary of Current English

\* *Written down value*

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

2014

### 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))	\$	
(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 2014, less cumulative dividends paid for 2 years to 30 June 2013	\$	
(iv)	Maximum Dividend from Surplus (least of (i), (ii) and (iii))	\$	
(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 (Item 2(a) in Table 1 on page 22 of Best Practice Management Guidelines)	Yes/No	
	Complying charges (Item 2(b) in Table 1)	Yes/No	
	DSP with Commercial Developer Charges (Item 2(e) in Table 1)	Yes/No	
	If Dual Water Supplies, Complying Charges (Item 2(g) in Table 1)	Yes/No	
(iii)	Sound Water Conservation & Demand Management implemented	Yes/No	
(iv)	Sound Drought Management implemented	Yes/No	
(v)	Complete Performance Reporting (by 15 September each year)	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) - Aboriginal Communities W&S Program Income (w10a)	\$ ('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

2014

#### 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))	\$	
(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 2014, less cumulative dividends paid for 2 years to 30 June 2013	\$	
(iv)	Maximum Dividend from Surplus (least of (i), (ii) and (iii))	\$	
(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) - Aboriginal Communities W&S Program Income (w10a)	\$ ('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 <b>Earnings before Interest and Tax (EBIT)</b> = 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) <b>Net Interest (NI)</b> = Interest expense (w4a+s4a) - Interest income (w9+s10) <b>Note:</b> 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

5. 2013/14 NSW Water Utility Performance Summary			
Column No.	Performance Indicator	Background to Formula	Formula
(1)	Water Supply Connected Properties (No.)	Total number of water supply connected properties (Residential plus Non-residential).	From Col (20) Table 9
(2)	Total Urban Water Supplied (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)	Residential Revenue from Usage Charges - Water Supply (% of residential bills)	Revenue from residential usage charges divided by total residential revenue (residential usage plus access charges including any rates).	$W_{6b} \times 100 \div [W_{6a} + W_{6b}]$
(4)	Typical Residential Bill - Water Supply (\$/assessment) (see note B)	Calculated using the average residential water supplied for 2013/14 multiplied by the usage charges for 2013/14 plus the access charge for 2013/14.	Col (5) x Col (14a) ÷ 100 + Col (2) Table 6
(5)	Typical Residential Bill - Sewerage (\$/assessment) (see note B)	Calculated using the access charge for 2013/14 plus, if council has residential sewer usage charges, the average residential water consumption for 2013/14 multiplied by the usage charges and usage factor for 2013/14.	Col (1) + Col (1a) Table 7
(6)	Typical Residential Bill - Water Supply & Sewerage (\$/assessment)	Sum of water supply and sewerage Typical Residential Bills.	Col (4) Table 5 + Col (5) Table 5
(7)	Typical Developer Charge - Water Supply & Sewerage (\$/ET)	Sum of water and sewerage Typical Developer Charges.	Col (7) Table 6 + Col (7) Table 7
(8)	Current Replacement Cost per Assessment - W&S (\$/assessment)	The value of the infrastructure assets divided by the number of assessments.	Col (62) Table 11 + Col (47) Table 16
(9)	E. coli Compliance Achieved?	E. coli water quality compliance (ADWG 2011) achieved - Yes or % if No. Number of samples tested that meet the water quality requirements divided by the total number of samples tested.	From Col (71) Table 12
(10)	% Population with E. coli Compliance	From population served and compliance achieved by each zone.	From Col (71c) Table 12
(11)	Chemical Compliance Achieved?	Chemical water quality compliance (ADWG 2011) achieved - Yes or % if No.	From Col (70) Table 12
(12)	% of Population with Chemical Compliance	From population served and compliance achieved by each zone.	From Col (70c) Table 12
(13)	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
(14)	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
(15)	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
(16)	Total Water Supply and Sewerage Complaints (no.)	Sum of water supply complaints (service, billing, water quality, other) and sewerage complaints (sewage chokes, service, billing, odour).	$Q_{102 \text{ Water}} + Q_{40 \text{ Sewerage}}$
(17)	Average Annual Residential Water Supplied (kL/connected property)	Average annual residential consumption (potable + non potable).	From Col (56) Table 10
(18)	Real Losses (L/connection/d) - Water Supply	Real loss or leakage L per day per connection.	From Col (41) Table 10
(19)	% 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.	From Col (33a) Table 15
(20)	Breaks and Chokes - Sewerage (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.	$Q_{64 \text{ Sewerage}} \div (Q_9 \text{ Sewerage} \div 100)$
(21)	Recycled Water (% of effluent)	Percent of Effluent Recycled	From Col (41c) Table 15
(22)	Recycled Water (Total ML)	Total Effluent Recycled	From Col (41a) Table 15
(23)	Total Revenue - W&S (\$M)	Sum of water supply revenue and sewerage revenue.	[Col (57) Table 11 + Col (42) Table 16] ÷ 1000
(24)	Net Debt to Equity - W&S (%)	See Col (26) of Table 5A	From Col (26) Table 5A
(25)	Capital Expenditure - W&S (\$/prop)	Assets, renewals, plant/equipment.	From Col (24b) Table 5A
(26)	Capital Expenditure - W&S (\$M)	Assets, renewals, plant/equipment.	Col (31a) Table 9 + Col (13a) Table 14
(27)	Economic Real Rate of Return - Water Supply (%)	See Col (12) of Table 6	From Col (12) Table 6
(28)	Economic Real Rate of Return - Sewerage (%)	See Col (11) of Table 7	From Col (11) Table 7
(29)	Full Cost Recovery - Water Supply (N / Y* / Y)	Achieved if either the economic real rate of return or return on assets is >=0, or if a LWU has significantly increased its charges to recover its costs.	From Col (14d) Table 6
(30)	Full Cost Recovery - Sewerage (N / Y* / Y)	Achieved if either the economic real rate of return or return on assets is >=0, or if a LWU has significantly increased its charges to recover its costs.	From Col (11a) Table 7
(31)	OMA Cost - Water Supply (\$/connected property)	See Col (67) of Table 11	From Col (67) Table 11
(32)	OMA Cost - Sewerage (\$/connected property)	See Col (52) of Table 16	From Col (52) Table 16
(33)	Best Practice Implementation - Water Supply and Sewerage (%)	Implementation of the 19 requirements of the Best-Practice Management Framework for Water Supply and Sewerage.	From Col (7) Table 3
(34)	Strategic Business Plans Completed? (Yes/No)	30-year Strategic Business Plan and financial plan are soundly based and are less than 5 years old.	From Col (1) Table 3

**Notes:**

A. References to W (eg.  $W_{15}$ ) refer to items in Special Schedules Nos 3 and 4 of each LWU's Annual Financial Statements. 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 in accordance with section H2 on page 344.

C. References to Q (eg.  $Q_{99 \text{ Water}}$ ) refer to questions in each LWU's Water Supply or Sewerage Performance Reporting database.

Formulae for calculation of performance indicators in table 5A

5A. 2013/14 NSW Water Utility Performance Summary			
Column No.	Performance Indicator	Background to Formula	Formula
Water Supply & Sewerage			
(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 (20) Table 9
(24a)	Total Income (\$M)	Total income plus gain/loss on disposal of assets less grants for acquisition of assets less interest income.	$\frac{[(W_{13} + W_{14} - W_{11a} - W_9) + (S_{14} + S_{15} - S_{12a} - S_{10})]}{1,000,000}$
(24b)	Capital Expenditure (\$/property)	Assets, Renewals, Plant/Equipment.	$(W_{16} \div \text{Col (20) Table 9}) + (S_{17} \div \text{Col (3) Table 14})$
(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.	$\frac{[(W_{13} - W_{11a} - W_5 + W_{4b} + W_{4c}) + (S_{14} - S_{12a} - S_5 + S_{4b} + S_{4c})]}{\div (W_{47} + W_{33b} + S_{48} + S_{34b})} \times 100$
(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.	$\frac{[(W_{13} - W_9 - W_{11a} - W_1 - W_2 - W_3) + (S_{14} - S_{10} - S_{12a} - S_1 - S_2 - S_3)]}{\div (W_{47} + W_{33b} + S_{48} + S_{34b})} \times 100$
(26)	Net Debt to Equity - W&S (%)	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.	$\frac{[(W_{36} + W_{38} - W_{30}) + (S_{37} + S_{39} - S_{31})]}{(W_{44} + S_{45})} \times 100 \div$
(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.	$\frac{[(W_{15a} + W_{4a} - W_9 - W_{14} + W_{4b} + W_{4c}) + (S_{16a} + S_{4a} - S_{10} - S_{15} + S_{4b} + S_{4c})]}{\div (W_{4a} - W_9 + S_{4a} - S_{10})}$
(28)	Dividend Payable (\$'000)	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	$(\text{Dividend paid or payable or proposed}) \times 100 \div (\text{Net profit after tax})$
(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).	$[\text{Col (30)} \div \text{Col (24a) Table 5A}] \times 100$
(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.	$\text{Col (32)} \div [\text{Col (24a) Table 5A} \times 1000] \times 100$

- 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 in accordance with section H2 on page 344.
- 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 table 5B

5B. 2013/14 NSW Water Utility Performance Summary			
Column No.	Performance Indicator	Background to Formula	Formula
Water Supply & Sewerage			
(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.	$Q_{103 \text{ Water}}$
(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.	$Q_{148 \text{ Water}}$
(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.	$Q_{80a \text{ Sewerage}}$
(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.	$Q_{148b \text{ Water}} + Q_{80b \text{ Sewerage}}$
(35d)	Greenhouse Gas Emissions - Total (tonnes CO2 per 1000 properties)	Total net greenhouse gas emissions from water, sewerage and other.	$Q_{148 \text{ Water}} + Q_{80a \text{ Sewerage}} + Q_{148b \text{ Water}} + Q_{80b \text{ Sewerage}}$
(36)	Major Sources of Water	The utility's major sources of water, including ground water in ML/d, surface water, bulk supply and the towns supplied to.	
(37)	Storage Dams	Major dams used to source water and their capacity.	
(38)	Bulk Raw Water Supply	Bulk raw water supplier.	
(39)	>50% of Supply from Ground Water	More than 50% of the utility's water is sourced from ground water.	
(40)	No. Bores	Bore holes connecting to an aquifer from which water is drawn.	Col (29) Table 9
(41)	Bulk Supplier (potable water)	Bulk potable water supplier.	$Q_{51 \text{ Water}}$

- 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 in accordance with section H2 on page 344.
- 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 table 5C

5C. Water Supply 2013/14 - Infrastructure Asset Condition and Performance			
Column No.	Performance Indicator	Background to Formula	Formula
(42)	Written Down Value Current Replacement Cost per property (\$)	The written down value of the infrastructure assets divided by the number of connected properties.	From Col (62a) Table 11.
(43)	Current Replacement Cost (CRC) of System Assets (\$'000)	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).	Col (61) Table 11 x 1,000
(44)	Written Down Replacement Cost (\$'000)	Written down replacement cost of system assets.	Col (60) Table 11 x 1,000
(45)	Current Depreciation of System Assets (\$'000)	Depreciation expense of system assets and plant and equipment.	From Special Schedule 3: $W_{3a} + W_{3b}$
(46)	Capital Expenditure (Total \$'000)	Assets, renewals, plant/equipment.	Col (31a) Table 9 x 1,000
(47)	Estimated Cost to Bring to a Satisfactory Standard (\$'000)	The amount of money that is required to be spent on an asset to ensure that it is in a satisfactory standard.	From Special Schedule 7
(48)	Actual Annual Maintenance (\$'000)	Amount spent in the current year to maintain the assets.	From Special Schedule 7
(49)	Mains Maintenance Cost (\$'000/100km)	Expenditure on maintenance of mains per 100km of main.	From Col (48) Table 10
(50)	Rehabilitation of mains (km/100km)	Length of mains rehabilitated per 100km of main.	From Col (44) Table 10
(51)	Rehabilitation of service connections (%)	Number of service connections rehabilitated as % of total.	From Col (45) Table 10
(52)	Rehabilitation of water meters (%)	Number of water meters rehabilitated as % of total.	From Col (45a) Table 10
(53)	Asset Renewals (\$'000)	Expenditure on renewals.	From Special Schedule 3: $W_{16c}$
(54)	Asset Renewals (\$'000 per 100km of main)	Expenditure on renewals per 100km of main.	From Col (46) Table 10
(55)	Asset Renewals (% of CRC)	Expenditure on renewals as percentage of Current Replacement Cost (CRC) of systems assets.	From Col (47) Table 10
(56)	Assets in Condition as % of WDV	Assets in condition one are considered to be excellent and that there is no work required (other than normal maintenance) while assets in condition five are considered to be very poor with urgent renewal or upgrading being required.	From Special Schedule 7
(57)	Renewals Ratio (%)	Asset renewals (building and infrastructure) divided by Depreciation, amortisation and impairment (building and infrastructure). (Expressed as a ratio).	From Special Schedule 7
(58)	Backlog Ratio (%)	Estimated cost to bring assets to a satisfactory condition divided by total written down value of infrastructure, building, other structures and depreciable land improvement assets.	From Special Schedule 7
(59)	Asset Maintenance Ratio (%)	Actual asset maintenance divided by Required asset maintenance.	From Special Schedule 7
(60)	Capital Expenditure Ratio (%)	Annual capital expenditure divided by Annual depreciation.	From Special Schedule 7
(61)	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.	From Col (67) Table 11
(62)	Net Debt to Equity - W&S (%)	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.	From Col (26) Table 5A
(63)	Economic Real Rate of Return - Water Supply (%)	Revenue from operations less operating expenses (OMA + current cost depreciation) 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.	From Col (12) Table 6
(64)	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
(65)	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.	From Col (43) Table 10
(66)	Real Losses (Leakage) (L/d/c)	Real loss or leakage L per day per connection.	From Col (41) Table 10
(67)	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
(68)	Water Service Complaints (per 1000 properties)	Complaints are any expression of customer dissatisfaction reported in person, by phone, fax, letter or email.	From Col (74) Table 12
(69)	% of Population with E. coli Compliance	From population served and compliance achieved by each zone.	From Col (71c) Table 12
(70)	Typical Residential Bill - Water Supply (\$/assessment)	Calculated using the average residential water supplied for 2013/14 multiplied by the usage charges for 2014/15 plus the access charge for 2014/15.	From Col (8) Table 6
(70a)	Drinking Water Management System (DWMS)? (Yes/No)	May include HACCP, ISO 9001, WSAA ADWG Aquality assessment, ADWG Framework for Management of Drinking Water Quality.	From Col (68a) Table 12
(70b)	No. of Water Treatment Operators Meeting National Certification Requirements (No.)	Operators with a Certificate III in Water Operations (Water Treatment) or equivalent; OR a NSW Office of Water Part 1 Certificate (Chemical Dosing Systems) or equivalent AND have completed chlorine safety training. Employed in operating a LWU treatment works or a chlorinator/aerator.	From Appendix I: Col (1) + Col (2)
(71)	Best Practice Implementation - Water Supply (%)	Implementation of the 10 requirements of the Best-Practice Management Framework for Water Supply.	From Col (7) Table 3
(72)	Strategic Business Plans Completed? (Yes/No)	30-year Strategic Business Plan and financial plan are soundly based and are less than 5 years old.	From Col (1) Table 3

**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. 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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 5D

5D. Sewerage 2013/14 - Infrastructure Asset Condition and Performance			
Column No.	Performance Indicator	Background to Formula	Formula
(73)	Written Down Value Current Replacement Cost per property (\$)	The written down value of the infrastructure assets divided by the number of connected properties.	From Col (47a) Table 16.
(74)	Current Replacement Cost (CRC) of System Assets (\$'000)	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).	Col (46) Table 16 x 1,000
(75)	Written Down Replacement Cost (\$'000)	Written down replacement cost of system assets.	Col (45) Table 16 x 1,000
(76)	Current Depreciation of System Assets (\$'000)	Depreciation expense of system assets and plant and equipment.	From Special Schedule 5: $W_{3a} + W_{3b}$
(77)	Capital Expenditure (Total \$'000)	Assets, renewals, plant/equipment.	Col (13a) Table 14 x 1,000
(78)	Estimated Cost to Bring to a Satisfactory Standard (\$'000)	The amount of money that is required to be spent on an asset to ensure that it is in a satisfactory standard.	From Special Schedule 7
(79)	Actual Annual Maintenance (\$'000)	What has been spent in the current year to maintain the assets.	From Special Schedule 7
(80)	Mains Maintenance Cost (\$'000/100km)	Expenditure on maintenance of mains per 100km of main.	Col (31) Table 15
(81)	Rehabilitation of mains (km/100km)	Length of mains rehabilitated per 100km of main.	From Col (27) Table 15
(82)	Rehabilitation of service connections (%)	Number of service connections rehabilitated as % of total.	From Col (28) Table 15
(83)	Asset Renewals (\$'000)	Expenditure on renewals.	From Special Schedule 5: $W_{17c}$
(84)	Asset Renewals (\$'000 per 100km of main)	Expenditure on renewals per 100km of main.	From Col (29) Table 15
(85)	Asset Renewals (% of CRC)	Expenditure on renewals as percentage of Current Replacement Cost (CRC) of systems assets.	From Col (30) Table 15
(86)	Assets in Condition as % of WDV	Assets in condition one are considered to be excellent and that there is no work required (other than normal maintenance) while assets in condition five are considered to be very poor with urgent renewal or upgrading being required.	From Special Schedule 7
(87)	Renewals Ratio (%)	Asset renewals (building and infrastructure) divided by Depreciation, amortisation and impairment (building and infrastructure). (Expressed as a ratio).	From Special Schedule 7
(88)	Backlog Ratio (%)	Estimated cost to bring assets to a satisfactory condition divided by total written	From Special Schedule 7
(89)	Asset Maintenance Ratio (%)	Actual asset maintenance divided by Required asset maintenance.	From Special Schedule 7
(90)	Capital Expenditure Ratio (%)	Annual capital expenditure divided by Annual depreciation.	From Special Schedule 7
(91)	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.	From Col (52) Table 16
(92)	Net Debt to Equity - W&S (%)	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.	From Col (26) Table 5A
(93)	Economic Real Rate of Return - Sewerage (%)	Revenue from operations less operating expenses (OMA + current cost depreciation) 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.	From Col (11) Table 7
(94)	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.	From Col (24) Table 15
(95)	Infiltration (ML per 100km of main)	Estimated groundwater infiltration and stormwater inflow into the system per 100km of main.	From Col (23) Table 15
(96)	Overflows (No. per 100km of main)	Recorded overflows in sewers, access chambers and pumping stations.	From Col (25) Table 15
(97)	Service Complaints (per 1000 properties)	Service complaints including chokes and odour, but excluding billing. Exclude queries.	From Col (62) Table 17
(98)	Sewage Treated that was Compliant	Percent of sewage volume treated that was compliant.	From Col (59e) Table 17
(99)	Odour Complaints (per 1000 properties)	Odour complaints for treatment works, pumping stations and pipe network in your sewerage business.	From Col (61) Table 17
(100)	Typical Residential Bill - Sewerage (\$/assessment)	Calculated using the access charge for 2014-15 plus, if council has residential sewer usage charges, the average residential water consumption for 2013-14 multiplied by the usage charges and usage factor for 2014-15.	From Col (8) Table 7
(100a)	Pollution Incident Response Management Plan (PIRMP)? (Yes/No)	A Pollution Incident Response Management Plan (PIRMP) is made available on the utility's website for each sewage treatment works, as required by EPA.	From Col (64a) Appendix D2
(100b)	No. of Wastewater Treatment Operators (No.)	The number of suitably qualified employees operating the utility's sewage treatment works.	From Col (64b) Appendix D2
(101)	Best Practice Implementation - Sewerage (%)	Implementation of the 9 requirements of the Best-Practice Management Framework for Sewerage.	From Col (7) Table 3
(102)	Strategic Business Plans Completed? (Yes/No)	30-year Strategic Business Plan and financial plan are soundly based and are less than 5 years old.	From Col (1) Table 3

- 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 in accordance with section H2 on page 344.
- C. References to Q (eg.  $Q_{99\text{ Water}}$ ) refer to questions in each LWU's Water Supply or Sewerage Performance Reporting database.

Formulae for calculation of performance indicators in table 6

6. Water Supply - 2013/14 Charges, 2014/15 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 blank 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 supplied (potable + non-potable).	$[W_1 + W_2] \times 100 \div [(Col (13) + Col (14) Table 8] \times 1000]$
(7)	Typical Developer Charge (\$/Equivalent Tenement (ET))	Upfront infrastructure contribution for new developments.	Q <sub>136</sub> (see note C)
(8)	Typical Residential Bill (\$/assessment) (see note C)	Calculated using the average residential water supplied for 2013-14 multiplied by the usage charges for 2014-15 plus the access charge for 2014-15.	Col (5) x Col (14a) ÷ 100 + 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) 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.	$[Col (1) Table 8] \div [Cols (18) \times (21) \times (22) Table 9]$
(14b)	Average Annual Residential Water Supplied (potable + non potable) (kL/property)	Average annual residential water supplied (potable and non potable).	$[Col (1) + Col (11) + Col (12a) Table 8] \div [Cols (18) \times (21) \times (22) Table 9]$
(14c)	Average Annual Residential Water Supplied (potable + non potable) (L/c/d)	Average annual residential water supplied per capita per day.	$[Col (1) + Col (11) + Col (12a) Table 8] \div [Col (23) Table 9] \div 365$
(14d)	Full Cost Recovery? (N / Y* / Y)	Achieved if either the economic real rate of return or return on assets is >=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

- Notes:**
- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Water Supply or Sewerage 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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 7

7. Sewerage - 2013/14 Charges, 2014/15 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.	$[S_1 + S_2] \times 100 \div [\text{Col (32) Table 15} \times 1000]$
(3a)	Non-residential Sewer Usage Charge (Not including SDF) (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)	Appropriate 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 (\$/Equivalent Tenement(ET))	Upfront infrastructure contribution for new developments.	$Q_{62}$ (see note C)
(8)	Typical Residential Bill (\$/assessment) (see note C)	Calculated using the access charge for 2014-15 plus, if council has residential sewer usage charges, the average residential water consumption for 2013-14 multiplied by the usage charges and usage factor for 2014-15.	Col (1) + Col (1a) 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.	$\frac{[(S_{14} - S_5 - S_{12a} + S_{4b} + S_{4c})]}{(S_{48} + S_{34b})} \times 100$
(11)	Economic Real Rate of Return (%)	Revenue from operations less operating expenses (OMA + current cost depreciation) 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 >=0, or if a LWU has significantly increased its charges in order to recover its costs.	From NOW records
(11b)	Recycled Water Usage Charge (c/kL)	Charge applied for use of recycled water.	From Council's Schedule of Fees and Charges
(11c)	Sewage Collected (kL/property)	Includes residential, non-residential and trade waste.	Col (39) Table 15
(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:**
- A. References to Q (eg.  $Q_{99}$ ) refer to questions in each LWU's Water Supply or Sewerage Performance Reporting database.
  - B. References to W (eg.  $W_{15}$ ) 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 in accordance with section H2 on page 344.

Formulae for calculation of performance indicators in table 8

8. 2013/14 Water Supplied in Regional NSW			
Column No.	Performance Indicator	Background to Formula	Formula
(1)	Residential	Domestic (inhouse and ex-house) potable water supplied.	Q <sub>54</sub>
(2)	Commercial	Offices, shops, clubs, hotels, motels, caravan parks potable water supplied.	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 water supplied.	Q <sub>57</sub>
(5)	Institutional	Hospitals, schools, colleges etc potable water supplied.	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 water supplied plus water losses (potable).	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 supply 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 supply 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>
(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 water supplied equals the sum of potable water supplied plus non-potable supply for industry or non-potable component in a dual supply system less recycled water for non-potable supply.	Col (10) + Col (12c) Table 8 - Q <sub>156</sub> + Q <sub>47a</sub>
(14)	Bulk Water Exports	Sales to other Local Water Utilities (LWUs) of potable and non-potable water.	Q <sub>59</sub>
(11b)	Recycled Water - Non-Urban	Total metered and estimated non-metered water supplied for agricultural purposes, environmental purposes and on-site use, excluding urban stormwater.	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
(15)	Surface Water	Surface water + ground water + bulk purchases should equal total annual water supplied.	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 bulk water purchased.	Q <sub>52b</sub>
(17b)	Total Sourced Water	Excluding non-urban recycled.	Col (15) + Col (16) + Col (16b) + Col (17) Table 8

- 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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 9

9. Water Supply - 2013/14 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.	$Q_{36}$
(18a)	Number of Service 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 connection).	$Q_{30}$
(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 should be provided by the LWU.	$Q_{37}$
(20)	Connected Properties	Total connected properties (residential plus non-residential). Calculated from number of assessments multiplied by the ratio of connected properties to assessments.	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 should be provided by the LWU.	$Q_{37a}$
(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 should be provided by the LWU.	$Q_{38}$
(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.	$Q_{31} \div \text{Col (22a) Table 9}$
(23)	Permanent Population	Where this data is ambiguous or missing, it has been estimated from other supporting information (financial data, previous year's data).	$Q_1$
(24)	Peak Population (% of permanent)	Maximum population supplied anytime this reporting year.	$Q_2 \times 100 \div Q_1$
(25)	Headworks Transfer Mains (raw water) (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.	$Q_{20a}$
(25a)	Trunk and Reticulation Mains (km)	Total length of mains including trunk mains and reticulation.	$Q_{22}$
(26)	Properties Served per km of main	Total number of connected properties divided by length of mains.	Col (20) $\div$ Col (25a) Table 9
(27)	Water Treatment Works	Number of works providing full treatment.	$Q_{17}$
(28)	Dams	Number of dams.	$Q_7$
(29)	Bores	Number of water supply bores.	$Q_{13}$
(30)	Pumping Stations	Number of pumping stations.	$Q_{15}$
(30a)	Pumping Stations per 100km of main	Number of pumping stations divided by length of main.	Col (30) $\div$ [Col (25a) $\div$ 100] Table 9
(31)	Capital Expenditure (\$/property)	Assets, renewals, plant/equipment.	Col (31a) x 1,000,000 $\div$ Col (20) Table 9
(31a)	Capital Expenditure (Total \$M)	Assets, renewals, plant/equipment.	$W_{16} \div 1,000,000$
(31b)	Capital Works Grants (\$'000)	Grants for acquisition of assets.	$W_{11a}$
(32)	Total Workforce (water supply) (Employees/1000 properties)	Equivalent full time employees involved with water supply.	$Q_{120}$
(34)	% Undergoing Training	% of employees in water supply workforce undergoing training for 2+ days during the year.	$Q_{122} \times 100 \div Q_{120}$
(37)	Outsourcing % of Maintenance Cost	% expended on outsourcing for maintenance of water supply business.	$Q_{130}$
(38)	Number of Injuries	Number of injuries (fatality, permanent disability or time loss of 1+ days) in water business.	$Q_{124}$
(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.	$Q_{123} \div (230 \times Q_{120})$
(40a)	Days Lost due to Injuries	Number of days lost due to injuries (time loss of 1+ days) in water supply business.	$Q_{125}$
(40b)	Days Lost due to Injuries (% of Total Days Worked)	Number of days lost due to injuries (time loss of one or more days) as a percentage of total days worked in water supply business.	$(Q_{125} \times 100) \div (230 \times Q_{120})$

- Notes:**
- A. References to Q (eg.  $Q_{99}$ ) refer to questions in each LWU's Water Supply Performance Reporting database.
  - B. References to W (eg.  $W_{15}$ ) 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 in accordance with section H2 on page 344.

Formulae for calculation of performance indicators in table 10

10. Water Supply - 2013/14 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)	Leakage Test (Type & Extent)	Type and extent of Leakage Test undertaken, the year and the result of the test.	Most 2013/14 results from Regional NSW Water Loss Management Program
(41d)	(Year)		
(41e)	(Result %)		
(41f)	Total Non-Revenue Water	Sum unbilled authorised consumption plus water losses (potable).	From Col (9) Table 8
(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 (% of total length)	Length of mains rehabilitated as % of total length 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 per 100km of main.	$W_{16c} \div (Q_{22} \div 100)$
(47)	Renewals (% of CRC)	Expenditure on renewals 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.	From 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.	From Col (12c) Table 8
(51)	% Water Recycled	For non-potable urban water supplied.	$\text{Col (11c)} \times 100 \div \text{Col (13) Table 8}$
(52)	Peak Day to Average Consumption (%)	Maximum 24 hour potable water supplied in reporting year (ML/d) divided by average daily consumption.	$Q_{82} \div [\text{Col (49)} \div 365]$
(53)	Peak Week to Average Consumption (%)	Average daily consumption over peak week (ML/d) divided by average daily consumption .	$Q_{83} \div [\text{Col (49)} \div 365]$
(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, 58% of the total potable supply has been used.	$[\text{Col (1) Table 8}] \div [\text{Cols (18) x (21) x (22) Table 9}]$
(56)	Average Annual Residential Water Supplied (Potable + Non Potable) (kL/property)	Average annual residential consumption (potable + non potable). See column 56a above.	$[\text{Col (1) + Col (11) + Col (12a) Table 8}] \div [\text{Cols (18) x (21) x (22) Table 9}]$

- 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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 10A

10A. Water Supply - 2013/14 Estimated Real Water Losses			
Column No.	Performance Indicator	Background to Formula	Formula
(1)	Water Utility	Only water utilities that participated in the Water Loss Management Program (WLMP) for Regional NSW Water Utilities are included.	Appendix 1 of the WLMP Report.
(2)	Zone	Where water utilities have been divided up into different zones, these are listed separately.	Appendices 3 and 4 of the WLMP Report.
(3)	Utility Connections 2009-10 (No.)	Number of physical connections to the water supply system for the water utility in 2009-10 (ie. A multiple dwelling with a single metered connection to the water supply system is counted as one connection).	Col (18a) Table 9 [2009-10 Benchmarking Report]
(4)	Zone Connections (No.)	Number of physical connections to the water supply system for each zone.	Appendices 3 and 4 of the WLMP Report.
(5)	Connection Ratio (Zone:Utility)	The ratio of connections for each zone to the total connections for the water utility.	$100 \times \text{Col (4)} \div \text{Col (3)}$
(6)	ILI Before	Infrastructure Leakage Index (ILI) before the WLMP.	Appendices 3 and 4 of the WLMP Report.
(7)	Utility Potable Annual Water Supplied 2009-10 (ML)	Sum of Total Revenue water plus Total Non-revenue water for the water utility in 2009-10.	Col (10) Table 8 [2009-10 Benchmarking Report]
(8)	Estimated Water Loss - Before (L/c/d)	Estimated water losses before leakage detection and repair.	Appendices 3 and 4 of the WLMP Report.
(9)	Estimated Water Loss - Before (ML)	Estimated water losses before leakage detection and repair.	$\text{Col (8)} \times \text{Col (3)} \times 365 \div 10^6$
(10)	Estimated Water Loss - Before (%)	Estimated water losses before leakage detection and repair.	$100 \times \text{Col (9)} \div \text{Col (7)}$
(11)	Estimated Water Loss - After (L/c/d)	Estimated water losses after leakage detection and repair.	Appendix 4 of the WLMP Report.
(12)	Estimated Water Loss - After (ML)	Estimated water losses after leakage detection and repair.	$\text{Col (11)} \times \text{Col (3)} \times 365 \div 10^6$
(13)	Estimated Water Loss - After (%)	Estimated water losses after leakage detection and repair.	$100 \times \text{Col (11)} \div \text{Col (7)}$
(14)	Annual Water Savings (ML)	Annual water savings for each zone and the water utility as a whole after leakage detection and repair.	$\text{Col (9)} - \text{Col (12)}$
(15)	Test	The type and extent of leakage detection and repair and/or pressure reduction undertaken for each water utility. Eg. L95 indicates that the leakage detection and repair project carried out covered 95% of the utility's service connections.	Appendix 4 of the WLMP Report.
(16)	Test Year	The year the above test was performed.	Appendix 4 of the WLMP Report.
(17)	Page	Page reference of the water utility's project summary in the WLMP Report.	Appendix 1 of the WLMP Report.
(18)	Comments	Details on any significant outcomes from the WLMP.	Appendices 3 and 4 of the WLMP Report.

- 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 in accordance with section H2 on page 344.

Formulae for calculation of performance indicators in table 11

11. Water Supply - 2013/14 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.	$[\text{Col (57) Table 11}] \times 1000 \div [\text{Col (20) Table 9}]$
(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.	$(W_{6a} + W_{6b}) \times 100 \div (W_6 + W_7)$
(59)	Residential Water Supplied (% of potable water supplied excluding water losses)	% of potable water <u>excluding</u> water losses.	$(Q_{54a} \div Q_{62}) \times 100$
(58a)	Residential Revenue from usage charges (%)	Resential revenue from usage charges.	$W_{6b} \times 100 \div (W_{6a} + W_{6b})$
(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 - W&S (%)	All overdrafts, repayable borrowings, interest bearing non-repayable borrowings, advances and leases less cash and investments divided by total equity.	$[(W_{36} + W_{38} - W_{30}) + (S_{37} + S_{39} - S_{31})] \times 100 \div (W_{44} + S_{45})$
(62a)	Written Down Value of Current Replacement Cost per property (\$)	The written down value of the infrastructure assets divided by the number of connected properties.	$W_{47} \div \text{Col (20) Table 9}$
(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.
(65)	Operating Result (\$/property)	Total revenue less total expenses less grants for acquisition of assets divided by total number of connected properties.	$(W_{15a}) \div \text{Col (20) Table 9}$
(64a)	Cross Subsidies (Annual Fees & Charges) (\$/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) (\$/ET)	Cross subsidies in water supply developer charges.	$(W_{28b}) \div \text{Col (18) Table 9}$
(66)	Externalities (\$/property)	Water fees paid by LWUs to Water NSW (formerly State Water).	From Water NSW 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:**
- 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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 12

12. Water Supply - 2013/14 Health, Levels of Service			
Column No.	Performance Indicator	Background to Formula	Formula
(68a)	Drinking Water Management System (DWMS) - Basis (e.g. ADWG, HACCP)	May include HACCP, ISO 9001, WSAA ADWG Aquality assessment, ADWG Framework for Management of Drinking Water Quality.	Q <sub>113a</sub>
(68b)	Drinking Water Management System (DWMS) - External Assessment? (Y/N)	Audited by an external accredited assessor and received certification for ISO 9001, HACCP or assessed against WSAA ADWG or ADWG.	Q <sub>114</sub>
(69)	Physical - % of Samples Complying with 2011 ADWG	Physical water quality compliance achieved - %. 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)	Physical Compliance Achieved?	Physical water quality compliance (ADWG 2011) achieved - Yes or No. Also see 69 above.	'Yes' if Col (69) ≥ 50%
(70)	Chemical - % of Samples Complying with 2011 ADWG	Chemical water quality compliance achieved - %. 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)	Chemical Compliance Achieved?	Chemical water quality compliance (ADWG 2011) achieved - Yes or No. Also see 70 above.	'Yes' if Col (70) ≥ 95%
(70b)	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
(70c)	% of Population with Chemical Compliance	From population served and compliance achieved by each zone.	
(71)	Microbiological - % of Samples Complying with 2011 ADWG	E. coli water quality compliance (ADWG 2011) achieved - %. 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)	E. coli Compliance Achieved?	E. coli water quality compliance (ADWG 2011) achieved - Yes or No. Also see 71 above.	'Yes' if Col (71) ≥ 98%
(71b)	No. of Zones where E. coli Compliance was Achieved	Assessment with the E. coli 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
(71c)	% of Population with E. coli Compliance	From population served and compliance achieved by each zone.	
(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 <sub>101a</sub> + Q <sub>101b</sub> ) x 1000 ÷ 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 <sub>96</sub> x 1000 ÷ 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 <sub>132a</sub> x 1000 ÷ 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 <sub>132b</sub> x 1000 ÷ Col (20) Table 9
(77)	Incidence of Unplanned Interruptions (No./1000 properties)	Includes each occurrence of unplanned interruptions to supply. Excludes reduced levels of service or breaks in service connections.	Q <sub>105</sub> x 1000 ÷ Col (20) Table 9
(78)	Average Duration of Interruptions (minutes)	Average duration of unplanned interruptions.	Q <sub>107</sub>
(78a)	Drought Water Restrictions (% of time)	Percent of time that water restrictions apply.	(Q <sub>95</sub> ÷ 365) x 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 2011 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 in accordance with section H2 on page 344.

Formulae for calculation of performance indicators in table 13

13. Water Supply - 2013/14 Benchmarking Cost Data			
Column No.	Performance Indicator	Background to Formula	Formula
(79a)	Total O&M Cost (\$/property)	Maintenance, Operation, Energy, Chemical and Bulk Purchase costs.	Col (79) + Col (80) + Col (81) + Col (82) + Col (82a) Table 13
(79)	Operating Cost Components - Maintenance (\$/property)	Maintenance cost of all water system assets.	$[W_{2b} + W_{2d} + W_{2f} + W_{2i} + W_{2l} + W_{2n}] \div \text{Col (20) Table 9}$
(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.	$W_{1b} \div \text{Col (20) Table 9}$
(91a)	Management Cost Components - Total (\$/property)	Administration, Engineering and Supervision costs.	Col (89) + Col (90) Table 13
(91)	Management Cost Components - Total (c/kL)	Management cost per kL of urban water supplied.	$[W_{1a} + W_{1b}] \times 100 \div [\text{Col (49) Table 10} \times 1000]$
(91b)	Total OMA Cost (\$/property)	Operation, Maintenance and Management costs.	Col (79a) + 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 (c/kL)	From special schedule No. 3.	$[W_{2j} + W_{2k} + W_{2l}] \div [10 \times \text{Col (49) Table 10}]$
(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:**
- 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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 14

14. Sewerage - 2013/14 Utility Characteristics			
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> x 100 ÷ Q <sub>1</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 workforce.	Q <sub>50</sub> x 100 ÷ Q <sub>49</sub>
(16)	% Undergoing Training	% of employees in sewerage workforce undergoing training for 2+ days during the year.	Q <sub>51</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 (No.)	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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 15

15. Sewerage - 2013/14 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.	$Q_{11} \times 100 \div \text{Col(3) Table 14}$
(29)	Renewals (\$'000 per 100km of main)	Expenditure on renewals per 100km of main.	$(S_{17c} \div 1000) \div (Q_9 \div 100)$
(30)	Renewals (% of CRC)	Expenditure on renewals as % of Current Replacement Cost (CRC) of systems assets.	$S_{17c} \times 100 \div [\text{Col(46) Table 16} \times 1000]$
(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.	$[\Sigma Q_{T18} + \Sigma Q_{T19}] \times 100 \div \text{Col (32) Table 15}$
(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/Inflow	% 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.	$100 - \text{Col (34)} - \text{Col (35)} - \text{Col (36)} - \text{Col (37) Table 15}$
(39a)	Level of Treatment - Primary Level	Primary treatment only.	$[\Sigma Q_{T17} \times 100] \div \text{Col (32) Table 15}$
(39b)	Level of Treatment - Secondary Level	Secondary treatment only.	$[\Sigma Q_{T18} \times 100] \div \text{Col (32) Table 15}$
(39c)	Level of Treatment - Tertiary Level	Tertiary treatment only.	$[\Sigma Q_{T19} \times 100] \div \text{Col (32) Table 15}$
(39)	Volume of Sewage Collected per property (kL/property)	Includes residential, non-residential and trade waste.	$\text{Col (32) Table 15} \div \text{Col (3) Table 14}$
(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.	$100 \times \text{Col (41a)} \div \text{Col (32) Table 15}$

- 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 in accordance with section H2 on page 344.

Formulae for calculation of performance indicators in table 16

16. Sewerage - 2013/14 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.	$[Col (42) Table 16 \times 1000] \div [Col (3) Table 14]$
(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.	$S_{46} \div Col (1) Table 14$
(48)	Net Debt to Equity - W&S (%)	All overdrafts, repayable borrowings, interest bearing non-repayable borrowings, advances and leases less cash & investments $\div$ total equity.	$[(W_{36} + W_{38} - W_{30}) + (S_{37} + S_{39} - S_{31})] \times 100 \div (W_{44} + S_{45})$
(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.	$(S_{28b} + S_{28c}) \div Col (1) Table 14$
(49b)	Cross Subsidies (Developer Charges) (\$/ET)	Cross subsidies in sewerage developer charges.	$(S_{29b}) \div Col (1) Table 14$
(50)	Operating Result (\$/property)	Total revenue less total expenses less grants for acquisition of assets divided by total number of connected properties.	$(S_{16a}) \div Col (3) Table 14$
(47a)	Written Down Value of Current Replacement Cost per property (\$)	The written down value of the infrastructure assets divided by the number of connected properties.	$S_{48} \div Col (3) Table 14$
(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).	$(S_{4a} + S_{18a} + S_{18b} + S_{18c}) \div Col (3) Table 14$
(52)	Operating Cost OMA (\$/property)	Total operation, maintenance and administration costs divided by total number of connected properties.	$[S_1 + S_2] \div Col (3) Table 14$
(54)	Management Cost (\$/property)	Total management costs divided by total number of connected properties.	$S_1 \div Col (3) Table 14$

- Notes:**
- A. References to Q (eg. Q<sub>99</sub>) refer to questions in each LWU's Sewerage Performance Reporting database.  $\Sigma Q_{T99}$  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 in accordance with section H2 on page 344.



Formulae for calculation of performance indicators in table 17

17. Sewerage - 2013/14 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 (%)	Compliance refers to the number of samples taken for system performance monitoring and not the number of tests.	see note C
(59b)	EPA Licence Compliance P (%)	Compliance refers to the number of samples taken for system performance monitoring and not the number of tests.	see note C
(59c)	EPA Licence Compliance Oil & Grease (%)	Compliance refers to the number of samples taken for system performance monitoring and not the number of tests.	see note C
(59d)	EPA Licence Compliance Faecal Coliform (%)	Compliance refers to the number of samples taken for system performance monitoring and not the number of tests.	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	Number of treatment works compliant with licence conditions.	see note G
(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)	Service complaints including chokes and odour, but excluding billing. Exclude queries.	$[Q_{38} + Q_{34} + Q_{39}] \times 1000 \div \text{Col (3) Table 14}$
(65)	Average Sewerage Interruption (minutes)	Measured from time when utility is aware that sewerage services are no longer available. Sum of total minutes of interruption divided by the total number of interruptions.	$Q_{43}$

- Notes:**
- A. References to Q (eg.  $Q_{99}$ ) refer to questions in each LWU's Sewerage Performance Reporting database.
  - B. References to S (eg.  $S_{15}$ ) 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 in accordance with section H2 on page 344.
  - F. From page 57 of the 2013-14 National Performance Framework.
  - G. From page 59 of the 2013-14 National Performance Framework.



Formulae for calculation of performance indicators in table 18

18. Sewerage - 2013/14 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.	$[S_{2a} + S_{2c} + S_{2f} + S_{2j}] \div \text{Col (3) Table 14}$
(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.	$[S_{2i} + S_{2j}] \div \text{Col (3) Table 14}$
(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.	$S_{1b} \div \text{Col (3) Table 14}$
(76a)	Management Cost Components - Total (\$/property)	Administration, Engineering and Supervision costs.	Col (74) + Col (75) Table 18
(76)	Management Cost Components - Total (c/kL)	Management cost per kL of sewage treated.	$[S_{1a} + S_{1b}] \times 100 \div \text{Col (32) Table 15}$
(76b)	Total OMA Cost (\$/property)	Operation, Maintenance and Management costs.	Col (66a) + Col (76a) Table 18
(77)	Wholesale Component (Treatment) (\$/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 (Reticulation) (\$/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 (c/kL)	From special schedule No. 5.	$[S_{2f} + S_{2g} + S_{2h} + S_{2i} + S_{2j} + S_{2k}] \div [10 \times \text{Col (32) Table 15}]$
(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 in accordance with section H2 on page 344.



Appendix C: 2013-14 Local water utility TBL performance reports

Coffs Harbour City Council Water Supply TBL Report (Page 1)

Coffs Harbour City Council	TBL Water Supply Performance	2013-14
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WATER SUPPLY SYSTEM - Coffs Harbour City Council serves a population of 70,200 (24,890 connected properties). Water is sourced from the Nymboida River (part of the Regional Water Supply which includes Shannon Creek Dam) and also from the Orara River. Water is transferred to Karangi Dam where it is treated and supplied to the Coffs Harbour area which stretches from Sawtell to Corindi. Council has 2 storage dams at Karangi and Woolgoolga (total storage capacity 5,870ML), not including the 30,000ML Shannon Creek Dam. Council has 2 smaller systems providing treated water to Coramba and Nana Glen villages. The water supply network comprises a dissolved air flotation treatment works, a conventional water treatment works and a chlorinator, 18 service reservoirs (88 ML), 7 pumping stations, 43.2 ML/d delivery capacity into the distribution system, 180 km of transfer and trunk mains and 510 km of reticulation.

PERFORMANCE - Coffs Harbour City Council achieved 100% implementation of the NSW BPM requirements. The 2014-15 typical residential bill was \$587 which was close to the statewide median of \$582 (Indicator 14). The economic real rate of return was similar to the statewide median (indicator 43). The operating cost (OMA) per property was \$396 which was close to the statewide median of \$400 (Indicator 49). Water quality complaints were negligible compared to the statewide median of 3 (Indicator 25). Compliance was achieved for microbiological water quality (100% of the population, 3 of 3 zones compliant), chemical water quality and physical water quality. There were no failures of the chlorination system or the treatment system. Coffs Harbour City Council reported no water supply public health incidents. Current replacement cost of system assets was \$413M (\$15,600 per assessment). Cash and investments were \$34M, debt was \$83M and revenue was \$20M (excluding capital works grants).

IMPLEMENTATION OF REQUIREMENTS OF NSW BEST-PRACTICE MANAGEMENT (BPM) FRAMEWORK

(1) Complete Current Strategic Business Plan & Financial Plan	YES <sup>12</sup>	(3) Sound water conservation implemented	YES
(2) (2a) Pricing - Full Cost Recovery, without significant cross subsidies	Yes	(4) Sound drought management implemented	YES
(2b,2c) Pricing - Appropriate Residential Charges	Yes	(5) Complete performance reporting (by 15 September)	YES
(2d) Pricing - Appropriate Non-residential Charges	Yes	(6) Integrated water cycle management strategy	YESC
(2e) Pricing - DSP with Commercial Developer Charges	Yes	IMPLEMENTATION OF ALL REQUIREMENTS	100%

TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

NW		No.		LWU		RANKING		MEDIAN	
				RESULT		>10,000 properties Note 1		All LWUs Note 2	
				Col 1		Col 2		Col 3	
UTILITY	CHARACTERISTICS	C1	1	Population served:	70200				
		C4	2	Number of connected properties:	24890	Number of assessments: 26480			
			3	Residential connected properties (% of total)		%	94		91
			4	New residences connected to water supply (%)		%	1.3		0.9
		A3	5	Properties served per kilometre of water main		Prop/km	37		32
			6	Rainfall (% of median annual rainfall)		%	65		77
		W11	7	Total urban water supplied at master meters (ML)		ML	6,530		6,800
			8	Peak week to average consumption (%)		%	126		152
			9	Renewals expenditure (% of current replacement cost of system assets)		%	0.3		0.5
			10	Employees per 1000 properties		per 1,000 prop	1.7		1.5
SOCIAL	CHARGES & BILLS	P1		Residential tariff structure for 2014-15:	inclining block; independent of land value; access charge \$143				
		P1.3	12a	Residential water usage charge for 2013-14 for usage <365 kL (c/kL)	c/kL (2013-14)	255	1	1	208
			12	Residential water usage charge for 2014-15 for usage <365 kL (c/kL)	c/kL (2014-15)	263	2	1	213
		P3	14a	Typical residential bill for 2013-14 (\$/assessment)	\$ (2013-14)	569	4	2	550
			14	Typical residential bill for 2014-15 (\$/assessment)	\$ (2014-15)	587	3	2	582
			15	Typical developer charge for 2014-15 (\$/equivalent tenement)	\$ (2014-15)	9,900	1	1	5,500
		F4	16	Residential revenue from usage charges (% of residential bills)	%	76	2	2	73
		F5	17	Revenue per property - water (\$/property)	\$/prop	810	3	3	795
	HEALTH		18	Water Supply Coverage (% of Urban Population with reticulated WS)	% of population	99.5	3	2	99.6
		H6	18a	Risk based drinking water quality plan?	Yes	Yes			
			19	Physical compliance achieved? Note 10	Yes	Yes	1	1	
			19a	Chemical compliance achieved? Note10	Yes	Yes	1	1	
		H4	19b	% population with chemical compliance		100	1	1	100
			20	Microbiological (E. coli) compliance achieved? Note 10	Yes	Yes	1	1	
	SERVICE LEVELS	H3	20a	% population with microbiological compliance	% of population	100	1	1	100
		C9	25	Water quality complaints per 1000 properties	per 1,000 prop	0	1	1	3
		C10	26	Water service complaints per 1000 properties	per 1,000 prop	0.2	1	1	6
		C17	27	Incidence of unplanned interruptions per 1000 properties	per 1,000 prop	9	2	2	50
		C15	28	Average duration of interruption (min)	min	120	1	2	150
		A8	30	Number of water main breaks per 100 km of water main	per 100km	3	1	1	10
			31	Drought water restrictions (% of time)	% of time	0	1	1	0
			32	Total days lost (%)	%	3.4	4	4	2.9
ENVIRONMENTAL	NATURAL RESOURCE MANAGEMENT	W12	33	Average annual residential water supplied - STATEWIDE (kL/property)	kL/prop	169	3	2	173
			33a	Average annual residential water supplied - COASTAL LWUs (kL/property)	kL/prop	169	4	4	157
			33b	Average annual residential water supplied - INLAND LWUs (kL/property)	kL/prop				263
		A10	34	Real losses (leakage) (L/service connection/day)	L/connection/day	60	2	2	70
			35	Energy consumption per Megalitre (kiloWatt hours)	kWh	461	2	2	620
			36	Renewable energy consumption (% of total energy consumption)	%				0
ECONOMIC	FINANCE	E12	36a	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 - equivalents per 1000 properties)	t CO2	360	2	3	370
			42	Current replacement cost per assessment (\$)	\$	15,600	4	3	16,500
		F17	43	Economic real rate of return - Water (%)	%	1.2	3	2	1.2
			44	Return on assets - Water (%)	%	-0.2	5	4	1.1
		F22	45	Net Debt to equity - WS&Sge (%)	%	14	1	1	1
		F23	46	Interest cover - WS&Sge		1	3	3	4
			47	Loan payment per property - Water (\$)	\$	523	1	1	64
		F24	47b	Net profit after tax - WS & Sge (\$'000)	\$'000	-3,200	5	5	1180
	EFFICIENCY		48	Operating cost (OMA) per 100km of main (\$'000)	\$'000	1,450	4	4	1,290
		F11	49	Operating cost (OMA) per property (\$/prop) Note 8	\$/prop	396	2	1	400
			50	Operating cost (OMA) per kilolitre (cents)	c/kL	149	4	4	126
			51	Management cost (\$/prop)	\$/prop	144	3	3	140
			52	Treatment cost (\$/prop)	\$/prop	76	4	2	58
			53	Pumping cost (\$/prop)	\$/prop	15	2	1	43
			54	Energy cost (\$/prop)	\$/prop	12	2	2	25
			55	Water main cost (\$/prop)	\$/prop	91	4	3	74
		F28	56	Capital Expenditure (\$/prop)	\$/prop	67	5	4	181

- NOTES :
- 1 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).
  - 2 Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs).
  - 3 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).
  - 4 Col 5 (National Median) is the median value for the 67 utilities reporting water supply performance in the National Performance Report 2013-14 (www.bom.gov.au).
  - 5 LWUs are required to annually review key projections & actions in the later of their IWCM Strategy and financial plan and their Strategic Business Plan and to annually 'roll forward', review and update their 30-year total asset management plan (TAMP) and 30-year financial plan.
  - 6 2014-15 Non-residential Tariff: Access Charge based on Meter Size: 40mm \$572, Two Part Tariff; Usage Charge 263c/kL.
  - 7 Non-residential water supplied was 27% of potable water supplied excluding non-revenue water.  
Non-residential revenue was 24% of annual rates and charges, indicating fair pricing of services between the residential and non-residential sectors.
  - 8 The operating cost (OMA) per property was \$396. Components were: management (\$144), operation (\$114), maintenance (\$104), energy (\$12) & chemical (\$19).
  - 9 Rehabilitations included 0.1% of water mains, 0.07% of service connections and 2.4% of water meters. Renewals expenditure was \$168,000/100km of main.
  - 10 Compliance with ADWG 2011 for drinking water quality is shown as "Yes" if compliance has been achieved (indicators 19, 19a & 20).
  - 11 Council has 2 fully qualified water treatment operators who meet the requirements of the National Certification Framework. 93% of employees received 2 or more days of training.
  - 12 As Council's IWCM Strategy is over 6 years old, it will need to prepare a new 30-year IWCM Strategy, financial plan and report in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au).

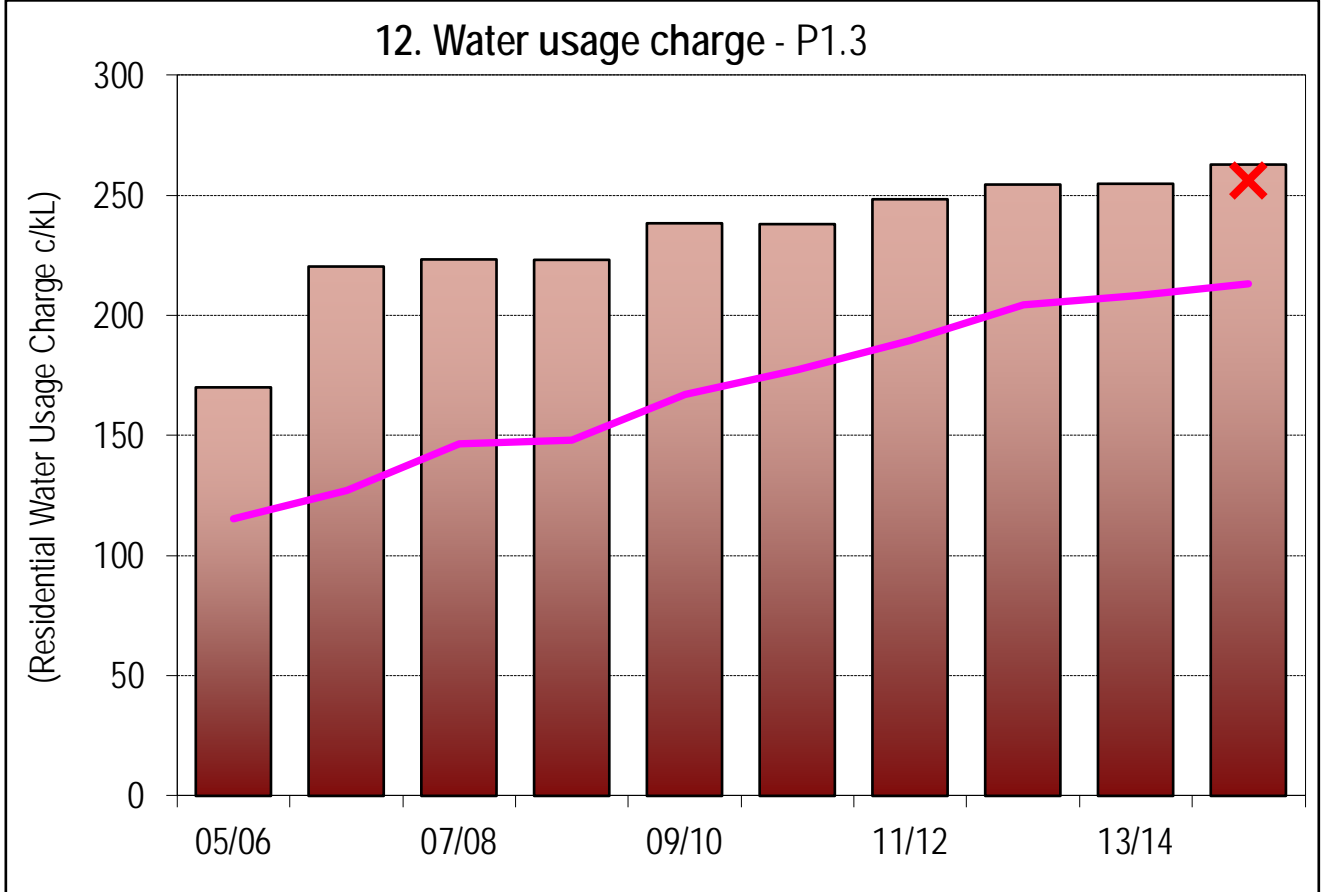
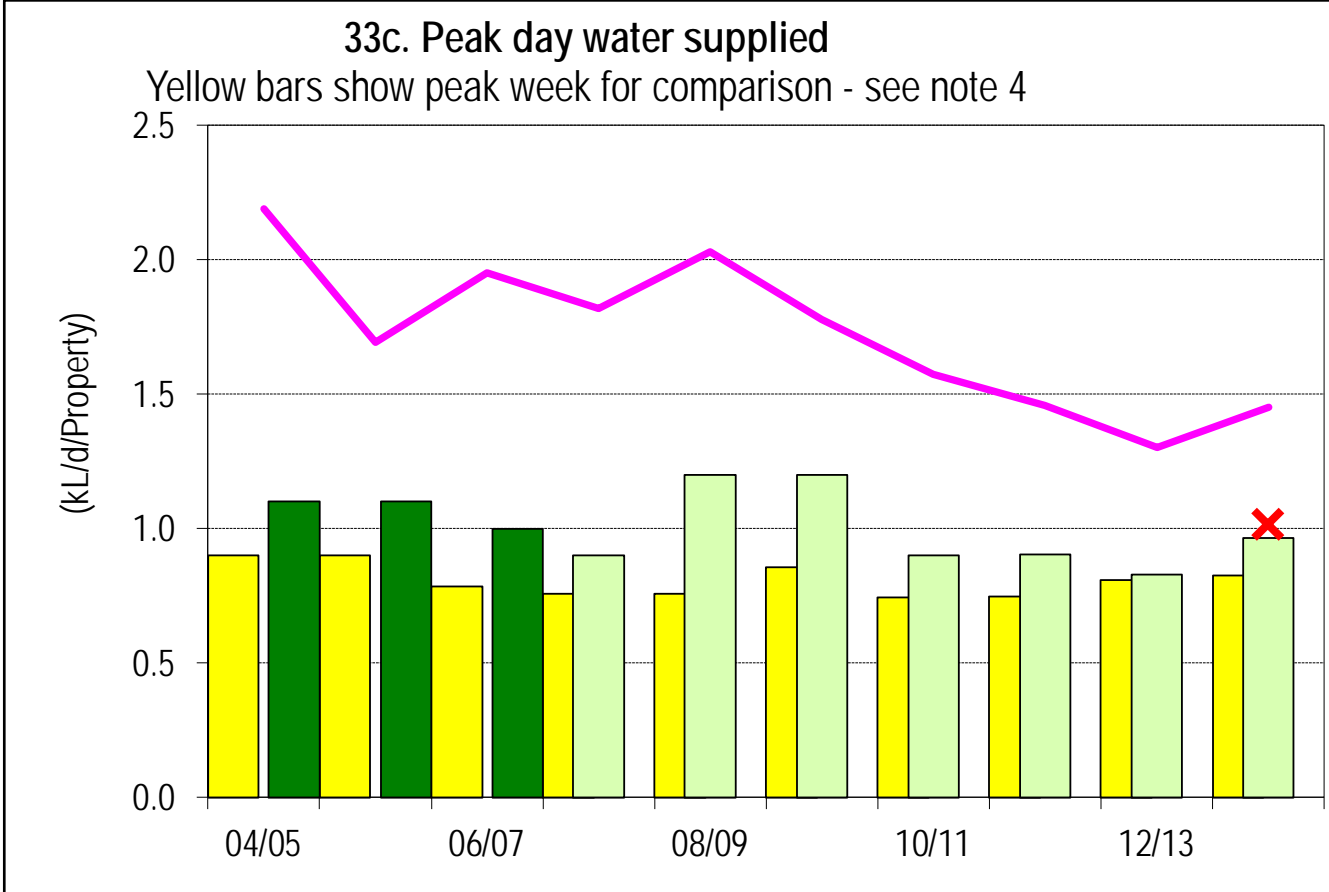
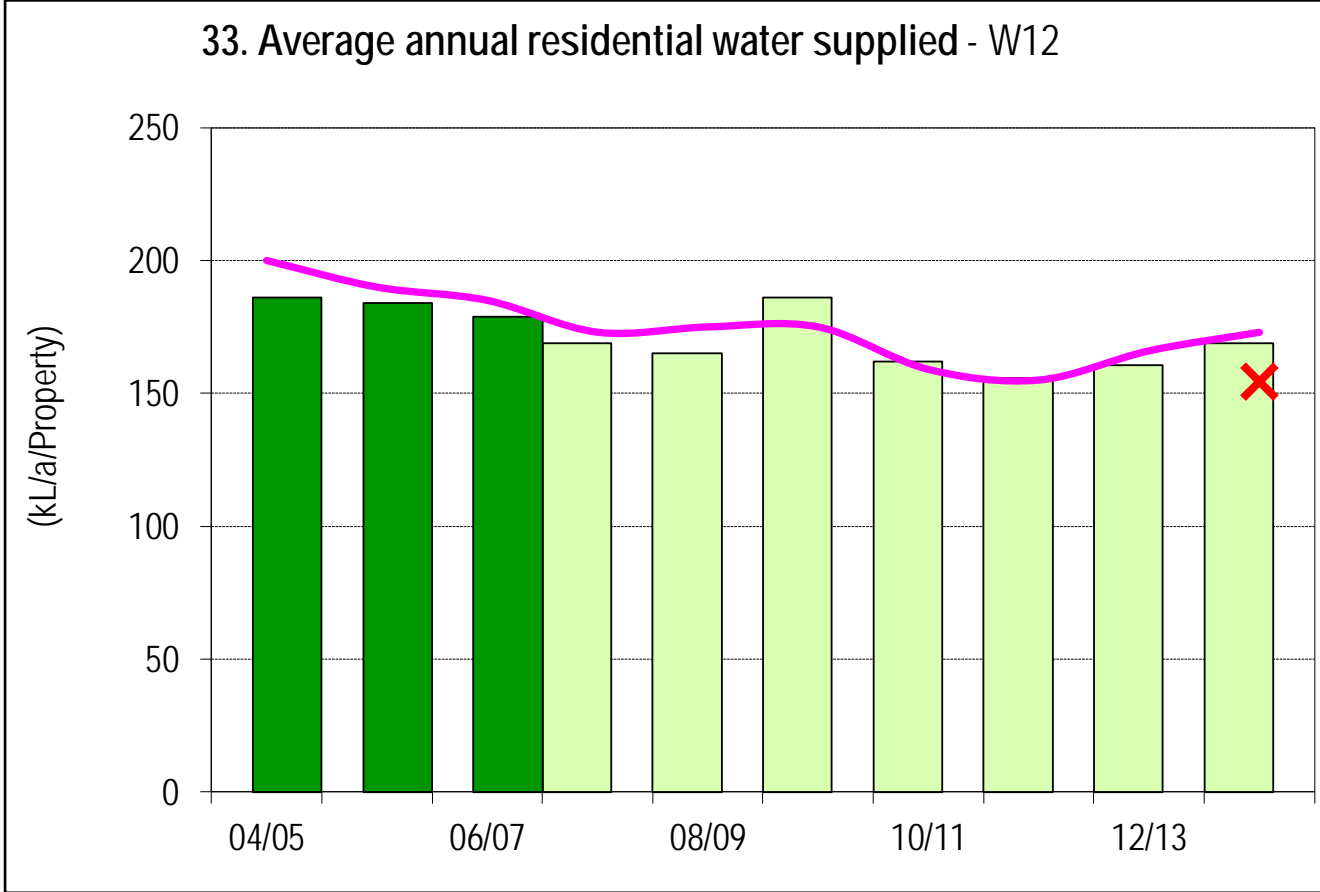


Coffs Harbour City Council Water Supply TBL Report (Page 2)

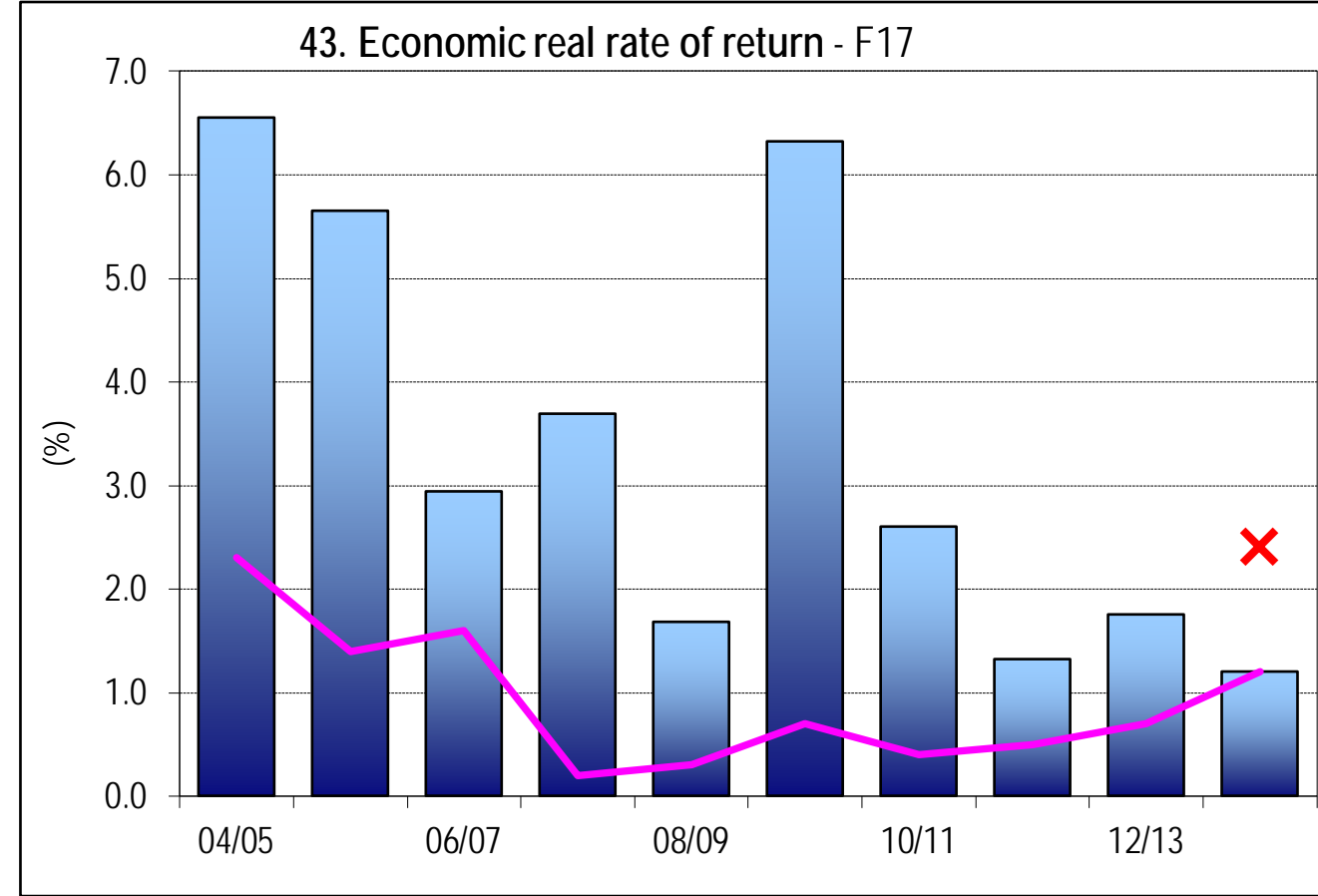
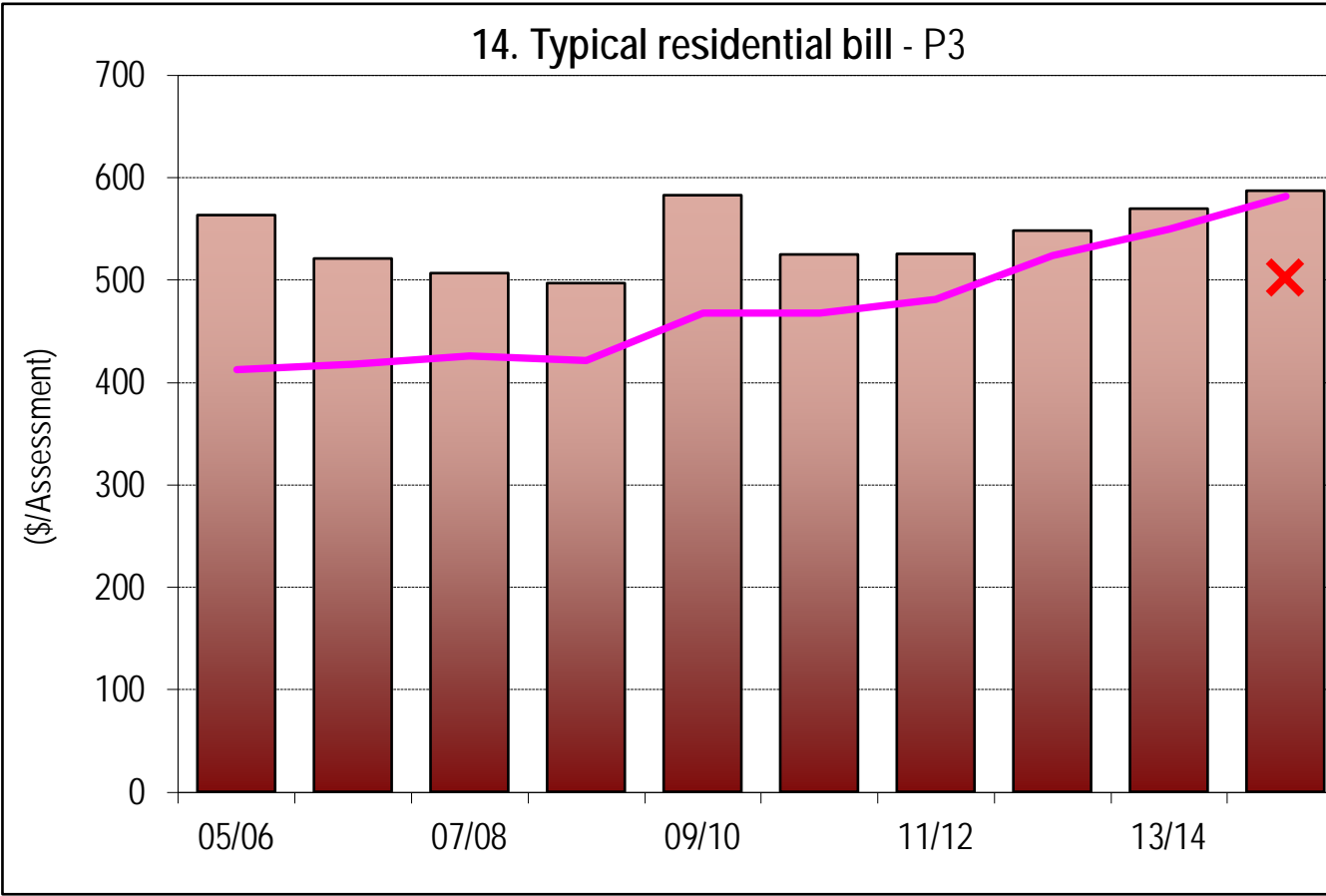
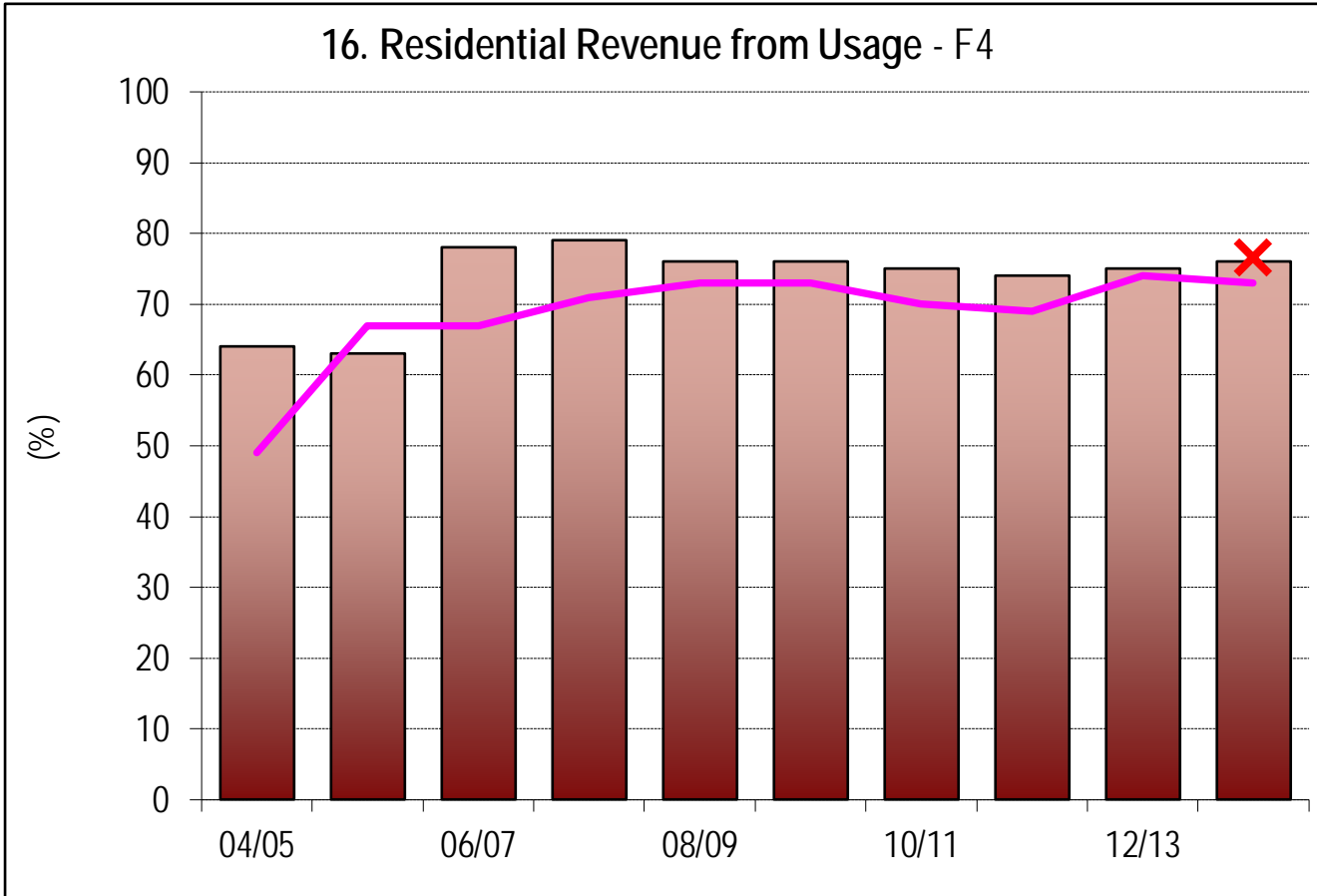
Coffs Harbour City Council TBL Water Supply Performance (page 2) 2013-14

(Results shown for 10 years together with 2013-14 Statewide Median and Top 20%)

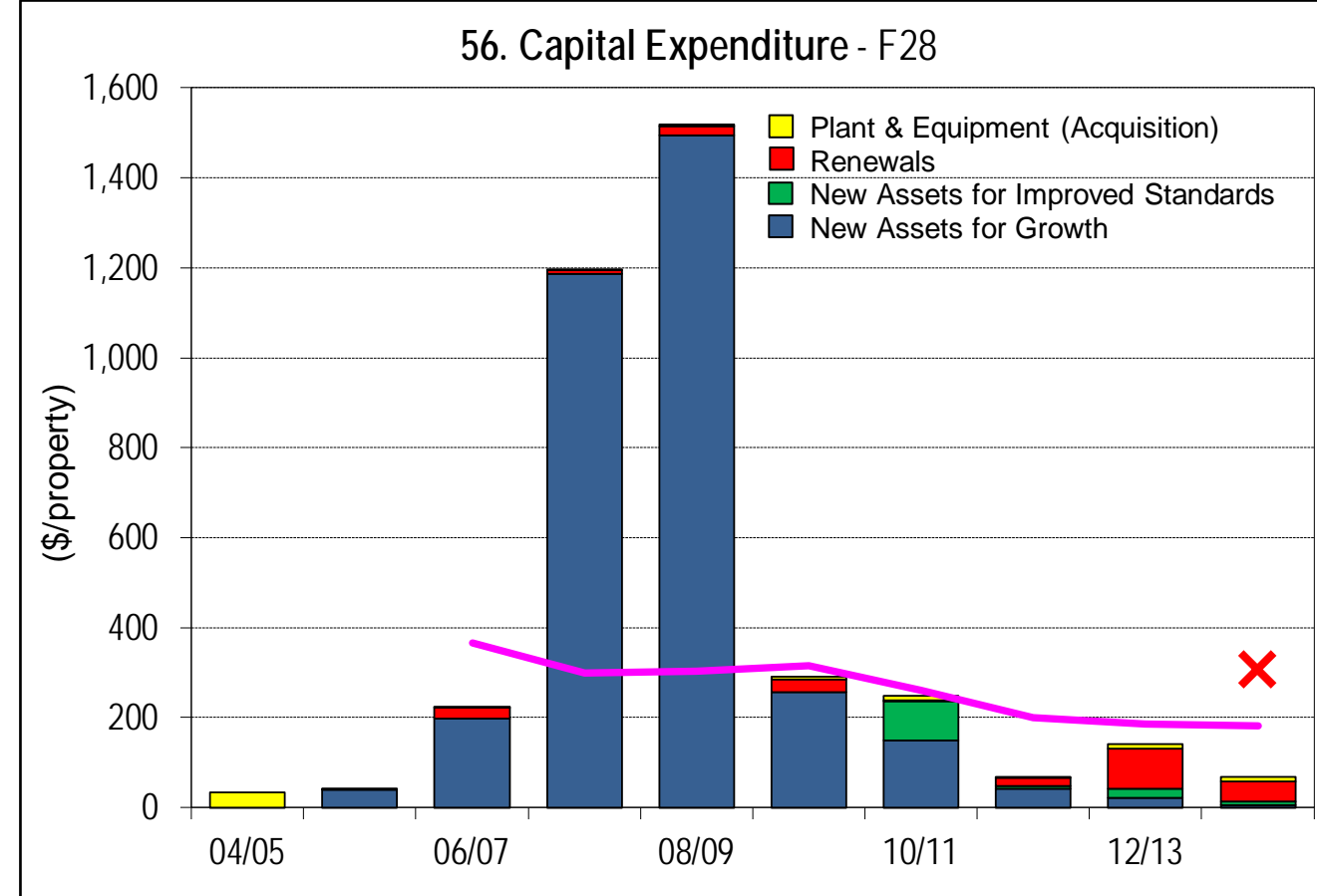
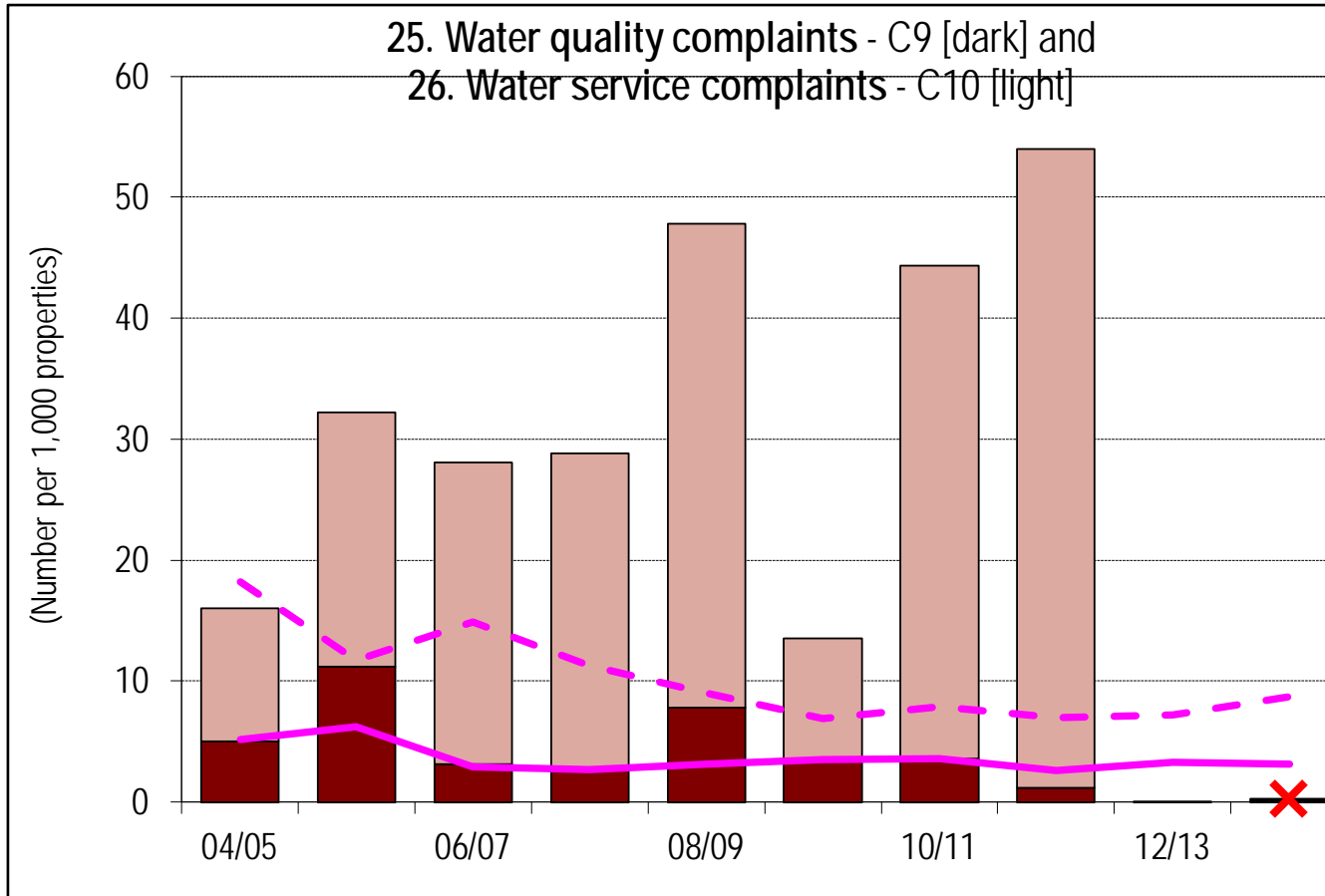
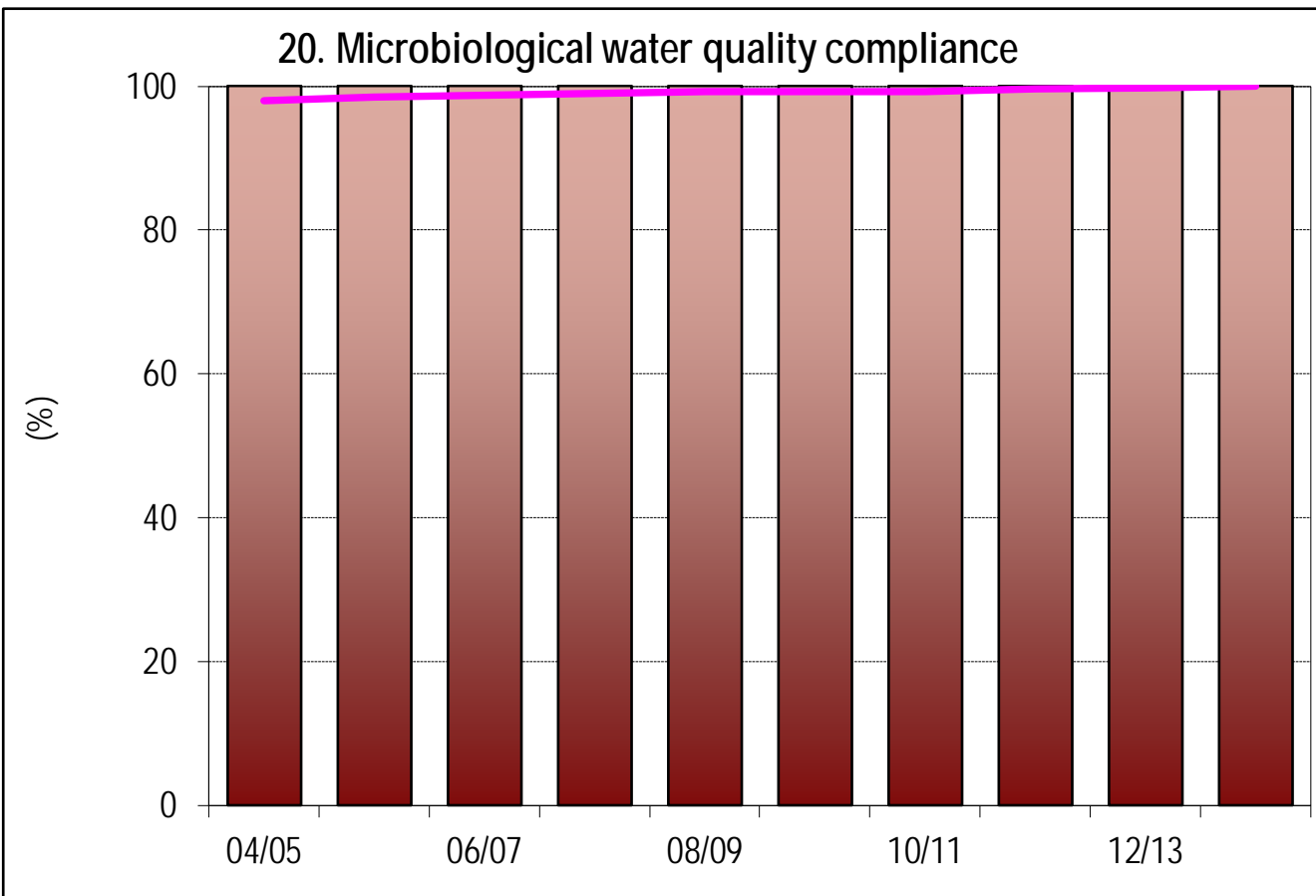
RESIDENTIAL USE/REVENUE FROM USAGE



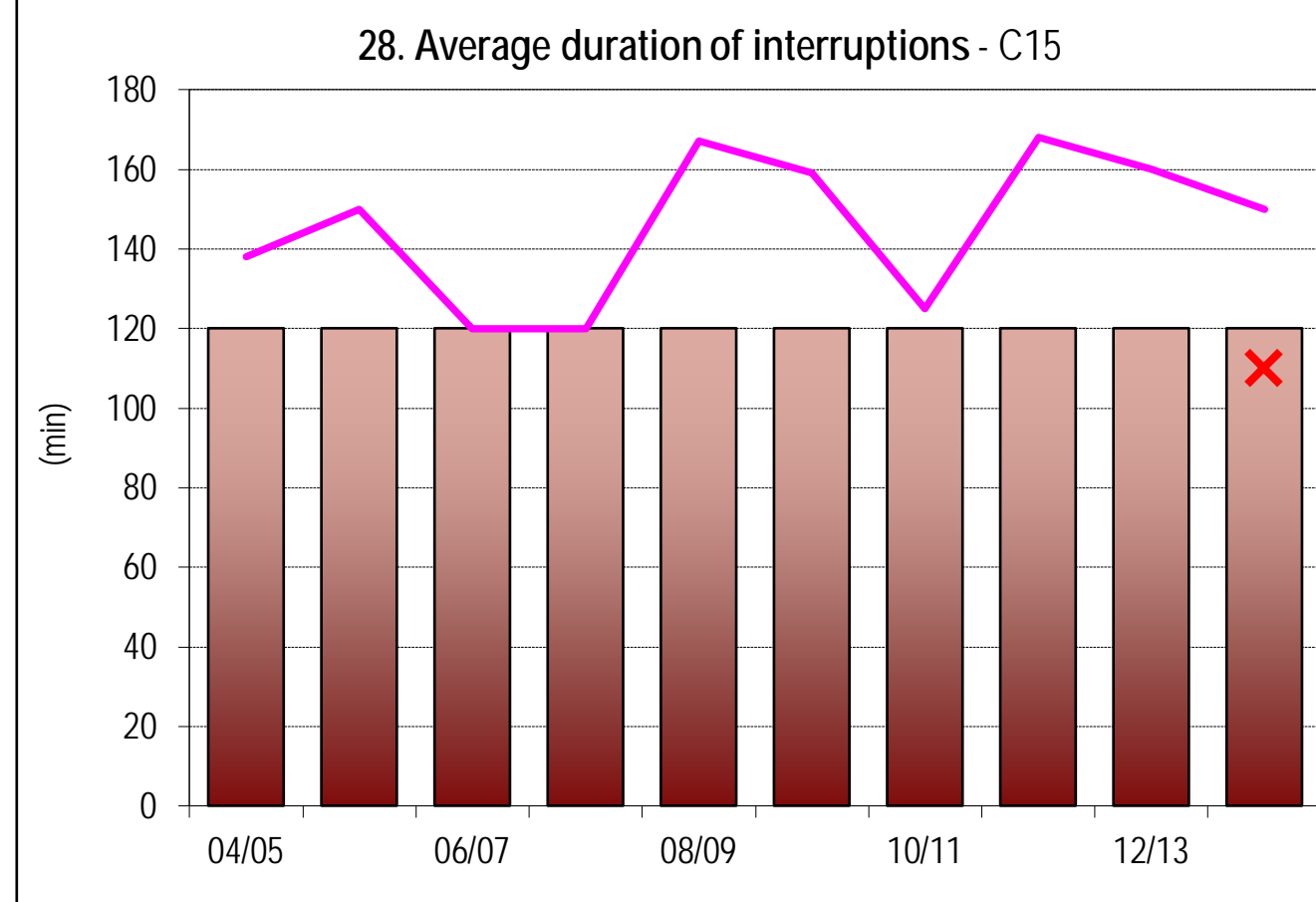
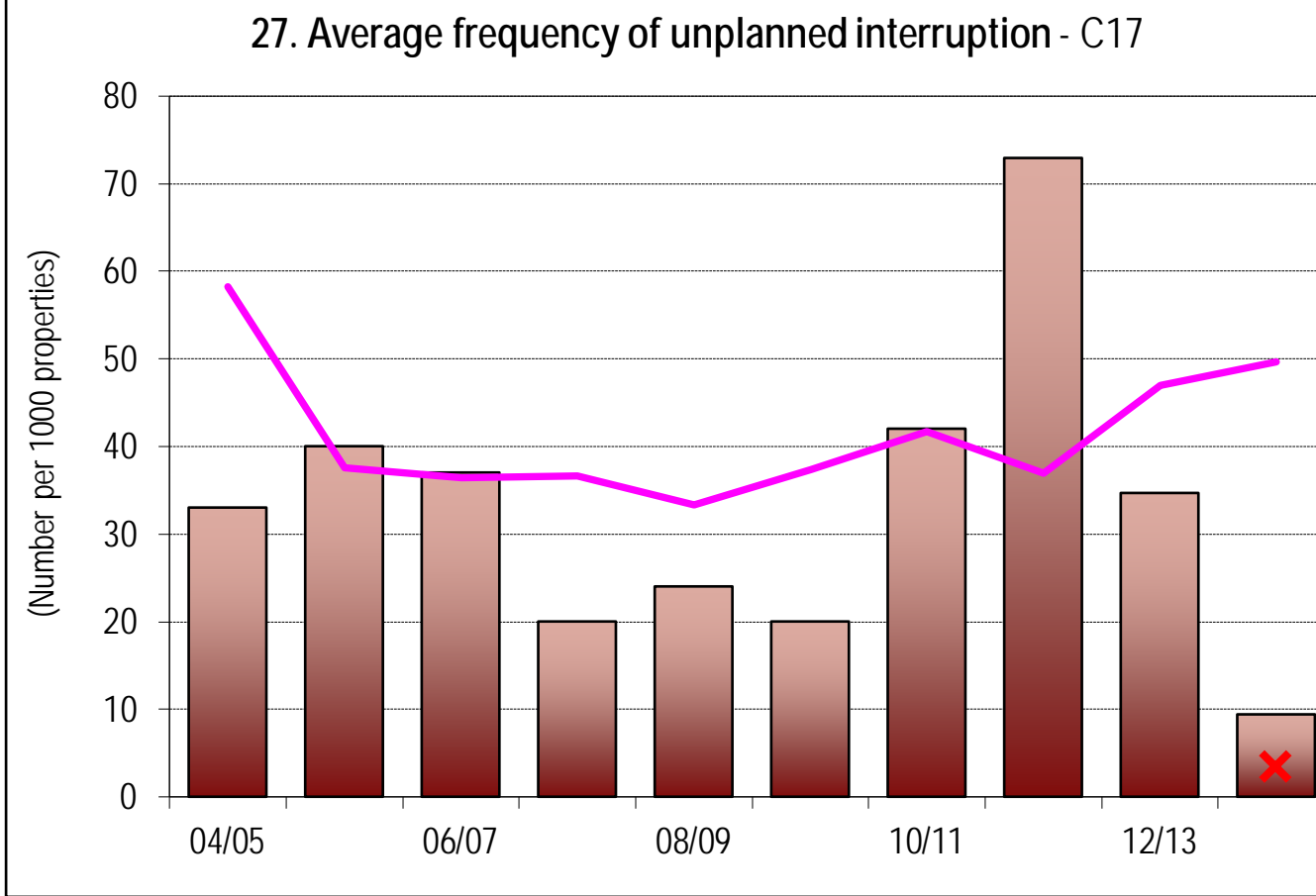
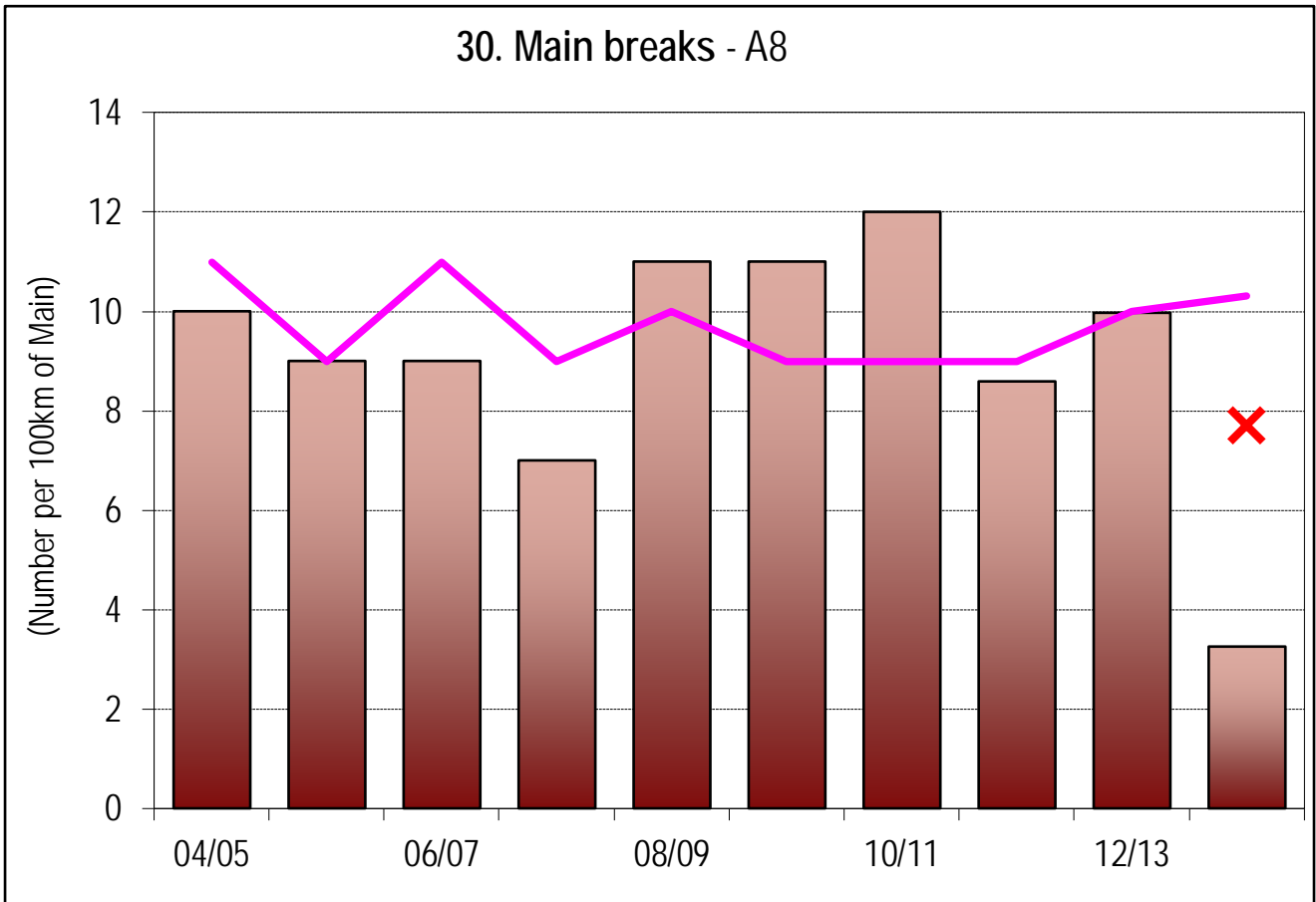
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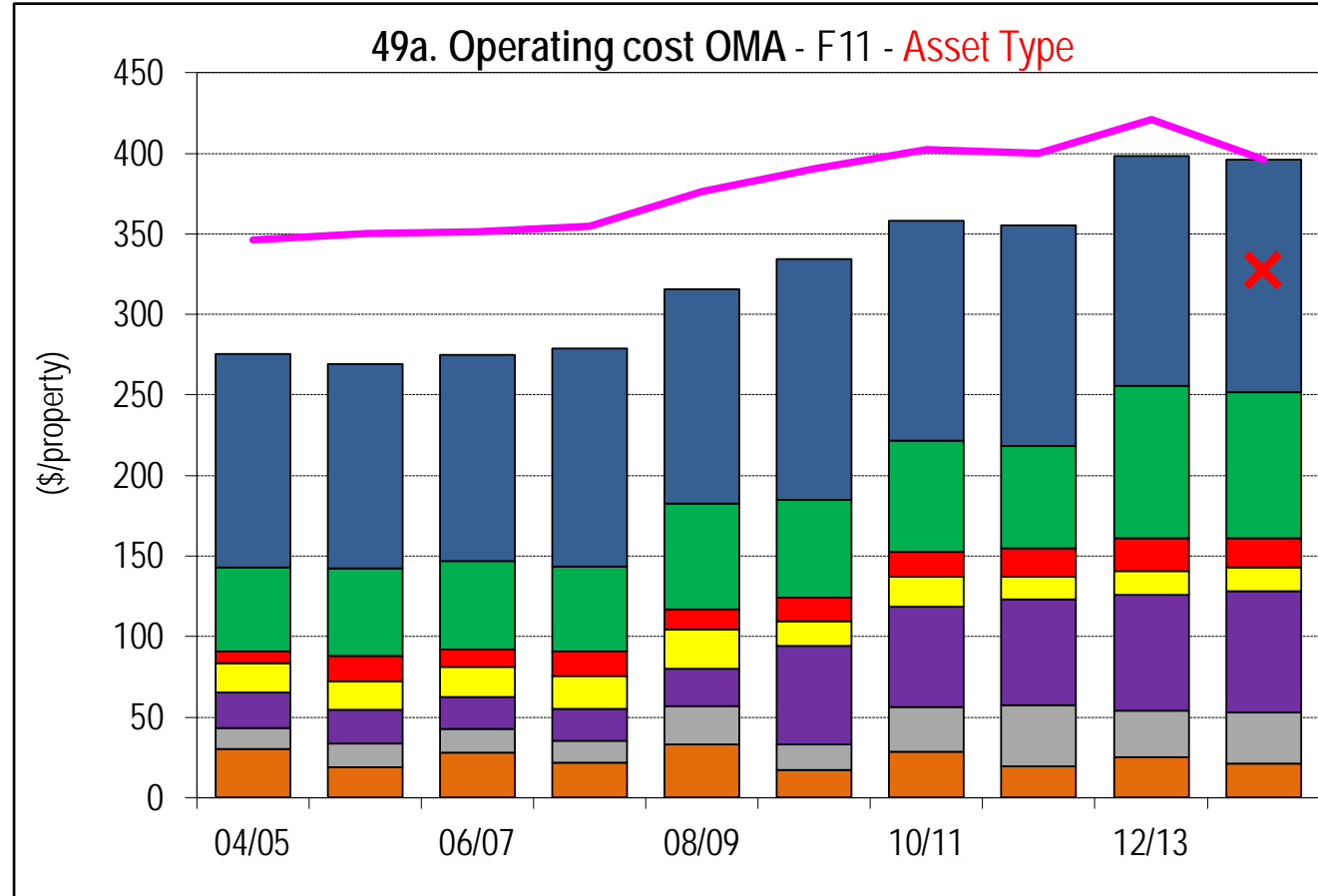
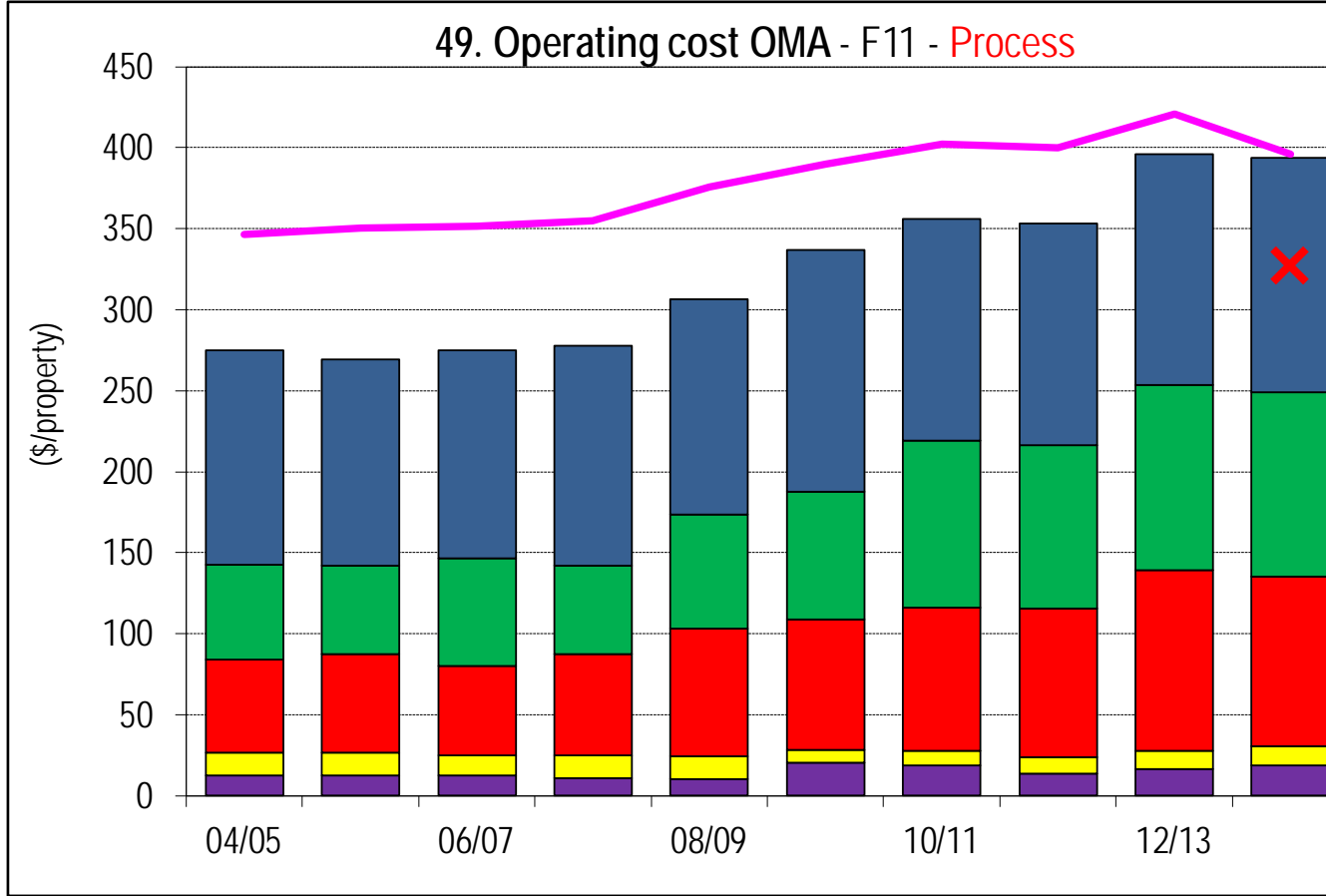
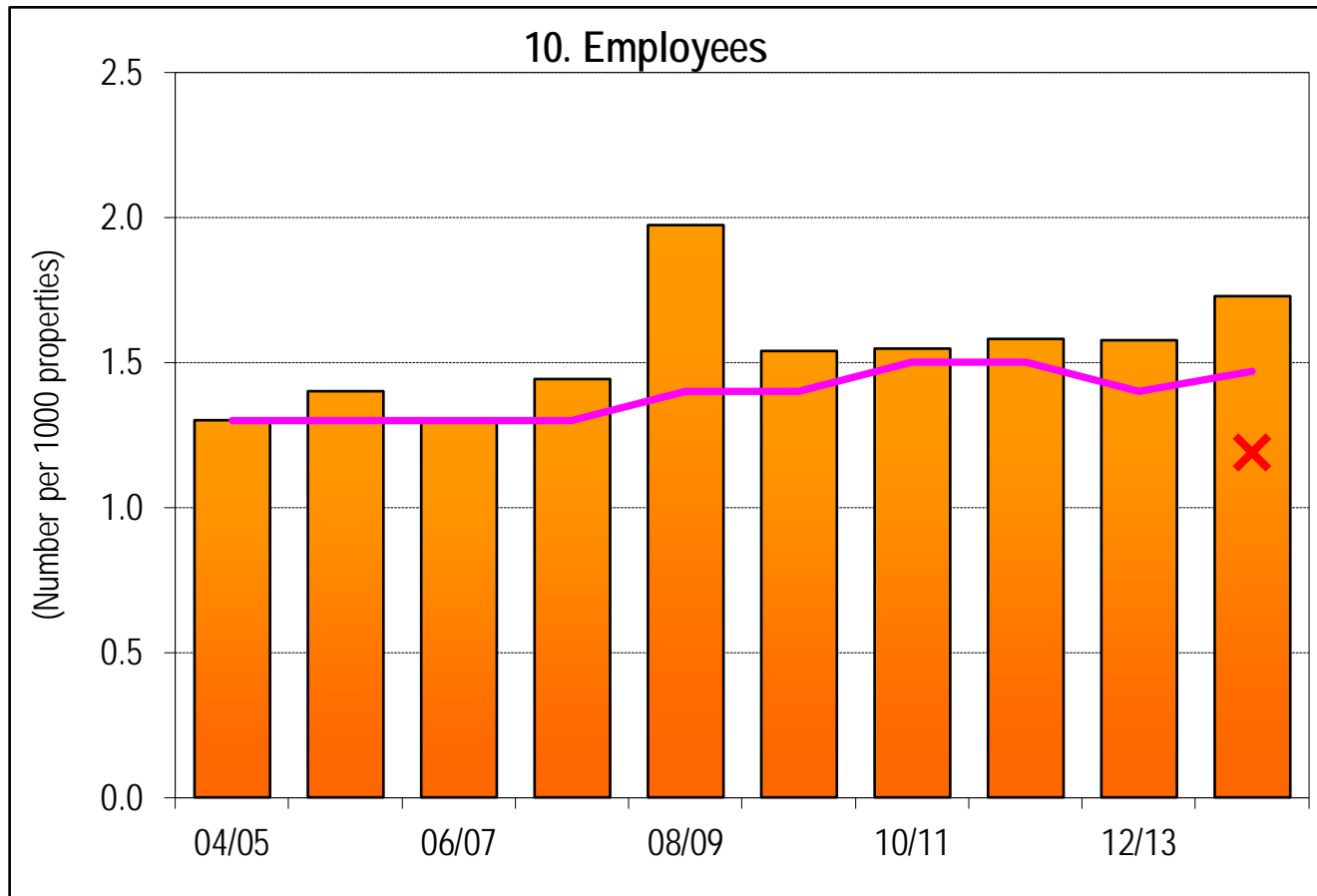
WATER QUALITY/CUSTOMER SERVICE/CAPITAL EXPENDITURE



RELIABILITY



EFFICIENCY



NOTES:

- Costs are in Jan 2014\$ except for graphs 12 and 14, which are in Jan 2015\$.
- 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 to 2010-11 compliance was on the basis of the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines (ADWG) and for 2011-12 to 2013-14 compliance was on the basis of the 2011 ADWG.
- Indicators 33 and 33c - Green shading of bars shows % of time Drought Water Restrictions applied in each year:
- Indicator 33c - Yellow bars show Peak Week Water Supplied for comparison with Peak Day Water Supplied shown in green.

LEGEND

State Median for all years  
Top 20% for 2013-14

0 - 30% 30-50% >50% of time



Coffs Harbour City Council Sewerage TBL Report (Page 1)

Coffs Harbour City Council	TBL Sewerage Performance	2013-14
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SEWERAGE SYSTEM - Coffs Harbour City Council serves a population of 69,200 (23,540 connected properties) and has 5 sewage treatment works providing secondary, advanced secondary, tertiary and advanced tertiary treatment. The system comprises 114,500 EP treatment capacity (Intermittent and Continuous Extended Aeration (Activated Sludge) and Biological Nutrient Removal), 117 pumping stations, 188 km of rising mains and 505 km of gravity trunk mains and reticulation. 27% of effluent was recycled (Indicator 27) and the treated effluent is discharged to ocean via a deep sea release.

PERFORMANCE - Residential growth for 2013-14 was 1.2% which is similar to the statewide median. Coffs Harbour City Council achieved 100% implementation of the NSW BPM requirements. The 2014-15 typical residential bill was \$806 which was above the statewide median of \$669 (Indicator 12). The economic real rate of return was 0.5% which was less than the statewide median (Indicator 46). The operating cost per property (OMA) was \$610 which was well above the statewide median of \$430 (Indicator 50). Sewage odour complaints were less than the statewide median of 1 (Indicator 21). Coffs Harbour Council reported 6 Category 2 (limited impact) environmental incidents. Council complied with the requirements of the environmental regulator for effluent discharge. The current replacement cost of system assets was \$647M (\$25,600 per assessment), cash and investments were \$52M, debt was \$102M and revenue was \$27.5M (excluding capital works grants).

IMPLEMENTATION OF REQUIREMENTS OF NSW BEST-PRACTICE MANAGEMENT (BPM) FRAMEWORK

(1) Complete current strategic business plan & financial plan	YES <sup>11</sup>	(2e) Pricing - DSP with commercial developer charges	Yes
(2) (2a) Pricing - Full Cost Recovery without significant cross subsid	Yes	(2f) Pricing - Liquid trade waste approvals & policy	Yes
(2b) Pricing - Appropriate Residential Charges	Yes	(3) Complete performance reporting (by 15 September)	YES
(2c) Pricing - Appropriate Non-Residential Charges	Yes	(4) Integrated water cycle management strategy	YESC <sup>11</sup>
(2d) Pricing - Appropriate Trade Waste Fees and Charges	Yes	IMPLEMENTATION OF ALL REQUIREMENTS	100%

TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

NW1		No.			LWU		RANKING		MEDIANS	
					RESULT		>10,000 properties		Statewide	
UTILITY	CHARACTERISTICS	C5	1	Population served: 69,200				All		National
		C8	2	Number of connected properties: 23,540	Number of assessments: 25,310			LWUs		
		C6	3	Number of residential connected properties: 22,070				Note 1	Note 2	Note 3
			4	New residences connected to sewerage (%)		Col 1	Col 2	Col 3	Col 4	Note 4
		A6	5	Properties served per kilometre of main						Col 5
		W18	6	Volume of sewage collected (ML)						
			7	Renewals expenditure (% of current replacement cost of system assets)						
			8	Employees per 1000 properties	per 1,000 prop					
SOCIAL	CHARGES & BILLS	P4		Description of residential tariff structure: access charge/prop; independent of land value						
		P4.1	11a	Residential access charge for 2013-14 (\$/assessment)	\$ 2013-14					
			11	Residential access charge for 2014-15 (\$/assessment)	\$ 2014-15					
		P6	12a	Typical residential bill for 2013-14 (\$/assessment)	\$ 2013-14					
			12	Typical residential bill for 2014-15 (\$/assessment)	\$ 2014-15					
			13	Typical developer charge for 2014-15 (\$/equivalent tenement)	\$ 2014-15					
		F6	15	Revenue per property - Sge (\$)	\$					
	HEALTH		16	Sewerage Coverage (% of Urban Population with Reticulated Sge Service)	%					
		E3	17	Percent of sewage treated to a tertiary level (%)	%					
		E4	18	Percent of sewage volume treated that was compliant (%)	%					
		E5	19	Number of sewage treatment works compliant at all times						
	SERVICE LEVELS		21	Odour complaints per 1000 properties	per 1,000 prop					
		C11	22	Service complaints - sewerage per 1000 properties	per 1,000 prop					
		C16	23a	Average sewerage interruption (minutes)	min					
			25	Total days lost (%)	%					
ENVIRONMENTAL	NATURAL RESOURCE MANAGEMENT	W19	26	Volume of sewage collected per property (kL)	kL					
		W26	26a	Total recycled water supplied (ML)	ML					
		W27	27	Recycled water (% of effluent recycled)	%					
		E8	28	Biosolids reuse (%)	%					
			30	Energy consumption - sewerage (kWh/ML)	kWh					
			31	Renewable energy consumption (% of total energy consumption)	%					
	ENVIRONMENTAL PERFORMANCE	E12	32	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 properties)						
			33	90 <sup>th</sup> Percentile licence limits for effluent discharge:						
			34	Compliance with BOD in licence (%)	%					
			35	Compliance with SS in licence (%)	%					
		A14	36	Sewer main breaks and chokes (per 100 km of main)	per 100km main					
			37a	Sewer overflows (per 100 km of main)	per 100km main					
		E13	37b	Sewer overflows reported to environmental regulator (per 100km of main)						
			39	Non res & trade waste % of total sge volume	%					
ECONOMIC	FINANCE		43	Revenue from non-residential plus trade waste charges (% of total revenue)	%					
			44	Revenue from trade waste charges (% of total revenue)	%					
		F18	46	Economic real rate of return - Sge (%)	%					
			46a	Return on assets - Sge (%)	%					
			48a	Loan payment per property - Sge (\$)	\$					
		F24	48b	Net profit after tax - WS & Sge (\$'000)	\$'000					
	EFFICIENCY		49	Operating cost (OMA) per 100 km of main (\$'000)	\$'000					
		F12	50	Operating cost (OMA) per property (\$) (Note 9)	\$					
			51	Operating cost (OMA) per kL (cents)	c/kL					
			52	Management cost per property (\$)	\$					
			53	Treatment cost per property (\$)	\$					
			54	Pumping cost per property (\$)	\$					
			55	Energy cost per property (\$)	\$					
			56	Sewer main cost per property (\$)	\$					
		F29	57	Capital Expenditure per property - Sewerage (\$)	\$					

NOTES :

1 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).

2 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.

3 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).

4 Col 5 (National Median) is the median value for the 66 utilities reporting sewerage performance in the National Performance Report 2013-14 (www.bom.gov.au).

5 LWUs are required to annually review key projections & actions in the later of their IWCM Strategy and financial plan and their Strategic Business Plan and to annually 'roll forward', review and update their 30-year total asset management plan (TAMP) and 30-year financial plan.

6 Non-residential access charge - \$789 x MF x SDF (MF - meter factor = [water meter size (mm)/20]^2 SDF - sewage discharge factor). Sewer usage charge - 206 c/kL.

7 Non-residential revenue was 21% of revenue from access, usage & trade waste charges. The sewage collected (residential, non-residential & trade waste) was not reported.

8 Compliance with Total N in Licence was 100%. Compliance with Total P in Licence was 100%.

9 Operating cost (OMA)/property was \$610. Components were: management (\$202), operation (\$128), maintenance (\$132), energy (\$76), chemical (\$13) & effluent/biosolids (\$58).

10 Coffs Harbour City Council rehabilitations included 0.3% of its sewerage mains and 0.2% of its service connections. Renewals expenditure was \$107,000/100km of main.

11 As Council's IWCM Strategy is over 6 years old, it will need to prepare a new 30-year IWCM Strategy, financial plan & report in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au).

12 Council has 6 fully qualified wastewater treatment operators who meet the NSW requirements. 93% of employees received 2 or more days of training.

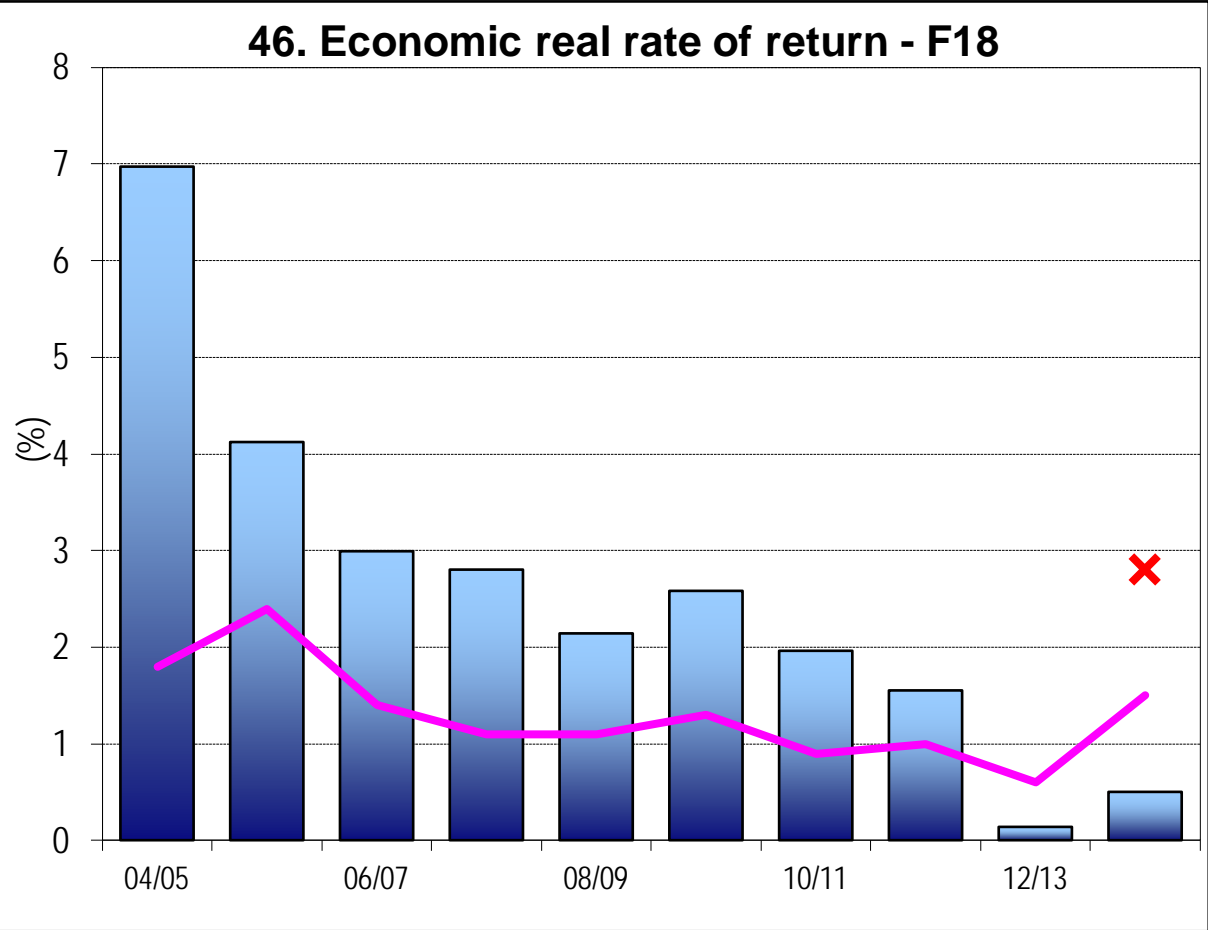
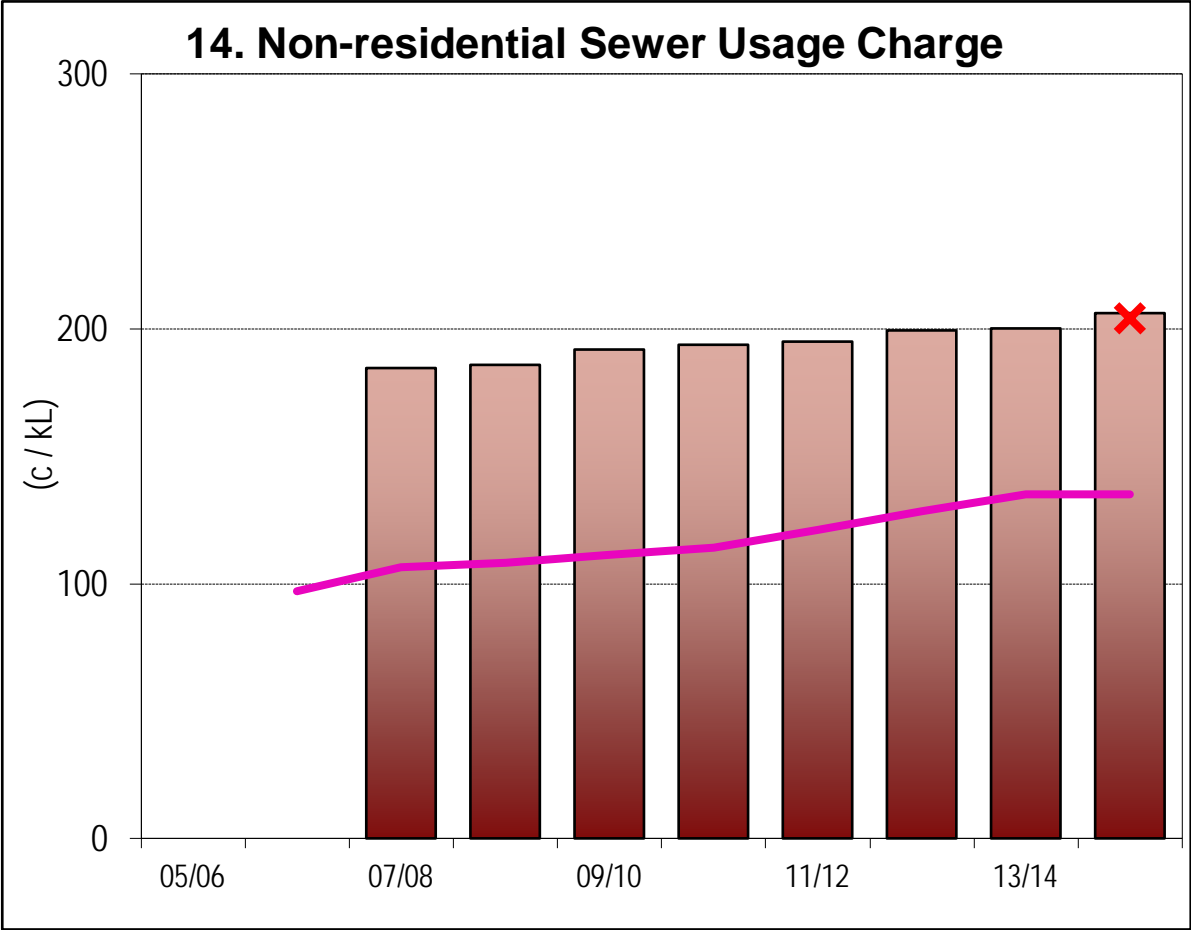
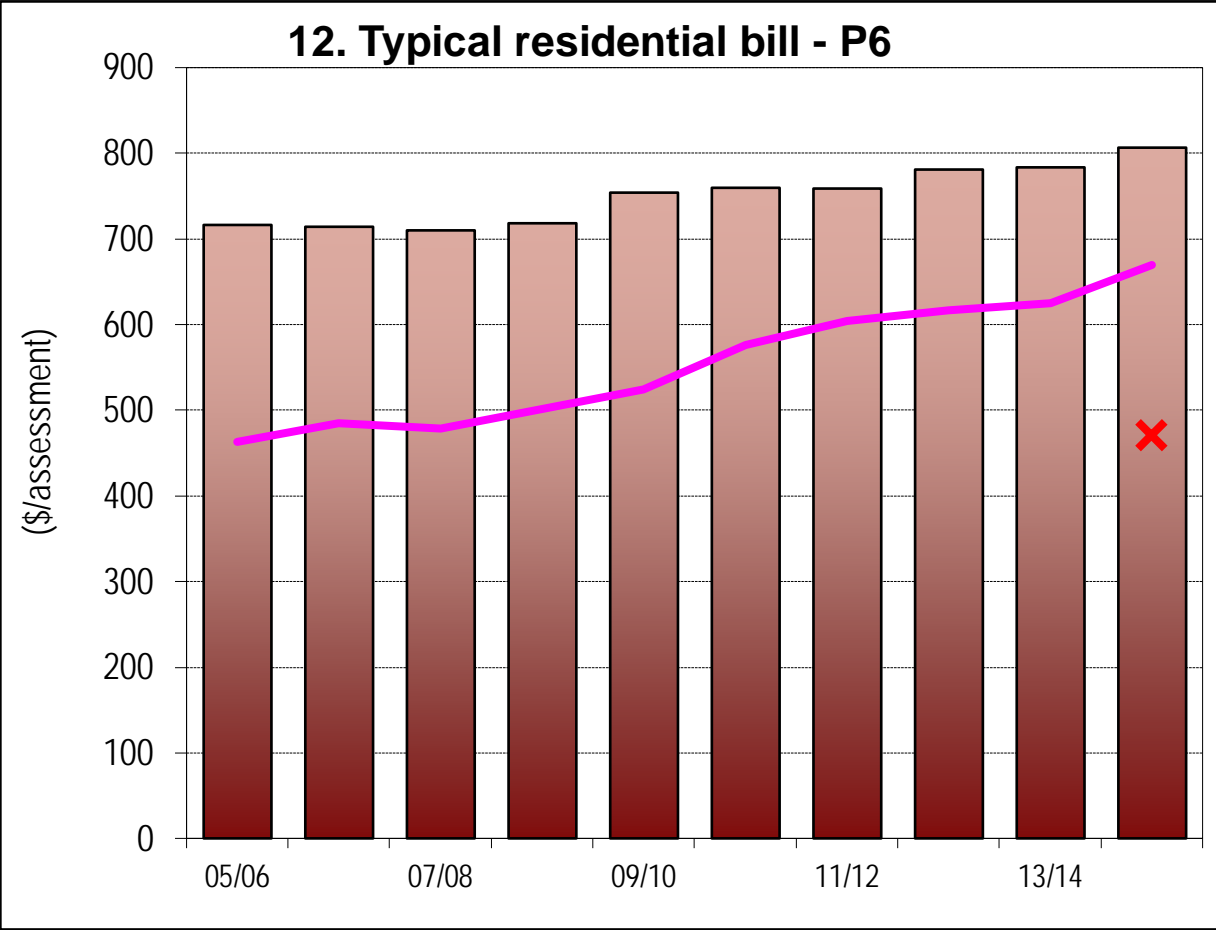


Coffs Harbour City Council Sewerage TBL Report (Page 2)

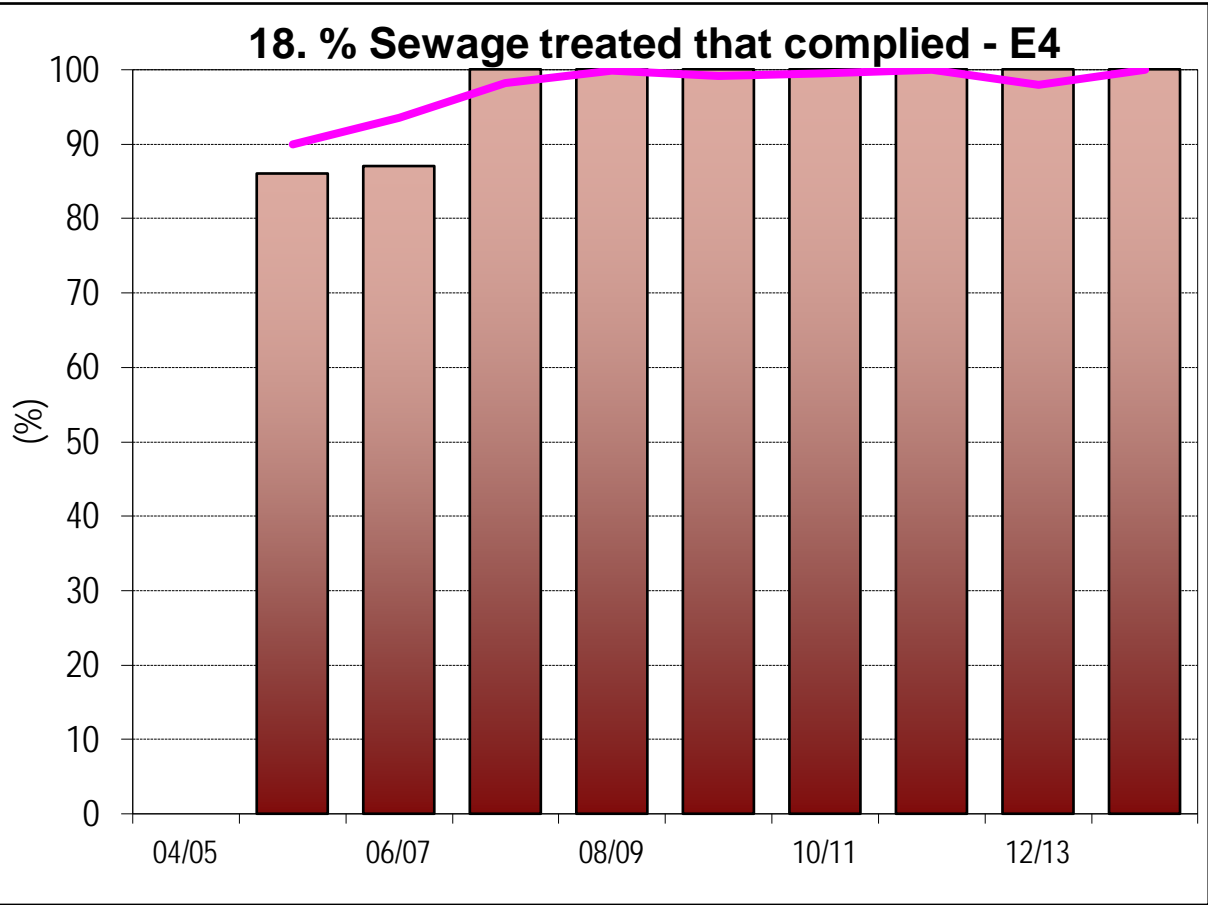
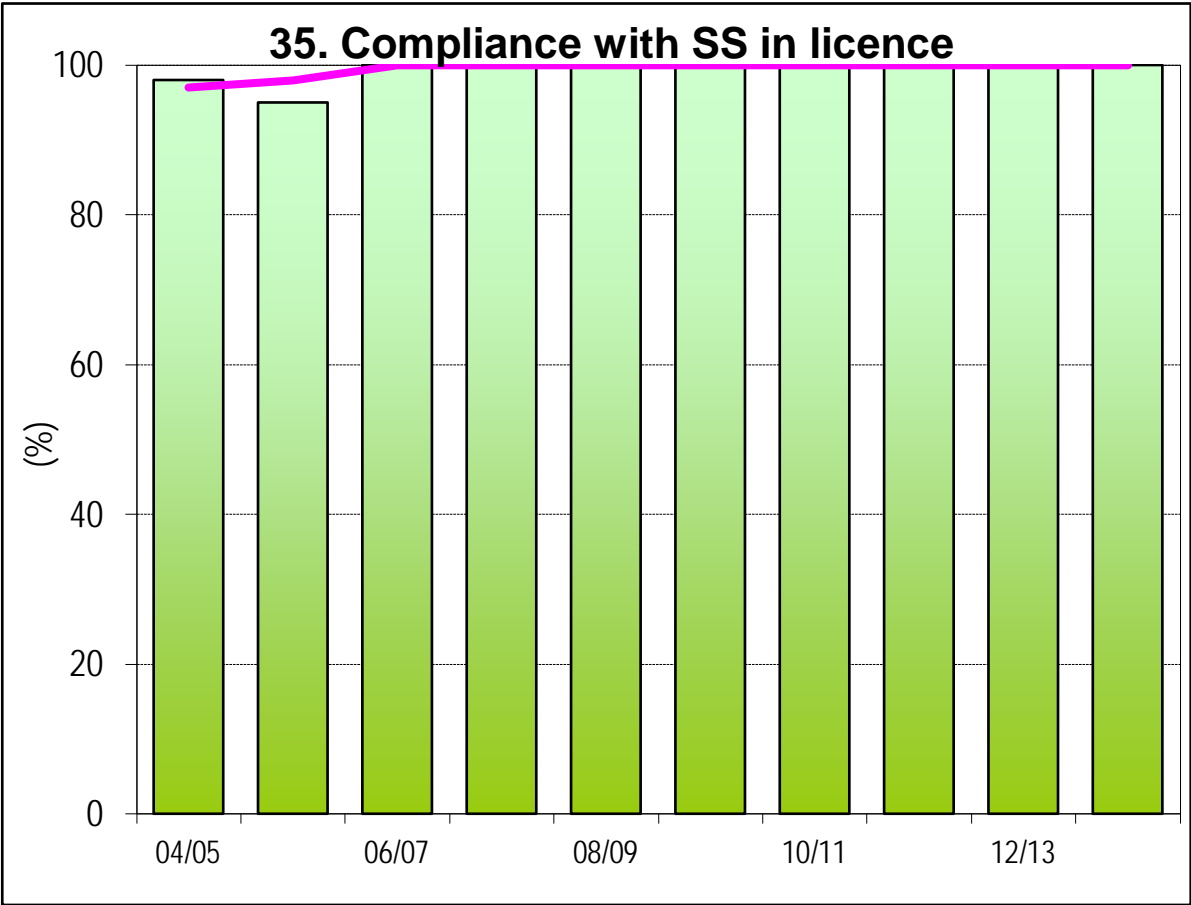
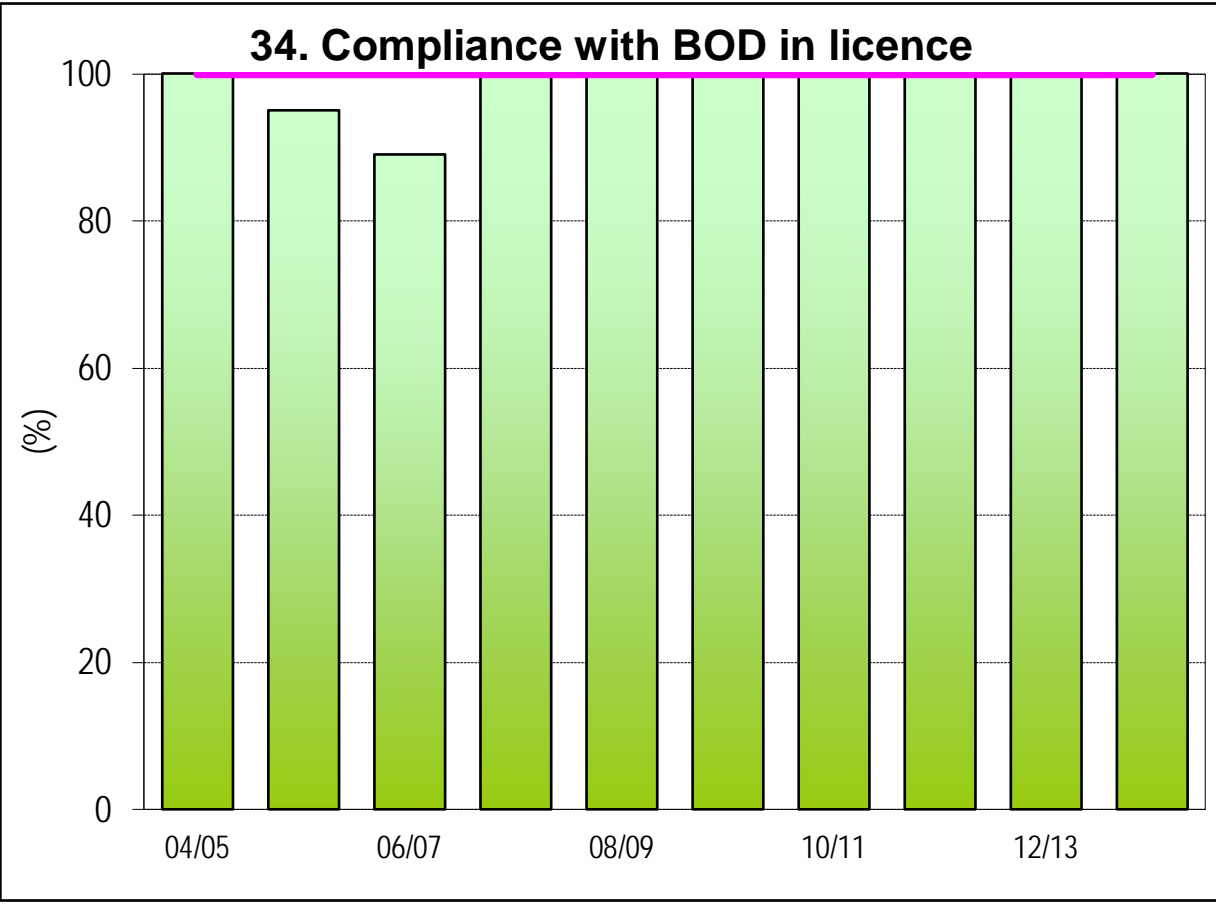
Coffs Harbour City Council TBL Sewerage Performance (page 2) 2013-14

(Results shown for 10 years together with 2013-14 Statewide Median and Top 20%)

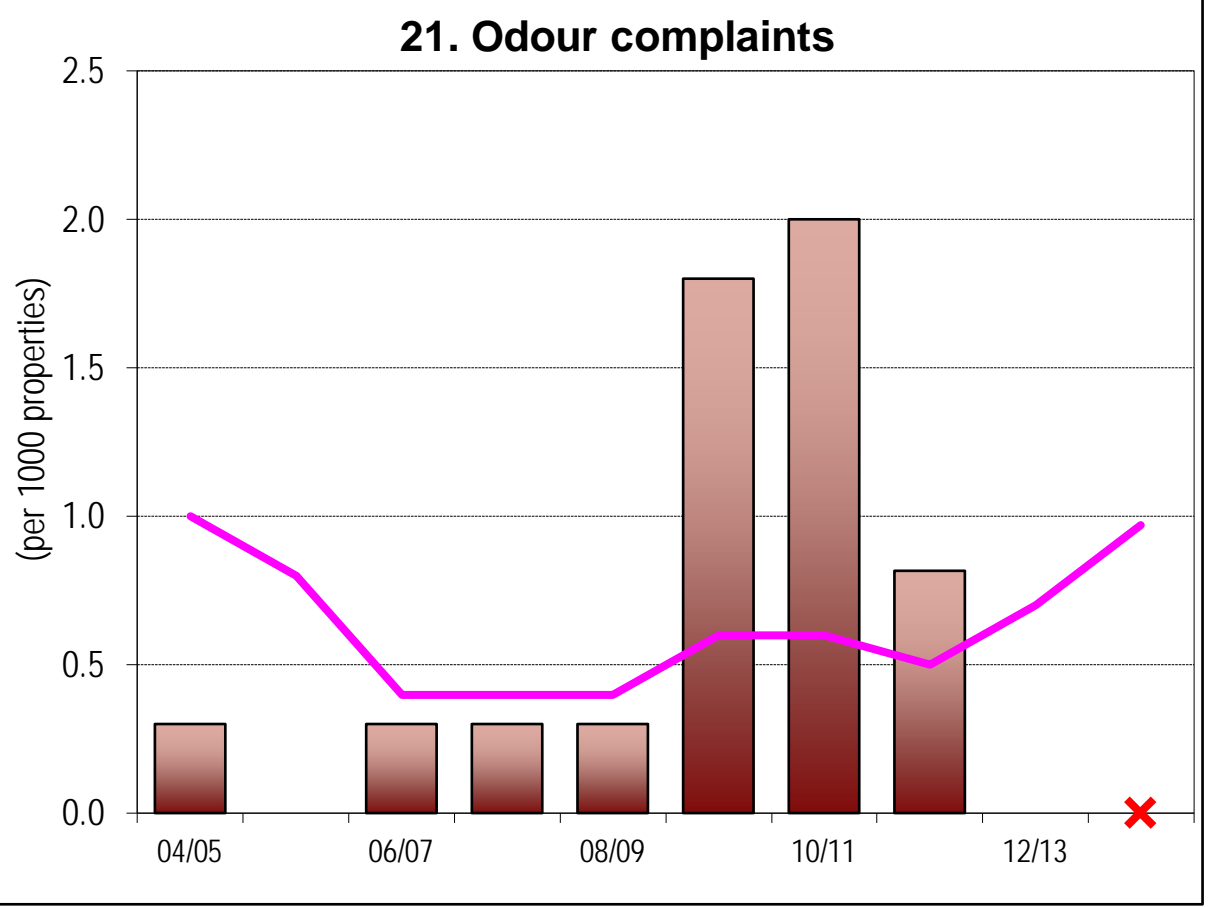
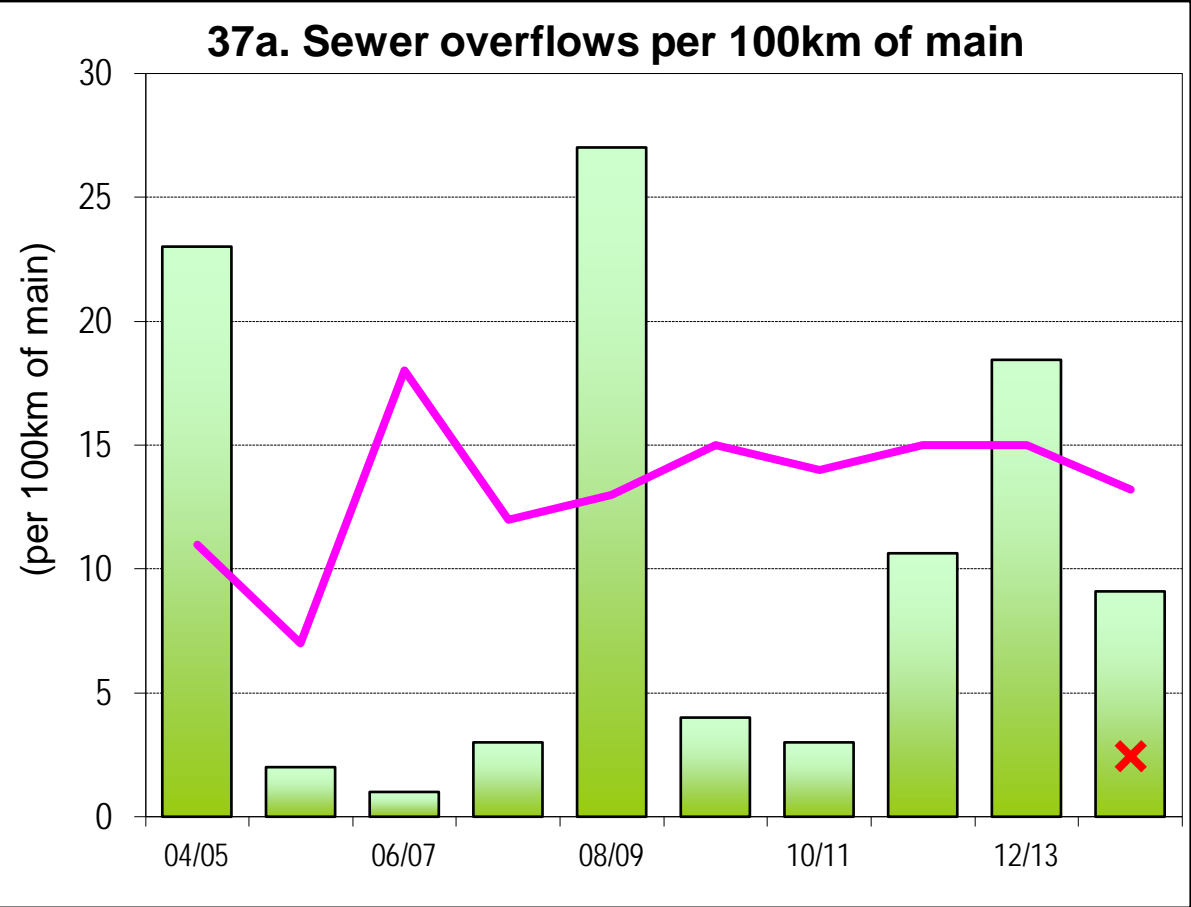
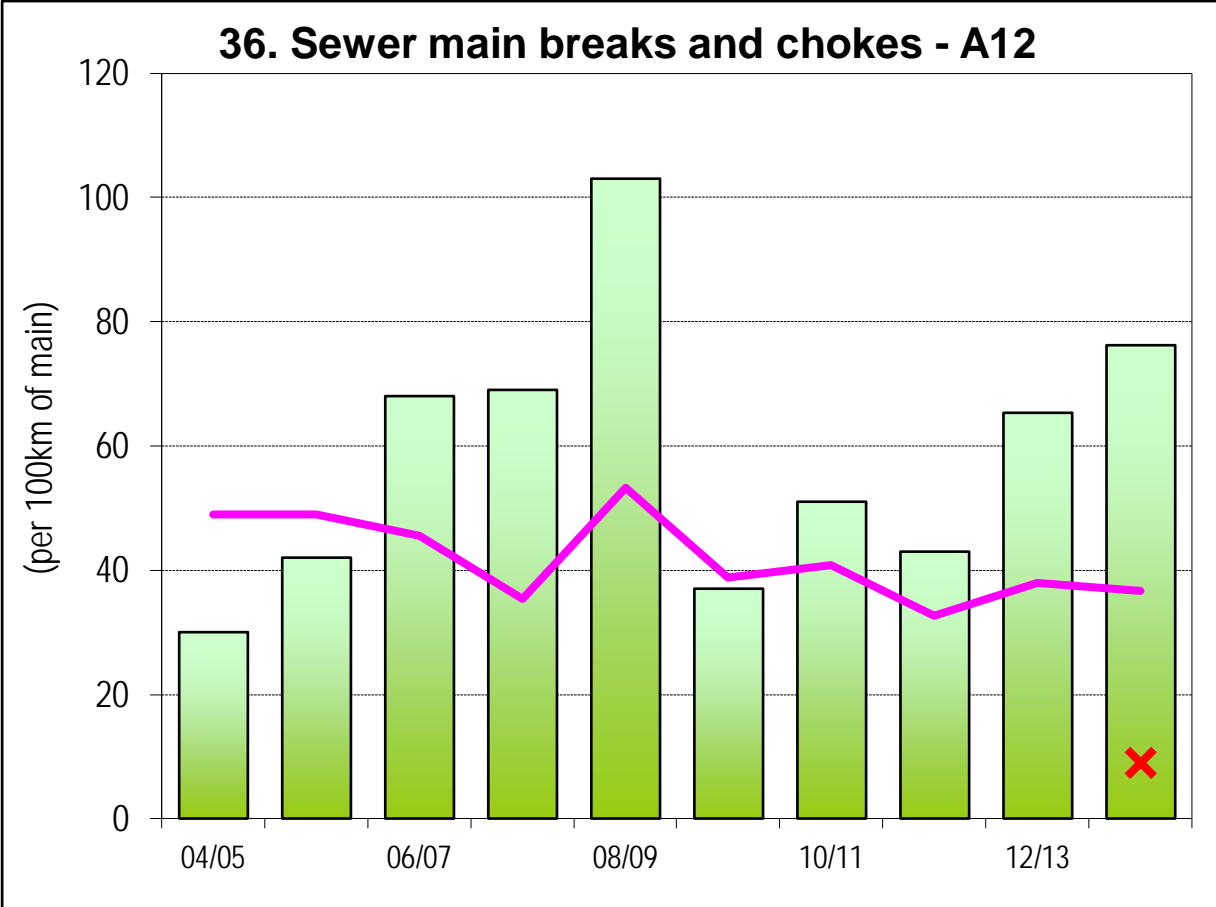
COST RECOVERY



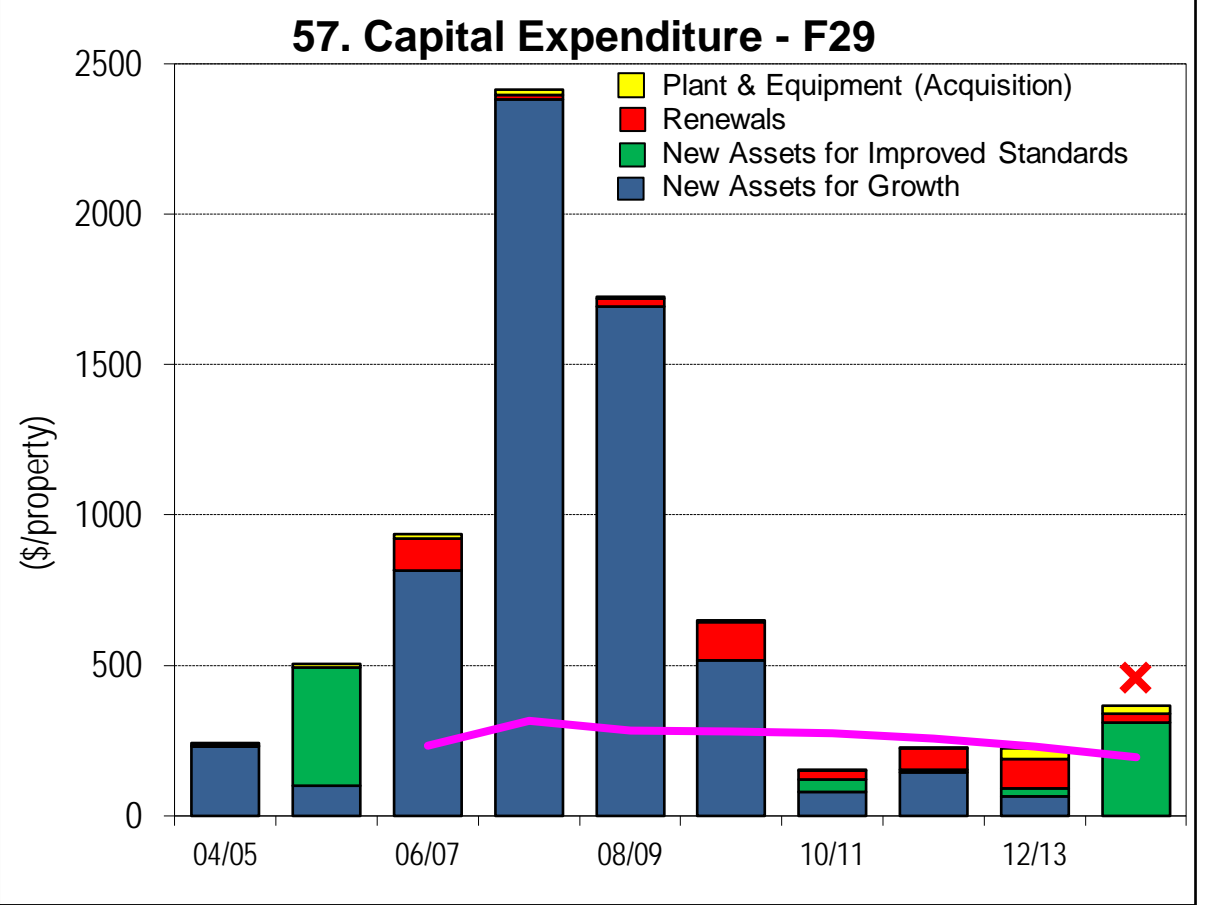
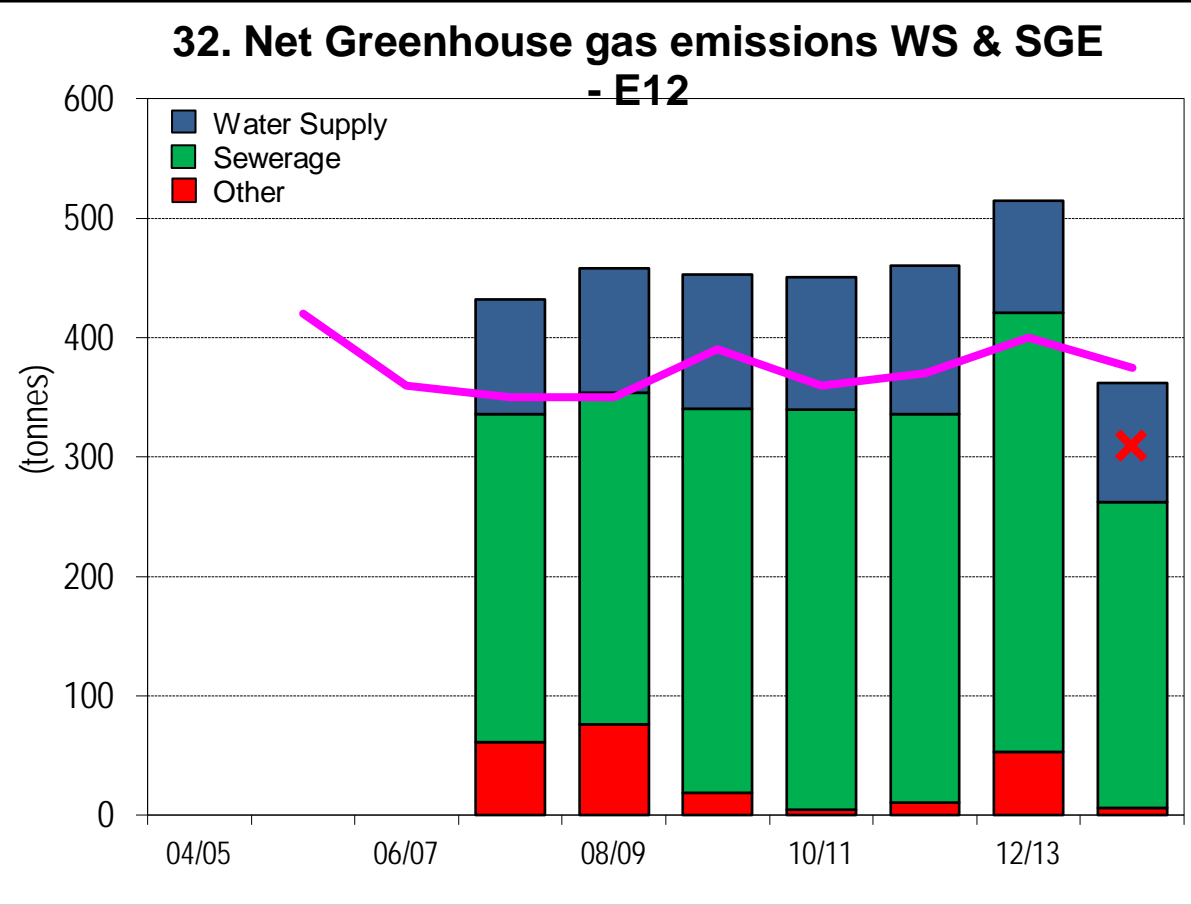
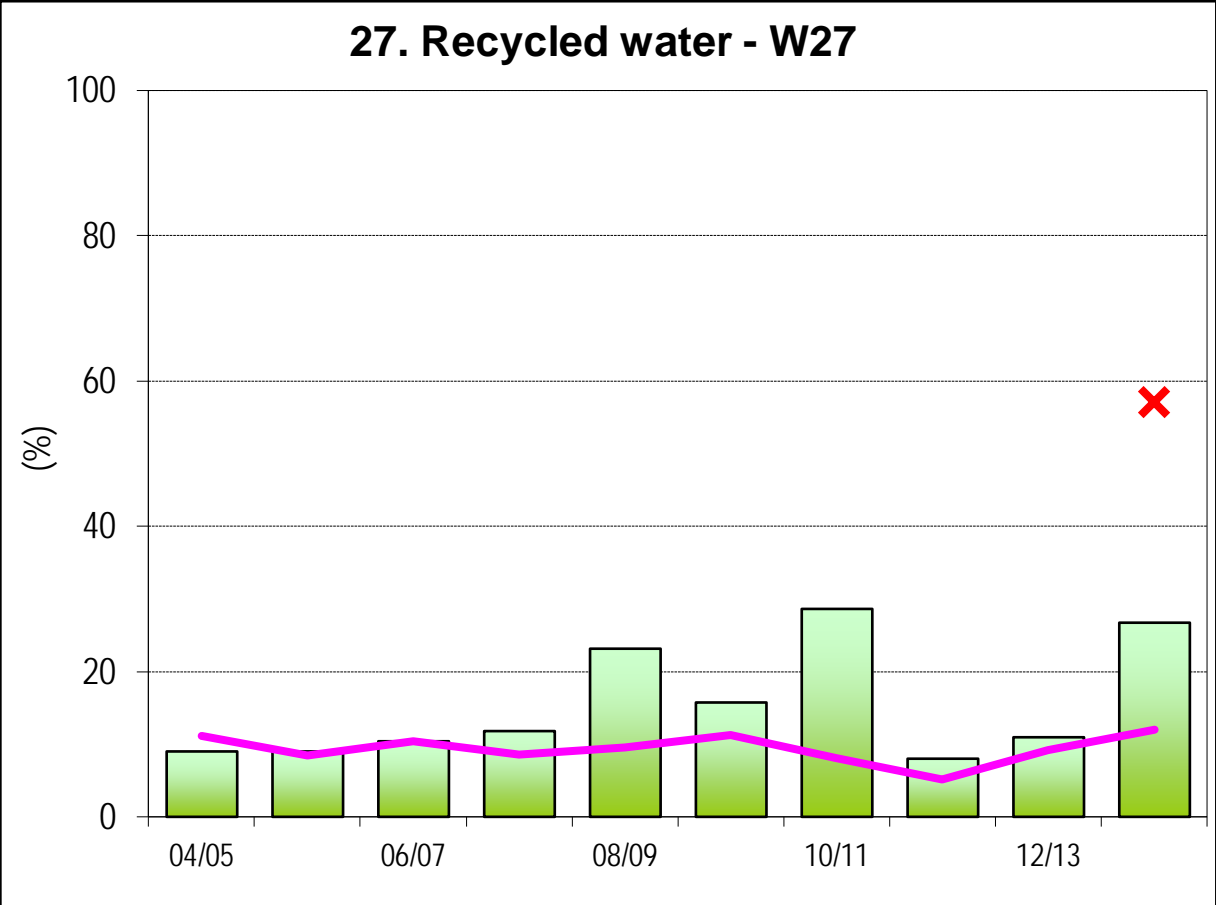
COMPLIANCE



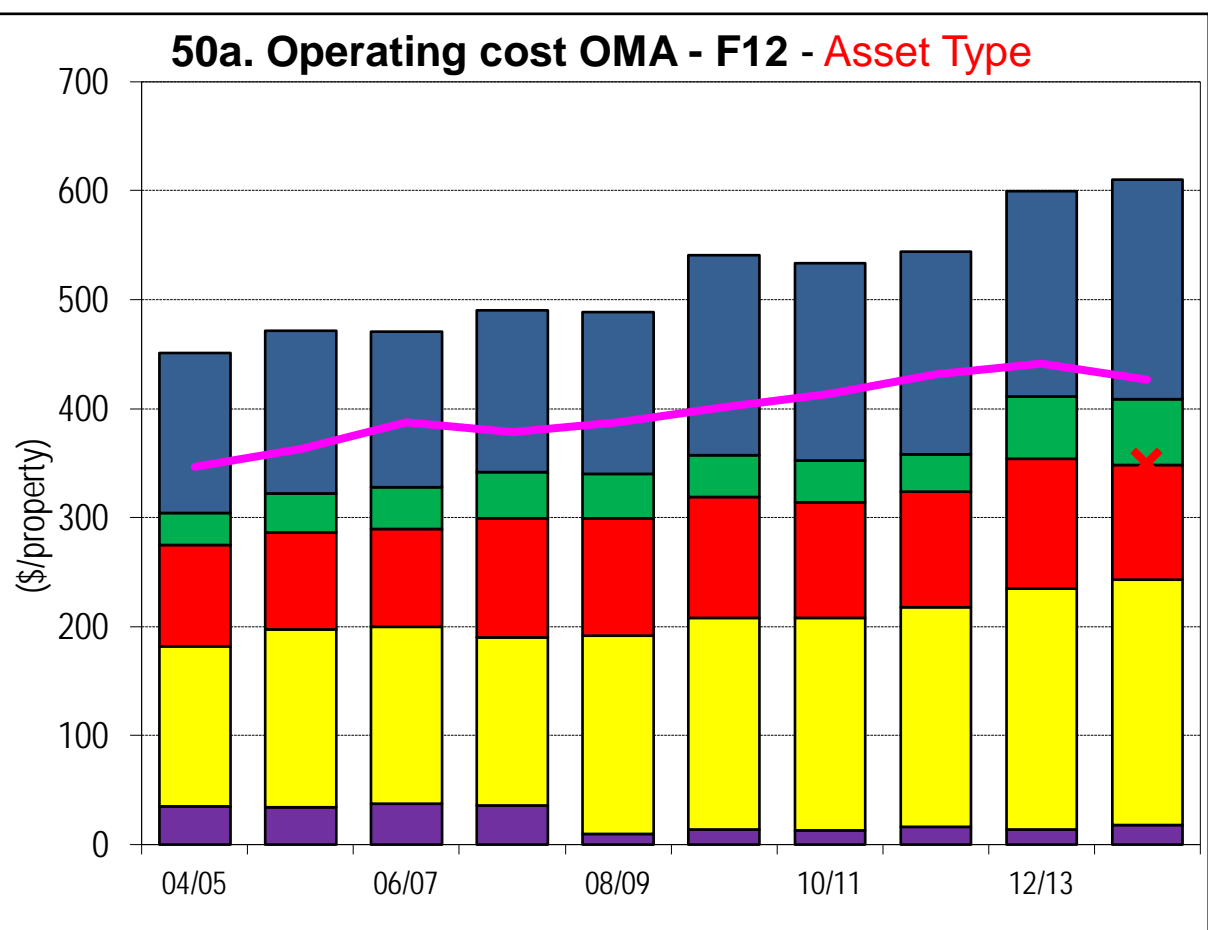
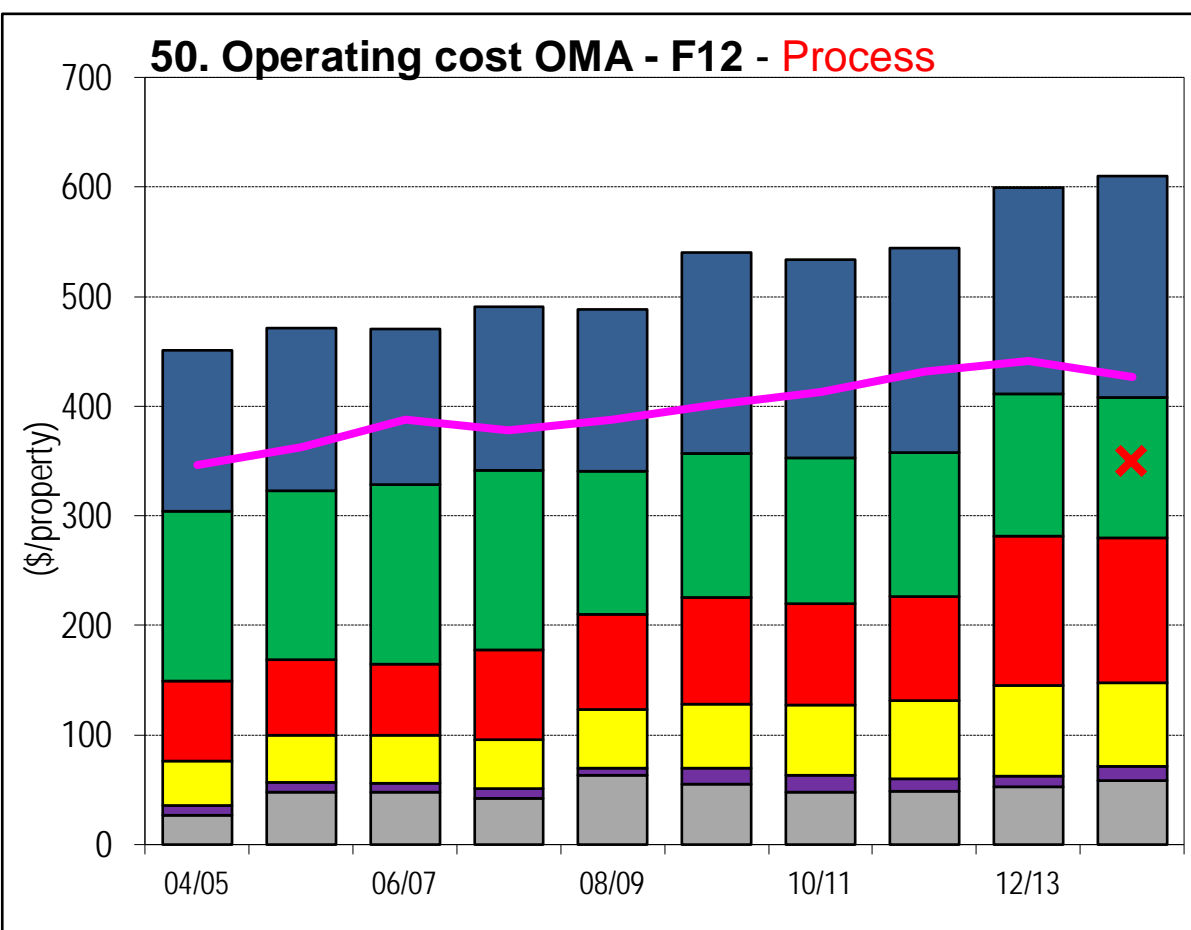
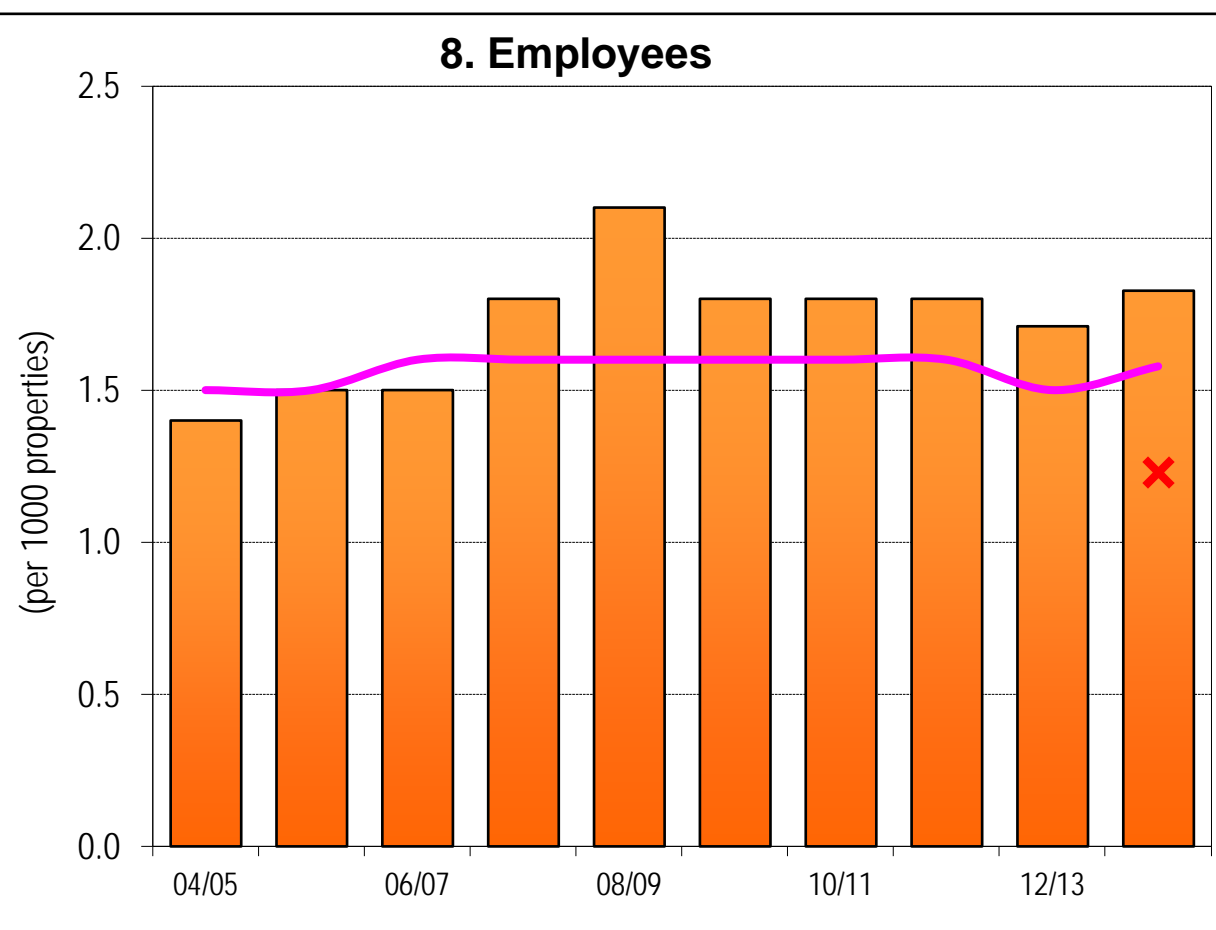
CUSTOMER SERVICE/RELIABILITY



ENVIRONMENT/CAPITAL EXPENDITURE



EFFICIENCY



NOTES:

1. Costs are in Jan 2014\$ except for graphs 12 and 14, which are in Jan 2015\$.

Management Operation Maintenance Energy Chemicals Effluent Mgmt

Management Mains Pump Stations Treatment Other

LEGEND  
State Median for all years  
Top 20% for 2013-14

Water Performance Percentiles (% of LWUs Basis) 2013-14

NSW Non-metropolitan Utilities Percentiles <sup>1,2</sup>								National Reporting <sup>3</sup>	
NWI No.	NSW No.	UTILITY CHARACTERISTICS	20%	40%	50% Median	60%	80%	NWI No.	National Median Utilities with >10,000 props
	3	Residential connected properties (% of total)	91	89	88	88	85		
	4	New Residential Dwellings Connected to Water Supply (%)	1.3	1.0	0.8	0.7	0.4		
A3	5	Properties Served per km of Main	34	28	26	24	18	A3	35
	6	Rainfall (% of average annual rainfall)	108	92	84	79	66		
W11	7	Total Urban Water Supplied (at Master Meters - ML)	4,500	2,900	1,800	1,200	800	W11	10,280
	8	Peak Week to Average Consumption (%)	129	162	178	188	223		
	9	Renewals Expenditure (% of current replacement cost of system assets)	1.0	0.6	0.4	0.3	0.2		
	10	Employees (employees per 1000 properties)	1.3	1.5	1.7	1.9	2.4		
SOCIAL - Charges/Bills									
P1.3	12a	Residential Water Usage Charge (c/kL for 2013-14)	225	192	170	147	105	P1.3	185
	12	Residential Water Usage Charge (c/kL for 2014-15)	241	203	179	154	118		
P3	14a	Typical Residential Bill (\$/assessment for 2013-14)	520	597	633	675	793	P3	567
	14	Typical Residential Bill (\$/assessment for 2014-15)	535	623	675	701	817		
	15a	Typical Developer Charge (\$/equivalent tenement for 2013-14)	7,700	5,500	5,000	4,200	2,000		
	15	Typical Developer Charge (\$/equivalent tenement for 2014-15)	7,700	5,600	5,000	3,700	2,300		
F4	16	Residential Revenue from Usage Charges (% of residential revenue)	76	71	67	65	57	F4	68
F5	17	Revenue per property - Water (\$)	1,037	949	888	801	717	F5	849
SOCIAL - Health									
	18	Water Supply Coverage (% of Urban Population with reticulated WS)	99.6	98	97	96	92		
	19	Physical Water Quality Compliance (%)	100	100	100	99	96		
	19a	Chemical Water Quality Compliance (%)	100	100	100	100	100		
	20	Microbiological (E. coli) Water Quality Compliance (%)	100	100	100	100	99.5		
H3	20a	Percent Population with Microbiological Compliance	100	100	100	100	100	H3	100
SOCIAL - Levels of Service									
C9	25	Water Quality Complaints (per 1000 properties)	0	1	3	4	8	C9	1.7
C10	26	Water Service Complaints (per 1000 properties)	1	8	13	19	32	C10	0.7
C17	27	Incidence of unplanned interruptions (per 1000 properties)	3	10	16	31	65	C17	96
C15	28	Average Duration of Interruption (minutes)	90	120	120	120	180	C15	113
A8	30	Number of Main Breaks (per 100 km of main)	7	10	12	15	22	A8	13
	31	Drought Water Restrictions (% of time)	0	0	0	0	55		
	32	Total Days Lost (%)	0	1	1	3	4		
ENVIRONMENTAL									
W12	33	Average Annual Residential Supplied (kL/property)	161	193	231	287	434	W12	185
	33a	Average Annual Residential Supplied - COASTAL (kL/property)	148	157	161	166	188		
	33b	Average Annual Residential Supplied - INLAND (kL/property)	193	250	287	381	499		
	33c	Peak Day Water Supplied (kL/d/connected property)	1.2	1.7	2.0	2.4	3.9		
	33d	Total Urban Recycled Water Supplied (ML)	56	105	193	234	540		
A10	34	Real Loss (leakage) (L/service connection/d)	50	70	80	90	120	A10	79
	34a	Non Revenue Water (NRW) (L/service connection/d)	69	98	127	146	191		
	35	Energy Consumption (kWh/ML)	280	470	520	560	720		
	36	Renewable Energy Consumption (% of Total Energy)	0	0	0	0	0		
E12	36a	Net Greenhouse Gas Emissions - WS & Sge (net tonnes CO2 - equivalents/1000props)	220	330	350	380	450	E12	390
ECONOMIC - Financial									
	42	Current Replacement Cost per Assessment - Water (\$)	20,400	17,000	16,400	14,600	11,200		
F17	43	Economic Real Rate of Return - Water (%)	2.6	1.2	0.9	0.7	-0.5	F17	1.9
	44	Return on Assets - Water (%)	2.9	1.3	0.9	0.3	-0.3		
F9/C4	44a	Written Down Replacement Cost - Water (\$/property)	14,300	10,700	9,600	8,500	7,100		8,029
F22	45	Net Debt to Equity - WS & Sge(%)	3	-4	-6	-9	-15	F22	11
F23	46	Interest Cover - WS & Sge	4	2	1	0	0	F23	2
	47	Loan Payment - Water (\$/property)	104	44	16	0	0		
F30	47a	Net Profit After Tax Ratio - WS & Sge (%)	22	11	8	3	-4	F30	8
F24	47b	Net Profit After Tax - WS & Sge (\$'000)	2,190	650	360	100	-130	F24	5,345
ECONOMIC - Efficiency									
	48	Operating Cost (OMA) per 100 km of Main (\$'000)	790	1,100	1,240	1,390	1,730		
F11	49	Operating Cost (OMA) per property (\$/property)	410	480	520	550	650	F11	439
	50	Operating Cost (OMA) per kL (c/kL)	77	105	118	132	173		
	51	Management Cost (\$/property)	105	140	150	162	212		
	52	Treatment Cost (\$/property)	37	88	119	137	208		
	53	Pumping Cost (\$/property)	17	47	59	74	139		
	54	Energy Cost (\$/property)	12	33	45	50	81		
	55	Water Main Cost (\$/property)	47	70	80	91	125		
F28	56	Capital Expenditure - Water Supply (\$/property)	305	181	140	103	45	F28	175

Notes:

- The above NSW 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 on page 111 the performance indicators are on a **percentage of connected properties** basis as this is the most appropriate for judging **Statewide Performance** by giving due weight to larger LWUs and reducing the effect of smaller LWUs.
- 20% is the top 20% of LWUs, **Median (50%)** is the median of LWUs and **80%** is the bottom 20% of LWUs.
- National Medians are from the National Performance Report 2013-14 which shows the performance indicators for 67 Australian urban water utilities providing reticulated water supply services to >10,000 properties [Note 14 on page 35]. The 7 bulk supply utilities are excluded.



Sewerage Performance Percentiles (% of LWUs Basis) 2013-14

NSW Non-metropolitan Utilities Percentiles <sup>1,2</sup>								National Reporting <sup>3</sup>	
NWI No.	NSW No.	UTILITY CHARACTERISTICS	20%	40%	50% Median	60%	80%	NWI No.	National Median Utilities with >10,000 props
	3	Residential connected properties (% of total)	93	90	90	89	87		
	4	New Residential Dwellings Connected to Sewerage (%)	1.3	0.9	0.7	0.5	0.3		
A6	5	Properties Served per km of Main	40	35	34	32	28	A6	41
W18	6	Volume of Sewage Collected (ML)	2,500	700	600	400	200	W18	5,723
	7	Renewals Expenditure (% of current replacement cost of system assets)	1.1	0.6	0.5	0.4	0.2		
	8	Employees (per 1000 properties)	1.1	1.6	1.8	1.9	2.4		
SOCIAL - Charges/Bills									
P4.1	11a	Residential Access Charge for 2013-14 (\$/assessment)	434	496	544	580	725	P4.1	573
	11	Residential Access Charge for 2014-15 (\$/assessment)	454	511	580	630	750		
P6	12a	Typical Residential Bill for 2013-14 (\$/assessment)	434	495	544	580	725	P6	683
	12	Typical Residential Bill for 2014-15 (\$/assessment)	454	511	580	630	750		
	13a	Typical Developer Charge for 2013-14 (\$/equivalent tenement)	6,900	4,500	3,900	3,000	1,500		
	13	Typical Developer Charge for 2014-15 (\$/equivalent tenement)	7,000	4,600	3,900	3,300	1,400		
	14	Non-residential sewer usage charge (c/kL)	211	175	140	122	99		
F6	15	Revenue per property - Sge (\$)	941	753	681	634	526	F6	938
SOCIAL - Health									
	16	Sewerage Coverage (% of Urban Population with Reticulated Sge Service)	98	95	94	93	88		
E3	17	Percent of sewage treated to a tertiary level (%)	100	100	99	97	71	E3	91
E4	18	Percent of sewage volume treated that was compliant (%)	100	100	100	94	73	E4	100
SOCIAL - Levels of Service									
	21	Odour Complaints (per 1000 properties)	0.0	0.0	0.0	0.4	1.4		
C11	22	Sewerage Service Complaints (per 1000 properties)	3	10	13	17	34	C11	1.0
C16	23a	Average Sewerage Interruption (min)	60	88	90	109	120	C16	105
	25	Total Days Lost	0	0	1	2	4		
ENVIRONMENTAL									
W19	26	Volume of Sewage Collected per property (kL)	245	218	199	188	172	W19	204
W26	26a	Total recycled water supplied (ML)	600	220	130	110	40	W26	1,638
W27	27	Recycled Water (% of effluent recycled)	69	25	15	9	1	W27	17
E8	28	Biosolids Reuse (%)	100	0	0	0	0	E8	100
	30	Energy Consumption - sewerage (kWh/ML)	360	550	710	770	990		
	31	Renewable Energy Consumption (% of total energy consumption)	0	0	0	0	0		
E12	32	Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 prop	220	330	350	380	450	E12	390
	33	90th 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	100	100		
	35	Compliance with SS in Licence (%)	100	100	100	100	91		
A14	36	Sewerage Main Breaks and Chokes (per 100 km of main)	9	25	35	44	77	A14	20
	37a	Sewer Overflows (per 100 km of main)	0	1	3	5	18		
E13	37b	Sewer Overflows Reported to Environmental Regulator (per 100 km of main)	0.0	0.0	0.0	0.0	1.3	E13	0.4
	39	Non-residential percentage of sewage collected (%)	29	21	18	14	8		
ECONOMIC - Financial									
	43	Revenue from Non-residential and Trade Waste Charges (% of total rates & charges)	25	21	19	17	11		
	44	Revenue from Trade Waste Charges (% of total rates & charges)	3	2	1	0	0		
	45	Current Replacement Cost of Fixed Sewerage Assets (\$/assessment)	18,700	15,900	14,600	13,800	12,300		
F18	46	Economic Real Rate of Return - sewerage (%)	2.5	1.7	1.1	0.7	-0.3	F18	2.6
	46a	Return on Assets - sewerage (%)	2.4	1.5	1.3	0.6	-0.1		
F10/C8	46b	Written Down Replacement Cost - sewerage (\$/property)	13,200	9,800	9,200	8,100	6,700		9,512
F22	47	Net Debt to Equity - WS & Sge (%)	3	-4	-6	-9	-15	F22	11
F23	48	Interest Cover - WS & Sge	4	2	1	0	0	F23	2
	48a	Loan Payment - sewerage (\$/property)	183	44	9	1	0		
F24	48b	Net Profit After Tax - WS & Sge (\$'000)	2,190	650	360	100	-130	F24	5,345
ECONOMIC - Efficiency									
	49	Operating Cost - sewerage (OMA) per 100 km of Main (\$'000)	830	1,240	1,330	1,450	1,800		
F12	50	Operating Cost - sewerage (OMA) per property (\$/property)	310	370	400	420	500	F12	405
	51	Operating Cost - sewerage (OMA) per kL (c/kL)	139	183	206	220	252		
	52	Management Cost - sewerage (\$/property)	82	113	127	160	182		
	53	Treatment Cost - sewerage (\$/property)	97	134	154	169	192		
	54	Pumping Cost - sewerage (\$/property)	25	46	56	64	88		
	55	Energy Cost - sewerage (\$/property)	18	34	38	41	49		
	56	Sewer Main Cost (\$/property)	29	39	47	56	71		
F29	57	Capital Expenditure - sewerage (\$/property)	254	139	105	78	23	F29	227

Notes:

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- 20% is the top 20% of LWUs, **Median (50%)** is the median of LWUs and **80%** is the bottom 20% of LWUs.
- National Medians are from the National Performance Report 2013-14 which shows the performance indicators for 66 Australian urban water utilities providing reticulated water supply services to >10,000 properties [Note 14 on page 35].

Appendix D1: 2013-14 Water Treatment Performance

Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>  37a	Total Potable Water Produced W11.3 ML 37c	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 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9		No. of Samples ÷ Allocation <sup>6</sup>		Drinking Water Management	No. WTW Operators	Chlorination System Failure	Major Malfunction of Treatment Processes
								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n Compliance 42n											
								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												
								No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46																								
Albury City Council	RA	Albury	8078	1992	140	DF	7951	63	4	13		86	6	2	0.4	217	100	217	98	458	99	215	100	215	100	139	100	100	76	3	100	95	Yes	3	0		0		
Armidale Dumaresq Council		Armidale	3162	2009	23	C	3162	128	46	2		7	2	1	0.2	365	100	365	100	365	100	15	100	15	100	100	100	100	43	5	100	90	Yes	3	0		0		
	B-RW	Wollongbar (Bulk From Rous)		-		-	-															12	100	12	100	73	100		-		100	95							
	B-RW	Ballina (Bulk From Rous)		-		-	-															12	100	12	100	159	99		-		100	95							
		Marom Creek	175	1997	3	DF	156	25	20	2	1	35	7	1	0.4	28	100	365	100	365	100	3	87	3	100	63	100				100	100							
		Total/Weighted Average	175		3		156	25	20	2	1	35	7	1	0.4	28	100	365	100	365	100	27	99	27	100	295	99	100	0	0	100	100	Yes	2	0		0		
	DS	Euston	47	2006	0.4	MF	75	550	220			50	26	0		362	100	362	100	362	100	3	100	3	100	26	100		-		100	100							
	UF	Balranald	109	1988	1	C	172	1,085	528	56		90	36	1		365	91	365	100	365	87	2	90	12	100	64	100		-		100	100							
		Total/Weighted Average	156		2		247	1,085	434	56		90	33	1		727	95	727	100	727	93	5	96	15	100	90	100	100	-	-	100	100	Yes	5	0		0		
Bathurst Regional Council		Bathurst	5984	1989	60	C	6354	310	36	9	4	254	15	0	0.2	14	100	14	100	14	100	15	100	15	100	186	99	100	539	35	100	100	Yes	4	0		0		
	UF	Wyndham		-		-	-															2	100	2	100	25	96		-		100	100							
	UF	Tantawangalo	57	2011	0.5	CH	57			2	2			0	0.1	2	100	2	100	2	100	2	100	2	100	26	100		2		100	100							
	UF	Tilba (Couria Ck)		1985	1	CH																2	100	2	100	48	100				100	100							
	UF	Yellow Pinch	1308	1988	25	CH	1313			4	2			3	0.9	13	100	13	100	13	100	13	100	13	100	144	100		21		100	100							
	GW	Bega	1018	1987	16	CH	1022			1	1			2	0.6	13	100	13	100	13	100	13	100	13	100	111	100		149		100	98							
	UF	Brogo	328	2008	6	CH	329			18	10			2	1.3	16	81	16	100	16	100	1	100	1	100	94	100		11		100	100							
	GW	Kiah	498	1972	6	CH	500			4	2			8	1.6	13	100	13	92	13	100	13	98	13	100	67	100		8		100	59							
	UF	Bemboka	36	1988	1	CH	36			27	10			4	2.2	9	89	9	100	9	100	1	100	1	100	26	100		1		100	100							
		Total/Weighted Average	3244		55		3257			27	2			8	1.0	66	94	66	98	66	100	47	100	47	100	541	100	100	192	13	100	94	Yes	17	0		0		
	GW	Bellingen / Seaboard	1209	1993	12	CH	1223			1	1			4	0.1	10	100	10	100	10	90	11	98	12	100	100	100		1		100	100							
		Dorrigo	133	1993	3	C	135	125	81	2	1	74	5	1	0.4	367	100	367	100	2	50	2	90	13	100	56	100				100	100							
		Total/Weighted Average	1342		15		1358	125	8	2	1	74	1	4	0.1	377	100	377	100	12	83	13	97	25	100	156	100	100	1	0	100	100	Yes	5	0		0		
	DS	Tocumwal	659	2002	7	DAF	590	90	40	5	3	100	20	1.5	0.1	2	100	2	100	2	100	3	100	13	100	52	100		2		100	100							
		Finley	225	2004	2	C	201	100	45	5	3	200	60	20	0.5	2	100	365	96	365	99	3	100	11	100	52	100		2		100	100							
		Berrigan	101	1990	1	C	90	70	35	5	4	150	50	10	0.5	2	100	365	99	365	99	3	100	12	100	43	100		2		100	84							
		Barooga	186	2000	1	DAF	166	100	50	5	1	80	25	2	0.2	2	100	2	100	2	100	3	100	12	100	52	100		3		100	100							
		Total/Weighted Average	1170		11		1047	100	42	5	3	200	31	20	0.2	8	100	734	98	734	99	12	100	48	100	199	100	100	9	3	100	98	Yes	8	0		0		
Bogan Shire Council	RA	Nyngan	857	2005	9	C	804	550	210	40	1	321	101	5	1.0	365	100	365	100	51	100	2	100	9	96	49	98	100	0	0	100	96	Yes	2	0		0		
	UF	Bombala	87	1983	3	C	162													52	100	2	100	14	100	48	100		10		100	94							
		Delegate	92	-	1	CH	170													52	100	1	60	1	100	52	100				100	100							
		Total/Weighted Average	179		5		332													104	100	3	87	15	100	100	100	100	10	11	100	100			3	0		0	
Boorowa Council		Boorowa	188	1993	3	CH	164	180	70	150	70	41	14	1	0.3	2	100	2	100	3	100	2	60	2	100	47	100	100	32	49	100	92	Yes	1	1		0		
Bourke Shire Council	DS	Bourke	369	2003	3	C	400	300	80	3	2	1,500	200	2	0.5	12	100	12	100	12	100	2	80	13	100	56	98	100	0	0	100	89			2	0		0	
	DS	Brewarrina	292	2013	1	C	180			2	2	2,000	1,000	1	0.5	2	100	365	100	2	100	3	100	3	100	55	98				100	49							
		Goodooga	97	1996	1	CH	60			2	1					1	100	1	100	1	100	1	80	1	100	35	100				100	95							
		Total/Weighted Average	389		2		240			2	2	2,000	750	1	0.4	3	100	366	100	3	100	4	95	4	100														



Appendix D1: 2013-14 Water Treatment Performance

Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>  37a	Total Potable Water Produced W11.3 ML 37c	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 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9			No. of Samples ÷ Allocation <sup>6</sup>		Drinking Water Management 44c	No. WTW Operators 44d	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 % Pop'n Compliance 42n	No. 43		/ 1,000 Props	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		No. 43			% 44a																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	



Appendix D1: 2013-14 Water Treatment Performance

Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>	Total Potable Water Produced W11.3 ML 37c	Year built or Augmented	Capacity ML/d 37b	Type of Treatment Works <sup>2</sup>	Volume Treated to Potable ML 38b	Colour Units				Turbidity Units				Compliance with 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9			No. of Samples ÷ Allocation <sup>6</sup>		Drinking Water Management	No. WTW Operators	Chlorination System Failure	Major Malfunction of Treatment Processes
								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n												
								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	Compliance 42n												
								No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46																									
Dubbo City Council	RA, GW	John Gilbert	8655	2007	80	C	8075	143	34	13	0	53	8	5	0.3	273	100	336	100	163	91	12	100	12	100	162	100	100	7	0	100	100	Yes	3	0	0				
Eurobodalla Shire Council		Eurobodalla Southern	363	2012	6	DF	363	43	14	18	1	11	4	3.8	0.7	131	99	131	100	12	67	12	93	12	100	120	100	2		100	96									
		Eurobodalla Northern	3055	2010	20	C	3055	18	9	4	1	3	2	1.4	0.1	365	100	365	100	12	75	24	94	24	100	373	100	16		100	100									
		Total/Weighted Average	3418		26		3418	43	10	18	1	11	2	3.8	0.2	496	100	496	100	24	71	36	94	36	100	493	100	100	18	1	100	100	Yes	5	0	0				
		Fish River Water Supply	Duckmaloi	2556	2003	11	MF	862	21	14	11	7	3	2	0	0.1	40	100	40	100	64	100	40	100	10	100	177	98	100	0	0	100	100	Yes	1	0	0			
Forbes Shire Council		Forbes	2448	1966	26	C	2375	150	95	5	3	92	25	1	0.3	360	100	40	100	11	100	11	98	11	100	58	100	100	13	4	100	92	Yes	2	0	0				
Gilgandra Shire Council	GW	Gilgandra	794	1973	5	C	793	3	2	1	0	40	10	1	0.5	2	100	2	100	52	100	52	100	12	100	52	100	100	9	7	100	100	Yes	2	0	0				
Glen Innes Severn Shire Council		Martins Lookout	537	1982	12	C	539	249	70	57	5	34	8	3	0.6	365	99	365	99	36	100	10	96	10	100	49	100				91	96								
		Deepwater	15	2011	7	DAF	15	367	101	6	0	26	5	1	0.2	12	99	12	100	12	100	1	100	1	100	22	100				100	88								
		Total/Weighted Average	552		19		554	367	71	57	5	34	8	3	0.6	377	99	377	99	48	100	11	96	11	100	71	100	100	0	0	92	93		3	0	0				
		Goldenfields Water Reticulator	GW	Oura	9006	1975	26	CH	4130								46	100	46	100	46	80	46	100	46	100	270	100	100	40	4	100	100	Yes		0	0			
Goldenfields Water County Council		Jugiong	241	1991	40	C	3781	21	17	2	1	152	79	4	0.8	14	100	14	100	14	50	25	97	35	100	183	100	6		100	100									
		Mount Arthur	33	-	4	CH	514									8	100	8	100	8	75	8	100	8	100	64	100	27		100	100									
		Mount Daylight	20	-	1	CH	309									2	100	2	100	2	100	2	100	2	100	26	100			100	100									
		Total/Weighted Average	294		46		4604	21	14	2	1	152	65	4	0.6	24	100	24	100	24	63	35	98	45	100	273	100	100	33	-	100	100	Yes		0	0				
Gosford City Council		Somersby	14934	1986	140	C	14511	502	116	9	2	41	8	1	0.2	12	100	12	100	12	100	12	100	12	100	397	100		1,062		100	100								
		Woy Woy		2007	5	MF										12	100	12	100	12	100	12	100	12	100	397	100													
		Total/Weighted Average	14934		145		14511	502	116	9	2	41	8	1	0.2	24	100	24	100	24	100	24	100	24	100	794	100	100	1,062	15	100	100	Yes	4	0	0				
Goulburn Mulwaree Council		Goulburn	2697	2002	35	C	2669	653	137	4	2	40	6	3	0.6	24	100	24	100	24	100	24	100	24	100	235	100	78		100	100									
		Marulan	91	1998	2	MF	90	79	27	10	5	21	1	3.4	0.9	12	100	12	100	11	100	12	76	12	100	89	99	2		100	100									
		Total/Weighted Average	2788		37		2759	653	133	10	2	40	6	3	0.6	36	100	36	100	35	100	36	92	36	100	324	100	100	80	8	100	100	Yes	4	0	0				
Greater Hume Shire Council	UF	Villages	140	2005	5	CH	393							1	0.4			2	100	2	100	52	100	2	100	52	100				100	100								
		Culcairn	61	2007	3	CH	171	1	1	1	1	2	2	2	1.0	2	100	2	100	2	100	2	100	2	95	46	100				100	90								
		Total/Weighted Average	201		7		564	1	0	1	0	2	0	2	0.6	2	100	4	100	4	100	54	100	4	97	98	100	100	0	0	100	96		2	0	0				
Griffith City Council	B-Mrm	Griffith	6213	1987	60	DAF	6360	99	40	8	0	46	17	3	0.3	350	100	350	100	16	100	16	100	16	100	111	99	16		100	85									
		Yenda	152	2001	2	MF	156					33	24	0	0.1			43	100	2	100	2	100	9	100	39	100	1		100	76									
		Total/Weighted Average	6365		62		6516	99	39	8	0	46	17	3	0.3	350	100	393	100	18	100	18	100	25	100	150	99	100	17	2	100	83	Yes	2	0	0				
Gundagai Shire Council		Gundagai	593	1988	5	C	500	500	120	45	5	240	25	10.0	0.3	365	100	365	100	52	100	4	85	14	99	47	100	100	8	8	100	92	Yes	2	0	0				
Gunnedah Shire Council	GW	Gunnedah	2818	2009	20	CH	2788			5	0			0	0.1	12	100	12	100	22	95	22	95	12	100	70	100				100	100								
		GQGW	Curlewis	114	2004	1	CH	113			1	1			0	0.1	2	100	2	100	21	100	2	60	2	100	51	100				100	100							
		GQGW	Tambar Springs	16	2006	1	CH	16			1	1			0.3	0.2	2	100	2	100	5	100	2	80	2	100	12	92				100	100							
		GQGW	Mullaley	20	2006	1	CH	20												3	100	3	100	3	85	12	92				100	100								
		Total/Weighted Average	2969		22		2937			5	0			0.3	0.1	16	100	16	100	51	98	29	92	19	98	145	99	99	0	0	100	100	Yes	1	0	0				
		Guyra Shire Council		Guyra	583	2003	6	C	492			3	2			1	0.7	3	100	34	100	3	100	3	100	12	100	53	100	100	3	2	100	100	Yes	2	0	0		
Gwydir Shire Council	NP	Gravesend Non Potable		2003	1																																			
		Bingara	552	2011	3	DAF	490			6	3																													

Appendix D1: 2013-14 Water Treatment Performance

Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>  37a	Total Potable Water Produced W11.3 ML 37c	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 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9			No. of Samples ÷ Allocation <sup>6</sup>		Drinking Water Management	No. WTW Operators	Chlorination System Failure	Major Malfunction of Treatment Processes
								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n Compliance 42n												
								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													
								No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46																									
Inverell Shire Council	GW RA	Copeton	1628	1982	18	C	1660	190	120	3	2	6	2	1	0.2	360	100	360	100	360	100	11	100	14	100	88	99		3		100	100								
		Ashford	134	1984	3	C	137	250	150			77	15	2	0.1	360	100	360	100	360	100	2	100	14	100	24	100				100	47								
		Yetman	20	1980	1	CH	20							0	0.2			1	100			2	90	2	97	18	100				100	72								
		Total/Weighted Average	1782		22		1817	250	121	3	2	77	3	2	0.2	720	100	721	100	720	100	15	99	30	100	130	99	100	3	1	100	80	Yes	2	0		0			
Jerilderie Shire Council	DS	Jerilderie	150	1980	1	CH	135	250	244	3		247	98	2	0.6	365	100	365	100	365	100	2	100	2	100	52	100	100	10	-	100	100	Yes	2	0		0			
Kempsey Shire Council	GW	Sherwood	2637	2000	38	CH	2595			1	0			10	1.5	14	100	296	99	300	98	28	100	14	100	287	100		6		100	100								
	GW	South West Rocks	616	2006	6	MF	606			1	1			7	0.5	1	100	51	98	52	100	2	100	11	100	51	100				100	81								
	GW	Stuarts Point	241	2010	3	DF	237			1	0			8	0.7	13	100	67	97	66	100	26	100	13	100	54	100		3		100	100								
	GW	Crescent Head	142	2012	3	CH	140			1	10		10.8	4.1	1	100	59	83	61	98	2	100	1	100	60	100				100	95									
	GW	Hat Head	30	2000	1	CH	30			4	3			1	0.5	2	100	27	100	29	100	4	100	2	100	27	100				100	100								
	GW	Willawarrin	10	1972	0.2	CH	10			1	1			1	0.4	12	100	37	100	36	100	24	100	12	100	25	100				100	100								
	GW	Bellbrook	10	2010	0.9	DF	10			1	0			3	0.6	13	100	13	100	36	100	26	100	13	100	24	100				100	96								
	Total/Weighted Average	3687		52		3628			4	1			11	1.3	56	100	550	97	580	99	112	100	66	100	528	100	100	9	1	100	100	Yes	11	0		0				
	Kyogle Council	NP NP	Bonalbo		2010	0.3																																		
Woodenbong				-																								-												
Kyogle			1988	3	C	295	1,005	141	1	1	236	7	3	0.6	2	100	94	100	96	100	2	100	12	100	101	99		5		100	100									
Total/Weighted Average		340		3	C	295	1,005	141	1	1	236	7	3	0.6	2	100	94	100	96	100	2	100	12	100	101	99	100	5	3	100	100	Yes	2	0		0				
Lachlan Shire Council		Condobolin	1046	2000	8	C	772	640	320	3	32	207	39		0.5	2	100	70	100	70	100	6	100	12	100	70	100		4		100	93								
	Lake Cargelligo	832	2004	5	DAF	614	500	115	1	1	225	90	1	0.2	1	100	45	100	1	100	1	100	1	100	52	100				100	100									
	Tottenham	22	1994	1	C	16	95	33	0	1	41	14	3	0.5	2	100	36	100	37	97	2	100	2	100	35	100				100	95									
	Total/Weighted Average	1899		13		1402	640	227	3	18	225	61	3	0.4	5	100	151	100	108	99	9	100	15	100	157	100	100	4	1	100	96	Yes	4	0		0				
Leeton Shire Council		Leeton	2471	1993	25	C	2191	79	38	0	0	46	20	1	0.1	365	100	365	100	365	100	11	100	11	100	74	100				100	100								
	Whitton	87	2003	0.9	C	77	185	107	0	0	124	62	0	0.1	365	100	365	100	365	100	2	100	2	100	27	100				100	100									
	Murrami	19	1993	0.3	LS	17	138	64	0	0	115	37	4	1.3	365	100	365	100	365	100	2	100	2	100	28	100				100	100									
	Total/Weighted Average	2577		26		2285	185	41	0	0	124	22	4	0.1	1,095	100	1,095	100	1,095	100	15	100	15	100	129	100	100	0	0	100	100		4	0		0				
Lismore City Council	B-RW UF	Rocky Ck (Bulk From Rous)		-		-	-															12	100	12	100	188	99				100	96								
	Nimbin		1949	0.3	CH	168	30	24	56	16	9	3	16	2.8	12	92	51	96	52	100	2	90	2	100	26	100				100	100									
	Total/Weighted Average			0.3		168	30	24	56	16	9	3	16	2.8	12	92	51	96	52	100	14	99	14	100	214	100	100	0	0	100	97	Yes	3	0		0				
Lithgow City Council	B-FR	Oakey Park	1091	1985	15	C	1217											62	100	24	96	13	98	24	100	270	99	100	77	10	100	100	Yes	2	0		0			
Liverpool Plains Shire Council	GW	Werris Creek	117	2004	3	C	262	175	60	5	1	30	4	1	0.2	365	98	365	99	365		3	100	3	100	50	100		2		100	98								
		Quirindi	267	2010		CH	597													2		3	80	3	100	50	100				100	98								
		Willow Tree		-		CH	-															3	80	3	100	24	100		-		100	96								
	Total/Weighted Average	929		18		2076	175	8	5	0	30	0	1	0.0	365	98	365	99	367		9	87	9	100	124	100	100	2	1	64	61		4	0		0				
MidCoast County Council	GW	Gloucester	372	1981	5	C	372	28	13	2	0	9	2	1	0.3	80	100	80	100	80	88	242	96	246	100	79	99		2		100	100								
		Bootawa Dam	7862	2010	60	MF	7862	28	9			10	2	0	0.1	459	100	459	100	459	98	1,389	99	1,390	100	462	100		90		100	99								
		Tea Gardens	542	2013	8	MF	542	17	12	18	5	1	0	1	0.3	54	100	54	100	54	100	164	100	183	88	52	100		9		100	100								
		Bulahdelah	133	2009	2																																			



Appendix D1: 2013-14 Water Treatment Performance

Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>	Total Potable Water Produced W11.3 ML 37c	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 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9		No. of Samples ÷ Allocation <sup>6</sup>		Drinking Water Management	No. WTW Operators	Chlorination System Failure	Major Malfunction of Treatment Processes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n Compliance 42n																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
								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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
								No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		37a	37c		37b	38a	38b																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										



Appendix D1: 2013-14 Water Treatment Performance

Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>	Total Potable Water Produced W11.3 ML 37c	Year built or Augmented	Capacity ML/d 37b	Type of Treatment Works <sup>2</sup>	Volume Treated to Potable ML 38b	Colour Units				Turbidity Units				Compliance with 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9			No. of Samples ÷ Allocation <sup>6</sup>		Drinking Water Management	No. WTW Operators	Chlorination System Failure	Major Malfunction of Treatment Processes
								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n Compliance 42n			Chemical	E. coli								
								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													
								No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46																									
		37a	37c		37b	38a	38b	39a	39b	39c	39d	40a	40b	40c	40d	42a	42b	42c	42d	42e	42f	42g	42h	42i	42j	42k	42l	42n	No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46				
Riverina Water County Council	GW	Waterworks	6881	1961	80	C	6427	101	16	4	1	169	21	1	0.4	13	100	13	100	393	98	13	100	13	100	386	100		38		100	100								
	GW	West Wagga	4872	1979	32	C	4550	18	4	3	2	5	1	1	0.4	13	100	13	100	13	100	13	100	13	100	386	100		27											
		North Wagga	2671	1977	25	C	2495	12	3	1	1	1	0	3	0.4	13	100	128	100	129	99	13	100	13	100	127	100		15		100	100								
	GW	Ralvona	321	1989	4	C	300	9	6	1	1	1	1	1	0.4	2	100	48	100	49	100	2	100	2	100	48	100				100	94								
	GW	Bulgary	503	1983	3	C	470	12	4	1	1	1	1	1	0.4	2	100	75	100	75	89	72	89	11	100	72	100		4		100	100								
	GW	Gardiners Crossing	198	1983	2	C	185	7	2	1	1	1	0	0	0.4	2	100	50	100	50	72	2	100	7	100	48	100		1		100	94								
		Urana	46	1964	1	C	43	45	33	2	1	46	35	1	0.4	2	100	49	100	49	100	2	100	6	100	48	100				100	94								
	GW	Walbundrie	39	2005	1	C	36	6	2	1	1	2	1	0	0.4	2	100	25	100	25	100	2	100	2	100	24	100				100	96								
	GW	Humula	11	2003	0.3	C	10	8	5	4	2	1	1	0	0.4	2	100	25	100	25	96	2	100	2	100	24	100				100	96								
	GW	Woomargama	20	1960	0.2	C	19	6	3	1	1	1	1	2	0.4	2	100	24	100	23	100	2	100	2	100	24	100		2		100	96								
	GW	Collingullie	71	2006	0.1	C	66	16	3	1	1	2	1	0	0.3	2	100	13	100	13	100	2	100	2	100	12	100				100	100								
	GW	Tarcutta	51	2009	1	C	48	38	18	1	1	1	1	0	0.4	2	100	23	100	24	96	2	100	2	100	24	100		3		100	96								
	GW	Oura	42	1982	1	C	39	9	4	1	1	1	1	1	0.4	2	100	12	100	12	100	2	100	2	100	127	100		1		100	100								
		Morundah	9	1992	0.2	C	8	47	32	1	1	57	44	0	0.4	2	100	25	100	25	92	2	100	2	100	24	100				100	96								
		Total/Weighted Average	15735		150		14696	101	9	4	1	169	10	3	0.4	61	100	523	100	905	96	131	94	79	100	1,374	100	100	91	3		100	100	Yes	4	0		0		
		Emigrant Creek Dam	541	2008	8	MF	541	97	16	2		18	7	0	0.1	17	100	17	100	17	100	17	100	17	100	17	100		-											
		Rous Villages		-		-	-															12	98	12	100	108	100		-		100	100								
		Nightcap	10980	2007	70	DF	10980	37	22	2		4	2	0		51	100	51	100	51	100	51	100	51	100	51	100		28											
		Total/Weighted Average	11521		78		11521	97	22	2		18	2	0	0.0	68	100	68	100	68	100	80	100	80	100	176	100	100	28	1				Yes	4	0		0		
		Bamarang	8937	1999	75	C	8937	65	35	2	1	3	2	3.9	0.2	12	100	106	100	106	97	105	99	105	100	582	100		11		100	100								
		Flatrock	1258	1998	28	C	1258	65	35	5	1	3	2	1	0.3	5	100	31	100	31	97	31	99	31	100	70	100				100	100								
		Milton	1352	2000	11	DF	1352	70	55	5	1	4	2	1	0.2	12	100	46	100	46	100	46	100	46	100	151	100		3		100	99								
		Kangaroo Valley	91	1993	1	MF	91	125	49	1	1	21	7	1	0.1	2	100	14	100	11	100	11	100	21	100	50	100		1		100	98								
		Total/Weighted Average	11638		115		11638	125	37	5	1	21	2	4	0.2	31	100	197	100	194	98	193	99	203	100	853	100	100	15	0		100	100	Yes	6	0		0		
Singleton Shire Council		Obanvale	2936	1993	30	DF	2912	5	5	5	3	7	2	0.7	0.1	612	100	590	100	587	100	12	100	12	100	212	100	100	16	2		100	100	Yes	4	0		0		
	UF	East Jindabyne	246	2012	9	CH	282			2	2			1	0.9	1	100	1	100	1	100	2	100	2	100	50	98				100	96								
	UF	Jindabyne	406	2007	8	CH	465			3	3			2	1.2	5	100	5	100	5	100	5	100	5	100	100	100		6		100	100								
	UF	Adaminaby	54	2005	2	CH	62			2	2			1.3	1.2	2	100	2	100	2	100	2	100	2	100	25	100		2		100	96								
	UF	Kalkite	15	2007	2	CH	17			2	2			1	0.8	2		2	100	2	100	2	100	2	100	24	100				100	73								
		Dalgety	18	2004	0.2	CH	21			15	8			0	0.1	3	100	3	100	3	100	3	100	3	100	24	100				100	96								
		Total/Weighted Average	740		21		847			15	3			2	1.0	13	85	13	100	13	100	14	100	14	100	223	100	100	8	2		100	100	Yes	3	3		0		
		Calala	9041	2014	80	C	8601	139	20	13	1	142	3	3	0.2	10	100	10	100	10	100	20	100	10	100	150	98		1		91	94								
		Manilla	379	1990	5	C	361	33	12	1	1	62	4	0	0.2	2	100	2	100	2	100																			

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								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n												
								Max	Avg	Max	Avg	Max	Avg	Max	Avg	Samples	%	Samples	%	Samples	%	Samples	%	Samples	%	Samples	%	Samples	%	Compliance	No. 43	/ 1,000 Props	% 44a	% 44b						
								39a	39b	39c	39d	40a	40b	40c	40d	42a	42b	42c	42d	42e	42f	42g	42h	42i	42j	42k	42l	42n												
Tumut Council		Tumut	1163	1978	16	C	1188	250	26	5	5	108	7	5	0.3	365	100	365	99	13	90	15	100	15	100	74	100		13		100	100								
		Batlow	172	2001	3	MF	176	250	80	15	12	9	3	2	0.3	261	100	261	95	1	100	2	90	4	100	55	100		2		100	100								
		Talbingo	61	1995	2	DF	62	70	15	3	3	4	1	0	0.1	365	100	365	100	1	100	1	100	1	100	24	100				100	96								
		Brungle	13	2003	0.3	MF	13	250	32	10	3	42	6	1	0.2	92	100	92	100	92	100				100	11	100		-			31								
		Total/Weighted Average	1409		21		1439	250	32	15	6	108	6	5	0.3	1,083	100	1,083	98	107	99	18	99	20	100	164	100	100	15	3	100	94	Yes	4	0			1		
Tweed Shire Council		Bray Park	9129	2010	100	MF	9134	37	11	1	0	28	5	1	0.2	52	100	104	100	1,632	86	2	100	8	100	40	100		156		73	17								
		Uki	39	1998	1	C	39	54	21	3	0	36	4	2	0.5	51	100	102	100	155	66				100	4	100		1			16								
		Tyalgum	30	2012	0.3	MF	30	81	12	3	0	119	9	0	0.2	52	100	104	100	103	100				100	5	100					20								
		Total/Weighted Average	9198		101		9203	81	11	3	0	119	5	2	0.2	155	100	310	100	1,890	85	2	100	8	100	49	100	100	157	5	62	17	Yes	4	0			0		
Upper Hunter Shire Council	UF	Murrurundi	113	1983	2	CH	111												52	100		2	100	2	100	45	100		5		100	88								
	GW	Merriwa	290	1980	2	C	284	2	1	1	1	1	1	1	0.6	2	100	2	100	2	100	2	100	2	100	50	100				100	98								
	GW	Cassilis	16	2001	1	CH	16	1	1	1	1	1	1	1	0.5	2	100	2	100	2	100	2	80	2	100	25	100				100	100								
		Scone And Aberdeen	1967	1982	12	CH	1929	5	1	5	1	1	0	1	0.1	5	100	5	100	8	100	12	100	2	100	130	100		2		100	100								
		Total/Weighted Average	2386		17		2340	5	1	5	1	1	0	1	0.2	9	100	9	100	64	100	18	98	8	100	250	100	100	7	2	100	100	Yes	5	0			0		
Upper Lachlan Council	GW	Crookwell	313	1990	3	C	292	60	20	5	3	4	3	0	0.3	2	100	2	100	2	100	2	100	13	100	51	100				100	100								
		Gunning	13	2014	1	DAF	12	200	50	5	1	120	20	5.0	0.2	2	100	2	100	2	100	2	70	2	100	51	100				100	100								
	UF	Dalton	16	2014	2	DAF	15													2	100	2	60	2	100	25	100				100	100								
	UF	Taralga	34	2014	0.3	MF	32	10	9	5	2	2	2	0	0.1	2	100	2	100	2	100	2	100	2	100	25	100				100	100								
		Total/Weighted Average	376		6		351	200	19	5	3	120	3	5	0.3	6	100	6	100	8	100	8	83	19	100	152	100	100	0	0	100	100	Yes	2	0			0		
Uralla Shire Council		Kentucky Creek	298	1985	5	C	295			2	2			0	0.1	2	100	2	100	50	100	2	100	12	100	50	100		6		100	98								
		Bundarra	46	1994	1	C	45	125		4	2			1	0.2	4	100	4	100	23	100	4	100	11	100	23	100				100	92								
		Total/Weighted Average	344		6		340	125		4	2			1	0.1	6	100	6	100	73	100	6	100	23	100	73	100	100	6	4	100	96	Yes	2	0			0		
Wakool Shire Council	DS	Wakool Rural/Town	81	2004	1	MF	95	550	490			105	70			26	100	26	100	26	100	26	100	26	100	26	100				100	100								
		Barham	101	1994	2	LS	118					190	78	1				26	100	26	100	2	100	2	100	47	100				100	92								
		Moulamein	37	2002	1	MF	43	520	260			70	33			26	100	26	100	26	100	2	100	2	100	26	100				100	100								
		Koraleigh (Raw Water)	7	2004	0.1	-	8	380	142			58	20			26	100	26	100	26	100	2	100	2	100	26	100				100	100								
		Tooleybuc	38	2004	0.3	MF	44	325	135	2		225	81	1		26	100	26	100	26	100	2	100	2	100	26	100				100	100								
	B-Mry	Total/Weighted Average	264		4		308	550	210	2		225	68	1		104	100	130	100	130	100	34	100	34	100	151	100	100	0	0	100	100			4	0		0		
Walcha Council		Walcha	185	1985	5	C	178	125	40	5	3	25	6	0	0.0	205	100	205	100	400	100	2	100	12	100	50	100	100	0	0	100	98			2	0		0		
Walgett Shire Council	NP	Carinda		2007	0.1																							-												
	NP	Rowena		2005	1																							-												
	DS	Lightning Ridge	1500	1999	3	UV	600														1	60	1	100	48	100		-		100	94									
	DS	Walgett	750	1962	2	C	300					1,000	115	5	0.6			3	100	3	100	2	90	2	100	64	100		2		67	100								
	DS	Collarenebri	155	1996	1	MF	62					1,000	98	1	0.5					4	100	1	100	1	100	58	98		4		100	92								
		Total/Weighted Average	2405		5																																			



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Water Utility	Source /type (Bulk Supp lier) <sup>9</sup>	Water Treatment Works <sup>1</sup>  37a	Total Potable Water Produced W11.3 ML 37c	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 2011 NHMRC/NRMMC Australian Drinking Water Guidelines <sup>3, 7</sup>																Water Quality Complaints C9		No. of Samples ÷ Allocation <sup>6</sup> Chemical E. coli		Drinking Water Management	No. WTW Operators	Chlorination System Failure	Major Malfunction of Treatment Processes
								Raw Water		Treated Water		Raw Water		Treated Water		Colour		Turbidity		pH		Physical		Chemical		E. coli		E. coli % Pop'n Compliance 42n											
								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												
								No. 43	/ 1,000 Props	% 44a	% 44b	Yes/No 44c	No. 44d	days 45	days 46																								
Wellington Council	RA	Wellington	893	1993	15	LS	900	100	25	3	2	40	10	4	2.0	52	100	365	100	365	100	12	100	12	100	63	98				100	84							
	RA	Geurie	64	1996	2	LS	65	10	15	3	2	33	10	3	0.3	365	100	365	100	365	100	1	100	1	100	42	100				100	82							
		Total/Weighted Average	957		16		965	100	24	3	2	40	10	4	1.9	417	100	730	100	730	100	13	100	13	100	105	99	100	0	0	100	83	Yes	3	0		0		
Wentworth Shire Council	RA	Buronga/Gol-Gol/Dareton	247	1994	4	LS	557	70	60	1	1	68	27	0	0.2	1	100	11	81	11	10	1	100	1	100	86	100		1		100	97							
	RA	Wentworth	56	1991	1	C	126	70	45	1	1	62	24	0	0.1	1	100	1	100	1	100	1	100	1	100	50	100				100	98							
	RA	Pooncarie	3	1996	0.2	LS	6				1	1	286	145	2	1.5	1	100	1	100	1	100	1	100	1	100	21	100				100	84						
	DS	Total/Weighted Average	305		5		689	70	57	1	1	286	27	2	0.2	3	100	13	84	13	24	3	100	3	100	157	100	100	1	0	100	95	Yes	2	0		0		
Wingecarribee Shire Council	B-NSW	Wingecarribee	4169	2001	40	DAF	4409															14	100	14	100	357	100		163		100	100							
	B-NSW	Bundanoon	1279	1988	10	DAF	1352															3	100	12	100	50	100		59		100	98							
		Medway		1992	8	C																10	100	10	100	67	100		-		91	77							
		Total/Weighted Average	5448		58		5761																27	100	36	100	474	100	100	222	12	100	100	Yes	3	0		0	
Wyong Shire Council		Mardi	15448	1994	160	DF	15555	99	61	7	2	8	3	1	0.3	360	100	360	100	921	100	14	100	14	100	441	100	100	318	5	100	100	Yes	3	0		0		
Yass Valley Council		Yass	885	1989	13	DAF	853	300	117	35	6	495	21	3	0.7	365	95	365	100	365	100	12	95	12	100	99	100	100	70	22	100	100			3	0		0	
Young Shire Council	B-GF	Reticulator		-		-	-															10	100	10	100	49	100	100	-	-	63	52	Yes			0		0	
Total Capacity of 2,740 ML/d						154	WTWs (Note 1)										Total No. of Samples						4,600		4,400		20,200		4,720 water quality complaints										
Total Potable Water Produced of 265,000 ML						85	Chlorinators/aerators (Note 1)										% of Samples Complying						98.4%		99.4%		99.8%		3 per 1,000 properties										
Total Volume Treated to Potable of 258,000 ML						239	Total										LWUs Complying						100%		100%		99%												

- Notes:**
- The total number of water treatment works (WTW) involving at least filtration and disinfection is 154. These include C, DF, DAF, LS, MF and D (Note 2 below). The total number of chlorinators/aerators is 85. These include CH, A, OZ and UV (Note 2 below). Where a LWU has more than one treatment works/chlorinator, the compliance values have been pro-rated on the basis of the number of samples tested at each treatment works/chlorinator and are shown in bold in the final line for that LWU.  
The capacity (37b), water produced (37c), treated volume (38b), number of samples (eg. 42a) and number of water quality complaints (43) shown above are the totals for all treatment works with potable supply for that LWU. The number of days of chlorination system failure (45), and the number of days of major malfunction of treatment processes (46) shown above are the weighted average based on treatment works capacity. Non-potable supplies are not included in totals or compliance. Potable water produced (W11.3) for each WTW has been determined from the potable water produced at each WTW pro-rated by the volume treated to potable (col(38b)) for the WTW divided by the total volume treated to potable for that utility.
  - For "**Type of Treatment Works**" (38a); A = Aerated & Disinfected, C = Conventional Water Treatment, CH = Chlorination Only, DF = Direct Filtration, DAF = Dissolved Air Flotation, LS = Lagoon Sedimentation, MF = Microfiltration, D = Desalination, OZ = Ozonation, UV = Ultra-Violet Disinfection, NIL = No Treatment. As indicated in Note 1 above, water treatment works involving at least filtration and disinfection is limited to C, DF, DAF, LS, MF and D.
  - Physical, Chemical and *E. coli* results are from the NSW Health Drinking Water Monitoring Program and/or from the NSW Performance Monitoring Database.
  - A recent review has found that some LWUs had overstated physical and chemical compliance by reporting the number of analytes rather than the number of samples. Compliance is calculated as a percentage of samples so columns 42g and 42j above have been corrected by using the results provided by the NSW Health Drinking Water Monitoring Program. However, the reporting of additional samples has been accepted for those LWUs that have confirmed that they have undertaken additional sampling to that required by the Drinking Water Program (eg. MidCoast Water and Goldenfields Water). Note that commencing in the 2012-13 financial year, such additional sampling reported by LWUs is only included in Appendix D1 if the testing has been undertaken by a NATA accredited laboratory.
  - The additional Physical, Chemical and *E. coli* results from the NSW Health Drinking Water Monitoring Program have also been included in Tables 5 and 12 on pages 116 and 183 and Figures 15 to 17 on pages 53 to 55. As shown above and in Table 9 on page 169, the number of LWU water treatment works is 154 and the number of chlorinator/aerators is 85 (ie. a total of 239).
  - NSW Health provides Chemical and Microbiological monitoring allocations for each LWU. The sampling reported to NSW Health has been augmented to include sampling reported by LWUs for the NSW Performance Monitoring Database but not included in the Drinking Water Program (44a) and (44b). Columns 44a and 44b show that almost all LWUs have tested 100% of their allocated samples by NSW Health for chemical and *E. coli* water quality.
  - The basis for assessing drinking water quality compliance is set out in section H4.6 on page 348. In summary, a LWU has complied with the guidelines for microbiological water quality (ie. it is shown as "Yes" in Tables 5 & 12) 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) is satisfactory (shown as compliant - 'Yes' in Tables 5 and 12)) if the 95th percentile of results meets the guidelines, and physical (aesthetic) water quality is satisfactory if the mean value of results meets the guideline values (shown as compliant - 'Yes' in Table 12).
  - The total water treatment capacity in regional NSW is 2,740 ML/d (column 37b) and the total potable water produced is 263 GL (column 38b). The total number of water quality complaints is 4,740 and the Statewide median is 3 complaints per 1,000 properties (columns 43).
  - All LWUs have met the physical, chemical and *E. coli* water quality requirements of ADWG (columns 42h, 42j and 42k).
  - 71 LWUs have a Drinking Water Management System (DWMS - column 44c).
  - The total number of fully qualified water treatment operators is 339 (column 44d). Refer also to Appendix I on page 353 and to page 36.
  - For "**Source/type (Bulk Supplier)**"; DS = dual supply, GW = groundwater, GQGW = good quality groundwater, ML = Menindee Lakes (Water NSW), NP = non-potable, RA = river abstraction (Water NSW), UF = unfiltered, B-ACT = bulk purchase (ACTEW), B-Alb = bulk purchase (Albury), B-FR = bulk purchase (Fish River), B-GF = bulk purchase (Goldenfields Water), B-Mrm = bulk purchase (Murrumbidgee Irrigation), B-Mry = bulk purchase (Murray Irrigation), B-RW = bulk purchase (Rous Water), B-NSW = bulk purchase (Water NSW).



Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)	
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	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	range	% Samples	% Samples							
			1	EP 10	3	2	Yes/No 5	Yes/No 6		W18.5 ML 15	W26 ML 16	49	50	51	52	53	54	55	56	57	58	59	60	61	62	70	71	72	68	69	% E4 63	64a	64b	65	67
Albury City Council	100% No	Albury (Kremur St)	1987	40,000	T	CEA, BNR	Y	Y	L	2,317		15	62	20	100	15	100	5	100	10	100	1	100	NL	100	6.5 - 8.5	100	62	3			Yes	3	13	0
		Albury (Waterview)	1999	26,500	AT	CEA, BNR	Y	Y	L	2,133		12	100	15	100	15	100	5	100	2	85	1	100	300	100	6.5 - 8.5	100	85	3			Yes	3	13	0
		Hume Weir	1980	500	T	IEA			R	13		20	100	30	100	NL	100		100	10	100	NL	100	NL	100	100	100	0				3	4	0	
		Lara Lakes	1990	200	S	A			L	7		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	0				3	12	0	
		Total/Weighted Average		67,200					L R	4,470	2,468	15	80	20	100	15	100	5	100	10	93	1	100	NL	100	6.5 - 8.5	100	73	6	0.3	73			42	0
Armidale Dumaresq Council		Armidale	1989	22,000	T	TF			L R	2,192	1,039	20	100	30	100	NL	100		100	10	100	NL	100	NL	100	100	100	8	1.0	100	Yes	4	12	0	
Ballina Shire Council	100%	Ballina	2014	37,000	AT	MBR	Y	Y	O	843		20	100	15	100	NL	100		100	10	100	NL	100	300	100	NL	100	100	9			Yes	4	26	0
	100%	Lennox Head	2011	28,000	AS	IEA	Y	Y	O	1,461		10	60	15	73	NL	100		100	5	100	NL	100	200	100	NL	100	60	9			Yes	4	26	-
	100%	Alstonville	1986	8,000	AS	IEA	Y	Y	R	478		10	100	15	73	10	100		100	5	100	0.5	81	200	100	NL	100	73	9			Yes	4	13	0
	100%	Wardell	1999	1,750	AS	IEA	Y		R	170		15	100	20	77	NL	100		100	10	100	NL	100	200	100	NL	100	77	0			Yes	4	26	1
	Total/Weighted Average		74,750					R O	2,952	273	10	80	15	81	NL	100		100	5	100	NL	97	200	100	NL	100	100	75	27	1.9	75			91	1
Balranald Council	No	Balranald	1999	2,000	S	A, AN			L	107		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	0				1	-	0	
	No	Euston	1995	1,100	S	A, AN			L	73		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	0				0	-	0	
	Total/Weighted Average		3,100						L	180	131	NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	0	0	100			0	0	
Bathurst Regional Council		Bathurst	1998	55,000	T	IEA, BNR	Y	Y		3,942	3,942	20	100	25	100	15	100		100	10	100	1	100	200	100	6.5 - 8.5	100	100	0	0.0	100	Yes	4	52	0
Bega Valley Shire Council	No	Wolumla	2007	800	T	MBR	Y			20		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	NL	100	100	1				1	-	0
	No	Cobargo	2006	800	T	MBR	Y		R	22		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	NL	100	100	2				1	-	0
	No	Candelo	2007	800	T	MBR	Y		R	18		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	NL	100	100	0				1	-	0
	No	Kalaru	2008	800	T	MBR	Y			13		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	NL	100	100	-				1	-	0
		Tura Beach	2006	4,500	S	CEA	Y		L	204		10	100	20	83	10	100	2	100	2	100	NL	100	NL	100	6.5 - 8.5	100	83	0			Yes	1	12	1
		Eden	1998	8,000	S	IEA	Y		O	327		10	100	20	100	10	100	2	100	2	100	NL	100	NL	100	6.5 - 8.5	100	100	5			Yes	1	12	0
		Tathra	2004	6,200	T	CEA	Y	Y		142		10	100	15	100	10	100	2	100	2	100	1	100	100	100	6.5 - 8.5	100	100	3			Yes	1	12	0
		Bega	2008	8,000	T	IEA	Y	Y	R	401		10	100	10	100	10	100	2	100	2	100	0.5	100	200	100	6.5 - 8.5	100	100	0			Yes	1	12	3
		Bermagui	2008	6,000	AS	CEA	Y		O	196		10	100	15	100	10	100	2	100	2	100	8	100	200	100	6.5 - 8.5	100	100	1			Yes	1	12	0
		Merimbula	2008	15,500	AS	IEA	Y		L O	762		10	100	20	100	10	100	2	100	2	100	13	100	200	83	6.5 - 8.5	100	83	4			Yes	1	12	0
	Total/Weighted Average		51,400						L R O	2,105	626	10	100	20	98	10	100	2	100	2	100	13	100	200	94	6.5 - 8.5	100	92	16	1.3	92			72	4
Bellingen Shire Council	100%	Urunga	1989	6,650	T	TF	Y	Y	R	298		10	100	15	100	10	100	2	100	2	100	0.5	100	200	100	6.5 - 8.5	100	100	1				3	26	0
		Bellingen	1994	5,000	T	IEA	Y	Y	R	241		10	100	15	100	10	100	2	100	2	100	0.5	100	200	100	6.5 - 8.5	100	100	1				2	26	1
		Dorrigo	1970	1,500	T	TF			R	78		20	100	30	100	NL	100		100	10	100	NL	100	NL	100	100	100	0				1	26	0	
		Total/Weighted Average		13,150					R	617		10	100	15	100	10	100	2	100	2	100	0.5	100	200	100	6.5 - 8.5	100	100	2	0.7	100			78	1
Berrigan Shire Council	No	Tocumwal	1944	4,000	T	TF				230		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	0				2	2	0	
	No	Finley	1967	3,200	T	TF				220		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	7				2	2	2	
	No	Barooga	1989	3,000	S	A			L	90		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	0				2	2	0	
	No	Berrigan	1968	1,500	T	TF				90		NL	100	NL	100	NL	100		100	NL	100	NL	100	NL	100	100	100	5			</				

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Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																				Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	No.	No./ 1000 props																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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			1	EP 10	3	2	5	6		W18.5 ML 15	W26 ML 16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													



Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)	
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	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	range	% Samples	% Samples	68						69
			1	EP 10	3	2	Yes/No 5	Yes/No 6		W18.5 ML 15	W26 ML 16	49	50	51	52	53	54	55	56	57	58	59	60	61	62	70	71	72	68	69	63	64a	64b	65	67
Eurobodalla Shire Council	100%	Batemans Bay	2012	21,000	T	CEA	Y		O	1,578		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	14			Yes	3	12	0
	100%	Narooma	1984	12,000	T	CEA	Y		O	582		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	3			Yes	3	12	0
	100%	Moruya	2014	8,000	T	CEA	Y	Y	R	295		20	100	30	100	15	100	NL	100	10	100	1	100	NL	100	NL	100	100	3			Yes	3	12	0
	100%	Tomakin	1984	8,000	T	CEA	Y		O	510		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	1			Yes	3	12	0
	100%	Tuross Heads	1984	4,000	T	IEA			L	174		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	1			Yes	3	12	4
		Total/Weighted Average		53,000					L R O	3,139	216	20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	22	1.2	100			60	4
Forbes Shire Council		Forbes	2005	12,000	T	IEA	Y	Y	L R	684	10	10	100	15	100	10	100	2	100	10	100	0.3	75	200	100	6.8 - 8.5	100	75	2	0.6	75	Yes	3	12	0
Gilgandra Shire Council	No	Gilgandra	2009	3,000	AT	TF				257	257	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0	0	100	Yes	3	4	0
Glen Innes Severn Shire Council	No	Deepwater	1987	500	S	AN			L	13		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				0	12	0
		Glen Innes	2007	8,000	AT	IEA	Y	Y	L R	732		10	100	15	100	10	100	2	100	2	100	0.3	100	200	100	6.5 - 8.5	100	100	0			Yes	4	26	0
		Total/Weighted Average		8,500					L R	745	89	10	100	15	100	10	100	2	100	2	100	0.3	100	200	100	6.5 - 8.5	100	100	0	0.0	100			38	0
Gosford City Council	No	Kincumber	1983	180,000	AS	C			O	11,422		30	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	6.5 - 8.5		100	114			Yes	4	61	0
		Woy Woy	1989	50,000	AS	CEA			O	4,154		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	100	100	19				4	61	0
		Total/Weighted Average		230,000					O	15,576	32	30	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	6.5 - 8.5	27	100	133	1.9	100			122	0
Goulburn Mulwaree Council	100%	Goulburn	2007	30,000	T	TF		Y	R	1,847		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	20			Yes	4	12	0
	No	Marulan	2002	1,100	S	A				0		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				2	0	0
		Total/Weighted Average		31,100					R	1,847	1,593	20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	20	1.9	100			12	0
Greater Hume Shire Council	100%	Holbrook	1969	1,600	T	TF			R	162		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	4	4	0
	No	Jindera	2005	1,200	T	A			L	87		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				4	-	0
	100%	Henty	1971	1,000	T	IEA	Y		L	64		20	100	30	100	20	100	NL	100	10	100	10	100	NL	100	NL	100	100	0			Yes	4	4	0
	100%	Culcairn	1996	1,200	T	IEA	Y		L	89		20	100	30	100	20	100	NL	100	10	100	10	100	NL	100	NL	100	100	0			Yes	4	4	0
	100%	Walla Walla	1981	1,000	T	IEA	Y		R	44		20	100	30	100	20	100	NL	100	10	100	10	100	NL	100	NL	100	100	0			Yes	4	4	0
	No	Burrumbuttock	1990	100	T	CED			L	2		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				4	-	0
		Total/Weighted Average		6,100					L R	448	57	20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0	0.0	100			16	0
Griffith City Council	100%	Griffith	2012	37,500	AT	MBR	Y	Y	L R	1,816		10	100	15	100	NL	100	NL	100	2	100	NL	100	200	100	NL	100	100	4			Yes	3	12	0
	100%	Yenda	1981	34,000	S	AL			R	71		50	100	50	83	NL	100	NL	100	NL	100	NL	100	600	83	5.5 - 9.5	100	83	2			Yes	0	6	0
	No	Bilbul	1990	310	P	A			L	10		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				2	-	0
		Total/Weighted Average		71,810					L R	1,897		10	100	15	99	NL	100	NL	100	2	100	NL	100	200	99	NL	100	99	6	0.9	99			18	0
Gundagai Shire Council	No	Gundagai	1932	3,500	S	TF				234	234	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0	0.0	100	Yes	2	10	2
Gunnedah Shire Council	No	Gunnedah	1969	11,000	S	TF				682		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	2			Yes	1	12	0
		Curlewis	1990	1,650	nil	A						NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				3	0	0
		Total/Weighted Average		12,650						682	580	20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	2	0.5	100			12	0
Guyra Shire Council	No	Guyra	2001	3,300	AS	CEA	Y	Y	R	192		15	100	20	100	15	100	5	100	10	100	1	10												



Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)		
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	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	range	% Samples	% Samples	68						69	E4 %
			1	EP 10	3	2	Yes/No 5	Yes/No 6		W18.5 ML 15	W26 ML 16	49	50	51	52	53	54	55	56	57	58	59	60	61	62	70	71	72			63	64a	64b	65	67	
Inverell Shire Council	No	Inverell	1986	12,000	AS	IEA			R	1,090		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	1	14	0	
		Ashford	1970	100	AS	IEA			R	35		20	100	30	80	NL	100	NL	100	10	100	NL	100	NL	100	6.5 - 8.5	100	80	0			Yes	1	14	0	
		Delungra	1970	500	AS	IEA			R	20		20	100	30	80	NL	100	NL	100	10	100	NL	100	NL	100	6.5 - 8.5	100	80	0			Yes	1	14	0	
		Gilgai	1980	500	S	A			R	30		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				1	-	0	
		Total/Weighted Average		13,100					R	1,175		20	100	30	99	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	99	0	0.0	99			42	0	
Jerilderie Shire Council	100%	Jerilderie	1996	2,000	S	A			L	81	50	20	0	30	0		100	NL	100	10	100		100		100	NL	100	0	0	0.0	0	Yes	2	4	0	
Junee Shire Council	100%	Junee	1992	7,000	T	IEA, TF			R	338	100	30	100	30	100	NL	100	NL	100	10	100	NL	100	600	100	5.5 - 9.5	100	100	0	0.0	100			2	4	0
Kempsey Shire Council	100%	Kempsey West	2011	12,000	T	TF		Y	L R	632		15	100	20	50	15	85	5	100	10	100	1	69	600	69	6.5 - 8.5	81	50	7			Yes	2	26	0	
		South West Rocks	2010	12,000	AT	IEA	Y	Y	L	537		10	100	15	100	10	100	3	100	2	100	3	100	NL	100	6.5 - 8.5	100	100	6			Yes	2	12	0	
		Kempsey South	2014	5,400	T	IEA, TF			R	275		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	3			Yes	2	26	0	
		Crescent Head	2012	4,000	T	IEA	Y	Y	L O	119		15	100	20	100	15	100	5	100	10	100	1	100	200	100	6.5 - 8.5	100	100	0			Yes	2	26	0	
		Smithtown/Gladstone	1983	2,000	T	IEA			R	78		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	1	12	0	
		Frederickton	1980	1,000	T	IEA			L R O	68		20	100	30	42	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	42	0			Yes	2	12	0	
		Hat Head	2011	2,500	T	IEA	Y	Y	L	40		10	100	15	100	10	100	2	100	2	100	0.5	88	200	100	6.5 - 8.5 -		88	0			Yes	2	26	0	
		Total/Weighted Average		38,900					L R O	1,749	110	15	100	20	80	15	95	5	100	10	100	1	89	600	89	6.5 - 8.5	91	79	16	1.6	79			140	0	
Kyogle Council	Reuse	Kyogle	2010	3,200	AS	A, TF, RC	Y	Y	R	245		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	3					2	12	0
	100%	Bonalbo	2002	500	AS	IEA	Y		L R	26		20	100	30	50	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	50	0					2	12	0
	100%	Woodenbong	2007	662	AS	IEA	Y		R	20		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0				1	12	0	
		Total/Weighted Average		4,362					L R	291	213	NL	100	NL	96	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	96	3	1.8	96			36	0	
Lachlan Shire Council	No	Condobolin	1982	4,000	AS	IEA, TF			L R	292		20	100	30	67	40	100	NL	100	10	100	10	100	1500	100	6.5 - 8.5	67	67	2			Yes	3	12	0	
		Tottenham	1979	1,000	AS	IEA	Y		L	51		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0					2	-	0
		Lake Cargelligo	1981	2,000	AS	IEA	Y		L	141		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0					3	-	0
		Total/Weighted Average		7,000					L R	484	116	20	100	30	80	40	100	NL	100	10	100	10	100	1500	100	6.5 - 8.5	80	80	2	0.9	80			12	0	
Leeton Shire Council	No	Leeton	1999	27,000	T	IEA, TF		Y	L	574		70	100	70	100	NL	100	NL	100	NL	100	NL	100	NL	100	5.5 - 9.5	100	100	0			Yes	4	6	0	
		Yanco	1980	1,000	T	IEA			L R	62		30	100	40	100	NL	100	NL	100	15	100	NL	100	600	100	5.5 - 9.5	100	100	0					3	4	0
		Whitton	2000	500	S	A				16		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0					3	-	0
		Total/Weighted Average		28,500					L R	652	13	70	100	70	100	NL	100	NL	100	NL	100	NL	100	NL	100	5.5 - 9.5	100	100	0	0.0	100			10	0	
Lismore City Council	100%	Lismore East	2004	30,500	AT	IEA	Y	Y	R	2,422		15	100	20	100	15	100	5	100	10	100	1	100	NL	100	6.5 - 8.5	100	100	1			Yes	4	52	0	
		Lismore South	2004	22,000	T	A, TF	Y	Y	R	1,243		15	100	20	100	15	100	5	100	10	100	1	38	NL	100	NL	100	38	7			Yes	2	52	0	
		Nimbin	1993	600	T	IEA	Y	Y	R	78		20	100	30	100	15	100	5	100	10	100	1	100	NL	100	NL	100	100	0			Yes	2	12	0	
		Total/Weighted Average		53,100					R	3,743	34	15	100	20	100	15	100	5	100	10	100	1	79	NL	100	6.5 - 8.5	100	79	8	0.6	79			116	0	
Lithgow City Council	100%	Lithgow	2012	23,000	T	IEA	Y	Y	R	1,329		10	100	15	100	10	100	2	100	10	100	0.5	75	200	100	6.5 - 8.5	100	75	1			Yes	4	12	0	
		Portland	1990	2,300	S	TF			R	235		30	100	50	100	35	-	NL		100	10	-		600	-	6.5 - 8.5 -		100	0			Yes	2	12	0	
		Wallerawang	2012	3,300	T	IEA	Y	Y	R	130		10	-		15	-		10	-		10	-		0.5	-	6.5 - 8.5 -		-	0			Yes	0	-	0	
		Total/Weighted Average		28,600					R	1,694		10	92	15	92	10	78	2	92	10	78	0.5	59	200	78	6.5 - 8.5	78	73	1	0.1	73			24	0	
Liverpool Plains Shire Council	No	Quirindi	1984	7,000	AS	IEA, TF			R	161		20	100	30	75	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	75	0			Yes	4	27	0	
		Werris Creek	1969	3,200	AS	TF			R	142		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	4	27	0	
		Total/Weighted Average		10,200					R	303		20	100	30	87	NL	100	NL	100	10																

Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	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	range	% Samples	% Samples	68						69																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)			
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	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	range	% Samples	% Samples	68						69	E4 % 63	64a
			1	EP 10	3	2	Yes/No 5	Yes/No 6		W18.5 ML 15	W26 ML 16	49	50	51	52	53	54	55	56	57	58	59	60	61	62	70	71	72									
Palerang Council	100%	Braidwood	2010	2,000	AT	IEA	Y	Y	R	148		10	100	15	86	10	100	2	79	2	100	0.5	86	200	100	6.5 - 8.5	100	79	0			Yes	2	13	0		
	100%	Bungendore	2012	5,000	AT	IEA	Y	Y	R	206		10	100	15	77	10	100	10	100	10	100	0.5	69	200	100	6.5 - 8.5	85	69	10			Yes	2	13	0		
		Captains Flat	1984	500	T	IEA	Y		R	46		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	1	4	0		
		Total/Weighted Average		7,500					R	400	76	10	100	15	83	10	100	10	92	10	100	0.5	79	200	100	6.5 - 8.5	92	76	10	4.8	76			30	0		
Parkes Shire Council	100%	Parkes	1996	14,500	AS	TF		Y	R	1,040		30	100	50	71	40	100	NL	100	10	100	10	100	NL	100	6.5 - 8.5	-	71	0			Yes	4	12	0		
	No	Tullamore	2009	370	S	A			L	12		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				0	-	0		
	No	Trundle	2011	670	S	A				-		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				0	-	0		
	No	Peak Hill	1983	2,000	AS	TF			L	110		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				0	-	0		
		Total/Weighted Average		17,540					L R	1,162	173	30	100	50	74	40	100	NL	100	10	100	10	100	NL	100	6.5 - 8.5	10	74	0	0.0	74			12	0		
Queanbeyan City Council	No	Queanbeyan	1986	34,500	AS	CEA, TF	Y	Y	L R	3,693	37	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0	0.0	100	Yes	3	365	0		
Richmond Valley Council	100%	Casino	1986	13,300	T	IEA, TF	Y		R	1,354		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	1	26	0		
		Evans Head	2013	5,500	T	IEA, TF	Y	Y	R	463		10	100	15	100	10	100	2	100	2	100	0.3	100	200	100	6.5 - 8.5	100	100	0			Yes	1	26	1		
	100%	Coraki	2011	1,200	T	TF			R	107		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0			Yes	1	13	0		
		Rileys Hill	1999	200	T	CEA	Y	Y	R	6		15	100	20	100	15	100	5	100	10	100	1	100	200	100	6.5 - 8.5	100	100	0			Yes	1	13	0		
		Total/Weighted Average		20,200					R	1,930	425	20	100	30	100	NL	100	NL	100	10	100	10	100	NL	100	NL	100	100	0	0.0	100			78	1		
Shoalhaven City Council	100%	Bendalong	2008	4,600	T	IEA	Y	Y	R	98		10	100	20	100	10	100	2	100	2	100	10	100	200	100	6.5 - 8.5	100	100	0				1	12	0		
		Nowra	1989	21,000	AS	CEA, TF	Y		R	1,852		40	100	40	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	1			Yes	1	12	0		
		St Georges Basin	1990	8,000	T	IEA	Y		O	1,166		10	100	15	100	10	100	2	100	2	100	NL	100	200	100	6.5 - 8.5	100	100	0			Yes	1	12	0		
	100%	Vincentia	2010	14,000	T	IEA	Y	Y	O	564		10	100	15	100	10	100	2	100	2	100	NL	100	200	100	6.5 - 8.5	100	100	0			Yes	1	12	0		
		Bomaderry	1990	12,500	AS	TF	Y		R	706		20	100	40	50	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	50	0		Yes	1	12	0		
		Milton Ulladulla	2006	28,000	T	IEA	Y		O	1,132		15	100	20	100	NL	100	NL	100	2	100	NL	100	200	100	NL	100	100	0			Yes	1	12	0		
		Culburra	2005	10,500	T	IEA	Y		O	632		10	100	15	100	10	100	2	100	2	100	NL	100	200	100	6.5 - 8.5	100	100	2			Yes	1	12	0		
	100%	Sussex Inlet	1990	8,000	T	IEA	Y		O	463		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	4			Yes	1	12	0		
		Callala	2000	6,000	T	IEA	Y	Y	O	227		10	100	15	100	10	100	2	100	2	100	NL	100	200	100	6.5 - 8.5	100	100	0			Yes	1	12	0		
		Conjola	2008	2,700	T	IEA	Y	Y	R	93		10	100	20	100	10	100	2	100	2	100	10	100	200	100	6.5 - 8.5	100	100	0			Yes	1	12	0		
	100%	Shoalhaven Heads	2012	8,000	T	IEA	Y	Y	R	232		10	100	15	100	10	100	2	100	2	100	NL	100	200	100	6.5 - 8.5	100	100	0			Yes	1	12	0		
		Berry	2006	3,000	T	IEA	Y	Y	R	229		20	100	30	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	0			Yes	1	12	0		
		Kangaroo Valley	2013	1,410	T	MBR	Y	Y	O	26		10	100	15	100	10	100	2	100	2	100	1	100	200	100	NL	100	100	0			Yes	2	10	0		
		Total/Weighted Average		127,710					R O	7,420	2,352	40	100	40	95	NL	100	NL	100	10	100	10	100	NL	100	NL	100	95	7	0.2	95			154	0		
Singleton Shire Council		Singleton	1988	20,000	AS	IEA	Y	Y	R	1,066	352	30	100	30	100	25	100	NL	100	15	100	15	100	NL	100	NL	100	100	0	0.0	100	Yes	4	12	0		
Snowy River Shire Council		Jindabyne	2012	8,000	AT	IEA	Y	Y	R	430		10	100	15	100	10	100	2	100	2	100	0.3	100	200	100	6.5 - 8.5	77	77	0			Yes	2	18	0		
		Berridale	2011	2,000	AS	IEA	Y		L R	101		10	100	15	100	10	86	1	100	2	100	9	100	100	100	6.5 - 8.5	100	86	0			Yes	1	14	0		
	No	Adaminaby	1961	750	T	TF	Y		R	17		20	100	30	85	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	85									



Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance															Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)						
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result						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	range	% Samples	% Samples						68	69	E4 %	64a	64b	days
			1	EP 10	3	2	Yes/No 5	Yes/No 6		W18.5 ML 15	W26 ML 16	49	50	51	52	53	54	55	56	57	58	59	60	61	62	70	71	72			63			65	67				
Tweed Shire Council		Banora Point	2012	75,000	AT	BNR	Y	Y	R	3,649		15	100	20	87	10	100	NL		100	10	100	5	100	10000	100	6.5 - 8.5	69	69	16			Yes	3	52	0			
		Murwillumbah	2007	16,000	AT	IEA, TF	Y	Y	R	1,062		10	100	15	100	10	100		2	100	5	100	0.5	100	200	100	6.5 - 8.5	100	100	9			Yes	2	26	0			
		Kingscliff	2008	25,000	AT	BNR	Y	Y	R	977		10	100	15	100	5	100		2	100	5	100	0.5	100	100	100	6.5 - 8.5	100	100	4			Yes	3	26	0			
		Hastings Point	2005	16,000	T	IEA	Y	Y	L	835		10	100	15	100	10	100	NL		100	5	100	1	100	NL		6.5 - 8.5	100	100	5			Yes	3	26	0			
		Tumbulgum	2000	700	AT	IEA	Y	Y	R	38		15	100	20	100	15	100		5	100	NL		1	100	200	100	6.5 - 8.5	100	100	0			Yes	3	26	0			
		Tyalgum	1990	500	AS	IEA	Y	Y		21		25	100	50	81	NL		100	NL		10	100	NL		100	NL	100		81	0		Yes	2	12	0				
		Uki	2004	600	AS	CEA	Y	Y		17		15	100	25	54	30	100		5	100	10	100	6	100	NL		6.5 - 8.5	42	42	1			Yes	2	12	0			
		Burringbar/Mooball	2013	750	T	IEA	Y	Y	R	20		10	100	15	100	10	82		2	82	5	100	0.5	86	200	100	6.8 - 8.5	100	82	4			Yes	3	26	0			
		Total/Weighted Average		134,550					L R	6,619	604	15	100	20	93	10	100	NL		100	10	100	5	100	10000	100	6.5 - 8.5	83	83	39	1.3	83			206	0			
Upper Hunter Shire Council	100%	Scone	1988	7,000	AS	IEA, TF			L R	791		20	100	30	100	NL		100	NL		10	100	NL		100	NL		100	100	0			Yes	2	12	0			
	100% No	Aberdeen	1983	4,000	AS	IEA			L R	184		20	100	30	100	NL		100	NL		10	100	NL		100	NL		100	100	1			Yes	3	12	0			
		Merriwa	1970	1,600	S	TF			L R	50		20	100	30	100	NL		100	NL		10	100	NL		100	NL		100	100	0			Yes	2	4	0			
		Murrurundi	1979	1,000	AS	IEA			R	67		NL		100	NL	100	NL		100	NL		100	NL		100	NL		100	100	0				1	0	0			
		Total/Weighted Average		13,600					L R	1,092	11	20	100	30	100	NL		100	NL		10	100	NL		100	NL		100	100	1	0.2	100			28	0			
Upper Lachlan Council	100% No	Crookwell	1996	4,200	T	IEA, TF	Y	Y	R	532		20	100	30	100	15	100		5	100	10	100	1	100	200	100	6.5 - 8.5	100	100	0			Yes	2	12	0			
		Taralga	2011	400	AT	IEA	Y	Y		60		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				2	12	0		
		Gunning	1976	1,000	T	IEA	Y		R	60		20	100	30	100	NL		100	NL		10	100	NL		100	NL		100	100	0			Yes	1	12	0			
		Total/Weighted Average		5,600					R	652	60	20	100	30	100	15	100		5	100	10	100	1	100	200	100	6.5 - 8.5	100	100	0	0.0	100			36	0			
Uralla Shire Council		Uralla	1994	3,960	AS	CEA	Y	Y	R	123		15	100	20	100	10	100		1	54	10	100	1	100	200	100	6.5 - 8.5	100	54	0	0.0	54	Yes	2	12	0			
Urana Shire Council	No	Urana	1996	754	S	A	Y	Y	L	55		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				2	51	0		
	No	Oaklands	1996	520	S	A	Y	Y		35		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				2	51	0		
		Total/Weighted Average		1,274					L	90		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0	0.0	100			102	0		
Wagga Wagga City Council	100% No	Wagga (Narrung St)	2010	72,917	T	CEA, IEA	Y	Y		3,910		10	100	15	100	10	100		2	100	2	100	0.3	100	NL		100	NL		100	100	15			Yes	4	12	0	
		Wagga (Koorinal)	2010	18,750	T	IEA	Y	Y		1,388		10	100	15	100	10	100		2	100	2	100	0.3	100	NL		100	NL		100	100	7			Yes	4	12	0	
		Collingullie	2007	250	S	A			L	9		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				3	0	0		
		Forest Hill	1974	6,000	T	IEA, AL				225		20	100	30	100	NL		100	NL		10	100	NL		100	NL		100	NL		100	100	0			Yes	3	4	0
		Uranquinty	1984	1,000	S	A			L	137		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				3	0	0		
		Tarcutta	1988	500	S	A			L	54		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				3	0	0		
		Total/Weighted Average		99,417					L	5,723	5,523	10	100	15	100	10	100		2	100	2	100	0.3	100	NL		100	NL		100	100	22	0.8	100			28	0	
Wakool Shire Council	No	Barham	1967	1,600	S	A, TF			L	95		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				1	-	0		
	No	Moulamein	1967	700	AS	IEA	Y	Y	L	20		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				0	-	0		
	No	Wakool	2013	-	P	A				-		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	-				0	-	-		
	No	Murray Downs	2005	260	T	BNR		Y	L	81		NL		100	NL		100	NL		100	NL		100	NL		100	NL		100	100	0				1	-	0		
	No	Tooleybuc	1987	500	P	A	Y	Y	L	146		NL		100	NL		100	NL		100	NL		100	NL		100	NL		1										



Appendix D2: 2013-14 sewage treatment performance

Water Utility	Licence Limits <sup>5</sup>	Sewage Treatment Works <sup>1,6</sup>	Year built or Augmented	Capacity	Standard of Treatment <sup>3</sup>	Type of Treatment Works <sup>4</sup>	Nitrogen Removal	Phosphorus Removal	Effluent Discharge <sup>3</sup>	Volume of Sewage Receiving Treatment	Volume of Effluent Recycled	90 Percentile Licence Limits <sup>5</sup> and EPA Licence Compliance																Odour Complaints		% Sge Treated that was compliant	Pollution Incident Response Management Plan <sup>7</sup>	No. of STW Operators	Sampling Days	Major Malfunction (Treatment Processes)					
												BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		E.coli		pH		Overall Result	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	range	% Samples	% Samples	68						69	E4 %	64a	64b	days
			1	EP 10	3	2	Yes/No 5	Yes/No 6		W18.5 ML 15	W26 ML 16	49	50	51	52	53	54	55	56	57	58	59	60	61	62	70	71	72			63	64a	64b	65	67				
Wentworth Shire Council	100%	Buronga Gol Gol	1994	5,000	T	A			L	180		50	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	5.5 - 9.5	100	100	7			Yes	0	4	0				
	100%	Wentworth	1964	2,000	AT	TF			L	85		30	100	45	100	NL	100	NL	100	10	100	NL	100	200	100	5.5 - 9.5	100	100	0			Yes	4	4	0				
	100%	Dareton	1969	2,000	AT	TF			L	36		30	100	45	100	NL	100	NL	100	10	100	NL	100	600	-	5.5 - 9.5	100	100	0			Yes	0	4	0				
	No	Namatjira	1988	1,200	T	A			L	25		NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	NL	100	100	0				0	-	0				
	100%	Wentworth (East)	1988	1,200	T	A			L	7		50	100	50	100	NL	100	NL	100	10	100	NL	100	200	100	5.5 - 9.5	100	100	-			Yes	4	4	-				
		Total/Weighted Average			11,400					L	333	3	50	100	50	100	NL	100	NL	100	10	100	NL	100	NL	89	5.5 - 9.5	100	100	7	4.4	100			16	0			
Wingecarribee Shire Council	100%	Mittagong	2002	1,400	AT	IEA	Y	Y	L R	950		10	100	15	100	10	100	2	100	10	100	0.3	100	NL	100	6.5 - 8.5	100	100	5			Yes	2	26	-				
		Bowral	2008	14,600	AT	IEA	Y	Y	R	1,293		10	100	15	100	10	100	2	100	5	100	0.3	100	200	100	6.5 - 8.5	100	100	9			Yes	2	26	0				
		Moss Vale	1995	9,000	AT	IEA	Y	Y	R	882		20	100	30	100	15	100	2	100	NL	100	1	100	NL	100	6.5 - 8.5	100	100	5			Yes	2	26	0				
		Bundanoon	2010	5,400	AT	IEA	Y	Y	L R	210		10	100	15	100	10	100	2	100	10	100	0.3	100	NL	100	6.5 - 8.5	100	100	3			Yes	2	26	0				
		Berrima	1990	2,000	T	IEA	Y	Y	R	78		20	100	30	100	15	100	2	100	NL	100	1	100	NL	100	6.5 - 8.5	100	100	0			Yes	2	13	0				
		Robertson	2013	2,000	AT	MBR	Y	Y		40		10	100	10	100	10	100	1	100	2	100	0.3	100	NL	100	6.5 - 8.5	100	100	7			Yes	2	0	0				
		Total/Weighted Average			34,400					L R	3,453	124	10	100	15	100	10	100	2	100	5	100	0.3	100	200	100	6.5 - 8.5	100	100	29	1.9	100			117	0			
Wyong Shire Council		Bateau Bay	1989	58,000	S	IEA, TF			O	2,893		NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	19			Yes	4	30	0				
		Wyong South	1988	48,000	S	IEA			O	4,658		NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	13				4	30	0				
		Charmhaven	1989	40,000	S	IEA			O	3,240		NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	22				2	30	0				
		Toukley	1973	41,500	S	TF			L O	2,744		NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	17			Yes	4	30	0				
		Gwandalan	1989	12,000	S	IEA			O	380		NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	7				2	30	0				
		Manning Park	1987	12,000	S	IEA			O	927		NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	4				2	30	0				
		Total/Weighted Average			211,500					L O	14,842	962	NL	100	50	100	NL	100	NL	100	10	100	NL	100	NL	100	NL	100	100	82	1.4	100			180	0			
Yass Valley Council		Yass	2010	6,800	AS	IEA		Y	R	472		10	100	15	100	10	100	2	100	2	100	0.3	100	200	67	6.5 - 8.5	100	67	0	0	67	Yes	3	12	0				
Young Shire Council		Young	1970	7,000	S	TF			L R	42		10	75	15	25	10	-	2	-	2	100	0.5	-	200	-	6.5 - 8.5	-	25	6			Yes	4	4	0				
		Young (New)	2013	12,000	T	IEA	Y	Y	L R	468		10	100	15	100	10	100	2	100	2	100	0.5	100	200	100	6.5 - 8.5	100	100	0				4	8	0				
		Total/Weighted Average			19,000					L R	510	109	10	98	15	94	10	92	2	92	2	100	0.5	92	200	92	6.5 - 8.5	92	94	6	1.6	94			12	0			
Total Capacity 2,700,000										Total Volume		159,000	43,000	No. of Samples Complying and % of Samples Complying																Total No. of Sampling Days 4,024									
														3,908		3,792		3,907		3,976		4,000		3,890		3,920		3,652		3,501		764 Odour Complaints (1 per 1,000 props)							
														97.1%		94.2%		97.1%		98.8%		99.4%		96.6%		97.4%		90.7%		87.0%									

- Notes:**
- 1. Where a LWU has more than one treatment works, the reported Licence Compliance values have been pro-rated on the basis of the number of sampling days at each treatment works and are shown in **bold** in the final line for that LWU. Totals are also shown in **bold** for capacity (10), sewage volume treated (15), volume of effluent recycled (16), sampling days (65) and odour complaints (68). The days of major malfunction of treatment processes (67) are shown in bold and are the weighted average based on treatment works capacity.
  - 2. For each licence limit, the value shown in the final line for each water utility is that required to be met for at least 50% of the utility's total licenced treatment works capacity.
  - 3. For **"Standard of Treatment"** (3); P = Primary; S = Secondary; AS = Advanced Secondary; T = Tertiary; AT = Advanced Tertiary. For **"Effluent Discharge"**; L = Land, O = Ocean, R = River.
  - 4. For **"Type of Treatment Works"** (2); A= Oxidation Pond, AL = Aerated Lagoons, AN = Anaerobic Pond, C = Conventional Activated Sludge, CEA = Continuous Extended Aeration (Activated Sludge), IEA = Intermittent Extended Aeration (Activated Sludge), TF = Trickling Filter, BNR = Biological Nutrient Removal.
  - 5. 90 Percentile Licence Limits have been reported at columns 49, 51, 53, 55, 57, 59, 61 and 70 unless noted as 100 percentile limits (100%) or no limits (NL).
  - 6. The total sewage treatment capacity in regional NSW is 2,700,000 EP (column 10), the volume of sewage treated is 159 GL (column 15) and the volume of effluent recycled is 43 GL (column 16). The total volume of sewage collected is 163,000 ML (column 32 of Table 15 on page 192). The Statewide medians for % of sewage treated that was compliant (E4) and odour complaints per 1,000 properties are 100% and 1 respectively. Refer also to Tables 15 and 17 on pages 192 and 198.
  - 7. Pollution Incident Response Management Plan - PIRMP - the sewage treatment works with a PIRMP available on the utility's website is shown in column 64a.
  - 8. The number of operators shown in column 64b is on the basis of LWU reporting. Eg. 4\* indicates the LWU has at least 4 wastewater treatment operators.

Appendix D3: 2013-14 Aboriginal Communities drinking water quality results

Community [DOH Town reference shown in square brackets]	Population  (1)	Supply System  (2)	Water Utility  (3)	Compliance with 2011 NHMRC/NRMMC Australian Drinking Water Guidelines									Drinking Water Quality Plan Prepared? (Yes/No)  (13)
				Physical			Chemical			Microbiological			
				Compliance Achieved?  (4)	% of Samples Compliant  (5)	No. of Samples  (6)	Compliance Achieved?  (7)	% of Samples Compliant  (8)	No. of Samples  (9)	Compliance Achieved?  (10)	% of Samples Compliant  (11)	No. of Samples  (12)	
Communities which provide their own drinking water supply													
Baryulgil Square	50	Baryulgil Community	Baryulgil	Yes	80	2	Yes	100	2	No	91	11	Yes
Malabugilmah	50	Malabugilmah Community	Malabugilmah	Yes	90	2	Yes	100	2	Yes	100	10	Yes
Bellbrook Community	150	Bellbrook Community	Bellbrook	Yes	100	1	Yes	100	1	Yes	100	25	Yes
Clara Hart (Enngonia Reserve)	60	Enngonia	Clara Hart - <b>NON-POTABLE</b>	Yes	90	2	Yes	100	2	Yes	100	10	Yes
Jubullum Village	200	Jubullum	Jubullum Community	Yes	100	2	Yes	100	2	No	76	17	Yes
Toomelah	125	Toomelah	Toomelah	Yes	80	2	Yes	100	2	No	96	25	Yes
Weilmoringle/Wytalbar	60	Weilmoringle Community	Weilmoringle - <b>NON-POTABLE</b>	Yes	100	2	Yes	100	2	Yes	100	12	Yes
Percent of communities tested which achieved compliance				100% 5/5			100% 5/5			40% 2/5			100% (7/7)
Communities provided with a bulk drinking water supply by the local water utility													
Cummeragunja	80	Cummeragunja	Goulburn Valley Water (Vic)	#			#			Yes	100	9	Yes
Gundurimba	60	Rocky Creek LM	Lismore City Council	#			#			Yes	100	25	Yes
Wamba Wamba	20	Murray Downs	Wakool Shire Council	#			#			Yes	100	9	Yes
Brungle Reserve	90	Brungle	Tumut Shire Council	#			#			Yes	100	11	Yes
Nanima Reserve	110	Wellington	Wellington Council	#			#			Yes	100	15	Yes
Alice Edwards Village	100	Bourke	Bourke Shire Council	#			#			Yes	100	11	Yes
Balranald Reserve (Endeavour Drive)	20	Balranald	Balranald Shire Council	#			#			Yes	100	9	Yes
Barwon 4	200	Brewarrina	Brewarrina Shire Council	#			#			Yes	100	13	Yes
Box Ridge	100	Rocky Creek RM	Richmond Valley Shire Council	#			#			Yes	100	11	Yes
Brewarrina West (Dodge City)	100	Brewarrina	Brewarrina Shire Council	#			#			No	93	14	Yes
Collarenebri Reserve (The Walli)	50	Collarenebri	Walgett Shire Council	#			#			Yes	100	10	Yes
Erambie	100	Cowra	Cowra Shire Council	#			#			Yes	100	12	Yes
Warrali	40	Wilcannia	Central Darling Shire Council	#			#			Yes	100	7	Yes
Gingie Community	40	Gingie	Walgett Shire Council - <b>NON-POTABLE</b>	Yes	60	1	Yes	100	1	No	79	14	Yes
Gulargambone Mission	6	Gulargambone	Coonamble Shire Council	#			#			#			Yes
Karuah	200		Hunter Water	#			#			#			Yes
Moonahcullah	50			#			#			#			No
Goodooga Reserve	45	Goodooga	Brewarrina Shire Council	#			#			Yes	100	12	Yes
Mallee	140	Wilcannia	Central Darling Shire Council	#			#			No	89	9	Yes
Mehi Crescent	300	Moree	Moree Plains Shire Council	#			#			Yes	100	6	Yes
Murrin Bridge	200	Murrin Bridge	Murrin Bridge Community	Yes	100	1	Yes	100	1	Yes	100	25	Yes
Namatijira Avenue	150	Gol Gol	Wentworth Shire Council	#			#			Yes	100	11	Yes
Namoi Reserve	60	Walgett	Walgett Shire Council	Yes	100	1	Yes	100	1	Yes	100	13	Yes
New Merinee [Dareton]	600	Gol Gol	Wentworth Shire Council	#			#			Yes	100	24	Yes
Stanley Village	175	Moree	Moree Plains Shire Council	#			#			Yes	100	6	Yes
Summervale	30	Walcha	Walcha Council	#			#			Yes	100	11	Yes
Wallaga Lake Community	150	Couria Creek	Bega Valley Shire Council	#			#			Yes	100	11	Yes
Willow Bend	75	Condobolin	Lachlan Shire Council	#			#			Yes	100	8	Yes
Narwon	100	Armidale	Armidale Dumaresq Council	Yes	100	1	Yes	100	1	Yes	100	3	Yes
Cabbage Tree Island	253	Marom Creek	Ballina Shire Council	#			#			Yes	100	12	Yes
Corindi Beach	25	Coffs Harbour	Coffs Harbour City Council	#			#			Yes	100	8	Yes
Quambone	15	Quambone	Coonamble Shire Council	#			#			Yes	100	11	Yes
Walhollow Reserve	178	Walhallow	Liverpool Plains Shire Council	Yes	80	3	Yes	100	3	Yes	100	23	Yes
Wongala	70	Coffs Harbour	Coffs Harbour City Council	#			#			Yes	100	8	Yes
Percent of communities tested which achieved compliance				100% 4/4			100% 4/4			93% 28/30			97% (33/34)
Communities provided with a full reticulated water supply service by the local water utility													
Bellwood	50	Bowraville	Nambucca Shire Council	#			#			Yes	100	11	Yes
Boona Road Condobolin	20	Condobolin	Lachlan Shire Council	#			#			Yes	100	13	Yes
Browns Flat [Nowra (Flat Rock)]	30	Flat Rock	Shoalhaven City Council	Yes	99	31	Yes	100	31	Yes	100	70	Yes
Cabarita [Tobwabba (Cabarita Community)]	250	Manning District WSS	MidCoast Water	#			#			Yes	100	13	Yes
Bowraville Village	275	Bowraville	Nambucca Shire Council	#			#			Yes	100	10	Yes
Coomaditchie	117		Sydney Water	#			#			#			Yes
Crescent Head (Loftus Rd)	56	Maguires Crossing	Kempsey Shire Council	#			#			Yes	100	16	Yes
Figtree	50	South West Rocks	Kempsey Shire Council	#			#			#			No
Green Hill	248	Kempsey and Lower Macleay	Kempsey Shire Council	Yes	100	6	Yes	99	6	Yes	100	51	Yes
Gunnedah Hill	10	Coonabarabran	Warrumbungle Shire Council	#			#			Yes	100	8	Yes
Gulargambone Top	120	Gulargambone	Coonamble Shire Council	#			#			Yes	100	11	Yes
La Perouse			Sydney Water	#			#			#			No
Maclean [Maclean Lookout]	160	Lower Clarence	Clarence Valley Council	Yes	100	2	Yes	100	2	Yes	100	12	Yes
Muli Muli	150	Urbenville	Tenterfield Shire Council	#			#			Yes	100	50	Yes
New Burnt Bridge	72	Kempsey and Lower Macleay	Kempsey Shire Council	#			#			Yes	100	27	Yes
Orient Point	200	Northern Shoalhaven (Bamarang)	Shoalhaven City Council	Yes	100	2	Yes	100	2	Yes	100	12	Yes
Peak Hill [Peak Hill Village]	50	Parkes	Parkes Shire Council	#			#			Yes	100	3	Yes
Pippi Beach (Nyguru Village) [Ngaru Village]	60	Lower Clarence	Clarence Valley Council	#			#			Yes	100	4	Yes
Purfleet	500	Manning District WSS	MidCoast Water	#			#			Yes	100	13	Yes
Three Ways	75	Griffith	Griffith City Council	#			#			Yes	100	3	Yes
Percent of communities tested which achieved compliance				100% 4/4			100% 4/4			100% 17/17			90% (18/20)
ALL COMMUNITIES - Percent of communities tested which achieved compliance				100% 13/13			100% 13/13			90% 47/52			95% (58/61)

**Notes:** 1. Drinking water quality for a Community has complied with the 2011 NHMRC/NRMMC Australian Drinking Water Guidelines (ADWG) for microbiological water quality (health related - shown as 'Yes' in column (10) above) if the required number of samples has been tested and at least 98% of samples had no *E.coli*. The 3 non-potable water supplies (column (3)) are not included in the totals or percent of communities for compliance with ADWG (columns (5), (8) and (11)), which are for the potable water supplied.

For the 5 communities where the potable drinking water supply did not comply for microbiological water quality, 'No' is shown in column (10) and the percentage of samples which complied is shown in column (11). Where *E.coli* is detected in a microbiological sample, further investigation is needed to determine whether there is a real problem with drinking water quality in accordance with NSW Health protocol (<http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-microbiological.aspx>).

2. Similarly, for chemical water quality (health related) to be satisfactory (shown as 'Yes' in column (7)), the 95th percentile of results must meet the guidelines and physical (aesthetic) water quality is satisfactory (shown as 'Yes' in column (4)) if the mean value of results meets the guideline values.

Although physical and chemical samples were not tested for the 33 communities with '#' in columns (4) and (7), the water supply for the local water utility which supplies each of these communities complied with ADWG for both physical and chemical water quality in 2013-14 (Table 12 on page 183).

The physical characteristics tested (aesthetic) are true colour, turbidity, total hardness as CaCO3, total dissolved solids (TDS) and pH.

The chemical characteristics tested (health related) are antimony, arsenic, barium, boron, cadmium, chromium, copper, fluoride, lead, manganese, mercury, molybdenum, nickel, nitrate, nitrite, selenium, silver and sulfate. Other chemical characteristics tested which are not health related are aluminium, calcium, chloride, iodine, iron, magnesium, sodium and zinc.



## Appendix E: Circular LWU 18 of June 2014 – Assuring the safety of water supply distribution systems



Department of  
Primary Industries  
Office of Water

WS14/109

Circular No. LWU 18  
Date 4 June 2014  
Contact Bill Ho  
Phone 9842 8495  
Fax  
E-mail bill.ho@dpi.nsw.gov.au

### Assuring the safety of drinking water supplies

This Circular has been prepared to advise NSW local water utilities (LWUs) of an important new protocol for assuring the safety of all drinking water supplies in regional NSW. The protocol is robust and cost-effective and must be implemented by all LWUs providing a drinking water supply.

#### Protocol

Following its review of a number of recent boil water alerts<sup>1</sup> in regional NSW, the NSW Office of Water, in consultation with NSW Health and the NSW Water Directorate, has developed the new protocol, which is set out in Attachment 2 – Appendix E of the *2012-13 NSW Water Supply and Sewerage Benchmarking Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Appendix E documents the minimum requirements for ensuring each potable water supply is safe from microbial contamination. Under this protocol, each LWU will need to ensure that the **standard operating procedures (SOP)** for its water supply systems meet these requirements in order to achieve the following three key barriers:

**Barrier 1 – Effective disinfection** to kill, inactivate or remove pathogens in the water supply prior to distribution.

**Barrier 2 – Ensure distribution system integrity** to prevent contamination.

**Barrier 3 – Maintain free chlorine residual** in the water in the distribution system to help protect against minor contamination and as an indicator of a potential breach in distribution system integrity.

Together, these 3 barriers operate to assure the safety of each water supply and to prevent microbial contamination.

The *Public Health Act (2010)* requires each LWU to develop and implement a risk based Drinking Water Management System in accordance with the NSW Guidelines for Drinking Water Management Systems, NSW Health and NSW Office of Water, 2013. Activities related to disinfection and distribution system integrity should be clearly defined in each water utility's Drinking Water Management System, in accordance with the above Appendix E.

<sup>1</sup> Attachment 1 is a copy of page 10 of the 2012-13 NSW Water Supply and Sewerage Benchmarking Report which provides examples of recent failures of integrity of water supply distribution systems.

Once a water supply is effectively disinfected (Barrier 1), enteric pathogens should not reappear within the distribution system, unless there is a failure of the integrity of the distribution system. Maintaining the integrity of the distribution system (Barrier 2) is therefore the most important barrier to prevent contamination of a disinfected water supply. To verify and maintain integrity of all its distribution systems, each LWU must carry out the actions identified in section E3 of Appendix E as a matter of priority within **the next 12 months**.

These actions include the following and need to be repeated at frequencies appropriate for each system, but no less than every **four (4) years**.

Carry out a careful and **detailed examination** of each service reservoir to ensure:

- (1) the reservoir and its roof are secured from entry by birds, animals, vermin and windborne contaminants;
- (2) rainwater cannot enter into the reservoir (i.e., no leaking roof or holes in the reservoir wall or gaps around the openings on the roof);
- (3) roof is adequately drained especially near the openings and landings. The roof should extend beyond the reservoir wall;
- (4) all inspection hatches are closed and locked at all times; and
- (5) the reservoir site and roof are secured from unauthorised access.

Where reservoir cleaning has been a routine activity for a water utility, reports from past cleaning episodes should be reviewed to find any reservoir integrity problems that have been identified but not corrected. Recent reports from experienced reservoir cleaners may satisfy the requirement for a detailed examination. Any deficiency in the roof or mesh design will need to be rectified by the LWU following such examination.

### Action

Each LWU will need to extend the standard operating procedures (SOP) for its water supply systems to meet the minimum requirements in Appendix E (Attachment 2) and to carry out the actions in section E3 of Appendix E within the next 12 months in order to ensure the integrity of its distribution systems and the safety of its water supplies.

### Reporting

Each LWU will need to complete the attached Summary Report (Attachment 3) following its detailed examination of the integrity of each of its water supply distribution systems in accordance with Appendix E (Attachment 2).

Further information on this matter is available from the NSW Office of Water by contacting Mr Bill Ho, Manager Water and Sewerage on 9842 8495 or [bill.ho@dpi.nsw.gov.au](mailto:bill.ho@dpi.nsw.gov.au).

Yours sincerely



**Michael Bullen**

**A/Deputy Director General, Water**

Encl. Attachments:

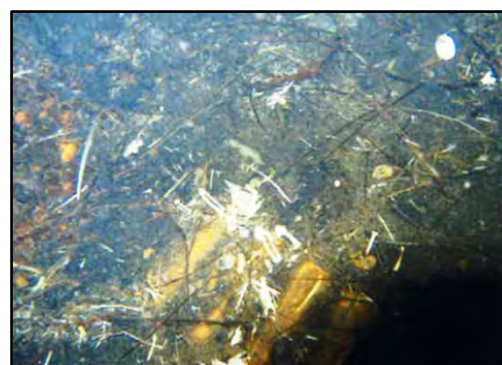
- 1 Copy of page 10 of 2012-13 NSW Benchmarking Report
- 2 Appendix E - Effective disinfection of a potable water supply and assuring integrity of the distribution system to prevent contamination of the supply
- 3 Summary Report – Distribution System Integrity

## ATTACHMENT 1

## Examples of Failure of Integrity of Distribution Systems

**Photo 1** (right) shows the **hatch** of a 20m high service reservoir, which has inadvertently been **left open** for a few weeks. The result was repeat detections of *E. coli* in the reticulated water supply and the need to issue a boil water alert.

**Photos 2 and 3** below are underwater photos in the above service reservoir showing evidence of contamination by birds – **bird eggs** (left) and **dead birds** (right).



**Photo 4** (below left) is a service reservoir where the **mesh openings** are **too large** and the roof design is deficient, allowing the entry of small birds, rainwater and windblown material to contaminate the stored water. The reservoir roof needs to be modified so that roof runoff and windblown material cannot contaminate the stored water. **Photo 5** (below right) shows mesh openings that are also too large, allowing entry of vermin, such as wasps and windblown material.



The continued detection of *E. coli* in reticulated water supplies and boil water alerts in 2012 and 2013 have highlighted the need for a strategic approach for assuring the integrity of the distribution system to prevent contamination of a water supply that has been effectively disinfected. The recommended approach in Appendix E on page 298 was developed by the NSW Office of Water and NSW Health in consultation with the NSW Water Directorate and LWUs to provide a robust basis for assuring the safety of a water supply. As noted in the box on page 10, each LWU needs to review its present standard operating procedures (SOP) to ensure they address the minimum requirements in Appendix E for achieving safe water supplies:

Barrier 1 – **Effective disinfection** to kill, inactivate or remove pathogens in the water supply prior to distribution.

Barrier 2 – Ensure **distribution system integrity** to prevent contamination.

Barrier 3 – **Maintain free chlorine residual** in the water in the distribution system where practicable, to help protect against minor contamination and as an indicator of a potential breach in distribution system integrity.



## ATTACHMENT 2

## Effective disinfection of a potable water supply and assuring integrity of the distribution system to prevent contamination of the supply

### E1 Overview

This appendix highlights the key requirements for ensuring the effective disinfection<sup>1</sup> and assuring the safety of a potable water supply. Each NSW Local Water Utility (LWU) needs to ensure that the **standard operating procedures (SOP)** for its water supply systems **meet** these minimum requirements, in order to achieve the following three key barriers:

**Barrier 1 – Effective disinfection** to kill, inactivate or remove pathogens in the water supply prior to distribution.

**Barrier 2 – Ensure distribution system integrity** to prevent contamination.

**Barrier 3 – Maintain free chlorine residual** in the water in the distribution system to help protect against minor contamination and as an indicator of a potential breach in distribution system integrity.

Guiding principle 1 of the *Australian Drinking Water Guidelines* (below<sup>1</sup>) highlights the risks to consumers from pathogenic organisms and the paramount importance of protecting water sources and water treatment.

For **free chlorine** disinfection, **Figure 1** on page 307 shows how the above 3 barriers work together to provide a safe water supply.

In addition, as indicated in the *2013-14 NSW Water Supply and Sewerage Benchmarking Report* (page 9) each utility needs to develop and implement a risk based Drinking Water Management System in accordance with the *NSW Guidelines for Drinking Water Management Systems*, NSW Health and NSW Office of Water, 2013. These systems should include reference to sound standard operating procedures (SOP) in accordance with this Appendix and are required from 1 September 2014 under the *Public Health Act 2010*. Activities related to disinfection and distribution system integrity need to be clearly defined in each water utility's Drinking Water Management System (DWMS).

The *NSW Guidelines for Drinking Water Management Systems* is based on the Framework for the Management of Drinking Water Quality outlined in the *2011 Australian Drinking Water Guidelines* (ADWG) to assure the safety and quality of the water supplied to the consumers.

Effective disinfection of the source water and ensuring the integrity of the distribution system with or without a residual disinfectant are separate barriers (ADWG and above).

**Effective disinfection** of a water supply is essential to kill, inactivate or remove any pathogens in the water supply prior to distribution (Barrier 1 above). This could be achieved through a number of disinfection systems. Disinfection is a **critical control point** and must be appropriately monitored (ADWG).

<sup>1</sup> Guiding principles 1 to 6 in Chapter 1 of the 2011 ADWG are listed below to provide an overall context to this Appendix:

- The greatest risks to consumers of drinking water are pathogenic microorganisms. Protection of water sources and treatment are of paramount importance and must never be compromised.
- The drinking water system must have, and continuously maintain, robust multiple barriers appropriate to the level of potential contamination facing the raw water supply.
- Any sudden or extreme change in water quality, flow or environmental conditions (e.g. extreme rainfall or flooding) should arouse suspicion that drinking water might become contaminated.
- System operators must be able to respond quickly and effectively to adverse monitoring signals.
- System operators must maintain a personal sense of responsibility and dedication to providing consumers with safe water, and should never ignore a consumer complaint about water quality.
- Ensuring drinking water safety and quality requires the application of a considered risk management approach.

**Preventing ingress of contaminants** at vulnerable points within the distribution system is a key **system integrity** barrier (Barrier 2 above) and **maintaining a residual disinfectant**<sup>2</sup> throughout the distribution system is another barrier (Barrier 3 above). Together, the 3 barriers operate to assure the safety of each water supply. A sound verification monitoring program<sup>3</sup> is needed to assure that these three barriers<sup>4</sup> are functioning effectively. The monitoring frequency for each water supply system is dependent on its key characteristics identified through analysis and should be reviewed as part of a comprehensive risk assessment. The guidance in the following sections E2, E3 and E4 provides the minimum requirements for each barrier for inclusion in each LWU's standard operating procedures (SOP) for its water supply systems. Following risk assessment for its systems, a LWU may include additional requirements in its SOP where warranted.

Service reservoir integrity is a Critical Control Point for disinfected water supply and should be appropriately monitored (section E3).

## E2 Barrier 1 – Effective Disinfection

Disinfection is the single process that has had the greatest impact on drinking water safety. In Australia the common disinfection systems used include chlorination, chloramination, ultraviolet irradiation and ozonation. The advantages and disadvantages for each of these systems are discussed in detail in ADWG.

When chlorination is used, a source water is effectively disinfected when the required *C.t* values have been achieved (ADWG 2013, page 186). However, the *C.t* values used in the design of chlorine disinfection systems in Australia are generally higher than those required for effective disinfection (ADWG and WHO general recommendation is 0.5 mg/L of free chlorine residual after 30 minutes). The *C.t* values can be achieved by adjusting the chlorine dose or the contact time to provide a minimum *C.t* value of 15 mg/L/minute. The LWU should check the adequacy of this for its system.

To achieve effective disinfection of a water supply with **free chlorine**, monitoring of the following parameters prior to the distribution of the water should be included in your LWU's SOP as these parameters could diminish disinfection effectiveness:

- Monitor the factors which affect effective disinfection (e.g. chlorine residual, pH and turbidity). Refer to section E5 on page 306 in regard to matters to be included in a LWU's verification monitoring program. For each system, determine and document the contact time.
- Maintain appropriate levels of free chlorine residual above 0.5 mg/L<sup>5</sup> for the available<sup>6</sup> contact time to provide a *C.t.* value greater than 15 mg/L/minute.

<sup>2</sup> Refer to page 186 of ADWG (Version 2.0, December 2013), under 'managing water supplies with no disinfection residual'.

<sup>3</sup> Each LWU's drinking water monitoring program (testing for *E.coli* (i.e. sampling location, frequency and number of samples tested) needs, as a minimum, to be in accordance with the NSW Health requirements. These requirements are consistent with ADWG and the number of annual samples allocated for each LWU is shown in Appendix D1, *2013-14 NSW Water Supply and Sewerage Benchmarking Report*. Appendix D1 shows that the required number of samples has been collected and tested for almost all LWUs. Each water utility should assess its monitoring requirements to determine whether additional monitoring above this minimum is needed.

<sup>4</sup> For very small communities, typically serving a population of about 30, with a high quality source water such as groundwater from a confined aquifer, it may be cost-effective for the LWU to complete the actions outlined in section E3 on page 303 at 4-monthly intervals, rather than consistently maintaining a positive free chlorine residual disinfectant as long as the regular *E.coli* tests results continue to comply with ADWG. Refer also to the 4th paragraph of section E4 on page 305.

<sup>5</sup> Part IV Information Sheet 1.3, Disinfection with Chlorine, ADWG.

<sup>6</sup> If the source water does not contain pathogens (e.g., a good quality groundwater from a confined aquifer), no chlorine contact time is required.

- Keep turbidity as low as practicable (aim for <1 NTU<sup>7</sup>). Turbidity higher than 1 NTU is acceptable where the source water is free from faecal contamination or where the effectiveness of chlorination has been validated<sup>8</sup>.
- Keep pH <8.5<sup>9</sup>
- Thoroughly clean and super-chlorinate<sup>10</sup> before use, all new and repaired distribution system infrastructure that is in contact with potable water such as mains and reservoirs.

Disinfection is a **critical control point** and must be adequately monitored, preferably continuously, to ensure effective disinfection (refer section E1). For **free chlorine** disinfection, in addition to an appropriate operational monitoring program, the minimum requirements to be included in the SOP are as follows:

1. Check that turbidity of the water being disinfected remains below the target critical limits for the system. Take appropriate corrective actions if the critical limits are exceeded.
2. Check the chlorine demand of the water supply being chlorinated as the raw water quality changes and adjust the chlorine dose rate accordingly to achieve the required residual.
3. Check the pH of water to be disinfected where a pH correction facility has been provided.
4. Confirm correct functioning of each chlorination plant.
5. Verify that the required chlorine dose rate has been added to the water supply<sup>11</sup>.
6. Provide continuous monitoring and/or daily testing of free chlorine residual at representative sampling points after the appropriate chlorine contact time.

For other types<sup>12</sup> of disinfection systems appropriate SOPs need to be developed to ensure effective disinfection.

## E3 Barrier 2 - Distribution System Integrity

Once a water supply is effectively disinfected, enteric pathogens should not reappear within the distribution system unless there is a failure of the integrity of the distribution system (ADWG 2013, page 186). Once a water supply has been effectively disinfected (Barrier 1), the disinfected water should remain safe to drink even in the **absence**<sup>13</sup> of a disinfectant residual. The integrity of the distribution system (Barrier 2) is therefore the most important barrier to prevent contamination of a disinfected water supply. To verify and maintain integrity of all its distribution systems, each LWU must carry out the following actions as a matter of priority within **the next 12 months**. Thereafter, **repeat** these actions at frequencies appropriate for each system but no less than every **four (4) years**.

<sup>7</sup> Table 10.5, ADWG.

<sup>8</sup> Monitoring test results which consistently find no *E.coli* in a water supply would validate the safety of the water supply.

<sup>9</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>10</sup> Chlorine Fact Sheet under Drinking Water Treatment Chemicals, ADWG.

<sup>11</sup> Check to ensure the storage tanks or cylinders have adequate chlorine. For sodium hypochlorite dosing plants complete a drop test to verify the accuracy of the chlorinator dosing rate as in some instances the released oxygen could interfere with the actual dosage rate. Also check the concentration of the sodium hypochlorite solution in the storage tank and adjust the dosage rate to allow for any loss of chlorine strength.

<sup>12</sup> Refer to Part IV Information Sheets 1.4 to 1.8 of ADWG.

<sup>13</sup> Where there is a risk of *Naegleria fowleri*, a free chlorine residual of 0.5mg/L or higher will control *N. fowleri*, provided the disinfectant residual persists throughout the distribution system (ADWG 'Disinfection with Chlorine' Information Sheet, page 191).



- a. Carry out a careful and **detailed examination**<sup>14</sup> of each service reservoir to ensure:
  - 1) the reservoir and its roof are secured from entry by birds, animals, vermin and windborne contaminants;
  - 2) rainwater cannot enter into the reservoir (i.e., no leaking roof or holes in the reservoir wall or gaps around the openings on the roof);
  - 3) roof is adequately drained especially near the openings and landings. The roof should extend beyond the reservoir wall;
  - 4) all inspection hatches are closed and locked at all times; and
  - 5) the reservoir site and roof are secured from unauthorised<sup>15</sup> access.
- b. Check the air valves and ensure they are functioning in accordance with the manufacturer's standard operating procedures.
- c. Check any backflow prevention devices and ensure they are operating in accordance with the manufacturer's standard operating procedures, tested in accordance with AS3500 and there is no cross contamination.
- d. Check and ensure all potable water connections with a risk of cross contamination such as connections to sewerage facilities (pumping station, treatment works, etc.) are provided with backflow prevention devices and are regularly tested in accordance with AS3500.
- e. Check and ensure all potable water connections to top up alternative water systems such as rainwater tanks/automatic switching device on premises are provided with backflow prevention devices (refer to Circular LWU 17) and are operating in accordance with the manufacturer's standard operating procedures, tested in accordance with AS3500 and there is no cross contamination.
- f. Review the reservoir maintenance standard operating procedures to ensure they are sound and fit for purpose<sup>14, 16</sup>.
- g. Review the standard operating procedures for repair and re-instatement of distribution system infrastructure that comes into contact with potable water such as mains and reservoirs to ensure the procedures are sound and fit for purpose<sup>16</sup>.
- h. Undertake all remedial works to assure system integrity as a matter of **priority**.

<sup>14</sup> Note that the careful and detailed examination of each service reservoir in steps (1) to (5) above is **NOT** a routine inspection, but rather a careful and detailed examination of each reservoir in order to detect and rectify any breaches of reservoir integrity. Such detailed examinations are necessary proactive measures to be undertaken by each LWU in order to detect and rectify breaches which are often not identified during routine inspections. There have been several recent instances where following detection of *E.coli* in the water supply and imposing a boil water alert, such detailed inspections have identified and rectified the breaches to reservoir integrity. The following paragraphs highlight that any **deficiency in the roof or mesh design** needs to be identified and **rectified** LWU following such examination.

It is essential all service reservoirs are designed and constructed to prevent ingress of contaminants. Additionally, for each service reservoir, a careful inspection of the reservoir roof, wall and mesh is essential in order to detect any breaches to the reservoir's integrity. As noted on page 12 of the *2013-14 NSW Water Supply and Sewerage Benchmarking Report*, 86% of the 22 boil water alerts in regional NSW during the period May 2006 to June 2008 have been due to such breaches in reservoir integrity. In most cases the breach was not visible from ground level and required use of mobile lifting equipment in order to detect the breach. Similarly a number of recent boil water alerts have been due to breaches in service reservoir integrity.

A confirmed detection of ***E.coli*** in a microbiological test sample should **trigger** a careful **review** by the LWU of whether the requirements of section E3 above have been met.

<sup>15</sup> Where access to third parties (e.g., telephone companies, SES, NSW Police, etc.) has been given to install equipment, appropriate written reinstatement and communication protocols need to be established between the LWU and each third party to ensure the reservoir integrity is not compromised. The LWU must conduct regular audits to ensure the protocols are being effectively implemented. Similar protocols should also be effected between the LWU and any service providers authorised by the LWU to access its service reservoir. A financial penalty should be imposed for any failures to comply with the protocol as these may breach the distribution system integrity and result in *E.coli* contamination of the supply and the need for a boil water alert. A model 'service reservoir integrity protocol' will be prepared by the NSW Office of Water to assist LWUs.

<sup>16</sup> As noted in section E2 on page 302, ensure your LWU's standard operating procedures including contracts with service providers include super chlorination and effective disinfection of any new and repaired or replaced water mains and other distribution system infrastructure that is in contact with potable water before the infrastructure is commissioned or the water service is reinstated.

## E4 Barrier 3 – Maintain a Free Chlorine Residual in the Water in the Distribution System

A residual disinfectant such as chlorine is maintained in the water within the distribution system to help protect against minor contamination due to a breach in the distribution system integrity (Barrier 2 above).

**Monitoring of free chlorine residual**, in the water in a distribution system on at least a weekly basis provides one of the key indications of the proper operation of the chlorination, of system integrity, and the necessary data for the utility to carry out timely corrective action. More frequent monitoring will provide more information to make better and timely decisions on changes to disinfection required to protect public health. On-site testing of free and total chlorine residual (and if possible pH and turbidity) should be carried out each time an *E. coli* sample is collected for testing by the NSW Health Drinking Water Monitoring Program for verification monitoring of the drinking water quality in accordance with ADWG. The ADWG suggests that:

- a minimum free chlorine residual of about 0.2mg/L<sup>17</sup> be maintained in the water throughout the distribution system. Re-chlorination may be necessary to achieve this chlorine residual in very extensive water supply distribution systems with long detention times.
- a sudden large drop in free chlorine residual may be an indicator of a fault in the chlorination system or an increase in the chlorine demand of the water or a major breach in distribution system integrity.

When it is difficult to maintain the desired target free chlorine residual level of  $\geq 0.2\text{mg/L}$  at the extremities of your system, your LWU should using a trial and error process increase the free chlorine residual level at the dosing points to the maximum generally acceptable<sup>18</sup> to the community. Consideration should be given to providing re-chlorination for systems where there is a significant risk of contamination of the reticulated water supply.

Once the desired free chlorine residual of the dosed water has been achieved and if the free chlorine residual at the extremities of the reticulation system continues to consistently remain below 0.2mg/L but greater than 0.05mg/L with *E.coli* test results showing 100% compliance<sup>3</sup>, then the LWU should undertake the actions outlined in section E3 on page 303 on an **annual**<sup>19</sup> basis.

If however, the free chlorine residual level is consistently below 0.05mg/L with *E.coli* test results showing 100% compliance<sup>3,20</sup> and the LWU can demonstrate the continuous integrity of the water supply distribution system<sup>21</sup>, the LWU should then undertake the actions outlined in section E3 on page 303 on a **four monthly**<sup>20</sup> basis and should also complete the following:

1. inspect and flush as needed the extremities of the system to remove 'stagnant' water.
2. opportunistically install pipe loops to any existing dead-end mains (i.e. as part of your LWU's repair and/or renewal work).

The measures in paragraphs 3 and 4 above are warranted in order to minimise capital and operating expenditure, while assuring safety of the water supply.

<sup>17</sup> Example in Table A1.10 on page A-20, ADWG. Such a chlorine residual can normally be achieved for the vast majority of consumers supplied by a water supply distribution system. However, as noted in the 2<sup>nd</sup> paragraph of page 305, it may be difficult to maintain such a residual at the extremities of a distribution system.

<sup>18</sup> The risk posed by disinfection by-products is considerably smaller than the risk posed by the presence of pathogenic microorganisms in water that has not been disinfected (Guiding Principle 1 of ADWG).

<sup>19</sup> The first action in section E3 on page 303 may be undertaken from ground level using a telescope, binoculars, etc.

<sup>20</sup> If the microbiological test samples regularly fail for *E.coli* then the LWU must investigate the reasons for the failures and consider maintaining a free chlorine residual of about 0.2 mg/L on a consistent basis. This could be achieved by one of many options such as early warning control/communication systems, secondary chlorination plants, sub-system cleaning including air scouring/swabbing of the pipeline, super chlorination, etc. It is expected the preferred option would be chosen on the basis of a cost-benefit analysis.

<sup>21</sup> If the LWU is finding difficulty in ensuring the continuous integrity of the water supply system due to remoteness of the operating staff, etc. then the LWU could consider intermittent manual dosing of chlorine to boost the chlorine residual or installation of a secondary chlorination plant. It is expected the preferred option would be chosen on a cost-benefit analysis. Manual dosing could be accomplished by dosing the required quantity of chlorine tablets or sodium hypochlorite into the service reservoir servicing the sub-system and/or using a portable liquid chlorine chlorinator.

## E5 Develop a Verification Monitoring Program

The verification monitoring program developed by a LWU for each distribution system should include the following:

- Parameters to be monitored (e.g. disinfectant residual, pH and turbidity)<sup>22</sup>.
- Sampling frequency.
- Sampling locations including system extremities<sup>23</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<sup>24</sup> of staff including induction of contractors.
- Requirements for documentation and management of records, including how monitoring results will be recorded and stored.
- Requirements for reporting and communication of results.

## E6 Field Tests

- Test kits for measuring chlorine residual, pH and turbidity are available.
- Chlorine residual, pH and turbidity measurements need to be done in the field.
- Ensure the operators have a thorough understanding of the field test kits especially the range they can measure, detection limits, error and interference tolerances.

If you wish to discuss any aspects covered in this Appendix, please contact the Manager Water and Sewerage, NSW Office of Water on telephone: (02) 9842 8495 or email: [bill.ho@dpi.nsw.gov.au](mailto:bill.ho@dpi.nsw.gov.au).

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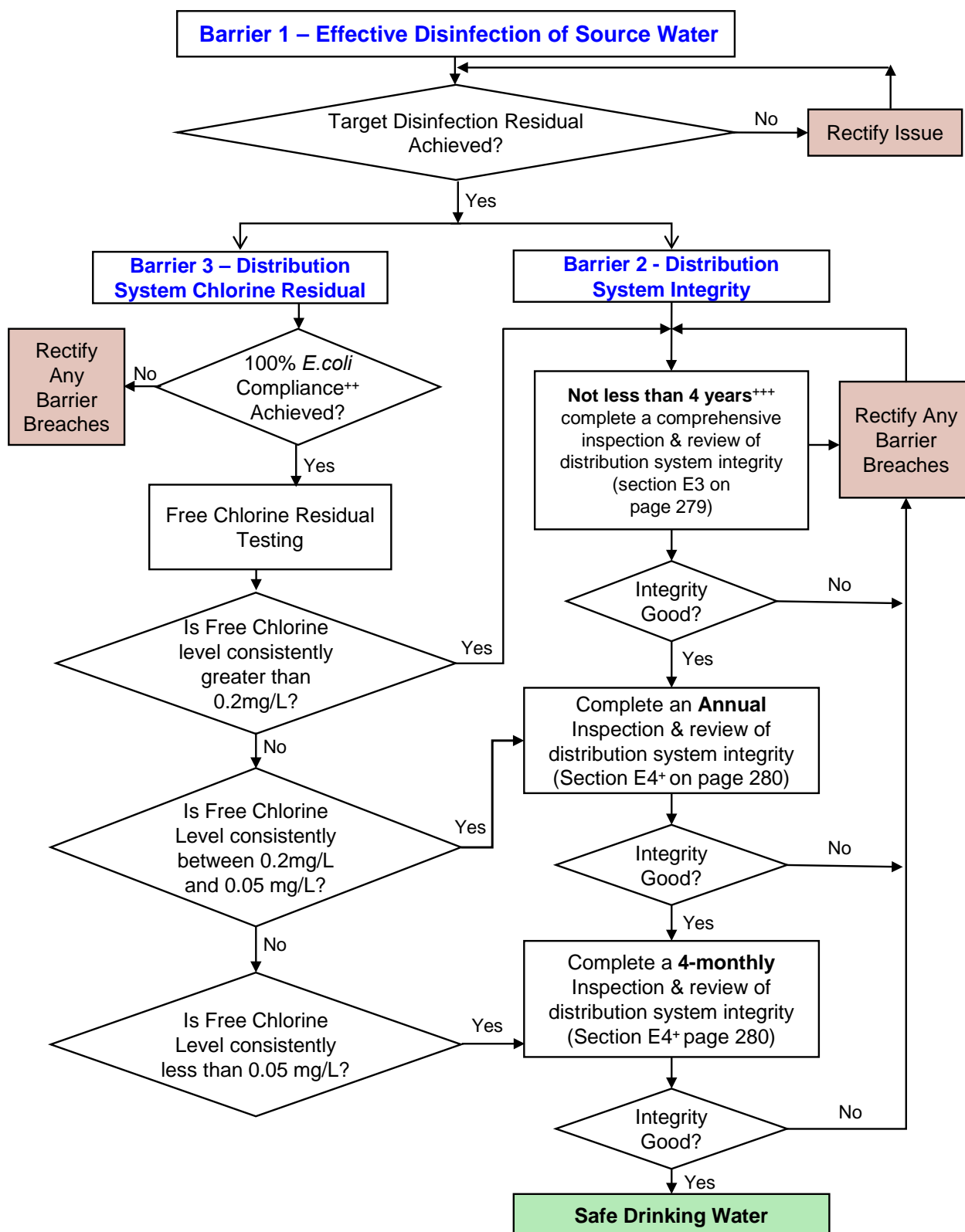
<sup>22</sup> For filtered water supplies, all the treated water should normally have a turbidity of less than 1 NTU, with 95 per cent of the supply having a turbidity of under 0.3 NTU.

<sup>23</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>24</sup> LWU water treatment operators need to have appropriate skills and qualifications in accordance with page 23 of the NSW Guidelines for Drinking Water Systems, 2013. Refer also to page 36 of the *2013-14 NSW Water Supply and Sewerage Benchmarking Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)) in regard to National Certification of Water Treatment Operators.



**Figure 1 – Effective disinfection<sup>1</sup> of a potable water supply and assuring integrity of the distribution system to prevent contamination of the supply**



+++ The first comprehensive inspection and review of water supply system integrity should be completed within 12 months in order to assure system integrity.

++ The 100% E.coli compliance requirement refers to test results where any failures in distribution system integrity have been detected and rectified by the LWU.

+ The actions in the 3<sup>rd</sup> and 4<sup>th</sup> paragraphs of section E4 on page 305 should be undertaken by the LWU over the next 12 months or 4 months respectively in order to assure continuing distribution system integrity. These actions are only applicable for the extremities of a distribution system where the free chlorine residual is consistently below 0.2 mg/L.

1 Figure 1 is on the basis of disinfection with free chlorine.

## ATTACHMENT 3

**SUMMARY REPORT<sup>1</sup> ON ASSURING INTEGRITY & SAFETY OF  
WATER SUPPLY DISTRIBUTION SYSTEMS****LWU -**

Date -

Contact Officer -

Phone -

Email -

- Water Supply Distribution **System** -
- Detailed examination of service **reservoirs** :
- Date completed -
- Key **Deficiencies** Identified -
- **Rectification** Works Completed -
- Addressed all the requirements of **Circular LWU 18**? Y/N Date -
- Standard Operating Procedures (**SOP**) updated to address the requirements of Circular LWU18?  
Y/N Date -

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<sup>1</sup> This summary report has been prepared in response to NSW Office of Water Circular LWU 18 of June 2014 and is to be retained in your LWU's records.

The first Summary Report prepared by a LWU for each of its water supply distribution systems is to be emailed to:  
[Bill.Ho@dpi.nsw.gov.au](mailto:Bill.Ho@dpi.nsw.gov.au).

Appendix F: NMUs - National Performance Report 2013-14

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  (ML)				W2  Includes W3.2 Excludes W25.1  (ML)				W3  W3 = W3.1+W3.2+W3.3  (ML)				W4  Excludes W28.4 Includes W23. Excludes W25.1  (ML)				W5  W5=W5.1+W5.2+W6+W28.2  (ML)				W6  Excludes W28.2  (ML)				W7  W7=W1+W2+W3.1+W4+W5+W28.4  (ML)			
	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation	5,589	5,141	6,395	6,862	0	0	0	0	77,102	61,290	0	0	10,606	13,191	41,776	41,543	414,004	415,498	510,299	523,725	0	0	0	0	507,301	495,120	558,470	572,129
Hunter Water Corporation	65,676	61,035	66,060	67,253	2,333	2,159	2,561	4,230	0	0	0	0	2,186	1,873	1,874	2,505	0	0	0	267	0	0	0	0	70,195	65,067	70,495	74,255
Water NSW	736,650	880,572	847,623	824,365	0	0	0	0									224	25	1,014	2,524					736,874	880,597	848,637	826,889
1 Gosford City Council	14,026	10,672	14,562	14,512	127	52	109	123	0	0	0	0	510	271	28	32	1,444	2,490	660	1,598	0	0	0	0	16,107	13,485	15,359	16,265
2 Wyong Shire Council	12,516	14,109	13,808	15,449	162	115	126	6	0	0	0	0	997	465	780	962	2,035	540	1,169	465	0	0	0	0	15,710	15,229	15,883	16,882
3 Shoalhaven City Council	14,230	12,277	14,393	13,963	0	0	0	0	0	0	0	0	156	73	194	194	70	72	95	86	0	0	0	0	14,456	12,422	14,682	14,243
4 Rous Water	11,142	11,132	11,077	11,521	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,142	11,132	11,077	11,521
5 MidCoast Water	7,728	7,775	8,010	8,124	603	540	556	542	0	0	0	0	0	0	133	372	0	0	0	0	0	0	0	0	8,331	8,315	8,699	9,038
6 Tweed Shire Council	8,938	8,851	9,317	9,802	0	0	0	0	0	0	0	0	436	338	431	563	9	0	0	6	0	0	0	0	9,383	9,235	9,748	10,371
7 Port Macquarie Hastings Council	6,016	5,739	5,792	6,090	0	0	0	0	0	0	0	0	92	94	110	142	0	0	0	0	0	0		0	6,108	5,833	5,902	6,232
8 Riverina Water	2,335	2,549	2,590	2,625	8,363	9,193	12,329	11,819	0	0	0	0	0	0	0	0	19	28	34	56	0	0	0	0	10,717	11,770	14,953	14,500
10 Coffs Harbour City Council	5,570	5,582	5,864	5,957	0	0		0	0	0		0					0	0	0	0					5,570	5,582	5,864	5,957
11 Albury City Council	5,542	6,272	7,376	7,599	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	5,542	6,272	7,376	7,599
12 Fish River Water	7,946	6,273	8,107	10,713	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,946	6,273	8,107	10,713
13 Tamworth Regional Council	8,716	8,426	9,376	9,358	330	447	613	579	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	9,046	8,873	9,989	9,937
14 Clarence Valley Council	5,893	6,572	5,765	6,199	0	0	0	0	0	0	0	0	150	109	128	176	0	0	0	0		0	0	0	6,043	6,681	5,893	6,375
15 Eurobodalla Shire Council	3,405	3,366	2,914	3,055	0	0	483	363	0	0	0	0	160	86	189	216	0	0	0	0	0	0	0	0	3,565	3,452	3,586	3,634
16 Wingecarribee Shire Council	868	868	1,119	1,352	0	0	0	0	0	0	0	0	54	35	98	124	3,518	3,490	3,796	4,319	0	0	0	0	4,440	4,393	5,013	5,795
17 Queanbeyan City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,442	3,641	3,836	3,995	0	0	0	0	3,442	3,641	3,836	3,995
18 Dubbo City Council	4,483	4,488	6,510	6,406	2,049	1,652	2,199	1,934	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	6,532	6,140	8,709	8,340
19 Orange City Council	3,878	4,035	4,528	4,557	50	79	120	59	0	0	0	0	1,714	2,218	1,573	2,903	0	0	0	0	0	0	0	0	5,642	6,332	6,221	7,519
21 Bathurst Regional Council			6,598	6,354			5	9	0	0	0	0			579	638			0	0	0	0	0				7,182	7,001
22 Lismore City Council	176	171	210	168	0	0	0	0	0	0	0	0	0	0	0	0	3,129	3,084	3,117	3,258	0	0	0	0	3,305	3,255	3,327	3,426
23 Bega Valley Shire Council	1,560	1,803	2,398	1,756	1,665	1,465	1,550	1,489	0	0	0	0	0	408	484	623	0	0	0	0	0	0	0	0	3,225	3,268	4,432	3,868
24 Ballina Shire Council	114	119	134	156	0	0	0	0	0	0	0	0	123	104	266	257	3,476	3,272	3,607	3,684	0	0	0	0	3,713	3,495	4,007	4,097
25 Kempsey Shire Council	1,952	0	0	0	1,467	3,333	3,479	3,627	0	0	0	0	0	0	75	97	0	0	0	0	0	0	0	0	3,419	3,333	3,554	3,724
26 Essential Energy	3,279	3,746	4,660	760	0	0	0	0	0	0	0	0	379	416	782	515	920	1,061	1,140	4,940		0	0	0	4,578	5,223	6,582	6,215
27 Byron Shire Council	320	334	402	408	0	0	0	0	0	0	0	0	240	374	547	390	2,434	2,356	2,365	2,429	0	0	0	0	2,994	2,690	3,314	3,227
28A Goldenfields Water (Reticulation)				0				0	0	0	0	0	0	0	0	0	3,874	4,475	5,551	5,794	0	0	0	0	3,874	4,475	5,551	5,794
28B Goldenfields Water (Bulk Water Supply)	3,273	3,394	3,722	3,781	3,464	3,601	4,556	4,644	0	0	0	0	0	0	0	0	270	306	389	450	0	0	0	0	7,007	7,301	8,667	8,875
20 Goulburn Mulwaree Council			2,768	2,707			0	0			0	0			0	0			71	52			0	0			2,839	2,759
9 Wagga Wagga Council																												
LWU Range Max	14,230	14,109	14,562	15,449	8,363	9,193	12,329	11,819	0	0	0	0	1,714	2,218	1,573	2,903	3,874	4,475	5,551	5,794	0	0	0	0	16,107	15,229	15,883	16,882
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	2,994	2,690	2,839	2,759
Median of NMU Indicators shown in Table	4,483	4,488	5,765	5,257	0	0	0	0	0	0	0	0	27	35	98	124	5	0	0	3	0	0	0	0	5,843	6,206	6,402	6,688

Notes \* Indicators shown are those published in the 2013-14 National Performance Report.



Appendix F: NMUs - National Performance Report 2013-14

WATER UTILITY		WATER RESOURCES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		USES OF WATER SUPPLIED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Volume of water supplied - Residential (incl nonpotable)  W8  Includes recycled water W8=W8.1+W8.2+W20  (ML)  2010/11    2011/12    2012/13    2013/14				Volume of water supplied - commercial, municipal, industrial (incl nonpotable)  W9  Includes recycled water W9=W9.1+W9.2+W21  (ML)  2010/11    2011/12    2012/13    2013/14				Volume of water supplied - other (incl nonpotable)  W10  W10=W10.1+W10.2+W25 excludes W10.3  (ML)  2010/11    2011/12    2012/13    2013/14				Total Urban Water Supplied (Excl Bulk Water W14 & Environmental Flows W13 Incl Urban Recycled & Losses) W11 W11=W8+W9+W10 =W11.1+W11.2+W26-W22-W23-W24+W28.4 Includes recycled, excludes environmental & aquifer recharge  (ML)  2010/11    2011/12    2012/13    2013/14				Average Annual Residential Water Supplied   W12  (kL/prop)  2010/11    2011/12    2012/13    2013/14				Volume of water supplied - Environmental flows  W13 Generally upstream of master meter Excludes recycled & aquifer recharge & stormwater  (ML)  2010/11    2011/12    2012/13    2013/14				Volume of bulk water exports  W14 W14=W14.1+W14.2+W15+W28.1 Includes recycled & stormwater  (ML)  2010/11    2011/12    2012/13    2013/14				Volume of bulk recycled water exports  W15 component of W14  (ML)  2010/11    2011/12    2012/13    2013/14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

Appendix F: NMUs - National Performance Report 2013-14

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				W17				W18 W18=W16+W17 Excludes W13				W19 W19=W18/C8									
		(ML)				(ML)				(ML)				(kL/property)									
2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14	
Sydney Water Corporation		485,268	563,484	473,726	448,104	24,167	24,613	22,849	21,475	509,435	588,097	496,575	469,579	306	334	277	261						
Hunter Water Corporation		63,971	76,388	63,400	59,904	3,898	4,389	4,697	4,974	67,869	80,777	68,097	64,878	314	369	308	289						
Water NSW																							
1	Gosford City Council	13,816	15,769	14,836	14,901	984	838	906	691	14,800	16,607	15,742	15,592	216	242	228	223						
2	Wyong Shire Council	15,937	17,423	16,287	14,835					15,937	17,423	16,287	14,835	268	292	273	246						
3	Shoalhaven City Council	7,682	8,404	7,361	8,257	110	121	127	127	7,792	8,525	7,488	8,384	192	209	182	200						
4	Rous Water																						
5	MidCoast Water	6,626	7,669	6,325	5,399	124	149	230	259	6,750	7,818	6,555	5,658	204	225	188	161						
6	Tweed Shire Council	7,842	7,991	7,678	6,466	1,321	595	228	238	9,163	8,586	7,906	6,704	302	277	263	221						
7	Port Macquarie Hastings Council	8,443	9,664	8,706	8,476					8,443	9,664	8,706	8,476	316	359	319	308						
8	Riverina Water																						
10	Coffs Harbour City Council	8,064	7,338	6,878	5,370					8,064	7,338	6,878	5,370	352	315	294	228						
11	Albury City Council	5,102	5,252	4,533	4,473	172	104	91	4	5,274	5,356	4,624	4,477	249	251	214	204						
12	Fish River Water																						
13	Tamworth Regional Council	4,082	4,348	4,267	3,697	1,129	1,131	1,129	1,045	5,211	5,479	5,396	4,742	278	290	282	245						
14	Clarence Valley Council	3,452	3,276	3,240	2,473	69	67	66	52	3,521	3,343	3,306	2,525	242	229	226	172						
15	Eurobodalla Shire Council	3,662	3,204	3,084	3,068	81	83	77	73	3,743	3,287	3,161	3,141	210	184	176	174						
16	Wingecarribee Shire Council	3,917	4,701	3,908	3,289	152	205	234	215	4,069	4,906	4,142	3,504	281	334	282	225						
17	Queanbeyan City Council																						
18	Dubbo City Council	2,908	2,759	2,641	2,613	154	161	154	183	3,062	2,920	2,795	2,796	197	186	176	175						
19	Orange City Council	5,822	4,293	3,852	3,564	148	208	236	209	5,970	4,501	4,088	3,773	378	284	252	229						
21	Bathurst Regional Council	3,576	4,319	4,133	4,016	532	549	529	597	4,108	4,868	4,662	4,613	273	325	308	299						
22	Lismore City Council	4,720	4,902	4,160	3,574					390	169	4,720	4,902	4,550	3,743	375	388	359	293				
23	Bega Valley Shire Council	2,030	2,309	1,890	2,105									2,030	2,309	1,890	2,105	168	189	156	173		
24	Ballina Shire Council	4,955	4,754	4,407	2,872					147	80	4,955	4,754	4,554	2,952	366	356	331	210				
25	Kempsey Shire Council	2,804	2,956	2,508	1,847	83	79	79	79	2,887	3,035	2,587	1,926	323	326	277	198						
26	Essential Energy	1,692	1,623	1,366	1,380									1,692	1,623	1,366	1,380	174	167	140	142		
27	Byron Shire Council	3,211	3,259	3,663	3,042	146	122	141	110	3,357	3,381	3,804	3,152	325	323	367	300						
28A	Goldenfields Water (Reticulation)																						
28B	Goldenfields Water (Bulk Water Supply)																						
20	Goulburn Mulwaree Council	1,517	1,716	1,692	1,723					96	124	1,517	1,716	1,788	1,847	149	166	186	175				
9	Wagga Wagga Council	5,619	5,440	4,926	4,904	738	721	808	819	6,357	6,161	5,734	5,723	252	244	220	218						
LWU Range Max		15,937	17,423	16,287	14,901	1,321	1,131	1,129	1,045	15,937	17,423	16,287	15,592	378	388	367	308						
LWU Range Min		1,517	1,623	1,366	1,380	69	67	66	4	1,517	1,623	1,366	1,380	149	166	140	142						
Median of NMU Indicators shown in Table		4,720	4,701	4,160	3,574	152	161	191	176	4,955	4,902	4,554	3,773	268	277	252	218						



Appendix F: NMUs - National Performance Report 2013-14

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				W21 Includes to golf courses. Excludes stormwater. Includes sewer mining				W22 Includes crops, forestry & livestock. Excludes Stormwater. Includes sewer mining				W23 Exclude disposal if not beneficial use. Exclude stormwater. Include sewer mining.				W24 Exclude stormwater. Include sewer mining.				W25 Include managed aquifer recharge W25.1, non revenue water, losses and sewer mining.				W26 W26=W20+W21+W22+W23+W24+W25 Includes sewer mining. Excludes stormwater				W27 W27=(W26+W15-W6)/W18.5x100 Exclude bulk recycled purchased			
		(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(%)			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		2,250	1,873	2,064	2,137	7,687	9,683	10,544	10,205	5,199	5,187	5,175	5,400	15,989	13,362	15,142	14,990	16,396	15,823	14,026	14,211	0	0	0	0	47,521	45,929	46,951	46,943	10	8	10	10
Hunter Water Corporation		0	0	0	0	2,006	1,643	1,644	2,274	2,488	2,824	2,445	2,441	0	0	0	0	180	198	180	180	0	0	0	0	4,674	4,664	4,269	4,895	7	6	6	8
Water NSW																																	
1	Gosford City Council			0	0	37	14	28	18	0	0	0	0	0	0	0	0	0	257	0	0	0	14	37	271	28	32	0	2	0	0		
2	Wyong Shire Council	123	120	657	51	570	326		683				0				0	304	19	220	228			0	997	465	877	962	6	3	6	7	
3	Shoalhaven City Council	0	0	0	0	72	38	292	644	764	671	1,670	1,708	0	0	0	0	27	35	30	0	0	0	0	863	744	1,992	2,352	11	9	27	28	
4	Rous Water																																
5	MidCoast Water	0	0	0	0	0	0	133	519	546	282	664	821	0	0	0	0	0	0	51	99	0	0	0	0	546	282	848	1,439	8	4	13	26
6	Tweed Shire Council	0	0	0	0	386	336	382	563	48	48	47	38	0	0	0	0	2	2	2	3	0	0	0	0	436	386	431	604	5	5	6	9
7	Port Macquarie Hastings Council	0	0	0	0	92	94	189	289	200	200	53	67	0	0	0	0	0	0	0	7	0	0	0	0	292	294	242	363	4	3	3	4
8	Riverina Water																																
10	Coffs Harbour City Council				0	28	71	259	567	136	300	542	614				0	537	118	0	255	0	0		0	701	489	801	1,436	9	8	11	26
11	Albury City Council	0	0	0	0	0	0	0	0	3,652	2,723	1,208	803	1,570	2,564	1,525	1,664	0	0	0	0	0	0	0	0	5,222	5,287	2,733	2,468	99	99	59	54
12	Fish River Water																																
13	Tamworth Regional Council				0				0	5,250	3,622	3,595	4,068				0	0	0		60	0	0		0	5,250	3,656	3,595	4,128	100	67	79	100
14	Clarence Valley Council			0	0	25	109	128	176				0				0			0	0				0	25	109	128	176	1	3	4	7
15	Eurobodalla Shire Council			0	0	103	77	170	190				0				0	19	9	19	26	38	0	0	0	160	86	189	216	4	3	6	7
16	Wingecarribee Shire Council	0	0	0	0	42	35	98	0	0	0	0	124	0	0	0	0	0	0	0	0	0	0	0	0	42	35	98	124	1	1	3	4
17	Queanbeyan City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
18	Dubbo City Council	0	0	0	0	0	0	0	0	1,411	1,305	2,108	1,884	0	0	0	0	85	91	70	74	0	0	0	0	1,496	1,396	2,178	1,958	50	48	83	100
19	Orange City Council	0	0	0	0	1,674	2,218	1,573	2,903	40	0	0	0	0	0	0	0	0	0	108	44	0	0	0	0	1,714	2,218	1,681	2,947	29	49	41	78
21	Bathurst Regional Council	0	0	0	0	0	0	0	0	0	0	0	0	3,575	4,198	4,062	3,197	336	126	726	745	0	0	0	0			4,788	3,942			103	100
22	Lismore City Council	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	34	0	0	0	0	0	0	0	34	0	0	0	1
23	Bega Valley Shire Council	0	0	0	0	391	408	484	461	57	77	196	165	0	0	0	0	0	0	0	0	0	0	0	0	448	485	680	626	22	21	38	31
24	Ballina Shire Council			0	0	123	104	0	273			128	0				0			4	0			0	0	123	164	132	273	3	4	3	10
25	Kempsey Shire Council	0	0	0	0	0	0	0	90	0	0	0	13	0	0	0	0	0	0	10	7	0	0	0	0	0	0	10	110	0	0	0	6
26	Essential Energy				0	320	416	629	709				0				0				0				0	320	416	629	709	19	26	46	51
27	Byron Shire Council	0	0	0	0	241	374	547	390	248	137	49	88	0	0	0	0	0	0	0	0	0	0	0	0	489	511	596	478	15	16	13	15
28A	Goldenfields Water (Reticulation)																																
28B	Goldenfields Water (Bulk Water Su																																
20	Goulburn Mulwaree Council	0	0	0	0	153	118	193	204	1,482	1,422	1,374	1,389	0	0	0	0	0	0	0	0	0	0	0	0	1,635	1,540	1,567	1,593	100	90	95	98
9	Wagga Wagga Council	0	0	0	0	82	184	331	251	432	253	224	225	5,843	5,532	4,988	5,047	0	2	0	0	0	0	0	0	6,357	5,971	5,543	5,523	100	97	97	97
LWU Range Max		123	120	657	51	1,674	2,218	1,573	2,903	5,250	3,622	3,595	4,068	5,843	5,532	4,988	5,047	537	257	726	745	38	0	0	14	6,357	5,971	5,543	5,523	100	99	103	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	0	0	0	0	0	0	0	0
Median of NMU Indicators shown in Table		0	0	0	0	72	77	152	228	136	137	53	53	0	0	0	0	0	0	0	2	0	0	0	0	448	416	655	668	8	5	12	20



Appendix F: NMUs - National Performance Report 2013-14

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 Excludes W6 & W28.2				Volume of non-potable water received from bulk supplier Excludes W6 & W28.2				Volume of potable water supplied – Residential Excludes recycled water				Volume of non-potable water supplied – Residential excludes recycled water				Volume of potable water supplied - Commercial, municipal and industrial				Volume of non-potable water supplied - Commercial, municipal and industrial				Volume of potable water supplied – Non-Revenue Water			
		W3.1				W3.2				W3.3				W5.1				W5.2				W8.1				W8.2				W9.1				W9.2				W10.1			
		(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		77,102	61,290	0	0	NA	0	0	0	NA	0	0	0	0	0	0	0	414,004	415,498	510,299	523,725	324,003	319,783	333,912	352,740	0	0	0	0	113,759	110,479	112,149	114,695	4,579	1,484	1,111	1,639				
Hunter Water Corporation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	267	0	0	0	0	37,087	34,911	38,370	40,150	0	0	0	0	21,068	19,225	21,026	21,306	0	0	0	0	9,539	9,046	9,198	9,995
Water NSW														224	25	1,014	2,524																								
1	Gosford City Council	0	0	0	0	0	0	0	0	0	0	0	0	1,444	2,490	660	1,598	0	0	0	0	9,979	9,744	10,545	10,967	0	0	0	0	2,198	2,111	2,473	2,494	0	0	0	0	1,661	1,317	1,270	2,922
2	Wyong Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	2,035	540	1,169	465	0	0	0	0	9,046	8,735	9,039	9,302					2,963	2,912	3,022	3,300	1	1	1	1	1,281	1,135	1,497	1,421
3	Shoalhaven City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	72	95	86	5,840	5,602	6,425	6,455	5	6	7	8	4,434	3,741	4,108	3,903	2,412	2,369	2,310	2,405	1,225	1,038	1,162	1,280
4	Rous Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	1,566	2,015	2,416	824	0	0	0	0	792	1,168	605	652
5	MidCoast Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,736	4,685	5,107	5,365	0	0	0	0	2,125	2,036	2,196	2,372	0	0	0	0	1,470	1,594	1,263	1,301
6	Tweed Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	6	0	0	0	0	5,136	4,966	5,379	5,685	0	0	0	0	1,973	2,106	2,160	2,336	0	0	0	0	1,377	1,202	1,167	1,183
7	Port Macquarie Hastings Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,935	3,865	4,213	4,296	0	0	0	0	1,325	1,243	1,343	1,322	0	94	111	141	817	713	617	625
8	Riverina Water	0	0	0	0	0	0	0	0	0	0	0	0	19	28	34	56	0	0	0	0	6,012	6,540	8,856	8,741	0	0	0	0	3,995	4,617	5,447	5,471	0	0	0	0	1,442	1,240	1,590	1,579
10	Coffs Harbour City Council																				3,732	3,599	3,721	3,929				0	1,286	1,371	1,370	1,422	4	0	6	9	640	575	797	607	
11	Albury City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,733	4,242	5,320	5,002	0	0	0	1	1,363	1,585	1,850	1,925	5	1	4	193	566	647	761	759
12	Fish River Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	50	0	0	222	0	65	72	4,248	4,141	5,905	5,000	1,218	546	1,411	1,753
13	Tamworth Regional Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,033	3,852	4,925	5,532	0	0	0	0	3,461	3,522	3,901	3,594	39	0	195	140	1,514	809	965	1,014
14	Clarence Valley Council			0	0			0	0			0	0			0	0			0	0	2,638	2,722	2,951	3,051	43	44	0	0	1,345	1,758	1,797	1,866	0	0	64	63	2,017	1,550	982	1,509
15	Eurobodalla Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,010	1,927	2,146	2,204			0	0	667	633	647	675	0	0	0	0	725	806	604	539
16	Wingecarribee Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,518	3,490	3,796	4,319	2,680	2,658	3,149	3,437	0	0	0	0	820	854	946	1,044	0	0	0	0	583	558	882	967
17	Queanbeyan City Council	0	0	0	0	0	0	0	0	0	0	0	0	3,442	3,641	3,836	3,995	0	0	0	0	2,845	2,786	2,645	2,757	0	0	0	0	434	539	515	649	0	0	0	0	512	568	670	589
18	Dubbo City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,880	3,690	5,455	5,292	0	0	0	0	1,621	1,705	2,949	2,498	195	114	260	269	622	589	934	865
19	Orange City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,312	2,426	2,725	2,695	0	0	0	0	798	757	1,087	1,084	0	0	0	0	581	487	470	462
21	Bathurst Regional Council			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,474	2,472	3,569	3,227	2	2	5	9	1,430	2,256	1,831	2,213	1,006	965	1,001	1,040	478	499	586	538
22	Lismore City Council	0	0	0	0	0	0	0	0	0	0	0	0	3,129	3,084	3,117	3,258	0	0	0	0	1,942	1,836	1,859	1,975	0	0	0	0	902	912	851	894	0	0	0	0	392	436	301	319
23	Bega Valley Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,679	1,703	1,814	1,765	0	0	0	0	894	941	1,038	945	0	0	27	66	675	647	1,098	719
24	Ballina Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	3,476	3,272	3,607	3,684	0	0	0	0	2,115	2,180	2,326	2,483	0	0	0	0	631	605	628	571	0	0	0	0	862	620	787	805
25	Kempsey Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,648	1,545	1,682	1,686	0	0	0	0	1,086	1,005	1,142	1,133	36	27	73	0	685	767	622	837
26	Essential Energy													0	0			920	1,061	1,140	4,940	2,086	2,271	2,690	2																

Appendix F: NMUs - National Performance Report 2013-14

WATER UTILITY		WATER RESOURCES																																									
		USES OF WATER SUPPLIED																								SEWAGE COLLECTED																	
		Volume of non-potable water supplied – Other				Volume of water supplied - managed aquifer recharge				Volume of water supplied - agricultural irrigation				Total urban potable water supplied W11.1=W8.1+W9.1+W10.1 excludes bulk exports				Total urban non-potable water supplied W11.2=W8.2+W9.2+W10.2 excludes recycled & stormwater				Total volume of potable water produced W11.3=W11.1+W14.1-W5.1 excludes recycled & stormwater				Volume of potable bulk water exports excludes recycled & stormwater				Volume of non-potable bulk water exports excludes recycled & stormwater				Volume of sewage supplied to other infrastructure operators				Volume of sewage taken from other infrastructure operators					
		W10.2				W10.3				W10.4				W11.1				W11.2				W11.3				W14.1				W14.2				W18.1				W18.2					
		(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)					
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14		
Sydney Water Corporation														437,762	430,262	446,061	467,435	4,579	1,484	1,111	1,639	492,167	480,733	509,790	527,511	NA	NA	NA	NA	NA	NA	NA	NA	908	803	1,245	1,237	0		0	0		
Hunter Water Corporation		0	0	0	0	0	0	0	0	0	0	0	0	67,694	63,182	68,594	71,451	0	0	0	0	0	63,182	68,623	71,483	315	12	29	299	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water NSW																		433,363	432,443	536,949	551,686									416,740	418,175	521,945	536,435										
1	Gosford City Council	7	52	95	117	0	0	0	0	0	0	0	0	12,246	13,172	14,288	16,383	7	52	95	117	13,994	13,705	15,444	16,532	1,748	533	1,156	149	0	0	0	0	0	0	0	0	0	0	0	0		
2	Wyong Shire Council													12,009	12,782	13,558	14,023	1	1	1	1	13,430	15,218	15,018	15,913	1,421	2,436	585	1,890					220	200	225	0	0	0	0	0		
3	Shoalhaven City Council	0	0	0	0	0	0	0	0	0	0	0	0	10,325	10,381	11,695	11,638	2,417	2,375	2,317	2,413	10,325	10,381	11,695	11,638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Rous Water	0	0	0	0	0	0	0	0	0	0	0	0	725	1,839	1,369	1,476	0	0	0	0	10,402	11,132	11,077	11,521	9,677	9,293	9,708	10,045	0	0	0	0										
5	MidCoast Water	0	0	0	0	0	0	0	0	0	0	0	0	7,028	8,315	8,566	9,038	0	0	0	0	7,028	8,315	8,566	9,038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	Tweed Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	7,151	8,274	8,706	9,204	0	0	0	0	7,151	8,274	8,706	9,204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Port Macquarie Hastings Council	0	0	0	0	0	0	0	0	0	0	0	0	5,286	5,821	6,173	6,243	0	94	111	141	5,286	5,821	6,173	6,243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Riverina Water	0	0	0	0	0	0	0	0	0	0	0	0	10,768	12,397	15,893	15,791	0	0	0	0	10,768	12,397	15,893	15,791	0	0	0	0	0	0	0	0										
10	Coffs Harbour City Council													5,093	5,545	5,888	5,958	4	0	6	9									321	954	401	63	0	0	0	0	0	0	0	0	0	
11	Albury City Council	0	0	0	0	0	0	0	0	0	0	0	0	5,124	6,474	7,931	7,686	5	1	4	194	5,379	6,743	8,310	8,078	255	269	379	392	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Fish River Water	0	0		0				0				0	1,440	676	1,476	1,825	4,248	4,191	5,905	5,000	7,946	1,366	2,309	2,615	6,506	690	833	790		717	1,599	3,122										
13	Tamworth Regional Council	0	0	0	0			0	0	39	34	0	0	7,494	8,183	9,791	10,140	39	0	195	140	7,494	8,183	9,791	10,140	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	
14	Clarence Valley Council	0	0	0	0			0	0			0	0	4,023	6,030	5,730	6,426					4,023	6,030	5,730	6,426			0	0			0	0	0	0	0	0	0	0	0	0	0	
15	Eurobodalla Shire Council	0	0	0	0			0	0			0	0	2,694	3,366	3,397	3,418	0	0	0	0	2,694	3,366	3,397	3,418	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0
16	Wingecarribee Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	3,520	4,070	4,977	5,448	0	0	0	0	3,520	4,070	4,977	5,448	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Queanbeyan City Council	0	0	0	0	0	0	0	0	0	0	0	0	3,299	3,893	3,830	3,995	0	0	0	0	3,299	3,893	3,830	3,995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Dubbo City Council	0	0	0	0	0	0	0	0	0	0	0	0	5,533	5,984	9,338	8,655	195	114	260	269	5,533	5,984	9,338	8,655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Orange City Council	0	0	0	0	0	0	0	0	0	0	0	0	3,112	3,670	4,282	4,241	0	0	0	0	3,112	3,672	4,282	4,241	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Bathurst Regional Council					0	0	0	0	0	0	0	0	3,904	5,227	5,986	5,978	1,008	967	1,006	1,049	3,907	5,230	5,988	5,984	3	3	2	6						0								
22	Lismore City Council	0	0	0	0	0	0	0	0	0	0	0	0	2,858	3,184	3,011	3,188	0	0	0	0	2,858	3,184	3,011	3,188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Bega Valley Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	2,596	3,291	3,950	3,429	0	0	27	66	2,596	3,291	3,950	3,429	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	Ballina Shire Council	0	0	0	0	0	0	0	0	0	0	0	0	2,764	3,405	3,741	3,859	0	0	0	0	2,764	3,405	3,741	3,859	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Kempsey Shire Council	0	0	0	0	0	0	0	0	1	0	0	0	3,010	3,317	3,446	3,656	36	27	73	0	3,025	3,333	3,479	3,687	15	16	33	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Essential Energy													3,688	4,469	5,23																											



## Appendix F: NMUs - National Performance Report 2013-14

WATER UTILITY		WATER RESOURCES																																											
		SEWAGE COLLECTED												USES OF RECYCLED WATER																															
		Volume of sewage taken from sewer mining				Volume of sewage measured at inlet to treatment works				Volume of treated sewage effluent				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				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							
		W18.3				W18.4				W18.5				W25.1				W28				W28.1				W28.2				W28.3				W28.4				W29							
(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)				(ML)													
2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14							
Sydney Water Corporation		0	0	0	0	532,694	561,000	480,359	464,586	472,129	578,676	494,241	478,591	NA	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	472,112	548,619	468,005	451,791							
Hunter Water Corporation		0	0	0	0	67,869	80,777	68,097	64,878	63,190	80,777	68,097	64,878	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63,971	75,915	63,828	59,983							
Water NSW																																													
1	Gosford City Council	0	0	0	0	14,800	16,607	15,742	15,592	14,799	16,607	15,658	15,575	0	0	0	0					0	0			0	0			0	0			0	0			14,270	16,335	15,630	15,543				
2	Wyong Shire Council	0	0	0	0	15,937	17,423	16,062	14,835	15,936	17,614	15,157	14,846					0					0	0			0	0			0	0			14,719	14,723	14,280	13,884							
3	Shoalhaven City Council	0	0	0	0	7,792	8,525	7,488	8,384	7,790	8,522	7,314	8,543	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,932	8,200	5,322	6,191						
4	Rous Water																					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
5	MidCoast Water	0	0	0	0	6,750	7,818	6,555	5,658	6,752	7,817	6,608	5,639	0				0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,138	7,352	5,760	4,200					
6	Tweed Shire Council	0	0	0	0	9,163	8,586	7,906	6,704	9,162	8,585	7,904	6,621	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,774	8,209	7,473	6,017					
7	Port Macquarie Hastings Council	0	0	0	0	8,443	9,664	8,706	8,476	8,442	9,664	8,526	8,476	0	0	0	0					0	0			0	0			0	0			0	0			8,202	9,410	8,284	8,113				
8	Riverina Water																					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
10	Coffs Harbour City Council	0	0	0	0	8,064	7,338	6,878	5,370	8,063	6,176	7,314	5,626					0					0	0			0	0			0	0			0	0			8,152	7,266	6,513	4,190			
11	Albury City Council	0	0	0	0	5,274	5,356	4,624	4,477	5,273	5,356	2,755	4,550	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	69	22	2,082						
12	Fish River Water																					0	0			0	0			0	0			0	0										
13	Tamworth Regional Council	0	0	0	0	5,211	5,479	5,396	4,742	5,211	5,479	4,531	4,128	0				0					0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,181	5,162	936	0					
14	Clarence Valley Council	0	0	0	0	3,521	3,343	3,306	2,525	3,523	3,335	3,454	2,528					0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,523	3,365	3,326	2,352					
15	Eurobodalla Shire Council	0	0	0	0	3,743	3,287	3,161	3,141	3,743	3,286	3,161	3,140					0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,587	3,200	2,972	2,924					
16	Wingecarribee Shire Council	0	0	0	0	4,069	4,906	4,142	3,504	4,045	4,876	3,981	3,537	0	0	0	0	0		197,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,044	4,876	3,883	3,413							
17	Queanbeyan City Council	0	0	0	0	4,015	3,812	2,965	3,596	4,016	3,813	2,692	3,240	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,702	3,175	2,692	3,240						
18	Dubbo City Council	0	0	0	0	3,062	2,920	2,795	2,796	3,008	2,897	2,610	1,958	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	997	895	432	0							
19	Orange City Council	0	0	0	0	5,970	4,501	4,088	3,773	5,991	4,495	4,059	3,796	0	0	0	0	5,517	8,233	5,517	6,043	0	0	0	0	0	0	0	0	0	0	0	0	0	4,330	2,233	2,378	849							
21	Bathurst Regional Council	0				4,108	4,868	4,662	4,613	3,575	4,198	4,788	3,942	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	3,575	4,198	0	0							
22	Lismore City Council	0	0	0	0	4,720	4,902	4,550	3,743	4,670	4,484	4,030	3,355	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	3,545	3,408	4,030	3,321							
23	Bega Valley Shire Council	0	0	0	0	2,030	2,309	1,890	2,105	2,021	2,309	1,795	2,016	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	1,450	1,730	1,115	1,390							
24	Ballina Shire Council	0	0	0	0	4,955	4,754	4,554	2,952	4,946	4,746	4,341	2,869					0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,823	4,590	4,209	2,596						
25	Kempsey Shire Council	0	0	0	0	2,887	3,035	2,587	1,926	2,886	3,033	2,436	1,921	0	0	0	0	23,927	30,875	23,927	14,643	0	0	0	0	0	0	0	0	0	0	0	0	0	2,708	2,839	2,426	1,811							
26	Essential Energy	0	0	0	0	1,692	1,623	1,366	1,380	1,692	1,623	1,366	1,380					0					0	0	0	0	0	0	0	0	0	0	0	0	1,320	1,157	737	671							
27	Byron Shire Council	0	0	0	0	3,357	3,381	3,804	3,152	3,210	3,257	4,550	3,126	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	2,969	2,747	3,954	2,648							
28A	Goldenfields Water (Reticulation)																					0	0			0	0			0	0			0	0										
28B	Goldenfields Water (Bulk Water Su																					0	0			0	0			0	0			0	0										
20	Goulburn Mulwaree Council	0	0	0	0	1,517	1,716	1,788	1,847	1,517	1,716	1,659	1,627	0	0	0	0					0	0			0	0			0	0			174	296	92	34								
9	Wagga Wagga Council	0	0	0	0	6,357	6,161	5,734	5,723	6,357	6,161	5,734	5,723																									0	190	191	200				
LWU Range Max		0	0	0	0	15,937	17,423	16,062	15,592	15,936	17,614	15,658	15,575	0	0	0	0	23,927	30,875	23,927	197,100	0	0	0	0	0	0	0	0	0	0	0	0	14,719	16,335	15,630	15,543								
LWU Range Min		0	0	0	0	1,517	1,623	1,366	1,380	1,517	1,623	1,366	1,380	0	0	0	0	5,517	0	5,517	6,043	0	0	0	0	0	0	0	0	0	0	0	0	0	69	0	0								
Median of NMU Indicators shown in Table		0	0	0	0	4,838	4,885	4,552	3,758	4,808	4,621	4,200	3,667	0	0	0	0	14,722	8,233	14,722	14,643	0	0	0	0	0	0	0	0	0	0	0	3,581	3,387	3,149	2,622									



Appendix F: NMUs - National Performance Report 2013-14

WATER UTILITY		ASSETS																											
		WATER ASSETS												SGE ASSETS															
		No. of WTWs providing <u>full</u> 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.)					
2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14		
Sydney Water Corporation		10	10	9	9	21,069	21,680	21,930	22,105	85	84	84	84	24	25	24	24	24,193	24,768	24,540	24,786	72	71	73	73	6	5	6	5
Hunter Water Corporation		6	6	6	6	4,896	4,930	4,820	4,893	47	47	48	48	18	19	19	19	4,729	4,792	4,852	4,903	46	46	46	46	0	0	0	0
Water NSW																													
1	Gosford City Council	2	2	2	2	979	980	982	986	72	72	72	72	2	2	2	2	1,312	1,313	1,314	1,320	52	52	52	53	0	0	0	0
2	Wyong Shire Council	1	1	1	1	1,214	1,208	1,309	1,182	50	50	46	52	6	6	6	6	1,243	1,252	1,202	1,212	48	48	50	50	0	0	0	0
3	Shoalhaven City Council	4	4	4	4	1,479	1,487	1,489	1,492	31	31	31	31	12	12	13	13	1,157	1,162	1,168	1,169	35	35	35	36	0	0	0	0
4	Rous Water	2	2	2	2	125	118	118	405																	0	0	0	0
5	MidCoast Water	3	4	4	5	1,396	1,355	1,390	1,393	26	28	27	28	12	13	13	13	996	1,072	1,098	1,123	33	32	30	31	0	0	0	0
6	Tweed Shire Council	3	3	3	3	692	701	702	713	46	45	45	45	7	7	8	8	687	678	691	700	44	46	44	43	0	0	0	0
7	Port Macquarie Hastings Council	4	4	4	4	782	789	793	802	38	38	37	38	5	5	5	5	652	655	661	684	41	41	41	40	0	0	0	0
8	Riverina Water	17	17	17	17	1,619	1,648	1,648	1,652	18	18	18	18													0	0	0	0
10	Coffs Harbour City Council	2	2	2	2	641	652	652	676	38	38	38	37	4	5	5	5	665	668	689	693	34	35	34	34	0	0	0	0
11	Albury City Council	1	1	1	1	569	571	583	594	40	40	40	40	4	4	4	4	496	499	511	519	43	43	42	42	0	0	0	0
12	Fish River Water	1	1	1	1	241	241	241	241																	0	0	0	0
13	Tamworth Regional Council	5	5	5	5	661	667	676	707	31	31	31	30	5	4	4	4	524	524	542	555	36	36	35	35	0	0	0	0
14	Clarence Valley Council					1,101	1,104	1,104	1,118	19	20	19	19	5	5	5	6	375	367	369	409	39	40	40	36	0	0	0	0
15	Eurobodalla Shire Council	1	1	2	2	938	920	868	886	21	21	22	22	5	5	5	5	522	525	526	527	34	34	34	34	0	0	0	0
16	Wingecarribee Shire Council	3	3	3	3	656	660	656	660	28	28	29	29	5	5	5	6	519	535	515	555	28	27	29	28	0	0	0	0
17	Queanbeyan City Council	0	0	0	0	286	286	283	283	56	56	58	58	1	1	1	1	329	329	327	327	49	49	50	51	0	0	0	0
18	Dubbo City Council	1	1	1	1	496	491	497	501	34	34	34	34	1	2	2	2	388	390	393	399	40	40	40	40	0	0	0	0
19	Orange City Council	1	1	1	1	546	571	610	621	30	29	28	28	2	2	2	2	401	416	430	437	39	38	38	38	0	0	0	0
21	Bathurst Regional Council	1	1	1	1	379	381	385	392	39	40	40	40	1	1	1	1	389	389	391	394	39	38	39	39	0	0	0	0
22	Lismore City Council	0	0	0	0	341	343	343	343	41	41	42	42	3	3	3	3	348	348	359	359	36	36	35	36	0	0	0	0
23	Bega Valley Shire Council	0	0	0	0	576	527	611	613	25	27	23	23	10	10	10	10	390	409	401	401	31	30	30	30	0	0	0	0
24	Ballina Shire Council	1	1	1	1	321	325	330	332	45	45	42	43	4	4	4	4	320	319	322	324	42	42	43	43	0	0	0	0
25	Kempsey Shire Council	3	3	3	4	551	493	491	491	22	26	26	25	7	7	8	8	270	270	272	273	33	34	34	36	0	0	0	0
26	Essential Energy	3	3	3	3			382	382	27	28	28	28	2	2	2	2	248	248	246	246	39	39	40	40	0	0	0	0
27	Byron Shire Council	1	1	1	1	237	237	237	237	46	46	47	47	4	4	4	4	239	239	248	248	43	44	42	42	0	0	0	0
28A	Goldenfields Water (Reticulation)	1	1	1	1	1,834	1,834	1,834	1,834	5	5	6	6													0	0	0	0
28B	Goldenfields Water (Bulk Water Su	3	3	3	3	315	315	315	315																	0	0	0	0
20	Goulburn Mulwaree Council	2	2	2	2	269	274	279	281	39	39	36	37	2	2	2	2	272	277	283	283	38	37	34	37	0	0	0	0
9	Wagga Wagga Council													5	5	6	6	590	596	599	623	43	42	43	42	0	0	0	0
LWU Range Max		17	17	17	17	1,834	1,834	1,834	1,834	72	72	72	72	12	13	13	13	1,312	1,313	1,314	1,320	52	52	52	53	0	0	0	0
LWU Range Min		0	0	0	0	125	118	118	237	5	5	6	6	1	1	1	1	239	239	246	246	28	27	29	28	0	0	0	0
Median of NMU Indicators shown in Table		2	2	2	2	576	571	611	617	34	34	34	34	5	5	5	5	449	458	471	478	39	39	40	39	0	0	0	0

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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				A9				A10				A11				A14				A15			
		(no./100km)								(L/connection/day)				(kL/km main/day)				(per 100km of main)				(per 1000 properties)			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		28	22	29	30	1.3	1.5	1.5	1.4	79	85	87	81	5	6	6	5	57	48	46	61	0	0	0	0
Hunter Water Corporation		31	25	32	30	1.2	1.1	1.1	1.2	84	75	75	82	3	3	3	4	60	47	42	54	13	9	9	10
Water NSW																									
1	Gosford City Council	29	27	23	22	1.0	1.0	1.0	1.4	61	36	32	116	4	2	2	7	42	36	38	37	4	4	4	5
2	Wyong Shire Council	10	8	10	17	1.0	1.0	1.0	1.0	31	30	33	34	2	1	2	2	57	55	46	54	1	1	1	1
3	Shoalhaven City Council	10	10	10	10	1.0	1.0	1.0	1.0	45	37	43	57	1	1	1	2	12	13	14	8	1	0	1	0
4	Rous Water	53	31	36	12									9	21	9	3								
5	MidCoast Water	4	5	8	8	1.0	1.1	1.0	1.0	79	84	57	57	2	2	1	2	6	6	6	6				
6	Tweed Shire Council	8	5	4	8	1.0	1.0	1.0	1.0	58	56	58	61	2	2	2	2	11	8	2	1	1	1	0	0
7	Port Macquarie Hastings Council	3	2	3	15	1.4	1.2	1.0	1.0	71	62	37	37	2	2	1	1								
8	Riverina Water	14	14	14	19	1.0	1.0	1.0	1.0	47	64	81	81	1	1	2	2								
10	Coffs Harbour City Council	12	9	10	3		1.0	1.0	1.0	50	60	75	63	2	2	3	2	51	43	65	76	8	10	13	3
11	Albury City Council	7	6	8	10	1.1	1.3	1.0	1.0	44	50	56	57	2	2	2	2			67	75			12	10
12	Fish River Water	3	4	5	8									14	6	16	19								
13	Tamworth Regional Council	6	13	8	7	6.7	2.7	3.0	3.2	186	74	83	91	6	2	3	3	89	79	77	74	4	1	3	9
14	Clarence Valley Council	14	10	12	13			1.0	1.2			104	127			2	2	41	29	43	45	5	16	11	10
15	Eurobodalla Shire Council			11	13	1.3	1.0	1.0	1.0	99	59	50	50	2	1	1	1			29	30			6	5
16	Wingecarribee Shire Council	5	6	6	12	1.0	1.0	1.4	1.5	79	74	122	133	2	2	3	4	36	25	44	46	16	8	9	7
17	Queanbeyan City Council	18	23	5	2	1.7	1.7	1.4	1.3	88	87	123	102	4	4	5	5	75	57	52	55	0	0	0	0
18	Dubbo City Council	6	3	4	4	1.4	1.3	2.1	2.5	69	65	101	124	2	2	3	4	38	36	43	42	15	11	15	13
19	Orange City Council			9	9			1.0	1.0			64	60			2	2	32	19	15	24	1	7	1	5
21	Bathurst Regional Council	12	8	5	8													32	64	58	84	10	3	3	3
22	Lismore City Council	14	10	25	37	1.0	1.0	1.0	1.0	40	46	37	39	2	2	1	2	120	101	55	49	16	12	6	9
23	Bega Valley Shire Council	6	4	8	9	1.0	1.0	2.1	1.4	54	54	143	96	1	1	3	2	18	10	9	22			3	3
24	Ballina Shire Council	8	2	12	6	3.3	2.1	2.7	2.5	194	121	156	145	7	5	6	6	28	10	8	20	1	1	2	2
25	Kempsey Shire Council	10	9	7	10	1.0	1.0	1.0	1.6	49	48	50	96	1	1	1	2	2	11	24	16			10	14
26	Essential Energy			24	17	1.1	1.6	1.7	1.5	65	98	102	90			3	3	129	102	128	115	37	40	36	37
27	Byron Shire Council	8	7	7	9	2.7	1.7	1.6	1.4	104	63	78	68	4	3	3	3	26	20	32	11	11	9	10	8
28A	Goldenfields Water (Reticulation)	19	21	21	10	1.0	1.0	1.0	1.0	67	74	91	92	0	0	1	1								
28B	Goldenfields Water (Bulk Water Supply)	0	0	0	0									9	6	4	4								
20	Goulburn Mulwaree Council			11	11			1.0	1.0			68	82			2	3							13	5
9	Wagga Wagga Council																	78	75	88	80	25	18	17	21
LWU Range Max		53	31	36	37	6.7	2.7	3.0	3.2	194	121	156	145	14	21	16	19	129	102	128	115	37	40	36	37
LWU Range Min		0	0	0	0	1.0	1.0	1.0	1.0	31	30	32	34	0	0	1	1	2	6	2	1	0	0	0	0
Median of NMU Indicators shown in Table		9	8	9	10	1.0	1.0	1.0	1.0	65	62	72	82	2	2	2	2	37	33	43	44	5	7	6	5



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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				E6				E7													
		( %)				( %)				( %)				( %)				(no.)				(YES/NO)				(YES/NO)													
2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14	
Sydney Water Corporation		75	74	74	74	4	5	4	3	21	23	22	23	100	100	100	100	26 of 29	24 of 29	23/29	28 of 29	Yes	Yes	Yes	Yes	No	No	No	No										
Hunter Water Corporation		0	0	0	0	54	56	56	57	46	44	44	43	100	99	100	100	7	12 of 18	15 of 19	13 of 19	Yes	Yes	Yes	Yes	No	No	No	No										
Water NSW																																							
1	Gosford City Council	1	2	1	0	98	97	97	98	1	2	2	2	100	100	100	100	2 of 2	2 of 2	2 of 2	2 of 2	Yes	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No		
2	Wyong Shire Council	30	0	0	0	64	96	95	94	6	4	5	7	100	100	100	100	6 of 6	6 of 6	6 of 6	6 of 6	Yes	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
3	Shoalhaven City Council	0	0	0	0	38	38	0	0	62	62	100	89	93	86	94	95	11 of 12	9 of 12	10 of 12	12 of 13	Yes	YES	Yes	Yes	No	No	No	No										
4	Rous Water																																						
5	MidCoast Water	0	0	0	0	12	16	19	17	88	84	81	83	99	99	98	96	11 of 12	12 of 13	8 of 13	9 of 13	Yes	YES	Yes	Yes	No	No	No	No										
6	Tweed Shire Council	0	0	0	0	1	1	1	1	100	99	99	98	100	98	97	83	5 of 7	5 of 7	5 of 7	4 of 8	Yes	YES	Yes	Yes	Yes	No	No	No	No									
7	Port Macquarie Hastings Council	0	0	0	0	0	0	1	0	100	100	99	100	78	88	89	82	2 of 5	4 of 5	4 of 5	3 of 5	Yes	YES	Yes	Yes	No	No	No	No										
8	Riverina Water																																						
10	Coffs Harbour City Council	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	3 of 4	5 of 5	5 of 5	5 of 5	Yes	YES	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
11	Albury City Council	0	0	0	0	0	0	0	0	100	100	100	100	83	71	19	73	3 of 4	3 of 4	2 of 4	2 of 4	Yes	YES	Yes	Yes	No	No	No	No										
12	Fish River Water																																						
13	Tamworth Regional Council	0	0	0	0	100	100	100	100	0	0	0	0	99	99	87	100	4 of 5	3 of 4	3 of 4	4 of 4	Yes	YES	Yes	Yes	No	No	No	No										
14	Clarence Valley Council	0	0	0	0	1	1	0	0	99	99	100	100	78	85	85	73	2 of 5	3 of 5	1 of 5	0 of 6	Yes	YES	Yes	Yes	No	No	No	No										
15	Eurobodalla Shire Council	0	0	0	1	6	6	6	5	95	94	94	95	100	92	72	100	5 of 5	4 of 5	3 of 5	5 of 5	Yes	YES	Yes	Yes	No	No	No	Yes										
16	Wingecarribee Shire Council	0	0	0	0	0	0	0	1	100	100	100	98	92	93	100	100	4 of 5	4 of 5	4 of 5	6 of 6	Yes	YES	Yes	Yes	No	No	No	Yes										
17	Queanbeyan City Council	0	0	0	0	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	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
18	Dubbo City Council	0	0	0	0	0	0	0	0	100	100	100	99	44	83	100	85	0 of 1	1 of 2	2 of 2	1 of 2	Yes	YES	Yes	Yes	No	No	Yes	No										
19	Orange City Council	0	7	1	0	1	1	1	2	99	92	98	99	60	75	83	100	1 of 2	1 of 2	1 of 2	2 of 2	Yes	YES	Yes	Yes			No	Yes										
21	Bathurst Regional Council	0	0	0	0	0	0	0	0	100	100	100	86	100	100	100	100	1 of 1	1 of 1	1 of 1	1 of 1	Yes	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
22	Lismore City Council	5	5	5	2	0	0	0	0	95	95	95	98	100	100	88	79	3 of 3	3 of 3	1 of 3	2 of 3	Yes	YES	Yes	Yes	Yes	Yes	No	No										
23	Bega Valley Shire Council	0	0	0	0	59	60	60	61	41	40	40	39			69	92	8 of 10	8 of 10	7 of 10	8 of 10	Yes	YES	Yes	Yes	No	No	No	No										
24	Ballina Shire Council	0	0	0	0	0	0	0	0	100	100	100	100	84	76	76	75	3 of 4	2 of 4	0 of 4	1 of 4	Yes	YES	Yes	Yes	No	No	No	No										
25	Kempsey Shire Council	0	0	0	0	23	21	22	28	77	79	78	63	88	80	79	79	4 of 7	5 of 7	5 of 7	4 of 7	Yes	YES	Yes	Yes	No	No	No	No										
26	Essential Energy	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	2 of 2	2 of 2	2 of 2	2 of 2	Yes	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
27	Byron Shire Council	0	0	0	0	0	0	0	1	100	100	100	96	100	94	88	97	3 of 4	2 of 4	2 of 4	3 of 4	Yes	YES	Yes	Yes	No	No	No	No										
28A	Goldenfields Water (Reticulation)																																						
28B	Goldenfields Water (Bulk Water Su																																						
20	Goulburn Mulwaree Council	0	0	0	0	0	2	0	0	100	98	100	100	83	100	100	100	1 of 2	2 of 2	2 of 2	2 of 2	Yes	YES	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
9	Wagga Wagga Council	0	0	0	0	3	6	3	4	97	95	97	97	98	100	100	100	4 of 5	5 of 5	6 of 6	6 of 6	Yes	YES	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
LWU Range Max		30	7	5	2	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	0	0	44	71	19	73																						
Median of NMU Indicators shown in Table		0	0	0	0	0	1	0	1	99	99	100	98	99	98	96	99																						



Appendix F: NMUs - National Performance Report 2013-14

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				E10				E11				E12				E13				E9.1				E10.1				E11.1				E12.1													
(%)				(t CO2 per 1,000 properties)				(t CO2 per 1,000 properties)				(t CO2 per 1,000 properties)				(t CO2 per 1,000 properties)				(number per 100km of main)				(t CO2 per ML)				(t CO2 per ML)				(t CO2 per ML)				(t CO2 per ML)													
2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14										
Sydney Water Corporation		100	100	100	100	67	65	66	69	200	163	113	118	-119	-151	-91	-99	143	72	85	85	0	1	0	0																								
Hunter Water Corporation		95	86	92	85	140	115	114	116	303	310	254	285	27	29	25	24	455	438	381	412	0	0	0	0																								
Water NSW																										0	0	0									0	0	0										
1	Gosford City Council	100	100	100	100	170	129	165	153	343	358	220	174	23	24	25	24	536	502	405	347	3	3	3	2																								
2	Wyong Shire Council	100	85	100	100	99		211	166	342		257	264	7		23	16		486	441	1	1	1	2																									
3	Shoalhaven City Council	100	100	100	100	198	205	171	147	203	314	280	253	6	7	5	5	408	489	423	377	1	0	1	1																								
4	Rous Water																													0	0	0	0									0	0	0	0	1	1	1	1
5	MidCoast Water	100	100	100	100	116	111	149	219	172	177	169	263	19	43	38	26	306	315	340	483	1	1	1	1																								
6	Tweed Shire Council	100	100	100	87	135	159	172	175	291	292	268	271	4	6	7	7	429	454	434	441	0	0	1	2																								
7	Port Macquarie Hastings Council	100	100	100	100	148	144	166	146	54	87	274	263	0				0	202	222	417	386	1	1	1	1																							
8	Riverina Water					307	608	351	353					0	16	15	19	307	624	365	372																												
10	Coffs Harbour City Council	100	100	100	100	111	130	98	103	335	339	382	267	5	11	55	6	450	460	515	362	1	0	13	1																								
11	Albury City Council	0	0	0	0	260	284	307	262	234	263	253	203	0				0	494	528	541	451	0	0	2	2																							
12	Fish River Water																									0		0	0													0		0	0				
13	Tamworth Regional Council	100	100	99	100	186	169	177	214	182	227	223	227	0				0	368	374	378	419	0	0	0	0																							
14	Clarence Valley Council	37	100	40	58	12	26	19	19	86	170	139	139						98	137	114	114	0	0	0	0																							
15	Eurobodalla Shire Council	0	47	0	33	138	154	162	159	183	198	191	204	20	16	14	16	341	351	352	363	4	6	7	8																								
16	Wingecarribee Shire Council	0	0	0	0	149	146	183	230	216	274	257	260	17	15	13	23	382	377	398	467	3	10	9	1																								
17	Queanbeyan City Council	0	0	0	0	9	14	20	15	74	84	152	146	27	46	18	7	110	143	190	170	1	0	1	1																								
18	Dubbo City Council	100	64	100	100	256	239	308	306	216	200	232	204	11	3	3	2	482	429	527	499	1	1	1	1																								
19	Orange City Council	0	100	100	100	200	209	235	221	250	191	182	199	6				5	449	390	414	416	2	0	0	1																							
21	Bathurst Regional Council	100	100	100	100	178	230	192	172	438	285	193	191						616	512	384	362	0	0	0	0																							
22	Lismore City Council	0	0	0	0	14	15	22	20	55	61	196	242	13				12	69	69	210	248	2	1	0	1																							
23	Bega Valley Shire Council	0	0	0	0	122				118	32	126	212	219	40	40	29	39	72	193	331	343	0	0	0	0																							
24	Ballina Shire Council	100	100	100	100	12	14	15	13	339	363	357	415						351	347	366	425	1	6	1	0																							
25	Kempsey Shire Council	70	99	96	100	157	158	180	198	151	243	231	172	31	31	26	16	340	368	376	349	1	1	6	1																								
26	Essential Energy	0	0	0	0	480	509	536	886	55	50	84	48						550	572	647	930	1	0	0	0																							
27	Byron Shire Council	100	100	100	100	7	12	6	6	276	368	169	172						283	363	164	167	5	4	1	2																							
28A	Goldenfields Water (Reticulation)					445				390					18				18	461				407																									
28B	Goldenfields Water (Bulk Water Su																									1	1	1	1									0	0	0	0	1	1	1	1				
20	Goulburn Mulwaree Council	0	0	0	0	113	91	116	118	175	463	493	472	2	22	22	20	615				618	2	3	1	0																							
9	Wagga Wagga Council	96	100	100	100																	0	0	0	1																								
LWU Range Max		100	100	100	100	480	608	536	886	438	463	493	472	40	46	55	39	616	624	647	930	5	10	13	8	1	1	1	1									0	0	0									
LWU Range Min		0	0	0	0	7	12	6	6	32	50	84	48	0	3	0	0	69	69	114	114	0	0	0	0	0	0	0	0									0	0	0									
Median of NMU Indicators shown in Table		98	100	100	100	148	150	171	166	203	235	223	219	14	16	14	14	360	376	398	386	1	0	1	1	0	1	0	0									0	0	0									

Appendix F: NMUs - National Performance Report 2013-14

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)			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		4,581	4,626	4,657	4,755	1,651	1,667	1,698	1,724	142	145	145	124	1,793	1,812	1,844	1,848	4,477	4,491	4,530	4,644	1,615	1,631	1,663	1,687	130	132	132	111	1,745	1,763	1,795	1,799
Hunter Water Corporation		539	540	545	550	212	214	218	222	16	16	15	14	228	230	233	236	520	517	523	528	204	207	209	213	12	12	12	11	216	219	221	224
Water NSW																																	
1	Gosford City Council	163	163	163	165	67	67	68	68	3	3	3	3	71	71	71	72	159	159	159	161	66	66	66	67	3	3	3	3	69	69	69	70
2	Wyong Shire Council	150	145	150	154	58	58	58	59	3	3	2	2	60	61	61	61	148	143	148	152	57	57	57	58	3	3	3	3	60	60	60	60
3	Shoalhaven City Council	92	93	90	89	43	43	44	44	3	3	3	3	46	46	47	47	82	83	79	79	39	39	39	40	2	2	2	2	41	41	41	42
4	Rous Water																																
5	MidCoast Water	78	82	82	83	34	36	36	36	3	3	3	3	37	38	39	39	77	81	81	81	30	32	32	32	3	3	3	3	33	35	35	35
6	Tweed Shire Council	81	79	79	78	31	31	31	31	1	1	1	1	32	31	32	32	78	73	75	76	29	30	29	29	1	1	1	1	30	31	30	30
7	Port Macquarie Hastings Council	79	80	80	81	27	27	27	27	3	3	3	3	30	30	30	30	72	73	74	75	25	25	25	26	2	2	2	2	27	27	27	28
8	Riverina Water	70	60	70	71	27	26	27	27	2	4	3	3	29	29	29	30																
10	Coffs Harbour City Council	67	68	69	70	23	23	23	23	2	2	2	2	25	25	25	25	66	67	68	69	22	22	22	22	1	2	2	2	23	23	23	24
11	Albury City Council	52	53	49	50	21	21	21	22	2	2	2	2	23	23	23	24	51	53	48	48	19	20	20	20	2	2	2	2	21	21	22	22
12	Fish River Water																																
13	Tamworth Regional Council	44	44	44	45	19	19	19	19	2	2	2	2	21	21	21	21	44	44	44	45	17	17	18	18	2	2	2	2	19	19	19	19
14	Clarence Valley Council	49	46	46	46	19	20	19	19	2	2	2	3	21	22	21	21	28	30	30	30	14	14	14	14	1	1	1	1	15	15	15	15
15	Eurobodalla Shire Council	37	39	31	31	18	19	19	19	1	1	1	1	19	20	20	20	36	38	27	29	17	17	17	17	1	1	1	1	18	18	18	18
16	Wingecarribee Shire Council	39	39	40	40	17	17	17	17	1	2	2	2	18	19	19	19	33	34	35	38	14	14	14	15	1	1	1	1	15	15	15	16
17	Queanbeyan City Council	40	35	38	39	15	15	15	16	1	1	1	1	16	16	16	16	40	35	38	38	15	15	15	16	1	1	1	1	16	16	16	17
18	Dubbo City Council	34	34	35	35	15	15	15	15	2	2	2	2	17	17	17	17	33	33	33	35	14	14	14	15	1	1	1	1	16	16	16	16
19	Orange City Council	38	40	40	41	15	15	15	16	2	2	2	2	16	17	17	17	38	40	40	41	15	15	15	15	1	1	1	1	16	16	16	17
21	Bathurst Regional Council	35	33	34	34	14	14	14	14	1	1	1	1	15	15	15	16	35	33	33	33	14	13	14	14	2	2	2	2	15	15	15	16
22	Lismore City Council	32	30	31	31	13	13	12	13	1	1	2	2	14	14	14	14	30	28	28	28	12	12	12	12	1	1	1	1	13	13	13	13
23	Bega Valley Shire Council	30	29	24	24	13	13	13	13	1	1	1	1	14	14	14	14	26	23	21	21	11	11	11	11	1	1	1	1	12	12	12	12
24	Ballina Shire Council	37	37	37	38	13	13	13	13	1	1	1	1	15	15	14	14	35	35	36	36	12	12	12	13	1	1	1	2	14	13	14	14
25	Kempsey Shire Council	25	25	25	25	11	11	11	11	2	2	2	2	12	13	13	13	19	20	20	21	8	9	9	9	1	1	1	1	9	9	9	10
26	Essential Energy	20	19	19	19	10	10	10	10	1	1	1	1	11	11	11	11	19	19	19	19	9	9	9	9	1	1	1	1	10	10	10	10
27	Byron Shire Council	29	29	21	21	10	10	10	10	1	1	1	2	11	11	11	11	29	29	21	21	9	9	9	9	1	1	1	1	10	11	10	11
28A	Goldenfields Water (Reticulation)	23	21	23	23	7	7	7	7	3	3	3	3	10	10	10	10																
28B	Goldenfields Water (Bulk Water Supply)																																
20	Goulburn Mulwaree Council	22	23	23	23	10	10	9	9	1	1	1	1	11	11	10	10	22	22	22	22	9	9	9	10	1	1	1	1	10	10	10	11
9	Wagga Wagga Council																	64	62	61	62	24	24	24	25	2	2	2	2	25	25	26	26
LWU Range Max		163	163	163	165	67	67	68	68	3	4	3	3	71	71	71	71.5	159	159	159	161	66	66	66	67	3	3	3	3	69	69	69	69.8
LWU Range Min		20	19	19	19	7	7	7	7	1	1	1	1	10	10	10	10.2	19	19	19	19	8	9	9	9	1	1	1	1	9	9	9	9.7
Median of NMU Indicators shown in Table		39	39	40	40	17	17	17	17	2	2	2	2	18	19	19	19.0	37	36	37	38	15	15	15	15	1	1	1	1	16	16	16	16.6



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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				Incidence 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)											
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14								
Sydney Water Corporation		1	1	0	0	0	0	0	0	0	1	0	1	2	2	3	2	3	4	4	3	79	86	86	83	147	155	153	151	240	261	277	277	175	147	160	183	3	3	4	6	1	0	1	1								
Hunter Water Corporation		3	3	3	3	0	0	0	0	2	2	2	1	2	2	2	2	8	8	7	6	60	71	79	71	141	122	142	128	142	156	154	148	258	206	236	303	4	2	5	8	0	0	3	1								
Water NSW																																																					
1	Gosford City Council	9	14	25	15					2	3	2	2																	222	196	199	311	209	247	224	209	200	153	171	187	0	0	0	0	8	16	14	12				
2	Wyong Shire Council	17	8	18	5	5	4	5	6	12	12	10	12					34	24	33	23	59	49	32	33	195	180	204	200	143	138	143	152	88	64	86	70	0	0	0	0	0	0	0	2								
3	Shoalhaven City Council	1	1	0	0	1	0	0	0	4	1	0	1	0	0	0	0	6	1	1	1	100	100	100	96	84	177	194	220	99	91	92	90	64	36	82	65	1	1	1	1	0	3	0	1								
4	Rous Water																													180				195																			
5	MidCoast Water	7	4	3	3	1	1	2	2	1	1	2	2	1				1	10	6	7	7													2				2	1	0	0	1	4	4	1	3						
6	Tweed Shire Council	5	5	4	5	22	21	24	28	6	6	6	7	0				0	35	31	33	40	51				56	160				149	20	228	182	130	7	9	27	50	0	0	0	0	2	3	3	7					
7	Port Macquarie Hastings Council	5	3	9	7	20	14	17	14	8	5	8	10	0	0	0	0	36	24	33	31	74	72	77	75	198	205	163	174	60	60	60	60	7	6	11	10	1	0	1	1	0	0	0	0								
8	Riverina Water	4	3	4	3	2	2	2	3					4	4	3	4	9	8	9	10					260				281	308	173					69	53	55	63	0	1	1	1	0	1	0	0					
10	Coffs Harbour City Council	4	1	0	0	41	53	0	0	15	22	0	0	0	0	0	0	63	80	1	0	99	99	99	99					95	94	91	99	42	73	35	9	4	5	5	6	0	0	0	0								
11	Albury City Council	1	1	4	3	4	5	2	1	37	33	1	1	0	0	0	0	6				5					104				124	136	87	87	84					0	0	0	0	15	21	4	27						
12	Fish River Water																					98				98	100	100	1,640				600																				
13	Tamworth Regional Council	1				0	28	55	47	56	26	22	22	21	0	0	0	0	57	82	67	78																	0	0		0	0	0	0	0	0	0					
14	Clarence Valley Council	8	7	8	23	44	27	28	57	29	24	23	19	1	1	1	2	105	76	53	101																	0	0	0	0	6	3	6	6								
15	Eurobodalla Shire Council	0	0	0	1	0	0	0	0	2	1	1	2	0				0	1				3					240				190					57				93	0	0	0	0	0	0	0	25				
16	Wingecarribee Shire Council	10	10	13	12	67	66	75	72	35	24	21	20	1	1	0	0	133	120	105	103	66				79	91				108	120				120	15	40	53	73	8	6	1	1	4	4	4	6					
17	Queanbeyan City Council	0				0	27	27	31	23	22	18	10	11	4	4	4	2	52	49	45	37					180				180	180	180	240	120	120	120	5	5	0	0	0	0	0	0	12	9	7	0				
18	Dubbo City Council	0	0	1	0	3	2	4	3	10	9	11	11	0	0	0	0	15				15	86	90	89	89	147	168	152	75	95	96	99	109	26	11	27	58	0	0	0	0	0	0	0	0							
19	Orange City Council	2	2	2	1	29	56	59	53	41	48	26	30	23		0	8	85				92					240				238	100				41	66				73	0	0	0	0	0	0	0	0				
21	Bathurst Regional Council	51	29	38	35	64	50	45	24	25	20	18	24	0	0	0	0	139	100	100	82													3				2	1	2	0	0	0	0	0	0	0	0	0				
22	Lismore City Council	1	1	0	0	3	4	0	1	25	22	3	16	1	1	1	2	30	28	4	19	80				80	288				120	112				69	125	39	123	32	0	0	0	0	1	1	1	1					
23	Bega Valley Shire Council	1	5	9	13	1	16	5	1	7	9	2	2	3	1	1	0	16				17	79	65	72	79									3				1	0	0	0	0	7	1	5	2						
24	Ballina Shire Council	0	0	0	4	1	0	0	4	9	3	1	4					10				3	1	12																	0	0	0	0	0	0	0	1					
25	Kempsey Shire Council	1	0	0	1	0	0	0	0	2	1	2	2	0	0	0	0	3	1	2	3	49				48	114	132	165	127	130	191	170	119	31	35	68	72	1	1	2	2	0	0	0	0							
26	Essential Energy	0	0	8	0	0	0	1	0	1	0	1	1	0	0	0	0	1	1	10	1	79	78	76	78													13	73	28	27	0	0	0	0								
27	Byron Shire Council	0	0	0	1	0	0	0	0	2	1	2	4	11	30	2	2	14	32	5	7																	1	1	2	1	0	0	0	0								
28A	Goldenfields Water (Reticulation)	7	7	9	7	39	58	39	1									49				8					235				192					77				6	2		1	0	0		0						
28B	Goldenfields Water (Bulk Water Su																																																				
20	Goulburn Mulwaree Council	2	1	3	8	6	28	28	28	32	28	21	30	0				0																	276				17	5	3	2	5	0	0	1	0						
9	Wagga Wagga Council									51	50	54	53	0				51	50	54	53	100				100					47				51	50	49																
LWU Range Max		51	29	38	35	67	66	75	72	51.2	49.8	53.7	53	23	30	4	8	139	120	105	103	100	100	100	100	260	281	1,640	600	240	247	224	209	200	153	276	187	13	73	28	27	15	21										



Appendix F: NMUs - National Performance Report 2013-14

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				H6				H7			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	13 of 13	13 of 13	13/13	13/13	100	100	100	100	13 of 13	12 of 13	12 of 13	13 of 13	Yes	Yes	Yes	Yes	ISO9001	ISO9001	ISO9001	ISO9001	Yes	Yes	Yes	Yes
Hunter Water Corporation		ADWG 2004	ADWG 2011	ADWG 2011	ADWG 2011	5 of 5	5 of 5	5 of 5	5 of 5	100	100	100	100	5 of 5	5 of 5	5 of 5	5 of 5	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	Yes	Yes	Yes
Water NSW		ADWG 2004	ADWG 2011	ADWG 2011	ADWG 2011																					Yes	Yes	Yes	Yes
1	Gosford City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
2	Wyong Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
3	Shoalhaven City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	3 of 4	4 of 4	4 of 4	4 of 4	99	100	100	100	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 2011	ADWG 2011	1 of 1	2 of 2	3 of 3	3 of 3	100	100	100	100	1 of 1	2 of 2	3 of 3	3 of 3	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
5	MidCoast Water	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	4 of 4	5 of 5	5 of 5	5 of 5	100	100	100	100	3 of 4	5 of 5	4 of 5	4 of 5	Yes	Yes	Yes	Yes	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
6	Tweed Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
7	Port Macquarie Hastings Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	5 of 5	5 of 5	5 of 5	5 of 5	100	100	100	100	4 of 5	5 of 5	5 of 5	5 of 5	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
8	Riverina Water	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	14 of 14	14 of 14	14 of 14	14 of 14	100	100	100	100	14 of 14	14 of 14	14 of 14	14 of 14	Yes	Yes	Yes	Yes	HACCP	HACCP	HACCP	HACCP	Yes	YES	Yes	Yes
10	Coffs Harbour City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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 2011	ADWG 2011	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
12	Fish River Water	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
13	Tamworth Regional Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	6 of 7	7 of 7	6 of 7	7 of 7	99	100	99	100	6 of 7	6 of 7	7 of 7	7 of 7	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
14	Clarence Valley Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	4 of 5	4 of 5	1 of 6	6 of 6	99	99	73	100	3 of 5	5 of 5	6 of 6	6 of 6	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
15	Eurobodalla Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	1 of 1	1 of 1	2 of 2	2 of 2	100	100	100	100	1 of 1	1 of 1	2 of 2	2 of 2	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
16	Wingecarribee Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
17	Queanbeyan City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
18	Dubbo City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
19	Orange City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
21	Bathurst Regional Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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
22	Lismore City Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	1 of 1	1 of 1	2 of 2	2 of 2	100	100	100	100	1 of 1	1 of 1	2 of 2	2 of 2	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
23	Bega Valley Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	5 of 6	6 of 6	7 of 8	7 of 8	99	100	100	100	6 of 6	6 of 6	8 of 8	8 of 8	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
24	Ballina Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	1 of 1	1 of 1	3 of 3	3 of 3	100	100	100	100	1 of 1	1 of 1	3 of 3	3 of 3	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
25	Kempsey Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	7 of 7	7 of 7	7 of 7	7 of 7	100	100	100	100	7 of 7	7 of 7	7 of 7	7 of 7	No	No	No	No	NHMRC	NHMRC	NHMRC	NHMRC	Yes	YES	Yes	Yes
26	Essential Energy	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
27	Byron Shire Council	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	1 of 1	1 of 1	2 of 2	2 of 2	100	100	100	100	1 of 1	1 of 1	2 of 2	2 of 2	No	No	No	No	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
28A	Goldenfields Water (Reticulation)	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	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 Su	ADWG 2004	ADWG 2004	ADWG 2011	ADWG 2011	3 of 3	3 of 3	3 of 3	3 of 3	100	100	100	100	3 of 3	3 of 3	2 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 2011	ADWG 2011	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	ADWG	ADWG	ADWG	ADWG	Yes	YES	Yes	Yes
9	Wagga Wagga Council																												
LWU Range Max										100	100	100	100																
LWU Range Min										99	99	73	100																
Median of NMU Indicators shown in Table										100	100	100	100																

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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			
P1		P1.1		P1.2		P1.3				P1.4				P1.5					



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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.)			
		2012/13	2013/14	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
	Sydney Water Corporation			No	No	567	594	576	559	197	193	198	206	561	579	572	572	4	4	4	4	4	4	4	4
	Hunter Water Corporation	0	0	na	No	388	419	447	443	175	163	176	181	342	345	395	402	3	3	3	3	3	3	3	3
	Water NSW																								
1	Gosford City Council	16	0	No	No	517	534	554	560	148	145	157	161	414	419	459	475	2	2	2	2	2	2	2	2
2	Wyong Shire Council	15	0	No	No	548	582	622	604	160	151	155	157	463	481	526	518	2	2	2	2	2	2	2	2
3	Shoalhaven City Council	0	0	No	No	392	397	402	401	136	130	149	147	293	287	320	317	4	4	4	4	4	4	4	4
4	Rous Water																								
5	MidCoast Water	0	0	No	No	641	677	692	694	139	131	143	150	497	505	546	565	4	4	4	4	4	4	4	4
6	Tweed Shire Council	0	0	No	No	469	513	553	588	167	163	177	184	411	441	503	553	2	2	2	2	2	2	2	2
7	Port Macquarie Hastings Council	0	0	No	No	590	612	634	655	147	144	157	157	475	486	534	550	4	4	4	4	4	4	4	4
8	Riverina Water	0	0	No	No	280	305	349	382	225	256	347	324	304	361	515	532	4	4	4	4	4	4	4	4
10	Coffs Harbour City Council	0	0	No	No	607	634	648	649	162	156	161	169	519	524	549	569	4	4	4	4	4	4	4	4
11	Albury City Council	0	0	No	No	234	256	281	308	180	203	255	232	221	259	363	349	3	3	3	3	3	3	3	3
12	Fish River Water																								
13	Tamworth Regional Council	0	0	No	No	469	498	517	518	216	204	261	287	489	504	601	638	4	4	4	4	4	4	4	4
14	Clarence Valley Council	0	0	No	No	433	437	472	492	142	139	148	161	344	339	389	427	4	4	4	4	4	4	4	4
15	Eurobodalla Shire Council	0	0	No	No	768	785	786	908	109	104	116	119	533	492	527	631	3	3	3	3	3	3	3	3
16	Wingecarribee Shire Council	0	0	No	No	411	444	477	474	159	157	186	200	351	375	453	474	3	3	3	3	3	3	3	3
17	Queanbeyan City Council	0	0	No	No	746	777	839	895	191	185	175	178	718	727	754	815	4	4	4	4	4	4	4	4
18	Dubbo City Council	0	0	No	No	518	522	530	576	263	249	368	350	622	603	812	836	4	4	4	4	4	4	4	4
19	Orange City Council	0	0	No	No	527	552	557	569	158	160	180	174	455	480	520	521	4	4	4	4	4	4	4	4
21	Bathurst Regional Council	0	0	No	No	414	414	427	458	182	180	259	227	389	386	527	503	4	4	4	4	4	4	4	4
22	Lismore City Council	0	0	No	No	618	663	681	729	152	143	145	155	506	521	540	606	4	4	4	4	4	4	4	4
23	Bega Valley Shire Council	0	0	No	No	661	666	675	679	129	130	139	134	494	501	527	520	3	3	3	3	3	3	3	3
24	Ballina Shire Council	0	0	No	No	479	515	533	560	162	166	177	194	417	456	492	549	4	4	4	4	4	4	4	4
25	Kempsey Shire Council	0	0	No	No	570	598	620	654	156	143	156	157	501	498	535	567	4	4	4	4	4	4	4	4
26	Essential Energy	0	0	No	No	516	565	604	588	219	237	281	281	540	622	741	723	4	4	4	4	4	4	4	4
27	Byron Shire Council	0	0	No	No	517	566	580	592	159	168	176	181	438	499	528	550	4	4	4	4	4	4	4	4
28A	Goldenfields Water (Reticulation)	0	0	No	No	474	542	557	569	176	199	261	284	430	540	677	738	4	4	4	4	4	4	4	4
28B	Goldenfields Water (Bulk Water Su																								
20	Goulburn Mulwaree Council	77	70	No	No	687	698	719	774	133	138	150	165	572	588	615	678		4	4	4		4	4	4
9	Wagga Wagga Council																								
LWU Range Max						768	785	839	908	263	256	368	350	718	727	812	836	4	4	4	4	4	4	4	4
LWU Range Min						234	256	281	308	109	104	116	119	221	259	320	317	2	2	2	2	2	2	2	2
Median of NMU Indicators shown in Table						517	552	557	588	159	157	175	174	463	492	527	550	4	4	4	4	4	4	4	4



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WATER UTILITY		RESIDENTIAL CHARGES AND BILLS																											
		SEWERAGE																											
		Tariff Structure				Fixed charge min				Usage charge				Special Levies				Income from Special Levies Retained by Utility											
		P4				P4.1				P4.2				P4.3				P4.4											
		(Charge Type)				(\$)				(\$/kL)				Description	(\$)				(Yes/No)										
2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14							
Sydney Water Corporation		N/A		n/a		N/A		N/A		556		567		570		571		0.0		0.0		0.0		0.0		No		No	
Hunter Water Corporation				Service charge only		Service charge only				526		548		570		569		0.0		0.0		0.0		0.0		Yes		Yes	
Water NSW																													
1	Gosford City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		519		534		549		576		0		0		0		0		No		No	
2	Wyong Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		470		473		476		516		0		0		0		0		No		No	
3	Shoalhaven City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		661		678		696		714		0		0		0		0		No		No	
4	Rous Water																												
5	MidCoast Water	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		897		929		945		920		0		0		0		0		No		No	
6	Tweed Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		611		640		668		691		0		0		0		0		No		No	
7	Port Macquarie Hastings Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		663		678		692		704		0		0		0		0		No		No	
8	Riverina Water																												
10	Coffs Harbour City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		750		757		781		783		0		0		0		0		No		No	
11	Albury City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		477		469		502		561		0		0		0		0		No		No	
12	Fish River Water																												
13	Tamworth Regional Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		747		753		735		738		0		0		0		0		No		No	
14	Clarence Valley Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		746		796		851		907		0		0		0		0		No		No	
15	Eurobodalla Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		765		818		838		844		0		0		0		0		No		No	
16	Wingecarribee Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		622		646		680		711		0		0		0		0		No		No	
17	Queanbeyan City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		368		370		375		414		0		0		0		0		No		No	
18	Dubbo City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		577		604		632		652		0		0		0		0		No		No	
19	Orange City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		359		354		359		384		0		0		0		0		No		No	
21	Bathurst Regional Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		429		440		445		456		0		0		0		0		No		No	
22	Lismore City Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		653		701		720		738		0		0		0		0		No		No	
23	Bega Valley Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		1060		1038		1,073		1,081		0		0		0		0		No		No	
24	Ballina Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		591		662		692		734		0		0		0		0		No		No	
25	Kempsey Shire Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		672		697		698		736		0		0		0		0		No		No	
26	Essential Energy	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		461		489		510		497		0		0		0		0		No		No	
27	Byron Shire Council	Fixed + Usage Charge		Fixed + Usage Charge		Fixed + Usage Charge		Fixed + Usage Charge		680		715		755		758		1		2		2		2		No		No	
28A	Goldenfields Water (Reticulation)																												
28B	Goldenfields Water (Bulk Water Su																												
20	Goulburn Mulwaree Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		677		685		693		699		0		0		0		0		No		No	
9	Wagga Wagga Council	Fixed Charge		Fixed Charge		Fixed Charge		Fixed Charge		436		456		446		434		0		0		0		0		No		No	
LWU Range Max										1,060		1,038		1,073		1,081		1		2		2		2					
LWU Range Min										359		354		359		384		0		0		0		0					
Median of NMU Indicators shown in Table										637		670		692		708		0		0		0		0					

Appendix F: NMUs - National Performance Report 2013-14

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				P6				P6.1				P7				P8			
		(\$ per assessment)				(\$ per assessment)				(no.)				(\$ per assessment)				(\$ per assessment)			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		556	567	570	571	556	567	570	571	4	4	4	4	1,123	1,161	1,146	1,130	1,117	1,146	1,142	1,142
Hunter Water Corporation		562	584	607	606	562	584	607	606	3	3	3	3	950	1,004	1,054	1,049	904	930	1,002	1,008
Water NSW																					
1	Gosford City Council	519	534	549	576	519	534	549	576	2	1	1	1	1,036	1,068	1,103	1,136	933	953	1,009	1,051
2	Wyong Shire Council	470	473	476	516	470	473	476	458	2	1	1	1	1018	1055	1,099	1,120	933	953	1,001	976
3	Shoalhaven City Council	661	678	696	714	661	678	696	714	4	4	4	4	1054	1075	1,098	1,115	954	965	1,017	1,031
4	Rous Water																				
5	MidCoast Water	897	929	945	920	897	929	945	920	4	4	4	4	1537	1606	1,637	1,614	1394	1434	1,491	1,485
6	Tweed Shire Council	611	640	668	691	611	640	668	691	2	2	2	2	1079	1153	1,220	1,279	1021	1081	1,171	1,244
7	Port Macquarie Hastings Council	663	678	692	704	663	678	692	704	4	4	4	4	1253	1290	1,326	1,359	1139	1164	1,226	1,254
8	Riverina Water													280	305	349	382	304	361	515	532
10	Coffs Harbour City Council	750	757	781	783	750	757	781	783	4	4	4	4	1358	1390	1,429	1,432	1269	1281	1,330	1,352
11	Albury City Council	477	469	502	561	477	469	502	561	3	3	3	3	712	725	784	869	698	728	865	910
12	Fish River Water																				
13	Tamworth Regional Council	747	753	735	738	747	753	735	738	4	4	4	4	1216	1251	1,252	1,256	1236	1256	1,336	1,376
14	Clarence Valley Council	746	796	851	907	746	796	851	907	4	4	4	4	1179	1233	1,324	1,399	1090	1135	1,241	1,334
15	Eurobodalla Shire Council	765	818	838	844	765	818	838	844	3	3	3	3	1533	1603	1,624	1,752	1298	1310	1,365	1,475
16	Wingecarribee Shire Council	622	646	680	711	622	646	680	711	3	3	3	3	1033	1090	1,156	1,185	974	1021	1,133	1,185
17	Queanbeyan City Council	368	370	375	414	368	370	375	414	4	4	4	4	1114	1147	1,214	1,309	1086	1097	1,129	1,229
18	Dubbo City Council	577	604	632	652	577	604	632	652	4	4	4	4	1095	1127	1,162	1,228	1200	1207	1,444	1,488
19	Orange City Council	359	354	358	384	359	354	358	384	4	4	4	4	886	906	915	953	813	835	878	905
21	Bathurst Regional Council	429	440	445	456	429	440	445	456	4	4	4	4	843	854	872	914	818	826	972	959
22	Lismore City Council	653	701	720	738	653	701	720	738	4	4	4	4	1271	1364	1,401	1,467	1159	1222	1,260	1,344
23	Bega Valley Shire Council	1060	1038	1,073	1,081	1060	1038	1,073	1,081	3	3	3	3	1721	1705	1,748	1,760	1554	1539	1,600	1,601
24	Ballina Shire Council	591	662	692	734	591	662	692	734	4	4	4	4	1071	1177	1,225	1,294	1008	1118	1,184	1,283
25	Kempsey Shire Council	672	697	698	736	672	697	698	736	4	4	4	4	1242	1295	1,319	1,390	1173	1195	1,233	1,303
26	Essential Energy	460	489	510	497	461	489	510	497	4	4	4	4	977	1054	1,113	1,085	1001	1111	1,252	1,220
27	Byron Shire Council	971	1034	1,094	1,102	911	983	1,040	1,060	4	4	4	4	1488	1601	1,674	1,694	1349	1482	1,568	1,610
28A	Goldenfields Water (Reticulation)													474	542	557	569	430	540	677	738
28B	Goldenfields Water (Bulk Water Supply)																				
20	Goulburn Mulwaree Council	677	685	693	699	677	685	693	699		1	1	1	1364	1383	1412	1,473	1249	1274	1308	1,377
9	Wagga Wagga Council	436	456	446	434	436	456	446	434	4	4	4	4	436	456	446	434	436	456	446	434
LWU Range Max		1,060	1,038	1,094	1,102	1,060	1,038	1,073	1,081	4	4	4	4	1,721	1,705	1,748	1,760	1,554	1,539	1,600	1,610
LWU Range Min		359	354	358	384	359	354	358	384	2	1	1	1	280	305	349	382	304	361	446	434
Median of NMU Indicators shown in Table		637	670	692	708	637	670	692	708	4	4	4	4	1,087	1,150	1,217	1,268	1,054	1,114	1,205	1,249



Appendix F: NMUs - National Performance Report 2013-14

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)				(%)							
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		1,250,960	1,251,510	1,264,210	1,279,454	1,178,670	1,206,640	1,252,720	1,252,110	2,420,450	2,746,810	2,537,700	2,561,477	80	78	78	79	698	691	686	692	675	684	698	696	1,350	1,516	1,376	1,386	7	6	6	6				
Hunter Water Corporation		117,046	118,722	137,916	144,493	139,722	156,060	161,921	157,965	257,703	274,322	299,836	302,458	66	66	95	96	513	515	592	613	647	713	731	704	1,130	1,191	1,287	1,283	5	5	5	5				
Water NSW		205,164	215,570	203,665	205,240						218,917	207,128	209,231																								
1	Gosford City Council	37,246	36,012	44,384	44,418	41,124	39,268	42,739	44,253	78,329	74,686	88,058	89,828	76	77	76	76	529	511	627	621	599	571	619	634	1,112	1,058	1,245	1,257	1	1	1	1				
2	Wyong Shire Council	44,494	42,076	46,909	48,411	30,844	31,477	32,297	31,739	75,338	71,954	77,149	79,859	60	60	62	67	737	694	773	788	518	528	542	526	1,249	1,187	1,272	1,300	2	2	2	2				
3	Shoalhaven City Council	22,673	21,721	24,077	23,167	37,914	38,598	39,345	40,465	60,334	60,253	64,324	63,683	72	71	76	74	492	470	517	493	933	947	957	966	1,309	1,304	1,380	1,356	2	2	2	2				
4	Rous Water	19,159	21,291	20,383	22,516					18,994	21,229	20,090	22,199																								
5	MidCoast Water	25,739	25,964	31,414	30,634	34,888	37,244	40,349	38,528	60,461	102,644	67,821	63,522	74	72	75	75	705	677	816	794	1,057	1,070	1,155	1,100	1,657	2,676	1,762	1,647	2	1	2	1				
6	Tweed Shire Council	18,843	22,177	23,431	32,404	24,721	28,837	27,650	35,735	41,625	47,234	49,516	66,721	73	75	75	77	592	707	743	1,018	816	930	919	1,177	1,307	1,506	1,569	2,096	2	2	2	1				
7	Port Macquarie Hastings Council	22,947	22,420	20,565	30,176	22,779	21,412	24,281	31,945	43,640	43,437	44,374	60,220	69	68	74	69	766	747	691	1,003	852	796	891	1,162	1,457	1,447	1,492	2,001	2	2	2	1				
8	Riverina Water	14,341	18,275	25,643	27,258					14,345	18,252	25,767	27,225	80	72	77	76	492	624	874	922					698	623	878	921	1	1	1	1				
10	Coffs Harbour City Council	21,967	18,614	21,974	20,239	25,608	26,665	26,655	27,493	47,576	45,279	46,990	47,154	73	73	74	76	894	755	887	813	1,117	1,146	1,139	1,168	1,937	1,835	1,899	1,894	1	1	1	1				
11	Albury City Council	8,974	10,553	14,778	16,370	15,116	15,286	18,053	20,466	24,096	25,576	32,818	36,844	62	69	79	79	395	460	635	694	715	718	835	933	1,058	1,116	1,411	1,562	1	1	1	1				
12	Fish River Water	6,940	7,314	8,999	10,045					6,940	7,314	8,999	10,045																								
13	Tamworth Regional Council	16,448	19,641	18,487	22,626	22,075	19,808	18,938	20,485	38,523	39,037	37,421	43,082	58	58	60	64	793	936	871	1,056	1,178	1,048	988	1,059	1,858	1,861	1,762	2,011	1	1	1	1				
14	Clarence Valley Council	12,664	12,934	13,279	14,407	13,060	14,799	15,033	15,947	22,926	27,545	28,908	30,911	65	65	67	67	598	582	622	673	898	1,014	1,027	1,089	1,083	1,239	1,354	1,444	2	2	2	1				
15	Eurobodalla Shire Council	13,751	12,895	12,958	15,532	17,064	18,376	18,213	18,797	30,176	30,510	28,570	33,867	53	66	68	64	711	661	665	794	959	1,028	1,017	1,043	1,559	1,563	1,469	1,731	1	1	1	1				
16	Wingecarribee Shire Council	9,676	10,631	12,543	13,454	12,116	13,228	13,544	14,888	21,799	23,845	26,048	28,327	66	65	68	69	530	572	670	710	835	901	922	954	1,194	1,282	1,391	1,494	2	1	1	1				
17	Queanbeyan City Council	12,284	13,620	15,372	18,910	7,055	6,621	7,058	12,605	17,601	20,241	22,430	31,515	59	62	63	64	772	849	943	1,152	436	413	433	756	1,105	1,262	1,376	1,920	1	1	1	1				
18	Dubbo City Council	13,403	13,091	16,862	17,776	11,321	11,629	13,264	14,221	24,268	22,586	29,836	30,092	72	71	78	75	803	778	995	1,037	727	740	837	888	1,454	1,342	1,761	1,755	1	1	1	1				
19	Orange City Council	11,546	13,427	15,873	15,576	8,361	9,970	10,570	11,694	19,939	23,372	26,499	27,447	61	61	64	71	707	800	938	906	529	628	652	710	1,221	1,393	1,565	1,597	1	1	1	1				
21	Bathurst Regional Council	10,698	10,346	12,911	14,813	8,575	8,626	9,831	10,784	19,274	18,972	22,582	25,597	64	71	83	83	718	684	848	951	570	576	650	698	1,293	1,255	1,483	1,644	1	1	1	1				
22	Lismore City Council	9,263	9,522	10,082	10,814	10,557	11,283	11,283	10,768	15,850	20,692	19,647	20,892	70	69	70	70	657	672	708	756	839	894	890	844	1,123	1,459	1,379	1,461	2	1	1	1				
23	Bega Valley Shire Council	10,065	11,105	9,115	10,296	14,863	15,319	15,166	16,467	24,927	26,420	24,245	26,745	66	66	60	63	706	776	636	715	1,232	1,257	1,249	1,352	1,749	1,845	1,691	1,859	1	1	1	1				
24	Ballina Shire Council	10,743	9,539	10,241	11,283	16,355	13,844	13,925	15,481	27,095	23,014	22,375	26,659	66	66	67	68	741	658	733	796	1,209	1,037	1,014	1,101	1,869	1,586	1,601	1,880	1	1	1	1				
25	Kempsey Shire Council	9,304	8,534	10,087	9,900	7,975	7,736	7,878	8,165	17,139	16,246	17,506	17,170	50	53	59	59	757	678	800	794	891	831	844	838	1,394	1,290	1,387	1,377	2	2	2	2				
26	Essential Energy	13,245	14,642	17,363	14,981	5,761	6,059	6,413	6,323	19,006	20,701	23,775	21,304	54	60	66	66	1,264	1,393	1,652	1,4																



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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)			
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		12,013,525	11,731,991	12,018,131	12,176,110	22,898,198	22,994,649	30,252,665	30,973,603	347	358	401	401	275	288	274	264	622	647	675	665	314,080	292,699	254,143	195,694	448,696	465,217	429,146	390,817
Hunter Water Corporation		1,642,790	1,930,105	2,260,902	2,332,222	3,001,406	3,195,059	3,224,788	4,519,324	205	236	240	229	347	303	368	340	552	539	608	570	26,795	36,404	29,660	76,276	145,292	83,886	60,431	32,628
Water NSW																						29,649	20,972	18,177	32,273				
1	Gosford City Council	506,176	518,620	535,766	550,751	1,355,000	1,400,948	1,454,998	1,504,642	349	362	383	367	292	342	444	404	641	703	827	771	45,706	13,686	12,731	12,883	27,789	31,463	34,159	27,660
2	Wyong Shire Council	557,210	554,368	835,780	852,534	400,447	649,311	691,681	703,801	428	335	328	319	376	344	354	354	804	678	683	673	34,031	82,831	13,964	19,827	4,715	10,584	12,405	6,532
3	Shoalhaven City Council	290,134	317,927	309,411	347,993	414,832	485,526	467,845	453,016	315	294	289	274	475	474	478	478	790	768	766	752	2,884	5,931	4,379	10,629	15,635	21,661	17,144	13,046
4	Rous Water	314,813	305,103	309,522	316,410																	5,010	3,029	2,568	5,537				
5	MidCoast Water	331,942	434,466	460,780	457,488	436,498	436,498	448,971	466,861	336	509	441	411	535	507	506	491	872	1,014	947	902	16,431	46,700	10,846	7,507	11,109	36,946	11,073	3,777
6	Tweed Shire Council	432,259	425,985	474,016	491,889	466,076	514,835	585,248	599,624	396	413	441	423	481	449	472	505	877	862	912	929	6,030	6,521	5,371	8,628	2,518	32,005	8,271	4,452
7	Port Macquarie Hastings Council	360,470	448,512	447,416	452,627	232,964	284,515	289,349	298,624	348	353	375	386	383	388	476	494	731	741	850	880	6,860	7,634	6,239	2,426	12,302	5,853	7,650	6,480
8	Riverina Water	185,360	183,954	191,362	195,664					359	335	397	342					339	335	397	342	9,228	6,282	5,674	6,180				
10	Coffs Harbour City Council	255,068	263,399	279,777	282,974	313,366	423,783	450,136	461,702	355	354	398	396	528	542	600	610	882	898	998	1,006	6,019	1,680	3,485	1,668	3,443	5,256	5,226	8,638
11	Albury City Council	196,658	197,936	202,526	206,790	157,695	161,677	166,194	176,710	301	308	337	306	445	467	449	429	746	775	786	735	2,297	2,569	3,498	2,431	2,380	0	2,443	3,314
12	Fish River Water	20,953	153,805	32,261	34,773																	2,378	5,886	422	994				
13	Tamworth Regional Council	168,238	170,091	185,104	205,537	194,257	206,649	225,723	233,737	475	530	531	536	364	430	441	471	840	960	972	1,007	4,779	6,474	10,663	10,949	27,795	4,138	2,340	9,682
14	Clarence Valley Council	366,303	396,514	386,815	386,222	200,582	248,321	259,790	247,953	367	372	390	380	444	489	538	495	809	861	928	876	4,955	2,028	2,479	2,159	7,885	29,305	9,578	8,687
15	Eurobodalla Shire Council	201,890	273,940	275,881	279,102	179,058	232,856	234,645	238,740	385	451	402	423	534	563	537	565	919	1,013	939	987	8,815	3,710	2,723	2,301	11,052	13,716	4,082	4,441
16	Wingecarribee Shire Council	176,142	168,488	170,821	165,872	208,408	215,054	223,090	274,694	310	338	357	375	386	433	435	531	696	771	794	906	2,577	2,620	2,485	746	4,714	15,810	11,665	2,172
17	Queanbeyan City Council	106,856	91,871	92,695	94,881	117,289	110,878	112,351	116,546	799	806	861	959	409	438	382	372	1,208	1,244	1,243	1,331	386	604	564	2,070	703	1,711	338	5,022
18	Dubbo City Council	189,572	163,697	161,960	164,362	159,387	158,075	156,927	157,374	475	398	469	504	407	386	369	349	883	784	839	854	1,325	1,854	4,471	1,669	4,897	3,840	3,074	2,805
19	Orange City Council	141,012	167,439	177,872	207,330	108,095	146,019	149,962	153,278	401	332	354	383	413	344	355	374	814	676	710	756	4,695	3,342	7,076	27,215	694	1,151	545	902
21	Bathurst Regional Council	131,510	150,994	153,955	158,217	73,979	83,872	86,745	88,989	482	448	524	532	420	427	434	416	902	875	958	948	1,954	4,304	2,736	3,628	1,718	1,728	4,097	2,993
22	Lismore City Council	76,369	70,255	72,529	75,388	181,700	176,358	185,219	188,544	557	609	623	616	467	475	470	466	1,023	1,084	1,094	1,082	1,806	1,669	2,029	2,289	4,754	10,554	7,003	2,657
23	Bega Valley Shire Council	103,097	182,196	184,180	187,762	117,919	177,877	178,101	181,975	493	578	534	506	750	734	727	734	1,245	1,312	1,261	1,240	18,937	5,191	2,043	2,608	4,697	1,798	2,385	5,558
24	Ballina Shire Council	86,848	103,554	105,664	111,296	110,122	222,336	248,546	264,360	561	594	652	642	597	632	683	643	1,158	1,225	1,335	1,285	2,717	1,808	1,638	2,100	13,837	30,353	26,755	8,794
25	Kempsey Shire Council	238,985	178,912	186,040	189,371	121,193	152,905	156,084	157,562	441	432	445	481	586	541	615	543	1,027	973	1,060	1,024	5,272	1,852	4,619	5,044	1,509	1,979	2,330	1,463
26	Essential Energy									1,109	1,311	1,170	1,281	390	451	338	319	1,500	1,760	1,508	1,600	5,508	2,876	3,482	3,102	2,125	1,441	2,003	1,003
27	Byron Shire Council	51,012	51,784	54,768	55,364	186,111	160,854	145,192	147,030	533	580	601	602	588	589	646	652	1,120	1,169	1,247	1,254	1,091	137	1,003	426	5,107	1,314	1,515	1,525
28A	Goldenfields Water (Reticulation)	168,393	168,568	161,583	148,566					567	559	665	642					452	559	665	642								
28B	Goldenfields Water (Bulk Water Su	50,910	63,768	69,912	63,975																								
20	Goulburn Mulwaree Council	168,123	197,145	201,218	203,326	77,685	78,706	80,882	84,426	370	404	418	418	392	414	410	368	762	818	828	786	33,657	12,130	2,727	2,546	1,596	1,553	1,690	1,297
9	Wagga Wagga Council					224,164	282,003	244,885	251,992					313	386	424	417	270	386	424	417					5,918	6,479	3,696	4,720
LWU Range Max		557,210	554,368	835																									

Appendix F: NMUs - National Performance Report 2013-14

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				F17				F18				F19				F20				F21				F22													
		(\$'000)				(%)				(%)				(%)				(\$'000)				(%)				(%)													
2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14		2010/11		2011/12		2012/13		2013/14	
Sydney Water Corporation		762,776	757,916	683,290	586,512	3	2	2	2	2	2	1	1	2	2	2	2	247,250	254,342	298,472	252,000	84	66	70	54	123	94	100	96										
Hunter Water Corporation		172,087	120,289	90,091	108,904	3	2	3	4	2	2	2	2	2	2	3	2	17,845	21,882	16,021	36,300	69	63	62	72	40	59	75	78										
Water NSW		29,649	20,972	18,177	32,273													29,385	26,376	27,479	27,900	75	75	75	108		57	49	48										
1	Gosford City Council	73,495	45,149	46,890	40,543	1	-1	1	0.8	1	0	0	-0.10	1	0	0	0.1	1,909	0	0	0	20	0	0	0	3	4	5	6										
2	Wyong Shire Council	38,746	93,415	26,369	26,359	1	1	1	1	-2	0	0	-0.40	0	0	1	0.6	0	0	0	0	0	0	0	11	10	10	10											
3	Shoalhaven City Council	18,519	27,592	21,523	23,675	0	1	1	1	2	2	2	2	2	2	2	2	2,495	2,723	2,669	2,673	25	24	20	21	2	2	1	0										
4	Rous Water	5,367	3,029	2,568	5,537	0	1	1	2									0		0	0	0		0	0	10	8	6	4										
5	MidCoast Water	27,540	83,646	21,919	11,284	0	-2	0	0.7	1	2	3	3	1	0	1	2	0	0	0	0	0	0	0	0	30	25	25	23										
6	Tweed Shire Council	8,547	38,527	13,643	13,080	0	0	1	2.4	0	1	1	1.70	0	1	1	2.0	0	0	0	0	0	0	0	2	4	3	2											
7	Port Macquarie Hastings Council	19,162	13,488	13,889	8,906	1	1	-1	1.7	2	1	1	2.90	1	1	0	2.2	915	1,683	0	940	14	43	0	11	-1	-2	-4	-5										
8	Riverina Water	7,160	6,282	5,674	6,180	-1	2	4	5									0	0	0	0	0	0	0	0	-1	-2	-4	-7										
10	Coffs Harbour City Council	9,462	6,936	8,711	10,306	2	1	2	1	2	2	0	0.50	2	2	1	0.8	0	0	0	0	0	0	0	21	17	15	14											
11	Albury City Council	4,677	2,569	5,941	5,745	-2	-1	1	1.7	1	1	3	4	0	0	2	3	0	0	0	0	0	0	0	3	3	1	-2											
12	Fish River Water	2,378	5,886	422	994	14	2	11	16										0	0		0	0		0		0	0											
13	Tamworth Regional Council	32,575	10,612	13,003	20,631	1	2	2	3	5	2	2	3	3	2	2	3	1,146	0	0	0	7	0	0	0	3	0	-2	-2										
14	Clarence Valley Council	12,840	31,334	12,057	10,846	0	0	0	0.7	1	1	1	2	1	0	0	1.3	0	0	0	0	0	0	0	8	9	10	10											
15	Eurobodalla Shire Council	19,867	17,426	6,805	6,742	1	0	0	0.4	2	2	1	1	1	1	0	0.7	645	788	543	133	15	49	-23	8	3	3	2	1										
16	Wingecarribee Shire Council	7,291	18,430	14,150	2,918	0	0	1	1.7	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	-1	0	0	-1										
17	Queanbeyan City Council	1,089	2,315	902	7,092	-3	-2	-1	0.9	-2	-4	-2	3	-3	-3	-2	2	0	0	0	0	0	0	0	0	-16	-18	-17	-19										
18	Dubbo City Council	6,222	5,694	7,544	4,474	1	2	3	3	1	2	2	3	1	2	2	3	0	0	0	0	0	0	0	3	2	0	-4											
19	Orange City Council	5,389	4,493	7,621	28,117	0	2	4	3	-1	1	1	2	-1	1	3	2	0	0	0	0	0	0	0	-13	-12	-13	-14											
21	Bathurst Regional Council	3,672	6,032	6,833	6,621	1	1	1	1.8	0	0	1	1.80	0	0	1	1.8	0	0	0	0	0	0	0	-12	-11	-11	-12											
22	Lismore City Council	6,560	12,223	9,032	4,946	-2	-3	-1	0.2	-1	-1	1	0.20	-1	-1	0	0.2	0	0	0	0	0	0	0	-4	-2	-1	-1											
23	Bega Valley Shire Council	23,634	6,989	4,427	8,166	0	0	-1	-1	1	1	0	0.40	1	1	-1	-0.1	0	0	0	0	0	0	0	1	-1	-2	-3											
24	Ballina Shire Council	16,554	32,161	28,394	10,894	0	-1	-1	0.3	4	0	1	1.40	2	0	0	1.1	0	0	0	0	0	0	0	-8	2	8	11											
25	Kempsey Shire Council	6,781	3,831	6,950	6,507	0	-1	0	0.0	0	0	-1	-0.40	0	-1	0	-0.2	0	0	0	0	0	0	0	6	7	8	8											
26	Essential Energy	7,634	4,316	5,484	4,105													0		0		0		0															
27	Byron Shire Council	6,200	1,451	2,518	1,951	0	1	-1	1.6	2	2	1	4	1	2	1	3.3	0	0	0	0	0	0	0	19	21	21	17											
28A	Goldenfields Water (Reticulation)					-1	0	1	2									0	0	0	0	0	0	0	0	-5	-9	-9											
28B	Goldenfields Water (Bulk Water Su					-3	-2	1	0.9									0	0	0	0	0	0	0	0	-11	-10	-11											
20	Goulburn Mulwaree Council	35,254	13,683	4,417	3,843	1	1	1	1	5	4	6	6	2	2	2	2	0	0	0	0	0	0	0	2	1	-2	-5											
9	Wagga Wagga Council	12,265	6,479	3,696	4,720					1	1	1	0.30					0	0	0	0	0	0	0	5		6	6											
LWU Range Max		73,495	93,415	46,890	40,543	14	2	11	16	5.2	4.3	5.8	6	3.4	2.2	2.6	3	2,495	2,723	2,669	2,673	25	49	20	21	30	25	25	23										
LWU Range Min		1,089	1,451	422	994	-3	-3	-1	-1	-2.2	-3.5	-2.2	0	-2.6	-2.7	-1.6	0	0	0	0	0	0	-23	0	-16	-18	-17	-19											
Median of NMU Indicators shown in Table		8,547	6,989	7,544	6,742	0	0	1	1.4	1.3	1.1	0.7	1.70	0.8	0.6	0.7	1.7	0	0	0	0	0	0	0	2	2	0	-1											



Appendix F: NMUs - National Performance Report 2013-14

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)													
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14
Sydney Water Corporation		2	1	2	2	294,301	385,796	426,389	464,493	157,920	157,184	159,665	157,875	0	0	0	0	0	2,159	6,869	15,672	175	162	138	106	257	264	239	217	12	14	17	18
Hunter Water Corporation		2	2	1	2	25,804	34,844	26,045	50,327	12,741	13,262	14,004	13,808	0	-114	110	276	0			0	118	158	127	323	673	383	273	145	10	13	9	17
Water NSW						39,516	42,720	36,639	25,879																					20	18	12	
1	Gosford City Council	4	0	0	1	9,449	-10,503	-7,782	-2,032	639	631	1,242	1,230	29,277	1,798	2,131	1,050	276	14	1	0	648	194	180	180	405	457	495	396	12	-14	-9	-2
2	Wyong Shire Council	0	0	1	1	-12,673	-15,926	-8,294	-5,219	1,445	1,405	1,422	1,375	29,743	261	626	950	42	0	0	0	564	1,366	230	323	80	178	208	108	-17	-22	-11	-7
3	Shoalhaven City Council	32	65	>100	59	10,174	11,435	13,116	12,650	1,066	1,054	1,050	1,035	0	0	0	0	212	7,798	3,805	0	422	128	93	226	1,931	531	417	311	17	19	20	20
4	Rous Water	1	2	4	3	-3,425		574	1,890	11	11	10	10	0	0	0	0												-18		3	9	
5	MidCoast Water	0	0	1	1	-7,425	27,855	-6,814	-5,351	985	964	993	907	579	0	0	0	434	4,897	1,564	0	450	1,217	281	195	336	1,062	317	108	-12	27	-10	-8
6	Tweed Shire Council	1	2	2	5	-4,714	-478	-1,732	14,196	811	776	753	739	0	0	0	917	0	2,166	1,109	320	189	208	170	271	83	1,032	275	147	-11	-1	-4	21
7	Port Macquarie Hastings Council	>100	>100	0	23	6,722	3,913	-2,489	8,590	904	743	732	719	0	1,001	3,766	1,333	0	346	0	0	229	254	210	81	460	218	280	236	15	9	-6	14
8	Riverina Water	0	>100	>100	>100	-2,396	375	3,862	6,931	205	212	218	225	66	133	252	0				316	214	193	209					-17	2	15	26	
10	Coffs Harbour City Council	1	1	1	1	3,921	1,514	-2,214	-3,197	518	510	508	499	0	0	0	0	220	413	533	1,002	245	68	141	67	151	226	224	367	8	3	-5	-7
11	Albury City Council	0	0	13	54	-2,360	-1,667	5,228	10,684	315	315	327	316	0	0	0	0	0	0	0	0	101	112	150	103	113	0	113	151	-10	-7	16	29
12	Fish River Water							3,609	4,492			0	0	0	0	0	0														40	45	
13	Tamworth Regional Council	>100	6	5	8	15,441	7,152	6,084	11,637	409	407	396	384	125	683	4,759	5,174	0	0	0	0	230	309	502	511	1,484	219	122	500	40	18	16	27
14	Clarence Valley Council	1	1	0	1	-3,718	-2,822	-3,874	1,706	460	459	457	448	12	-56	-87	0	631	5,817	2,473	2,733	234	91	116	101	542	2,008	654	593	-16	-10	-13	6
15	Eurobodalla Shire Council	8	2	1	3	4,322	1,608	-2,341	1,674	404	409	396	391	3,231	105	0	0	0	583	-1,607	0	456	190	140	118	621	767	228	246	14	5	-8	5
16	Wingecarribee Shire Council	2	3	5	8	-1,208	-3,041	201	4,626	323	332	340	339	0	0	0	0	4,158	9,653	4,717	300	141	141	132	39	325	1,076	794	139	-6	-13	1	16
17	Queanbeyan City Council	0	0	0	>100	-5,937	-4,228	-4,092	4,718	174	171	154	159	0	0	0	0	0	0	0	0	25	38	35	126	43	107	21	301	-34	-21	-18	15
18	Dubbo City Council	6	10	13	>100	3,405	2,596	6,264	7,340	202	200	193	190	0	0	15	0	0	0	0	0	80	110	264	97	314	245	194	175	14	12	21	24
19	Orange City Council	0	>100	>100	>100	-833	5,112	9,330	9,307	266	262	260	257	4,357	0	0	26,295	0	0	0	0	287	199	418	1,583	44	73	34	55	-4	22	35	34
21	Bathurst Regional Council	>100	>100	>100	>100	151	818	1,996	4,718	223	210	207	206	333	822	21	0	0	0	0	0	131	285	180	233	114	116	271	194	1	4	9	18
22	Lismore City Council	0	0	>100	>100	-6,421	-3,039	-535	-151	266	262	281	255	0	0	0	357	0	0	0	0	128	118	143	160	377	837	553	208	-41	-15	-3	-1
23	Bega Valley Shire Council	>100	25	0	0	2,328	2,032	-3,240	-702	286	271	273	270	6,239	1,747	72	0	0	0	0	0	1,329	363	143	181	389	147	196	456	9	8	-13	-3
24	Ballina Shire Council	>100	0	1	1	5,175	-1,882	-2,760	-54	312	313	313	303	19	24	46	0	0	0	0	0	187	125	117	148	1,023	2,274	1,947	625	19	-8	-12	0
25	Kempsey Shire Council	0	0	0	0	-3,354	-4,274	-3,333	-4,596	272	266	262	253	210	8	109	800	0	0	0	0	429	147	367	404	169	212	250	150	-20	-26	-19	-27
26	Essential Energy					-382		2,989	420	339	271	257	357	0	0	0	0	0	0	0	0	526	273	332	295	218	148	206	103	-2		13	2
27	Byron Shire Council	1	1	0	2	-2,623	-534	-3,263	2,036	164	164	160	154	0	0	0	0	463	-45	0	0	100	13	90	38	493	125	146	145	-13	-3	-15	9
28A	Goldenfields Water (Reticulation)	0	0	>100	>100	0	0	2,297	4,069	108	105	104	98	311	4,032	0	0													0	0	19	30
28B	Goldenfields Water (Bulk Water Su	0	0	>100	>100	0	0	783	862	0	0	0	0	254	3,299	0	0													0	0	16	17
20	Goulburn Mulwaree Council	20	4	8	10	3,623	3,264	5,576	5,972	191	191	191	182	27,013	11,964	1,152	315	197	42	114	300	3,166	1,127	274	245	157	150	176	123	20	17	27	28
9	Wagga Wagga Council	1	1	1	0	-164	-161	-847	-1,343	181	166	162	160					0	0	0	0					234	256	142	180	-1	-1	-5	-8
LWU Range Max		32	>100	>100	>100	15,441	27,855	13,116	14,196	1,445	1,405	1,422	1,375	29,743	11,964	4,759	26,295	4,158	9,653	4,717	2,733	3,166	1,366	502	1,583	1,931	2,274	1,947	625	40	27	40	45
LWU Range Min		0	0	0	0	-12,673	-15,926	-8,294	-5,351	0	0	0	0	0	-56	-87	0	0	-45	-1,607	0	25	13	35	38	43	0	21	55	-41	-26	-19	-27
Median of NMU Indicators shown in Table		1	>100	>100	2	-273	0	-535	2,036	299	271	273	270	16	0	0	0	0	0	0	0	240	192	175	181	319	222	226	187	-2	0	-3	14



## Appendix F: NMUs - National Performance Report 2013-14

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)															
		2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14	2010/11	2011/12	2012/13	2013/14								
Sydney Water Corporation Hunter Water Corporation Water NSW		473	498	379	372					506	386	379					236	160	186					236	160	186					68	48	34	58							
1	Gosford City Council																																								
2	Wyong Shire Council																																								
3	Shoalhaven City Council																																								
4	Rous Water	1,592	1,913	1,840	1,954					1,578	1,907	1,814	1,927	809	866	987	965					809	866	987	965	416	272	1,875	481												
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	873	1,050	917	936					873	1,050	917	936	1,548	710	472	493					419	582	472	314	2	845	58	93												
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 Supply)	440	498	533	530					439	498	535	530	314				308					314				308	0													
20	Goulburn Mulwaree Council																																								
9	Wagga Wagga Council																																								
LWU Range Max		1,592	1,913	1,840	1,954					1,578	1,907	1,814	1,927	1,548	866	987	965					809	866	987	965	416	845	1,875	481												
LWU Range Min		440	498	533	530					439	498	535	530	809	710	314	308					419	582	314	308	2	272	58	0												
Median of NMU Indicators shown in Table		873	1,050	917	936					873	1,050	917	936	1,179	788	472	493					614	724	472	314	209	559	966	93												

## 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.

Emissions can be Scope 1 emissions (direct emissions from sources within the boundary of a facility and as a result of that facility's activities) or Scope 2 emissions (indirect emissions from purchased electricity, heat or steam consumed by a facility but produced outside of the facility's boundary).

Greenhouse gas emissions 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, formula for the calculation of emissions from sewage treatment works and a calculator. See National Greenhouse and Energy Reporting 2012 published by the Federal Department of Climate Change and Energy Efficiency at the following web address:

<http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting.aspx>

The calculation of emissions is relatively complicated 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 NSW utilities to use where they do not have other more detailed calculations. The calculator is a spreadsheet based on the Federal Government factors. It also includes some simplifying assumptions for sewage treatment. Utilities should review these assumptions to assess whether they 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

An example for the 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>. The resulting emissions should be entered in your Performance Monitoring Database.

Note that this Greenhouse Gas Calculator is provided for guidance only and calculation sheets should not be forwarded to the Office of Water.

An example is provided for an example utility showing the procedure for calculation of emissions (see green tab **Example**).

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<sup>1</sup> Examples of common emission sources are shown at yellow tab **Emission Source Examples**

### 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.

### 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.

If your utility does not have sufficient data to determine STW emissions using this spreadsheet at tab **STW 1**, graphs for typical STWs are also provided which provide an indication of approximate emissions (see 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 (enter value as a negative number).

### 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 2012. 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

Updated July 2012

Based on Tables 1 to 5 of the NATIONAL GREENHOUSE ACCOUNTS (NGA) FACTORS July 2012

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 sum of emissions from orange tabs STW 1 to STW 10 ).

3. Enter the carbon offset (if any) in the cell for sequestration.

4. The calculated TOTAL Emissions (tonnes CO2-e) are shown in the yellow cells 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
ELECTRICITY PURCHASED FROM GRID (Table 5 of NGA)		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								
SUBTOTAL	t CO2-e					0.0	0.0	0.0	0.0
LIQUID FUELS (Transport) (Adapted from Table 4 of NGA)									
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								
SUBTOTAL	t CO2-e					0.0	0.0	0.0	0.0
LIQUID FUELS (Non Transport) (Adapted from Table 3 of NGA)									
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								
SUBTOTAL	t CO2-e					0.0	0.0	0.0	0.0
SOLID FUELS (Non Transport) (Adapted from Table 1 of NGA)									
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								
SUBTOTAL	t CO2-e					0.0	0.0	0.0	0.0
NATURAL GAS (Non Transport) (Adapted from Table 2 of NGA)									
Coal seam methane	m³								
Coal mine waste gas	m³								
Town gas	m³								
Liquefied natural gas	kL								
Landfill or sludge biogas (methane only)	m³								
SUBTOTAL	t CO2-e					0.0	0.0	0.0	0.0
SEWAGE TREATMENT (from STW spreadsheets)									
Sum of STW 1 to STW 10 or from STW Graphs	t								
SUBTOTAL	t CO2-e						0.0		0.0
SEQUESTRATION									
Carbon Offset	t								
SUBTOTAL	t CO2-e							0.0	0.0
TOTAL EMISSIONS	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 Sewage Treatment Works

B. CALCULATION OF GREENHOUSE GAS EMISSIONS FROM SEWAGE TREATMENT WORKS (STWs)

STW 1

Insert STW identifier

Updated July 2012

Data is required to be entered in the blue cells below (either step 1 or step 2 and then step 7).

Enter data in green cells if data is available. Otherwise green cells may be left blank. Total emissions are calculated at step 16.

If your utility has more than one STW, enter additional data in the worksheets STW 2 to STW 10 (orange tabs).

METHANE EMISSIONS

1

Inflow to STW

Insert volume of sewage inflow to STW per year (if known). Else leave blank.

0

ML

2

Population served (P)

If inflow to STW is unknown, Insert population served by STW.  
(If inflow to STW is unknown, a default value is calculated using 240 L/c/d for residential sewage.)

0

No.

3

COD in influent (CODw)

Insert COD in influent to STW (if known). Else leave blank.  
(If BOD in influent is known, CODw can be calculated from BOD x 2.6).  
If COD or BOD in influent are unknown, CODw is estimated from the following approximation.  
CODw = 0.0585 x population (P)

tonnes

CODw =

0

tonnes

4

COD in sludge (CODsl)

COD in sludge can be calculated from the amount of volatile solids in the sludge (step 4a)  
or from the fraction of influent CODw that is removed and treated as sludge (step 4b).

4a

Insert volatile solids in sludge

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

OR

4b

Fraction of COD removed as sludge (Fsl)

Insert fraction of CODw removed as sludge (if known, else leave blank).  
Fsl = fraction COD removed as sludge (default is 0.6)

fraction of CODw

Fsl =

0.6

CODsl = VSpsl x 1.99 + VSwasl x 1.48 OR Fsl x CODw

tonnes

5

COD in effluent (CODEff)

Insert COD in effluent (if known). Else leave blank.  
CODEff = COD in effluent (default is 0.08 x CODw)

tonnes

CODEff =

0

tonnes

6

Methane correction factor (MCF)

Select MCF for the appropriate type of STW from table 1 below.  
(MCF is the fraction of COD anaerobically treated)

MCF =

7

Sludge transferred out (CODtr)

Insert COD in sludge transferred out of the STW to landfill (if known). Else leave blank  
CODtrlandfill = COD in sludge transferred out to landfill (in tonnes)  
(default = CODsl x (1-MCF x 0.4))

tonnes

CODtrlandfill =

0

tonnes

Insert COD in sludge transferred out of STW to other than fill (if known)

tonnes

CODtrother = sludge transeferred to other than fill (default =

tonnes

CODtr = CODtrlandfill + CODtrother

tonnes

8

Emissions from wastewater treatment (CH4genww)

CH4genww = (CODw - CODsl - CODEff) x MCF x EFw  
where EFw = 5.3 tonnes CO2-e per tonne COD

CH4genww =

0

t CO2-e

9

Emissions from sludge (CH4gensl)

CH4gensl = (CODsl - CODtr) x MCF x EFsl  
where EFsl = 5.3 tonnes CO2-e per tonne COD

CH4gensl =

0

t CO2-e

10

Methane captured for combustion, flaring or recovered in a digester (R)

Insert volume of methane combusted or flared (in m3)  
AND / OR  
Insert methane recovered in digester (in tonnes CO2-e)

Q =

m3

t CO2-e

R = 0.0142464 x Q combusted plus tonnes recovered in digester

R =

0

t CO2-e

11

Total Methane emissions (CH4gen)

CH4gen = CH4genww + CH4gensl - R

CH4gen =

0

t CO2-e

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NITROGEN EMISSIONS

12 Nitrogen in wastewater (Nin)

Nitrogen entering STW (Nin assumed to be = 0.036 x 0.16 x Population)

Nin =  t N

13 Nitrogen in sludge transferred out of STW (Ntr)

Sludge transferred to landfill (Mtrlandfill) (default CODtrlandfill)

Mtrlandfill =  tonnes

Nitrogen in sludge transferred to landfill (Ntrlandfill = 0.05 x Mtrlandfill)

Ntrlandfill =  t N

Nitrogen in sludge transferred to other than landfill (assumed to be 0)

Ntrother =  t N

Ntr = Ntrlandfill + Ntrother

Ntr =  t N

14 Nitrogen discharged to the environment

Nitrogen discharged to enclosed waters (Nencw) if known. Else leave blank.  
ie. other than estuarine or open coastal waters

t N

Nitrogen discharged to estuarine waters (Nestw) if known. Else leave blank.

t N

Nitrogen discharged to open coastal waters (Ncw) if known. Else leave blank.

t N

15 Total nitrous oxide emissions (Ej)

Ej = (Nin - Ntr) x 4.9 + Nestw x 1.2

Ej =  t CO2-e

TOTAL GREENHOUSE GAS EMISSIONS FROM STW (GHG)

16 Total Greenhouse Gas Emissions (GHG)

GHG = Methane emissions plus nitrous oxide emissions  
GHG = CH4gen + Ej

GHG =  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)

Greenhouse gas emissions can also be calculated using the NGER System Measurement Technical Guidelines July 2012 (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 do not apply to a particular utility, 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 are shown below in Table 1. See also yellow tab **STW Assumptions**
- Table 1 Fraction of COD anaerobically treated in wastewater and sludge (MCF)
- | TYPE OF TREATMENT                   | STW assumed for each type of treatment                  | MCF |
|-------------------------------------|---|-----|
| Managed aerobic treatment           | Aerated Lagoon  | 0   |
|                                     | Preliminary treatment                                   |     |
|                                     | Activated sludge processes                              |     |
|                                     | Secondary sedimentation tanks of clarifiers             |     |
|                                     | Intermittent Extended Aeration (IDEA)                   |     |
|                                     | Oxidation ditches and carrousels                        |     |
|                                     | Mechanically aerated lagoons                            |     |
|                                     | Trickling filters                                       |     |
|                                     | Dissolved air flotation                                 |     |
|                                     | Aerobic digesters                                       |     |
|                                     | Tertiary filtration                                     |     |
|                                     | Disinfection (eg. chlorination, ultraviolet, ozonation) |     |
|                                     | Mechanical dewatering                                   |     |
| Unmanaged aerobic treatment         | Gravity thickeners                                      | 0.3 |
|                                     | Imhoff Tanks  |     |
| Anaerobic digester/reactor          | Anaerobic digester                                      | 0.8 |
|                                     | High rate anaerobic reactors                            |     |
| Anaerobic shallow lagoon (<2m deep) | Facultative lagoons                                     | 0.2 |
|                                     | Maturation/polishing lagoons                            |     |
|                                     | Sludge drying pans                                      |     |
| Anaerobic deep lagoon (>2m deep)    | Sludge lagoons  | 0.8 |
|                                     | Covered anaerobic lagoons                               |     |
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# Graphs of Emissions from different types of STW

## Indicative Emissions for different types of STW

Updated July 2012

Indicative greenhouse gas emissions resulting from typical types of treatment are shown in Figures 1 and 2 below for varying population or inflow.

Figures 1 and 2 have been developed based on a number of assumptions including:

inflow from residential sewage of 240 L per capita per day, and assumed values of COD in effluent and sludge.

For an explanation of all assumptions refer to yellow tab **STW Assumptions**.

Figure 1. Greenhouse Gases Based on Population

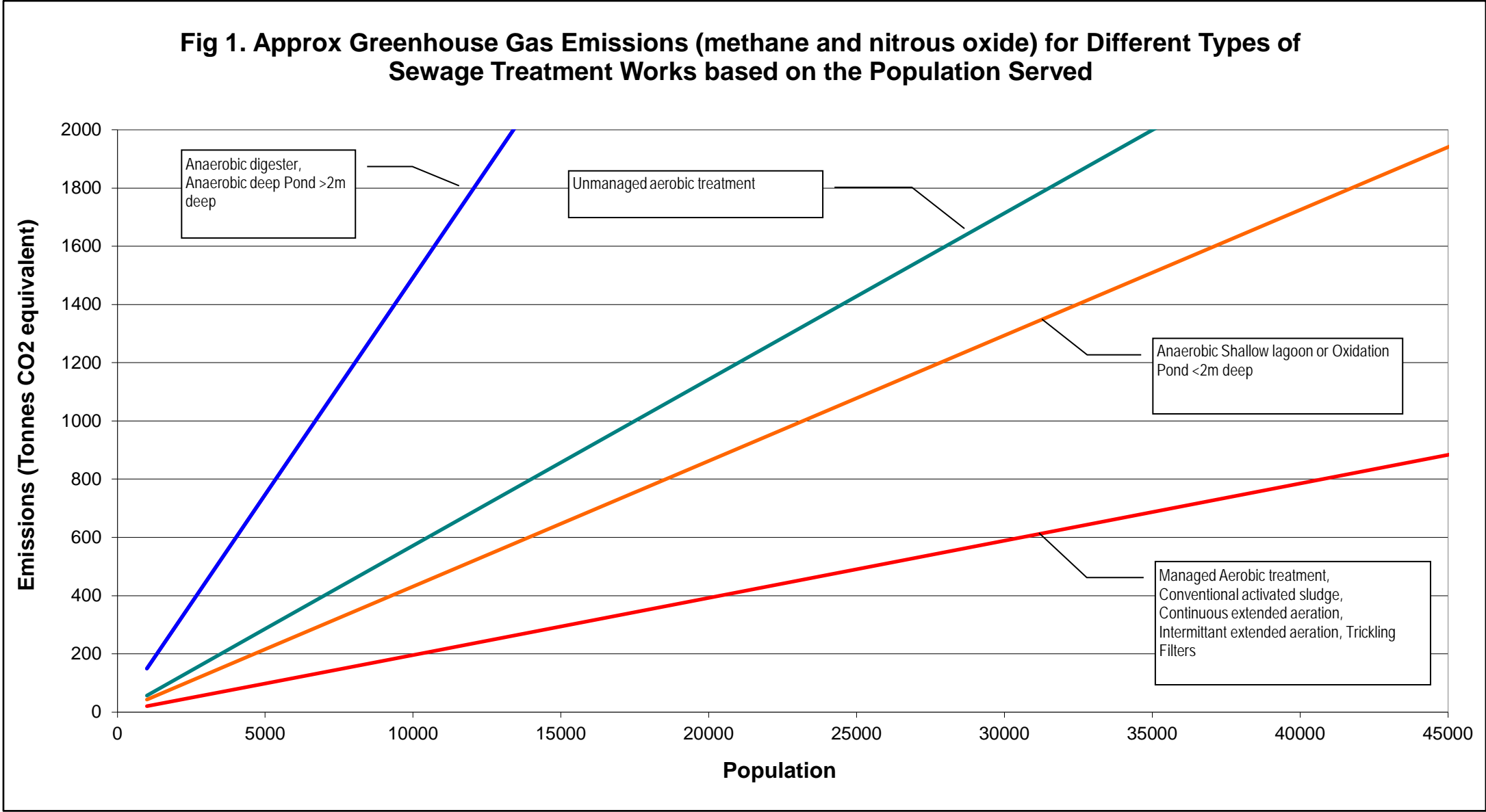
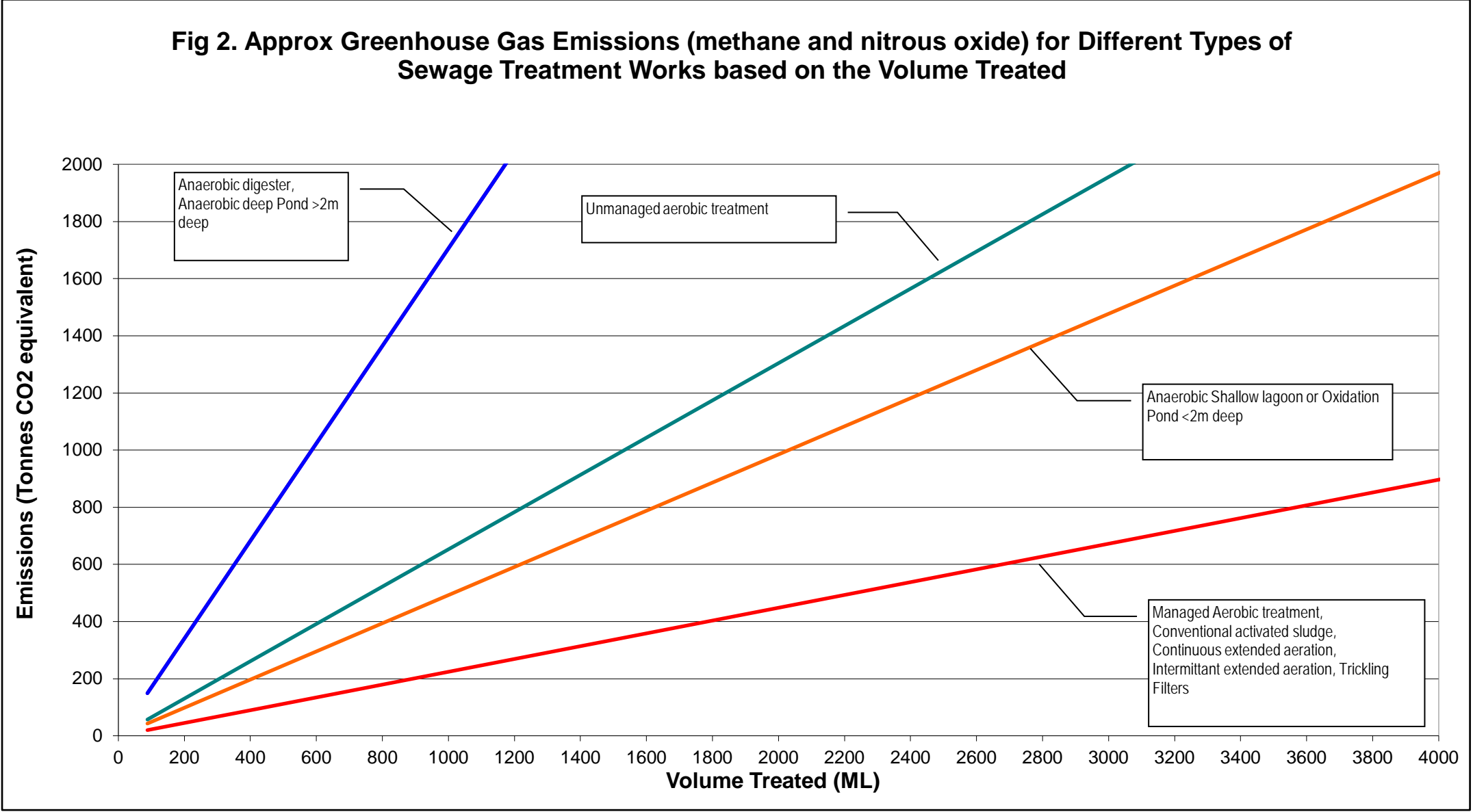


Figure 2. Greenhouse Gases Based on Volume of Inflow



Assumptions Adopted for the Calculation of Emissions from STWs

ASSUMPTIONS ADOPTED FOR THE CALCULATION OF INDICATIVE EMISSIONS FROM STWs

The following assumptions have been provided to assist in the calculation of indicative emissions from STWs. Updated July 2012  
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 2012

(a)	BOD	Biological oxygen demand BOD from domestic sewage is assumed to be 2.25 tonnes per annum per 100 persons $BOD = 0.0225 \text{ tonnes per capita per annum}$
(b)	COD	Chemical oxygen demand COD is assumed to be 2.6 times BOD for wastewater $COD = 2.6 \times 0.0225 = 0.0585 \text{ tonnes per capita per annum}$
(c)	P	Population served by the STW Where the inflow to the STW is measured but the population served is unknown, an approximation for the population served can be calculated by assuming that the volume of inflow for residential sewage is 240 L per capita per day.
(d)	CODw	The quantity of COD in wastewater influent to the STW from the population served (P) $CODw = 0.0585 \times P \text{ tonnes per annum}$
(e)	CODsl	Quantity of COD removed as sludge from the wastewater and treated in the STW $CODsl = CODpsl + CODwasl$ where CODpsl is the quantity of COD removed as primary sludge from wastewater and treated at the STW CODwasl is the quantity of COD removed as waste activated sludge $CODpsl = VSpsl \times 1.99$ where VSpsl is the estimated volatile solids in the primary sludge $CODwasl = VSwasl \times 1.48$ where VSwasl 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. Otherwise it is assumed that the COD removed as sludge is about 60% of COD entering STW $CODsl = 0.60 \times CODw$
(f)	CODtr	Quantity of COD in sludge transferred out of the STW to landfill (CODtrlandfill) or to other (CODtrother) $CODtr = CODtrlandfill + CODtrother$ where the default for CODtrlandfill = $CODsl \times (1 - MCFsl \times 0.4)$ and for CODtrother is zero
(g)	CODEff	The quantity of COD in wastewater discharged as effluent from the STW CODEff is assumed to be 0.08 times the COD in influent unless an actual value for CODEff is known $CODEff = 0.08 \times CODw$
(h)	EFw EFsl	Methane emission factors for wastewater (EFw) and for sludge (EFsl) $EFw = EFsl = 5.3 \text{ tonnes CO}_2\text{-e / tonne COD}$
(i)	MCF	Methane correction factor for wastewater and for sludge MCF is the fraction of COD anaerobically treated in wastewater or sludge Note that methane is only generated through anaerobic treatment of COD and therefore emissions must be corrected by multiplying by MCF to eliminate any COD that is not anaerobically treated. Default values for MCF are provided in the NGER Guidelines and are shown in Table 1 below
(j)	Q	Quantity of methane captured for flaring or for combustion for use by the STW (m3) Note that where methane from waste biomass is recovered and flared or combusted for energy, the CO2 emitted is not counted as an emission but regarded as part of the natural carbon cycle. The total amount of methane recovered is therefore regarded as saved not emitted so long as it does not enter the atmosphere as CH4.
(k)	R	Recovered or captured methane from wastewater in tonnes CO2-e $R = 0.0142464 \times Q \text{ tonnes CO}_2\text{-e}$
(l)	CH4genww	Methane emissions generated from wastewater treatment are calculated using the formula shown in the NGER Guidelines $CH4genww = (CODw - CODsl - CODEff) \times MCFww \times EFw \text{ in tonnes CO}_2\text{-e}$
m)	CH4gensl	Methane emissions generated from sludge are calculated using the formula shown in the NGER Guidelines $CH4gensl = (CODsl - CODtr) \times MCFsl \times EFsl \text{ in tonnes CO}_2\text{-e}$ where CODtr is the COD in sludge transferred out of the STW (assumed to all go to landfill)
(n)	CH4gen	Total methane emissions (sum of the wastewater emissions plus sludge emissions less the methane captured) $CH4gen = CH4genww + CH4gensl - \text{methane captured (R)} \text{ in tonnes CO}_2\text{-e}$

(n)	Nin	<p>Nitrogen in wastewater entering the STW</p> <p>It is assumed that Nin is calculated from the population served as follows:</p> <p style="padding-left: 40px;"><math>Nin = Protein \times Fracpr \times Population\ served\ (P)</math> where</p> <p style="padding-left: 40px;">Protein = 0.036 (default from NGER Guidelines)</p> <p style="padding-left: 40px;">Fracpr = 0.16 (default from NGER Guidelines)</p> <p>It is also assumed that the nitrogen entering the STW (Nin) equals the nitrogen in effluent discharged to the environment (Nenv) plus the nitrogen in sludge transferred out (Ntr)</p> <p style="padding-left: 40px;"><math>Nin = Ntr + Nenv</math></p>								
(o)	Ntr	<p>Nitrogen in sludge transferred to landfill (it is assumed that all nitrogen transferred out of the STW (ie Ntr) goes to landfill)</p> <p style="padding-left: 40px;"><math>Ntr = 0.05 \times Mtrl</math></p> <p style="padding-left: 40px;">where Mtrl is the dry mass of sludge transferred to landfill (default assumed to be CODtrl)</p>								
(p)	Nenv	<p>Nitrogen in effluent including discharge to the environment (lagoons and waterways)</p> <p style="padding-left: 40px;"><math>Nenv = Nencw + Nestw + Ncw</math> where</p> <p style="padding-left: 40px;">Nencw is the nitrogen discharged to enclosed waters</p> <p style="padding-left: 40px;">Nestw is the nitrogen discharged to estuarine waters</p> <p style="padding-left: 40px;">Ncw is the nitrogen discharged to open coastal waters</p>								
(q)	EFsec	<p>Emission factor for nitrous oxide emitted in the wastewater treatment process</p> <p style="padding-left: 40px;"><math>EFsec = 4.9</math> tonnes nitrous oxide measured in CO2-e per tonne nitrogen produced</p>								
(r)	EFencw EFestw EFcw	<p>Emission factors for the discharge environments shown below in CO2-e per tonne nitrogen</p> <table border="1"><thead><tr><th colspan="2">Emission Factors</th></tr></thead><tbody><tr><td>Discharge to enclosed waters (EFencw) (ie. all waters other than estuarine or open coastal waters)</td><td>4.9</td></tr><tr><td>Discharge to estuarine waters (EFestw)</td><td>1.2</td></tr><tr><td>Discharge to open coastal waters (EFcw)</td><td>0</td></tr></tbody></table>	Emission Factors		Discharge to enclosed waters (EFencw) (ie. all waters other than estuarine or open coastal waters)	4.9	Discharge to estuarine waters (EFestw)	1.2	Discharge to open coastal waters (EFcw)	0
Emission Factors										
Discharge to enclosed waters (EFencw) (ie. all waters other than estuarine or open coastal waters)	4.9									
Discharge to estuarine waters (EFestw)	1.2									
Discharge to open coastal waters (EFcw)	0									
(s)	Ej	<p>Total nitrous oxide emissions from sewage treated by the STW</p> <p style="padding-left: 40px;"><math>Ej = (Nin - Ntr - Nencw) \times EFsec + Nencw \times EFencw + Eestw \times EFestw + Ecw \times Efcw</math></p> <p style="padding-left: 40px;">substituting the emission factors gives</p> <p style="padding-left: 40px;"><math>Ej = (Nin - Ntr) \times 4.9 + Nestw \times 1.2</math></p>								

For convenience, graphs have been prepared for different types of STWs for varying inflows or populations based on all of the above assumptions,. These graphs are shown at the orange tab **STW Graphs**.

Table 1 Fraction of COD anaerobically treated in wastewater and sludge (MCF)

TYPE OF TREATMENT	STW assumed for each type of treatment	MCF
Managed aerobic treatment	Aerated Lagoon Preliminary treatment Activated sludge processes Secondary sedimentation tanks of clarifiers Intermittently Decanted Extended Aeration (IDEA) Intermittently Decanted Aerated Lagoons (IDAL) Oxidation ditches and carousels Membrane bioreactors (MBR) Mechanically aerated lagoons Trickling filters Dissolved air flotation Aerobic digesters Tertiary filtration Disinfection (eg. chlorination, ultraviolet, ozonation) Mechanical dewatering	0
Unmanaged aerobic treatment	Gravity thickeners Imhoff Tanks	0.3
Anaerobic digester/reactor	Anaerobic digester High rate anaerobic reactors	0.8
Anaerobic shallow lagoon (<2m deep)	Facultative lagoons Maturation/polishing lagoons Sludge drying pans	0.2
Anaerobic deep lagoon (>2m deep)	Sludge lagoons Covered anaerobic lagoons	0.8



Example Calculation of Emissions from Water and Sewerage Operations

Example Calculation of Emissions from Water and Sewerage Operations						Example Council 2013-14																																																																																
<p>For an example council, fictitious fuel quantities have been assumed and are shown in the table at right.</p> <p>These quantities have been entered into the appropriate blue shaded cells in the emissions table below.</p> <p>The council also has an anaerobic lagoon &lt;2m deep.</p> <p>The STW has no biogas captured or flared.</p> <p>Inflow to STW is 430ML serving 5,000 people</p> <p>The total greenhouse gas generated from this STW is shown in the green tab <b>Example STW</b> and is 216 t CO2-e</p> <p>This value is entered into the blue shaded cell for sewerage operations emissions below</p>						<table><tr><th>Fuel Type</th><th colspan="2">Water</th><th colspan="2">Sewerage</th><th colspan="2">Other*</th></tr><tr><td>Electricity</td><td>200000</td><td>kwh</td><td>300000</td><td>kwh</td><td>100000</td><td>kwh</td></tr><tr><td>Fuel oil</td><td>10</td><td>kL</td><td>15</td><td>kL</td><td>15</td><td>kL</td></tr><tr><td>Diesel oil</td><td></td><td></td><td></td><td></td><td>10</td><td>kL</td></tr><tr><td>Ethanol</td><td></td><td></td><td></td><td></td><td>12</td><td>kL</td></tr><tr><td>Heating oil</td><td></td><td></td><td></td><td></td><td>5</td><td>kL</td></tr><tr><td>Diesel oil (non transport)</td><td></td><td></td><td></td><td></td><td>2</td><td>kL</td></tr><tr><td>Fuel oil (non transport)</td><td></td><td></td><td></td><td></td><td>1</td><td>kL</td></tr><tr><td>Wood (dry)</td><td></td><td></td><td></td><td></td><td>55</td><td>t</td></tr><tr><td>Town gas</td><td>125</td><td>m3</td><td>335</td><td>m3</td><td>540</td><td>m3</td></tr><tr><td>Carbon offset</td><td></td><td></td><td></td><td></td><td>45</td><td>t</td></tr></table>		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		
						Fuel Type	Water		Sewerage		Other*																																																																											
						Electricity	200000	kwh	300000	kwh	100000	kwh																																																																										
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						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 CO2-e (207t for water supply, 528t for sewerage and 14t for Other).																																																																																						
FUEL or PROCESS UTILISED	UNITS	ANNUAL QUANTITY USED				GREENHOUSE GAS EMISSIONS (t CO2-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 CO2 -e	t CO2 -e	t CO2 -e	t CO2 -e																																																																													
ELECTRICITY PURCHASED FROM GRID (Table 5 of NGA)		Enter data into the blue cells only																																																																																				
Electricity purchased from NSW or ACT Grid	kWh	200,000	300,000	100,000	600,000	176.0	264.0	88.0	528.0																																																																													
Electricity purchased from QLD Grid	kWh																																																																																					
Electricity purchased from Vic Grid	kWh																																																																																					
SUBTOTAL	t CO2-e					176.0	264.0	88.0	528.0																																																																													
LIQUID FUELS (Transport) (Adapted from Table 4 of NGA)																																																																																						
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			27.0	27.0																																																																													
Liquefied petroleum gas (Vehicles)	kL																																																																																					
Ethanol (Vehicles)	kL			12	12			1.0	1.0																																																																													
SUBTOTAL	t CO2-e					29.2	43.8	71.7	144.7																																																																													
LIQUID FUELS (Non Transport) (Adapted from Table 3 of NGA)																																																																																						
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																																																																																					
SUBTOTAL	t CO2-e					0.0	0.0	16.9	16.9																																																																													
SOLID FUELS (Non Transport) (Adapted from Table 1 of NGA)																																																																																						
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																																																																																					
SUBTOTAL	t CO2-e					0.0	0.0	1.1	1.1																																																																													
NATURAL GAS (Non Transport) (Adapted from Table 2 of NGA)																																																																																						
Coal seam methane	m³																																																																																					
Coal mine waste gas	m³																																																																																					
Town gas	m³	125	335	540	1000	0.3	0.8	1.3	2.3																																																																													
Liquefied natural gas	kL																																																																																					
Landfill or sludge biogas (methane only)	m³																																																																																					
SUBTOTAL	t CO2-e					0.3	0.8	1.3	2.3																																																																													
SEWAGE TREATMENT (from STW spreadsheet)																																																																																						
From emissions calculated in 'Example STW' spreadsheet	t						216.0		216.0																																																																													
SUBTOTAL	t CO2-e						216.0		216.0																																																																													
SEQUESTRATION																																																																																						
Carbon Offset (enter as a negative value)	t			-45	-45			-165.2	-165.2																																																																													
SUBTOTAL	t CO2-e							-165.2	-165.2																																																																													
TOTAL EMISSIONS	t CO2-e					205.5	524.6	13.9	744.0																																																																													
* OTHER is the estimated water and sewerage component of the fuel used in Councils' office buildings. It also includes sequestration as a carbon offset where appropriate (this is entered as 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

Updated July 2012

Data is required to be entered in the blue cells below (either step 1 or step 2 and then step 7).

Enter data in green cells if data is available. Otherwise green cells may be left blank. Total emissions are calculated at step 16.

If your utility has more than one STW, enter additional data in the worksheets STW 2 to STW 10 (orange tabs).

METHANE EMISSIONS

1

Inflow to STW

Insert volume of sewage inflow to STW per year (if known). Else leave blank.

438

ML

2

Population served (P)

Insert population served by STW.  
(If inflow to STW is unknown, a default value is calculated using 240 L/c/d for residential sewage.)

5,000

5,000

No.

3

COD in influent (CODw)

Insert COD in influent to STW (if known). Else leave blank.  
(If BOD in influent is known, CODw can be calculated from BOD x 2.6).  
If COD or BOD in influent are unknown, CODw is estimated from the following approximation.  
CODw = 0.0585 x population (P)

tonnes

CODw =

293

tonnes

4

COD in sludge (CODsl)

COD in sludge can be calculated from the amount of volatile solids in the sludge (step 4a) or from the fraction of influent CODw that is removed and treated as sludge (step 4b).

4a

Insert volatile solids in sludge

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

OR

4b

Fraction of COD removed as sludge (Fsl)

Insert fraction of CODw removed as sludge (if known, else leave blank).  
Fsl = fraction COD removed as sludge (default is 0.6)

fraction of CODw

Fsl =

0.6

CODsl = VSpsl x 1.99 + VSwasl x 1.48 OR Fsl x CODw

CODsl =

176

tonnes

5

COD in effluent (CODEff)

Insert COD in effluent (if known). Else leave blank.  
CODEff = COD in effluent (default is 0.08 x CODw)

tonnes

CODEff =

23

tonnes

6

Methane correction factor (MCF)

Select MCF for the appropriate type of STW from table 1 below.  
(MCF is the fraction of COD anaerobically treated)

MCF =

0.8

7

Sludge transferred out (CODtr)

Insert COD in sludge transferred out of the STW to landfill (if known). Else leave blank  
CODtrlandfill = COD in sludge transferred out to landfill (in tonnes)  
(default = CODsl x (1-MCF x 0.4))

tonnes

CODtrlandfill =

119

tonnes

Insert COD in sludge transferred out of STW to other than fill (if known)

tonnes

CODtrother = sludge transeferred to other than fill (default =

CODtrother =

0

tonnes

CODtr = CODtrlandfill + CODtrother

CODtr =

119

tonnes

8

Emissions from wastewater treatment (CH4genww)

CH4genww = (CODw - CODsl - CODEff) x MCF x EFw  
where EFw = 5.3 tonnes CO2-e per tonne COD

CH4genww =

397

t CO2-e

9

Emissions from sludge (CH4gensl)

CH4gensl = (CODsl - CODtr) x MCF x EFsl  
where EFsl = 5.3 tonnes CO2-e per tonne COD

CH4gensl =

238

t CO2-e

10

Methane captured for combustion, flaring or recovered in a digester (R)

Insert volume of methane combusted or flared (in m3)  
AND / OR  
Insert methane recovered in digester (in tonnes CO2-e)  
R = 0.0142464 x Q combusted plus tonnes recovered in digester

Q =

m3

t CO2-e

R =

0

t CO2-e

11

Total Methane emissions (CH4gen)

CH4gen = CH4genww + CH4gensl - R

CH4gen =

635

t CO2-e

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NITROGEN EMISSIONS

12 Nitrogen in wastewater (Nin)

Nitrogen entering STW (Nin assumed to be = 0.036 x 0.16 x Population)

Nin = 28.8 t N

13 Nitrogen in sludge transferred out of STW (Ntr)

Sludge transferred to landfill (Mtrlandfill) (default CODtrlandfill)

Mtrlandfill = 119 tonnes

Nitrogen in sludge transferred to landfill (Ntrlandfill = 0.05 x Mtrlandfill)

Ntrlandfill = 6.0 t N

Nitrogen in sludge transferred to other than landfill (assumed to be 0)

Ntrother = 0.0 t N

Ntr = Ntrlandfill + Ntrother

Ntr = 6.0 t N

14 Nitrogen discharged to the environment

Nitrogen discharged to enclosed waters (Nencw) if known. Else leave blank.

ie. other than estuarine or open coastal waters

t N

Nitrogen discharged to estuarine waters (Nestw) if known. Else leave blank.

t N

Nitrogen discharged to open coastal waters (Ncw) if known. Else leave blank.

t N

15 Total nitrous oxide emissions (Ej)

Ej = (Nin - Ntr) x 4.9 + Nestw x 1.2

Ej = 112 t CO2-e

TOTAL GREENHOUSE GAS EMISSIONS FROM STW (GHG)

16 Total Greenhouse Gas Emissions (GHG)

GHG = Methane emissions plus nitrous oxide emissions

GHG = CH4gen + Ej

GHG = 747 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) Greenhouse gas emissions can also be calculated using the NGER System Measurement Technical Guidelines July 2012 (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 do not apply to a particular utility, 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 are shown below in Table 1. See also yellow tab **STW Assumptions**

Table 1 Fraction of COD anaerobically treated in wastewater and sludge (MCF)

TYPE OF TREATMENT	STW assumed for each type of treatment	MCF
Managed aerobic treatment	Aerated Lagoon	0
	Preliminary treatment	
	Activated sludge processes	
	Secondary sedimentation tanks of clarifiers	
	Intermittent Extended Aeration (IDEA)	
	Oxidation ditches and carrousels	
	Mechanically aerated lagoons	
	Trickling filters	
	Dissolved air flotation	
	Aerobic digesters	
	Tertiary filtration	
	Disinfection (eg. chlorination, ultraviolet, ozonation)	
	Mechanical dewatering	
Unmanaged aerobic treatment	Gravity thickeners	0.3
	Imhoff Tanks	
Anaerobic digester/reactor	Anaerobic digester	0.8
	High rate anaerobic reactors	
Anaerobic shallow lagoon (<2m deep)	Facultative lagoons	0.2
	Maturation/polishing lagoons	
	Sludge drying pans	
Anaerobic deep lagoon (>2m deep)	Sludge lagoons	0.8
	Covered anaerobic lagoons	



## 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 Processes for the NSW Performance Monitoring System

## H1 Introduction

The *NSW Performance Monitoring System* (page 3) is a '**one stop shop**' which minimises red tape, avoids duplication in reporting and enables the NSW Office of Water to annually provide the required local water utility (LWU) data to the Australian Bureau of Meteorology [BOM - for the annual National Performance Report for Urban Water Utilities ([www.bom.gov.au](http://www.bom.gov.au))] and the Australian Bureau of Statistics.

A prime objective of the *NSW Performance Monitoring System* is to reliably determine the Statewide performance of the regional NSW local water utilities. This requires analysis of statewide medians and totals for key performance indicators in order to reveal historical trends and enable interstate performance comparisons<sup>47</sup>. A further objective is to publish performance data which is accurate and which is not misleading, both for individual 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 annually critically 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 bold in Tables 3 to 18 (section H3 on page 345).

In addition to the extensive independent auditing of the reported NSW data (page 3 and footnote 48 on page 346), this appendix outlines the data validation processes undertaken by the NSW 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*.

The NSW Office of Water is responsible for managing the NSW Government's *Country Towns Water Supply and Sewerage (CTWSS) Program* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)), which is a major reform Program. The Office of Water oversees and monitors utility performance, provides leadership, guidance, software and training (page 8) to the utilities and is the primary regulator for the 105 regional LWUs.

## 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.).

<sup>47</sup> Refer to page 17 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report*, section 5.3 on page 19, Table 4 on page 111 and Appendix A on page 204. Such performance comparisons may provide valuable insights on opportunities for continuing to improve performance and to provide better value for money to residents.

- **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 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 are shown in section H4 on page 346. 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.

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 275 to 278). 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 346.

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 the 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. the utility's strategic business plan or IWCMS Strategy, 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>48</sup> of the water supply and sewerage performance reporting for those LWUs with over 10,000 connected properties. The Office of Water approves each 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 Statements to each LWU's annual financial statements (refer to pages 253 to 255).

LWUs are required to annually report the fair value<sup>49</sup> and the current replacement cost depreciation of their water supply and sewerage assets in their audited 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 are outlined on pages 346 to 350.

### 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

<sup>48</sup> Independent audits of the auditable indicators in the *National Performance Framework 2013-14* for the 29 LWUs required to report nationally were undertaken in 2006-07, 2009-10 and 2012-13. Indicators which met the rigorous national auditing requirements have been published in the *National Performance Report 2013-14*. These LWUs serve 75% of the connected properties in regional 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.

<sup>49</sup> In accordance with the Australian Accounting Standards Board's AASB116 Property Plant and Equipment. The *NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets*, NSW Office of Water 2014 provides current unit rates and guidance on the valuation and depreciation of such assets. Available at [www.water.nsw.gov.au](http://www.water.nsw.gov.au).

systems. This is done to align with national performance reporting and to facilitate comparisons. In addition, detailed data showing the performance of each of the 539 LWU water and sewage treatment works is published in Appendices D1 and D2 on pages 281 to 296. Refer also to Section H4.6 on page 348.

## 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.

**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 169 and 189). 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 134 and 146 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 137 and 149. The charges shown in Tables 6 and 7 include the charges for the current reporting year (2013-14) and also for the forthcoming year (2014-15) and are obtained by the Office of Water 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. Refer also to note 5 on page 33.

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 58% of the LWU's Total Potable Urban Water Supplied (NWI Indicator W11.1 – refer to column 10 of Table 8 on page 155).

**Real Losses** (mostly 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. These adjusted values of real losses are shown in *italics bold* in column 8 of Table 8 on page 155. Refer also to page 15, note 10 on page 34 and Figure 28 on page 66.

**Non Revenue Water (NRW)** (Real losses (mostly leakage), Apparent Losses (under-registration of customer meters and illegal use) plus Unbilled Water supplied (eg. mains flushing and firefighting)) – Where a LWU has reported NRW of less than 10% of the total potable urban water supplied (W11.1), the reported NRW has been increased to 10%, unless the LWU has provided evidence of a Real Loss of less than 6%. In such cases, the adopted value for NRW has been determined as the Real Loss plus 4%. The adjusted values of NRW (W10.1) and total potable urban water supplied (W11.1) are shown in *italics bold* in columns 9 and 10 of Table 8 on page 155. Refer also to note 10 on page 34 and Figure 29 on page 67. NRW for the last 3 years in L/c/d is shown in column 41f of Table 10 on page 172.

## H4.5 EFFICIENCY

**Operating Cost (OMA)** – NWI indicators F11 and F13 (water supply operating cost per property and water and sewerage operating cost per property respectively) are calculated in accordance with the NWI definitions and reported accordingly in the *National Performance Report* and in Appendix F on page 309.

However in Tables 5 and 11 on pages 116 and 180 and Figures 33 to 35 on pages 70 to 72, 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 penalising 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 in *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 DRINKING WATER QUALITY COMPLIANCE

Drinking Water Quality 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 *NSW Performance Monitoring Database*. A LWU has complied with the 2011 NHMRC/NRMMC Australian Drinking Water Guidelines (2011 ADWG) for microbiological water quality (i.e. it is shown as 'Yes' in column (9) of Table 5 on page 116) if the required number of samples has been tested and at least 98%<sup>50</sup> of samples had no *E.coli*. Where *E. coli* is detected in a microbiological sample, further investigation is needed to determine whether there is a real problem with drinking water quality in accordance with the NSW Health protocol: (<http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-microbiological.aspx>).

Similarly, chemical water quality (health related<sup>51</sup>) is satisfactory (shown as 'Yes' in column (11) of Table 5 on page 116) if the required number of samples has been tested and the 95th percentile of results does not exceed the guideline value for each chemical. Non-potable supplies are excluded.

<sup>50</sup> This value (98%) has been determined by NSW Health in accordance with section 10.3.1 on page 10-11 of 2011 ADWG and is the same value as applied for the 2004 ADWG.

Where a LWU has not complied with 2011 ADWG, the percentage of samples which complied is shown in columns (9) and (11) of Table 5 on page 116 for microbiological and chemical compliance respectively.

<sup>51</sup> The 2011 ADWG specify guideline limits for chemical water quality (health related). Aesthetic parameters such as iron, aluminium, sodium, total dissolved solids (TDS), chloride, iodine and zinc are excluded.



Physical (aesthetic) water quality is satisfactory if the required number of samples has been tested and the mean of results does not exceed the guideline value for each characteristic.

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, the percentage of complying samples for that treatment works is deemed to be zero. Refer also to pages 8 and 9.

As noted on page 20, annual review of your Drinking Water Management System (DWMS) is required and any required corrective action needs to be included in your annual Action Plan to Council. Refer also to Circular LWU 18 (page 298).

The physical characteristics tested (aesthetic) are true colour, turbidity, total hardness as CaCO<sub>3</sub>, total dissolved solids (TDS) and pH.

The chemical characteristics tested (health related) are antimony, arsenic, barium, boron, cadmium, chromium, copper, fluoride, lead, manganese, mercury, molybdenum, nickel, nitrate, nitrite, selenium, silver and sulfate. Other chemical characteristics tested which are not health related are aluminium, calcium, chloride, iodine, iron, magnesium, sodium and zinc.

Columns 69, 70 and 71 of Table 12 on page 183 show the percentage of samples which complied with the Physical, Chemical and Microbiological requirements of ADWG for each of the last 3 years. Columns 69a, 70a and 71a show whether the LWU has complied with the 2011 ADWG for physical, chemical and microbiological water quality respectively in the 2013-14 financial year.

Columns 42h, 42j and 42l of Appendix D1 on page 281 show the percentage of the samples tested which complied with the 2011 ADWG for each water treatment works in 2013-14 for physical, chemical and microbiological water quality respectively.

It is important that specialist LWU infrastructure, such as water and sewage treatment works, dams and recycling projects, is fit for purpose, robust, cost-effective and without wasteful 'gold plating' which causes unwarranted increases to the customer bills. In this regard, any LWU proposals for the construction or modification of a dam, a water or sewage treatment works or a recycling project require NSW Office of Water approval under section 60 of the *Local Government Act, 1993* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Similarly, acceptance of a high or medium risk trade waste discharge to a LWU sewerage system requires a NSW Office of Water Section 90(1) concurrence (page 352).

The section 60 approval involves an independent and objective review which allows the Office of Water to share its insights and expertise in overseeing the 539 LWU water and sewage treatment works and 119 LWU dams. The section 60 review provides assurance to the community that the proposed infrastructure is fit for purpose and provides a robust, safe, cost-effective and soundly based solution, without wasteful 'gold plating'. Refer also to pages 109 and 115 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

In addition, under section 61 of the *Local Government Act, 1993*, the NSW Office of Water carries out regular inspections of the 539 LWU water and sewage treatment works and provides feedback and mentoring to the LWU operators. The detailed performance of each of these treatment works is disclosed annually in Appendices D1 and D2 on pages 281 to 296.

Each operator in charge of a water or sewage treatment works in regional NSW is required to have appropriate qualifications and experience ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). NOW conducts comprehensive operator training courses for LWU water and sewage treatment works operators ([www.water.nsw.gov.au](http://www.water.nsw.gov.au) and [urbanwater@water.nsw.gov.au](mailto:urbanwater@water.nsw.gov.au) [pages 36 and 353]). The detailed performance of each of these treatment works is publicly disclosed annually in Appendices D1 and D2 on pages 281 to 296.

Similarly, under the Aboriginal Communities Water and Sewerage Program ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)), the NSW Office of Water carries out regular inspections of the water and sewerage infrastructure for 60 discrete Aboriginal Communities in NSW. The 2013-14 drinking water quality results for these communities are disclosed in Appendix D3 on page 297.

## 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** – A STW is fully compliant if it meets its licence conditions for all prescribed indicators. If any indicator which is prescribed in the licence fails to meet the licence conditions (i.e. BOD, Suspended Solids, Total Nitrogen, Oil and Grease, Phosphorous, Faecal Coliforms, Ammonia, pH), then the STW is deemed not to comply with its licence.

## H5 Implementation of Best-Practice Management Framework

LWUs must implement the 19 planning, pricing and management requirements of the *NSW Best-Practice Management Framework* (page 6) in order to achieve appropriate, affordable, cost-effective and sustainable piped water supply and sewerage services and to comply with *National Competition Policy* and with the *National Water Initiative*. Meeting the requirements of 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 CTWSS Program (page 5).

Each LWU reports its implementation of the requirements of the *Best-Practice Management Framework* in Notes 2 and 3 of the Special Purpose Financial Statements to its annual financial statements (pages 253 to 255). The Office of Water assesses this reported implementation 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 pages 6 and 7). The assessment procedure for each requirement is shown below. Where a LWU has not reported its implementation against one or more of the requirements, the Office of Water will assess the LWU's implementation 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 have implemented that particular requirement. Each LWU's implementation results are shown in Table 3 on page 108.

Further information on implementation of integrated water cycle management (IWCM), strategic business planning, water conservation, drought management and trade waste regulation is available on pages 22 to 24, 108 and 113 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

A LWU's **peak planning document** for water supply and sewerage is the **later of its IWCM Strategy and financial plan and SBP and financial plan** (page 8).

**Strategic Business Plan and Financial Plan** – The strategic business plan needs to be prepared in accordance with the July 2014 Strategic Business Plan Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Guidance for LWUs is available in 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)). Refer also to pages 22, 23, 108 and 113 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

The NSW Office of Water reviews LWU strategic business plans and financial plans in order to ensure they are soundly based. A LWU has met the requirement if it has prepared a sound 30-year water and/or sewerage strategic business plan and financial plan in accordance with the above Check List. Such a plan must include a sound 30-year total asset management plan (TAMP) (page 7) and demonstrate the long-term financial sustainability of the LWU's 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 provisionally met the requirement, and is shown as Yes\* in Table 3 on page 108 (columns 1) and Table 5 on page 116 (column 34). As noted on pages 110 and 119, such a LWU now needs to prepare a 30-year IWCM Strategy and 30-year financial plan in accordance with the July 2014 IWCM Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

As noted on page 20 each LWU needs to annually 'roll forward', review and update its 30-year total asset management plan for projects completed, modified or deferred and to prepare an updated 30-year financial plan. A brief report to Council should be provided on the updated financial plan, including any necessary corrective action (an example Report to Council is provided on page 131 of the *NSW Strategic Business Planning Guidelines*). Refer also to pages 107 and 111 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

**Pricing** – The 11 pricing requirements of the NSW Best-Practice Management Framework (page 6) are outlined below. These incorporate implementation of the NSW Framework for Regulation of Sewerage and Trade Waste<sup>52</sup>, which includes implementation of appropriate sewerage and trade waste charges and developer charges, as well as a sound trade waste regulation policy and an approval for each trade waste discharger. As noted below, the pricing requirements include a non-residential sewer usage charge/kL and non-compliance trade waste usage and excess mass charges. In addition, the framework for regulation of sewerage and trade waste also involves mentoring and coaching of dischargers and enforcement measures which include financial penalties and finally, disconnection of a trade waste discharger in the event of persistent failure to comply with approval conditions (page 6).

**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 134 and column 11a of Table 7 on page 146). As noted on page 346, assets must be valued at fair value and current replacement cost depreciation must be applied.

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 134 and column 11a of Table 7 on page 146). Refer also to page 22 of this report and to Appendix G on page 84 of the *2010-11 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

**Pay-for-use-pricing** – For water supply, this 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 108. Refer also to columns 1, 5b and 5d of Table 6 on page 134. All the NSW utilities have now met this requirement.

**Residential water usage charges > 75%** - In order to provide strong pricing signals to residents and encourage efficient water use, the water supply tariff for LWUs with 4,000 or more connected

<sup>52</sup> The NSW Framework for Regulation of Sewerage and Trade Waste is a preventative risk management approach for achieving effective and efficient use of the sewerage system, which is a common pool resource (page 6).



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 deemed to have provisionally met the requirement and is shown as Yes\*. Refer also to section 4.4 on page 13, Figure 13 on page 51, column 2c of Table 3 on page 108, column 13 of Table 6 on page 134 and pages 5 and 25 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

**Appropriate 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 108.

**Residential sewerage charges** – Residential tariff is independent of land value. Refer to column 2b of Table 3 on page 108 and to column 3 of Table 7 on page 146.

**Non-residential sewerage charges** – This requires a two part tariff with an appropriate sewer usage charge per kL and an access charge that is reflective of the peak load the customer may place on the sewerage system. Refer to column 2c of Table 3 on page 108, Figure 44 on page 81, and to column 3a of Table 7 on page 146.

**Liquid trade waste fees and charges** – This requires appropriate trade waste fees and charges to be applied to all liquid trade waste dischargers. These include non-compliance trade waste usage and excess mass charges (page 6). Refer to column 2d of Table 3 on page 108 and to column 4 of Table 7 on page 146. Refer also to Figure 45 on page 82 and Table 7C on page 153.

A sound liquid **trade waste regulation policy** (endorsed by the NSW Office of Water) and an appropriate approval for each trade waste discharger is a further requirement. Refer to column 2f of Table 3 on page 108 and Table 7C on page 153.

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<sup>53</sup> to the sewerage system requires the Office of Water's concurrence under section 90(1) of the *Local Government Act, 1993* ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)).

**Developer charges** – The requirement is met 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 implementation and are shown as Yes\*. In addition utilities with growth of under 5 lots/a are granted an exemption and are shown as Yes<sup>e</sup>. Refer to columns 2e of Table 3 on page 108. Refer also to column 7 of Table 6 on page 134 (water supply), column 7 of Table 7 on page 146 (sewerage). Until the release of any new developer charges guidelines, the NSW utilities are authorised to continue to annually index their existing water supply and sewerage developer charges.

**Complete Performance Report by due date** – A LWU meets the requirement if it completes its performance reporting for water supply and/or sewerage by the due date (currently 15 September each year) and prepares and implements a sound annual Action Plan to Council. Refer to column 5 of Table 3 on page 108 (water supply) and column 3 on page 108 (sewerage).

**Water conservation** – The requirement is met if the LWU has a water conservation and demand management plan. Refer to column 3 of Table 3 on page 108 and Table 8C on page 163.

**Drought management** – The requirement is met if the LWU has a drought management plan. Refer to column 4 of Table 3 on page 108 and Table 8C on page 163.

<sup>53</sup> Liquid Trade Waste Regulation Guidelines, 2009 ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)) Refer also to pages 6 and 8.

**Integrated water cycle management** – A utility's IWCM Strategy needs to identify a 30-year strategy for water supply, sewerage and stormwater which provides the best value for money on the triple bottom line (TBL) basis of social, environmental and economic considerations. The Office of Water reviews each LWU's IWCM Evaluation and IWCM Strategy to ensure they are soundly based. The IWCM Strategy needs to identify the best mix of capital works, non-build solutions, policies and operation and maintenance activities. Note that the 19 Best-Practice Management requirements aid the development of such a strategy through the required sound planning, pricing and management of services.

The requirement is met if the LWU has commenced an integrated water cycle management (IWCM) study. Refer to column 6 of Table 3 on page 108 (water supply) and to column 4 on page 108 (sewerage). As indicated in note 5 on page 110, a utility which has completed its IWCM Strategy is shown as 'YesC' on page 108 and a utility which has only completed its IWCM Evaluation (Part 1 of the IWCM study) is shown as 'YesE' on page 108.

As indicated in Note 8 on page 110, LWUs whose IWCM Strategy is over 6 years old need to prepare a new 30-year IWCM Strategy, financial plan and report in accordance with the July 2014 IWCM Check List ([www.water.nsw.gov.au](http://www.water.nsw.gov.au)). Refer also to Appendix H on page 106 of the *2013-14 NSW Water Supply and Sewerage Performance Monitoring Report*.

## Appendix I: Certification of Water Treatment Works Operators in Regional NSW

LWU		Number of Water Treatment Operators* (1)	Number of Operators – Chemical Dosing+ (2)	Number of Operators in Training (3)	Meet National Certification Requirements?# (4)
11	Albury	2	1		Yes
29	Armidale Dumaresq	1	2	1	Yes
24	Ballina	2			Yes
100	Balranald	4	1		Yes
21	Bathurst Regional	4			Yes
23	Bega Valley	16	1		Yes
47	Bellingen	2	3		Yes
53	Berrigan	8			Yes
89	Bogan	1	1	1	Yes
97	Bombala	3			Yes
104	Boorowa	1		1	Yes
87	Bourke	1	1	1	Yes
105	Brewarrina	5			Yes
27	Byron	3	1		Yes
91	Cabonne		2	3	Yes
92	Carrathool	6			Yes
103	Central Darling	2	1	1	Yes
14	Clarence Valley	2			Yes
67	Cobar	2		1	Yes
10	Coffs Harbour	2		1	Yes
50	Cooma-Monaro	2	2		Yes
75	Coonamble			1	
42	Corowa	7			Yes
39	Cowra	6			Yes
40	Central Tablelands	3		2	Yes
54	Deniliquin	2	1	1	Yes
18	Dubbo	2	1	1	Yes
26	Essential Energy	5		2	Yes
15	Eurobodalla	3	2		Yes
12	Fish River	1		1	Yes
51	Forbes		2		Yes
84	Gilgandra	2		1	Yes
60	Glen Innes Severn	3			Yes
1	Gosford	4			Yes
20	Goulburn Mulwaree	4			Yes
80	Greater Hume	2			Yes
30	Griffith	2			Yes
94	Gundagai	2			Yes
44	Gunnedah		1		Yes
90	Guyra	2		1	Yes
28	Goldenfields	2		1	Yes
81	Gwydir	3	1	4	Yes
76	Harden	1	1		Yes
86	Hay	4			Yes
37	Inverell	2			Yes
106	Jerilderie	1	1	2	Yes
25	Kempsey	10	1	2	Yes
70	Kyogle	2		3	Yes
59	Lachlan	4		2	Yes
48	Leeton	4			Yes
22	Lismore	3			Yes
31	Lithgow	2			Yes
61	Liverpool Plains	4			Yes
5	MidCoast	13	1		Yes
32	Mid Western Regional	8	2	2	Yes
38	Moree Plains	6			Yes
65	Murray	2		2	Yes
101	Murrumbidgee			4	
41	Muswellbrook	4			Yes
34	Nambucca	3			Yes
46	Narrabri				
63	Narrandera	2		1	Yes
62	Narromine	3		1	Yes
83	Oberon	3			Yes
19	Orange	3			Yes
71	Palerang		5	1	Yes
36	Parkes	1	1	1	Yes



## Appendix I: Certification of Water Treatment Works Operators in Regional NSW

LWU		Number of Water Treatment Operators* (1)	Number of Operators – Chemical Dosing+ (2)	Number of Operators in Training (3)	Meet National Certification Requirements?# (4)
7	Port Macquarie-Hastings	6		1	Yes
33	Richmond Valley	1		1	Yes
4	Rous	4			Yes
8	Riverina	4			Yes
3	Shoalhaven	5	1		Yes
35	Singleton	4			Yes
52	Snowy River	1	2	3	Yes
13	Tamworth Regional	9		3	Yes
68	Tenterfield	3		1	Yes
93	Tumbarumba	2		1	Yes
43	Tumut	4		2	Yes
6	Tweed	4			Yes
45	Upper Hunter	1	4		Yes
73	Upper Lachlan	2		1	Yes
85	Uralla	1	1	2	Yes
88	Wakool	4			Yes
98	Walcha	2			Yes
79	Walgett	1		4	Yes
96	Warren	3		2	Yes
55	Warrumbungle	11		6	Yes
57	Wellington	3			Yes
74	Wentworth	2		1	Yes
16	Wingecarribee	3		1	Yes
2	Wyong	3			Yes
56	Yass Valley	2	1	1	Yes
<b>TOTAL</b>		<b>294</b>	<b>45</b>	<b>76</b>	<b>89</b>

### Notes:

- Columns 1 and 2 above show that the NSW LWUs have a total of 339 fully qualified water treatment operators who meet the requirements of the National Certification Framework for water treatment operators (column 4). 89 LWUs meet these requirements (column 4) and 294 of these operators are qualified to operate a water treatment works or a chlorinator/aerator (column 1). 45 of the operators are qualified to operate a chlorinator/aerator (column 2).
  - In addition, column (3) shows that a further 76 operators are currently undertaking training in water treatment operation.
  - As shown in column (3) above, Murrumbidgee has 4 operators currently undergoing training for operation of its Coleambally chlorinator and Darlington Point ultra-violet disinfection plants.
- \* Such operators have a Certificate III in Water Operations (Water Treatment) or equivalent and are employed in operating a LWU treatment works or a chlorinator/aerator (refer to page 23 of NSW Guidelines for drinking water management systems, NSW Health and NSW Office of Water, 2013 (<http://www.health.nsw.gov.au/environment/water/Documents/NSW-Guidelines%20for-Drinking-Water-Management-Systems.pdf>)).
- + Such operators have a NSW Office of Water Part 1 Certificate (Chemical Dosing Systems) or equivalent, have also completed chlorine safety training and are employed in operating a LWU chlorinator/aerator (refer to page 23 of NSW Guidelines for drinking water management systems).
- # [http://nwc.gov.au/\\_\\_data/assets/pdf\\_file/0019/25345/Proposed-National-Certification-Framework.pdf](http://nwc.gov.au/__data/assets/pdf_file/0019/25345/Proposed-National-Certification-Framework.pdf)

## Appendix J: Liveability Indicators for Regional NSW

LWU		Number of Residential Rainwater Tanks (1)	Typical Rainwater Tank Volume (kL) (2)	Development Control Plan? (3)	Stormwater Channels Managed Under WSUD Principles (km) (4)
11	Albury			Yes	
29	Armidale Dumaresq	1224	4.7	Yes	5.5
24	Ballina			Yes	
100	Balranald	150	4.5		
21	Bathurst Regional				3
23	Bega Valley	1,800	5	Yes	
47	Bellingen			Yes	
53	Berrigan				
89	Bogan				
97	Bombala				
104	Boorowa	435	15		1
87	Bourke	150	10		
105	Brewarrina	300	5		
27	Byron			Yes	
91	Cabonne				
92	Carrathool				
103	Central Darling				
14	Clarence Valley	289	13.8	Yes	
67	Cobar				
10	Coffs Harbour	1,618	3	Yes	
50	Cooma-Monaro				
75	Coonamble				
58	Cootamundra				
42	Corowa				
39	Cowra				
40	Central Tablelands				
54	Deniliquin				
18	Dubbo	200	5	Yes	2
26	Essential Energy				
15	Eurobodalla				
12	Fish River				
51	Forbes	960	1		
84	Gilgandra				
60	Glen Innes Severn				
1	Gosford	8,856	2	Yes	34
20	Goulburn Mulwaree		10		8
80	Greater Hume				
30	Griffith				
94	Gundagai				
90	Guyra				
28	Goldenfields				
44	Gunnedah				
81	Gwydir	1500	4		
76	Harden				
86	Hay				
37	Inverell				
106	Jerilderie	360	1		
25	Kempsey				
70	Kyogle	700	4.5		31
59	Lachlan				
48	Leeton				
22	Lismore			Yes	89
31	Lithgow				
61	Liverpool Plains				
5	MidCoast				
32	Mid Western Regional	1,435	3	Yes	0.6
38	Moree Plains				
65	Murray	120	2.5		
101	Murrumbidgee				
41	Muswellbrook				
34	Nambucca		5		
46	Narrabri	600			
63	Narrandera			Yes	
62	Narromine				
83	Oberon				
19	Orange	251		Yes	

Appendix J: Liveability Indicators for Regional NSW

LWU		Number of Residential Rainwater Tanks (1)	Typical Rainwater Tank Volume (kL) (2)	Development Control Plan? (3)	Stormwater Channels Managed Under WSUD Principles (km) (4)
71	Palerang				
36	Parkes				
7	Port Macquarie-Hastings			Yes	
17	Queanbeyan	152	3.5	Yes	
33	Richmond Valley			Yes	
4	Rous				
8	Riverina				
3	Shoalhaven				
35	Singleton	2076	10	Yes	
52	Snowy River				
13	Tamworth Regional	278	9 to 22	Yes	
68	Tenterfield				
93	Tumbarumba	35			
43	Tumut				
6	Tweed	1,713	5		1.4
45	Upper Hunter				
73	Upper Lachlan				
85	Uralla	220	5		
9	Wagga Wagga			Yes	52
88	Wakool				
98	Walcha				
79	Walgett				
96	Warren				
55	Warrumbungle				0.2
57	Wellington				
74	Wentworth				
16	Wingecarribee	138	5	Yes	12
2	Wyong	10,000		Yes	0.4
56	Yass Valley		4.5		
	TOTAL	28,700 (for 26 LWUs)	3 to 5 kL (typical for 25 LWUs)	22 LWUs have a Development Control Plan	128 km (for 13 LWUs)

- Notes:**
1. The results shown above have been reported by 26 LWUs in the 2013-14 data collection for the above performance indicators. More utilities are expected to be able to report in future data collections.



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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
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