2008-09
NSW WATER SUPPLY AND SEWERAGE
PERFORMANCE MONITORING REPORT
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Minister’s foreword

The Performance Monitoring Report for NSW water utilities for 2008-09 provides an overview of the current status and future water supply and sewerage needs of NSW.

This annual Report has been prepared by the NSW Office of Water and its predecessors since 1986, and presents the key performance indicators for all NSW urban water utilities. This enables each utility to monitor and improve its performance through benchmarking against similar utilities. The Report also highlights the overall statewide performance of the NSW non-metropolitan local water utilities and compares that performance with interstate utilities. The Report is important for public accountability and has been strongly endorsed by the Independent Pricing and Regulatory Tribunal.

Through mechanisms such as the State’s Best-Practice Management of Water Supply and Sewerage Guidelines, and the Country Towns Water Supply and Sewerage Program, the NSW Government will continue to work with water utilities to ensure the community benefits from effective, sustainable, and safe water and sewerage services.

To provide a balanced view of the long-term sustainability of NSW water utilities, the report adopts a triple bottom line accounting focus, with performance reported on the basis of social, environmental and economic performance indicators. These indicators include the typical residential bill, compliance with the Australian Drinking Water Guidelines 2004, compliance with sewage treatment works licences, the volume of water used and recycled, operating costs and whether full cost recovery has been achieved.

By monitoring and reporting on performance, I encourage each NSW water utility to continue to improve its services for the community.

The Hon. Phillip Costa MP
Minister for Water
Minister for Corrective Services
Acknowledgements

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

The contribution of NSW Health is acknowledged for providing additional water quality data (from the NSW water quality database) and water quality monitoring compliance data. This data has been incorporated into Tables 5 and 12 and Appendix D1 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

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

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

Local water utilities in non-metropolitan NSW continue to face significant challenges, such as the effects of climate change and water sharing plans on water availability, population growth along coastal NSW and a declining population in some inland areas, together with a shortage of skills and resources in water engineering. The continuing drought has also had a severe effect on water resources and the financial performance of utilities.

In such difficult times it is even more important for utilities to have in place a sound strategic business plan and financial plan together with water conservation and drought management plans, as required by the State Government’s Best-Practice Management of Water Supply and Sewerage Guidelines 2007. Currently, 89 per cent of utilities have a sound strategic business and financial plan and implementation of these plans should ensure the long term sustainability of these services. In addition, 96 per cent of the utilities are achieving full cost recovery for water supply and 97 per cent for sewerage. The overall level of compliance with the 19 requirements of the guidelines is 82 per cent (86 per cent for water supply and 78 per cent for sewerage).

Utilities are acknowledged for their continuing efforts to minimise the typical residential bill (TRB), which for water supply and sewerage is $900 per assessment (Jan 2010$), an increase of a total of 2% in real terms over the past 14 years. At the same time, 99 per cent of the 20,700 samples tested for E. coli comply with the 2004 Australian Drinking Water Guidelines, with 88 per cent of the utilities complying with these Guidelines. Average annual residential water supplied is a low 175 kilolitres (kL) per property, which is 47 percent lower than that in 1991. This reduction is mainly due to strong pay-for-use water pricing signals with a median water usage charge of 150 cents per kilolitre (c/kL) together with implementation of water conservation and demand management measures by the utilities. In addition, the water restrictions imposed by 61 per cent of utilities as a result of severe drought conditions have contributed to this outcome.

Utility characteristics

Since July 2008, 106 local water utilities (LWUs) have provided water supply and sewerage services to country NSW (i.e. excluding Sydney and Hunter Water Corporations). Of these LWUs, 97 provided water supply services (including three bulk suppliers - Cobar Water Board, Fish River Water Supply and Rous County Council) while 100 LWUs provided sewerage services.

The LWUs provided a piped water supply to a population of 1.8 million (97.9 per cent coverage) and to 791,000 water supply connected properties. The total water supplied was 288,000 megalitres (ML) which has fallen significantly over the past 18 years. This is mainly due to the application of best practice management measures by utilities (e.g. strong pay-for-use water pricing signals, water conservation and demand management), as well as the current water restrictions due to the continuing drought.

The NSW drought continues to significantly affect utilities. Forty three per cent of utilities received below average rainfall in 2008-09 and 61 per cent of the utilities imposed drought water restrictions.

The LWUs also provided a piped sewerage service to 1.7 million people (95.2 per cent coverage).

Since implementation of the new Country Towns Water Supply and Sewerage Program (CTWSS) in 1996, the non-metropolitan urban population with a piped sewerage service has increased by 245,000 people, thus increasing the coverage from 92.3 per cent to 95.2 per cent of the non-metropolitan urban population.
Social

- Typical residential bill for water supply and sewerage is $900 per assessment (Jan 2010$), which has increased by a total of 2% over the past 14 years. The typical residential bill for water supply is $430 while the sewerage bill is $470.

- Median water usage charge for the first step has risen to 150 c/kL. This is higher than most of the other Australian utilities and provides a strong pricing signal to encourage efficient water use.

  Median water usage charge for the second step has risen to 180 c/kL. Water usage charges now provide 73 per cent of residential revenue, compared to 25% 11 years ago.

- Typical developer charge for water supply and sewerage is $8,500 per equivalent tenement. This is 35 per cent of the $24,200 median current replacement cost of system assets per assessment.

- Water quality compliance has remained high and water quality complaints have remained low. These results are similar to the other Australian utilities.

- Sewage odour complaints and sewerage service complaints have also remained at a level similar to the other Australian utilities.

- Water main breaks are 10 per 100km of main. These have remained much lower than all the other states and the capital city utilities, indicating good asset condition.

Environmental

- Eighty-seven per cent of utilities have implemented sound water conservation measures.

- Reuse of recycled water comprised 38,000 ML, which is 23 per cent of the total volume of sewage collected and was carried out by 79 per cent of the utilities, mostly for agriculture.

- Compliance with the Department of Environment, Climate Change and Water (DECCW) sewerage licences was 98 per cent of the 3,990 samples analysed for Biochemical Oxygen Demand (BOD) and 94 per cent of the 3,990 samples analysed for suspended solids (SS). Eighty-eight per cent of the utilities complied with their licence for BOD and 76 per cent complied for Suspended Solids.

- Median per cent of sewage treated that complied with licence conditions is 100%.

**Average annual residential water supplied** was 175 kL/connected property which was similar to country Victoria and lower than all the other Australian states and capital city utilities, except for Brisbane and Melbourne.

Average annual residential water supplied has fallen by 47 per cent over the past 18 years (from 330 kL/property to 175 kL/property). This is mainly due to the strong pricing signals from pay-for-use water pricing and implementation of water conservation by LWUs, although current water restrictions have also affected recent results. This is the Statewide median which includes both coastal and inland utilities. Inland utilities have a higher volume of water supplied (median of 245 kL/property) due to their hotter and drier climate and the use of evaporative air coolers. The coastal median is 150 kL/property.
Economic

The total revenue for the 106 utilities was $950M and the current replacement cost of their water supply and sewerage assets was $19,900M. Seventy two of these utilities were Category 1 businesses under National Competition Policy, having an annual revenue of over $2m for their water supply or sewerage businesses.

- Economic real rate of return was 0.6 per cent for water supply and sewerage which was higher than country Victoria, but lower than most of the capital city utilities. The drought has adversely affected LWU rates of return. Ninety-six per cent of the utilities are now achieving full cost recovery for water supply and 97 per cent for sewerage.

- Operation, maintenance and administration cost (OMA) for water supply and sewerage has increased from $477 to $670 (Jan 2009$) over the past 17 years, largely due to more stringent standards for sewage treatment and increasing management costs. The OMA cost was lower than the country utilities in all the other states but higher than most of the capital city utilities.

All NSW urban water utilities have abolished their annual water allowances for potable water, thus enabling NSW to comply with this key requirement of the National Water Initiative (NWI). Eighty-nine per cent of utilities have a sound strategic business plan and long-term financial plan, compared to 31% 11 years ago. Implementation of these plans should ensure the long term sustainability of these services.

This report has been compiled from data reported by the NSW utilities. The reported performance indicators for utilities serving over 10,000 connected properties have been independently audited in accordance with the rigorous auditing requirements of the National Performance Framework 2008-09. In addition the reported values for the 30 NWI financial performance indicators have been independently audited for all of the NSW utilities.

Best practice management

The NSW Government continues to actively encourage the non-metropolitan NSW water utilities to achieve effective, sustainable, and safe water supply and sewerage businesses through the Best-Practice Management of Water Supply and Sewerage Guidelines. All of the utilities are expected to comply with the requirements of the Guidelines, which were updated in August 2007.

- The overall level of compliance by the 106 NSW utilities with the 19 requirements of the Best-Practice Management Guidelines is 82 per cent. In addition, 38 per cent of the utilities have complied with all of the requirements for water supply and 39 per cent of the utilities have complied with all of the requirements for sewerage. [Figure 21 on page 47, page 17, Appendix C on page 65].

- Compliance with all of the requirements of the Best-Practice Management Guidelines is a pre-requisite for payment of a dividend from the surplus of a utility’s water supply or sewerage businesses. Each utility which meets these requirements should consider paying such an ‘efficiency dividend’ to the council’s general revenue [box on page 10].

- Such compliance is also required for financial assistance towards the capital cost of backlog infrastructure under the NSW Government’s Country Towns Water Supply and Sewerage (CTWSS) Program.
List of NSW water utilities

This report discloses performance indicators for all NSW water utilities, comprising the 106 non-metropolitan local water utilities (LWUs) together with the four metropolitan utilities (Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority and Hawkesbury Council). All the NSW utilities are listed in the table below in alphabetical order. To facilitate comparisons with similar sized LWUs, Appendices C to F of this report are sorted in order of the number of connected properties served. The number shown in the table below with each utility 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, namely over 10,000; 3,001 to 10,000; 1,501 to 3,000, and 200 to 1,500 connected properties.

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

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<td>11</td>
<td>Albury City</td>
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<td>Armidale Dumaresq</td>
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<td>Forbes</td>
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<td>24</td>
<td>Ballina (R)</td>
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<td>Fish River WS (BS)</td>
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<td>Ballaranaid (DS)</td>
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<td>Gloucester</td>
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<td>23</td>
<td>Bega Valley</td>
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<td>Goldenfields (NO SGE)</td>
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<td>47</td>
<td>Bellingen</td>
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<td>Greater Hume</td>
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<td>Bermagui (DS)</td>
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<td>Griffith</td>
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<td>72</td>
<td>Bland (NO WS)</td>
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<td>Gundagai</td>
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<td>78</td>
<td>Billeyey (NO WS)</td>
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<td>Guyra</td>
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<td>89</td>
<td>Bogan</td>
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<td>Harden (R)</td>
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<td>97</td>
<td>Bombala</td>
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<td>Hawkesbury (NO WS)</td>
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<td>Boorowa</td>
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<td>Hay (DS)</td>
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<td>Bourke (DS)</td>
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<td>Hunter Water</td>
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<td>Inverell</td>
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<td>Byron (R)</td>
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<td>Jerilderie (DS)</td>
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<td>91</td>
<td>Cabonne</td>
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<td>Junee (NO WS)</td>
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<td>Carrathool</td>
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<td>Junee (NO WS)</td>
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<td>103</td>
<td>Central Darling (DS)</td>
<td>41</td>
<td>Kemptfield</td>
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<td>40</td>
<td>Central Tablelands (NO SGE)</td>
<td>42</td>
<td>Kempsey</td>
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<td>14</td>
<td>Clarence Valley</td>
<td>43</td>
<td>KyOGLE</td>
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<td>67</td>
<td>Cobar (R)</td>
<td>44</td>
<td>Lady Edith (DS)</td>
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<td>66</td>
<td>Cobar WB (BS)</td>
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<td>Lake Macquarie-Hastings</td>
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<td>Coffs Harbour</td>
<td>46</td>
<td>Liverpool Plains</td>
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<td>99</td>
<td>Coolamon (NO WS)</td>
<td>47</td>
<td>Lockhart (NO WS)</td>
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<td>Cooma-Monaro</td>
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<td>Lindsay</td>
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<td>Coonamble</td>
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<td>Lithgow</td>
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<td>Cootamundra (R)</td>
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<td>Lithgow</td>
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<td>Corowa</td>
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<td>Lockhart (NO WS)</td>
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<td>70</td>
<td>Kyogle</td>
<td>54</td>
<td>Liverpool Plains</td>
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R – Reticulator; DS – Dual Supply; BS – Bulk Supplier; NO WS – No water supply; NO SGE – No sewerage
1. Performance monitoring

Performance monitoring and benchmarking are required under National Competition Policy and the National Water Initiative, are important for public accountability and have been strongly endorsed by the NSW Independent Pricing and Regulatory Tribunal. Performance monitoring is also a key requirement of the NSW Best-Practice Management of Water Supply and Sewerage Guidelines1.

This Performance Monitoring Report presents the key NSW performance indicators (Figures 1 to 27 and Appendix D), discloses the overall Statewide performance of the non-metropolitan NSW water utilities (section 2) and compares that performance with interstate utilities (section 3 and Appendix A). The full suite of performance indicators is provided in the 2008-09 NSW Water Supply and Sewerage Benchmarking Report which contains benchmarking data to enable each local water utility (LWU) to monitor trends in its performance indicators over the past six years and to benchmark its performance against that of similar LWUs. The benchmarking report is available on the NSW Office of Water website (www.water.nsw.gov.au).

To facilitate comparisons, performance indicators have been prepared for each LWU's aggregated water businesses and aggregated sewerage businesses, rather than for individual water & sewerage systems.

1.1 Triple bottom line focus

To provide a balanced view of the long-term sustainability of the NSW utilities, a triple bottom line (TBL) accounting focus has been adopted. This involves consideration of a utility’s strategic business plan together with its social and environmental management practices, with performance reported on the basis of social, environmental and economic performance indicators.

1.2 Statewide performance

The Statewide performance of the NSW LWUs is provided in section 2, where the performance indicators are calculated on a ‘percentage of connected properties 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.

1.3 Utility performance comparison

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

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

For further detail on factors that impact on a utility’s performance, refer to section 5.3 on page 21.

1.4 TBL reports and action plans

The NSW Office of Water provides each LWU with an annual TBL Performance Report and a template for its Action Plan to Council for its water supply business and for its sewerage business. The TBL reports provide a summary of the LWU’s compliance with the requirements of the Best-Practice Guidelines & its performance for over 50 key performance indicators together with the Statewide medians and the LWU’s relative performance against similar sized LWUs. TBL reports and action plans are discussed in section 5 on page 19. An example TBL report [page 63] and action plan [page 61] are provided in Appendix B.

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1 Best-Practice Management of Water Supply and Sewerage Guidelines, NSW Government 2007
2. Performance summary

The Statewide performance of the non-metropolitan NSW local water utilities (LWUs) is provided below for the key performance indicators. The full suite of performance indicators over the past six years is shown in the 2008-09 NSW Water Supply and Sewerage Benchmarking Report which is available on the NSW Office of Water website (www.water.nsw.gov.au).

To comply with best-practice management and to provide a balanced view of the long-term sustainability of NSW water utilities, this report provides a triple bottom line (TBL) focus with performance reported on the basis of social, environmental and economic indicators.

Performance monitoring and benchmarking are required under National Competition Policy and the National Water Initiative\(^2\), are important for public accountability and have been strongly endorsed by the Independent Pricing and Regulatory Tribunal\(^3\).

Utility characteristics

New residential dwellings - median as a percent of the existing residential properties was:
- 0.9\% connected to water supply
- 0.8\% connected to sewerage.

Renewals expenditure - median as a percent of current replacement cost of system assets was:
- 0.5 for water supply
- 0.1 for sewerage.

**Infrastructure renewals**

As noted in section 4.1 on page 15, assessment of infrastructure renewals requirements is a critical element of a utility’s asset management plan, which must be documented in the utility’s 20 to 30-year strategic business plan and financial plan. Details of each LWU’s asset rehabilitation activities and renewals expenditure are provided in Tables 10 and 15 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

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. 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 financial plan addresses all future capital expenditure, including renewals, identified in a soundly based asset management plan. They should ensure their Typical Residential Bill is in accordance with the projection in their adopted Strategic Business Plan. They should also annually monitor income and expenditure and update their 30-year financial plan. Funding in the financial plan involves an appropriate mix of the utility’s annual income, accumulated cash and investments and borrowings. Further guidance on renewals and asset management is available on page 10 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

As shown on pages 8 and 13, water main breaks for NSW LWUs have remained much lower than all the other states and the capital city utilities, indicating good water main asset condition.


\(^3\) Pricing Principles for Local Water Authorities, Independent Pricing and Regulatory Tribunal NSW, 1996
Properties served per km of main – median was:
- 32 for water supply
- 40 for sewerage.

Employees - median number of employees per 1,000 properties was:
- 1.4 for water supply
- 1.6 for sewerage.

Provision of reticulated sewerage – The 2008-09 population provided with a piped sewerage service was 1.7 million (95.2% coverage). For water supply, the population served was 1.8 million (97.9% coverage).

Rainfall
2008-09 was another dry year with 43% of water utilities receiving below average annual rainfall. Snowy River received only 49% of its average rainfall while Bellingen (218%) and Kempsey (203%) received the highest percentage of their average annual rainfall.

Water restrictions
During 2008-09, 61% of LWUs needed to apply drought water restrictions [Figure 22 of the 2008-09 NSW Water Supply of Sewerage Benchmarking Report]. The median for water restrictions was 55% of the time. 90% of LWUs have implemented sound drought management [column 4 on page 65].

Note:
The 23 years of results for the non-metropolitan NSW urban water utilities shown above indicate that:
1. For the 15 years from 1986 to 2000/01, on average, the NSW utilities did not apply any drought water restrictions for 87% of the years, which include the severe 1993 to 1994 drought. This is consistent with the implied target of no drought water restrictions in 90% of years in the NSW Security of Supply basis (commonly referred to as the “5/10/10 rule”).
2. For the 23 years from 1986 to 2008/09, on average, the NSW utilities did not apply any drought water restrictions for 75% of the years. However, this period includes both the above 1993 to 1994 drought and the very severe 2001 to 2008/09 drought.
2. Performance summary

Business plans

The percentage of utilities with a sound 20 to 30 year strategic business plan and financial plan has increased from 31% to 89% over the past 11 years. This now includes all LWUs with over 3,000 connected properties. These utilities comply with National Competition Policy and cover 98% of the connected properties in non-metropolitan NSW. 30 of these LWUs now need to update their plans. Refer also to section 4.1 on page 15.

Social – charges/bills

Tariffs

94% of LWUs had both pay-for-use water supply pricing and full cost recovery for water supply and 95% had sound pricing with full cost recovery for sewerage. These are required under the National Water Initiative.

Pay-for-use water supply tariff – In July 2009, 98% of LWUs had a two-part tariff (i.e. an access charge and a usage charge for all potable water usage) or an inclining block tariff. These tariffs comply with National Competition Policy and the National Water Initiative.

Annual water allowance

All NSW utilities have abolished the annual water allowances for their potable water supply.

Water usage charge

The Statewide median residential revenue from water usage charges was 73% [Figure 20 on page 46]. Figure 20 and Appendix E on page 72 show that 52% of LWUs have obtained at least 65% of their residential revenue from water usage charges.

- The median water usage charge for the first step was 150 c/kL, which is higher than most of the other Australian utilities and provides a strong pricing signal to encourage efficient water use. As shown on page 6, the typical residential bill for water supply and sewerage has increased by a total of 4% over the past 13 years (Jan 2010$).
- Twenty per cent of utilities had a first step water usage charge of over 165 c/kL.
- Eighty per cent of utilities had a first step usage charge of over 85 c/kL.
- The median water usage charge for the second step was 180 c/kL. Approximately 75% of utilities had step pricing in place for discretionary water use, with a higher charge per kilolitre for usage over 200 to 600 kL/annum.
2. Performance summary

Benefits of strong pricing signals

The first graph above shows that the median residential water usage charge has increased from 79c/kL to 150c/kL (2009-10$) over the past 11 years. The second and third graphs show that while the residential revenue from water usage charges has increased from 25% to 73%, the water Typical Residential Bill (TRB) has increased by only 5% (from $410 to $430) over this period.

The strong pricing signals provided have enabled the NSW LWUs to avoid over $1 billion in capital expenditure over the last decade for augmenting water supply headworks and treatment capacity and the associated increases in their typical residential bills. By encouraging efficient water use, these pricing signals have assisted the NSW LWUs to achieve a 47% reduction in the residential water supplied per connected property since 1991 (page 8). Such efficient water use is valuable for protecting our water resources and the environment.

Residential water billing in accordance with national guidelines – 14% of LWUs now have residential water billing in accordance with the National Guidelines for Residential Customers’ Water Accounts, 2006. In addition, a further 26% of LWUs have made significant progress towards such billing [column 5e of Appendix E on page 72].

Sewer usage charge – 70% of water utilities had a non-residential sewer usage charge per kL to provide a strong pricing signal to commercial and industrial dischargers [Figure 27 on page 53, column 3a on page 75]. The median sewer usage charge was 100 c/kL.

Access charge - median residential access charge per assessment was:
- $120 for water supply [column 2 on page 72]
- $470 for sewerage [column 1 on page 75].

Developer charges - median typical developer charge was:
- $4,600 per equivalent tenement (ET) for water supply [Figure 24 on page 50, column 7 on page 72]
- $3,900 per ET for sewerage [Figure 25 on page 51, column 7 on page 75].

The median current replacement cost of system assets for water supply and sewerage was $11,900 and $12,300 per assessment respectively. The typical developer charge for water supply and sewerage was $8,500, which is 35% of the current replacement cost of system assets per assessment.

The number of LWUs with complying liquid trade waste fees and charges is 67%, compared with 20% of LWUs five years ago [column 4 on page 75]. The non-residential sewerage charges and the trade waste fees and charges levied by each LWU are shown respectively in Tables 7B and 7C of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report. The non-residential water supply charges are shown in Table 6B of the Benchmarking Report.

All LWUs should levy appropriate non-residential sewerage access and sewer usage charges, together with trade waste fees and charges for all commercial and industrial dischargers to the sewerage system [item 2 on page 15].
Typical residential bill - median 2009-10 typical residential bill per assessment was:

- $430 for water supply [Figure 2 on page 27, column 8 on page 71]
- $470 for sewerage [Figure 3 on page 28, column 8 on page 75].

The typical residential bill (TRB) is the principal indicator of the overall cost for a water supply or sewerage system. It is the bill paid by a residential customer using the LWU’s average annual residential water supplied (refer also to pages 13 and 23). The Statewide 2009-10 TRB for water supply and sewerage was $900 per assessment (Jan 2010$) and has increased by a total of 2% over the past 14 years [Figure 1 on page 26, column 13 on page 68].

Software and guidelines

Comprehensive software and guidelines to assist LWUs in developing appropriate water supply and sewerage financial plans, water supply tariffs, sewerage tariffs, liquid trade waste fees and charges, developer charges and asset management plans (capital works plan, operation plan and maintenance plan) continue to be available from the NSW Office of Water.

(Dilip Dutta on phone (02) 8281 7372, fax (02) 8281 7351, e-mail Dilip.Dutta@water.nsw.gov.au).

Social – health

Population served

The NSW Government’s Country Towns Water Supply and Sewerage Program has assisted LWUs in achieving the present high levels of water supply and sewerage coverage for the urban population in non metropolitan NSW:

- water supply 97.9% coverage (1.8 million population served)
- sewerage 95.2% coverage (1.7 million population served).

Microbiological compliance for E. coli (health related) - of the 20,700 samples tested for E. coli, 99% complied with the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines (ADWG), which was similar to the other Australian utilities [graph 7 on page 56]. However, only 88% of LWUs complied with ADWG for microbiological water quality, which is the primary health related indicator [Figure 5 on page 30]. The 12 non-complying LWUs each served between 1,000 and 5,300 connected properties. The following box will assist LWUs to achieve microbiological compliance, which is a high priority for each LWU.

Achieving microbiological compliance

2. Performance summary

**Chemical compliance** (health related) - of the 23,600 samples tested, 98% complied with the ADWG for chemical water quality [Figure 4 on page 29, column 7 on page 68] and 96% of LWUs complied with ADWG for chemical water quality. As noted in Figure 4, most of the non-compliances are not health related and involve parameters such as hardness, iron and manganese.

**Physical compliance** - of the 26,500 samples tested 98% complied with the ADWG for physical water quality (aesthetic) and 98% of LWUs complied for physical water quality [Figure 12 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report].

In 2008-09, the water supply for over 99% of the urban population in non-metropolitan NSW complied with ADWG for both microbiological and chemical water quality [Figs 4 and 5 on pages 29 and 30, column 8, 7 and 7a on page 68].

Over the past eight years microbiological compliance has ranged from 97% to 99%, and chemical compliance has ranged from 95% to 98%.

**Risk-based drinking water quality management plans**

To safeguard drinking water quality, each LWU should move to develop and implement a risk-based drinking water quality management plan in accordance with ADWG. Further information is available on page 7 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report (available at www.water.nsw.gov.au). Tools are being developed by the NSW Office of Water to assist LWUs and assistance is available from the Office of Water (Bill Ho on Tel (02) 8281 7326, fax (02) 8281 7351, e-mail Bill.Ho@water.nsw.gov.au).

For LWUs with a number of separate water treatment works or sewage treatment works, the 2008-09 compliance with drinking water quality guidelines and DECCW licence conditions have been pro-rated based on the number of samples tested for each treatment works. The full 2008-09 results for each LWU water treatment works are disclosed in Appendix D1 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report available on the Office of Water website.

A summary of the sampling requirements under ADWG is provided on page 200 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report. Each LWU should ensure that it adheres to the sampling frequencies specified in Part 3 of ADWG and to the NSW Health advice of the required sampling frequency for each of the utility’s water sources.

**Social – levels of service**

**Sewage odour complaints** - median was 0.4 per 1000 properties [graph 10 on page 56, Figure 7 on page 32]. Odour complaints have remained low over the past 15 years. The Office of Water is continuing to work with LWUs experiencing high odour complaints to develop appropriate control measures.

**Sewerage service complaints** – median was 12 per 1000 properties [Figure 44 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report]. Service complaints have fallen from 20 to 12 over the past 14 years.
2. Performance summary

**Water quality complaints** – median was 3 per 1000 properties, similar to the other Australian utilities [graph 8 on page 56, Figure 6 on page 31].

**Water service complaints** – median was 6 per 1000 properties [Figure 19 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report].

Water quality complaints have remained between three to eight over the past 14 years while service complaints have decreased from seven to six. As indicated above, drinking water quality has improved over this period due to the commissioning of new water treatment facilities.

**Water main breaks** – median was 10 per 100km of main. This has remained much lower than all other states and capital city utilities, indicating good water main asset condition [graph 9 on page 56 and Figure 20 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report].

**Environmental – water usage and reuse**

**Average annual residential water supplied**

The Statewide median ‘average annual residential water supplied’ was 175 kL/connected property, which was similar to last year’s result but which has fallen by 47% over the past 18 years [page 13, graph 12 on page 57, Figure 8 on page 33, column 3 on page 68, column 14b on page 72].

Note that for inland water utilities the hotter and drier climate, together with the use of evaporative cooling, results in significantly higher residential water usage than coastal utilities. Water restrictions also affect this value. The weighted median ‘average annual residential water supplied’ for the inland utilities was 245 kL/connected property and the weighted median for coastal utilities was 150 kL/property [Figure 8A on page 34].

**Water conservation** – 87% of LWUs have implemented a sound water conservation plan [column 3 on page 65]. The water conservation measures implemented by each LWU are disclosed in Table 8C of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

**Recycled water** - 79% of LWUs carried out re-use of effluent, mostly for agriculture [Figure 12 on page 38, column 12 on page 68]. The total volume of water recycled in the 2008-09 financial year was 38,000 ML. This was 23% of the total volume of sewage collected, compared to 14% in 1998-99. 25% of LWUs recycled over 50% of their effluent. The highest volume recycled for one utility was 3,590 ML (Albury) and a further eight utilities (Bathurst, Goulburn Mulwaree, Orange, Dubbo, Shoalhaven, Tamworth Regional, Coffs Harbour and Wyong) each recycled over 1,000ML.
Environmental – effluent management

**Sewage effluent quality (BOD)** – 98% of the 3,990 sampling days complied with the 90-percentile limits of the Department of Environment, Climate Change and Water (DECCW) licences for Biochemical Oxygen Demand (BOD) and 88% of utilities complied with the 90-percentile limit of their BOD licence [graph 14 on page 58, Figure 9 on page 35]. Over the past 15 years Statewide compliance for BOD has ranged from 92% to 98%. Over this period, licence limits for both BOD and SS have become more stringent for many LWUs.

**Sewage effluent quality (SS)** – 94% of the 3,990 sampling days complied with the 90-percentile limits of the DECCW licences for Suspended Solids (SS) and 76% of utilities complied with 90-percentile limits of their SS licence. [graph 15 on page 58, Figure 10 on page 36]. Over the past 15 years Statewide compliance for SS has ranged from 90% to 96%. The major cause of non-compliance is the growth of algae in maturation ponds being measured as SS.

**Major cause of non-compliance with SS licence**

The major cause of non-compliance was due to the growth of algae in maturation ponds, being measured as suspended solids (SS). Most treatment works in non-metropolitan NSW have maturation ponds due to the previous DECCW preference for ponding over chlorination. Negotiations with the DECCW to develop an appropriate licencing method when maturation ponds are used for disinfection have favoured an option to test for SS prior to the maturation ponds. For new installations and major augmentations, ultraviolet (UV) disinfection is being used as an alternative to maturation ponds to overcome this problem.

**Sewage volume treated that was compliant** – sewage treated that was compliant had a median of 100%, up from 90% 3 years ago [graph 17a on page 58].

**Biosolids reuse** - median LWU reuse of biosolids was 100% in 2008-09. This has increased from 43% in 1998-99 [Table 15 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report].

As noted on page 8, 23% of the total sewage volume collected was recycled.

**Sewer main breaks and chokes** – median was 53 per 100 km of main [graph 16 on page 58 and Figure 51 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report]. This has fallen from 75 to 53 over the past 17 years.
Economic – financial

**Economic real rate of return** – median was:
- 0.3% for water supply
- 1.1% for sewerage

The economic real rate of return (ERRR) for water supply and sewerage was 0.6%. This has declined over the past 14 years and was similar to country Victoria, but lower than the capital city utilities [graph 18 on page 59]. The drought has adversely impacted water supply and sewerage ERRRs. [Figures 13 and 14 on pages 39 and 40, column 19 on page 68, column 12 on page 72, column 11 on page 75].

**Full cost recovery** - as indicated in Figures 13, 14 on pages 39, 40, full cost recovery was achieved by:
- 96% of utilities for water supply and
- 97% of utilities for sewerage.

There remain four water supply utilities and three sewerage utilities which are not achieving full cost recovery [Figure 13 on page 39 and Figure 14 on page 40].

Each LWU should continue to review its annual water supply, sewerage and trade waste tariffs, its developer charges, its operation, maintenance and administration costs, and its projected volume of water to be supplied to customers and the resulting revenue in order to ensure it achieves full cost recovery. This will ensure the utility meets this key requirement of the Best Practice Management Guidelines and the National Water Initiative. Further guidance on achieving full cost recovery is provided below.

**Achieving full cost recovery**

The current drought has adversely affected the economic real rate of return for many LWUs as the lower volume of water supplied to customers has reduced the LWU’s revenue from usage charges. Where the reduction in the water supplied to customers has exceeded the LWU’s estimate, the revenue and rate of return have been lower than forecast. However, as shown on Figure 13 on page 39, 35 LWUs have responded by significantly increasing their 2009-10 charges in order to achieve full cost recovery.

Each LWU should continue to set each year’s tariff to raise the required revenue (based on the analysis in your LWU’s current 30-year financial plan) on the basis of its careful estimate of the volume of water to be supplied to customers over the next financial year. This is particularly important during periods of drought and water restrictions in order to ensure the LWU continues to meet its obligation to achieve full cost recovery.

In addition, each LWU which meets all the requirements of the **Best-Practice Management Guidelines** should consider paying 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 the box on page 5 which highlights the strategic benefits of strong pricing signals and the resulting efficient water use.

**Revenue** (revenue less grants for capital works) [columns 4 and 9 on page 68 and page 65] Total revenue was $950M comprising:
- $490M for water supply and $460M for sewerage.

**Net debt to equity** - the median net debt to equity was:
- 0% for water supply and 0% for sewerage. Net debt to equity for water supply and sewerage was 1.4% [column 19a on page 70].
Economic – efficiency

**Operating cost per property** – the median operating cost (OMA)* per connected property was:

- Water Supply - $330 per property [Figure 15 on page 41]
- Sewerage - $340 per property [Figure 16 on page 42]

* OMA – Operation, maintenance and administration

The median operating cost for water supply of $330/property was lower than the country utilities in all the other states, but higher than most of the capital city utilities. The median operating cost for sewerage of $340/property was similar to country Victoria but higher than the capital city utilities. Refer also to page 14 and graphs 19 and 20 on page 59.

**Increased borrowing**

Utilities facing significant capital investment are encouraged to make greater use of borrowings to reduce their required Typical Residential Bill (TRB). Twenty year loan terms are recommended in order to avoid an unfair financial burden on existing customers and to facilitate inter-generational equity.

**Operating cost (OMA)** – $670/property for water supply and sewerage [column 17 on page 68]. This has increased from $477 to $670 (Jan 2009$) over the past 17 years, largely due to more stringent standards for sewage treatment and to increasing management costs.

LWUs with higher operating costs than the above medians should carefully examine their operations to determine whether they can improve their cost-effectiveness [page 20].

**Water supply operating cost** – the median water supply operating cost was 111 c/kL (Jan 2009$). This has risen from 56 c/kL over the past 14 years largely due to the reduced volume of water supplied per property and higher management costs [Figure 17 on page 43, column 6 on page 72].
Sewerage operating cost – the median sewerage operating cost was 145 c/kL (Jan 2009$) [column 2 on page 75 and Figure 62 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report]. This has risen from 91 c/kL over the past 14 years due to more stringent standards for sewage treatment, reduced sewage volumes and increasing management costs.

Management cost – the median management cost was $250/property for water supply and sewerage [column 18 on page 68]. The management cost per property has increased from $151 to $250 (Jan 2009$) over the past 17 years. The median management cost/property for water supply was $127 [Figure 18 on page 44]. The median management cost for sewerage was $123 [Figure 19 on page 45].

Treatment cost – the median treatment cost per property was:

- $35 for water treatment*
- $108 for sewage treatment (including chemical and energy costs).

* Only the 62 utilities with water treatment works involving at least filtration and disinfection for over 50% of their supply have been considered.

Pumping cost – the median pumping cost per connected property (including energy) was:

- $29 for water supply
- $50 for sewerage.

Water main and sewer main cost – the median water and sewer main cost per connected property was:

- $51 for water mains
- $40 for sewer mains.

Number of employees – the median number of employees was 3.0 per 1000 properties for water supply and sewerage, which was lower than country Victoria and the last reported values for Sydney and Hunter. This indicator has fallen from a maximum of 3.3 over the past 18 years. Each LWU’s results are shown on Figures 8 and 39 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

Water supply – the employees per 1000 properties has fallen by almost 20% from a maximum of 1.7 to 1.4.

Sewerage – the employees per 1000 properties has fallen by over 10% from a maximum of 1.8 to 1.6.
3. Interstate comparisons

To provide an overall assessment of NSW Local Water Utilities (LWUs), the key performance indicators are compared below with those reported by interstate utilities. For detailed graphs on interstate performance comparisons over the past 17 years, refer to Appendix A on page 54.

It is noted that many performance indicators are significantly affected by the density of development (ie. the number of properties served per km of water main or sewer main), which for country NSW is similar to country Victoria, but significantly lower than capital city utilities [graphs 1 and 2 on page 54]. Also, the performance of smaller utilities such as NSW LWUs and country Victoria are adversely affected by a lack of economy of scale.

Social

Compliance with microbiological water quality guidelines was high (99% of the 20,700 samples tested) and similar to most other Australian utilities [graph 7 on page 56]. Also water quality complaints were low and similar to most other Australian utilities [graph 8 on page 56].

Typical residential bill (TRB) is the principal indicator of the overall cost of a water supply or sewerage system. It is the bill paid by a residential customer using the utility’s average annual residential water supplied. The median TRB (water supply and sewerage) was lower than Perth, Canberra and Sydney, but higher than country Victoria and the other capital city utilities [graphs 4, 5 and 6 on page 55]. However, the first step water usage charge for NSW LWUs of 150 c/kL is relatively high and provides a strong pricing signal to encourage efficient water use [graph 3 on page 55].

Water main breaks for NSW LWUs have remained much lower than all the other states and the capital city utilities, indicating good water main asset condition [graph 9 on page 56].

Environmental

Annual residential water supplied per connected property was similar to country Victoria, and lower than all the other Australian states and the capital city utilities, except for Brisbane and Melbourne [graph 12 on page 57].

The percent sewage treated that was compliant was higher than country Victoria and most of the capital city utilities [graph 17a on page 58 and Table 15 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report].
3. Interstate comparisons

**Sewer main breaks and chokes** and **sewer overflows to the environment** were at about the median of the other Australian utilities [graph 16 on page 58 and graph 17 on page 59].

In total, 38,000ML of effluent was recycled in country NSW in 2008-09, which was 23% of the volume of sewage collected. The statewide median **percent of effluent recycled** for NSW LWUs has remained at 10% which is lower than country Victoria but higher than Brisbane, Perth, Sydney and Hunter Water [graph 13 on page 57].

**Economic**

**Economic real rate of return** [graph 18 on page 59] was higher than country Victoria but lower than the capital city utilities.

**Annual median operating cost (OMA)** for water supply was $330 per connected property [graph 19 on page 59], which was lower than the country utilities in all the other states but higher than most of the capital city utilities.

**The median operating cost for sewerage** was $340 per connected property [graph 20 on page 59], which was similar to country Victoria but higher than the capital city utilities.

**Revenue from community service obligations** [graph 22 on page 60] was higher than the Queensland utilities, but lower than all other Australian utilities.

**Net Debt to equity** [graph 21 on page 60] was lower than all the other Australian utilities except for Brisbane.
4. **Best practice management**

4.1 **Best Practice Management Guidelines**

The NSW Government has published the *Best Practice Management of Water Supply and Sewerage Guidelines* to encourage continuing improvement in performance of all NSW urban water utilities. Updated in August 2007, the guidelines are the key driver for reform of planning and management and for continuing performance improvement by each utility. The guidelines are available on the NSW Office of Water website (www.water.nsw.gov.au).

Compliance with the requirements of the Guidelines will provide the basis for utilities to achieve effective, sustainable, and safe water supply and sewerage businesses. It will also demonstrate best-practice management of these businesses and compliance with National Competition Policy and the National Water Initiative. In addition, in order to pay a dividend from the surplus of its water supply and sewerage businesses or to seek financial assistance towards the capital cost of backlog infrastructure under the Country Towns Water Supply and Sewerage program, a utility must demonstrate such compliance.

All utilities are expected to comply with the 19 requirements of the Guidelines (Appendix C on page 65), which cover the following six criteria:

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

1. **Strategic business planning** The community and governments are demanding increased accountability, increased levels of services and increased efficiency from water utilities. In addition, regulatory authorities are imposing more stringent environmental and health regulations. The LWU’s strategic business plan facilitates sound asset management by addressing these issues & providing a framework within which the utility needs to negotiate appropriate levels of service with the community and develop its 30-year asset management plan. This involves a cost-effective capital works program which discloses each of the growth, improved standards & renewals components, together with a sound operation plan & maintenance plan. The strategic business plan must include both the above asset management plan & a sound 20 to 30 year financial plan which identifies the resulting Typical Residential Bill (current dollars) over this period. Refer also to page 2 and page 4.

2. **Pricing and regulation of water supply, sewerage and trade waste.** Best practice pricing and regulation are fundamental to the effective delivery of water supply, sewerage and trade waste services, resulting in fair pricing of services, removal of significant cross-subsidies and protection of our valuable water resources and the environment. The strong pricing signals thus provided encourage both efficient water use by all users and compliance with discharge limits and waste minimisation by commercial and industrial dischargers. Refer also to the box on page 5.
The NSW Office of Water has published comprehensive Water Supply, Sewerage and Trade Waste Pricing Guidelines 2002 and Liquid Trade Waste Regulation Guidelines 2009. In addition to providing guidance for best-practice pricing and regulation by LWUs, these documents emphasise the need for appropriate pricing. Such pricing complies with the above National Water Initiative commitments. The comprehensive software and guidance available are noted on page six.

3. **Water conservation and demand management** are essential for ensuring efficient use of our valuable water resources and to improve environmental outcomes. Cost-effective water conservation delivers significant environmental and social benefits and reduces capital and operating costs [box on page 5].

   Measures that should be examined in each LWU’s water conservation plan include:
   
   - active intervention – e.g. retrofit programs, rebates for water efficient appliances or rainwater tanks and building code programs (including BASIX),
   - water pricing reform, community education, water loss and leakage reduction programs.

4. **Drought management** is a fundamental responsibility of the LWU for ensuring continuity of supply. This needs to be documented in a drought management plan with an adopted schedule of trigger points for timely implementation of appropriate drought water restrictions.

5. **Annual performance monitoring** is required under National Competition Policy and the National Water Initiative and is essential for monitoring and improving performance and for public accountability. Each LWU should continue to lodge its data on the NSW Performance Monitoring Database by 15 September each year [column 5 (water) and 3 (sewerage) on page 65]. Each LWU should also review its annual TBL Performance reports prepared by the Office of Water and provide a sound Action Plan to Council, which addresses any areas of under-performance [page 19].

6. **Integrated Water Cycle Management (IWCM)** is a comprehensive framework to identify and address water management issues in order to determine the management strategies which best meet the utility’s social, environmental and economic objectives on a triple bottom line (TBL) basis. An IWCM ‘Generic Scope of Work’ document and seven IWCM information sheets are now available on the NSW Office of Water website to provide guidance for LWUs on developing a sound IWCM evaluation and IWCM strategy.
4.2 Compliance with guidelines

Water utilities are required to report their outcomes against each of the 19 requirements of the Best-Practice Management Guidelines (ten for water supply and nine for sewerage) in Notes 2 and 3 of the Special Purpose Financial Reports of their 2008-09 Annual Financial Statements. The reported compliance is shown in Appendix C on page 65.

As noted on page vii, the overall level of compliance with the above requirements was 82%, comprising 86% for water supply and 78% for sewerage. 38% of the utilities complied with all the requirements for water supply and 39% have complied with all the requirements for sewerage [page 65 and Figures 21, 22, 23 on pages 47, 48, 49].

- **Strategic business plan and financial plan** – As shown on page 4, 89% of LWUs have a sound 30-year strategic business plan and financial plan [column 21 on page 68].

- **Pricing and cost recovery** - 94% of LWUs now have both pay-for-use water supply pricing and full cost recovery for water supply, while 95% have both appropriate pricing and full cost recovery for sewerage [column 2a on page 65]. As noted on page ten, 96% of LWUs have full cost recovery for water supply and 97% have full cost recovery for sewerage.

- **Non-residential charges** - 95% of LWUs have complying non-residential water supply charges [column 2d on page 65] while 69% have complying non-residential sewerage charges [column 2c on page 65].

- **DSP and developer charges** - 81% of LWUs have an appropriate water supply Development Servicing Plan (DSP) with commercial developer charges and 74% of LWUs have a sewerage DSP [column 2e on page 65].

- **Liquid trade waste fees and charges** – As noted on page 5, 67% of LWUs have complying liquid trade waste fees and charges [column 2d on page 65].

- **Liquid trade waste policy** - 69% of LWUs have an appropriate liquid trade waste policy and have issued a liquid trade waste approval to all their trade waste dischargers [column 2f on page 65].

- **Water conservation plan** - As noted on page eight, 87% of LWUs have implemented a sound water conservation plan [column 3 on page 65].

- **Drought management plan** - As noted on page three, 90% of LWUs have implemented sound drought management [column 4 on page 65].

- **IWCM strategy** - 68% of LWUs reported that they have commenced their IWCM evaluation or strategy [columns 6 and 4 on page 65]. As noted on page 67, 46 LWUs have completed an IWCM Evaluation, 26 of which have also completed an IWCM Strategy.
4.3 Eligibility for payment of a dividend

Appendix C on page 65 indicates that only 3% of the utilities are proposing to pay a dividend from the surplus of their water supply or sewerage businesses.

Following an update of the Best-Practice Management Guidelines in 2007, compliance has continued to increase as utilities proceed to implement best-practice management. As noted on page 17, 39% of the NSW utilities are now eligible to pay a dividend. These utilities have effective, sustainable and safe water supply and sewerage businesses.

As noted in the box on page 10, each utility which meets the requirements of the Best-Practice Management Guidelines should consider paying an ‘efficiency dividend’ from the surplus of its water supply and sewerage businesses to the council’s general revenue.

4.4 Climate change

The NSW Government is tackling the challenge of the impact of climate change on non-metropolitan water utilities by developing climate change guidelines which build on the existing robust NSW Security of Supply basis for sizing of urban water supply headworks. The new guidelines will be informed by the results of a pilot study4 on 11 existing water supplies in non-metropolitan NSW. A Climate Change Steering Group involving the National Water Commission, CSIRO, the Local Government and Shires Associations, the NSW Water Industry Directorate, NSW Public Works and the NSW Office of Water is responsible for overseeing the pilot study and the development of the guidelines. A consultation draft of the guidelines is proposed for release in late 2010.

The NSW Security of Supply basis for sizing water supply headworks was developed in response to the experiences and lessons learnt from the severe 1979-1983 drought. This basis for sizing headworks is commonly referred to as the “5/10/10 rule” and it was designed to maintain water supply to customers with only moderate water restrictions during a more severe drought than had been experienced over the previous 100 or more years. Refer also to page 3.

The pilot study has developed a sound basis for NSW LWUs to assess the impact of climate change for the Year 2030 on the secure yield of their urban water supply. The impact is influenced by the location of the LWU and the utility’s headworks system.

Future 30 year IWCM strategies will need to include assessment of the secure yield of the utility’s water supply in accordance with the new climate change guidelines.

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5. TBL reports and action plans

5.1 Triple bottom line (TBL) performance reports

The NSW Office of Water provides each utility and IPART with an annual triple bottom line (TBL) performance report for the utility’s water supply business and for its sewerage business (a sample report is shown on pages 63 and 64).

Each LWU’s annual TBL performance report provides a brief description of the LWU’s water supply or sewerage system together with a summary of the LWU’s performance for over 50 key performance indicators. The TBL reports also disclose whether the LWU has complied with each of the ten water supply and nine sewerage requirements of the Best-Practice Management Guidelines.

Each TBL report groups the above performance indicators under Utility Characteristics, Social, Environmental and Economic factors. For each indicator, the LWU’s result is shown together with the Statewide median, the ranking of the LWU’s result against all LWUs and also the ranking against similar sized LWUs. These rankings aim to assist each LWU to gain a quick appreciation of its relative performance.

The rankings are based on quintile groupings, with the top 20% of LWUs for each indicator being ranked 1 and the bottom 20% being ranked 5 (LWUs in the range 40% to 60% are ranked 3).

LWUs will appreciate that each of the performance indicators is a ‘partial’ indicator only and therefore cannot be interpreted in isolation. It is also emphasized that the rankings are indicative only and do not take account of the wide range of factors which can impact on an LWU’s performance, as discussed in section 5.3 on page 21. The aim of providing a ranking for each LWU’s performance is to assist the LWU in quickly identifying any areas of apparent under-performance in comparison with similar sized LWUs.

The second page of the TBL reports provide graphs with the LWU’s performance over the past 10 years for 15 key indicators. These graphs enable the LWU to review trends over time for each indicator, which provide the most meaningful assessment of performance.

Each LWU needs to review its performance using its annual TBL performance reports for water supply and sewerage and to provide an Action Plan to Council which addresses any areas of under-performance, as outlined in section 5.2 below.

5.2 Review performance and preparation of an action plan

Each utility should aim to provide the levels of service negotiated with its community at the lowest sustainable typical residential bill. This is done by setting cost-reflective developer charges, non-residential charges and liquid trade waste fees and charges, and then minimising the Typical Residential Bill (TRB) on a sustainable basis. Utilities which have complied with the Best-Practice Management Guidelines and wish to pay an ‘efficiency dividend’ [box on page 10] to the Council’s general revenue should also include the dividend amount.

Each LWU is required to prepare an annual Action Plan to Council, based on its review of the TBL performance report. The Action Plan should address any 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.

A key role for the Action Plan is to ‘close the planning loop’ with the utility’s strategic business plan. The utility’s TRB must therefore be compared with the projection in its strategic business plan and any necessary corrective action documented in the Action Plan.

An example Action Plan is shown on pages 61 and 62. In order to assist LWUs, the NSW Office of Water will provide a template for each LWU’s Action Plan together with the annual TBL reports for each LWU.
The template will show the LWU’s results, the drivers for each indicator and the LWU’s ranking relative to similar sized LWUs followed by the ranking relative to all LWUs. Space will be provided for the LWU to provide its comments and proposed actions (the 2 right hand columns on pages 61 and 62).

In order to prepare an Action Plan, it will be necessary for each LWU to review its performance. In practice this means reviewing whether the performance indicators under ‘Health’, ‘Levels of Service’, ‘Environmental’ and ‘Economic’ are satisfactory, taking into account factors that may affect performance outlined in section 5.3. If the indicators are unsatisfactory, the LWU will need to develop options to improve performance.

The steps that each LWU should follow to review performance are:

1. **Check compliance with BPMG** and highlight areas of non-compliance. Any non-compliances must be addressed as a priority.

2. **Review performance** using the indicators shown on the first page of the TBL performance report for each of water supply and sewerage (example review and Action Plan is on pages 61 and 62, example reports are on pages 63 and 64). Particular note should be taken of indicators that appear to be less than satisfactory ie. with a ranking of 4 or 5.

3. **Identify any trends** over the past ten years in the selected performance indicators shown on the second page of the TBL performance report, and compare the latest values with the Statewide median values and the top 20%.

In undertaking a review of indicators and trends in performance, LWUs should take note of the many factors that may contribute to the apparent under-performance (see also section 5.3). If further analysis is warranted (eg. if the ranking of the performance indicator is low and remains unexplained or other factors suggest apparent under-performance), then the following may also be required.


Where in-depth investigation is warranted for selected indicators, the LWU can also undertake process benchmarking.

5. **Process benchmarking** for selected indicators for areas of apparent under-performance, e.g. where the LWU has a low ranking relative to LWUs with similar characteristics.

It is important to note that the **typical residential bill** is the principal indicator of the overall cost of a water supply or sewerage system and is the annual bill paid by a residential customer using the utility’s average annual residential water supplied [section 1.3 on page 1 and section 5.3]. A critical element in minimising the typical residential bill and providing value for money for the community is to ensure that the operating cost (OMA) is efficient. Each LWU therefore needs to carry out an ongoing review of the components of its operating cost. Particular attention is required for components with a low ranking.

The components\textsuperscript{5} of operating cost are:

5a. **Management cost** – this includes administration, engineering and supervision and is typically almost 40% of the total operating cost [Figure 18 on page 44].

5b. **Treatment cost (water)** – this is dependent on the type and quality of the water source and the extent of treatment provided. In addition, there are great economies of scale for the operation of water treatment works (i.e. facilities involving at least filtration and disinfection).

\textsuperscript{5} Figures 31 to 37, Figures 60 to 66 and Tables 11, 13, 16 and 18 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report report these components for each LWU.
Treatment cost (sewage) – 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. There are significant economies of scale for operation of treatment works.

5c. Pumping cost (water) – this is dependent on topography and, for water supply, the location of the water source. For example, Country Water 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.

5d. Energy cost – 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. 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).

5e. Water and Sewerage mains cost – this is dependent on the age and condition of the mains, the ground conditions and the number of connected properties per kilometre of mains.

5.3 Factors affecting performance

Many factors impact on a water utility’s performance and make comparison of utilities a complex analysis. These 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 indicators are the trends over time for each utility. However, even with these, 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. An example of some of the factors affecting performance of a utility’s 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 operating costs. For example, the average annual residential water supplied in inland NSW is over 60% higher than coastal NSW [page 8].

2. Geography – The geology, geography and topography can have a significant effect on water transportation costs, particularly with pumped systems compared to gravity systems.

3. Asset Life Cycle – Recently constructed systems have much lower maintenance and renewals costs compared to older systems. Refer also to page 2.

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 varies in non-metropolitan NSW from five to over 90). A further key factor is the number of small discrete urban water supply systems operated by the utility which tend to greatly increase the operating cost per property.

5. Water Resources Availability and Proximity - Bulk storage and/or long transfer systems can incur significant capital and operating costs [Note 17 on page 25]. Such costs would not apply for utilities relying on groundwater or those receiving a regulated supply from a State Water dam.
6. **Size of LWU** – there are significant economies of scale for large utilities, particularly the capital cost of infrastructure and the operating cost of water treatment works.

**Social – levels of service**

7. **Service standards** – increasingly stringent standards for water quality and environmental health may result in additional capital and operating 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 per property and a high treatment cost per property for small discrete urban water supply systems (utilities without ‘unfiltered’ or ‘groundwater’ after their name in Appendices C to E have water treatment involving at least filtration and disinfection for over 50% of their water supply) [Note 18 on page 25].

**Environmental**

9. **High residential water supplied per property** – such utilities should examine opportunities for achieving efficient water use through water demand management and providing appropriate water pricing signals to customers including the residential water usage charge/kL (Figure 26 on page 52) and the residential revenue from water usage charges (Figure 20 on page 46). As noted on Figure 20, 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 6). Refer also to the box on page 5.

**Economic**

10. **High loan payment per property** – indicates a relatively high capital cost per property, recent construction of significant capital works or use of short-term loans. Twenty-year loan terms are recommended in order to avoid unfairly burdening existing customers and to facilitate inter-generational equity. Refer also to the box on page 11.

11. **High pumping cost** – is influenced mainly by topography and geography. As noted on page 21, the LWU may be able to achieve significant savings in energy cost.

There is a strong correlation between the operating cost per property and the number of employees per 1000 properties. Refer also to pages 11 and 12.

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.

**5.4 Benchmarking**

Each LWU can improve its performance in areas of apparent under-performance by benchmarking its key work processes with those 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 the community.

In addition, each LWU should undertake ‘Syndicate Benchmarking’ with a group of LWUs with similar characteristics in order to determine current best practice and to identify existing practices which each LWU can improve. Such process benchmarking should be highly cost-effective for all NSW LWUs.
6. General notes

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

2. **Data not reported** – Where an LWU has not reported a key performance indicator for 2008-09, the value previously reported has been used where appropriate. Such values are shown in *italics bold* in Appendices C to F.

3. **Properties vs assessments** - This report has been prepared on a ‘per connected property’ basis for consistency with national performance reporting [column 1 of Appendix D on page 68]. 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. Factors that influence this indicator are the number of vacant blocks (with no connection but which are billed as an assessment) and the number of multiple dwellings (e.g. blocks of flats or units) with a single assessment.

4. **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. For any utility there is minimal change in this ratio of the number of connected properties per assessment from year to year. The NSW Office of Water has worked with LWUs to establish these ratios. Where warranted for a particular LWU, these ratios are updated from time to time.

5. **Statewide medians** – This report refers to Statewide medians which are calculated on a ‘percentage of connected properties’ basis, which is a weighted median on the basis of connected properties. This 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 (example in Appendix B on page 63)).

6. **Aggregated businesses** – To facilitate comparisons, the performance indicators in this report have been prepared for each LWU’s aggregated water supply or sewerage businesses, rather than for individual water supply or sewerage systems.

7. **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 page 20 and page 6.

   **Calculation of TRB** – The 2009-10 typical residential bill is based on a customer of the LWU’s principal water supply or sewerage system using the LWU’s 2008-09 average annual residential water supplied per connected property. These bills and tariff details are shown in Appendices E & F on pages 72 and 75. The typical residential bill for 2008-09 and previous years is based on the reported average annual residential water supplied for that year (2008-09 residential water supplied is shown in column 3 of Appendix D on page 68 and column 14b of Appendix E on page 72).

8. **Full cost recovery** – Full cost recovery is achieved if either the economic real rate of return or the return on assets is >=0. In addition, many utilities have significantly increased their 2009-10 charges in order to achieve full cost recovery (shown as ‘Y*’ in column 14a of Appendix E on page 72 and column 11a of Appendix F on page 75).

An LWU has complied with the guidelines for microbiological water quality (i.e. it had 100% compliance) 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 reported. Refer also to page 6.

10. **Total water supplied** – Total annual water supplied comprises the sum of the potable water supplied plus the non-potable water supplied. Recycled water is a component of the non-potable supply which also includes raw water [column 2 of Appendix D on page 68].

11. **Average annual residential water supplied** – The average annual residential water supplied per connected property is shown in Appendix D [column 3] and includes both potable and non-potable water supplied. Where an LWU has not separately reported its residential water supplied, such volume has been estimated using the Statewide average of 57% of the LWU’s total potable water supplied. As indicated in Note 12 below, 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. (Refer also to page 8).

12. **Dual supplies** – Eleven LWUs had a dual water supply to over 50% of their residential customers in June 2009 (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 958 (241), Berrigan 292 (173), Bourke 3,169 (539), Central Darling 526 (145), Hay 1,140 (184), Jerilderie 1,033 (245), Murray 260 (156), Wakool 839 (195), Walgett 938 (195), Warren 352 (164) and Wentworth 376 (119).

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

13. **Water losses** – For consistency with national performance reporting, water losses comprise real losses (leakage) plus apparent losses (unauthorised consumption and under-registration of customer meters). Unbilled water supplied (fire fighting and mains flushing) is not a water loss but is a component of non revenue water.

14. **Minimum real losses** – Leakage studies for over 40 NSW LWUs indicate an average leakage from water supply distribution systems of 17% of annual consumption (range 6% to 35%). Therefore, a minimum real loss (i.e. leakage) of 6% of the potable water supplied has been adopted for this report. 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. Table 10 of the 2008-09 NSW Water Supply and Sewerage Benchmarks Report discloses that 42 LWUs have recently carried out a reservoir drop test, waste metering or night flow analysis in order to determine their present real losses and opportunities for leakage reduction.

Minimum non revenue water – Similarly, Statewide analysis of non revenue water (water losses plus unbilled consumption) for NSW water utilities other than bulk water suppliers, indicates a minimum of 10% of annual water supplied. Reported non revenue water of less than 10% of total water supplied has only been accepted where the utility has provided evidence to support the adoption of a lesser value. Where the reported non revenue water has not been accepted, the reported values of total potable town water supplied have been increased as a result of increasing the reported non revenue water component to 10%. These adjusted values are shown in italics bold in column 10 of Table 8 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

15. **OMA costs for reticulators** – The operation, maintenance and administration (OMA) costs for water supply reticulators include the OMA cost for the bulk supplier on the basis of the volume of water supplied to the reticulator divided by the total volume supplied by the bulk supplier to all customers.
For example for Cootamundra, the OMA cost of $245 per property comprises $109 per property for the bulk supply from Goldenfields (bulk supplier) plus $136 for the reticulator (Cootamundra). Refer to column 67 of Table 11 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report.

**16 Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority** – The performance indicators for Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority were obtained from the National Performance Report 2008-09 for Urban Water Utilities.

**17. 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 21). The following 45 non-metropolitan utilities provided such bulk storage: Armidale, Ballina, Bathurst, Bega Valley, Bourke, Brewarrina, Byron (Mullumbimby), Cabonne, Central Tablelands, Clarence Valley, Cobar, Cooffs Harbour, Country 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.

**18. Unfiltered** – a utility where over 50% of its supply is an unfiltered surface water supply i.e. the utility does not have a water treatment works providing filtration and disinfection for >50% of its supply. (Refer also to Item 8 on page 22).

- **Groundwater** – a utility with >50% of its supply comprising good quality unfiltered groundwater.
- **Reticulator** – a utility which purchases >70% 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% of its residential customers (Note 12 above).

**19. National Water Initiative (NWI) indicators** – There are 30 NSW water utilities with > 10,000 connected properties including three metropolitan utilities and 27 non-metropolitan utilities. These utilities have reported their performance in the National Performance Report 2008-09 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 2008-09 and are shown in Appendix F of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report (available on www.water.nsw.gov.au). Appendix F of the Benchmarking Report discloses the NSW results for all the 117 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 2008-09 and Appendix F of the Benchmarking Report. However they have been included in the Figures and in Appendices D, E and F of this report.

**20. Reported NWI indicators** –
- **Appendix D** reports the results for NWI indicators C4, W11, W12, A8, C15, F1, H3, C9, F2, E4, E13, W27, W26, F24, P8, F13 F19, F22, F28 and F16.
- **Appendix E** reports indicators P1, P3, F17, F18, W12 and C4.
- **Appendix F** reports indicators P4, F18 and C8.

The 2008-09 results for NWI indicators C9, W12, E13, W27, F17, F18, F11, F12 and F4 are shown in Figures 6, 8, 11, 12, 13, 14, 15 and 16 respectively. The 2009-10 results for indicators P3 and P4 are shown in Figures 2 and 3. Results for indicator P8 are shown in Figure 1 and Appendix D.
**Figure 1: Typical Residential Bill ($ per assessment) - Water Supply & Sewerage 2009-10**

**OVERVIEW**
The reported 2009-10 Typical Residential Bill (TRB) ranged from $573 to $1,893. The Statewide median TRB is $900 and has increased by 2% (Jan 2010$) over the last 14 years (page 4), while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have a TRB of under $915 and 80% of LWUs have a TRB of under $1,180.

**PERFORMANCE**

**TRB of LWU Groups 1 to 4**
- **Groups 1 and 2** – High incidence under $915
- **Group 4** – High incidence over $1,180

**DRIVERS**
- Economies of scale
- Availability of water resources
- Need for storage dams
- Quality of raw water supply
- Density of development and associated need for long transfer systems by LWUs with less densely populated areas
- The relatively high capital costs and operation and maintenance costs per property for water treatment and pumping for small discrete water supplies.

The level of sewage treatment provided and the more stringent requirements for compliance with the Department of Environment, Climate Change and Water (DECCW) licences for the larger sewerage systems are key drivers of these results. The DECCW requirements often include nutrient removal and disinfection facilities for the larger sewerage systems.

### Parameter
(2008-09 Average Residential Water Consumption x 2009-10 Water Usage Charges) + 2009-10 Water and Sewerage Access Charges

### Notes:
1. This figure shows ranked values of the 2009-10 typical residential 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. The Statewide median is appropriate for judging statewide performance. It is weighted on the basis of connected properties, which gives due weight to larger LWUs and reduces the effect of smaller LWUs.
3. Refer also to page 6.
4. For general notes see page 23.
Figure 2: Typical Residential Bill ($ per assessment) - Water Supply 2009-10

OVERVIEW
The reported 2009-10 Typical Residential Bill (TRB) for water supply ranged from $207 to $1,350. The Statewide median TRB is $430, while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have a TRB of under $460 and 80% of LWUs have a TRB of under $600.

PERFORMANCE
TRB for LWU Groups 1 to 4
Group 1 - High incidence under $460
Groups 1 and 2 - Low incidence over $600
Groups 3 and 4 - Low incidence under $460
Groups 3 and 4 - High incidence over $600

DRIVERS
- Economies of scale
- Availability & proximity of water resources
- Need for storage dams
- Treatment required for raw water supply
- Density of development & need for long transfer systems
- The relatively high cost per property (capital, operation and maintenance costs) for water treatment and pumping for small water supplies.
- Climate (eg. Inland vs coastal).

COMMENT
Smaller LWUs are likely to incur higher costs per property due to lack of economies of scale. Inland LWUs have a higher cost due to the hotter, drier climate, use of evaporative coolers and availability of water resources.

Parameter: (2008-09 Average Residential Water Consumption x 2009-10 Water Usage Charges) + 2009-10 Water Access Charge

Notes:
1. This figure shows ranked values of the 2009-10 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. The 11 LWUs with a dual water supply (ie. a potable supply for indoor use and a non-potable supply for outdoor use) are enclosed in brackets. Reticators are suffixed by --R. Refer to Note 12 on page 24.
3. For general notes see page 23.
Figure 3: Typical Residential Bill ($ per assessment) - Sewerage 2009-10

OVERVIEW

The reported 2008-09 Typical Residential Bill (TRB) ranged from $221 to $957. The Statewide median TRB is $470, while 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have a TRB of under $405 and 80% of LWUs have a TRB of under $570.

PERFORMANCE

TRB for LWU Groups 1 to 4
Groups 3 and 4 – High incidence under $405
Groups 3 and 4 – Low incidence over $570
Group 1 - Low incidence under $405
Groups 1 and 2 – High incidence over $570

DRIVERS

- The level of sewage treatment provided
- More stringent requirements for compliance with the Department of Environment, Climate Change and Water (DECCW) licences for larger sewerage systems (DECCW requirements often include nutrient removal and disinfection facilities).

COMMENT

Larger sewerage systems often have more stringent treatment requirements which can result in significantly higher costs per property.

Notes:

1. This figure shows ranked values of the 2009-10 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. For general notes see page 23.
Figure 4: Chemical Water Quality Compliance – Water Supply 2008-09

**Overview**

The reported 2008-09 chemical water quality compliance ranged from 100% to 70%. 96% of the LWUs complied with the 2004 Australian Drinking Water Guidelines for chemical water quality.

**Performance**

Chemical compliance of LWU Groups 1 to 4

- Most of the non-complying utilities were Group 1 coastal utilities without full water treatment.

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

Notes:

1. This figure shows ranked values of the 2008-09 distribution system chemical water quality compliance with the 2004 NHMRC/NRMMC Australian Drinking Water Guidelines for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served – over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.

2. For an LWU to comply with the 2004 Australian Drinking Water Guidelines for chemical water quality, the required number of samples must be tested and at least 95% of the results must be less than the guideline value for each chemical. Non-potable supplies are excluded.

3. For LWUs with more than one water treatment works, the reported compliance has been pro-rated on the basis of the number of samples tested at each treatment works.

4. For general notes see page 23.
Figure 5: Microbiological Water Quality Compliance - Water Supply 2008-09

OVERVIEW
The reported 2008-09 microbiological water quality compliance for E. coli ranged from 100% to 91%. 88% of the LWUs complied with the Australian Drinking Water Guidelines, 2004 for microbiological water quality.

PERFORMANCE
• Three Group 2 LWUs, 3 Group 3 LWUs and 6 Group 4 LWUs did not comply with the Guidelines.

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

Notes:
1. This figure shows ranked values of the 2008-09 distribution system microbiological water quality compliance with the 2004 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. For an LWU to comply with the 2004 Australian Drinking Water Guidelines for microbiological water quality, the required number of samples must be tested and at least 98% of the samples must contain no E. coli. Non-potable water supplies are excluded.
3. For LWUs with more than one water treatment works, the reported compliance has been pro-rated on the basis of the number of samples tested at each treatment works.
4. Refer also to page 6.
5. For general notes see page 23.
Figure 6: Water Quality Complaints - Water Supply 2008-09

OVERVIEW
The reported 2008-09 water quality complaints per 1,000 properties ranged from 0 to 80. The Statewide median water quality complaints is 3, while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have water quality complaints under 0.9 and 80% of LWUs have water quality complaints under 5.4.

DRIVERS
• Relatively high capital costs and operation and maintenance costs per property for water treatment for smaller water supplies.
• Type of water supply business (eg. reticulator)
• Water source and type of treatment required (eg. unfiltered supply, UV treatment, microfiltration etc).

PERFORMANCE
All groups had similar incidence of representation over the range of results. LWUs in the lowest ranking quintile group (ie. With more than 5.4 complaints per 1000 properties) should investigate the reason for the complaints.
Figure 7: Odour Complaints - Sewerage 2008-09

OVERVIEW

The reported 2008-09 sewage odour complaints per 1,000 properties ranged from 0 to 12. The Statewide median sewage odour complaints is 0.4 while 49% of LWUs reported nil sewage odour complaints and 80% of LWUs have sewage odour complaints under 1.1.

PERFORMANCE

Sewage odour complaints of LWU Groups 1 to 4
- Groups 2, 3 and 4 - High incidence of nil
- Groups 2 and 3 - Low incidence over 1.1
- Group 1 - Low incidence of nil

COMMENT

Many of the Group 4 LWUs have old trickling filter sewage treatment works which provide a lower level of performance than the newer Intermittent Decanted Extended Aeration (IDEA) treatment works.

LWUs in the lowest ranking quintile group (ie. with more than 1.1 complaints per 1000 properties) should investigate the reason for the complaints.

Parameter: Number of odour complaints from sewage treatment works and pumping stations (ST39) x 1,000

Notes:
1. This figure shows ranked values of the 2008-09 number of sewage odour 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to page 7.
3. For general notes see page 23.
Figure 8: Average Annual Residential Water Supplied 2008-09

OVERVIEW
The reported 2008-09 average annual residential water supplied ranged from 72 to 3,170 kL/property. The Statewide annual residential water supplied is 175kL/property. 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have a residential water supplied under 200kL/property and 80% of LWUs have a residential water supplied under 400kL/property.

The weighted median average annual residential water supplied for inland LWUs is 245kL/property while for coastal LWUs the weighted median is 150kL/property (see Figure 8A).

The Statewide median average annual residential water supplied has fallen from 330 to 175kL/property (47%) over the last 18 years, mainly due to the introduction of pay-for-use water pricing and implementation of water conservation and demand management by LWUs.

PERFORMANCE
Residential consumption of LWU Groups 1 to 4
- Group 1 - High incidence under 200kL/property
- Group 1 – No incidence over 400kL/property
- Group 4 - Low incidence under 200kL/property
- Group 4 - High incidence over 400kL/property

DRIVERS
- Severe climatic conditions and high incidence of evaporative air coolers in inland areas will significantly increase water consumption.
- Water restrictions
- Water conservation measures (ie. demand management)

COMMENT
Many LWUs with residential water supplied greater than 400kL/property have a dual supply.

Parameter: Annual residential water supplied (W54) x 1,000
No. connected properties

Notes:
1. This figure shows ranked values of the 2008-09 average annual residential water supplied per connected property for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. The 11 LWUs with a dual water supply (ie. a potable supply for indoor use and a non-potable supply for outdoor use) are enclosed in brackets. Refer to Note 12 on page 24.
3. Refer also to page 8.
4. For general notes see page 23.

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Figure 8A: Average Annual Residential Water Supplied - Coastal & Inland LWUs 2008-09

The 11 LWUs with a dual water supply (i.e., a potable supply for indoor use and a non-potable supply for outdoor use) are enclosed in brackets. Refer to Note 12 on page 24.

This figure shows ranked values of the 2008-09 average annual residential water supplied per connected property for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.

Parameter: Annual residential water supplied (W54) x 1,000
No. residential connected properties

Notes:
1. This figure shows ranked values of the 2008-09 average annual residential water supplied per connected property for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. The 11 LWUs with a dual water supply (i.e., a potable supply for indoor use and a non-potable supply for outdoor use) are enclosed in brackets. Refer to Note 12 on page 24.
3. For general notes see page 23.
Figure 9: Compliance with BOD in Licence - Sewerage 2008-09

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**OVERVIEW**

The reported 2008-09 Biochemical Oxygen Demand (BOD) compliance with the 90 percentile limits of the LWU’s DECCW sewage treatment works licence ranged from 100% to 25%.

88% of the LWUs complied with the 90 percentile limit of their DECCW licence.

**PERFORMANCE**

BOD compliance of LWU Groups 1 to 4
- Most of the non-complying utilities were Groups 2 and 3.

**COMMENT**
- Many of the Groups 3 and 4 LWUs have old trickling filter sewage treatment works which provide a lower level of performance than the newer Intermittent Decanted Extended Aeration (IDEA) treatment works.

**Parameter:** Percentage of samples complying with 90 percentile Department of Environment, Climate Change and Water (DECCW) licence limits for biochemical oxygen demand (BOD) (STW50)

**Notes:**
1. This figure shows ranked values of the 2008-09 percent compliance with the 90 percentile Department of Environment, Climate Change and Water (DECCW) licence limits for biochemical oxygen demand (BOD) for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to page 9.
3. For general notes see page 23.
**OVERVIEW**

The reported 2008-09 Suspended Solids (SS) compliance with the 90 percentile limits of the LWU’s DECCW sewage treatment works licence ranged from 100% to 22%. 76% of the LWUs reported that they complied with the 90 percentile limit of their DECCW licence.

**PERFORMANCE**

SS compliance of LWU Groups 1 to 4
- Most of the non-complying utilities were Groups 2 and 3.

**COMMENT**
- The good performance of Group 1 is assisted by additional facilities provided for solids capture including filtration, dissolved air flotation (DAF) and extended aeration treatment works (EAT).
- The relatively poor performance of Groups 2 and 3 LWUs is mostly due to the growth of algae in maturation ponds, as well as the impact of the current drought.

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**Parameter:** Percentage of samples complying with 90 percentile Department of Environment, Climate Change and Water (DECCW) licence limits for suspended solids (SS) (STW50)

**Notes:**
1. This figure shows ranked values of the 2008-09 percent compliance with the 90 percentile Department of Environment, Climate Change and Water (DECCW) licence limits for suspended solids (SS) for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to page 9.
3. For general notes see page 23.
The reported 2008-09 sewer overflows to the environment per 100km main ranged from 0 to 100. The Statewide median sewer overflows is 12, while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have sewer overflows under 2 and 80% of LWUs have sewer overflows under 27.

PERFORMANCE
Sewer overflows of LWU Groups 1 to 4

- Group 1 - High incidence over 39
- Group 2 - High incidence under 27
- Group 3 - Low incidence under 27
- Group 4 - DID NOT REPORT

COMMENT
LWUs in the lowest ranking quintile group (ie. with over 27 overflows per 100km of main) should investigate the reason for the overflows.

Parameter:
Total number of sewer overflows (S53) x 100
Length of reticulation/gravity mains (S7) + Length of rising/pressure mains (S8)

Notes:
1. This figure shows ranked values of the 2008-09 sewer overflows to the environment for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. For general notes see page 23.
Figure 12: Recycled Water (percent effluent recycled) - Sewerage 2008-09

OVERVIEW
The reported 2008-09 recycled water (percentage effluent recycled) ranged from 100 to 0%. The Statewide median recycling is 10%, while 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have recycled over 26% of their sewage effluent and 79% of LWUs have carried out some recycling.

PERFORMANCE
Reclaimed water of LWU Groups 1 to 4
Groups 2 and 3 – High incidence over 26%
Group 1 – No incidence of nil
Groups 3 and 4 – High incidence of nil

COMMENT
Recycled effluent is mainly used for agriculture, with the remainder used for on-site purposes at treatment works, environmental uses and urban non-residential uses.

Parameter: Total volume of effluent recycled (STW25) x 100
Volume of sewage receiving secondary treatment (STW18)

Notes:
1. This figure shows ranked values of the 2008-09 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. For LWUs which did not report their 2008-09 volumes recycled, the 2007-08 percentage has been shown. These utilities are shown in italics bold in Column 12 of Appendix D.
3. Reuse of recycled water was carried out by 79% of LWUs. Statewide 23% of the total volume of sewage collected was recycled. The total volume recycled in non-metropolitan NSW was 39,000ML. 25% of LWUs recycled over 50% of their effluent. The highest volume recycled by a utility was 3,590ML (Albury) and a further 8 utilities (Bathurst, Orange, Dubbo, Goulburn Mulwaree, Shoalhaven, Tamworth Regional, Coffs Harbour and Wyong) each recycled over 1,000ML.
4. Refer also to page 8.
5. For general notes see page 23.
The reported 2008-09 water supply Economic Real Rate of Return (ERRR) ranged from 9.9% to -8.3%. The Statewide median ERRR is 0.3%, while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have an ERRR over 0.5 and 58% of LWUs have an ERRR of at least 0%.

**COMMENT**

- 96% of the LWUs are now achieving full cost recovery for water supply. This includes the 35 utilities with an ERRR under 0% which have increased their charges to recover their costs (refer to column 14c, Appendix E on page 72).
- 4 LWUs did not achieve full cost recovery (Albury, Cowra, Mid-Western Regional and Cobar Water Board). All LWUs are required to achieve full cost recovery in order to meet this key requirement of the Best-Practice Management Guidelines and the National Water Initiative.

The recent drought has had a significant effect on the ERRR due to the loss of income from water usage charges.

**Parameter:**

\[
\text{ERRR} = \frac{\text{(Total Income (W13) - Interest Income (W9) - Grants for acquisition of assets (W11a) - Total Expenses (W5) + Interest Expenses (W4a) + Revaluation Decrements (W4b) + Other Expenses (W4c))} \times 100}{\text{Written down replacement cost of system assets, plant and equipment (W33)}}
\]

**Notes:**

1. This figure shows ranked values of the 2008-09 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to pages 10 and 14.
3. For general notes see page 23.
OVERVIEW
The reported 2008-09 sewerage supply Economic Real Rate of Return (ERRR) ranged from 12% to -7.5%. The Statewide median ERRR is 1.1%, while 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have an ERRR over 1.0% and 66% of LWUs have an ERRR of at least 0%.

COMMENT
• 97% of LWUs are now achieving full cost recovery for sewerage supply. This includes the 24 utilities with an ERRR under 0% which have increased their charges to recover their costs (refer to column 11a, Appendix F on page 75).
• There remain 3 LWUs which are not achieving full cost recovery. One of these LWUs (Coonamble) has over 1,000 properties and should move to achieve full cost recovery in order to meet this key requirement of the Best-Practice Management Guidelines and the National Water Initiative.

Parameter: 
\[ \frac{(Total\ Income\ (S14) - Interest\ Income\ (S10) - Grants\ for\ acquisition\ of\ assets\ (S12a) - Total\ Expenses\ (S5) + Interest\ Expenses\ (S4a) + Revaluation\ Decrements\ (S4b) + Other\ Expenses\ (S4c)) \times 100}{Written\ down\ replacement\ cost\ of\ system\ assets,\ plant\ and\ equipment\ (S34)} \]

Notes:
1. This figure shows ranked values of the 2008-09 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to pages 10 and 14.
3. For general notes see page 23.
Figure 15: Operating Cost (OMA) per property - Water Supply  2008-09

OVERVIEW
The reported 2008-09 water supply operating cost ranged from $182 to $1,173/property. The Statewide 
median operating cost is $330/property, while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile 
groups) have an operating cost of under $380/property and 80% of LWUs have an operating 
cost of under $500/property.

PERFORMANCE
Operating cost of LWU Groups 1 to 4
Group 1 - High incidence under $380/property
Group 4 – Low incidence under $380/property
Groups 2 & 4 - High incidence over $500/property

DRIVERS
• Need for water treatment
• Availability and proximity of water resources (eg. groundwater, pumped vs gravity supply)
• The economies of scale of the larger water supply systems
• The lack of economies of scale of the smaller water supply systems
• The relatively high operation and maintenance costs per property for water treatment and 
pumping for small discrete water supplies
• Larger utilities may achieve cost savings through better access to materials and equipment in the 
larger urban centres.
• Topography (pumping vs gravity reticulation)
• Development density and the number of separate water supply schemes.

COMMENT
The statewide median OMA cost has risen from $225 to $330 property (Jan 2009$) over the past 17 
years, largely due to increased management costs.

Notes:
1. This figure shows ranked values of the 2008-09 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The 
metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. Refer also to pages 11 and 14.
3. For general notes see page 23.
The reported 2008-09 sewerage operating cost ranged from $137 to $596/property. The Statewide median operating cost is $340/property, while 40% of LWUs (i.e., LWUs in the 2 highest ranking quintile groups) have an operating cost of under $300/property and 80% of LWUs have an operating cost of under $410/property.

**OVERVIEW**

The 2008-09 sewerage operating cost ranged from $137 to $596/property. The Statewide median operating cost is $340/property, while 40% of LWUs (i.e., LWUs in the 2 highest ranking quintile groups) have an operating cost of under $300/property and 80% of LWUs have an operating cost of under $410/property. The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.

**PERFORMANCE**

Operating cost of LWU Groups 1 to 4
- Groups 3 and 4 - High incidence under $300/property
- Groups 3 and 4 - Low incidence over $410/property
- Group 1 - Low incidence under $300/property
- Group 2 - High incidence over $410/property

**DRIVERS**
- The level of sewage treatment provided
- Economies of scale
- More stringent requirements for compliance with the Department of Environment, Climate Change, and Water (DECCW) licences for larger sewerage systems (these often require nutrient removal and disinfection facilities).

**COMMENT**

The statewide median OMA cost has risen from $240 to $340 (Jan. 2009$) per property over the past 17 years, largely due to more stringent standards for sewage treatment and increased management costs.

---

**Figure 16: Operating Cost (OMA) per property - Sewerage 2008-09**

Parameter: Management expenses (S1) + Total operation expenses (S2) - Purchase of water + Bulk supplier's OMA

No. connected properties

Notes:
1. This figure shows ranked values of the 2008-09 sewerage 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. Refer also to pages 11 and 14.
3. For general notes see page 23.
Figure 17: Operating Cost (OMA) per kilolitre - Water Supply 2008-09

OVERVIEW
The reported 2008-09 water supply operating cost ranged from 23 to 270c/kL. The Statewide median operating cost is 111c/kL, while 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have an operating cost of under 95c/kL and 80% of LWUs have an operating cost of under 150c/kL.

PERFORMANCE
Operating cost/kL of LWU Groups 1 to 4

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Low incidence under 95c/kL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 3</td>
<td>High incidence over 150c/kL</td>
</tr>
</tbody>
</table>

DRIVERS
- Need for water treatment
- Availability and proximity of water resources (eg. groundwater, pumped vs gravity supply)
- The economies of scale of the larger water supply systems
- The lack of economies of scale of the smaller water supply systems
- The relatively high operation and maintenance costs per property for water treatment and pumping for small discrete water supplies
- Larger utilities may achieve cost savings through better access to materials and equipment in the larger urban centres.
- Topography (pumping vs gravity reticulation)
- Development density and the number of separate water supply schemes.

COMMENT
The operating cost per kilolitre has risen from 40c/kL to 111c/kL (Jan. 2009$) in the past 14 years largely due to higher management costs and the reduced volume of water supplied per property.

Parameter: Management expenses (SSW1) + Total operation expenses (SSW2) - Purchase of water (SSW2o)
Total Potable Water Supplied (Q62)

Notes:
1. This figure shows ranked values of the 2008-09 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to page 11.
3. For general notes see page 23.
Figure 18: Management Cost (OMA) per property – Water Supply 2008-09

Overview
The reported 2008-09 water supply management cost ranged from $27 to $366/property. The Statewide median management cost is $127/property, while 40% of LWUs (i.e., LWUs in the 2 highest ranking quintile groups) have a management cost of under $115/property and 80% of LWUs have a management cost of under $175/property.

Performance
Management cost of LWU Groups 1 to 4

Group 2 - High incidence over $175

Drivers
- LWUs with a number of small water supply schemes may incur a higher management cost.
- LWUs with low development density may incur a higher management cost.

Comment
- Some of the smaller LWUs may not be identifying their full management costs. Such LWUs may not be devoting sufficient resources to management issues as many of them are also reporting relatively low levels of compliance with the requirements of the Best-Practice Management Guidelines.
- The management cost per property has increased from $77 to $127 (Jan. 2009$) over the past 17 years.

Parameter:
Management expenses (SSW1) + Total operation expenses (SSW2) - Purchase of water (SSW2o)
No. connected properties

Notes:
1. This figure shows ranked values of the 2008-09 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to page 12.
3. For general notes see page 23.
Figure 19: Management Cost (OMA) per property - Sewerage  2008-09

Parameter: Administration Cost (S1a) + Engineering Cost (S1b)
No. of connected properties

Notes:
1. This figure shows ranked values of the 2008-09 sewerage 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4).
2. Refer also to page 12.
3. For general notes see page 23.
Figure 20: Residential Revenue from Usage - Water Supply  2008-09

OVERVIEW
The reported 2008-09 residential revenue from water usage charges ranged from 90% to 20%. The Statewide median residential revenue from water usage charges is 73%, while 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have revenue from usage charges of over 70% and 80% of LWUs have revenue from usage charges of over 50%.

PERFORMANCE
Revenue from usage of LWU Groups 1 to 4
Group 1 - High incidence over 70%
Group 1 - Low incidence under 50%
Group 2 - High incidence under 50%

COMMENT
Most of the Group 1 LWUs are providing strong pricing signals to their residential customers through their water usage charges to encourage efficient water use. However, contrary to the guidelines on page 14 and 15, many Group 2 LWUs and 3 Group 1 LWUs are providing weak pricing signals to their residential customers through their usage charges. These LWUs should review their tariff structures to provide appropriate pricing signals. Assistance is available from the NSW Office of Water (Dilip Dutta 8281 7372 Dilip.Dutta@water.nsw.gov.au).

Parameter: Revenue from Residential Water Usage Charges (W7b) x 100
Revenue from Residential Access Charges (W7a) + Revenue from Residential Water Usage Charges (W7b)

Notes:
1. This figure shows ranked values of the 2008-09 percentage revenue from residential water usage charges for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. Refer also to the box on page 5.
3. For general notes see page 23.
Figure 21: Best-Practice Management Compliance (%) - Water Supply & Sewerage 2008-09

OVERVIEW
The reported 2008-09 compliance with the requirements of the Best-Practice Management Guidelines (BPMG) for water supply and sewerage ranged from 35% to 100%. The overall level of compliance is 82%. 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have BPMG compliance of over 95% and 80% of LWUs have BPMG compliance of over 63%.

PERFORMANCE
BPM compliance of LWU Groups 1 to 4
Group 1 - High incidence over 95%
Groups 1 and 2 - Low incidence under 63%
Group 4 - Low incidence over 95%
Group 4 - High incidence under 63%

COMMENT
Most of the Group 1 LWUs have a high level of compliance with the requirements of the BPMG, whereas many Group 3 and 4 LWUs have a low level of compliance with the requirements of the BPMG.

Notes:
1. This figure shows ranked values of the 2008-09 compliance with the requirements of the Best-Practice Management of Water Supply and Sewerage Guidelines 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 (WHITE), 3,001 to 10,000 (YELLOW), 1,501 to 3,000 (ORANGE) and 200 to 1,500 (RED).
2. For general notes see page 23.
Figure 22: Best-Practice Management Compliance (%) - Water Supply 2008-09

The reported 2008-09 compliance with the requirements of the Best-Practice Management Guidelines (BPMG) for water supply ranged from 30% to 100%. The overall level of compliance is 86%. 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have BPMG compliance of over 100% and 80% of LWUs have BPMG compliance of over 70%.

PERFORMANCE
BPM compliance of LWU Groups 1 to 4
Groups 1 and 2 - High incidence over 100%
Groups 1 and 2 - Low incidence under 70%
Group 4 - No incidence over 90%

COMMENT
Most of the Group 1 LWUs have a high level of compliance with the requirements of the BPMG, whereas many Group 4 LWUs have a low level of compliance with the requirements of the BPMG.

58% of the Group 1 LWUs have met all the requirements of the BPMG.

Notes:
1. This figure shows ranked values of the 2008-09 compliance with the requirements of the Best-Practice Management of Water Supply and Sewerage Guidelines for water supply for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (WHITE), 3,001 to 10,000 (YELLOW), 1,501 to 3,000 (ORANGE) and 200 to 1,500 (RED).
2. Requirements for compliance with best-practice include: complete current Strategic Business Plan & Financial Plan; Pricing with full cost-recovery, without significant cross subsidies; complying residential charges; required residential revenue from water usage charges; complying non-residential charges; sound Water Conservation implemented; sound Drought Management implemented; Development Servicing Plan with commercial developer charges; complete Performance Reporting by 15 September; and Integrated Water Cycle Management strategy commenced.
3. For general notes see page 23.
Figure 23: Best-Practice Management Compliance (%) – Sewerage 2008-09

The reported 2008-09 compliance with the requirements of the Best-Practice Management Guidelines (BPMG) for sewerage ranged from 11% to 100%. The overall level of compliance is 78%. 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have BPMG compliance of over 89% and 80% of LWUs have BPMG compliance of over 44%.

OVERVIEW
The reported 2008-09 compliance with the requirements of the Best-Practice Management Guidelines (BPMG) for sewerage ranged from 11% to 100%. The overall level of compliance is 78%. 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have BPMG compliance of over 89% and 80% of LWUs have BPMG compliance of over 44%.

PERFORMANCE
BPM compliance of LWU Groups 1 to 4
Groups 1 and 2 - High incidence over 89%
Groups 1 and 2 - Nil incidence under 44%
Groups 3 and 4 - Low incidence over 89%
Groups 3 and 4 - High incidence under 44%

COMMENT
Most of the Group 1 LWUs have a high level of compliance with the requirements of the BPMG, whereas many Group 3 and 4 LWUs have a low level of compliance with the requirements of the BPMG.

91% of the Group 1 LWUs have met all the requirements of the BPMG.

COLOUR LEGEND
Group 1 >10,000 properties
Group 2 3,001-10,000 properties
Group 3 1,501-3,000 properties
Group 4 200-1,500 properties

Notes:
1. This figure shows ranked values of the 2008-09 compliance with the requirements of the Best-Practice Management of Water Supply and Sewerage Guidelines for sewerage for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (WHITE), 3,001 to 10,000 (YELLOW), 1,501 to 3,000 (ORANGE) and 200 to 1,500 (RED).
2. Requirements for compliance with best-practice include: complete current Strategic Business Plan & Financial Plan; Pricing with full cost-recovery, without significant cross subsidies; complying residential charges; complying non-residential charges; complying trade waste fees & charges; Development Servicing Plan with commercial developer charges; liquid trade waste approvals & current Trade Waste Policy; complete Performance Reporting by 15 September; and Integrated Water Cycle Management strategy commenced.
3. For general notes see page 23.
Figure 24: Typical Developer Charges - Water Supply 2009-10

OVERVIEW
The reported 2009-10 water supply typical developer charges ranged from $11,340 to $400/equivalent tenement (ET). The Statewide median water supply developer charge is $4,600/ET, which is 39% of the median current replacement cost of water supply system assets of $11,900 per assessment. 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have a developer charge of over $4,300/ET and 80% of LWUs have a developer charge of over $1,600/ET.

PERFORMANCE
Developer charges of LWU Groups 1 to 4
Group 1 - High incidence over $4,300
Group 1 - No incidence under $1,600
Group 2 - Low incidence under $1,600
Groups 3 and 4 - Low incidence over $4,300
Groups 3 and 4 - High incidence under $1,600

COMMENT
Most of the Group 1 LWUs have commercial developer charges. Many of the Groups 3 and 4 LWUs do not have commercial developer charges.

Parameter: Typical Water Supply Developer Charge (W36)

Notes:
1. This figure shows ranked values of the 2009-10 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. 82 LWUs levied water supply developer charges.
3. 81% 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, Boorowa, Bourke, Brewarrina, Central Darling, Coonamble, Country Energy, Gilgandra, Hay, Kyogle, Tumbarumba and Warren.
4. Refer also to page 5.
5. For general notes see page 23.
Figure 25: Typical Developer Charges - Sewerage 2009-10

**OVERVIEW**

The reported 2009-10 sewerage typical developer charges ranged from $10,300 to $600/equivalent tenement (ET). The Statewide median sewerage developer charge is $3,900/ET, which is 32% of the median current replacement cost of sewerage system assets of $12,300 per assessment. 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have a developer charge of over $3,900/ET and 80% of LWUs have a developer charges of over $1,000/ET.

**PERFORMANCE**

Developer charges of LWU Groups 1 to 4

Group 1 – High incidence over $3,900
Group 1 and 2 – No incidence under $1,000
Group 3 and 4 – Low incidence over $3,900
Group 3 and 4 – High incidence under $1,000

**COMMENT**

Most of the Group 1 LWU’s have commercial developer charges. Many of the Group 2 and 3 LWU’s do not have commercial developer charges.

---

**Parameter:**

Typical Sewerage Developer Charge (S36)

**Notes:**

1. This figure shows ranked values of the 2009-10 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.

2. 78 LWUs levied sewerage developer charges.

3. 74% of LWUs have an appropriate sewerage Development Servicing Plan (DSP) with commercial developer charges. This includes the following 12 utilities which have received an exemption from needing to levy commercial sewerage developer charges due to their low growth of under 5 lots/a - Bogan, Boorowa, Bourke, Brewarrina, Central Darling, Coonamble, Country Energy, Gilgandra, Hay, Kyogle, Tumburumba and Warren.

4. Refer also to page 5.

5. For general notes see page 23.
Figure 26: Residential Water Usage Charge - 2009-10

OVERVIEW
The reported 2009-10 residential water usage charges for the first step ranged from 300 c/kL to 25c/kL. The Statewide median residential water usage charge is 150c/kL, which provides strong pricing signals to customers and is higher than most of the other Australian utilities. 40% of LWUs (i.e. LWUs in the 2 highest ranking quintile groups) have a water usage charge of over 130c/kL and 80% of LWUs have a water usage charge of over 85c/kL.

The Statewide median water usage charge for the second step was 180c/kL. 79% of the utilities have step pricing in place for discretionary water use, with a higher charge per kL for usage over 200 to 600kL/a (Appendix E on page 72).

PERFORMANCE
Usage charges of LWU Groups 1 to 4
Group 1 - High incidence over 130c/kL
Group 1 - Low incidence under 85c/kL
Groups 2 and 4 - Low incidence over 130c/kL
Group 2 - High incidence under 85c/kL

COMMENT
Most of the Group 1 LWUs are providing strong pricing signals to their residential customers through their water usage charges to encourage efficient water use. However, contrary to the guidelines on page 15 and 16, many Group 2 LWUs and 3 Group 1 LWUs are providing weak pricing signals to their residential customers through their usage charges. These LWUs should review their tariff structures to provide appropriate pricing signals. Assistance is available from the NSW Office of Water (Dilip Dutta 8281 7372 Dilip.Dutta@water.nsw.gov.au).

Notes:
1. This figure shows ranked values of the 2009-10 residential water usage charge for the first step for each Local Water Utility (LWU) in 4 groups, based on the number of connected properties served - over 10,000 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. As shown on page 3, the Statewide Typical Residential Bill (TRB) for water supply and sewerage has increased by a total of 4% in current dollars over the past 13 years.
3. Refer also to the box on page 5.
4. For general notes see page 23.
Figure 27: Non-residential Sewer Usage Charge - 2009-10

**OVERVIEW**
The reported 2009-10 non-residential sewer usage charges ranged from 15c to 320c/kL. The Statewide median non-residential sewer usage charges is 100 c/kL, while 40% of LWUs (ie. LWUs in the 2 highest ranking quintile groups) have a sewer usage charge of over 130c/kL and 70% of LWUs have a sewer usage charge.

**PERFORMANCE**
Usage charges of LWU Groups 1 to 4

- **Groups 1 and 3** – Low incidence of 0c/kL
- **Groups 2 and 4** – High incidence of 0c/kL

**COMMENT**
Most Groups 1 and 2 LWUs provide strong pricing signals to their non-residential customers through their sewer usage charges.

**Parameter:** Non-residential Sewer Usage Charge

**Notes:**
1. This figure shows ranked values of the 2009-10 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 (Group 1), 3,001 to 10,000 (Group 2), 1,501 to 3,000 (Group 3) and 200 to 1,500 (Group 4). The metropolitan water utilities (Sydney Water Corporation and Hunter Water Corporation) are shown in blue.
2. For general notes see page 23.
Appendix A
National performance comparisons 1992-93 to 2008-09

PERFORMANCE COMPARISONS - Utility Characteristics

1. Properties Served per km of Main (Water) (NWI Indicator - A3)

2. Properties Served per km of Main (Sewerage) (NWI Indicator - A6)

NOTES:
1. Melbourne Water was disaggregated into 4 constituent utilities in 1994. Melbourne Water Consolidated results for 1994/95 to 2008/09 are either aggregated results of the constituent utilities or consolidated results reported in the National Performance Report 2008-09, WSAA Facts (note 2) or reported in Urban Water Review (note 3).


5. QLD Country - Urban Water Service Providers Queensland Report 2003-04, (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 2008-09 obtained from median of QLD NMUs (Cairns, Logan, Ipswich, Mackay, Townsville) published in the National Performance Report 2008-09. The results shown from 2002-03 report a maximum of 5 of the 72 Queensland country utilities.


7. Financial data is presented in real 2008-09 dollars.
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 2009-10 Usage Charge and TRB (graphs 3 to 6) for the capital city utilities have been determined from data published on each utility's website.
PERFORMANCE COMPARISONS - Social (Water)

7. Microbiological Water Quality Compliance* (NWI Indicator - H3)
(NHMRC/ARMCANZ Australian Drinking Water Guidelines)

8. Water Quality Complaints (NWI Indicator - C9)

9. Water Main Breaks (NWI Indicator - A8)

* 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
The exceptions are Victorian country utilities where results up to 2003-04 are on the basis of the less stringent
1984 World Health Organisation Guidelines and which are now on the basis of the Victorian Safe Drinking
Water Regulations 2005, and also Melbourne Water where prior to 2004-05 the results are on the basis of
the above 1987 Guidelines and which are now on the basis of the 2004 ADWG.
For 2005-06 to 2008-09, the results shown are for "% of population where microbiological compliance was achieved", in accordance with NWI Indicator H3.
For country NSW, 38,000 ML of wastewater was recycled in 2008-09, which is 23 per cent of the total volume of sewage collected and was carried out by 79 per cent of the utilities, mostly for agriculture.
The major cause of non-compliance in non-metropolitan NSW is due to the growth of algae in maturation ponds being measured as suspended solids (SS). Most treatment works in non-metropolitan NSW have maturation ponds due to previous Department of Environment and Conservation (DEC) preference for ponding over chlorination. Negotiations with the DEC to develop an appropriate licencing method when maturation ponds are used for disinfection have favoured an option to test for SS prior to the maturation ponds. For new installations and major augmentations, Ultra Violet (UV) disinfection is being used rather than maturation ponds to overcome this problem.
Appendix A – National performance comparisons 1992-93 to 2008-09

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 16 for all the other utilities for these years.
2. Operating Cost (OMA) is the Operation, Maintenance and Administration Cost in 2008/09$.

PERFORMANCE COMPARISONS - Economic

17. Sewer Overflows to the Environment

18. Economic Real Rate of Return1 (Water & Sewerage) (NWI Indicator - F19)

19. Operating Cost2 (OMA) per connected property (Water) (NWI Indicator - F11)

20. Operating Cost2 (OMA) per connected property (Sge) (NWI Indicator - F12)
PERFORMANCE COMPARISONS - Economic

21. Net Debt to Equity (NWI Indicator - F22)

22. Revenue from Community Service Obligations (NWI Indicator - F8)
Appendix B
Example TBL sewerage performance report and action plan

Shoalhaven City Council Sewerage – Example Action Plan Page 1

Summary
In 2008-09, Shoalhaven Council complied with all 19 requirements of the NSW Best-Practice Management Guidelines and has performed well in the delivery of water supply and sewerage services. However, high residential growth over the last few years and the new backlog sewerage schemes have contributed to higher operating and management costs.

Key actions from Council's Strategic Business Plan:
- Backlog sewerage schemes completed for Conjola, Lake Tabourie and Currarong to provide a piped sewerage service to 1,900 people.
- Sewer relining program for high risk areas is nearing completion.

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULT</th>
<th>COMMENT/DRIVERS</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best-Practice Management Guidelines</strong></td>
<td>Compiled with all the Best Practice Requirements</td>
<td>Excellent</td>
<td>Demonstrates effective and sustainable water supply and sewerage businesses. Continue the periodic review and update of Strategic Business Plan (SBP) and Financial Plan (FP). Integrated Water Cycle Management (IWCM) Strategy, Trade Regulation Waste Policy and Development Servicing Plan (DSP).</td>
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<tr>
<td><strong>Characteristics</strong></td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>Connected property density 355 per km of main</td>
<td>Lower than the statewide median of 40</td>
<td>A connected property density below about 30 can significantly increase the cost per property of providing services.</td>
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<tr>
<td>7</td>
<td>Renewals expenditure 0.4% Above average (2, 2)</td>
<td>Good</td>
<td>White the ranking is good, Council’s maintenance and renewals expenditures are low. Council has reviewed its asset management plan and increased funds have been directed to maintenance and renewals over the next 5 years.</td>
</tr>
<tr>
<td>8</td>
<td>Employees 2.1 per 1,000 props</td>
<td>Requires review</td>
<td>The employee ratio has risen by 0.5 over the last 4 years as a result of servicing the above backlog sewerage schemes, involving 4 STWs. (Graph 5 of TBL Report)</td>
</tr>
<tr>
<td><strong>Social - Charges</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Typical residential bill (TRB) 5565 per assessment unit</td>
<td>Satisfactory</td>
<td>Drivers - Capital expenditure, OMA and management cost. A good outcome as the TRB is identical to the projection in Council’s Strategic Business Plan.</td>
</tr>
<tr>
<td>13</td>
<td>Typical Developer Charges 37630 per high assessment unit</td>
<td>Good</td>
<td>The developer charge is 56% of the CRC of $13700. Council will continue to review and update its DSP after 5 years.</td>
</tr>
<tr>
<td>14</td>
<td>Non-residential sewer usage charge 91c/kL</td>
<td>Requires review</td>
<td>Marginally below the statewide median but much lower than Shoalhaven’s operating cost of 274c/kL. Council is progressively increasing this charge to ensure that appropriate pricing signals are provided to non-residential customers. This will address the present disparity where the non-residential sewage and trade waste volume was 19% of total sewage collected, but provided only 14% of the total revenue.</td>
</tr>
<tr>
<td><strong>Social - Health</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Urban Properties without reticulated sewer service 4.5% Above average ranking (2, 2)</td>
<td>Good</td>
<td>Backlog sewerage schemes completed for Conjola, Lake Tabourie and Currarong to provide a piped sewerage service to 1,900 people.</td>
</tr>
<tr>
<td>17</td>
<td>Percent sewage treated to tertiary level 58% Below average (4, 3)</td>
<td>Requires review</td>
<td>Well below the statewide median of 88%. Refer to Indicator 18 below.</td>
</tr>
<tr>
<td>18</td>
<td>Percent of sewage volume that complied 63% Below average (4, 4)</td>
<td>Requires review</td>
<td>Low result, well below statewide median of 100%. Council is planning to upgrade existing lagoon STWs where algae growth in maturation ponds is causing non-compliance with SS in licences.</td>
</tr>
<tr>
<td>19</td>
<td>Sewage treatment works complaint at all times 9 of 12</td>
<td>Requires review</td>
<td>Refer to Indicator 19 above.</td>
</tr>
<tr>
<td><strong>Social - Levels of Service</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Odour Complaints 2 per 1000 props</td>
<td>Requires review</td>
<td>Results over last 10 years are generally higher than statewide median of 0.4. The 2008-09 result was adversely affected by the commissioning of the new Conjola STW. Shoalhaven’s complaints monitoring system is able to accurately record all complaints.</td>
</tr>
<tr>
<td>22</td>
<td>Service complaints 7 per 1000 props</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Average Duration of Intermittent service</td>
<td>Not reported</td>
<td>Statewide median 116 minutes.</td>
</tr>
<tr>
<td>25</td>
<td>Total Days Lost 4.5% Below average (4, 5)</td>
<td>Requires review</td>
<td>This has remained above the statewide median over the last 10 years. Council has critically reviewed its total days lost and has found its performance to be satisfactory.</td>
</tr>
</tbody>
</table>

   SBP, review and update required after 3 years. FP update required annually.
   IWCM Strategy: review and update required after 5 years. Liquid Trade Waste Regulation Policy in accordance with the NSW Liquid Trade Waste Regulation Guidelines, 2009 required by June 2011. DSP review and updating is required after 5 years.

2. The ranking relative to similar size LWUs is shown first (Col. 2 of TBL Report) followed by the ranking relative to all LWUs (Col. 3 of TBL Report).
### Shoalhaven City Council Sewerage – Example Action Plan Page 2

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULT</th>
<th>COMMENT/DRIVERS</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENVIRONMENTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27 Percentage effluent recycled</td>
<td>29% Above average (2, 2)</td>
<td>Good. Council’s Regional Effluent Management Scheme (REMS) is a national leader, which highlights the high environmental values developed by Council and the community.</td>
<td>Council will continue to identify further options for recycling effluent.</td>
</tr>
<tr>
<td>28 Biosolids reuse</td>
<td>100% Highest ranking (1, 1)</td>
<td>Excellent.</td>
<td></td>
</tr>
<tr>
<td>32 Net Greenhouse gas emissions (WS &amp; Sge)</td>
<td>410 T CO2/1000 props Below average (4, 4)</td>
<td>Requires review. Slightly higher than median emission.</td>
<td>Council will examine options for improvement.</td>
</tr>
<tr>
<td>34 Compliance with BOD in licence</td>
<td>100% Highest ranking (1, 1)</td>
<td>Excellent.</td>
<td></td>
</tr>
<tr>
<td>35 Compliance with SS in licence</td>
<td>88% Lowest ranking (5, 5)</td>
<td>Requires review. Result well below statewide median of 100%, Drivers - algae in maturation ponds, impact of drought.</td>
<td>Refer to Indicator 18 above.</td>
</tr>
<tr>
<td>36 Sewer main breaks and chokes</td>
<td>47 per 100km of main Above average (2, 2)</td>
<td>Good. Drivers - condition and age of assets.</td>
<td>Council has an ongoing commitment to reduce sewer overflows through its current inspection and relining program, and the development of its risk based asset renewal program.</td>
</tr>
<tr>
<td>37 Sewer overflows to the environment</td>
<td>13 per 100km of main Median ranking (3, 4)</td>
<td>Satisfactory.</td>
<td></td>
</tr>
<tr>
<td><strong>ECONOMIC</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39 Non-residential percentage of sewage collected</td>
<td>19% Highest ranking (1, 1)</td>
<td>Good.</td>
<td></td>
</tr>
<tr>
<td>43 Non-residential revenue</td>
<td>14% Below average (4, 4)</td>
<td>Requires review.</td>
<td>Refer to Indicator 14 above.</td>
</tr>
<tr>
<td>46 Economic Real Rate of Return (ERRR)</td>
<td>1.3% Median ranking (3, 2)</td>
<td>Satisfactory. ERRR is about the Statewide median but has fallen significantly over the last 5 years. Council will continue to monitor its performance (refer to Indicators 14 and 43 above). The continuing drought has also had a detrimental effect on the ERRR.</td>
<td></td>
</tr>
<tr>
<td>47 Net debt to equity</td>
<td>8 Above average (2, 1)</td>
<td>Good.</td>
<td></td>
</tr>
<tr>
<td>48 Interest cover</td>
<td>3 Below average (4, 4)</td>
<td>Good. Drivers - in general an interest cover of &gt;2 is satisfactory.</td>
<td></td>
</tr>
<tr>
<td>49 Loan payments</td>
<td>$135 per prop Above average (2, 1)</td>
<td>Good. Drivers - expenditure on capital works, short term loans. 20-year loan terms are proposed for future loans to reduce the financial burden on the present customers and facilitate inter-generational equity.</td>
<td></td>
</tr>
<tr>
<td>50 Operating cost (OMA)</td>
<td>$424 per prop Lowest ranking (5, 5)</td>
<td>Ongoing review. OMA has shown an increasing trend over the last 4 years. Drivers - development density, level of treatment, management cost, topography, number of discrete schemes and economies of scale.</td>
<td>Council has critically reviewed its OMA cost to ensure efficient operations. The above backlog sewerage schemes and increasing energy charges have resulted in the recent increases to the OMA cost per property.</td>
</tr>
<tr>
<td>52 Management cost</td>
<td>$153 per prop Lowest ranking (5, 5)</td>
<td>Ongoing review. Management cost is high, with an increasing trend over the last 10 years. Drivers - development cost, number of discrete schemes, number of employees.</td>
<td>Refer to Indicator 50 above.</td>
</tr>
<tr>
<td>53 Treatment cost</td>
<td>$101 per prop Above average (2, 3)</td>
<td>Good. Drivers - type and level of treatment, economies of scale</td>
<td></td>
</tr>
<tr>
<td>54 Pumping cost</td>
<td>$73 per prop Lowest ranking (5, 4)</td>
<td>Low ranking Drivers - topography, development density, effluent recycling. Low ranking but the pumping cost is driven by the energy charges, system characteristics and recycling and is not able to be significantly reduced. Refer to Indicator 50 above.</td>
<td></td>
</tr>
<tr>
<td>56 Sewer main cost</td>
<td>$57 per prop Below average (4, 4)</td>
<td>Low ranking Drivers - topography, asset age, development density. Refer to Indicator 50 above.</td>
<td></td>
</tr>
</tbody>
</table>
Shoalhaven City Council TBL Sewerage Performance 2008-09

SEWERAGE SYSTEM - Shoalhaven Council has 12 sewage treatment works providing advanced secondary and tertiary treatment. The system comprises 133,800 EP treatment capacity (Inermittent Extended Aeration (Activated Sludge) and Trickling Filter), 219 pumping stations (755 MLd), 168 km of rising mains and 944 km of gravity trunk mains and reticulation. Treated effluent is recycled by Council’s Regional Effluent Management Scheme (REMS). Excess effluent is discharged to ocean and river.

PERFORMANCE - Residential growth for 2008/09 was 2.5% which is higher than the statewide median. Shoalhaven City Council achieved 100% compliance with Best Practice requirements. The typical residential bill was $585 which was above the statewide median of $470 (Indicator 12). The economic real rate of return was 1.3% which was greater than the statewide median (Indicator 46). The operating cost per property (OMA) was $424 which was above the statewide median of $340 (Indicator 50). Sewage odour complaints were above the statewide median of 0.4 (Indicator 21). Although Council did not comply with the environmental regulator for effluent discharge, 83% of Council’s effluent was compliant. The current replacement cost of system assets was $611M ($13,700 per assessment), cash and investments were $14M, debt was $51M and revenue was $30.4M (excluding capital works grants). Council paid a dividend of $1.2M.

COMPLIANCE WITH BEST-PRACTICE MANAGEMENT GUIDELINES REQUIREMENTS

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Requirement</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Complete current strategic business plan &amp; financial plan</td>
<td>YES</td>
</tr>
<tr>
<td>(2a)</td>
<td>Pricing - All cost-recovery, without significant cross subsidies</td>
<td>YES</td>
</tr>
<tr>
<td>(2b)</td>
<td>Pricing - Non-Residential Charges</td>
<td>YES</td>
</tr>
<tr>
<td>(2c)</td>
<td>Pricing - Liquid trade waste approvals &amp; policy</td>
<td>YES</td>
</tr>
<tr>
<td>(3)</td>
<td>Complete performance reporting (by 15 September)</td>
<td>YES</td>
</tr>
<tr>
<td>(4)</td>
<td>Integrated water cycle management strategy commenced</td>
<td>YES</td>
</tr>
</tbody>
</table>

TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

<table>
<thead>
<tr>
<th>Metric</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population served</td>
<td>80,100</td>
</tr>
<tr>
<td>Number of connected properties</td>
<td>44,480</td>
</tr>
<tr>
<td>New residences connected to sewerage</td>
<td>38,290</td>
</tr>
<tr>
<td>Volume of sewage collected (ML)</td>
<td>6,510</td>
</tr>
<tr>
<td>Residential access charge / assessment ($)</td>
<td>585</td>
</tr>
<tr>
<td>Typical residential bill ($)</td>
<td>585</td>
</tr>
<tr>
<td>Typical developer charge / equivalent tenement ($)</td>
<td>7,600</td>
</tr>
<tr>
<td>Non-residential sewage usage charge (c/kL)</td>
<td>0.8</td>
</tr>
<tr>
<td>Odour complaints per 1,000 properties</td>
<td>1.2</td>
</tr>
<tr>
<td>Service complaints per 1,000 properties</td>
<td>7</td>
</tr>
<tr>
<td>Average sewerage interruption (minutes)</td>
<td>2</td>
</tr>
<tr>
<td>Total days lost (%)</td>
<td>3.5</td>
</tr>
<tr>
<td>Volume of sewage collected per property (ML)</td>
<td>165</td>
</tr>
<tr>
<td>Total recycled water supplied (ML)</td>
<td>1,900</td>
</tr>
<tr>
<td>Biosolids reuse (%)</td>
<td>100</td>
</tr>
<tr>
<td>Energy consumption per Megawatt (kW/hour)</td>
<td>250</td>
</tr>
<tr>
<td>Renewable energy consumption (%)</td>
<td>0.5</td>
</tr>
<tr>
<td>Net greenhouse gas emissions - WS &amp; Sge (net tonnes CO2 equivalents per 1,000 properties)</td>
<td>410</td>
</tr>
<tr>
<td>Compliance with BOD in Licence</td>
<td>100</td>
</tr>
<tr>
<td>Compliance with SS in Licence</td>
<td>88</td>
</tr>
<tr>
<td>Sewer main breaks and chokes per 100 km of main</td>
<td>47</td>
</tr>
<tr>
<td>Sewer overflows per 100 km of main</td>
<td>3</td>
</tr>
<tr>
<td>Revenue from property - $/g</td>
<td>770</td>
</tr>
<tr>
<td>Revenue from non-residential plus trade waste charges (% of total revenue)</td>
<td>4.4</td>
</tr>
<tr>
<td>Economic real rate of return - Sge (%)</td>
<td>0.8</td>
</tr>
<tr>
<td>Return on assets - Sge (%)</td>
<td>0.6</td>
</tr>
<tr>
<td>Net Debt to equity - Sge (%)</td>
<td>8</td>
</tr>
<tr>
<td>Interest cover - Sge</td>
<td>3</td>
</tr>
<tr>
<td>Loan payment per property - Sge ($)</td>
<td>135</td>
</tr>
<tr>
<td>Net profit after tax - WS &amp; Sge ($'000)</td>
<td>-291</td>
</tr>
<tr>
<td>Operating cost (OMA) per 100 km of main ($'000)</td>
<td>1,500</td>
</tr>
<tr>
<td>Operating cost (OMA) per property ($)</td>
<td>424</td>
</tr>
<tr>
<td>Management cost per property ($)</td>
<td>153</td>
</tr>
<tr>
<td>Treatment cost per property ($)</td>
<td>101</td>
</tr>
<tr>
<td>Energy cost per property ($)</td>
<td>73</td>
</tr>
<tr>
<td>Capital expenditure per property ($)</td>
<td>530</td>
</tr>
</tbody>
</table>

NOTES:
1. Council’s ranking in Col 2 is based on a comparison of its result in Col 1 with the percentiles for LWUs with >10,000 properties. This is on a % of LWUs basis - see also Note 2.
2. Council’s ranking in Col 3 is based on a comparison of its result in Col 1 with the percentiles for all LWUs. This is also on a % of LWUs basis as this is relevant for comparing the performance of an LWU with all other LWUs - see attachment.
3. The Statewide Median (Col 4) is on a % of connected properties basis. It best reveals statewide performance giving due weight to larger LWUs & reducing the effect of smaller LWUs.
4. Annual review of the key projections & actions in LWUs Strategic Business Plan (SBP) are required, together with annual updating of LWUs Financial Plan. The SBP should be updated after 3 years.
5. Non-residential. Access Charge based on square of meter size, sewer usage charge - $/kL.
6. Non-residential & trade waste volume was 19% of total sewage collected; these customers only provided 14% of the revenue from annual charges, usage and trade waste charges.
7. Compliance with Total N in Licence was 100%. Compliance with Total P in Licence was 100%.
8. The operating cost (OMA)/property was $424. Components were management ($105), operation ($189), maintenance ($45), energy ($19), chemical ($3) and effluent.biocides ($16).
Appendix B – Example TBL sewerage performance report

Shoalhaven City Council Sewerage TBL Report (Page 2)

(Results shown for 10 years together with 2008/09 Statewide Median and Top 20%)

NOTES:
1. Costs are in Jan 2009$.

LEGEND
2008/09 State Median
2008/09 Top 20%
## WATER SUPPLY

<table>
<thead>
<tr>
<th>LWUs with &gt;10,000 Properties</th>
<th>% of LWUs 'Yes' (&gt;10,000 connected properties)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100% 96% 89% 63% 85% 93% 90% 89% 100% 89% 90%</td>
</tr>
<tr>
<td></td>
<td>LWUs with 3,001 - 10,000 Properties</td>
</tr>
<tr>
<td></td>
<td>100% 96% 89% 63% 85% 93% 90% 89% 100% 89% 90%</td>
</tr>
</tbody>
</table>

### WATER UTILITY

<table>
<thead>
<tr>
<th>LWUs with &gt;10,000 Properties</th>
<th>% of LWUs 'Yes' (&gt;10,000 connected properties)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100% 96% 89% 63% 85% 93% 90% 89% 100% 89% 90%</td>
</tr>
<tr>
<td></td>
<td>LWUs with 3,001 - 10,000 Properties</td>
</tr>
<tr>
<td></td>
<td>100% 96% 89% 63% 85% 93% 90% 89% 100% 89% 90%</td>
</tr>
</tbody>
</table>

### SEWERAGE

<table>
<thead>
<tr>
<th>LWUs with &gt;10,000 Properties</th>
<th>% of LWUs 'Yes' (&gt;10,000 connected properties)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>100% 96% 89% 63% 85% 93% 90% 89% 100% 89% 90%</td>
</tr>
<tr>
<td></td>
<td>LWUs with 3,001 - 10,000 Properties</td>
</tr>
<tr>
<td></td>
<td>100% 96% 89% 63% 85% 93% 90% 89% 100% 89% 90%</td>
</tr>
</tbody>
</table>
## 2008-09 Best-Practice Management Compliance

### WATER UTILITY

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Compliance</th>
<th>Reporting</th>
<th>Conservation</th>
<th>Rate Recovery</th>
<th>Non-Residential</th>
<th>_DSP</th>
<th>Developers’ Charges</th>
<th>Overall Liquid Trade Waste Policy</th>
<th>Overall Domestic Water Cycle Strategy</th>
<th>Overall Water Supply Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrabri (Groundwater)</td>
<td>3.2</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>80%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Ballina (Unfiltered)</td>
<td>3.8</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Leeton</td>
<td>4.6</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Young (Reticulator)</td>
<td>3.9</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Cooma-Monaro</td>
<td>5.1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Forbes</td>
<td>3.9</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Snowy River (Unfiltered)</td>
<td>4.3</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Berrigan (Dual Supply)</td>
<td>4.0</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Deniliquin</td>
<td>3.7</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Manumbugle</td>
<td>3.2</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
</tbody>
</table>

### SEWERAGE

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Compliance</th>
<th>Reporting</th>
<th>Conservation</th>
<th>Rate Recovery</th>
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</thead>
<tbody>
<tr>
<td>Narrabri (Groundwater)</td>
<td>3.2</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>80%</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Ballina (Unfiltered)</td>
<td>3.8</td>
<td>Yes*</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
<td>Yes*</td>
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</tr>
<tr>
<td>Leeton</td>
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<td>Forbes</td>
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<td>Snowy River (Unfiltered)</td>
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<td>Deniliquin</td>
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<td>Manumbugle</td>
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<td>Yes*</td>
<td>Yes*</td>
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<td>Yes*</td>
<td>Yes*</td>
<td>100%</td>
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</table>
## Appendix C - 2008-09 Best-Practice Management Compliance

### WATER SUPPLY

<table>
<thead>
<tr>
<th>WATER UTILITY</th>
<th>(1) Strategic Business Plan</th>
<th>(2) Principal Developer Charges</th>
<th>(3) Proposed Development Charges</th>
<th>(4) Complete Performance Reporting Within 12 Months of Request</th>
<th>(5) Integrated Water Cycle Management Strategy Completed (Year/Yes)</th>
<th>Overall Compliance with all BPM Criteria (Yes/No)</th>
<th>Proposed Reporting on Audited Results (Year/Yes)</th>
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<tbody>
<tr>
<td>Gundagai</td>
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<td>Warragamba</td>
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<tr>
<td>Beetaloo</td>
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<tr>
<td>Coolamon</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>Balranald (Dually)</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
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<tr>
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<td>Yes*</td>
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<tr>
<td>Brewarrina</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes*</td>
<td>Yes*</td>
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<tr>
<td>Jurabinda (Dually)</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
</tbody>
</table>

| % of LWUs 'Yes' (200 – 1,500 connected properties) | 60% | 92% | 52% | 84% | 84% | 64% | 76% | 80% | 69% | 48% | 75% | Overall | 68% | 67% | 71% | 56% | 30% | 42% | 71% | 48% | 59% | Overall |

**Notes:**

1. **Best Practice Management criteria are set out in "Best Practice Management of Water Supply and Sewerage Guidelines August 2007" (BPMG).**
2. There are 10 criteria which must be satisfied for an LWU to achieve compliance for sewerage. These are (1), (2a), (2b), (2c), (2d), (2e), (3), (4), (5) and (6) shown in the table above for sewerage.
3. % of LWUs 'Yes' for sewerage is: 90% for LWUs with >10,000 properties; 91% for LWUs with 3,001 - 10,000 properties; 81% for LWUs with 1,501 - 3,000 properties and 75% for LWUs with 200 - 1,500 properties respectively. The overall level of compliance for sewerage for all LWUs was 78%.
4. **Overall Compliance for all SGE Businesses 78%**

---

### SEWERAGE

<table>
<thead>
<tr>
<th>SEWERAGE UTILITY</th>
<th>(1) Strategic Business Plan</th>
<th>(2) Principal Developer Charges</th>
<th>(3) Proposed Development Charges</th>
<th>(4) Complete Performance Reporting Within 12 Months of Request</th>
<th>(5) Integrated Water Cycle Management Strategy Completed (Year/Yes)</th>
<th>Overall Compliance with all BPM Criteria (Yes/No)</th>
<th>Proposed Reporting on Audited Results (Year/Yes)</th>
</tr>
</thead>
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<tr>
<td>96 Gundiagai</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes*</td>
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<tr>
<td>96 Weddin</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes*</td>
</tr>
<tr>
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<td>Yes</td>
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<td>Yes</td>
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<td>Yes*</td>
</tr>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes*</td>
<td>Yes*</td>
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<tr>
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<td>Yes</td>
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<td>Yes</td>
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<td>Yes*</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes*</td>
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<tr>
<td>96 Jurabinda</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
</tbody>
</table>

| % of LWUs 'Yes' (200 – 1,500 connected properties) | 87% | 94% | 98% | 74% | 56% | 81% | 97% | 90% | 82% | 68% | 38% | Overall | 86% | 85% | 87% | 76% | 60% | 72% | 86% | 83% | 77% | Overall |

**Notes:**

1. **Overall Compliance for all WS Businesses 86%**

---

### Appendix C - 2008-09 Best-Practice Management Compliance

- Overall Compliance for all SGE Businesses 78%
- Overall Compliance for all WS Businesses 86%
## Water Supply

<table>
<thead>
<tr>
<th>NSW Water Supply Corporation</th>
<th>Total Water Supplied (10^9 L)</th>
<th>Average Daily Water Use (per 10^3 households)</th>
<th>Water Quality Compliance (2004 MINCOM/RAWW Guidelines)</th>
<th>Water Quality Compliance (Per 100,000 L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney Water</td>
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<td>0.6</td>
<td>5</td>
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<tr>
<td>Hunter Water</td>
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<td>31</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Bathurst &amp; District Authority</td>
<td>173</td>
<td></td>
<td>7</td>
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### Majorana with > 10,000 Properties

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<th>NSW Water Supply Corporation</th>
<th>Total Water Supplied (10^9 L)</th>
<th>Average Daily Water Use (per 10^3 households)</th>
<th>Water Quality Compliance (2004 MINCOM/RAWW Guidelines)</th>
<th>Water Quality Compliance (Per 100,000 L)</th>
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<td>2008-09 NSW Performance Monitoring Report</td>
<td>NSW Office of Water</td>
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## Appendix D - 2008-09 NSW Water Utility Performance Summary

### Water Supply

## WATER SUPPLY

### WATER UTILITY

<table>
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<tr>
<th>Water Supply</th>
<th>Total Water Supplied (ML)</th>
<th>Average Annual Residential Water Per House</th>
<th>Average Main Breaks</th>
<th>Average Length of Unplanned Interruptions</th>
<th>Volume of Available Water</th>
<th>Water Quality Compliance (2004 NIMH/RMCA Guidelines)</th>
<th>Revenue</th>
<th>% of Goals Achieved (%)</th>
<th>Average Overhauls</th>
<th>Average Outliers</th>
<th>Recycled Water</th>
<th>Net Profit After Tax</th>
<th>Capital Expenditure</th>
<th>Strategic Business Plan Complete (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
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<td>(8)</td>
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<td>(10)</td>
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<td>(12)</td>
<td>(13)</td>
<td>(14)</td>
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<td></td>
<td>[G]</td>
<td>[W]</td>
<td>[W/2]</td>
<td>[P]</td>
<td>[S]</td>
<td>[C]</td>
<td>[A]</td>
<td>[B]</td>
<td>[C]</td>
<td>[D]</td>
<td>[E]</td>
<td>[F]</td>
<td>[G]</td>
<td>[H]</td>
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### LWMAs with 200 - 1,500 Properties

<table>
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<tr>
<th>LWMAs</th>
<th>Water Supply</th>
<th>Total Water Supplied (ML)</th>
<th>Average Main Breaks</th>
<th>Average Length of Unplanned Interruptions</th>
<th>Volume of Available Water</th>
<th>Water Quality Compliance (2004 NIMH/RMCA Guidelines)</th>
<th>Revenue</th>
<th>% of Goals Achieved (%)</th>
<th>Average Overhauls</th>
<th>Average Outliers</th>
<th>Recycled Water</th>
<th>Net Profit After Tax</th>
<th>Capital Expenditure</th>
<th>Strategic Business Plan Complete (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>(2)</td>
<td>(3)</td>
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<td>[P]</td>
<td>[S]</td>
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<td>[D]</td>
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<td>[F]</td>
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### LWMAs without Water Supply

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<th>Average Main Breaks</th>
<th>Average Length of Unplanned Interruptions</th>
<th>Volume of Available Water</th>
<th>Water Quality Compliance (2004 NIMH/RMCA Guidelines)</th>
<th>Revenue</th>
<th>% of Goals Achieved (%)</th>
<th>Average Overhauls</th>
<th>Average Outliers</th>
<th>Recycled Water</th>
<th>Net Profit After Tax</th>
<th>Capital Expenditure</th>
<th>Strategic Business Plan Complete (%)</th>
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</thead>
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# Statewide Totals & Medians

<table>
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<th></th>
<th>791,000</th>
<th>288,000</th>
<th>177,591</th>
<th>165</th>
<th>75</th>
<th>4,300</th>
<th>600</th>
<th>25</th>
<th>120</th>
<th>15</th>
<th>200</th>
<th>25</th>
<th>1,000</th>
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<tbody>
<tr>
<td>Totals or Medians (% of LWMAs basis)</td>
<td>28,000</td>
<td>7,766</td>
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<td>10</td>
<td>3,125</td>
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<td>100</td>
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<td>100</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

2008-09 NSW Performance Monitoring Report | NSW Office of Water
### Notes


2. No WSL means not responsible for water supply.

3. Where an LWU has not reported an item for 2008-09, 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 for LWUs responsible for sewerage only (column (1)) is sewerage properties.

5. NSW Water Utilities

   In NSW there are 110 water utilities comprising:
   - 4 metropolitan water utilities (Sydney and Hunter Water Corporations, Sydney Catchment Authority (SCA) and Hawkesbury Council), and
   - 106 non-metropolitan Local Water Utilities (LWUs).

6. Totals for non-metropolitan NSW

   The totals shown below are for non-metropolitan NSW and therefore exclude Sydney & Hunter Water Corporations, the SCA and Hawkesbury Council. The totals exclude double-counting where bulk utilities are supplied.

<table>
<thead>
<tr>
<th>Statewide medians (non-metropolitan):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water quality complaints - 3 per 1000 properties (column (6b)).</td>
</tr>
<tr>
<td>Operation, maintenance and administration (OMA) cost (water &amp; sewerage) - $670/connected property (column (17)).</td>
</tr>
<tr>
<td>OMA cost 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 (17).</td>
</tr>
<tr>
<td>Management cost for water supply and sewerage - $250/connected property (column (18)).</td>
</tr>
<tr>
<td>Current replacement cost for water supply and sewerage - $24,200/assessment (column (15)).</td>
</tr>
<tr>
<td>Capital expenditure for water supply and sewerage - $514/property (column (19b)). The total capital expenditure for water supply and sewerage was $900M (column (19c)).</td>
</tr>
</tbody>
</table>

7. Category 1 Businesses – Category 1 businesses are defined as having an annual revenue of over $2M (NSW Government’s Policy Statement on Application of National Competition Policy to Local Government, June 1996). 72 LWUs are Category 1 businesses (shown in bold in Col(4) & (9)). Column (4) shows there were 56 LWUs responsible for water supply with a revenue of over $2M, and 42 such utilities responsible for sewerage (column (9)).

8. Pay-for-use water supply tariff - 52 of the 94 LWUs providing reticulated water have a pay-for-use water supply tariff in 2008-09 (ie. a two-part tariff or an inclining block tariff). Such tariffs comply with IPART recommendations and the COAG Strategic Framework for Water Reform.

9. Pay-for-Use Pricing & Full Cost Recovery - For water supply, 94% of LWUs have pay-for-use pricing in 2008-09, residential tariffs independent of land value together with full cost recovery (col 2 of Table 3).

10. Physical and chemical water quality - 96% of the 26,500 physical samples and 98% of the 23,600 chemical samples tested for NSW LWUs achieved 100% compliance with the 2004 NHMRC/NRMMC Guidelines. Of the 106 LWUs, 97 were responsible for water supply (including 3 for bulk supply - Cobar WB, Fish River WS & Rous Water). 101 were responsible for sewerage. 97 were responsible for both water supply and sewerage, 6 for water supply only and 9 for sewerage only.

11. Microbiological water quality - E.coli - 96% of the 20,700 samples tested for NSW LWUs achieved 100% compliance with the 2004 NHMRC/NRMMC Guidelines. 98% of LWUs complied with the COAG Strategic Framework for Water Reform and the National Water Initiative (NWI) Indicators.

12. Compliance with DECC Discharge Licence for Sewerage - BOD - 96% of the 3,989 sampling days for NSW LWUs achieved 100% compliance with the 90-percentile limit of their DECC licence for BOD (Biochemical Oxygen Demand). 88% of LWUs complied with the DECC licence (col 10).

13. Strategic Business Plans - 94 LWUs have completed a sound water &/or sewerage Strategic Business Plan (col 21) and have demonstrated long term financial sustainability of their water and sewerage businesses to comply with National Competition Policy. The plans of 30 of these LWUs now need updating (these are shown as “Yes” in column 21).

14. Total Water Supplied - The average annual residential water supplied (col (22)) includes non-potable and recycled water (see Table 6).

15. No WSL means not responsible for water supply.

16. Reuse of recycled water comprises 38,000ML which is 23% of the volume of sewage collected and was carried out by 75% of utilities, mostly for agriculture.

17. National Water Initiative (NWI) Indicators - The 33 NSW water utilities with over 10,000 connected properties (3 metropolitan utilities and 27 non-metropolitan utilities) are required to report their performance under the NWI. The results that have met the rigorous NWI auditing requirements have been published in the National Performance Report 2008-09. Refer also to Notes 15 and 20 on page 24.

## Appendix E - Water Supply - Residential Charges, Bills, Cost Recovery

### Water Utility

**Fixed Charge (or Minimum)**  
**Usage Charge for Step 1 and Step 2**  
**Billing Rate Geographic Guidelines**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>(Step 1)</th>
<th>(Step 2)</th>
</tr>
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<tbody>
<tr>
<td>($)</td>
<td>($)</td>
<td>(kL)</td>
<td>(kL)</td>
</tr>
</tbody>
</table>

### Bills

#### Typical Residential Charge based on average water usage supplied (Government Guidelines)

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### Cost Recovery

#### Annual Residential Water Supply

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### Residential Charges - Current and 2008/09

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<th>LWUs with &gt; 10,000 Properties</th>
<th>LWUs with 3,001 - 10,000 Properties</th>
<th>LWUs with 1,001 - 3,000 Properties</th>
<th>LWUs with 1,000 or Fewer Properties</th>
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### Appendices

- Table A1: Water Supply Charges
- Table A2: Water Supply Bills

### Notes

- *Note: All values should be read with due caution.
- This table provides information on residential charges, bills, and cost recovery for Sydney Water.}

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**2008-09 NSW Performance Monitoring Report | NSW Office of Water**

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### Appendix E - Water Supply - Residential Charges, Bills, Cost Recovery

#### Water Utility

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#### LWUs with 1,500 - 3,000 Properties

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<th>Medians (of LWUs based) for 3,000 to 10,000 Properties</th>
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<td>LWUs of 1,500 - 3,000 Properties</td>
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#### Medians (of LWUs based) for 1,500 to 3,000 Properties

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</thead>
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<tr>
<td></td>
<td>LWUs of 1,500 - 3,000 Properties</td>
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</tbody>
</table>

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#### Notes

- * denotes charge is at full rate or charge range is at full rate
- ** denotes charge is at half rate or charge range is at half rate
- N denotes not applicable or charge is not applicable

---

#### Appendices

- **Appendix A - Water Supply - Residential Charges, Bills, Cost Recovery**
- **Appendix B - Water Supply - Non-Residential Charges, Bills, Cost Recovery**
- **Appendix C - Water Supply - Comprehensive Charges, Bills, Cost Recovery**
- **Appendix D - Water Supply - Water Quality and Environmental Charges, Bills, Cost Recovery**
- **Appendix E - Water Supply - Residential Charges, Bills, Cost Recovery**

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#### References

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#### Additional Information

- **Water Supply**
- **Residential**
- **Bills**
- **Cost Recovery**
- **EWR (Water Supply)**
- **Usage Charges**
- **Annual Revenue from Water Supplied**
- **Medians** (of LWUs based) for 3,000 to 10,000 Properties
- **Rows** (of LWUs based) for 1,500 to 3,000 Properties

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#### Key Points

- Residential charges and bills are calculated based on usage, with fixed charges and step charges applied.
- The typical developer charge is based on the amount of water supplied.
- The typical residential bill is calculated using the operating cost and the developer charge.
- Return on assets, EWR (Water Supply), and usage charges are provided for each water utility.
- Annual revenue from water supplied is calculated for each LWU.
- Medians are provided for LWUs of 1,500 to 3,000 properties.

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#### Table of Contents

- Water Utility
- LWUs with 1,500 - 3,000 Properties
- Medians (of LWUs based) for 3,000 to 10,000 Properties
- Medians (of LWUs based) for 1,500 to 3,000 Properties
## Appendix E - Water Supply - Residential Charges, Bills, Cost Recovery

### Water Utility

<table>
<thead>
<tr>
<th>Usage (for Step 1 and Step 2)</th>
<th>Operating Cost (OMA)</th>
<th>Typical Developer Charge</th>
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### Billing Area Guidelines

- Usage Charge (for Step 1 and Step 2)
- Typical Developer Charge

| Typical Residential Water Supply based on average usage from Note 11.
| Typical Residential Water Supply based on average usage from Note 11.

### Notes:

1. **Residential Revenue from Usage Charges**: Where this is marked *, it has been calculated from the projected typical residential bill for the 2009/10 financial year as this provides a higher value than the current year.

2. **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 12 on page 24).

3. **Average Annual Residential Water Supplied**: 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.

4. **Full Cost Recovery**: 4 LWUs did not achieve full cost recovery (shown as "N").

5. **Average Annual Residential Water Supplied**: 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.
## Appendix F - Sewerage - Residential Charges, Bills, Cost Recovery

### RESIDENTIAL CHARGES (Current & 2009/10)

| WATER UTILITY | Fixed Charge (or Minimum) | Operating Cost (OMA) | Access Charge Independent of Land Value ($) | Non-residential Sewer Usage Charge (Nil if in SDP) ($) | Trade Waste Usage Charge c/vL | Complying Liquid Waste Fees and Charges (%) | Non-Res & Trade Waste Charges (% of Annual rates & Charges) | Non-Res & Trade Waste Volume (% of Sewage Collected) | Typical Developer Charge ($/Equivalent Tenement [ET]) | Economic Real Rate of Return (Bewage) (%) | Return on Assets (%) | Property Value ($/assessment) | Return on Capital | Full Cost Recovery | Recycled Water Usage Charge in place (%) | Linked Properties |
|--------------|---------------------------|----------------------|----------------------------------|-----------------------------------------------|-----------------------------|----------------------------------|------------------------------------------------|------------------------------------------------|-----------------------------------|----------------------|----------------|-----------------------------|----------------|----------------|-------------------------------------|----------------|----------------|
| Sydney Water | 408 480 501 | 65 | Y Y | 137 142 | Y Y | 4,740 4,740 | 1.9 1.2 | 0.9 | 1,707,000 | 1,5 2.3 | 2.0 | 1,707,000 | 1,5 2.3 | 2.0 | 1,707,000 | 1,5 2.3 | 2.0 | 1,707,000 |
| Hunter Water | 303 362 462 | 61 | Y Y | 46 62 | Y Y | 3,000 3,000 | 1.9 1.2 | 0.9 | 1,707,000 | 1,5 2.3 | 2.0 | 1,707,000 | 1,5 2.3 | 2.0 | 1,707,000 | 1,5 2.3 | 2.0 | 1,707,000 |

### BILLS

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<th>Water Utility</th>
<th>Property Value ($/Equivalent Tenement [ET])</th>
<th>Economic Real Rate of Return (Bewage) (%)</th>
<th>Return on Assets (%)</th>
<th>Property Value ($/assessment)</th>
<th>Return on Capital</th>
<th>Full Cost Recovery</th>
<th>Recycled Water Usage Charge in place (%)</th>
<th>Linked Properties</th>
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<td>Sydney Water</td>
<td>1.9 1.2</td>
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<td>1,707,000</td>
<td>1,5 2.3</td>
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### COST RECOVERY

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<th>Full Cost Recovery</th>
<th>Recycled Water Usage Charge in place (%)</th>
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### LWA's with > 10,000 Properties

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### LWA's with 1,001 - 3,000 Properties

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<th>Property Value ($/assessment)</th>
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<th>Full Cost Recovery</th>
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<td>1,5 2.3</td>
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### Linked Properties

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2008-09 NSW Performance Monitoring Report | NSW Office of Water
### Appendix F - Sewerage - Residential Charges, Bills, Cost Recovery

#### RESIDENTIAL CHARGES (Current & 2009/10)

<table>
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<th>WATER UTILITY</th>
<th>Fixed Charge (or Minimum)</th>
<th>Operating Cost (O&amp;M)</th>
<th>Access Charge (independent of Land Value)</th>
<th>Non-residential sewer usage charge (NSU)</th>
<th>Trade Waste Usage Charge</th>
<th>Complying liquid trade waste fees &amp; charges*</th>
<th>Non-residential &amp; trade waste charges (% of annual rates &amp; charges)</th>
<th>Non-residential &amp; trade waste charges (% of Sewerage Collected)</th>
<th>Typical Developer Charge</th>
<th>Typical Residential Bill</th>
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#### BILLS

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#### Connected Properties

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<tr>
<td>18 out of 28 have non-res sewer usage charges</td>
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<tr>
<td>2,750</td>
</tr>
<tr>
<td>(8)</td>
</tr>
<tr>
<td>(10)</td>
</tr>
<tr>
<td>(11a)</td>
</tr>
<tr>
<td>(11b)</td>
</tr>
<tr>
<td>(12) CS</td>
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<tr>
<td>(13a)</td>
</tr>
<tr>
<td>(13b)</td>
</tr>
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<td>(11) CS</td>
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</table>

#### Median (of LWUs with basin full suppliers) for 3,000 to 10,000 Properties

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<th>Median (of LWUs with basin full suppliers) for 3,000 to 10,000 Properties</th>
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<tbody>
<tr>
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#### Median (of LWUs with basin full suppliers) for 3,000 to 10,000 Properties

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<td>(10)</td>
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<td>(11a)</td>
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#### 2008-09 NSW Performance Monitoring Report | NSW Office of Water
## Appendix F - Sewerage - Residential Charges, Bills, Cost Recovery

### Table: Residential Charges (Current & 2009/10)

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### Table: Bills

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### Table: Cost Recovery

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### Notes:
1. 70 LWUs have non-residential sewerage charges which satisfy with the Best Practice Management Guidelines (Table C, page 61) and 69 LWUs have complying trade waste fees and charges.
2. Full Cost Recovery for sewerage has been achieved by 97 utilities (99%). These comprised the 70 utilities which had either an Economic Real Rate of Return or Return on Assets of >=0 for the 2008/09 financial year, shown as “Y” in col(11a).
3. In addition they include the 24 utilities which have significantly increased their 2009/10 charges in order to recover all their costs which are shown as “Y*”. A total of 3 LWUs did not achieve full cost recovery (shown as “Y”).
4. * in column (1) indicates that this LWU has a residential sewer usage charge as follows; Byron 128 c/kL, Snowy River 100 c/kL, and Cabonne 120 c/kL.