

NSW



LAND & WATER  
CONSERVATION



LOCAL GOVERNMENT &  
SHIRES ASSOCIATIONS OF NSW

2000/01  
NSW Water Supply  
and Sewerage

*Performance  
Comparisons*



**2000/01 NSW WATER SUPPLY AND SEWERAGE**

**PERFORMANCE COMPARISONS**

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# FOREWORD

The NSW Government promotes continuous improvement of water utilities with the aim of improving the quality and efficiency of services to all residents. To facilitate continuous improvement, it provides comparative information which can be used by organisations to benchmark their performance against other similar organisations. As part of this aim, the Minister for Land and Water Conservation provides copies of this NSW Annual Water Supply and Sewerage Performance Comparisons report to all 127 NSW water utilities. The report has been produced since 1986 and summarises the performance of these utilities for the last 6 years. It has been prepared by the Town Water Treatment and Recycling Branch of the Department of Land and Water Conservation.

The performance comparisons provide information to everyone with an interest in the performance of NSW water utilities (eg. management, customers, regulators and other utilities). In particular, they enable each utility to compare both trends in its performance indicators and its relative performance. Utilities can thus identify and rectify any areas of under-performance. Table 1 (Water Supply) and Table 2 (Sewerage) on pages xxvi and xxvii facilitate yardstick comparisons by showing the top 20%, Statewide median and the lower 20% for each NSW performance indicator.

To provide a balanced view of the long-term sustainability of NSW water utilities, a Triple Bottom Line (TBL) accounting focus has been adopted, with performance reported on the basis of social, environmental and economic performance indicators. In addition, the large utilities (over 10,000 assessments) have reported their performance for a range of new social and environmental indicators.

Comparison of reported performance should take account of the wide range of factors which can impact on a water utility's performance and on the typical residential bill, which is the annual bill paid by a typical residential customer and is the principal indicator of the overall cost of a water supply or sewerage system. Such factors can produce a fundamental difference in performance. For example, in the case of water supply, a utility which provides the full water supply system will perform differently to one which only provides components of the system (eg. reticulation or bulk supply). Each water utility can improve its performance by taking account of such factors and comparing its performance with utilities having similar characteristics.

Performance comparisons and benchmarking are required under National Competition Policy, are important for public accountability to the community and have been strongly endorsed by the Independent Pricing and Regulatory Tribunal<sup>1</sup>. The NSW Performance Comparisons also provide valuable data for determining the present position and assessing future water supply and sewerage needs for non-metropolitan NSW. This ensures an appropriate focus and targeting of programs to assist the NSW utilities.

The Department of Land and Water Conservation/Local Government and Shires Associations (DLWC/LGSA) syndicate benchmarking pilot project on water supply and sewerage by a group of 7 large NSW councils has resulted in Council strategies for significant cost savings and indicates that such process benchmarking should be highly cost-effective for all non-metropolitan councils. The report therefore provides current disaggregated cost data to facilitate such benchmarking.

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<sup>1</sup> Pricing Principles for Local Water Authorities, Independent Pricing and Regulatory Tribunal, NSW, September 1996

## **ACKNOWLEDGMENTS**

The strong and continuing support of the Local Government and Shires Associations for the NSW annual water supply and sewerage performance reporting system since its commencement in 1986 is acknowledged.

As the success of the NSW performance reporting system is contingent on full participation by all NSW councils, the continuing participation of each council in the reporting system and each council's significant efforts in providing current, accurate and timely data on its performance are particularly acknowledged.

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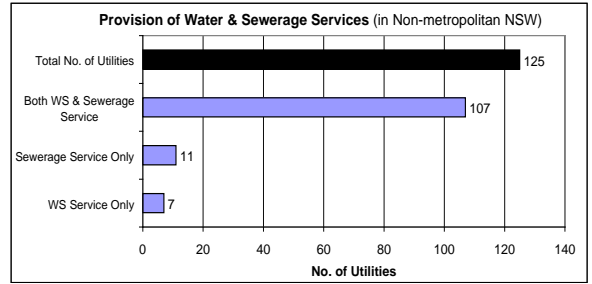
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# EXECUTIVE SUMMARY

## Utility Characteristics

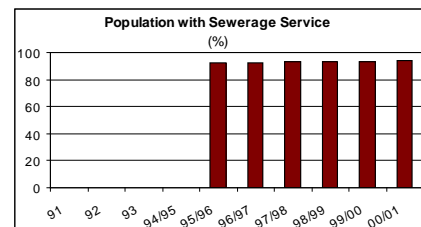
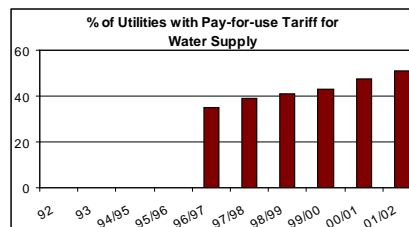
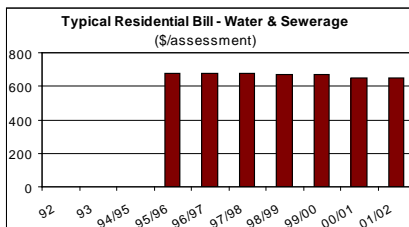
1.7 million people were provided with a reticulated water supply in non-metropolitan NSW (ie. excluding Sydney and Hunter Water Corporations) in 2000/01. The number of water supply assessments was 725,000 and the total water consumption was 338,000 ML. 125 water utilities provided water supply and sewerage services.

The total turnover for the 125 utilities was \$690M and the current replacement cost of their water supply and sewerage assets was \$9,400M. 43 of these utilities (34%) were Category 1 businesses under National Competition Policy, having an annual turnover of over \$2M for their water supply or sewerage businesses.



To provide a balanced view of the long-term sustainability of the NSW water utilities, a Triple Bottom Line (TBL) accounting focus has been adopted, with performance reported on the basis of **Social, Environmental and Economic** performance indicators.

## Social Indicators (Charges/Bills, Health, Levels of Service)

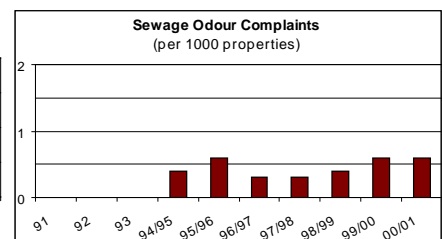
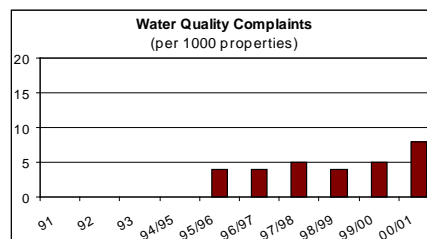
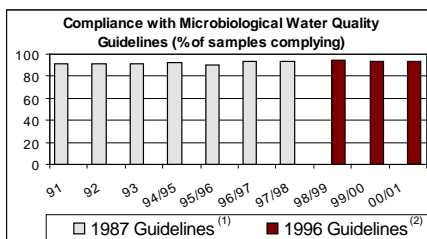


**Typical residential bill** – \$650/assessment for water supply and sewerage in 2001/02. This has remained relatively constant in current dollars over the last 6 years. The typical residential bill for water supply has risen slightly to \$310 while the sewerage bill has fallen slightly to \$335.

**Pay-for-use water supply tariff** – 57 utilities (51%) had a two-part tariff (with an access charge and a usage charge for all water usage); or an inclining block tariff in July 2001. These utilities complied with the Independent Pricing and Regulatory Tribunal's (IPART) Pricing Principles for Local Water Authorities and with the Council of Australian Governments' (COAG) Strategic Framework for Water Reform.

**Tariffs and Business Plans** – 96 utilities (83%) had residential water supply tariffs independent of land value, and 85 utilities (72%) had residential sewerage tariffs independent of land value. 49 water utilities (39%) have completed Strategic Business Plans and have demonstrated long-term financial sustainability of their water supply and sewerage businesses to comply with National Competition Policy. A further 49 utilities (39%) have prepared draft Strategic Business Plans for these businesses.

**Population with Sewerage Service** – 93.7% of the non-metropolitan urban population (ie. 1,580,000 persons) received a reticulated sewerage service in 2000/01. This has increased from 92.3% over the last 6 years.



**Drinking Water quality** – Microbiological water quality compliance for faecal coliforms (health related) and total coliforms was 97% and 93% respectively on the basis of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines. Physical and chemical compliance was 96% and 97% of samples tested respectively. Over the last 6 years compliance ranged from 90% to 95% for microbiological, and from 91% to 96% for physical and chemical.

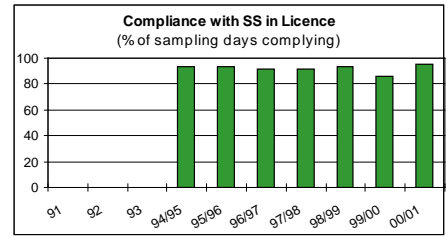
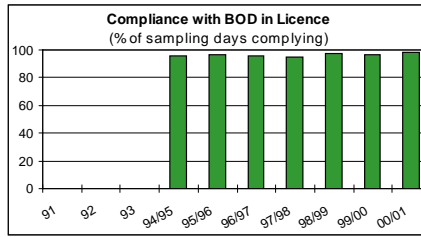
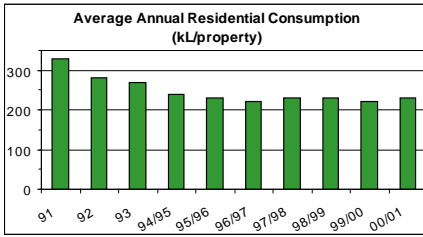
**Water quality complaints and water service complaints** – 8 and 9 per 1000 properties. Service complaints have increased from 7 to 9 over the last 6 years. Water quality complaints have increased from 4 to 8 and over the last 6 years. This does not reflect a deterioration in water quality, which is improving due to the commissioning of new water treatment facilities, but rather greater reporting by the utilities and increasing community awareness of water quality issues.

**Sewage odour complaints and sewerage service complaints** – 0.6 and 11 per 1000 properties. Odour complaints have remained fairly constant and service complaints have fallen from 20 to 11 over the last 6 years.

(1) 1987 NHMRC/AWRC Drinking Water Quality Guidelines

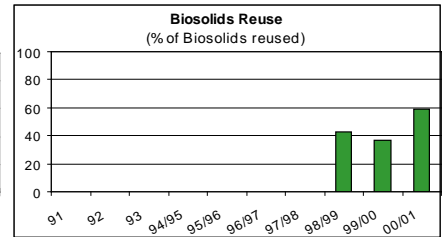
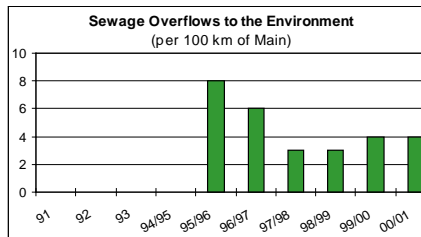
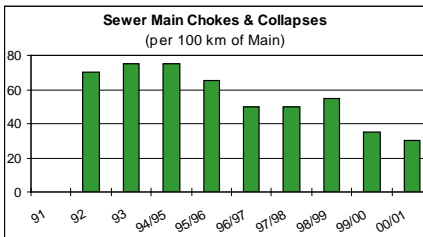
(2) 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines

## Environmental Indicators



**Average Annual Residential Consumption** – 230 kL/property. Average annual residential consumption has fallen from 330 kL to 230 kL over the last 10 years due to introduction of pay-for-use water pricing and customer education in efficient water use.

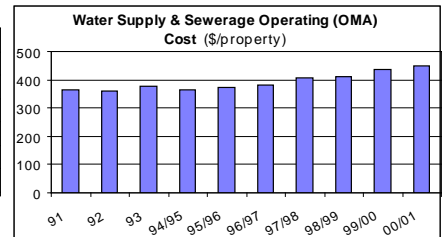
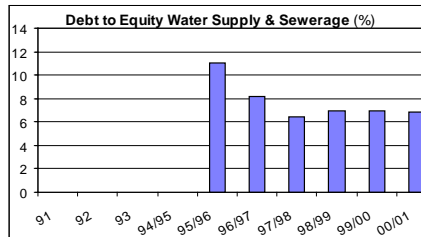
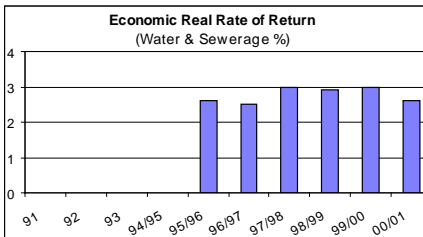
**Sewage Effluent Quality** – 98% of the sampling days complied with the 90-percentile limits of the EPA licences for Biochemical Oxygen Demand (BOD) and 95% of the sampling days complied for Suspended Solids (SS). Compliance over the last 6 years has ranged from 95% to 98% for BOD and from 86% to 95% for SS.



**Sewer main chokes and collapses and sewer overflows to the environment** – 30 and 4 per 100 km of main. These have fallen from 75 to 30 and 8 to 4 respectively over the last 6 years.

**Biosolids Reuse** – in total, 59% of the biosolids produced was reused in 2000/01. This has increased from 43% in 1998/99.

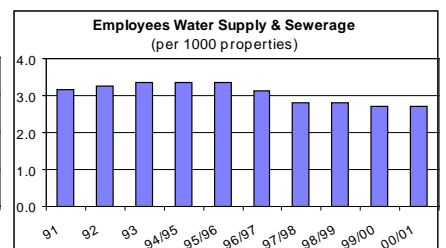
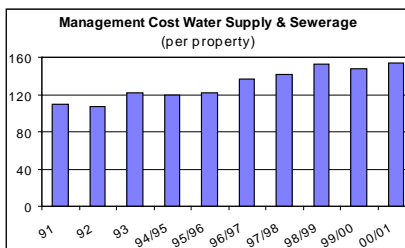
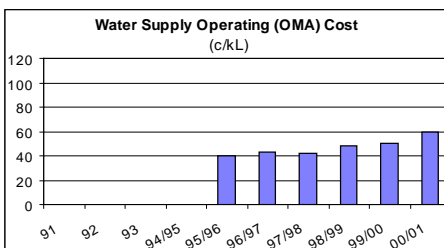
## Economic Indicators (Financial, Efficiency)



**Economic real rate of return** – 2.6% for water supply and sewerage. 83 utilities (66%) had a positive real rate of return. The real rate of return has been maintained between 2.5 and 3.0% over the last 6 years.

**Debt/equity** – 7% for water supply and sewerage, falling from 11% over the last 7 years.

**Operating cost (OMA - operation, maintenance and administration)** - \$450/property for water supply and sewerage. The OMA cost per property has increased from \$360 to \$450 (Jan 2001\$) over the last 10 years, largely due to more stringent standards for sewage treatment and higher management costs.



**Water Supply Operating Cost** was 59c/kL (Jan 2001\$). This has risen from 40 c/kL in the last 6 years largely due to higher management costs and reduced water consumption per property.

**Sewerage operating cost** was 82 c/kL (Jan 2001\$).

**Management cost** – \$155/property for water supply and sewerage. The management cost per property has increased from \$108 to \$155 (Jan 2001\$) over the last 10 years.

**Number of employees** – 2.6 per 1000 properties for water supply and sewerage. This has fallen from a maximum of 3.3 over the last 10 years. The number of employees per 1000 properties for water supply has fallen from a maximum of 1.7 to 1.3 and for sewerage has fallen from a maximum of 1.8 to 1.4.

# SUMMARY OF RESULTS

## 1 OVERVIEW

To provide a balanced view of the long-term sustainability of NSW water utilities, a Triple Bottom Line (TBL) accounting focus has been adopted, with performance reported on the basis of social, environmental and economic performance indicators. The reported performance indicators have been grouped under the following categories:

- Utility Characteristics
- Social (Charges/Bills, Health, Levels of Service)
- Environmental
- Economic (Financial, Efficiency)

To improve the coverage of social and environmental issues, the larger utilities (over 10,000 assessments) have reported their performance for an additional 22 social and environmental performance indicators (refer to Figures 25A, 40A, 68A, 96A and Appendix C – indicators 11, 23 to 26 and 38 to 43 for Water Supply and indicators 9, 17 to 20, 32 and 38 to 42 for Sewerage). All utilities will be asked to report on these indicators in 2001/02.

The performance indicators have been prepared for each utility's aggregated water supply businesses and aggregated sewerage businesses, rather than for individual water supply and sewerage systems to facilitate comparisons.

Statewide performance indicators are reported in the Summary. These have been calculated on a '*percentage of connected properties basis*' as this best indicates Statewide performance by giving due weight to larger utilities and reducing the effect of smaller utilities on Statewide performance.

Table 5 on page xxxii shows the key water supply and sewerage performance indicators for each of the 127 NSW water utilities to provide an overview of each utility's performance.

Most of the figures in this report show the results for each water utility for each of the last 6 years to enable review of trends and to facilitate benchmarking and 'yardstick' comparisons. These figures have been arranged into the following 4 size ranges to enable each utility to compare its performance against similar sized utilities (eg. Figure 22 on page 72):

- Over 10,000 connected properties,
- 2,001 to 10,000 connected properties,
- 801 to 2,000 connected properties, and
- 200 to 800 connected properties.

Tables 6 to 12 on pages 5 to 41 show key data for each utility's water supply and sewerage businesses over the last 4 years:

- Table 6 2000/01 Water Consumptions in Non-Metropolitan NSW
- Table 6A 2000/01 Non-Metropolitan Water Consumptions from Source Catchments
- Table 7 Water Supply – Utility Characteristics, Financial
- Table 8 Water Supply – Residential Charges, Bills
- Table 8A Water Supply – 2001/02 Residential Inclining Block or Multiple Tariffs
- Table 8B Water Supply – 2001/02 Non-Residential Tariffs
- Table 9 Water Supply – Health, Levels of Service, Efficiency
- Table 10 Sewerage – Utility Characteristics, Financial
- Table 11 Sewerage – Residential Charges, Bills
- Table 11A Sewerage – 2001/02 Residential Multiple Tariffs
- Table 11B Sewerage – 2001/02 Non-Residential Tariffs

- Table 12 Sewerage – Environmental, Levels of Service, Efficiency

Draft Tables 5 to 12 and Appendices D1 and D2 were circulated to each council's water supply and sewerage manager for review. Any corrections advised have been incorporated in this report.

These tables can be used to view trends and compare key performance indicators for all utilities. This allows each council to review its performance against utilities with similar businesses. Council can then improve its performance by appropriate benchmarking (refer page xxiii).

## 2 STATEWIDE PERFORMANCE

### Top 20% of Performance

Non-metropolitan NSW performance indicators for the top 20% of performance, Statewide median values and the bottom 20%, calculated on a percentage of connected properties basis are shown on Table 1 (Water Supply, page xxvi), Table 2 (Sewerage, page xxvii).

To facilitate comparisons with other forms of reporting, Table 3 on page xxviii shows the top 20%, median values, and the bottom 20% for 14 key performance indicators for percentage of connected properties; percentage of population; and percentage of councils bases for non-metropolitan NSW.

### Trends in Statewide Performance

Trends in Statewide performance over the period 1991 to 2000/01 are shown in Table 4 on page xxx for 13 key performance indicators.

Table 4 shows that over the last 10 years:

- *Water Consumption* – Average annual residential water consumption per connected property has fallen from 330 kL/a to 230 kL/a.
- *Typical residential bill 2000/01* – The typical residential bill for water supply and sewerage has remained at about \$650/assessment in current dollars (Table 5).
- *Average residential bill per connected property* has increased slightly to \$325 for water supply and decreased slightly to \$335 for sewerage (Jan 2001\$).
- *Microbiological* - 97% of the samples tested in 2000/01 contained no faecal coliforms. Microbiological compliance with the 1996 Australian Drinking Water Guidelines was 90% to 95% of samples over the last 6 years.
- *Water quality complaints* have increased slightly to 8, water service complaints have increased from 7 to 9 per 1000 connected properties over the last 6 years.
- *Sewage odour complaints* have remained at 0.6, sewerage service complaints have fallen from 20 to 11 per 1000 connected properties over the last 6 years.
- *Biochemical Oxygen Demand (BOD)* - 98% of the sampling days complied with the 90-percentile limits of the EPA licences for BOD. Compliance over the last 6 years ranged from 95% to 98%.
- *Sewer main chokes and collapses* and *sewer overflows to the environment* have fallen from 75 to 30 and 7 to 4 per 100 km of main respectively over the last 6 years.
- *Debt/equity* has fallen from 11% to 7% for water supply & sewerage over the last 6 years.
- *Economic real rate of return* - This has remained steady at about 2.6% for water supply and sewerage over the last 6 years.
- *Operating (OMA) cost* per connected property has increased slightly to \$200 for water supply and \$225 for sewerage (Jan 2001\$) due to more stringent standards for sewage treatment and to increasing management costs.
- *Management cost* per connected property has increased from \$55 to \$80 for water supply and from \$53 to \$75 for sewerage (Jan 2001\$).

- *Number of employees (per 1000 connected properties)* – 2.6 for water supply and sewerage, a reduction of 20% over the last 10 years. The number of employees for water supply has fallen from a maximum of 1.7 to 1.3 and for sewerage has fallen from 1.8 to 1.4.

## Interstate Comparisons

To provide an overall assessment of the performance of NSW non-metropolitan utilities in providing water supply and sewerage, the results of the Australian Urban Water Industry 2001 WSAF Facts are shown in Appendix A. The NSW annual operating cost (OMA\*) for water supply is \$202 per connected property, which is lower than Sydney Water and also significantly lower than Victorian country utilities. The operating cost (OMA) for sewerage is \$228 per connected property, which is similar to Sydney Water and other Australian utilities. The economic real rate of return for water supply and sewerage is 2.6% which is slightly lower than Sydney Water and Hunter Water.

The compliance with microbiological water quality guidelines and the water main breaks per 100 km of main in non-metropolitan NSW are similar to the median for Australian capital city utilities and are significantly better than Victoria. Although all sewage treatment works in non-metropolitan NSW provide at least secondary treatment, Sydney Water provides secondary treatment for only 20% of its sewage.

## 3 STATEWIDE MEDIAN PERFORMANCE INDICATORS

The 2000/01 Statewide median performance indicators for the non-metropolitan NSW water utilities have been calculated on a *percentage of connected properties basis*, as shown in Tables 1 and 2 on pages xxvi and xxvii and summarised below. For brevity in this report, these are usually referred to as ‘per property’.

### UTILITY CHARACTERISTICS

#### Population Served (Figures 16, 68)

- 75% of water councils and 80% of sewerage councils serve a population of under 20 000.
- 45% of water councils and 55% of sewerage councils serve a population of under 5 000.
- 20% of water councils and 25% of sewerage councils serve a population of under 2 000.

#### New Residential Dwellings (Figures 17, 70)

Median new residential dwellings as a percent of the existing residential properties was:

- 1.0% connected to water supply
- 1.4% connected to sewerage

#### Properties Served per km of Main (Figures 18, 71, Tables 7, 10)

The median number of properties served per km of main was:

- 33 for water supply
- 40 for sewerage

#### Rainfall (Figure 15)

The rainfall for 2000/01 as a percentage of average annual rainfall is shown together with the average annual rainfall and the average maximum temperature for the year. This figure shows that 2000/01 was a relatively wet year with 66% of water utilities receiving above average rainfalls. Carrathool (135%), Gloucester, Tumbarumba, Bellingen, Murrurundi, Narrabri, Warren, Cobar and Bogan (190%) received over 135% of their average rainfall. Eurobodalla (74%), Barrabra, Oberon, Ballina, Wyong and Shoalhaven (66%) received under 75% of their average rainfall.

\* OMA – operation, maintenance and administration

## Employees (Figures 25, 73)

The median number of employees per 1000 connected properties was:

- 1.3 for water supply and
- 1.4 for sewerage.

## SOCIAL - CHARGES/BILLS

### Water Usage Charge (Figure 2, Table 8)

- The median water usage charge was 65c/kL.

20% of councils had a water usage charge of over 80c/kL, and 80% of councils had a charge of over 50c/kL. The water usage charge should be based on the long-run marginal cost<sup>2</sup> which is typically 80c to \$1.20 per kL for non-metropolitan NSW. The median water supply operating cost was 59c/kL (Table 1, Table 9, Figure 56).

### Sewer Usage Charge (Table 11B)

Only 10% of councils had a sewer usage charge for non-residential customers. All councils should set a non-residential sewer usage charge based on the long-run marginal cost<sup>2</sup> which is typically 80c to \$1.50 per kL for non-metropolitan NSW. The median sewerage operating cost was 82 c/kL (Table 2, Table 12, Figure 106).

### Annual Water Allowance (Figure 2, Table 8)

The median annual water allowance was 0 kL. 51% of councils responsible for reticulating water supply had a two-part tariff or an inclining block tariff. Such tariffs have no water allowance and comply with the IPART Pricing Principles and COAG requirements. *All councils which still have a water allowance should use the software and guidelines discussed on page xviii to develop an appropriate pay-for-use tariff.*

### Access Charge (Figure 2, 5, Table 8, 11)

The median residential access charge per assessment was:

- \$195 for water supply and
- \$345 for sewerage.

### Developer Charges (Figures 1, 4, 6, Tables 5, 8, 11)

The median typical developer charge was:

- \$2300 per equivalent tenement (ET) for water supply and
- \$1800 per ET for sewerage.

### Trade Waste Charges - (Table 11)

Columns (10b) and (10c) of Table 11 show the non-residential sewerage and trade waste charges as a percentage of the total annual rates and charges revenue and the volume of trade waste as a percentage of sewage collected. 70% of councils do not yet have trade waste fees and charges. As indicated on page xix all councils should levy appropriate non-residential sewerage charges and trade waste fees and charges for all liquid trade waste dischargers into the council's sewerage system, including commercial properties. *DLWC has developed software and guidelines to assist councils in developing appropriate water supply and sewerage tariffs and trade waste fees and charges. This software is available from DLWC as indicated on page xviii.*

### Typical Residential Bill (Figures 3, 5, 7, Tables 5, 8, 11)

The median 2001/02 typical residential bill per assessment was:

- \$310 for water supply and
- \$335 for sewerage.

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<sup>2</sup> Wise Water Management – A Demand Management Manual for Water Utilities, Water Services Association of Australia, November 1998



Average Residential Bill (Figures 8, 26, 80, Tables 8, 11)

The median 2000/01 average residential bill per connected property was:

- \$325 for water supply and
- \$335 for sewerage.

## SOCIAL - HEALTH

Unserviced Urban Population (Figures 35, 68)

Median urban population without a reticulated service:

- water supply is 0.7 % of the existing population
- sewerage service is 2.7 % of the existing population.

In total, 1.7 million people were provided with a reticulated water supply in non-metropolitan NSW. 1.58 million people were provided with reticulated sewerage (93.7 % of the urban population).

For water utilities with a number of separate water supply or sewage treatment works, the 2000/01 compliance with drinking water quality guidelines and EPA licence conditions have been pro-rated based on the number of samples tested for each treatment works (refer final pages of Appendix B).

Compliance with Drinking Water Quality Guidelines (Figures 36 to 40, Tables 5, 9)

- *Microbiological water quality* - 97% of the 16,500 faecal coliform samples tested and 93% of the 16,300 total coliform samples tested complied with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines, and
- *Physical & Chemical* - 96% of the 22,000 physical samples tested and 97% of the 20,700 chemical samples tested complied with the guidelines.

Over the last 6 years, microbiological compliance ranged from 90% to 95% and physical and chemical compliance ranged from 91% to 96%.

57% of non-metropolitan NSW water utilities complied with the microbiological water quality guidelines for faecal coliforms. 50% of utilities complied with physical water quality guidelines and 50% with chemical water quality guidelines. 17% of utilities did not report on this important item. *All utilities, including those only responsible for reticulation should carry out the necessary water quality sampling and report thereon in future.*

Chlorination System Malfunction - (Figure 52)

The chlorination system failed to operate on at least one (1) day in 2000/01 for 12% of utilities. 4% of utilities reported failure of the chlorination system for over 3 days in 2000/01.

## SOCIAL - LEVELS OF SERVICE

Customer Complaints (Figures 43 to 45, 97 to 99, Tables 9, 12)

The median for complaints per 1000 connected properties was 8 for water quality and 0.6 for sewage odour. *Utilities unable to report on customer complaints should institute a system to record and report complaints. Utilities with high levels of complaints should examine their operations.*

Customer Interruption Frequency (Figures 46, 100)

The median customer interruption frequency was 20 per 1000 connected properties for water supply and 2 per 1000 connected properties for sewerage.

During 2000/01, only 9 utilities needed to apply *water restrictions*. No NSW utilities had restrictions in place for over 50% of the time in 2000/01 (Figure 51).

## ENVIRONMENTAL

Average Annual Residential Consumption (Figure 20, Table 7)

The median average annual residential water consumption was 230 kL/connected property.

### Consumption by Sector (Tables 6 and 6A)

Annual water consumption by sector (residential, industrial, commercial, other) is shown on Table 6. Table 6A shows the consumption per source catchment.

### Recycled Water (Figure 92, 93, Table 6)

Re-use of recycled water was carried out by 49% of utilities, mostly for agriculture. In total, for all treatment works, about 13% of effluent was recycled. Orange council sold 2,650 ML of recycled water to mining companies. 19 utilities recycled over 50% of their effluent.

### Compliance with EPA Licence Conditions - (Figures 83 to 87, Tables 5, 12)

- **BOD** - 98% of the 6,400 sampling days complied with the 90-percentile limits of the Environment Protection Authority (EPA) licences for Biochemical Oxygen Demand (BOD), and
- **SS** - 95% of the 6,400 sampling days complied for Suspended Solids (SS).

Compliance over the last 6 years has ranged from 95% to 98% for BOD and 86% to 95% for SS.

52% of the non-metropolitan NSW water utilities complied with their BOD licence limits. 37% complied with their SS licence limits. The major cause of non-compliance was due to the growth of algae in maturation ponds, being measured as BOD and SS. Most treatment works in non-metropolitan NSW have maturation ponds due to previous EPA preference for ponding over chlorination. Negotiations with the EPA to develop an appropriate licensing 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 as an alternative to maturation ponds to overcome this problem. 8% of utilities did not report on their BOD and SS compliance. *All utilities with an EPA discharge licence should carry out the necessary sampling of effluent quality and report thereon in future.*

### Sewer Main Chokes and Collapses (Figure 88, 89, Table 12)

The Statewide median was 30 sewer main chokes and collapses per 100 km of sewer mains. 12% of utilities did not report this item. *These utilities should institute a system to record and report thereon in future.*

### Sewer Overflows to the Environment (Figure 90, Table 12)

The Statewide median was 4 sewer overflows to the environment per 100 km of sewer mains. Some 24 % of utilities reported no sewer overflows. 34% of utilities did not report on this item. *These utilities should institute a system to record and report thereon in future.*

### Trade Waste (Figure 74)

Details of trade waste discharges to sewerage systems are shown on Figure 74.

### Energy Consumption (Figures 24, 25, 95, 96)

Only 50% of utilities reported on their energy consumption. *All utilities should report on this item.*

## ECONOMIC - FINANCIAL

### Turnover (revenue less grants for capital works) (Figures 10, 14, 29, 34, 77, 82 Tables 5, 7, 10)

The total turnover was \$373M for water supply and \$316M for sewerage.

### Economic Real Rate of Return (Figures 11, 30, 78, Tables 5, 7, 10)

The median economic real rate of return was:

- 2.6% for water supply and
- 2.6% for sewerage.

### Operating Sales Margin (Figures 12, 31, 79)

The median operating sales margin was 23% for water supply and 9% for sewerage. Many councils had a negative economic real rate of return and operating sales margin for sewerage

(Figures 78 and 79). *These councils should review their strategic business plans and charges to ensure the long-term financial sustainability of their businesses* (refer also to page xvii).

#### Debt to Equity (Figures 13, 32, 80, Tables 5, 7, 10)

The median debt to equity was:

- 3% for water supply and
- 9% for sewerage.

#### Loan Payment (Figures 14, 33, 81)

The median loan payment per connected property was:

- \$50 for water supply and
- \$80 for sewerage.

### **ECONOMIC - EFFICIENCY**

#### Operating Cost (OMA) (Figures 54 to 58, 104 to 108, Tables 5, 9, 12)

The operating cost (OMA - operation, maintenance and administration) was:

- For water supply, \$200 per connected property, \$680,000 per 100km of mains, 59 c/kL.
- For sewerage, \$225 per connected property or \$900,000 per 100 km of mains, 82 c/kL.

*Water utilities with higher operating costs should examine their operations to determine whether they can improve their cost-effectiveness (refer to pages xx to xxii).*

#### Management Cost (Figures 59, 60, 109, 110, Tables 5, 9, 12)

The median management cost per connected property was:

- \$80 for water supply and
- \$75 for sewerage.

*Utilities with higher management costs should examine their operations to determine whether they can improve their cost-effectiveness (refer to page xx).*

#### Treatment Cost (Figures 61, 62, 111, 112)

The median treatment cost per connected property was:

- \$30 for water treatment (only utilities with a water treatment works involving at least filtration and disinfection for over 50% of their supply have been considered) and
- \$60 for sewage treatment (including chemical and energy costs)

#### Pumping Cost (Figures 63, 64, 112, 113)

The median pumping cost per connected property (including energy cost) was:

- \$20 for water supply and
- \$35 for sewerage.

#### Water Main and Sewer Main Cost (Figures 64A, 65, 115,116)

The median water main and sewer main cost per connected property was:

- \$40 for water mains and
- \$27 for sewer mains.

### **APPENDICES D1 AND D2 - PERFORMANCE OF TREATMENT WORKS**

These appendices report the detailed performance for each water and sewage treatment works in non-metropolitan NSW in order to facilitate benchmarking and performance improvement.

# PERFORMANCE REPORTS FOR EACH COUNCIL

In response to the Independent Pricing and Regulatory Tribunal's (IPART) recommendations<sup>1</sup>, DLWC will continue to provide each council and IPART with an annual Performance Report for the council's water supply and sewerage businesses (sample reports in Appendix C). Most of the data in this performance report is based on Tables 5 to 12 which have been reviewed by Council's water supply and sewerage manager. In addition, in response to council requests, each council that has completed a separate performance report for a number of water supply or sewerage systems under its control will be provided with a separate performance report for each system.

The 2000/01 Performance Report indicates the status of Council's strategic business plan and financial plan. Councils which have completed these plans have demonstrated long-term financial sustainability of their water supply and sewerage businesses and comply with National Competition Policy<sup>3,4</sup>. Further information on business planning is provided on the facing page.

The status of Council's compliance with the IPART Pricing Principles can be obtained from Council's 2000/01 Performance Report. Refer to pages xviii to xx which also indicate the recommended action by councils.

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

Councils will appreciate that each of the performance indicators is a "partial" indicator only and therefore cannot be interpreted in isolation. In addition, the rankings are indicative only and do not take account of the wide range of factors which can impact on a council's performance, as discussed in the Foreword and pages xxi and xxii. The aim of ranking each council's performance is to assist the council in identifying areas where its performance appears to be lower than that of similar sized councils. Further suggestions for reviewing Council's performance indicators and comparing them with similar councils and Statewide values are provided in pages xix to xxii.

Council can improve its performance in apparent areas of under-performance by benchmarking<sup>5</sup> its key work processes in these areas with the work processes of 1 or 2 high performing councils having similar characteristics (refer to page xxi) and implementing the best practices thus identified (refer to page xxii).

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<sup>3</sup> NSW Government Policy Statement on the Application of National Competition Policy to Local Government, NSW Government, June 1996

<sup>4</sup> Pricing & Costing for Council Businesses, *A Guide to Competitive Neutrality*, Dept of Local Government, July 1997

<sup>5</sup> Syndicate Benchmarking: Water Supply and Sewerage, Department of Land and Water Conservation, NSW and Local Government and Shires Associations of NSW, June 1997

# WHAT SHOULD COUNCIL DO NOW?

## 1 STRATEGIC BUSINESS PLANS

Council's strategic business plans<sup>6,7</sup> for water supply and sewerage are its principal planning documents for these businesses and will focus Council's attention on identifying appropriate levels of service and developing a cost-effective capital works program and operation and maintenance plans. 39% of councils have completed strategic business plans for their water supply and sewerage businesses (column (20) of Table 5). Those councils have *demonstrated long-term financial sustainability of their water supply and sewerage businesses to comply with National Competition Policy* and now need to annually review the key projections and actions in their strategic plans and annually update their financial plans. The strategic business plans should be updated every 3 years.

A further 39% of councils have prepared draft strategic business plans for these businesses, but further development of the plans is required, including preparing a robust long-term financial plan. These councils should aim to finalise their business plans by June 2003. Regional financial planning workshops using the powerful NSW Financial Planning Model (FINMOD) will continue to be conducted by DLWC to assist each council to finalise its financial plan.

Councils which have not yet prepared a strategic business plan should do so as these plans provide an overarching framework for the council's water supply and sewerage planning. Financial assistance of up to \$10,000 towards the cost of preparation of a council's first strategic business plan for each of water supply and sewerage is available from the Minister for Land and Water Conservation under the Country Towns Water Supply and Sewerage program.

***To comply with National Competition Policy<sup>3,4</sup>, each council needs to prepare a strategic business plan and financial plan to demonstrate the long-term financial sustainability of its water supply and sewerage businesses.*** Such plans are also a pre-requisite for eligibility for financial assistance under the Country Towns Water Supply and Sewerage program. Whilst a positive economic real rate of return (column (15) of Table 5) indicates that a council is recovering the operating cost and current cost depreciation for its businesses, it provides no indication on the financial sustainability of the business as it takes no account of future expenditure requirements nor their impact on the future typical residential bill.

## 2 COMPLIANCE WITH IPART PRICING PRINCIPLES

### 2.1 IPART Pricing Principles

The IPART Pricing Principles for Local Water Authorities<sup>1</sup> are consistent with the Council of Australian Governments' (COAG) Strategic Framework for Water Reform<sup>8</sup> and include:

- (1) *Cost-reflective pricing* of water supply and sewerage services.
- (2) *Use of a two-part tariff or an inclining block tariff* for water supply where this is cost-effective. 51% of the 112 non-metropolitan utilities responsible for reticulating water supply now have such a tariff in place (column (5) of Table 5). A two-part tariff has an access charge and a charge per kL for all water usage. An inclining block tariff has an access charge, a relatively low charge per kL for usage up to say 200 kL/a and a higher charge per kL for greater usage.

<sup>6</sup> Strategic Business Plans for Water Supply and Sewerage: Guidelines for Preparation, Public Works, NSW, Nov 1993

<sup>7</sup> NSW Financial Planning Model: Overview of Financial Planning, How Model Works, User Manual, Department of Land and Water Conservation, NSW (Advance Copy, October 2000)

<sup>8</sup> Strategic Framework for Water Reform: *Communique, Report of the Working Group on Water Resources Policy*, Council of Australian Governments, February 1994

*Non-residential tariffs* for water supply and sewerage are shown in Tables 8B and 11B respectively. In order to be cost-reflective, access charges for both water supply and sewerage should be independent of land value and should be based on the square of the size of the water service connection. AIEW, Bega, Central Tablelands, Eurobodalla, Gosford, Goulburn, Lismore, Singleton, Tamworth, Wingecarribee and Wyong councils have such tariffs in place for water supply. Bega, Eurobodalla, Gosford, MidCoast, Wingecarribee and Wyong have such tariffs in place for sewerage. 66% of councils have uniform access charges for water supply and 17% of councils have access charges based on land value. Both these groups should move to set non-residential access charges on the basis of the square of the service connection size and independently of land value. Non-residential sewer usage charges should reflect the long-run marginal cost as indicated on page xii.

- (3) *The removal of land value* from water supply and sewerage access charges is required to eliminate significant cross-subsidies. 85% of councils have their residential water supply tariff independent of land value and 72% of councils have their residential sewerage tariff independent of land value (columns (6) and (10) of Table 5).
- (4) *Cost-reflective Developer Charges* – Developer charges for water supply and sewerage are shown in Table 5 (column (14)). It is evident that many councils' developer charges are not achieving full cost recovery. *Developer charges guidelines<sup>9</sup> for councils are proposed for release in July 2002; an advance copy is available on request from DLWC (Fax: 9895 5968).*
- (5) *Demand management* - Council should implement cost-effective demand management. Each council's average annual residential consumption per property is shown in Table 5 (col (3)).

The status of Council's compliance with the IPART Pricing Principles can be obtained from Council's 2000/01 Performance Report by reviewing the indicators shown under Social (Charges/Bills). In addition to developer charges, the Report shows the residential tariff structure, indicating whether the access charge is independent of land value and whether a two-part or inclining block tariff has been adopted for water supply. The Report also shows the non-residential tariff which should be independent of land value and should be a two-part tariff for non-residential sewerage. The footnote to the sewerage report provides information on trade waste charges. Average annual residential water consumption is shown under Environmental.

The Minister for Land and Water Conservation has arranged for DLWC to prepare software and guidelines on best practice water supply, sewerage and trade waste pricing. By March 2002, these had been provided to 46 NSW councils. These tools are available on request from DLWC (Fax: 9895 5968). A series of two-day regional workshops for councils on Best Practice Developer Charges and Water Supply, Sewerage and Trade Waste Pricing are proposed from July to October 2002. These include a half-day session on strategic issues to brief councillors and general managers.

## 2.2 Recommended Action

- (1) Councils which have not yet adopted a two-part or an inclining block tariff for water supply should aim to do so by July 2003 where this is cost-effective. However, it is expected that implementation of such a tariff may not be cost-effective for unmetered small towns (with a population of say under 2,000) which are not facing augmentation of the capacity of their water supply. Guidance on implementing such tariffs is provided in the above software and guidelines and in the Water Demand Management Manual<sup>2</sup> provided to Council by the Minister for Land and Water Conservation (Appendices 3.1, 3.2 and 3.3 of the manual).
- (2) Councils which have not yet done so should remove land values from their access charges.

<sup>9</sup> Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, Department of Land and Water Conservation, NSW (Advance Copy, May 2001)

- (3) As recommended in IPART's Pricing Principles<sup>1</sup>, all councils should adopt appropriate two-part tariffs for non-residential sewerage. As for water, for non-residential customers, sewerage access charge should be based on the square of the size of the water service connection and an appropriate sewer usage charge per kL (refer to page xii) should apply for the estimated volume discharged to the sewer. In most cases, the volume discharged to the sewer can be estimated as the metered water volume times a sewer discharge factor. The guidelines include suggested discharge factors.
- (4) All councils should levy appropriate trade waste fees and charges for all liquid trade waste dischargers<sup>1</sup> into the council's sewerage system. Councils should aim to introduce appropriate non-residential sewerage charges and trade waste fees and charges as part of their 2002/03 management plan. Trade waste dischargers<sup>10</sup> include commercial properties such as a baker, butcher, café, chemist, club, doctor, fish shop, florist, grocer, hotel, laundry, motel, photo-lab, restaurant, service station, supermarket, take-away shop, vet.
- The software and guidelines referred to on the facing page will assist council to develop and implement appropriate non-residential water supply, sewerage and trade waste charges.
- (5) Councils should prepare Development Servicing Plans<sup>9</sup> (DSPs) and set cost-reflective developer charges as far as possible. However, if Council elects to set lower charges, the resulting cross-subsidy should be disclosed in the DSP and Council's annual report.
- (6) Councils should implement cost-effective demand management<sup>2</sup>.

### 3 IMPROVING COUNCIL'S PERFORMANCE

Council's overall aim for its water supply and sewerage businesses should be to provide the levels of service negotiated with its community at the lowest sustainable cost ie. after setting cost-reflective developer charges, non-residential charges and trade waste charges, Council should minimise its typical residential bill in current dollars on a sustainable basis.

In practice this means reviewing whether Council's performance indicators under "Health", "Levels of Service" and "Environmental" are satisfactory. If they are not, Council would need to develop options to raise its levels of service and consult its community to establish the option which provides the best value for money. In some cases this may require increased maintenance costs eg. quicker response times to sewer chokes, complaints or repairs of main breaks. However, often it would require investment in capital works eg. providing a new water treatment works, upgrading an existing sewage treatment works or renewing old failing sewer mains.

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 typical residential customer. A critical element in minimising the typical residential bill and providing value for money for the community is to ensure Council's operating cost (OMA) is efficient as indicated in section 3.1 (4) overleaf.

#### 3.1 Performance Review

To assess its performance, Council should:

- (1) *Review its performance indicators* using Council's 2000/01 Performance Report for each of water supply and sewerage (sample reports in Appendix C). As indicated on page xvi, Council's Performance Report provides a ranking of Council's performance relative to similar sized councils (second shaded column) and relative to all councils (third shaded column).

<sup>10</sup> Concurrence Guideline for Liquid Trade Waste Discharges to the Sewerage System, Department of Land and Water Conservation, NSW 2002

- (2) *Identify any trends* in Council's performance indicators over the last 7 years using the second page of Council's 2000/01 Performance Report, and compare Council's performance indicators with the Statewide median values and the top 20% (Appendix C).
- (3) *Compare selected performance indicators* with those of other councils with similar sized water supply or sewerage businesses using the Figures showing performance trends for 4 size of council ranges over the last 6 years (eg. Figure 22). These Figures report the performance of all the 127 NSW water utilities, including Sydney and Hunter Water Corporations, Australian Inland Energy and Water and the Fish River government business enterprise. The values for Sydney and Hunter have been obtained from WSAA Facts 2001<sup>11</sup>.
- (4) *Review Operating Cost* - the *operating cost* (OMA – operation, maintenance and administration) per property *is a prime indicator of the performance of a water utility* and should be reviewed carefully by each utility to ensure it has an efficient operating cost. The components of operating cost are listed below:
  - Management cost,
  - Treatment cost,
  - Pumping cost,
  - Energy cost and
  - Water or Sewer mains cost.

Each of the above components should be examined and compared with those of similar councils, bearing in mind possible economies of scale (refer to section 3.2 (7) on facing page).

- (4a) *Management cost* – this includes administration, engineering and supervision and is a significant proportion of the total operating cost. Council should compare its management cost with similar businesses (section 3.2 (7) and Figures 59, 60, 109, 110).
- (4b) *Treatment cost (water)* – this is dependent on the type and quality of the water source and whether a fully filtered water supply is required. In addition, there are great economies of scale for the operation of water treatment works (ie. facilities involving at least filtration and disinfection) (section 3.2 (7) and Figures 61, 62).
- (4c) *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 (section 3.2 (7), Figures 111, 112).
- (4d) *Pumping cost (water)* – this is dependent on topography and, for water supply, the location of the water source. For example, AIEW 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 for pumping (section 3.2 (7) and Figures 63, 64).
- (4e) *Energy cost* – this is mainly a consequence of pumping requirements and is a component of pumping cost for water supply (Figure 64). Energy cost may be reduced by maximising pumping in off-peak periods or by negotiating a favourable rate from the energy supplier (eg. *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 and significant cost savings may be available by optimising energy use in the treatment process (Figures 113, 114) (eg. *such optimising of energy use has provided annual savings of over \$100,000 for a number of large sewage treatment works*).
- (4f) *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 km of mains (section 3.2 (7) and Figures 64A, 65, 115, 116).

<sup>11</sup> The Australian Urban Water Industry, WSAA Facts 2001, Water Services Association of Australia, 2001



- (5) *Undertake process benchmarking for selected indicators* for areas of apparent under-performance, eg. where Council has a ranking of 3 to 5 relative to councils with similar characteristics (refer to section 3.2 below and section 3.3 overleaf).

### 3.2 Impact of Council's Characteristics

As discussed in the Foreword, a number of factors such as the extent of the services provided by Council, properties served per km of main, climate etc. will impact on the level of Council's performance indicators. Council should take account of these factors by comparing its performance with councils having similar characteristics. For example, in the case of a *water supply* system, Council should take account of factors such as:

- (1) **Properties served per km of main** - geographically dispersed systems have fewer connected properties served per km of main. This tends to increase the typical residential bill and the operating (OMA) cost per property (refer col (3) of Tables 7 and 10, Figures 18 and 71).
- (2) **Whether bulk storage is provided** – utilities providing bulk storage dams and/or long transfer systems from their water sources to the area served will incur significant capital and operating costs for these facilities, resulting in a higher typical residential bill. Such costs would be avoided by utilities relying on groundwater or receiving a regulated supply from a DLWC dam (refer to Note 16 on page 4).
- (3) **Whether supply is filtered** – the need to fully filter a water supply will significantly increase capital and operating costs and the typical residential bill over an unfiltered surface supply or a good quality groundwater (refer to Note 17 on page 4 – councils without '*unfiltered*' or '*groundwater*' after their name have water treatment involving at least filtration and disinfection for over 50% of their water supply). Due to the lack of economies of scale for both the capital cost and the operating cost, the cost of filtration per property is particularly high for small water supply systems.
- (4) **High residential consumption per property** - for utilities with a high residential consumption per property, a high level of annual and peak day water volumes would be delivered to customers. This is likely to result in a relatively high typical residential bill and operating cost per property. Such utilities should examine opportunities for reducing consumption through water demand management and implementation of a two-part or inclining block tariff (refer to col (5) of Table 7, Figure 22 and page xvii).
- (5) **Loan payment per property** - a high value for this item would indicate a relatively high capital cost per property, recent construction of significant capital works or use of short-term loans (refer to Figures 33 and 81).
- (6) **High pumping cost** - this is influenced mainly by topography and geography. A high pumping cost will also increase the typical residential bill and the operating cost per property. As noted in section 3.1 (4e) on the facing page, Council may be able to achieve significant savings in energy cost (refer to Figures 63, 64, 113, 114).
- (7) **Size of Utility** – there are significant economies of scale for some components, particularly the capital cost of most components and the operating cost for treatment and pumping. The tables overleaf highlight the median operating costs for 4 sizes of utilities.

For water utilities which outsource little of their operation, maintenance and administration work, (which is presently the case for the vast majority of NSW utilities), there is a strong correlation between the operating cost (OMA) and the number of employees per 1000 properties. Figures 21 and 73 show the number of employees per 1000 properties. Col (23) of Table 9, col (22) of Table 12, Figures 59, 60, 109, 110 show management cost per property.

**Median Performance Indicators for 4 Sizes of Utilities – Water Supply 2000/01**

<i>Size of Utility</i> <i>Performance Indicator</i>	<i>Over 10,000</i> <i>Connected</i> <i>Properties</i> <i>(24 utilities)</i>	<i>2,001 to 10,000</i> <i>Connected</i> <i>Properties</i> <i>(36 utilities)</i>	<i>801 to 2,000</i> <i>Connected</i> <i>Properties</i> <i>(36 utilities)</i>	<i>200 to 800</i> <i>Connected</i> <i>Properties</i> <i>(18 utilities)</i>
Operating Cost/property (\$)	195	260	280	260
Operating Cost (c/kL)	50	60	55	48
Operating Cost/ 100 km (\$'000)	820	680	540	450
Management Cost/property (\$)	75	85	70	35
Treatment Cost <sup>1</sup> /property (\$)	35	77	90	115
Pumping Cost/property (\$)	20	30	40	73
Energy Cost <sup>2</sup> /property (\$)	14	16	21	25
Water Main Cost/property (\$)	36	44	53	61
No. of Employees/1000 properties	1.2	1.6	2.0	3.2

Notes: 1. Only councils with a treatment works with at least filtration & disinfection for over 50% of supply have been considered.  
2. A component of pumping cost.

**Median Performance Indicators for 4 Sizes of Utilities – Sewerage 2000/01**

<i>Size of Utility</i> <i>Performance Indicator</i>	<i>Over 10,000</i> <i>Connected</i> <i>Properties</i> <i>(17 utilities)</i>	<i>2,001 to 10,000</i> <i>Connected</i> <i>Properties</i> <i>(37 utilities)</i>	<i>801 to 2,000</i> <i>Connected</i> <i>Properties</i> <i>(38 utilities)</i>	<i>200 to 800</i> <i>Connected</i> <i>Properties</i> <i>(26 utilities)</i>
Operating Cost/property (\$)	230	210	210	200
Operating Cost (c/kL)	85	80	80	70
Operating Cost/ 100 km (\$'000)	920	780	590	450
Management Cost/property (\$)	80	70	60	35
Treatment Cost/property (\$)	62	65	80	90
Pumping Cost/property (\$)	40	33	33	35
Energy Cost <sup>1</sup> /property (\$)	20	12	12	13
Sewer Main Cost/property (\$)	26	28	13	15
No. of Employees/1000 properties	1.3	1.5	1.6	2.5

Note: 1. A component of pumping and treatment costs.

Similar considerations to (1), (5), (6) and (7) on the previous page apply to *sewerage*. In addition, a significant cost impactor is whether Council is operating nutrient removal facilities at its treatment works (Figures 85 and 86). In 2000/01, Albury, Bathurst, Bellingen, Cooma-Monaro, Cootamundra, Hastings, Lismore, Murrurundi, Orange, Queanbeyan, Uralla, Wagga Wagga, Wingecarribee and Yarrowlumla councils operated such facilities for over 50% of their treatment works capacity. In addition, significant such nutrient removal was carried out by Byron, Coffs Harbour, Kempsey, MidCoast, Shoalhaven, Tumut and Tweed councils.

### 3.3 Benchmarking

As indicated in page xvi, Council can improve its performance in apparent areas of under-performance by benchmarking<sup>5</sup> its key work processes in these areas with the work processes of 1 or 2 high-performing similar councils and implementing the best practices thus identified.

In addition, Council should undertake “Syndicate Benchmarking” with a group of councils with similar characteristics in order to determine current best practice and to identify existing practices which Council can improve. *The results of the syndicate benchmarking pilot project indicate that such process benchmarking should be highly cost-effective for all NSW councils.* Over 40 NSW councils have advised they wish to proceed with syndicate benchmarking of their water supply and sewerage businesses. DLWC is now working with these councils to facilitate appropriate syndicate benchmarking projects and will disseminate the results.

## 4 REVIEW OF PERFORMANCE - Example SEWERAGE BUSINESS

### EXAMPLE – SHOALHAVEN CITY COUNCIL – 2000/01 TBL SEWERAGE PERFORMANCE REPORT

#### 1. Strategic Business Plans

An example Performance Report is shown overleaf for Shoalhaven City Council which has 10 sewage treatment works. Council has prepared a satisfactory strategic business plan (to be updated after 3 years ie. in 2002/03). Notwithstanding that Council is operating in a sensitive physical environment and facing major capital expenditure over the next few years, Council's financial planning should examine options for effecting a significant reduction to the typical residential bill by implementing the action plan below.

#### 2. Compliance with IPART Pricing Principles

Council has uniform residential annual sewerage charges of \$510/assessment. These are independent of land value (items 10 and 11) – this tariff structure is satisfactory. Council has a two-part tariff for non-residential customers with a uniform access charge of \$510/assessment and a sewer usage charge of 85 c/kL (Footnote 5). However, Council should replace its access charge with one based on the square of the size of the water service connection and should also levy trade waste licence fees and charges (Footnote 6) for all its liquid trade waste dischargers (Council presently has trade waste charges for larger dischargers only). Implementation of such charges should enable a 5% reduction in the typical annual residential bill (refer to Table 12). Council is presently reviewing its developer charges (item 12). Moving to cost-reflective developer charges should enable a further 10% reduction in the typical residential bill.

#### 3. Improving Council's Performance

The volume of sewage treated per property (item 26) was 176 kL/a with a ranking of 1 (1), indicating it is within the top 20% of councils with over 10,000 connected properties (the ranking relative to similar sized utilities is shown first, followed by the ranking relative to all councils within brackets). The final column shows the Statewide median – for item 26 this is 260 kL/a. Effluent recycling (item 27) was low (ranking 4 (4)) however, Council's Regional Effluent Management Scheme will greatly increase effluent recycling. Council had a high level of biosolids reuse (item 28) with a ranking of 2 (2).

Council had 4.8% of its urban properties without reticulated sewerage – item 16 with a ranking of 4(3). However, Council has a major backlog sewerage program to reticulate the unsewered towns in its area. Council had a small number of minor public health incidents (item 17).

The typical residential bill (items 11 and 12) was \$510 with a ranking of 5 (5) and was among the highest 5% in the state (refer to Figure 5 on page 49).

Odour complaints (item 21) were high with a ranking of 4 (4), service complaints (item 22) were low with a ranking of 2 (2), and total days lost (item 25) was high with a ranking of 5 (4).

Compliance with BOD in licence (item 34) was 95% (ranking 4 (4)) and compliance with SS in licence (item 35) was 85% (ranking 5 (5)). Council should review its treatment practices to improve compliance for these two indicators. Council had a number of minor or limited environmental incidents (items 39, 40).

Council's sewer main chokes and collapses (item 36) and sewer overflows to the environment (item 37) were satisfactory with a ranking of 2 (3). Council had a significant capital expenditure on improving environmental performance (item 42).

The economic real rate of return (item 46) was 8.6% with a ranking of 1 (1) and the debt to equity ratio (item 47) was 10% with a ranking of 2 (2).

The operating cost (OMA) per property (item 49) was high (ranking of 4 (5)), indicating it is in the lower 40% of similar sized councils, although Council operates in a sensitive environment and provides nutrient removal from some of its sewage. The operating cost/kL was 147 c/kL – item 50, with a ranking of 5(5). The management cost (item 52) of \$100 per property was high with a ranking of 5 (5).

Pumping costs were also high with a ranking of 4(5). However, treatment, energy and sewer main costs per property were consistent with median costs for similar sized councils. Council should review its operating and management costs relative to councils with similar characteristics (section 3.1(4) on page xx).

#### Performance Trends

The graphs on page 2 of Council's Performance Report show trends in performance over the last 7 years. These graphs indicate a higher than average rate of development (Fig 4), a typical residential bill that is trending higher than the Statewide median (Fig 12) and a high economic rate of return (Fig 46).

BOD and SS compliances (Figs 34, 35) are below the statewide medians. Also the percentage of days lost (Fig 25), operating (Fig 50), management (Fig 52) and pumping costs (Fig 54) were all consistently above the Statewide medians.

#### Action Plan

Council should review its operating and management costs (Fig 50, 52) together with the days lost (Fig 25). Also it should review its treatment practices with a view to improving performance (compliance with BOD, SS and odour). Council should develop a cost-reflective access charge for its non-residential customers and appropriate trade waste fees and charges for all its liquid trade waste dischargers as indicated in 2. above. Council should also move to cost-reflective developer charges. Council should review its financial plan to significantly reduce its typical residential bill by adopting the lowest sustainable 5-year price path (current dollars).

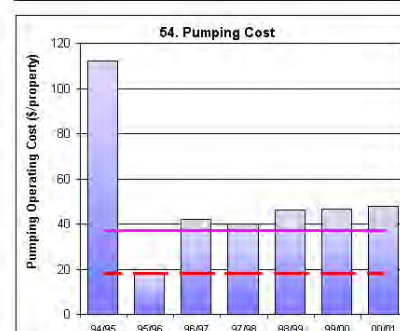
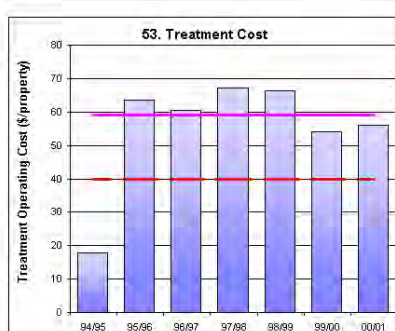
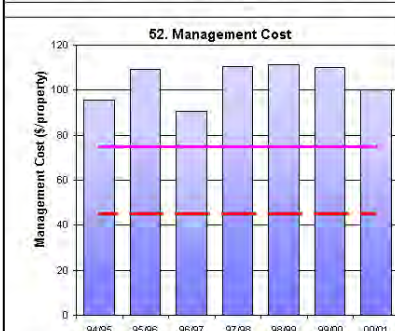
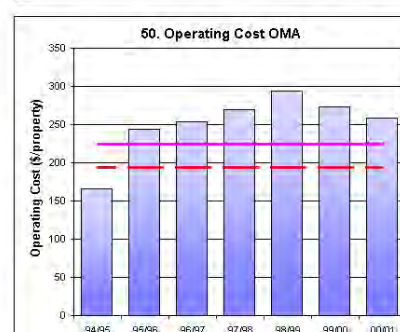
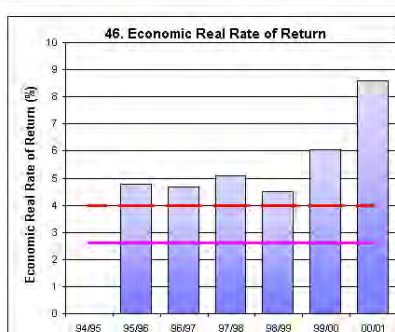
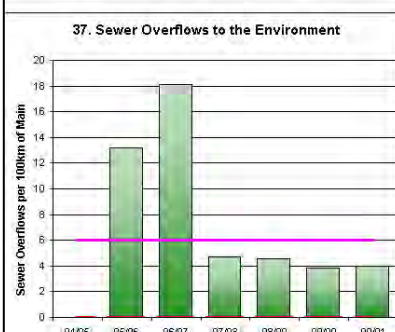
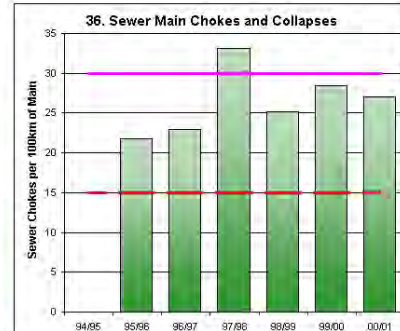
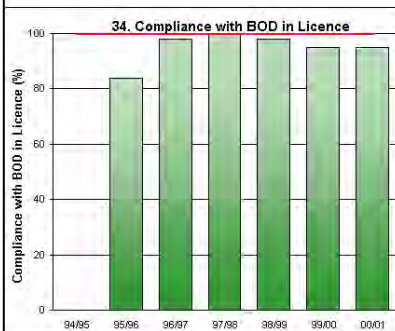
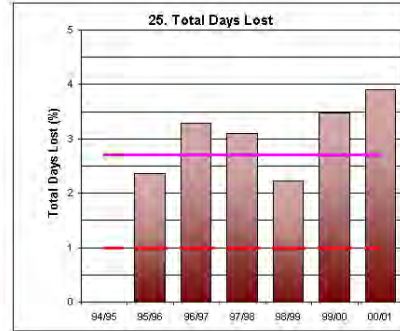
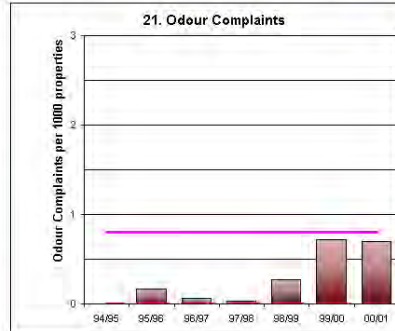
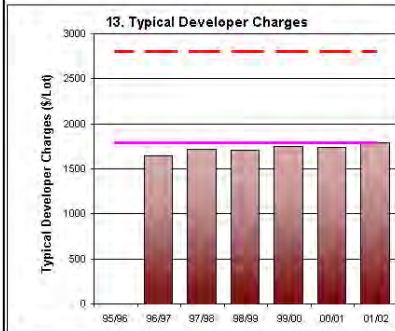
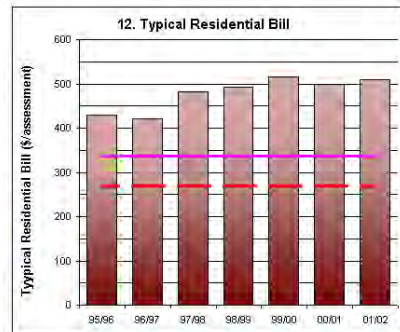
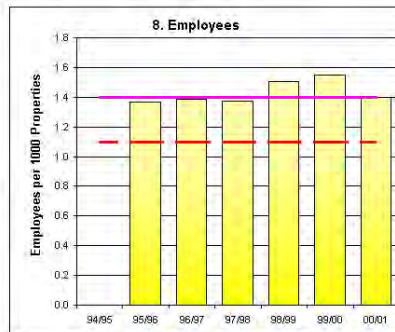
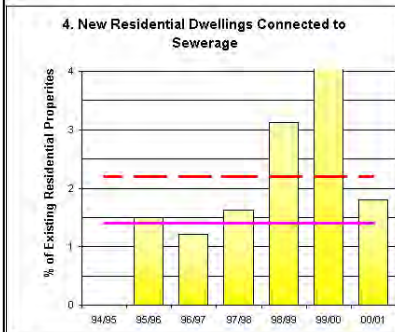
Example Performance Report – Page 1

Shoalhaven City Council		TBL Sewerage Performance			2000/01				
<p>Council has 10 sewage treatment works, 9 provide secondary treatment and 1 provides tertiary treatment. The system comprises 98,000 EP treatment capacity (comprising 7 Intermittently Decanted Extended Aeration, 2 Intermittently Decanted Extended Aeration/trickling filters and 1 continuous extended aeration treatment works), 197 pumping stations (546 ML/d), 127 km of rising mains, 810 km of reticulation, and 5 ocean, 3 river and 1 land discharges. The total number of sampling days at the treatment works was 150. There were no major malfunctions of the treatment processes. The current replacement cost of system assets was \$172M (\$4,600/assessment), cash and investments were \$7.5M, debt was \$16.6M and turnover was \$22.2M (excluding capital works grants).</p>									
<b>Business Planning</b>									
<b>Strategic Business Plan (SBP)</b>		Year Prepared	1995/96	Year Updated:	1999/00	Is Further Development Required <sup>4</sup> ?	NO		
<b>Financial Sustainability of Business Demonstrated?</b>		YES	Year Updated:	1999/00	Is Further Development Required <sup>4</sup> ?	NO			
<b>Triple Bottom Line (TBL) Performance Indicators</b>									
				<b>Council Result</b>	<b>Ranking<sup>1</sup> &gt;10,000 Properties</b>	<b>Ranking<sup>2</sup> All Councils</b>	<b>Statewide Median<sup>3</sup></b>		
<b>UTILITY CHARACTERISTICS</b>		1	Population Served:	84,000	(0.94 connected properties per assessment)				
		2	Number of Assessments:	37,700	Number of Connected Properties:	35,400			
		3	Residential Assessments (% of total)			96		5	92
		4	New Residential Dwellings Connected to Sewerage (%)			1.8	1	1	1.4
		5	Properties Served per km of Main			38		2	40
		6	Volume of Sewage Collected (ML)			6,190	2	1	3700
		7	Renewals Expenditure (% of current replacement cost of system assets)			0.5		1	0.0
		8	Employees (per 1000 properties)			1.4	4	2	1.4
		9	Employees Undergoing 2 or more Days of Training (number of employees)						
<b>SOCIAL</b>	<b>Charges/Bills</b>	10	Description of Residential <sup>5</sup> Tariff Structure 2001/02:	Access Charge/property, Independent of Land Value					
		11	Residential Access Charge 2001/02 <sup>5</sup> (\$/assessment)		510		5	345	
		12	Typical Residential Bill 2001/02 (\$/assessment)		510	5	5	335	
		13	Typical Developer Charge 2001/02 (\$/equivalent tenement)		1,790	3	3	1,600	
		14	Average Residential Bill 2000/01 (\$/connected property)		510	5	5	335	
	15	Real Increase over Previous Year's Average Residential Bill (%)		-2	5	3	-2.0		
	<b>Health</b>	16	Urban Properties without Reticulated Sewerage Service (%)		4.8	4	3	2.7	
		17	Category 1 Public Health Incidents - Minor (per 1000 properties)		0.3	4		0	
		18	Category 2 Public Health Incidents - Limited Effects (per 1000 properties)		0	1		0	
		19	Category 3 Public Health Incidents - Major (per 1000 properties)		0	1		0	
		20	Capital Expenditure on Improving Public Health Performance (\$/Property)		0	1		0	
		<b>Level of Service</b>	21	Odour Complaints (per 1000 properties)		1.0	4	4	0.6
			22	Service Complaints (per 1000 properties)		7	2	1	11
			23	Customer Interruption Frequency (per 1000 properties)					2
			24	Average Customer Outage Time (min)					1
25			Total Days Lost (%)		3.9	5	4	2.7	
<b>ENVIRONMENTAL</b>	<b>Natural Resource Management</b>	26	Volume of Sewage Treated per property (kL/a)		176	1	1	260	
		27	Recycled Water (% of effluent recycled)		1	4	4	1	
		28	Biosolids Reuse (%)		80	2	2	80	
		29	Treated Sewage (% of sewage collected)		100				
		30	Energy Consumption (kWh/ML)		760		4	500	
		31	Energy Consumption (kWh/property)		140		4	130	
		32	Renewable Energy Consumption (kWh/property)						
	<b>90 Percentile Licence Limits for Effluent Discharge:</b>	33	BOD 20 mg/L; SS 30 mg/L						
		34	Compliance with BOD in Licence (%)		95	4	4	100	
		35	Compliance with SS in Licence (%)		85	5	4	98	
		36	Sewer Main Chokes and Collapses (per 100 km of main)		27	2	3	30	
		37	Sewer Overflows to the Environment (per 100 km of main)		4	2	3	4	
		38	% Progress towards ISO 14001 Certification (100% is certified)		0	2		0	
		39	Category 1 Environmental Incidents - Minor (per 1000 properties)		1.5	3		1.5	
40	Category 2 Environmental Incidents - Limited Effects (per 1000 properties)		1.5	3		1			
41	Category 3 Environmental Incidents - Major (per 1000 properties)		0	1		0			
42	Capital Expenditure on Improving Environmental Performance (\$/Property)		450	1		20			
<b>ECONOMIC</b>	<b>Financial</b>	43	Revenue from Access Charges (% of total)		65		5	75	
		44	Revenue from Trade Waste Charges (% of total)		0.0		2	0.4	
		45	Revenue from Other (% of total)		35		1	25	
		46	Economic Real Rate of Return (%)		8.6	1	1	2.6	
		47	Debt to Equity (%)		10	2	2	9	
		48	Interest Cover (%)		570		2	530	
	<b>Efficiency</b>	49	Operating Cost (OMA) per 100 km of Main (\$'000)		980	4	5	900	
		50	Operating Cost (OMA) per property (\$/property)		259	5	4	225	
		51	Operating Cost (OMA) per kL (c/kL)		147	5	5	82	
		52	Management Cost (\$/property)		100	5	5	75	
		53	Treatment Cost (\$/property)		56	3	2	60	
		54	Pumping Cost (\$/property)		48	4	5	35	
		55	Energy Cost (\$/property)		7	2	4	8	
		56	Sewer Main Cost (\$/property)		34	2	4	27	
<p><b>Notes:</b> 1 Ranking for each performance indicator is based on dividing the results for councils in the &gt;10,000 connected properties group into 5 equal divisions of 20%, i.e. a ranking of 1 indicates the Council is in the top 20% of Councils; a ranking of 5 indicates the Council is in the bottom 20% of Councils.                  2 Ranking (1 to 5) for all councils.                  3 The Statewide Median is on a percentage of connected properties basis as indicated in Tables 2 and 3 of the 2000/01 NSW Performance Comparisons Report.                  4 Annual review of the key projections and actions in Council's Business Plan are required, together with annual updating of Council's Financial Plan. The Business Plan should be updated after 3 years.                  5 Non-residential: Uniform Access Charge (\$510); usage charge of 85 c/kL. Council has trade waste charges for large dischargers.                  6 Trade waste and non-residential rates and charges provided 12% of the revenue from annual rates and charges, including usage and trade waste charges.                  7 The operating cost (OMA)/property was \$259. The components of operating cost/property were: management (\$100), operation (\$109), maintenance (\$36), energy (\$7) and chemical (\$3).</p>									

Example Performance Report – Page 2

**Shoalhaven City Council - Sewerage Performance - 2000/01**

(Results shown for 7 years together with 2000/01 Statewide Median and Top 20%)



Note: Costs are in Jan 2001 \$.

**LEGEND**  
 2000/01 State Median ————  
 2000/01 Top 20% - - - - -

**Table 1 : 2000/01 NSW Water Supply Performance Indicators**

	20%	Median (50%)	80%
<b>UTILITY CHARACTERISTICS</b>			
Residential Assessments (% of total)	89	92	95
New Residential Dwellings Connected to Water Supply (%)	2.1	1.0	0.7
Properties Served per km of Main	52	33	24
Rainfall (% of average annual rainfall)	72	100	111
Annual Total Consumption (at Master Meters - ML)	17,500	7,500	3,100
Peak Week to Average Consumption (%)	140	145	200
Renewals Expenditure (% of current replacement cost of system assets)	0.6	0.0	0.0
Employees (employees per 1000 properties)	1.0	1.3	1.9
<b>SOCIAL</b>			
<b>CHARGES/BILLS</b>			
Water Usage Charge 2001/02 (c/kL)	80	65	50
Annual Water Allowance 2001/02 (kL/assessment)	0	0	200
Access Charge 2001/02 (\$/assessment)	80	195	245
Typical Residential Bill 2001/02 (\$/assessment)	230	310	375
Typical Developer Charge 2001/02 (\$/equivalent tenement)	3,500	2,300	1,600
Average Residential Bill (\$/connected property)	210	325	405
Bill for Residential Customer using 200 kL/a (\$/assessment)	200	255	330
Real Increase over Previous Year's Bill for Residential Customer using 200 kL/a (%)	-3	-3	8
<b>HEALTH</b>			
Urban Population without Reticulated Public Water Supply (%)	0.0	0.7	3.2
Physical and Chemical Water Quality Compliance (%)	100	100	95
Microbiological Water Quality Compliance (%)	100	99	98
Category 1 Public Health Incidents - Minor		0	
Category 1 Public Health Incidents - Limited Effects		0	
Category 1 Public Health Incidents - Major		0	
Capital Expenditure on Improving Public Health		3	
<b>LEVELS OF SERVICE</b>			
Water Quality Complaints (per 1000 properties)	2	8	18
Service Complaints (per 1000 properties)	3	9	40
Customer Interruption Frequency (per 1000 properties)	4	20	140
Average Duration of Interruption (hr)	2	2	3
Average Customer Outage Time (min)	0	2	20
Number of Main Breaks (per 100 km of main)	6	18	35
Drought Water Restrictions (% of time)	0	0	0
Total Days Lost (%)	1.1	2.5	4
<b>ENVIRONMENTAL</b>			
Average Annual Residential Consumption (kL/property)	205	230	310
Unaccounted for Water (including leakage %)	10	10	20
Energy Consumption (kWh/ML)	1	500	710
Energy Consumption (kWh/property)	0	400	620
<b>ECONOMIC</b>			
<b>FINANCIAL</b>			
Revenue from Usage Charges (% of total)	55	35	20
Revenue from Access Charges (% of total)	20	35	60
Revenue from Other (% of total)	10	20	40
Economic Real Rate of Return (%)	4.2	2.6	0.7
Return on Assets (%)	4.1	2.5	1.0
Debt to Equity (%)	9	3	0.3
Interest Cover (%)	>1000	520	290
Loan Payment (\$/property)	75	50	5
<b>EFFICIENCY</b>			
Operating Cost (OMA) per 100 km of Main (\$'000)	435	680	970
Operating Cost (OMA) per property (\$/property)	170	200	280
Operating Cost (OMA) per kL (c/kL)	40	59	65
Management Cost (\$/property)	53	80	100
Treatment Cost (\$/property)	5	30	75
Pumping Cost (\$/property)	7	20	37
Energy Cost (\$/property)	7	15	20
Water Main Cost (\$/property)	25	40	55

**Notes:**

- 20%**                      *top 20% of properties*  
 Median (50%)        median of properties (Statewide)  
 80%                      bottom 20% of properties
- The above non-metropolitan NSW performance indicators are on a percentage of connected properties basis which is the most appropriate basis for judging Statewide performance by giving due weight to larger councils and reducing the effect of smaller councils (refer also to Notes 1 to 3 on page xxix).
- The performance indicators in this table and their grouping are consistent with the the body of the present report and the reports for each council in Appendix C.

**Table 2 : 2000/01 NSW Sewerage Performance Indicators**

	<b>20%</b>	<b>Median (50%)</b>	<b>80%</b>
<b>UTILITY CHARACTERISTICS</b>			
Residential Connections (% of total)	90	92	94
New Residential Dwellings Connected to Sewerage (%)	2.2	1.4	0.7
Volume of Sewage Collected (ML)	6,200	3,700	1,100
Properties Served per km of Main	45	40	35
Renewals Expenditure (% of current replacement cost of system assets)	9.1	0.0	0.0
Employees (per 1000 properties)	1.1	1.4	1.7
<b>SOCIAL</b>			
<b>CHARGES/BILLS</b>			
Access Charge 2001/02 (\$/assessment)	270	345	430
Typical Residential Bill 2001/02 (\$/assessment)	270	335	430
Typical Developer Charge 2001/02 (\$/equivalent tenement)	2,800	1,800	1,400
Average Residential Bill (\$/connected property)	285	335	420
Real Increase over Previous Year's Average Residential Bill (%)	-13	-2	1
<b>HEALTH</b>			
Urban Properties without Reticulated Sewerage Service (%)	0.6	2.7	9
Category 1 Public Health Incidents - Minor (per 1000 properties)			
Category 2 Public Health Incidents - Limited Effects (per 1000 properties)			
Category 3 Public Health Incidents - Major (per 1000 properties)			
Capital Expenditure on Improving Public Health (\$/property)			
<b>LEVEL OF SERVICE</b>			
Odour Complaints (per 1000 properties)	0	0.6	1
Service or Choke Complaints (per 1000 properties)	7	11	40
Customer Interruption Frequency (per 1000 properties)	0	2	30
Average Duration of Interruptions (hr)	1	2	2
Average Customer Outage Time (min)	0	1	4
Total Days Lost (%)	1.0	2.7	4
<b>ENVIRONMENTAL</b>			
Volume of Sewage Treated per property (kL/a)	215	260	320
Reclaimed Water (% of effluent reclaimed)	30	1	0
Biosolids Reuse (%)	100	80	0
Energy Consumption (kWh/ML)	200	500	760
Energy Consumption (kWh/property)	55	130	180
Renewable Energy Consumption (kWh/property)			
<b>90 Percentile Licence Limits for Effluent Discharge:</b>			
<b>BOD 35 mg/L; SS 40 mg/L; Total N 25 mg/L; Total P 5 mg/L</b>			
Compliance with BOD in Licence (%)	100	100	93
Compliance with SS in Licence (%)	100	98	89
Sewer Main Chokes and Collapses (per 100 km of main)	15	30	75
Sewer Overflows to the Environment (per 100 km of main)	0	4	15
<b>% Progress towards ISO 14001 Certification (100% is certified)</b>			
Category 1 Environmental Incidents - Minor (per 1000 properties)			
Category 2 Environmental Incidents - Limited Effects (per 1000 properties)			
Category 3 Environmental Incidents - Major (per 1000 properties)			
Capital Expenditure on Improving Environmental Performance (\$/property)			
<b>ECONOMIC</b>			
<b>FINANCIAL</b>			
Revenue from Access Charges (% of total)	85	75	65
Revenue from Trade Waste Charges (% of total)	3	0.4	0
Revenue from Other (% of total)	35	25	20
Economic Real Rate of Return (%)	4	2.6	0.4
Return on Assets (%)	4.7	2.1	0.6
Debt to Equity (%)	17	9	1
Interest Cover (%)	>1000	530	180
Loan Payment (\$/property)	190	80	12
<b>EFFICIENCY</b>			
Operating Cost (OMA) per 100 km of Main (\$'000)	740	900	970
Operating Cost (OMA) per property (\$/property)	195	225	265
Operating Cost (OMA) per kL (c/kL)	65	82	105
Management Cost (\$/property)	45	75	105
Treatment Cost (\$/property)	40	60	75
Pumping Cost (\$/property)	20	35	50
Energy Cost (\$/property)	6	8	12
Sewer Main Cost (\$/property)	20	27	35

**Notes:**

1. **20%**                      *top 20% of properties*  
     **Median (50%)**        median of properties (Statewide)  
     **80%**                      bottom 20% of properties
2. The above non-metropolitan NSW performance indicators are on a percentage of connected properties basis which is the most appropriate basis for judging Statewide performance by giving due weight to larger councils and reducing the effect of smaller councils (refer also to Notes 1 to 3 on page xxix).
3. The performance indicators in this table and their grouping are consistent with the body of the present report and the reports for each council in Appendix C.

**Table 3: 2000/01 Performance Indicator Comparison - Percentage of Properties, Population, Councils Bases**

WATER SUPPLY	% of Connected Properties (per Connected Property)			% of Population (per Head)			% of Councils (per Connected Property)		
	20%	50%	80%	20%	50%	80%	20%	50%	80%
<i>UTILITY CHARACTERISTICS</i>									
New Residential Dwellings Connected (%)	2.1	1.0	0.7	2.1	1.1	0.7	1.6	0.7	0.3
Rainfall (% of average annual rainfall)									
Employees (per 1000)	1.0	1.3	1.9	1.0	1.3	1.8	1.1	1.8	2.9
<i>ENVIRONMENTAL</i>									
Annual Residential Consumption (kL/a)	205	240	310	205	240	310	205	260	390
<i>SOCIAL - CHARGES/BILLS</i>									
Average Residential Bill (\$)	210	325	405	210	320	405	310	390	480
<i>SOCIAL - HEALTH</i>									
Urban Properties without Reticulated Public Water Supply (%)	0.0	0.4	3.4	0.0	0.4	3.4	0.0	1.1	7.6
Compliance with 1996 Microbiological Drinking Water Quality Guidelines (%)	100	99	98	100	99	98	100	100	95
Physical and Chemical Water Quality Compliance (%)	100	100	95	100	100	95	100	100	95
<i>SOCIAL - LEVELS OF SERVICE</i>									
Customer Interruption Frequency (per 1000)	4	20	140	4	20	140	4	16	46
Water Quality Complaints (per 1000)	2	8	18	2	8	18	2	4	14
Service Complaints (per 1000)	3	9	40	3	9	40	3	8	30
<i>ECONOMIC - FINANCIAL</i>									
Economic Real Rate of Return (%)	4.2	2.6	0.7	3.8	2.4	0.7	3.9	1.7	0
<i>ECONOMIC - EFFICIENCY</i>									
Operating Cost (OMA) per property (\$)	170	200	280	170	200	280	180	260	340
Operating Cost (OMA) per 100 km of Main (\$'000)	435	680	970	440	720	970	390	600	880
Management Cost (\$)	53	80	100	53	80	100	45	70	80



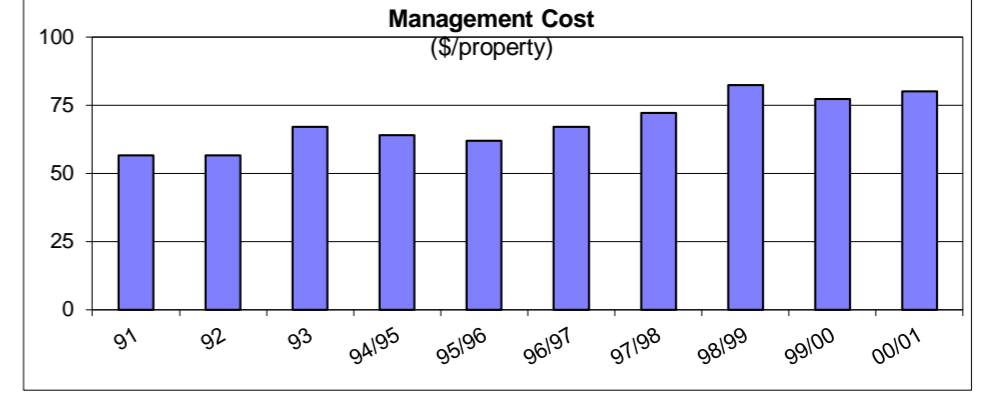
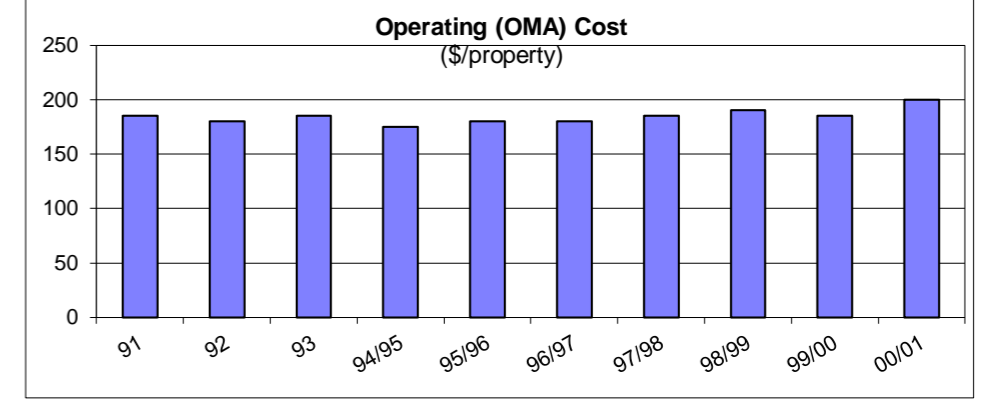
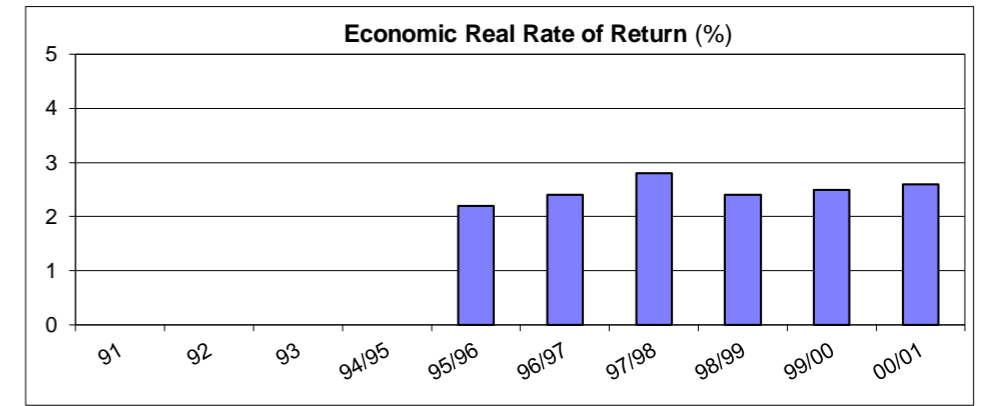
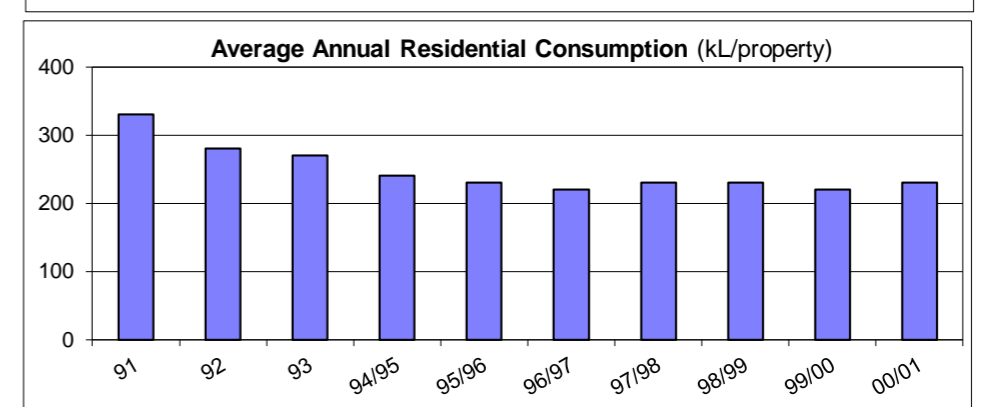
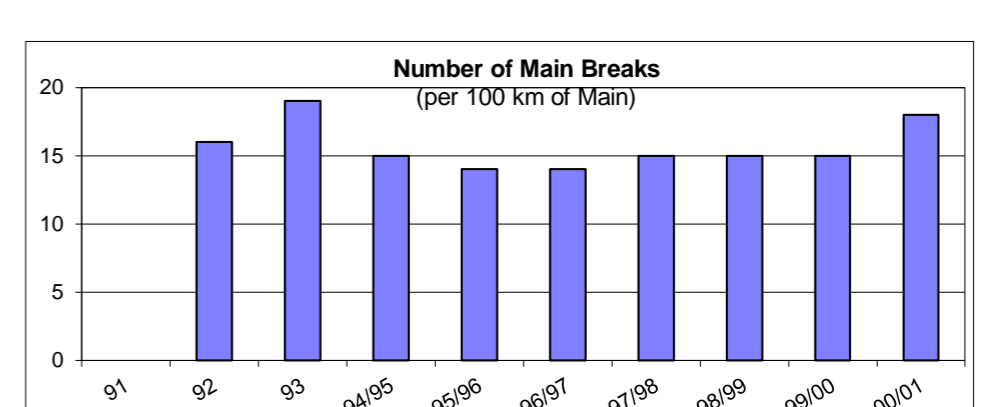
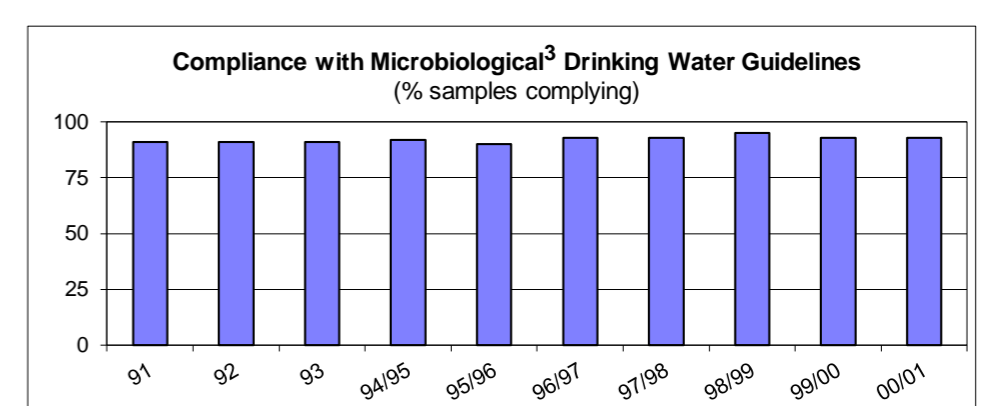
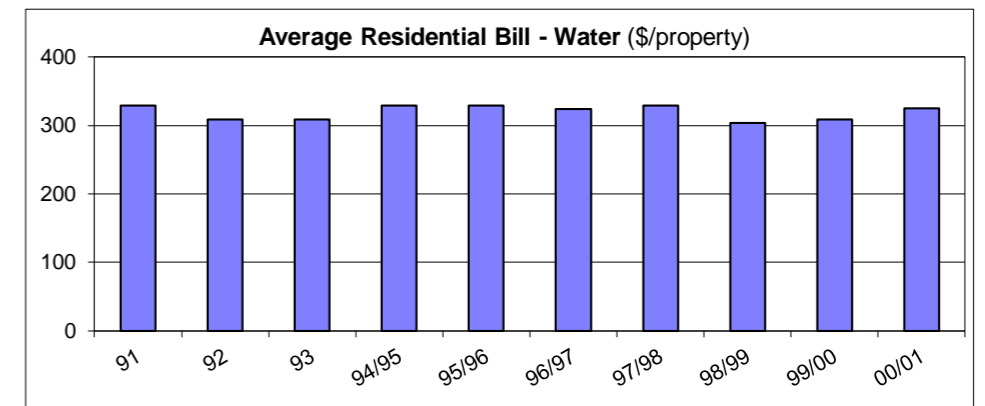
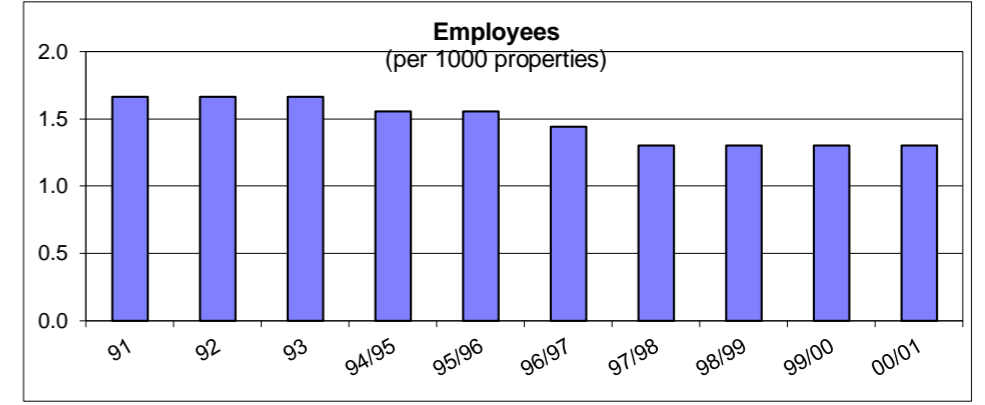
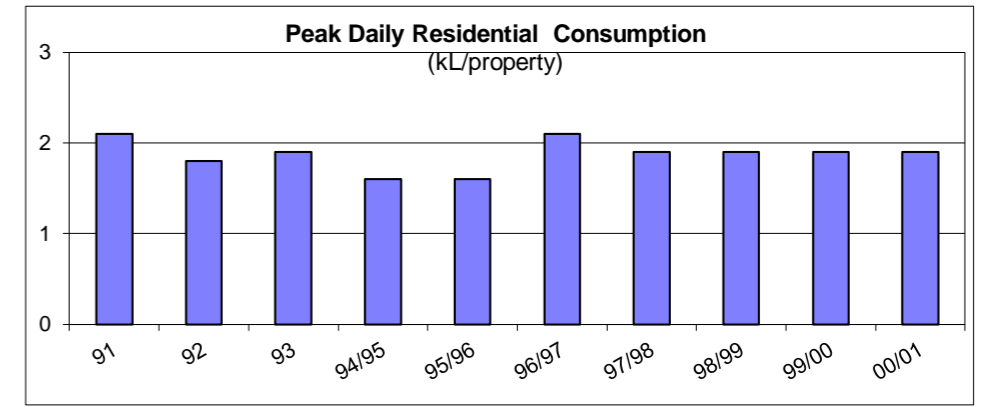
SEWERAGE	% of Connected Properties (per Connected Property)			% of Population (per Head)			% of Councils (per Connected Property)		
	20%	50%	80%	20%	50%	80%	20%	50%	80%
<i>UTILITY CHARACTERISTICS</i>									
New Residential Dwellings Connected (%)	2.2	1.4	0.7	2.2	1.4	0.7	1.8	0.7	0
Employees (per 1000)	1.1	1.4	1.7	1.1	1.4	1.7	1.1	1.6	2.7
<i>ENVIRONMENTAL</i>									
Compliance with BOD in Licence (%)	100	100	93	100	100	93	100	100	92
Compliance with SS in Licence (%)	100	98	89	100	98	89	100	96	83
Sewer Main Chokes and Collapses (per 100 km of main)	15	30	75	15	30	75	5	33	105
Sewer Overflows to the Environment (per 100 km of main)	0	6	15	0	6	15	0	3	13
<i>SOCIAL - BILLS/CHARGES</i>									
Average Residential Bill (\$)	285	335	420	285	340	420	245	340	415
<i>SOCIAL - HEALTH</i>									
Urban Properties without Reticulated Sewerage (%)	0.6	2.2	9.4	0.6	2.2	9.4	0.7	6.1	16.0
<i>SOCIAL - LEVELS OF SERVICE</i>									
Odour Complaints (per 1000)	0	1	1	0	1	1	0	0	3
Service or Choke Complaints (per 1000)	7	11	40	7	11	40	7	17	50
<i>ECONOMIC - FINANCIAL</i>									
Economic Real Rate of Return (%)	4.5	2.6	0.4	4.5	2.6	0.3	4.0	1.2	-1.3
<i>ECONOMIC - EFFICIENCY</i>									
Operating Cost (OMA) per property (\$)	195	225	265	195	225	265	140	210	260
Operating Cost (OMA) per 100 km of Main (\$'000)	740	900	970	740	900	970	415	690	950
Management Cost (\$)	45	75	105	45	75	105	27	59	95

#### Notes

1. This table compares 14 key performance indicators for non-metropolitan NSW for each of water supply and sewerage on a 'percentage of connected properties' basis, 'percentage of population' basis, and 'percentage of councils' basis. The table has been provided to facilitate comparisons with other Australian and overseas data.
2. The *percentage of connected properties* basis is the most appropriate for judging Statewide performance by giving due weight to larger councils and reducing the effect of smaller councils. It is used in Tables 1 and 2 and throughout this report.
3. The *percentage of councils* basis is relevant for *comparing* the performance of one *council* with other councils (refer to Appendix C).
4. The *top 20%* are shown under '20%'. Median values are provided under '50%'. The bottom 20% are shown under '80%'.
5. Although it is unlikely that any council would be able to meet the 20% level for all performance indicators, these indicators provide broad targets that councils might aspire to achieve.

**Table 4 - Trends in Statewide Performance Indicators - 1991 to 2000/01**

	91	92	93	94/95	95/96	96/97	97/98	98/99	99/00	00/01
<b>WATER SUPPLY</b>										
<b>UTILITY CHARACTERISTICS</b>										
<b>Peak Daily Residential Consumption</b> (kL/property)	2.1	1.8	1.9	1.6	1.6	2.1	1.9	1.9	1.9	1.9
<b>Employees</b> (Employees/1000 properties)	1.7	1.7	1.7	1.6	1.6	1.4	1.3	1.3	1.3	1.3
<b>SOCIAL - BILLS/CHARGES</b>										
<b>Average Residential Bill</b> (\$/ property)	330	309	309	330	330	324	330	304	309	325
<b>SOCIAL - HEALTH</b>										
<b>Compliance with Microbiological<sup>3</sup> Drinking Water Guidelines</b> (% of samples complying)	91	91	91	92	90	93	93	95	93	93
<b>SOCIAL - LEVELS OF SERVICE</b>										
<b>Number of Main Breaks</b> (per 100km of Main)		16	19	15	14	14	15	15	15	18
<b>ENVIRONMENTAL</b>										
<b>Annual Residential Consumption</b> (kL/property)	330	280	270	240	230	220	230	230	220	230
<b>ECONOMIC - FINANCIAL</b>										
<b>Economic Real Rate of Return</b> (%)					2.2	2.4	2.8	2.4	2.5	2.6
<b>ECONOMIC - EFFICIENCY</b>										
<b>Operating (OMA) Cost</b> (\$/property)	185	180	185	175	180	180	185	191	185	200
<b>Management Cost</b> (\$/property)	57	57	67	64	62	67	72	82	77	80



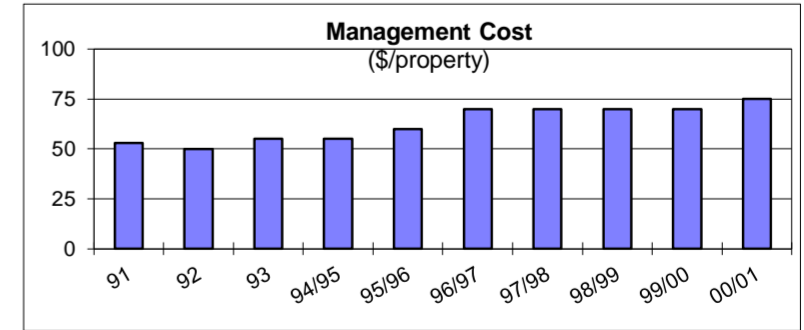
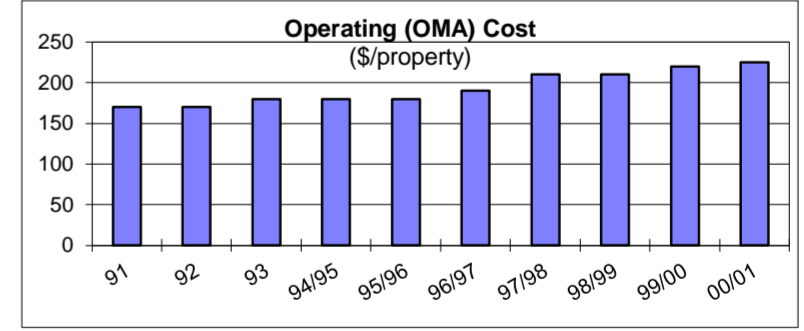
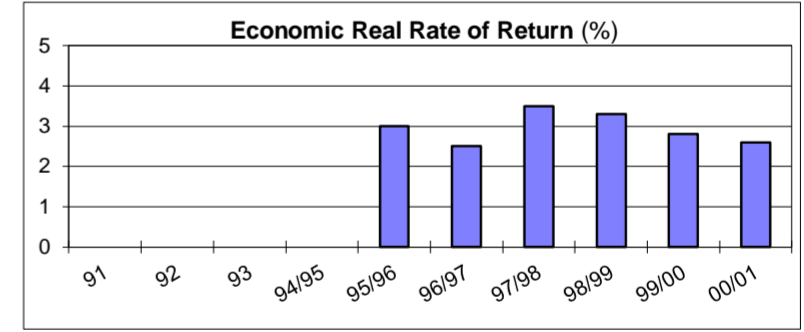
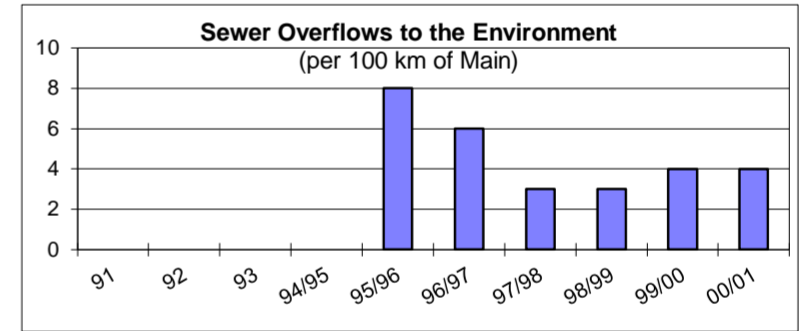
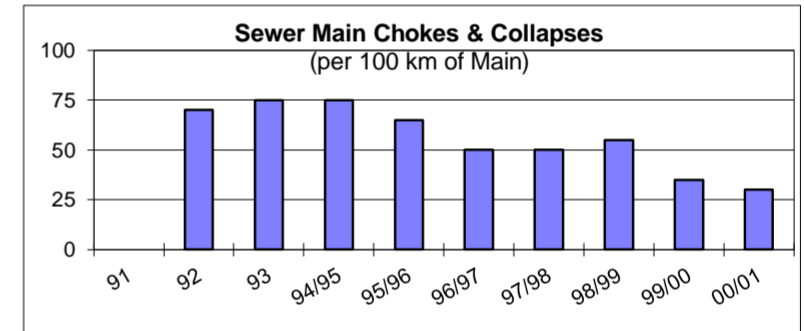
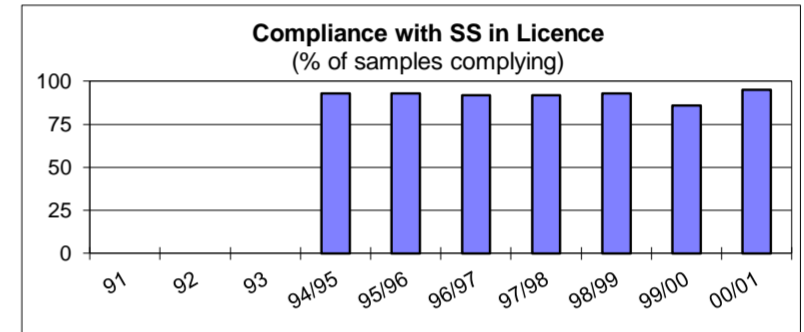
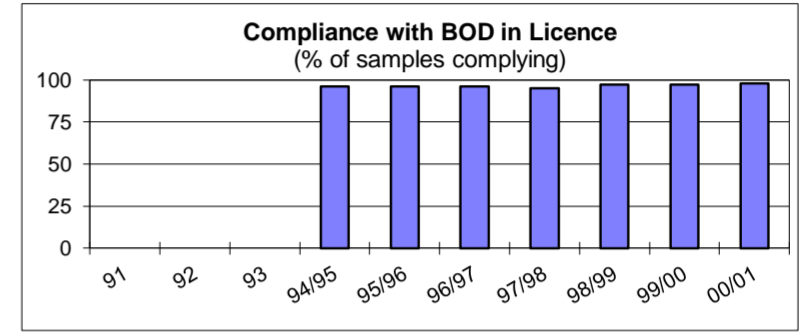
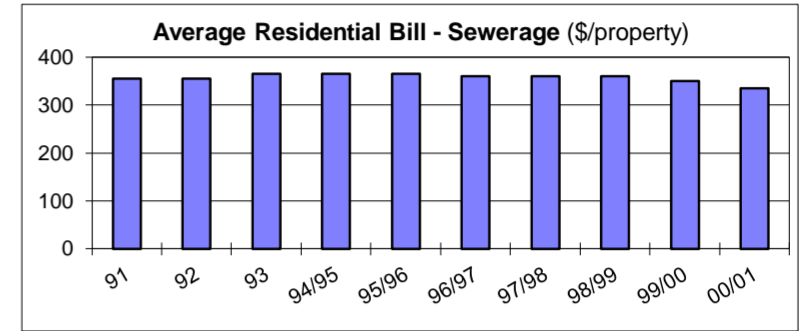
**Notes:**

- The values shown are Statewide medians on a percentage of connected properties basis from 1991 to 1999/00, except for microbiological, BOD and SS compliance which are the percentage of samples complying.
- Costs are in January 2001\$.
- From 1998/99, results are on the basis of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines. 1991 to 1997/98 results are on the basis of the 1987 NHMRC/AWRC Drinking Water Guidelines.

**Table 4 - Trends in Statewide Performance Indicators - 1991 to 2000/01**

**SEWERAGE**

	91	92	93	94/95	95/96	96/97	97/98	98/99	99/00	00/01
<b>UTILITY CHARACTERISTICS</b>										
<b>Employees</b> (Employees/1000 properties)	1.5	1.6	1.7	1.8	1.8	1.7	1.5	1.5	1.4	1.4
<b>SOCIAL - BILLS/CHARGES</b>										
<b>Average Residential Bill</b> (\$/property)	355	355	365	365	365	360	360	360	350	335
<b>ENVIRONMENTAL</b>										
<b>Compliance with BOD in Licence</b> (% of samples complying)				96	96	96	95	97	97	98
<b>Compliance with SS in Licence</b> (% of samples complying)				93	93	92	92	93	86	95
<b>Sewer Main Chokes and Collapses</b> (per 100 km of Main)		70	75	75	65	50	50	55	35	30
<b>Sewer Overflows to the Environment</b> (per 100 km of Main)					8	6	3	3	4	4
<b>ECONOMIC - FINANCIAL</b>										
<b>Economic Real Rate of Return</b> (%)					3.0	2.5	3.5	3.3	2.8	2.6
<b>ECONOMIC - EFFICIENCY</b>										
<b>Operating (OMA) Cost</b> (\$/property)	170	170	180	180	180	190	210	210	220	225
<b>Management Cost</b> (\$/property)	53	50	55	55	60	70	70	70	70	75



# Table 5 - 2000/01 NSW Water Utility Performance Summary

Water Utility	Water Supply								Sewerage				Water Supply and Sewerage							
	2000/01 Water Supply Assessments (No.)	2000/01 Annual Water Consumption (ML)	2000/01 Average Annual Residential Water Consumption (kL/connected property)	2000/01 Turnover (\$M)	2001/02 Tariff Pay-for-Use ?	2001/02 Residential Tariff Independent of Land Value ?	2000/01 Water Quality Compliance (1996 NHMRC/ARMCANZ Guidelines)		2000/01 Turnover (\$M)	2001/02 Residential Tariff Independent of Land Value ?	2000/01 EPA Licence Compliance		2001/02 Typical Residential Bill (\$/assessment)	2001/02 Typical Developer Charge (\$/ET)	2000/01 Economic Real Rate of Return (%)	2000/01 Debt to Equity (%)	2000/01 OMA cost (\$/connected property)	2000/01 Management Cost (\$/connected property)	2000/01 Current Replacement Cost of System Assets (\$M)	Strategic Business Plans Prepared ?
							Physical and Chemical (%)	Microbiological: Faecal Coliforms (%)			BOD (%)	SS (%)								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
1 Albury	18,100	10,100	310	6.0	Yes <sup>9</sup>	Yes <sup>10</sup>	93	94	7.8	Yes	100	98	437	3,000	1.1	14	458	222	210	Yes <sup>15</sup>
2 Armidale Dumaresq	7,800	3,390	286	3.6	Yes	Yes	100	100	2.3	Yes	100	100	574	4,860	-1.0	1	555	280	166	Yes
3 Ballina (Reticulator)	12,600	4,210	252	4.5	Yes	Yes	99	100	6.0	Yes	98	88	597	5,550	1.2	1	511	151	134	
4 Balranald (Dual Supply)	770	1,580	171	0.4		Yes	100	100	0.3	Yes	NL	NL	373	1,430	1.3	5	409	71	18	Yes
5 Barraba	850	240	204	0.4		Yes	100		0.2	Yes	100	100	670		1.1	14	460	118	7	Yes*
6 Bathurst	11,900	7,490	383	8.0	Yes	Yes	100	100	4.9	No	100	100	738	3,310	1.3	1	479	196	210	Yes
7 Bega Valley (Unfiltered)	12,600	3,820	203	5.6	Yes	Yes	100	82	4.9	Yes	100	92	717	5,230	0.6	0	530	292	169	Yes
8 Bellingen (Unfiltered)	3,900	1,480	260	1.7	Yes	Yes	100	100	1.4	Yes	98	92	752	12,500	1.0	1	420	118	57	Yes*
9 Berrigan (Dual Supply)	3,000	2,030	230	1.6		Yes	100	100	1.0	Yes	100	100	725		-0.3	9	494	178	46	Yes
10 Bingara	730	430	372	0.3		Yes			0.2	Yes		100	667		-0.1	13	381	110	12	Yes
11 Bland (Sewerage Only)	1,818 <sup>5</sup>	NO WS							0.7	No	100	100	348	1,000	-0.1	0	215	72	8	
12 Blayney (Sewerage Only)	1,236	NO WS							0.6	Yes	100	100	370	1,080	2.9	0	218	107	5	Yes*
13 Bogan	1,200	870	495	0.6		No	98	97	0.4	No	NL	NL	823		-0.2	5	606	300	23	
14 Bombala	920	380	312	0.4	Yes	Yes	50	90	0.3	Yes	100	100	803	2,720	3.8	12	447	97	12	Yes*
15 Boorowa	580	190	242	0.3	Yes	Yes			0.1	No	100	100	666	900	-2.2	14	425	55	9	
16 Bourke (Dual Supply)	1,700	900	396	0.8		Yes		67	0.5	Yes	NL	NL	939	830	-4.5	16	768	196	20	
17 Brewarrina (Dual Supply)	620	1,160	413	0.4		Yes	60	100	0.2	Yes	100	100			-0.1	2	799	91	7	
18 Australian Inland Energy & Water	10,200	7,450	356	5.4		Yes	100	100	2.5	No	100	96	532		-5.1	5	862	230	95	Yes*
19 Byron (Reticulator)	10,000	3,070	198	4.1	Yes	Yes	97	100	7.7	Yes	100	100	817	10,100	4.3	6	657	228	92	Yes*
20 Cabonne	1,100	500	216	0.8		No	72	100	1.2	No	92	89	1009		2.8	8	470	122	36	Yes
21 Carrathool (Groundwater)	1,100	1,310	386	0.8		Yes	80	100	0.1	Yes	NL	NL	465	1,300	-0.3	2	703	225	27	Yes
22 Central Darling (Dual Supply)	730	780	157	0.5		Yes			0.1	Yes	NL	NL	603		-1.2	0	600	102	16	
23 Central Tablelands (Water Supply Only)	5,000	2,540	237	2.8	Yes	Yes	15	100	NO SGE				354	3,000	-0.2	0	346	161	58	Yes*
24 Cobar (Dual Supply)	2,000	1,140	382	1.3		Yes	100	100	0.4	Yes	NL	NL	685	2,110	-0.8	1	449	183	29	Yes*
25 Coffs Harbour (Unfiltered)	21,800	5,730	190	13.0	Yes	Yes			14.1	Yes	100	100	870	5,290	4.1	33	470	173	278	Yes*
26 Coolah	1,100	420	193	0.5	Yes	Yes	90	95	0.2	Yes			519		2.3	0	440	69	9	Yes*
27 Coolamon (Sewerage Only)	862	NO WS							0.3	Yes			230	3,000	0.2	9	222	63	4	Yes
28 Cooma-Monaro	3,600	1,410	266	1.9	Yes	Yes	100	88	1.5	Yes	98	99	867	3,900	2.6	10	511	159	39	Yes
29 Coonabarabran	1,900	960	339	1.1		No	67	100	0.7	No	83	83	799	1,830	-0.7	3	603	302	46	Yes*
30 Coonamble (Groundwater)	1,600	1,310	793	0.6		Yes			0.5	No	95	95	420		0.1	1	294	41	21	Yes*
31 Cootamundra (Reticulator)	2,700	1,010	266	1.3		No			0.5	No	100	100	483	2,700	-2.0	8	357	85	11	Yes*
32 Copmanhurst (Unfiltered)	150	35	161	0.1		Yes	100	83	0.5	Yes	97	100	905	4,540	7.3	0	943	348	5	Yes*
33 Corowa	3,500	3,220	670	1.5		Yes	99	96	1.1	Yes	83	42	565		0.8	1	418	153	47	Yes*
34 Cowra	5,100	2,320	240	2.8	Yes	Yes	100	95	1.2	Yes			610	5,000	-0.6	2	553	146	43	Yes*
35 Crookwell	1,100	330	215	0.6		No	100	100	0.4	No	100	100	981	1,220	1.7	23	456	59	15	Yes*
36 Culcairn (Groundwater)	540	190	228	0.1		Yes	100	54	0.3	Yes	100	80	378	3,910	-0.1	6	231	72	10	
37 Deniliquin	3,600	3,730	534	1.8		Yes	99	100	1.1	Yes	100	40	864	980	2.3	3	458	204	34	Yes
38 Dubbo	12,700	7,250	294	6.7	Yes	Yes	95	95	7.4	No		75	787	5,750	1.9	0	535	204	204	Yes*
39 Dungog (Unfiltered)	2,000	770	203	0.9		Yes			0.5	Yes	NL	NL	574	5,520	2.7	8	354	140	18	Yes
40 Eurobodalla (Unfiltered)	18,000	5,740	214	7.3	Yes	Yes	90	100	8.2	Yes	100	99	778	3,650	1.0	11	544	221	252	Yes
41 Fish River WS (Unfiltered, Bulk Supplier)	23,000	13,900		7.0		Yes	84	100	NO SGE					1.6	1	108	65	153		Yes
42 Forbes	3,500	3,460	608	1.5		No	80	93	1.4	No	86	93	790	1,260	5.1	9	331	62	28	Yes*
43 Gilgandra (Groundwater)	1,300	740	409	0.6	Yes	Yes	100	100	0.3	Yes	95	100	579		0.1	7	300	59	22	Yes*

# Table 5 - 2000/01 NSW Water Utility Performance Summary

Water Utility	Water Supply								Sewerage				Water Supply and Sewerage							
	2000/01 Water Supply Assessments (No.)	2000/01 Annual Water Consumption (ML)	2000/01 Average Annual Residential Water Consumption (kL/connected property)	2000/01 Turnover (\$M)	2001/02 Tariff Pay-for-Use ?	2001/02 Residential Tariff Independent of Land Value ?	2000/01 Water Quality Compliance (1996 NHMRC/ARMCANZ Guidelines)		2000/01 Turnover (\$M)	2001/02 Residential Tariff Independent of Land Value ?	2000/01 EPA Licence Compliance		2001/02 Typical Residential Bill (\$/assessment)	2001/02 Typical Developer Charge (\$/ET)	2000/01 Economic Real Rate of Return (%)	2000/01 Debt to Equity (%)	2000/01 OMA cost (\$/connected property)	2000/01 Management Cost (\$/connected property)	Current Replacement Cost of System Assets (\$M)	Strategic Business Plans Prepared ?
							Physical and Chemical (%)	Microbiological: Faecal Coliforms (%)			BOD (%)	SS (%)								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
44	Glenn Innes	2,900	760	195	1.2	Yes	100	100	0.7	Yes	100	100	519		1.2	5	326	137	35	Yes*
45	Gloucester	1,700	750	314	0.7	Yes	100	85	0.6	Yes	100	90	696	2,800	1.1	7	462	118	19	Yes*
46	Goldenfields (Bulk Supplier) (WS Only)	18,800	7,800		7.5	Yes	94	100	NO SGE				2,000	3.5	9	169	31	108		Yes
47	Goldenfields (Reticulator) (WS Only)	10,900	5,420	274	7.1	Yes	98	96	NO SGE			473	2,000	-2.0	0	434	67	135		
48	Goldenfields (Combined) (WS Only)	18,800	8,420		14.7	Yes	94	97	NO SGE									244		
49	Gosford	62,800	18,200	225	18.5	Yes	100	100	26.9	Yes	100	100	564	3,890	1.8	6	401	205	700	
50	Goulburn	8,800	4,170	302	4.8	Yes	99	100	3.5	No	75	50	668	2,250	3.7	16	565	250	53	Yes*
51	Grafton (Unfiltered)	6,800	2,360	185	2.3	Yes	80	100	3.1	Yes	98	89	606		3.8	0	516	165	69	Yes*
52	Griffith	9,000	9,820	825	5.0	No	100	100	3.9	No	90	90	568	3,640	1.5	0	691	218	114	Yes*
53	Gundagai	940	590	392	0.4	No	100	100	0.2	No	96	96	516		1.6	6	467	121	5	
54	Gunnedah (Groundwater)	4,100	2,900	474	1.8	No			0.9	Yes	100	90	474	4,450	2.9	6	278	68	44	Yes
55	Gunning (Groundwater)	350	120	238	0.1	No	50	84	0.1	No	75	75	318		3.1	2	363	76	6	Yes*
56	Guyra	1,200	320	270	0.4	Yes	Yes		0.5	Yes	100	100	881		0.7	16	424	161	12	Yes
57	Harden (Reticulator)	1,500	940	514	1.0	Yes	100	84	0.2	Yes	92	83	827		-7.1	2	651	109	18	Yes*
58	Hastings (Unfiltered)	25,400	6,600	204	12.1	Yes	56	100	13.9	Yes	90	97	794	6,000	3.3	3	393	128	337	Yes
59	Hay (Dual Supply)	1,300	2,210	197	0.6	Yes	100		0.5	Yes	100	100	690		-0.6	0	484	136	13	Yes*
60	Holbrook (Sewerage Only)	690	NO WS						0.3	No			168		1.2	5	244	79	4	Yes
61	Hume (Unfiltered)	2,000	1,070	370	0.8	No	100		0.3	Yes			400	3,940	-1.0	0	737	159	16	
62	Hunter Water	199,000	81,200	213	71.7	Yes	99	100	73.0	Yes	100	100	484	4,400	3.6	5	286		1,920	
63	Inverell	4,900	1,680	171	2.1	Yes	100	100	1.2	Yes	95	85	591		-1.6	1	479	124	71	
64	Jerilderie (Dual Supply)	460	350	161	0.2	No	100	100	0.2	No	100	100	811		-1.3	8	862	339	5	
65	June (Sewerage Only)	1,400	NO WS						0.5	Yes	100	100	255	500	4.6	0	194	48	7	
66	Kempsey (Groundwater)	10,500	5,490	395	5.3	Yes	100	100	4.5	Yes	100	100	974	6,620	2.7	15	468	151	169	Yes*
67	Kyogle	1,700	650	243	0.7	Yes	100	100	0.6	Yes	95	29	708	2,000	-1.8	5	463	196	24	Yes*
68	Lachlan	2,600	1,260	352	1.7	Yes	78	97	0.7	Yes	100	100	720		1.8	0	444	127	42	Yes
69	Leeton	3,600	2,580	522	2.0	Yes	100	100	1.6	No	100	100	769	5,100	4.9	5	466	127	45	Yes
70	Lismore (Reticulator)	12,700	4,110	209	6.0	Yes	76	100	6.1	Yes	100	93	578	7,220	4.9	3	427	77	126	Yes
71	Lithgow	7,100	2,350	217	3.1	Yes	100	100	2.0	No	75		606	4,010	-2.6	0	502	192	74	
72	Lockhart (Sewerage Only)	695	NO WS						0.3	No	100	100	95		0.3	2	212	41	10	Yes
73	North Coast Water (Unfiltered) (WS Only)	10,800	3,820	203	6.1	Yes	85	97	NO SGE			333	3,360	2.6	4	166	100	97		Yes
74	Maclean (Sewerage Only)	4,782	NO WS						3.1	Yes	81	100	416	3,180	5.4	6	209	72	31	Yes
75	Manilla	1,100	550	425	0.4	Yes	100	100	0.6	Yes	100	100	672	2,400	1.4	23	511	192	13	Yes*
76	Merriwa	600	290	338	0.3	Yes	100	96	0.1	Yes	100	100	703	1,600	-4.5	0	515	125	8	Yes*
77	MidCoast (Manning - Unfiltered)	20,700								Yes	100	99	790	6,300						Yes*
78	MidCoast (Great Lakes - Unfiltered)	13,000								Yes	97	95	835	7,300						Yes*
79	MidCoast (Combined - Unfiltered)	33,600	11,000	234	15.7	Yes	82	100	17.5	Yes	94	92			2.8	22	466	87	412	
80	Moree Plains (Groundwater)	5,000	4,020	716	1.5	Yes	95	100	2.5	Yes			853	3,970	2.0	24	632	154	36	Yes*
81	Mudgee (Unfiltered)	4,700	2,130	301	2.8	Yes	60	100	1.9	No	100	95	814	4,780	2.2	9	521	199	65	Yes*
82	Mulwaree	500	140	196	0.4	Yes	100	96	0.2	No	100	100	740	5,000	1.8	22	429	42	9	Yes
83	Murray	2,000	1,720	258	1.2	Yes		100	0.8	Yes	NL	NL	685	1,400	3.9	36	454	165	20	Yes*
84	Murrumbidgee (Groundwater)	760	870	695	0.3	No		100	0.3	No	50	50		2,000	4.6	3	200	42	8	Yes*
85	Murrurundi (Unfiltered)	630	200	213	0.4	Yes		100	0.2	Yes	100	100	739	1,300	3.0	1	255	37	6	
86	Muswellbrook	4,900	2,330	337	2.0	Yes	65	100	1.7	Yes	100	100	595	6,660	-1.6	0	609	114	54	Yes

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	2000/01 Water Supply Assessments (No.)	2000/01 Annual Water Consumption (ML)	2000/01 Average Annual Residential Water Consumption (kL/connected property)	2000/01 Turnover (\$M)	2001/02 Tariff Pay-for-Use ?	2001/02 Residential Tariff Independent of Land Value ?	2000/01 Water Quality Compliance (1996 NHMRC/ARMCANZ Guidelines)		2000/01 Turnover (\$M)	2001/02 Residential Tariff Independent of Land Value ?	2000/01 EPA Licence Compliance		2001/02 Typical Residential Bill (\$/assessment)	2001/02 Typical Developer Charge (\$/ET)	2000/01 Economic Real Rate of Return (%)	2000/01 Debt to Equity (%)	2000/01 OMA cost (\$/connected property)	2000/01 Management Cost (\$/connected property)	2000/01 Current Replacement Cost of System Assets (\$M)	Strategic Business Plans Prepared ?	
							Physical and Chemical (%)	Microbiological: Faecal Coliforms (%)			BOD (%)	SS (%)									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)		
87	Nambucca (Groundwater)	6,000	1,800	250	2.1	Yes	Yes	100	97	2.9	Yes	92	91	701	4,940	3.4	10	373	145	71	Yes
88	Narrabri (Groundwater)	4,200	3,730	622	1.6	Yes	Yes		91	1.4	Yes	74	74	809	4,000	1.6	11	323	74	63	Yes
89	Narrandera (Groundwater)	2,200	1,790	577	1.2	Yes	Yes	92	100	0.9	No	100	83	801		4.2	1	448	109	21	Yes
90	Narromine (Groundwater)	2,100	860	428	0.7	Yes	Yes			0.8	No	NL	NL	743	1,440	-1.5	1	586	300	34	Yes
91	Nundle (Groundwater) (WS Only)	250	130	450	0.1		Yes	100	100	NO SGE				703		-2.1	30	396	34	2	
92	Oberon (Unfiltered, Reticulator)	1,200	800	191	1.2	Yes	Yes			0.5	No	100		465	2,260	4.6	15	581	133	12	Yes*
93	Orange	14,400	7,800	498	6.7		No	100	100	6.0	No	96	96	640	7,280	1.3	0	351	90	188	Yes
94	Parkes	5,800	6,160	305	4.5		No	100	94	1.1	No	50	33	537	6,750	1.6	0	487	82	100	Yes*
95	Parry (Groundwater)	1,900	1,020	349	0.8		Yes	100	72	0.5	Yes	100	40	600	1,000	0.6	22	399	82	32	Yes*
96	Pristine Waters (Unfiltered)	2,000	600	233		Yes	Yes	100	96		Yes	100		947	4,220	4.0	27	233	55	18	Yes
97	Queanbeyan (Reticulator)	13,500	4,860	218	12.8	Yes	Yes	100	88	13.5	No	100	98	626	1,860	16.9	1	402	164	91	Yes
98	Quirindi (Groundwater)	1,600	630	321	0.5		Yes	90	100	0.4	Yes	93	61	523		1.5	1	376	86	21	
99	Richmond Valley	6,600	3,220	312	2.6	Yes	Yes			2.5	Yes	100	77	626	6,530	2.0	2	526	220	75	Yes
100	Riverina (Groundwater) (WS Only)	25,800	14,500	351	12.0	Yes	Yes	93	100	NO SGE				308	1,200	2.3	9	198	56	172	Yes*
101	Rous (Bulk Supplier) (WS Only)	33,500	13,500		7.7		Yes	100	100	NO SGE					1,260	-0.4	0	150	60	108	Yes
102	Rylstone	1,300	400	200	0.6		Yes	100	100	0.4	Yes	100		781	1,680	-2.5	0	615	117	18	Yes
103	Scone (Unfiltered)	2,700	1,490	244	1.3	Yes	Yes	95	100	1.0	No	100	100	670	4,640	0.7	0	500	181	33	
104	Severn	190	30	119	0.1	Yes	Yes		92	0.1	Yes	83	75	739			11	206	69	2	
105	Shoalhaven	45,200	17,500	167	16.3	Yes	Yes	94	100	22.2	Yes	95	85	755	3,960	7.8	9	394	154	325	Yes
106	Singleton	5,400	2,740	343	3.2	Yes	Yes	100	100	1.8	Yes	100	100	723	3,570	1.1	0	525	214	78	Yes
107	Snowy River (Unfiltered)	2,400	810	224	1.8	Yes	Yes	100		1.3	Yes	92	81	674	4,500	4.3	11	301	96	40	Yes
108	Sydney Water	1,629,000	625,000	263	690.0	Yes	Yes	96	100	725.0	Yes	100	99	639	5,700	-1.0	16	471		11,660	
109	Tallaganda (Unfiltered)	710	170	195	0.2	Yes	Yes	100	92	0.2	Yes	92	83	450	6,000	-0.4	0	382	62	6	Yes*
110	Tamworth	15,200	9,290	292	7.2	Yes	Yes		100	7.8	Yes	74	94	706	4,620	2.3	2	531	171	252	Yes
111	Temora (Sewerage Only)	1,950	NO WS							0.3	Yes			135		-2.7	0	139	25	8	
112	Tenterfield	1,800	570	233	0.9	Yes	Yes	90	86	0.7	Yes	100	88	671	3,000	-2.3	0	592	211	28	Yes
113	Tumbarumba	1,100	590	262	0.5		Yes	100	100	0.4	Yes	98	92	689		-1.1	0	442	104	17	Yes*
114	Tumut	4,000	1,880	264	1.9	Yes	Yes	75	100	1.9	Yes	100	100	769	6,190	1.7	3	431	140	68	Yes*
115	Tweed	27,500	9,680	240	13.9		Yes	99	100	17.7	Yes	99	92	625	7,060	4.5	4	406	154	355	Yes*
116	Uralla	1,300	390	211			Yes	100	100		Yes	100	100	727				452	225	14	Yes*
116A	Urana (Sewerage Only)	300	NO WS							0.2	Yes					1.1	18	193	95		
117	Wagga Wagga (Sewerage Only)	20,777	NO WS							6.9	Yes	96	89	237	1,200	2.9	1	111	30	117	
118	Wakool (Dual Supply)	1,800	1,200	270	0.8		Yes			0.5	No	NL	NL	577		3.4	13	290	54	18	Yes
119	Walcha	820	260	198	0.4	Yes	Yes	100	100	0.2	Yes	75	50	703		-0.9	2	545	122	16	
120	Walgett (Dual Supply)	1,700	1,380	110			Yes				Yes			716				540	195	27	
121	Warren (Dual Supply)	1,000	580	203	0.5		Yes	75	100	0.4	Yes	100	100	763		2.1	3	470	95	12	Yes
122	Weddin (Sewerage Only)	1,010	NO WS							0.1	Yes	100	100	142		-10.8	0	112	27	6	
123	Wellington	2,800	1,030	267	1.7		No	100	100	0.9	No	100	90	840	2,400	1.4	14	611	229	37	Yes
124	Wentworth (Dual Supply)	1,600	3,080	386	1.2		Yes	98	100	0.6	Yes			1029	4,040	0.5	15	689	130	36	
125	Wingecarribee	16,800	4,690	219	8.5	Yes	Yes	100	100	6.9	Yes	100	100	795	5,900	3.1	14	452	227	227	Yes
126	Wyong	55,300	17,200	221	21.6	Yes	Yes	100	100	22.4	Yes	100	100	577	4,800	2.9	7	369	106	611	
127	Yallaroi (Groundwater)	730	400	467	0.4		No			0.2	No	98		747		1.0	10	399	51	9	Yes*
128	Yarrowlumla (Groundwater)	930	340	236	1.2		Yes		100	1.4	Yes	91	100	855	3,460	17.0	11	556	183	12	Yes*
129	Yass	2,500	930	240	1.4		Yes	100	100	0.9	No	100	100	703	3,130	1.3	2	624	217	26	Yes
130	Young (Reticulator)	3,400	1,490	268	1.9		Yes		63	0.8	Yes	100	91	593	2,700	3.3	9	359	60	12	Yes

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							Physical and Chemical (%)	Microbiological: Faecal Coliforms (%)			BOD (%)	SS (%)								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
<b>Totals</b> <sup>6</sup>	725,000	338,000 ML (see note 6)	Median 230kL/connected property (see note 7)	\$373M (see note 6)	57/112 Yes (see note 9)	97/114 Yes (see note 10)	50/114 100% Compliance	65/114 100% Compliance (see note 12)	\$315M (see note 7)	85/118 Yes	57/109 100% Compliance (see note 10)	40/109 100% Compliance (see note 13)	Median \$650 per assessment (see note 7)	Median \$4,800 per ET (see note 7)	Median 2.6 % (85/125+ve) (see note 7)	Median 7% (see note 7)	Median \$450/connected property (see note 7)	Median \$155/connected property (see note 7)	\$9,400M	49 Yes 49 Yes* 98 /125

**Notes:**

- Each line of this table shows the key 2000/01 performance indicators/characteristics for one of the 127 NSW water utilities** (including Sydney and Hunter water corporations). A more detailed breakdown of performance indicators for each water utility is provided in Tables 6 to 12 as well as in Figures 1 to 119. This table enables water utilities to carry out an overall comparison of their performance with that of other NSW utilities. However, **it is important to ensure** that any such **comparisons are made with similar utilities** (refer to pages i and ix of the report).
- No WS** means not responsible for water supply; **No SGE** means not responsible for sewerage.
- Of the **125 non-metropolitan NSW water utilities** in 2000/01, 114 utilities were responsible for water supply and 118 were responsible for sewerage (107 of these utilities were responsible for both water supply and sewerage, 7 were responsible for water supply only and 11 were responsible for sewerage only).
- Where a water utility has not reported an item for 2000/01, the value previously reported by the utility has been used where available, otherwise an estimate has been used based on results for similar utilities. Such values are shown in this table in **italics bold**.
- For utilities responsible for sewerage only, the number shown in column (1) is the number of sewerage assessments (shown left justified).
- The totals shown above are for non-metropolitan NSW and therefore exclude Sydney and Hunter.** The totals for the number of Water Supply Assessments (column (1)), Annual Water Consumption (column (2)) and Turnover (column (4)) exclude double-counting where bulk water suppliers are involved. The total **number of water supply assessments** in non-metropolitan NSW was **725,000** (column (1)). The total **annual water consumption was 338,000 ML** (column (2)). The **total turnover** for water supply and sewerage was **\$690M** (column (4) + column (9)) and the **current replacement cost of assets was \$9,400M** (column (19)).
- Columns (3), (13), (14), (15), (16), (17) and (18) show that the Statewide medians (non-metropolitan) were:
  - Average annual residential water consumption - 230kL/connected property** (column (3)). Refer also to Figure 22.
  - Typical residential bill for water and sewerage - \$650/assessment** (column (13)). The 2001/02 typical residential bill for water supply has been calculated on the basis of each utility's 2001/02 tariff (columns (9), (11) and (12) of Table 8) using the 2000/01 average annual residential water consumption (column (3)). The typical residential bill for sewerage is based on the utility's access charge (column (9)) of Table 11 except for 5 utilities where account was also taken of the utility's usage charges. For water supply only utilities or sewerage only utilities, the typical residential bill is shown left justified in column (13). Refer also to Figures 3, 5 and 7.
  - Typical developer charge for water and sewerage - \$4,800/equivalent tenement (ET)** (column (14)). For water supply only utilities or sewerage only utilities, the typical developer charge is shown left justified in column (14). Refer also to Figures 1, 4 and 6.
  - Economic real rate of return for water and sewerage - 2.6%** (column (15)) **79** of the 125 non-metropolitan water utilities had a positive real rate of return.
  - Debt/equity for water and sewerage - 7%** (column (16)). Refer also to Figures 13, 32 and 80.
  - Operation, maintenance and administration (OMA) cost for water and sewerage - \$450/connected property** (column (17)). For water supply only utilities or sewerage only utilities, the OMA cost is shown left justified in column (17). Refer also to Figures 54 and 104.
  - Management cost for water supply and sewerage - \$155/connected property** (column (18)). For water supply only utilities or sewerage only utilities, the management cost is shown left justified in column (18).
- 43 of the non-metropolitan NSW water utilities are Category 1 businesses** under the NSW Government's Policy Statement on Application of **National Competition Policy** to Local Government, June 1996 as they had an **annual turnover of over \$2M** (shown in **bold**). **29 utilities** had an **annual turnover of over \$2M for both water supply and sewerage**, **12 utilities** had such a turnover for **water supply only**, and **2 utilities** had such a turnover for **sewerage only**. Column (4) shows there were 41 such utilities **responsible for water supply** with a turnover of over \$2M (column (4)) and **27** such utilities **responsible for sewerage** (column (9)). Refer also to Figures 14, 34 and 82.
- Column (5) shows that **57** non-metropolitan water utilities had a **pay-for-use water supply tariff** (ie. a two-part tariff or an inclining block tariff). Such tariffs **comply with** the recommendations of the NSW Pricing and Regulatory Tribunal (**IPART**) and the Council of Australian Governments' (**COAG**) Water Reforms for residential customers. 46 of these utilities had such a tariff in place in July 1999. Refer also to Figure 2.
- Column (6) shows there were **97** non-metropolitan **water supply utilities** with residential **tariffs independent of land value** and column (10) shows there were **85** such **sewerage utilities**. Such tariffs **comply with IPART recommendations and the COAG Water Reforms**. Refer also to Figure 2 and Table 10.
- Physical and chemical water quality - 96% of the 22,000 physical samples tested for non-metropolitan NSW achieved 100% compliance** with the 1996 NHMRC/ARMCANZ Guidelines. 97% of the 20,700 chemical samples tested achieved 100% compliance. Table 9 shows that **57 out of 114 non-metropolitan water utilities achieved 100% physical compliance and 57 utilities achieved 100% chemical compliance**. Refer also to Figures 36, 37 and 40, Table 9 and Appendix D1.
- Microbiological water quality - 97% of the 16,500 faecal coliform samples tested for non-metropolitan NSW achieved 100% compliance** with the 1996 NHMRC/ARMCANZ Guidelines. 93% of the 16,300 total coliform samples tested achieved 100% compliance. Faecal contamination is the primary health-related indicator. Column (8) shows that **65 out of 114 non-metropolitan water utilities achieved microbiological compliance for faecal coliforms**. Refer also to Figures 38 to 40.
- BOD - 98% of the 6,400 sampling days for non-metropolitan NSW achieved 100% compliance** with the 90 percentile limit of their EPA licence for BOD (Biological Oxygen Demand). Column (11) shows that **57 out of 109 non-metropolitan water utilities licenced by the EPA achieved 100% BOD compliance** (11 water utilities had no EPA discharge licence (NL)). Refer also to Figures 83 and 87.
- SS - 95% of the 6,400 sampling days for non-metropolitan NSW achieved 100% compliance** with the 90 percentile limit of their EPA licence for SS (Suspended Solids). Column (12) shows that **40 out of 109 non-metropolitan water utilities licenced by the EPA achieved 100% SS compliance** (10 water utilities had no EPA discharge licence (NL)). Refer also to Figures 84 and 87.
- Column (20) shows that 49 water utilities have **completed** their water supply and sewerage **Strategic Business Plans** and have **demonstrated long term financial sustainability of their water supply and sewerage businesses to comply with National Competition Policy**. A further 49 utilities have prepared draft Strategic Business Plans for these businesses, but further development of these draft business plans is required.

# 1. PARTICIPATING COUNCILS

The following 123 non-metropolitan councils participated in the NSW Annual Water Supply and Sewerage Reporting System in 2000/01. *This represents 100% participation by NSW councils.* Financial data for 119 councils was obtained from Special Schedule Nos 3 to 6 of the councils' 2000/01 financial statements and advice from councils on their charging structures. The location of councils is shown on the map on the final page of this report (following Appendix D).

Albury	Cobar	Gloucester	Lachlan		Temora
Armidale	Coffs Harbour	Goldenfields CC	Leeton	Oberon	Tenterfield
	Coolah	Gosford	Lismore	Orange	Tumbarumba
Ballina	Coolamon	Goulburn	Lithgow		Tumut
Balranald	Cooma-Monaro	Grafton	Lockhart	Parkes	Tweed
Barraba	Coonabarabran	Griffith		Parry	
Bathurst	Coonamble	Gundagai	Maclean	Pristine Waters	Uralla
Bega Valley	Cootamundra	Gunnedah	Manilla		Urana
Bellingen	Copmanhurst	Gunning	Merriwa	Queanbeyan	
Berrigan	Corowa	Guyra	MidCoast CC	Quirindi	Wagga Wagga
Bingara	Cowra		Moree Plains		Wakool
Bland	Crookwell	Harden	Mudgee	Richmond Valley	Walcha
Blayney	Culcairn	Hastings	Mulwaree	Riverina CC	Walgett
Bogan		Hay	Murray	Rous CC	Warren
Bombala	Deniliquin	Holbrook	Murrumbidgee	Rylstone	Weddin
Boorowa	Dubbo	Hume	Murrurundi		Wellington
Bourke	Dungog		Muswellbrook	Scone	Wentworth
Brewarrina		Inverell		Severn	Wingecarribee
Byron	Eurobodalla		Nambucca	Shoalhaven	Wyong
		Jerilderie	Narrabri	Singleton	
Cabonne	Forbes	Junee	Narrandera	Snowy River	Yallaro
Carrathool		Kempsey	Narromine		Yarrowlumla
Central Darling	Gilgandra	Kyogle	Nundle	Tallaganda	Yass
Central Tablelands CC	Glen Innes		North Coast CC	Tamworth	Young





## 2. KEY DATA TABLES

This section contains the following key data tables:

- Table 6 2000/01 Water Consumptions in Non-Metropolitan NSW
- Table 6A 2000/01 Non-Metropolitan Water Consumptions from Source Catchments
- Table 7 Water Supply – Utility Characteristics, Financial
- Table 8 Water Supply – Residential Charges, Bills
- Table 8A Water Supply – 2001/02 Residential Inclining Block or Multiple Tariffs
- Table 8B Water Supply – 2001/02 Non-Residential Tariffs
- Table 9 Water Supply – Health, Levels of Service, Efficiency
- Table 10 Sewerage – Utility Characteristics, Financial
- Table 11 Sewerage – Residential Charges, Bills
- Table 11A Sewerage – 2001/02 Residential Multiple Tariffs
- Table 11B Sewerage – 2001/02 Non-Residential Tariffs
- Table 12 Sewerage – Environmental, Levels of Service, Efficiency

### GENERAL NOTES

1. To provide a balanced view of the long-term sustainability of water utilities, a triple bottom line (TBL) accounting focus has been adopted in this report, with performance indicators reported on the basis of Utility Characteristics, **Social** (Charges/Bills, Health, Levels of Service), **Environmental** and **Economic** (Financial, Efficiency).
2. Where a water utility has not reported an item for 2000/01, the value previously reported has been used where available, otherwise an estimate has been used based on results for similar utilities. Such values are shown in *italics bold* in Tables 5 to 12. These values are also shown in the relevant figures.
3. As for the 1998/99 and 1999/00 NSW Water Supply and Sewerage Performance Comparisons reports, this report has been prepared on a “*per connected property*” basis for consistency with national performance reporting. A connected property is a property that is connected to the 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 (eg. blocks of flats or units) with a single assessment.
4. The ratio of the number of connected properties to the number of assessments is reported to be about 0.95 for most utilities, although it ranges from 0.75 to 1.43. The data required for the calculation of this ratio was not well reported. DLWC has therefore estimated this ratio for many utilities (shown in *italics bold* in columns (2) and (2a) of Tables 7 and 10).
5. The formulae for calculation of the performance indicators in the tables are shown in the final pages of Appendix B.
6. The *typical residential bill* is the annual bill paid by a typical residential customer 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 usage charges.
7. The 2001/02 typical residential bill is based on a customer of the water utility’s principal water supply or sewerage system, using the utility’s 2000/01 average annual residential water consumption. These tariffs are shown in Tables 8 and 8A (water supply) and Table 11 (sewerage). The typical residential bill for 2000/01 and previous years is based on the reported average annual residential water consumption for that year (these consumptions are shown in column 5 of Table 7).

8. The 2000/01 residential revenue, as a percentage of total rates and charges revenue is reported in column (7a) of Tables 7 and 10. A number of utilities did not report a breakdown of their rates and charges revenue into residential and non-residential. The percentage residential revenue for such utilities has been estimated by DLWC on the basis of reported values for similar utilities and is shown in italics bold in Tables 7 and 10. These latter values have been used for estimating the average residential bill for these utilities.
9. The average residential bill (Tables 8, 11 and Figures 8, 28, 80) comprises the water utility's revenue from residential rates and charges, including residential sales of water, divided by the number of connected residential properties. Except for utilities with an inclining block tariff or an annual water allowance, and those with access charges not independent of land value, the average residential bill is less than the typical residential bill due to pensioner rebates and vacant lots.
10. The typical developer charges reported for Sydney Water Corporation and Hunter Water Corporation are for new release areas.
11. Drinking water quality guidelines have become more stringent. As for the 1998/99 and 1999/00 NSW Water Supply and Sewerage Performance Comparisons reports, this report reports compliance with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines. The detailed performance of each water treatment works or chlorination station in non-metropolitan NSW is reported in Appendix D1.
12. The average annual residential water consumption per connected property (Tables 5, 7 and Figure 22) refers to potable water consumption. Where a water utility has not separately reported its residential water consumption, such consumption has been estimated using the Statewide average of 59% of the utility's total potable water consumption (bottom of col (1) of Table 6).
13. For consistency with national performance reporting, unaccounted-for-water now includes system water loss (ie. leakage).
14. A review of unaccounted for water for NSW water utilities responsible for reticulating water supply to residential customers has indicated a minimum of 10% of total potable water consumption. The values for any such utilities reporting less than 10% unaccounted for water have been increased to 10% (shown in italics, bold in column (7) of Table 6), and the reported values for total water consumption have been increased accordingly. Similarly, as minimum system water loss levels (ie. leakage) for such utilities have been found to be at least 6% of the potable water consumption, reported values of system water loss of less than 6% have been increased to 6% (shown in italics, bold in column (8) of Table 6).
15. Total annual water consumption comprises the sum of the potable water supply plus the non-potable water supply less the recycled water (column (12) of Table 6). Recycled water is a component of the non-potable supply which also includes raw water.
16. 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 \$227/property comprises \$146/property for the bulk supply from Goldenfields (bulk supplier) plus \$81 for the reticulator (Cootamundra).
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 section 3.2 (2) on page xxi). The following non-metropolitan utilities provided such bulk storage: *Armidale, Australian Inland Energy & Water, Ballina, Bathurst, Bega Valley, Bourke, Brewarrina, Cabonne, Central Tablelands, Cobar, Coffs Harbour, Coonabarabran, Crookwell, Eurobodalla, Fish River, Glen Innes, Gosford, Goulburn, Guyra, Hastings, Inverell, Kyogle, Lachlan, Lithgow, MidCoast, Moree, Mudgee, Mulwaree, Murrurundi, Orange, Parkes, Parry, Rous, Rylstone, Shoalhaven, Tallaganda, Tamworth, Tenterfield, Tweed, Uralla, Wingecarribee, Wyong, Yarrawluma, Yass.*
18. **Unfiltered** – refers to a utility with over 50% of its supply comprising unfiltered surface water supply ie. the utility does not have a water treatment works involving at least filtration and disinfection for 50% of its supply.  
**Groundwater** – refers to a utility with over 50% of its supply comprising good quality unfiltered groundwater.  
**Reticulator** – refers to a utility which purchases over 70% of its source water from a bulk supplier and reticulates water to householders in its area.  
**Bulk Supplier** – refers to a utility whose main task is to provide a piped bulk water supply to other utilities, rather than reticulating water to householders.  
**Dual Supply** – refers to a utility with a potable reticulated water supply for indoor uses and a separate non-potable supply for outdoor uses.
19. The performance indicators for Sydney Water Corporation and Hunter Water Corporation have been obtained from WSAA Facts 2001.

# Table 6 - 2000/01 Water Consumptions in Non-metropolitan NSW

Water Utility	Source Catchment	Catchment Management Board	Water Consumption - Town Water Supply (ML)											Recycled Water (ML)		Consumption (ML)			
			Residential	Commercial	Industrial	Rural	Institutional	Bulk	Public	Unaccounted <sup>2,5</sup> for Water	System Water Loss <sup>5</sup>	Total Potable Town Water Supply	Non-Potable Town Water Supply	Total Annual Town Water Consumption <sup>6</sup> (Potable + Non-potable)	For Non-Potable Town Water Supply <sup>8</sup>	For Agricultural use and Non-Potable Town Water Supply <sup>9</sup>	Surface Water	Ground Water	
			(1)	(2)	(3)	(3A)	(4)	(5)	(6)	(7)	(8)	(9) =(1)+(2)+(3)+(3A) (4)+(5)+(6)+(7) or total reported	(10) (for outdoor uses or industry)	(11) =(9)+(10)-(12)	(12)	(13)	(14)	(15)	
1	Albury	Murray	Murray	4,830	1,311	770		359	641	272	1,949	608	10,100		10100		4,960	10,100	
2	Armidale Dumaresq	Macleay	Mid North Coast								339	203	3,390		3,390		470	3,390	
3	Ballina (Reticulator)	Tweed/Richmond	Northern Rivers	2,837	448	52		217	24	15	620	463	4,210	130	4,210	134	134	4,200	10
4	Balranald (Dual Supply)	Murrumbidgee	Lower Murray Darling	169							19	11	190	1,390	1,580			1,580	
5	Barraba	Namoi	Gwydir	158	28					24	23	14	230	010	241			241	
6	Bathurst	Castlereagh/Macquarie	Central West	4,381	807	799		638			736	442	7,360	130	7,490			7,490	
7	Bega Valley (Unfiltered)	Bega	South East	2,137							382	229	3,820		3,820		274	1,950	1,870
8	Bellingen (Unfiltered)	Bellinger	Mid North Coast								148	89	1,480		1,480			1,480	
9	Berrigan (Dual Supply)	Murray	Murray	868							133	65	1,000	1,030	2,030			2,030	
10	Bingara	Gwydir	Gwydir	248	29			13		73	65	26	430		428			428	
11	Bland	No WS	Murrumbidgee													0	242	0	0
12	Blayney	No WS	Lachlan																
13	Bogan	Castlereagh/Macquarie	Central West								87	52	870		868			868	
14	Bombala	Snowy	South East	289						50	38	23	380		377		30	377	
15	Boorowa	Lachlan	Lachlan	311							19	11	190		190			190	
16	Bourke (Dual Supply)	Darling	Central West								71	43	710	190	899			899	
17	Brewarrina	Castlereagh/Macquarie	Central West	365							37	22	370	800	1,160		160	1,060	100
18	Australian Inland Energy & Water	Darling	Lower Murray Darling	3,310	441	1,784		446		7	971	418	6,960	490	7,450		522	7,450	
19	Byron (Reticulator)	Tweed/Richmond	Northern Rivers	2,732							334	184	3,070		3,070		74	3,070	
20	Cabonne	Lachlan	Lachlan								34	20	340	160	497			478	19
21	Carrathool (Groundwater)	Murrumbidgee	Lachlan	442						0	148	35	590	720	1,310	0		723	590
22	Central Darling (Dual Supply)	Darling	Western								17	10	170	610	780			780	
23	Central Tablelands	Castlereagh/Macquarie	Lachlan	913	100	338	219	72	206	79	611	322	2,540		2,540		0	2,390	148
24	Cobar (Dual Supply)	Darling	Western	1,123							112	67	1,120	20	1,140		150	1,140	
25	Coffs Harbour (Unfiltered)	Bellinger	Upper North Coast	3,666	929	119		121	85	93	712	344	5,730		5,730		188	5,730	
26	Coolah	Castlereagh/Macquarie	Central West	177	92			3		9	42	30	420		416		110	85	331
27	Coolamon	No WS	Murrumbidgee													0	45	0	0
28	Cooma-Monaro	Murrumbidgee	Murrumbidgee								141	85	1,410		1,410			1,350	64
29	Coonabarabran	Castlereagh/Macquarie	Namoi								190	58	960		961	0	47	821	141
30	Coonamble (Groundwater)	Castlereagh/Macquarie	Central West	960	27	10		41	6	135	131	79	1,310		1,310		40		1,330
31	Cootamundra (Reticulator)	Murrumbidgee	Murrumbidgee	632	55	44		44		46	191	61	1,010		1,010	0	0	1,010	0
32	Copmanhurst (Unfiltered)	Clarence	Upper North Coast	27							7	2	30		35			35	
33	Corowa	Murray	Murray	1,960	100	638				200	322	193	3,220		3,220		865	3,220	
34	Cowra	Lachlan	Lachlan	1,073	104	699		52	164		232	139	2,320		2,320			2,320	
35	Crookwell	Lachlan	Lachlan	188	20	7	5	14	1	31	66	20	330		333	0	0	333	0
36	Culcairn (Groundwater)	Murray	Murrumbidgee	116	7	1	2	21	4	17	19	11	190		186		25		186
37	Deniliquin	Murray	Murray								266	160	2,660	1,070	3,730	0		3,730	0
38	Dubbo	Castlereagh/Macquarie	Central West	3,518	890			496		504	1,841	435	7,250		7,250		1,270	4,500	2,750
39	Dungog (Unfiltered)	Hunter	Hunter	351	58		43	40			282	46	770		772		550	772	
40	Eurobodalla (Unfiltered)	Clyde	South East	3,462	650	85				350	1,191	745	5,740		5,740		530	5,740	
41	Fish River WS (Unfiltered, Bulk Supplier)	Castlereagh/Macquarie	Central West								1,284	835	13,900		13,900		0	13,900	
42	Forbes	Lachlan	Lachlan	1,945	155	340	8	126	358	21	328	200	3,280	180	3,460			3,040	415
43	Gilgandra (Groundwater)	Castlereagh/Macquarie	Central West	422	140	35	7	5		60	74	45	740		743	0	200		719
44	Glen Innes	Moonie/Macintyre	Border Rivers	445	116	1		41		4	153	46	760		760			760	
45	Gloucester	Manning	Lower North Coast			130	8	11		4	75	45	750		747	0	0	747	0
46	Goldenfields (Bulk Supplier)	Murrumbidgee	Murrumbidgee						7,019		768	762	7,800		7,800			4,150	3,650
47	Goldenfields (Reticulator)	Murrumbidgee	Murrumbidgee	2,002	309	6	1,890	22		377	686	668	5,290	130	5,420	0	0	4,920	502
48	Goldenfields (Combined)	Murrumbidgee	Murrumbidgee										8,290	130	8,420			3,780	4,150
49	Gosford	Hawkesbury	Hawkesbury	13,145	929	895	44	373		323	2,520	1,500	18,200		18,200		0	18,200	
50	Goulburn	Hawkesbury	Wollondilly								417	250	4,170		4,170			4,170	

# Table 6 - 2000/01 Water Consumptions in Non-metropolitan NSW

Water Utility	Source Catchment	Catchment Management Board	Water Consumption - Town Water Supply (ML)											Recycled Water (ML)		Consumption (ML)			
			Residential	Commercial	Industrial	Rural	Institutional	Bulk	Public	Unaccounted <sup>2,5</sup> for Water	System Water Loss <sup>5</sup>	Total Potable Town Water Supply	Non-Potable Town Water Supply	Total Annual Town Water Consumption <sup>6</sup> (Potable + Non-potable)	For Non- Potable Town Water Supply <sup>8</sup>	For Agricultural use and Non- Potable Town Water Supply <sup>9</sup>	Surface Water	Ground Water	
			(1)	(2)	(3)	(3A)	(4)	(5)	(6)	(7)	(8)	(9) <small>=(1)+(2)+(3)+(3A) (4)+(5)+(6)+(7) or total reported</small>	(10) <small>(for outdoor uses or industry)</small>	(11) <small>=(9)+(10)-(12)</small>	(12)	(13)	(14)	(15)	
51	Grafton (Unfiltered)	Clarence	Upper North Coast	1,231	236	425	47	118	71	236	142	2,360		2,360	0	150	2,360	0	
52	Griffith	Murrumbidgee	Murrumbidgee							942	565	9,420	390	9,820			9,820		
53	Gundagai	Murrumbidgee	Murrumbidgee	322	100	50		10	1	59	36	590		592		105	592		
54	Gunnedah (Groundwater)	Namoi	Namoi	1,790		333				484	290	2,900		2,900		628	2	2,900	
55	Gunning (Groundwater)	Lachlan	Lachlan	120						12	7	120		120			0	120	
56	Guyra	Gwydir	Gwydir	271	11	4				4	32	320		322			322		
57	Harden (Reticulator)	Murrumbidgee	Murrumbidgee	713							230	80	940	190	943	186	140	943	
58	Hastings (Unfiltered)	Hastings	Mid North Coast	4,466	980	10	64	388		23	660	400	6,600		6,600		77	6,600	
59	Hay (Dual Supply)	Murrumbidgee	Murrumbidgee								37	22	370	1,840	2,210	0	0	2,210	
60	Holbrook	No WS	Murrumbidgee																
61	Hume (Unfiltered)	Murray	Murray	819							251	64	1,070		1,070			1,070	
62	Hunter Water	Metropolitan																	
63	Inverell	Gwydir	Border Rivers	764	150	400	50	50		100	168	101	1,680		1,680			1,680	
64	Jerilderie (Dual Supply)	Murray	Murrumbidgee								11	6	110	240	352		3	352	
65	Junee	No WS	Murrumbidgee																
66	Kempsey (Groundwater)	Macleay	Mid North Coast	3,591	563		760			22	549	329	5,490	50	5,490	51	51	5,490	
67	Kyogle	Clarence	Upper North Coast	348	17			7	2		169	100	540	110	653		36	653	
68	Lachlan	Lachlan	Lachlan	1,050							210	105	1,260		1,260		26	1,260	
69	Leeton	Murrumbidgee	Murrumbidgee	1,650	180	195	25	30	5	110	385	325	2,580		2,580	0	0	2,580	
70	Lismore (Reticulator)	Tweed/Richmond	Northern Rivers	2,508	951		108				537	250	4,110		4,110		924	4,110	
71	Lithgow	Hawkesbury	Cox's River	2,114							235	141	2,350		2,350	0	0	2,350	
72	Lockhart	No WS	Murrumbidgee																
73	North Coast Water (Unfiltered)	Clarence	Upper North Coast	1,622	299	582	742	25	2	33	510	320	3,820		3,820	0	0	3,820	
74	Maclean	No WS	Upper North Coast														72		
75	Manilla	Namoi	Namoi	395	25	25				50	55	33	550		550			550	
76	Merriwa	Hunter	Hunter	171	35	4	3	1		37	37	33	290		287			287	
77	MidCoast (Manning - Unfiltered)	Manning	Lower North Coast														0		
78	MidCoast (Great Lakes - Unfiltered)	Manning	Lower North Coast																
79	MidCoast (Combined - Unfiltered)	Manning	Lower North Coast	7,120	1,010	544		60		80	2,166	1,600	11,000		11,000	0	31	10,300	644
80	Moree Plains (Groundwater)	Gwydir	Gwydir	3,025	144	203				103	386	232	3,860	340	4,020	176	283	916	3,110
81	Mudgee (Unfiltered)	Castlereagh/Macquarie	Central West	1,330	120	60		35	25	350	213	128	2,130	50	2,130	50	300	233	1,900
82	Mulwaree	Hawkesbury	Wollondilly	97							14	9	140		142		10	142	
83	Murray	Murray	Murray	433	163					12	230	50	840	880	1,720		100	1,720	
84	Murrumbidgee (Groundwater)	Murrumbidgee	Murrumbidgee								87	52	870		865				865
85	Murrurundi (Unfiltered)	Hunter	Namoi	161							37	12	200		198		0	153	45
86	Muswellbrook	Hunter	Hunter	1,429	331	42		291			233	140	2,330	800	2,330	800	971	2,000	330
87	Nambucca (Groundwater)	Bellinger	Mid North Coast	1,300	222	25	12	42		20	180	125	1,800		1,800	0	0	0	1,800
88	Narrabri (Groundwater)	Namoi	Namoi								373	224	3,730		3,730		800		3,730
89	Narrandera (Groundwater)	Murrumbidgee	Murrumbidgee	964	100					150	307	270	1,790		1,790	0	0	0	1,790
90	Narromine (Groundwater)	Castlereagh/Macquarie	Central West	749	28						86	52	860		863				863
91	Nundle (Groundwater)	Namoi	Namoi	96	17						13	8	130		126		0	13	113
92	Oberon (Unfiltered, Reticulator)	Castlereagh/Macquarie	Central West	200	50	350			50	50	100	48	800		800			800	
93	Orange	Castlereagh/Macquarie	Central West	6,493		523					780	468	7,800	2,650	7,800	2,650	3,020	7,690	103
94	Parkes	Lachlan	Central West	1,500	350	2,655	100	235	200	500	616	369	6,160		6,160		244	2,520	3,640
95	Parry (Groundwater)	Namoi	Namoi										1,020		1,020		90	990	30
96	Pristine Waters (Unfiltered)	Clarence	Upper North Coast	381	63						157	36	600		601			601	
97	Queanbeyan (Reticulator)	Murrumbidgee	Murrumbidgee	3,954					1	420	486	292	4,860		4,860		79	4,860	
98	Quirindi (Groundwater)	Namoi	Namoi	367	57	10	16	21	3	57	94	38	630		625				625
99	Richmond Valley	Tweed/Richmond	Northern Rivers								322	193	3,220		3,220	0	3	3,220	
100	Riverina (Groundwater)	Murrumbidgee	Murrumbidgee	7,940	1,732	1,407	258	668	417	423	1,629	868	14,500		14,500			1,790	12,690
101	Rous (Bulk Supplier)	Tweed/Richmond	Northern Rivers	927						11,246	766	315	13,500		13,500			13,500	58

# Table 6 - 2000/01 Water Consumptions in Non-metropolitan NSW

Water Utility	Source Catchment	Catchment Management Board	Water Consumption - Town Water Supply (ML)											Recycled Water (ML)		Consumption (ML)		
			Residential	Commercial	Industrial	Rural	Institutional	Bulk	Public	Unaccounted <sup>2,5</sup> for Water	System Water Loss <sup>5</sup>	Total Potable Town Water Supply <small>= (1)+(2)+(3)+(3A) (4)+(5)+(6)+(7) or total reported</small>	Non-Potable Town Water Supply <small>(for outdoor uses or industry)</small>	Total Annual Town Water Consumption <sup>6</sup> <small>(Potable + Non-potable) = (9)+(10)-(12)</small>	For Non-Potable Town Water Supply <sup>8</sup>	For Agricultural use and Non-Potable Town Water Supply <sup>9</sup>	Surface Water	Ground Water
			(1)	(2)	(3)	(3A)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
102 Rylstone	Castlereagh/Macquarie	Central West	404							<b>40</b>	<b>24</b>	400		404			404	
103 Scone (Unfiltered)	Hunter	Hunter	618	196					111	565	220	1,490		1,490		811	981	509
104 Severn	Moonie/Macintyre	Border Rivers	20	3	0		2		2	3	2	30		30		13	30	
105 Shoalhaven	Shoalhaven	Southern	6,614	1,686	1,400	849	91		143	3,151	<b>836</b>	13,900	3,610	17,500	0	72	17,500	0
106 Singleton	Hunter	Hunter								411	<b>164</b>	2,740		2,740		1,080	2,740	
107 Snowy River (Unfiltered)	Snowy	South East	671	43	16				2	<b>81</b>	<b>49</b>	810		813	0	0	813	0
108 Sydney Water	Metropolitan																	
109 Tallaganda (Unfiltered)	Shoalhaven	Southern	88						20	65	12	170		173			173	
110 Tamworth	Namoi	Namoi	4,125	2,378	1,441		125	19		1,201	557	9,290		9,290			9,290	
111 Temora	<b>No WS</b>	Murrumbidgee													0		0	0
112 Tenterfield	Moonie/Macintyre	Border Rivers	362	41	12	1	16	78	7	<b>57</b>	<b>34</b>	570		575		76	575	
113 Tumbarumba	Murray	Murray	241	41					84	<b>87</b>	<b>35</b>	590		589			589	
114 Tumut	Murrumbidgee	Murrumbidgee	917	149	498	11	81		7	<b>185</b>	<b>111</b>	1,850	50	1,880	17	25	1,880	
115 Tweed	Tweed/Richmond	Northern Rivers	5,875	2,398		69			260	1,081	600	9,680		9,680		254	9,680	
116 Uralla	Gwydir	Gwydir	236	33					18	99	36	390		386			386	
116A Urana	<b>No WS</b>	Murrumbidgee													0		0	0
117 Wagga Wagga	<b>No WS</b>	Murrumbidgee													0	1,040	0	0
118 Wakool (Dual Supply)	Murray	Murray	413	96					50	<b>62</b>	<b>37</b>	620	580	1,200			1,200	
119 Walcha	Namoi	Mid North Coast	142	58	1	3	13		12	32	26	260		261	0	0	261	0
120 Walgett (Dual Supply non-potable)	Namoi	Namoi	150	10	5				1	167	<b>20</b>	330	<b>1,050</b>	1,380			<b>1,380</b>	
121 Warren (Dual Supply)	Castlereagh/Macquarie	Central West	294							<b>29</b>	<b>18</b>	290	290	581			287	294
122 Weddin	<b>No WS</b>	Lachlan														17		
123 Wellington	Castlereagh/Macquarie	Central West	596	51	11		39		75	255	195	1,030		1,030	0	0	1,030	0
124 Wentworth (Dual Supply)	Darling	Lower Murray Darling	525	75					559	<b>129</b>	<b>77</b>	1,290	1,790	3,080			3,080	
125 Wingecarribee	Hawkesbury	Wollondilly	3,088	1,136						469	282	4,690		4,690			4,690	
126 Wyong	Tuggerah Lake	Central Coast	11,194	3,050						<b>1,716</b>	<b>1,029</b>	17,200		17,200			17,200	
127 Yallaroi (Groundwater)	Gwydir	Border Rivers	302	16	1	9	18		18	<b>40</b>	<b>24</b>	400		404			40	364
128 Yarrawluma (Groundwater)	Murrumbidgee	Murrumbidgee	341							<b>34</b>	<b>20</b>	340		341			2	339
129 Yass	Murrumbidgee	Murrumbidgee								<b>93</b>	<b>56</b>	930		926			926	
130 Young (Reticulator)	Murrumbidgee	Murrumbidgee	851	40	250		25		53	272	<b>89</b>	1,490		1,490		250	1,490	
<b>Total for 68 utilities reporting column (1) together with (2) and/or (3)</b>			<b>138,000</b>	<b>27,000</b>	<b>18,000</b>	<b>3,000</b>	<b>6,000</b>	<b>2,000</b>	<b>6,000</b>	<b>34,000</b>	<b>17,000</b>	<b>236,000</b>	<b>12,900</b>	<b>245,000</b>	<b>3,900</b>	<b>18,000</b>	<b>202,000</b>	<b>43,000</b>
<b>Percentage of Total Potable Supply</b>			<b>59%</b>	<b>11%</b>	<b>8%</b>	<b>1%</b>	<b>3%</b>	<b>1%</b>	<b>3%</b>	<b>14%</b>	<b>7%</b>							
<b>TOTAL (all water utilities)<sup>4</sup></b>												<b>320,000</b>	<b>22,000</b>	<b>338,000</b>	<b>4,100</b>	<b>22,700</b>	<b>283,000</b>	<b>55,000</b>

**Notes:**

- Source: Data provided by the 125 non-metropolitan NSW water utilities for the 2000/01 NSW Water Supply and Sewerage Performance Comparisons Report. 114 of these utilities are responsible for water supply. Column (13) reports the volume of recycled water use and includes a further 11 utilities which are responsible for sewerage only.
- For consistency with national performance reporting, unaccounted for water (column (7)) now includes leakage (column (8)).
- Where a water utility has not reported its total potable water consumption in 2000/01 (column (9)), the consumption previously reported has been used and is shown in *italics bold*.
- The total consumptions for all non-metropolitan water utilities shown in the bottom line of the above table exclude double counting where water is supplied by a bulk supplier.
- A review of unaccounted for water for NSW water utilities responsible for reticulating water supply to residential customers has indicated a minimum of 10% of total potable water consumption. The values for any such utilities reporting less than 10% unaccounted for water have therefore been increased to 10% (shown in *italics bold*), and the reported values for total consumption have been increased accordingly. Similarly, as minimum system water loss levels (ie. leakage) for such utilities have been found to be at least 6% of the total potable water consumption, reported values of system water loss of less than 6% have been increased to 6% (shown in *italics bold*).
- The total annual water consumption (column (11)) comprises the sum of the potable water supply (column (9)) and the non-potable water supply (column (10)), less the recycled water (column(12)).
- The above analysis shows that the total 2000/01 annual water consumption for country NSW was 338,000 ML (column (11)), of which 320,000 ML (column (9)) was for potable water supply. The total non-potable water supply was 22,000 ML (column (10)) which included 4,100 ML recycled water (column(12)). Column (12) includes 3,450 ML of recycled water sold to mining companies by Orange and Muswellbrook councils. The non-potable supply was mainly for outdoor uses in dual water supplies, but also includes supplies to industry and other outdoor uses. The average uses as a percentage of the total potable water supply were:
  - Residential - 59 % (column (11))
  - Commercial and Industrial - 19 % (columns (2) and (3))
  - Unaccounted for water - 14 % (column (7))
- Recycled water used for non-potable town water supply is shown in column (12). This is a component of the non-potable town water supply (column (10)) which also includes raw water.
- The recycled water used for agriculture and non-potable town water supply uses is shown in column (13) and includes the values shown in column (12). The total volume of recycled water for non-metropolitan NSW water utilities was 22,700 ML, which is 13% of the total volume of sewage collected.

**Table 6A - 2000/01 Non-metropolitan Water Consumptions from Source Catchments in NSW**

Source Catchment	Source Catchment	Water Consumption - Town Water Supply (ML)											Recycled Water		Consumption (ML)		
		Residential	Commercial	Industrial	Rural	Institutional	Bulk	Public	Unaccounted for Water	System Water Loss	Total Potable Supply	Non-Potable Supply	Total Annual Water Consumption (Potable + Non-potable)	For Non-Potable Town Water Supply	For Agricultural use and Non-Potable Town Water Supply	Surface Water	Ground Water
		(1)	(2)	(3)	(3A)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Bega	Bega	2,140	437	291	049	097	032	097	382	229	3,820	000	3,820	000	274	1,950	1,870
Bellinger	Bellinger	5,830	1,320	257	104	200	113	151	1,040	557	9,010		9,010		188	7,210	1,800
Castlereagh/Macquarie	Castlereagh/Macquarie	30,010	5,120	4,060	808	2,000	645	2,100	6,540	3,250	49,000	3,920	50,200	2,700	5,150	41,600	8,680
Clarence	Clarence	3,610	618	1,100	804	166	30	134	1,080	600	7,350	110	7,470		186	7,470	
Clyde	Clyde	3,460	650	85	73	146	49	350	1,190	745	5,740	0	5,740	0	530	5,740	0
Darling	Darling	5,470	745	2,030	130	530	87	617	1,300	615	10,300	3,100	13,300		672	13,300	
Gwydir	Gwydir	4,850	383	670	123	198	60	316	790	438	7,080	340	7,240	176	283	3,770	3,470
Hastings	Hastings	4,470	980	10	64	388	56	23	660	400	6,600		6,600		77	6,600	
Hawkesbury (Country Towns only)	Hawkesbury	20,880	2,830	1,760	188	662	250	612	3,660	2,180	29,600	0	29,600	0	10	29,600	0
Hunter (Country Towns only)	Hunter	4,330	956	442	131	444	66	302	1,560	615	7,820	800	7,820	800	3,410	6,650	1,170
Lachlan	Lachlan	6,390	848	3,850	167	475	740	659	1,520	873	14,000	340	14,300	0	270	10,100	4,190
Macleay	Macleay	5,570	951	677	803	226	75	108	888	532	8,880	50	8,880	51	521	3,390	5,490
Manning	Manning	7,560	1,100	674	148	71	100	84	2,240	1,640	11,800	0	11,700	0	31	11,000	644
Moonie/Macintyre	Moonie/Macintyre	827	160	13	11	59	85	13	213	82	1,360		1,360		89	1,360	
Murray	Murray	11,300	2,270	1,930	259	637	730	759	3,330	1,230	20,400	3,800	24,200	0	5,950	24,000	186
Murrumbidgee	Murrumbidgee	37,920	6,790	5,330	2,700	1,840	7,740	2,410	6,700	4,410	52,000	4,710	56,500	203	599	35,500	20,490
Namoi	Namoi	10,000	3,450	2,200	250	385	99	988	2,250	1,130	19,100	1,060	20,100	0	1,520	12,700	7,400
Shoalhaven	Shoalhaven	6,700	1,710	1,410	851	95	119	163	3,220	848	14,100	3,610	17,700		72	17,700	
Snowy	Snowy	960	86	45	15	30	10	52	119	71	1,190	0	1,190	0	30	1,190	0
Tuggerah Lake	Tuggerah Lake	11,190	3,050	1,310	219	437	146	437	1,720	1,030	17,200		17,200			17,200	
Tweed/Richmond	Tweed/Richmond	16,760	6,060	2,610	482	1,070	11,440	883	3,660	2,000	24,300	130	24,300	134	1,390	24,300	10
<i>No Water Supply</i>	<i>No Water Supply</i>														1,420		
	<b>Totals</b>	<b>200,200</b>	<b>40,500</b>	<b>30,800</b>	<b>8,400</b>	<b>10,200</b>	<b>22,700</b>	<b>11,300</b>	<b>44,000</b>	<b>23,000</b>	<b>320,000</b>	<b>22,000</b>	<b>338,000</b>	<b>4,100</b>	<b>22,700</b>	<b>283,000</b>	<b>55,000</b>

**Note:**  
For water utilities which did not report their residential consumption together with commercial and/or industrial consumption, the percentages tabulated in *Table 6* were applied to their total potable water consumption (column 9) and the consumptions for each category summed for each catchment to obtain the above values.

# Table 7 - Water Supply - Utility Characteristics, Financial

WATER UTILITY		UTILITY CHARACTERISTICS													FINANCIAL																						
		Total No of Assessments				Connected Properties per Assessment		Residential Assessments	Population	Peak Population	Connected Properties	Length of Mains	Properties Served per km of Main	Total Annual Consumption				Average Annual Residential Consumption			Economic Real Rate of Return				Total Turnover (excl. Capital Works Grants)				Residential Revenue	Residential Consumption	Current Replacement Cost (CRC)		Debt to Equity				
		(Total)		(Resid'l)		(Proportion of Total Assessments)	(Permanent)	(% of Permanent)	(Total)	(km)	(3)	(ML)				(kL/property)			(%)				(\$'000)				(% of annual rates & charges)	(% of potable excl unaccounted for water)	System Assets (\$M)	per Assessmt (\$)	(%)						
		(1)	(2)	(2a)	(2b)	(2c)	(2d)	(2e)	(2f)	(3)	(4)				(5)			(6)				(7)				(7a)	(7b)	(7c)	(7d)	(8)							
1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	98/99	99/00	00/01	97/98	98/99	99/00	00/01	1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	97/98	98/99	99/00	00/01					
1	Albury	17,530	17,680	18,100	18,100	0.96	0.96	0.89	42,500	120	17,400	380	45.9	12,200	11,120	9,240	10,100	382	308	310	0.4	1.9	1.3	0.3	6,160	6,240	6,240	6,040	84	59	95	5,300	6	4	3	2	
2	Armidale Dumaresq	7,760	8,160	9,310	7,800	0.98	0.98	0.91	23,000		7,600	265	28.7	3,370	3,200	3,390	3,390	255	241	286	-1.2	-1.1	-1.9	-1.0	3,540	3,070	3,070	3,620		65	107	13,800	0	0	1	1	
3	Ballina (Reticulator)	12,800	12,080	12,200	12,600	0.96	0.96	0.93	33,300		12,100	315	38.4	3,770	3,920	3,770	4,210	220	215	252	1.1	1.3	0.5	1.5	3,700	3,670	3,670	4,460	76	75	46	6,800	1	0	0	0	
4	Balranald (Dual Supply)	770	750	750	770	0.95	0.95	0.88	2,000	110	730	29	25.1	1,700	1,350	1,350	1,580	375	260	171	1.7	1.4	1.4	1.2	410	400	400	420	84	65	8	10,800	7	2	2	4	
5	Barraba	750	770	770	850	1.01	1.01	0.90	1,400	100	860	48	17.9	140	160	280	240	179	265	204	-1.8	-2.4	1.9	2.0	370	390	390	420	90	75	6	6,600	23	21	19	17	
6	Bathurst	10,900	11,220	11,400	11,900	1.06	1.07	0.90	30,600	200	12,600	335	37.6	6,590	6,380	6,070	7,490	284	281	383	2.9	2.7	2.6	2.0	7,320	7,460	7,460	7,980	66	66	128	10,700	1	0	0	0	
7	Bega Valley (Unfiltered)	12,000	12,160	12,300	12,600	0.95	0.95	0.92	25,600	160	11,900	503	23.7	3,360	3,580	3,120	3,820	200	162	203	2.7	2.3	1.7	1.0	6,020	5,990	5,990	5,630	79	65	98	7,800	0	0	0	0	
8	Bellingen (Unfiltered)	3,840	3,840	3,840	3,900	0.95	0.95	0.89	9,100	100	3,700	156	24.0	1,510		1,320	1,480	200	222	260	1.3	1.2	1.3	1.8	1,560	1,580	1,580	1,710	70	65	32	8,100	2	1	0	0	
9	Berrigan (Dual Supply)	2,870	2,860	2,990	3,000	0.98	0.98	0.86	6,200	120	2,900	190	15.5	2,530	2,110	2,270	2,030	291	369	230	1.8	1.8	0.7	0.0	1,460	1,530	1,530	1,590	85	67	24	8,100	15	14	11	10	
10	Bingara	740	740	730	730	1.00	1.00	0.92	1,200	110	730	33	22.2	460	330	370	430	237	304	372	2.3	2.9	2.4	3.4	270	260	260	290	83	68	5	6,300	26	26	26	24	
11	Bland	No WS																																			
12	Blayney	No WS																																			
13	Bogan	1,020	1,030	1,040	1,200	1.01	1.01	0.85	2,500		1,200	48	25.3		840	1,000	870	506	317	495	0.7	-0.7	-1.1	-1.7	820	680	680	640	90	65	16	13,100	8	7	5	4	
14	Bombala	830	910	910	920	0.92	0.92	0.84	1,900	110	840	37	22.9	400	380	430	380	426	447	312	3.6	3.0	3.2	4.9	390	400	400	440	83	65	6	6,700	12	8	6	3	
15	Boorowa	840	640	650	580	0.94	0.87	0.90	1,200	100	550	100	5.5	190	190	190	190	279	210	242		-0.7	1.6	1.1	320	310	310	300	89	65	5	7,800	29		30	29	
16	Bourke (Dual Supply)	1,750	1,760	1,760	1,700	0.75	0.75	0.81	4,100		1,300	87	14.9	1,690	1,600	900	900	507	378	396	-7.5	-6.1	-5.3	-5.5	700	750	750	770	86	65	13	7,300	5	5	15	14	
17	Brewarrina	550	550	620	620	0.86	0.94	0.88	1,700	110	530	50	10.7	1,030	940	1,130	1,160	194	380	413	-4.9	-2.3	-2.1	-2.3	300	340	340	350	73	65	4	5,600	0	0	1	1	
18	Australian Inland Energy & Water	10,200	10,180	10,200	10,200	1.01	1.01	0.91	22,000		10,300	362	28.4	8,120	8,590	7,120	7,450	448	325	356	0.7	0.9	0.3	-8.2		9,890	9,890	5,360	90	55	60	5,900	0		0	5	
19	Byron (Reticulator)	8,130	9,400	10,000	10,000	0.96	0.96	0.94	27,000	130	9,600	154	62.3	3,110	2,630	2,550	3,070	285	157	198	3.3	1.3	5.8	3.8	4,200	3,740	3,740	4,130	90	65	31	6,300	0	0	0	1	
20	Cabonne	1,090	1,090	1,120	1,100	0.92	0.92	0.88	2,100	100	1,000	88	11.8	370	380	400	500	361	168	216	0.5	0.4	0.5	1.3	690	660	660	750	83	65	19	17,200	7	6	4	3	
21	Carrathool (Groundwater)	980	980	980	1,100	0.95	0.95	0.85	2,000	110	1,000	383	2.7	840	830	870	1,310	739	422	386	0.7	1.3	0.5	0.2	770	760	760	800	90	75	23	20,900	6	5	5	3	
22	Central Darling (Dual Supply)	730	730	730	730	1.00	1.00	0.87	1,400	100	730	99	7.4	90	90	120	780	95	79	157		-2.7	-1.8					500	90	65	14	19,000			1	0	
23	Central Tablelands	5,000	4,810	4,910	5,000	0.95	0.95	0.81	11,000	110	4,700	414	11.4	3,250	2,930	2,430	2,540	266	272	237	-0.9	-1.5	-1.5	-0.2	2,740	2,370	2,370	2,780	71	47	58	11,600	0	0	0	0	
24	Cobar (Dual Supply)	1,840	1,740	2,020	2,000	0.95	0.95	0.90	4,500	110	1,900	95	20.1	1,600	1,370	1,140	1,140	856	359	382	-0.5	-1.0	-1.0	-0.4	1,220	1,130	1,130	1,260	80	65	20	10,100	1	0	0	1	
25	Coffs Harbour (Unfiltered)	20,500	20,500	21,200	21,800	0.94	0.94	0.94	55,800	120	20,500	563	36.4	5,310	5,530	5,600	5,730	208	190	190	4.8	3.9	4.2	4.2	10,900	9,900	9,900	13,000	71	73	129	5,900	13	24	32	28	
26	Coolah	1,070	1,070	1,070	1,100	0.97	0.97	0.88	1,900	110	1,000	58	18.1	110	170	460	420	167	280	193	5.0	0.9	1.4	0.9	450	430	430	480	90	47	7	6,200	0	0	0	0	
27	Coolamon	No WS																																			
28	Cooma-Monaro	3,550	3,570	3,610	3,600	0.95	0.95	0.90	7,700	130	3,400	148	23.1	1,610	1,480	1,410	1,410	330	253	266	4.6	5.5	7.7	6.6	1,700	1,710	1,710	1,860	83	65	15	4,200	13	9	7	4	
29	Coonabarabran	1,870	1,870	1,870	1,900	1.00	1.00	0.87	4,100		1,900	58	32.8	1,210	650	780	960	299	395	339	-0.2	0.1	-0.5	-1.0	990	1,080	1,080	1,050	90	73	27	14,400	1	1	1	0	
30	Coonamble (Groundwater)	1,370	1,470	1,470	1,600	0.87	0.85	0.87	4,400	110	1,400	63	22.5	1,020	830	930	1,310	741	528	793	7.6	3.8	3.5	4.6	570	560	560	610	90	75	8	4,600	5	4	2	1	
31	Cootamundra (Reticulator)	2,700	2,700	2,700	2,700	0.99	0.99	0.90	6,800	100	2,600	84	31.7	1,180	980	930	1,010	260	243	266	-3.1	-0.7	2.9	2.7	1,300	1,140	1,140	1,260	86	75	3	1,300	0	0	1	0	
32	Copmanhurst (Unfiltered)	130	130	150	150	0.95	0.95	0.86	330		150	10	14.3	40	30	30	35	212	217	161	-1.8	-7.1	11.4	0.7	50	48	50	96	90	73	1	8,600	0	0	1	0	
33	Corowa	3,370	3,460	3,470	3,500	0.93	0.92	0.91	6,900		3,300	95	34.3	3,900	3,470	3,250	3,220	735	664	670	2.2	3.8	2.5	1.9	1,450	1,420	1,420	1,510	74	68	28	8,000	0	0	1	0	
34	Cowra	5,020	5,130	5,020	5,100	0.95	0.95	0.93	12,600	110	4,800	350	13.8	2,300	3,100</																						



# Table 7 - Water Supply - Utility Characteristics, Financial

WATER UTILITY		UTILITY CHARACTERISTICS														FINANCIAL																				
		Total No of Assessments				Connected Properties per Assessment		Residential Assessments	Population	Peak Population	Connected Properties	Length of Mains	Properties Served per km of Main	Total Annual Consumption				Average Annual Residential Consumption			Economic Real Rate of Return				Total Turnover (excl. Capital Works Grants)				Residential Revenue	Residential Consumption	Current Replacement Cost (CRC)		Debt to Equity			
		(Total)		(Residl)		(Proportion of Total Assessments)	(Permanent)	(% of Permanent)	(Total)	(km)	(3)	(ML)				(kL/property)			(%)				(\$'000)				(% of annual rates & charges)	(% of potable excl unaccounted for water)	System Assets (\$M)	per Assessmt (\$)	(%)					
		(1)	(2)	(2a)	(2b)	(2c)	(2d)	(2e)	(2f)	(3)	(4)				(5)			(6)				(7)				(7a)	(7b)	(7c)	(7d)	(8)						
1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	98/99	99/00	00/01	97/98	98/99	99/00	00/01	1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	97/98	98/99	99/00	00/01				
44	Glen Innes	2,800	2,810	2,810	2,900	0.90	0.91	0.87	6,000	120	2,600	79	32.8	750	700	680	760	199	199	195	1.4	0.9	1.5	0.7	1,050	1,050	1,050	1,180	87	73	20	6,800	3	3	2	2
45	Gloucester	1,290	1,300	1,630	1,700	0.95	0.95	0.88	2,800	130	1,600	49	32.2	710	680	720	750	395	338	314	3.5	1.2	-0.6	0.9	630	620	620	680	86	65	9	5,200	7	5	4	2
46	Goldenfields (Bulk Supplier)	18,600	18,830	18,800	18,800	0.94	0.94	0.79	37,600	110	17,700	311	56.8	8,830	7,160	6,800	7,800				4.2	3.4	2.8	3.5	7,160	6,880	6,880	7,530		65	108	5,800	13	10	10	9
47	Goldenfields (Reticulator)	10,800	10,870	10,900	10,900	0.92	0.92	0.73	20,800	110	10,000	1,420	7.1	5,470	5,080	4,490	5,420	255	225	274	-0.5	-2.3	-2.9	-2.0	7,340	6,590	6,590	7,130	50	43	135	12,400	0	0	0	0
48	Goldenfields (Combined)	18,600	18,830	18,800	18,800	0.94	0.94	0.79	37,600	110	17,700	1,730	10.2	8,830	7,160	7,340	8,420								14,500	13,470	13,470	14,700	70		244	18,200				
49	Gosford	61,400	62,280	63,200	62,800	0.98	0.98	0.95	142,900	110	61,500	930	66.2	18,400	16,700	17,000	18,200	212	216	225	2.7	1.8	2.2	0.8	19,700	18,690	18,690	18,500	81	75	322	5,100	6	4	3	2
50	Goulburn	8,520	8,910	8,910	8,800	1.03	1.03	0.89	21,500		9,100	224	40.4	4,420	4,080	4,140	4,170	230	331	302	6.3	4.7	5.8	4.1	4,420	4,110	4,110	4,820	89	65	30	3,400	8	7	5	4
51	Grafton (Unfiltered)	6,640	6,660	6,710	6,800	1.06	1.07	0.92	17,500	100	7,200	255	28.1	2,720	5,370	2,350	2,360	354	197	185	-0.2	0.4	0.8	3.8	1,950	1,860	1,860	2,320	83	58	23	3,400	3	2	1	0
52	Griffith	7,570	7,570	8,760	9,000	0.85	0.84	0.88	24,000		7,600	380	20.1	7,600	9,090	9,000	9,820	851	795	825					4,140	4,140	5,010	85	65	64	7,100	0	2	0	0	
53	Gundagai	930	930	940	940	1.02	1.02	0.86	2,400	130	950	33	28.9	800	660	660	590	466	471	392	1.6	2.5	1.9	1.7	440	440	440	430	85	60	4	4,200	11	10	8	6
54	Gunnedah (Groundwater)	4,100	4,110	4,130	4,100	1.02	1.02	0.90	10,300		4,200	175	24.1	2,300	2,270	2,840	2,900	580	418	474	3.0	2.2	2.8	3.6	1,670	1,540	1,540	1,790	85	69	24	5,700	11	10	8	7
55	Gunning (Groundwater)	360	360	360	350	0.95	0.95	0.89	690		330	17	19.3	130	90	90	120	302	153	238	-1.4	-0.6	1.9	1.9	100	120	120	140	0	65	3	10,000	1	1	0	0
56	Guyra	1,160	1,170	1,170	1,200	0.95	0.95	0.90	2,900	100	1,100	60	18.6	290	310	290	320	274	275	270	-0.4	-0.2	-0.3	-0.6	400	390	390	440	89	75	5	4,200	9	8	6	5
57	Harden (Reticulator)	1,560	1,610	1,510	1,500	0.96	0.95	0.74	3,800		1,500	168	8.7	920	1,030	810	940	649	420	514	-3.7	-4.8	-4.6	-6.7	980	940	940	1,010	55	75	12	7,900	0	0	0	1
58	Hastings (Unfiltered)	23,400	24,280	24,900	25,400	0.95	0.95	0.91	62,900	120	24,200	681	35.5	6,390	6,190	6,630	6,600	191	190	204	2.3	5.3	2.8	2.5	11,000	14,740	14,740	12,100	90	75	195	7,700	1	1	0	0
59	Hay (Dual Supply)	1,210	1,280	1,290	1,300	0.98	0.98	0.87	2,900		1,300	86	14.6	2,010	3,940	3,200	2,210	236	200	197	-0.4	-0.2	-0.4	0.0	550	550	550	570	72	65	8	6,300	2	0	0	0
60	Holbrook	No WS																																		
61	Hume (Unfiltered)	1,840	1,970	2,000	2,000	0.95	0.95	0.88	6,000	130	1,900	146	13.1	1,110	1,040	960	1,070	494	321	370	2.3	-4.5	-1.4	-0.4	1,020	720	720	840	88	75	9	4,600	1	0	0	0
62	Hunter Water	188,000	193,000	196,000	199,000	1.00	1.00	0.93	467,000		199,000	4,310	46.2	80,100	77,100	80,100	81,200	192	196	213	4.9	4.4	4.4	3.7	75,000	72,000	72,000	71,700		56	955	4,800	5	5	5	5
63	Inverell	5,180	4,780	4,850	4,900	0.98	0.99	0.92	11,700	100	4,800	205	23.5	2,350	2,350	2,070	1,680	288	279	171	1.0	-0.3	-0.3	-0.9	2,300	2,070	2,070	2,080	78	50	44	9,000	4	3	2	1
64	Jerilderie (Dual Supply)	480	460	460	460	0.93	0.93	0.92	970		430	40	10.6	340	390	330	350	191	143	161	10.2	1.1	-3.3	-5.3	220	210	210	240	90	65	2	5,000	22	10	6	6
65	Junee	No WS																																		
66	Kempsey (Groundwater)	10,100	10,260	10,400	10,500	0.99	0.99	0.88	24,300	120	10,300	549	18.8	4,280	5,620	7,790	5,490	332	434	395	3.6	3.7	2.9	3.2	4,640	4,810	4,810	5,330	73	73	95	9,100	12	18	22	20
67	Kyogle	1,770	1,700	1,700	1,700	0.95	0.95	0.88	3,700	120	1,600	65	24.8	400	520	480	650	238	195	243	-0.9	-1.5	-1.7	-0.9	560	600	600	720	72	75	12	6,800	1	1	1	1
68	Lachlan	2,460	2,400	2,410	2,600	1.02	1.02	0.78	5,600	100	2,700	152	17.6	1,410	1,090	920	1,260	466	264	352	0.8	1.8	0.3	2.7	1,510	1,530	1,530	1,740	73	70	26	10,000	0	0	0	0
69	Leeton	3,440	3,440	3,560	3,600	1.00	1.00	0.88	8,000	110	3,600	125	28.7	2,610	2,590	2,330	2,580	588	511	522	0.1	1.5	1.3	4.7	1,770	1,690	1,690	1,990	76	75	24	6,600	3	3	6	4
70	Lismore (Reticulator)	12,230	12,300	12,400	12,700	1.04	1.05	0.90	32,800		13,200	302	43.7	3,280	3,830	3,590	4,110	222	193	209	3.6	2.7	2.0	8.0	4,680	4,320	4,320	5,990	74	70	39	6,300	4	4	5	2
71	Lithgow	7,070	7,170	7,070	7,100	0.98	0.98	0.90	20,000		7,000	454	15.4	2,400	2,090	2,280	2,350	320	259	217	-1.4	-2.4	-4.1	-1.6	3,170	2,870	2,870	3,090	0	65	36	5,100	0	0	0	0
72	Lockhart	No WS																																		
73	North Coast Water (Unfiltered)	9,640	9,740	10,300	10,800	0.95	0.95	0.78	25,500	150	10,200	1,070	9.6	3,560	3,540	3,790	3,820	200	213	203	3.7	2.7	14.1	2.6	5,440	4,990	4,990	6,140	69	49	97	9,000	6	5	4	4
74	Maclean	No WS																																		
75	Manilla	1,120	1,120	1,120	1,100	0.93	0.93	0.88	2,300	100	1,100	36	29.3	560	310	640	550	398	495	425	5.3	1.3	1.3	0.1	370	360	360	410	89	75	5	4,400	34	32	30	28
76	Merrriwa	590	600	600	600	0.94	0.94	0.90	1,100	130	570	26	21.9	400	290	290	290	379	371	338	1.8	1.6	-2.7	-2.8	310	300	300	310	79	68	4	7,000	1	0	0	0
77	MidCoast (Manning - Unfiltered)	18,600	18,830	20,400	20,700	0.96	0.96	0.94			19,800	765	25.9	7,800	8,700			217			7.9	3.0			7,900	7,400	7,400		0				16	24		
78	MidCoast (Great Lakes - Unfiltered)	11,600	11,840	12,800	13,000	0.96	0.96	0.95			12,400	345	36.1	2,900	3,140			216			2.2	3.0			6,600	6,200	6,200						15	24		
79	MidCoast (Combined - Unfiltered)	30,200	30,670	33,200	33,600	0.96	0.96	0.94	85,000	110	32,300	1,020	31.7	10,700	11,840	9,540	11,000	217	213	234	5.0	3.0	1.8	3.1	14,500	13,600	13,600	15,700	90	75	171	5,100	16	24	2	12
80	Moree Plains (Groundwater)	5,000	5,000	5,000	5,000	0.97	0.96	0.88	12,500	100	4,900	231	21.0	3,400	3,410	2,340	4,020	631	379	716					1,260	1,260	1,510		73	75	12	2,500	0	6	6	9
81	Mudgee (Unfiltered)	4,490	4,540	4,600	4,700	1.03	1.04	0.90	10,100	200	4,800	240	20.1	1,860	1,850	1,720	2,130	236	235	301	7.7															

# Table 7 - Water Supply - Utility Characteristics, Financial

WATER UTILITY		UTILITY CHARACTERISTICS														FINANCIAL																					
		Total No of Assessments				Connected Properties per Assessment		Residential Assessments	Population	Peak Population	Connected Properties	Length of Mains	Properties Served per km of Main	Total Annual Consumption				Average Annual Residential Consumption			Economic Real Rate of Return				Total Turnover (excl. Capital Works Grants)				Residential Revenue	Residential Consumption	Current Replacement Cost (CRC)		Debt to Equity				
		(Total)		(Residl)		(Proportion of Total Assessments)	(Permanent)	(% of Permanent)	(Total)	(km)	(3)	(ML)				(kL/property)			(%)				(\$'000)				(% of annual rates & charges)	(% of potable excl unaccounted for water)	System Assets (\$M)	per Assesmt (\$)	(%)						
		(1)	(2)	(2a)	(2b)	(2c)	(2d)	(2e)	(2f)	(3)	(4)	(5)	(6)	(7)	(7a)	(7b)	(7c)	(7d)	(8)																		
1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	98/99	99/00	00/01	97/98	98/99	99/00	00/01	1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	2000/01	97/98	98/99	99/00	00/01				
88	Narrabri (Groundwater)	4,200	4,200	4,200	4,200	0.98	0.98	0.85	10,800	110	4,100	133	30.8	3,700	3,230	3,400	3,730	969	475	622	2.8	5.5	5.4	5.9	1,730	1,740	1,740	1,640	90	65	21	5,000	6	5	4	3	
89	Narrandera (Groundwater)	2,390	2,140	2,150	2,200	0.92	0.92	0.84	4,800	120	2,000	65	30.3	1,810	1,480	1,870	1,790	700	613	577	6.4	8.0	7.1	8.7	1,020	1,180	1,180	1,200	89	65	9	4,300	4	3	2	1	
90	Narrromine (Groundwater)	2,050	2,060	2,080	2,100	0.95	0.95	0.88	4,800		2,000	56	35.5	1,140	1,030	1,370	860	400	402	428	5.5	4.5	-2.8	-2.0	730	730	730	700	88	75	9	4,600	1	0	0	0	
91	Nundle (Groundwater)	220	220	220	250	0.95	0.95	0.91	350	130	230	18	13.0	100	110	110	130	350	495	450	-0.7	-0.4	-0.9	-2.1	100	110	110	120	90	75	2	6,400	29	30	30	30	
92	Oberon (Unfiltered, Reticulator)	1,200	1,200	1,210	1,200	1.01	1.02	0.84	2,500	100	1,200	34	36.6	590	700	860	800	193	239	191	12.9	10.2	15.1	8.9	730	790	790	1,220	85	29	6	4,800	7	16	32	32	
93	Orange	13,400	13,690	13,700	14,400	1.00	1.00	0.90	31,500	100	14,400	409	35.3	7,230	6,950	5,980	7,800	351	263	498	4.7	1.6	2.9	2.6	7,240	5,690	5,690	6,740	89	75	88	6,100	0	0	0	0	
94	Parkes	4,930	5,760	5,760	5,800	0.95	0.95	0.90	11,500	100	5,500	420	13.0	3,230	6,280	6,120	6,160	283	300	305	2.8	1.6	1.6	1.7	4,770	3,980	3,980	4,450	58	27	77	13,400	0	0	0	0	
95	Parry (Groundwater)	1,760	1,850	1,860	1,900	0.95	0.95	0.95	5,000	110	1,800	97	18.5	940	440	1,020	1,020	474	489	349	2.3	1.8	0.8	0.6	900	840	840	810	90		20	10,400	21	19	19	18	
96	Pristine Waters (Unfiltered)	1,870	1,990	1,990	2,000	0.95	0.95	0.86	3,800	180	1,900	44	42.7	600	490	510	600	232	180	233	4.0	4.2	4.2		920	860	820		90	75	11	5,600	31	22	22		
97	Queanbeyan (Reticulator)	12,900	12,500	13,000	13,500	1.03	1.04	0.93	29,700		13,900	245	56.6	5,080	4,340	4,290	4,860	291	275	218	3.0	0.7	0.1	18.0	5,900	5,330	5,330	12,800	85	65	35	2,600	1	2	1	1	
98	Quirindi (Groundwater)	1,600	1,600	1,600	1,600	0.83	0.84	0.85	3,000	100	1,300	51	26.0	900	570	600	630	292	312	321	2.8	0.5	1.1	1.9	530	490	490	510	86	69	10	6,000	0	0	0	0	
99	Richmond Valley	6,450	6,440	6,290	6,600	0.97	0.97	0.93	17,300	120	6,400	172	37.4	3,460	3,100	3,010	3,220	350	299	312	2.6	2.0	4.0	2.5	2,790	2,570	3,010	2,570	86	65	31	5,300	3	2	0	2	
100	Riverina (Groundwater)	23,700	23,960	25,500	25,800	0.96	0.96	0.91	58,000	100	24,800	1,330	18.6	16,500	15,200	13,600	14,500	385	328	351	4.5	3.4	2.5	2.3	12,900	12,150	12,150	12,000	70	62	172	6,700	10	9	9	9	
101	Rous (Bulk Supplier)	31,700	33,000	33,500	33,500	0.96	0.96	0.94	99,200		32,200	375	85.8	11,700	11,000	11,600	13,500				2.1	3.0	2.9	-0.4	7,220	7,720	7,720	7,660	90	62	108	3,200	0	0	0	0	
102	Rylstone	1,270	1,270	1,270	1,300	0.99	0.99	0.93	2,700		1,300	41	31.1	520	580	580	400	344	344	200	1.6	1.1	-0.4	-1.9	810	710	710	620	82	65	12	9,000	0	0	0	0	
103	Scone (Unfiltered)	2,610	2,620	2,640	2,700	1.01	1.02	0.92	7,000	120	2,700	114	24.0	1,780	1,470	1,410	1,490	214	228	244	3.8	1.4	0.2	1.8	1,420	1,120	1,120	1,280	81	67	16	5,800	0	0	0	0	
104	Severn	190	190	200	190	0.95	0.95	0.91	400	100	180	9	21.3		100	100	30	400	335	119	-1.5	-0.5	-0.4		60	50	50	50	90	74	1	3,400	12	11	8	14	
105	Shoalhaven	43,700	44,210	45,200	45,200	0.94	0.94	0.93	85,000	340	42,500	1,550	27.4	17,300	16,340	19,100	17,500	177	170	167	4.2	3.1	3.8	7.5	15,900	15,260	15,260	16,300	79	61	153	3,400	11	12	9	8	
106	Singleton	5,360	5,440	5,150	5,400	0.95	0.95	0.90	13,800	100	5,200	131	39.5	2,850	3,240	2,600	2,740	316	329	343	2.6	3.6	5.2	2.2	3,080	3,210	3,210	3,200	87	69	37	6,800	14	10	7	0	
107	Snowy River (Unfiltered)	2,250	2,380	2,380	2,400	1.43	1.43	0.88	3,700	520	3,400	122	28.0	870	660	650	810	187	120	224	3.9	2.5	2.5	6.5	1,290	1,150	1,150	1,780	90	75	18	7,800	21	17	15	13	
108	Sydney Water	1,579,000	1,572,000	1,599,000	1,629,000	0.97	0.97	0.90	4,029,000		1,580,000	20,270	77.9	620,000	635,800	601,900	625,000	242	244	263	4.3	3.4	3.4	3.8	622,000	597,000	597,000	690,000		69	5,770	3,500	19	18	16	17	
109	Tallaganda (Unfiltered)	600	600	600	710	0.88	0.86	0.85	1,100		620	19	32.8	260	240	220	170	327	312	195	0.9	-0.4	-0.3	-0.5	290	260	260	200	81	75	3	4,900	3	2	0	0	
110	Tamworth	13,557	14,280	15,100	15,200	1.01	1.01	0.92	35,800	200	15,400	453	33.9	9,280	8,190	8,710	9,290	265	265	292	3.3	0.6	1.8	1.3	7,280	6,450	6,450	7,160	83	51	145	9,500	4	2	1	1	
111	Temora	No WS																																			
112	Tenterfield	2,030	1,960	1,960	1,800	0.95	0.95	0.91	3,600		1,700	64	26.9	500	550	590	570	301	199	233	-0.3	-4.4	-1.7	-3.6	700	770	770	890	84	70	15	8,600	0	2	4	0	
113	Tumbarumba	1,070	1,070	1,070	1,100	0.95	0.95	0.92	2,000	150	1,000	54	18.7	750	4,070	410	590	850	314	262	1.4	-0.3	1.3	2.4	390	390	390	450	88	48	8	7,600	4	0	0	0	
114	Tumut	3,880	3,870	3,890	4,000	0.95	0.95	0.90	11,700	100	3,800	123	31.3	1,880	2,400	1,740	1,880	303	261	264	1.7	2.7	2.6	2.1	1,680	1,800	1,800	1,930	71	55	32	7,900	4	5	2	2	
115	Tweed	25,350	26,250	25,800	27,500	0.91	0.93	0.96	65,000	130	25,000	585	42.8	9,310	8,930	8,500	9,680	233	224	240	3.3	2.5	2.8	3.4	12,200	11,850	11,850	13,900	77	68	171	6,200	3	3	2	1	
116	Uralla	1,250	1,260	1,260	1,300	1.01	1.02	0.86	2,800	100	1,300	37	34.1	240	490	390	390	198	195	211	-0.6	0.0	-0.4		490	480	480		86	75	9	6,900	4	4	3		
116A	Urana	No WS																																			
117	Wagga Wagga	No WS																																			
118	Wakool (Dual Supply)	1,170	1,210	1,850	1,800	0.95	0.95	0.87	2,600	100	1,800	55	31.9	1,200	1,520	1,320	1,200	315	66	270	4.5	4.3	4.1	3.0	720	750	750	820	66	74	12	6,700	15	15	12	14	
119	Walcha	840	820	820	820	1.01	1.01	0.86	1,600	110	830	49	17.0	260	260	260	260	187	195	198	1.6	-0.2	-0.2	-0.4	420	340	340	380	87	62	10	12,200	7	5	4	2	

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# Table 8 - Water Supply - Residential Charges, Bills

WATER UTILITY		RESIDENTIAL CHARGES												RESIDENTIAL BILLS																					
		Type of Tariff (8a)	Access Charge (or Minimum) (\$) (9)			Charge Independent of Land Value? (10)			Allowance (kL) (11)		Usage Charge for >200kL/a (or > Allowance) (c/kL) (12)				Typical Developer Charge (\$/ET) (13)				Typical Residential Bill (\$/assessment) (13a)				Average Residential Bill (\$/property) (14)				Bill for Customer using 200 kL/a (\$/assessment) (15)				Real Increase in Bill for Customer using 200 kL/a (%) (16)				
			1999/00	2000/01	2001/02	1999/00	2000/01	2001/02	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01					
1	Albury	Inclining Block	145	125	150	Yes	Yes	Yes	Nil	Nil	12	12	12*	12*	1,000	1,000	1,500	1,500	191	182	164	187	313	304	254	263	170	169	169	149	4	-2	-2	-14	
2	Armidale Dumaresq	Inclining Block	135	145	153	Yes	Yes	Yes	Nil	Nil	55	55	60*	65*	3,600	3,620	3,620	3,620	275	268	290	339	265	242	225	409	245	245	245	265	-9	-2	-2	5	
3	Ballina (Reticulator)	Inclining Block	215	175	91	Yes	Yes	Yes	75	Nil	30	30	30*	70*	1,300	1,350	1,350	1,350	272	257	240	267	170	183	179	238	170	178	200	213	-14	2	9	3	
4	Balranald (Dual Supply)	Unmetered	220	256	225	Yes	Yes	Yes									750		212	220	256	225		460	433	391	210	212	220	256	-3	-1	2	13	
5	Barraba	300kL Allowance	434	434	434	Yes	Yes	Yes	300	300	61	61	61	61					434	434	434	434	414	460	442	421	434	434	434	434	8	-2	-2	-3	
6	Bathurst	45kL Allowance	305	316	250	No	No	Yes	400	45	85	85	88*	50*	1,000	1,200	1,200	1,820	297	305	316	419	280	290	390	414	297	305	316	316	-2	1	2	-3	
7	Bega Valley (Unfiltered)	Two Part	200	200	185	Yes	Yes	Yes	Nil	Nil	126	65	65	65	2,500	2,460	2,610	2,790	423	305	306	317	453	380	342	325	393	393	330	330	1	-2	-18	-3	
8	Bellingen (Unfiltered)	Two Part	185	189	194	Yes	Yes	Yes	Nil	Nil	54	55	56	57	4,900	4,900	5,500	5,500	291	308	332	342	305	275	253	279	286	291	295	301	0	0	-1	-1	
9	Berrigan (Dual Supply)	250kL Allowance	427	427	450	Yes	Yes	Yes	250	250	43	43	55*	55	400	430	425	475	412	427	493	450	429	443	465	479	405	412	427	427	-2	0	2	-3	
10	Bingara	320kL Allowance	295	300	300	Yes	Yes	Yes	320	320	90	90	100	120					285	295	300	362	328	283	302	328	285	285	295	300	-2	-2	1	-1	
11	Bland	NO WS																																	
12	Blayney	NO WS																																	
13	Bogan	700kL Allowance	451	475	488	No	No	No	700	700	65	65	68	70					452	451	475	488	426	559	562	549	444	452	451	475	1	0	-2	2	
14	Bombala	Inclining Block	425	425	350	Yes	Yes	Yes	300	Nil	65	84	84	40*	1,100	1,050	1,190	1,190	499	549	549	480	473	413	445	444	414	426	425	425	-2	1	-2	-3	
15	Boorowa	Two Part	342	342	378	Yes	Yes	Yes	Nil	Nil	60	60	60	65	400	400	400	400	504	468	473	520	380	465	473	478	462	462	462	342	-2	-2	-2	-28	
16	Bourke (Dual Supply)	Unmetered	503	517	517	Yes	Yes	Yes							400	400	400	400	491	503	517	517	451	497	511	608	483	491	517	517	1	0	3	-3	
17	Brewarrina	Unmetered	467	502	527*	No	No	Yes											467	467	502	527*	471	535	422	522	445	467	502	502	2	3	5	-3	
18	Australian Inland Energy & Water	200kL Allowance	210	210	220	Yes	Yes	Yes	200	200	53	56	56*	60*					327	280	280	314	287	287	301	344	182	198	210	210	5	7	4	-3	
19	Byron (Reticulator)	Two Part	91	93	93	Yes	Yes	Yes	Nil	Nil	85	85	87	87	5,000	4,400	4,900	4,900	318	225	232	265	353	295	299	318	290	260	261	267	-6	-12	-2	-1	
20	Cabonne	500kL Allowance	492	492	505	No	No	No	500	500	127	130	134*	140*	400	400	400	400	546	492	492	505	548	541	531	548	546	546	492	492	-2	-2	-12	-3	
21	Carrathool (Groundwater)	500kL Allowance	305	305	315	Yes	Yes	Yes	500	500	43	31	31*	33*	500	790	794	794	393	305	305	315	463	472	596	580	305	290	305	305	3	-7	3	-3	
22	Central Darling (Dual Supply)	115kL Allowance	445	121	121	Yes	Yes	Yes	115	115	244	244	244*	244*					425	358	121	223		445	445	755	405	425	652	328	1	3	51	-51	
23	Central Tablelands	Declining Block	120	120	120	Yes	Yes	Yes	Nil	Nil	86	86	96*	99*			3,000		344	354	381	354	337	353	355	395	288	288	298	312	1	-2	1	2	
24	Cobar (Dual Supply)	550kL Allowance	493	493	493	Yes	Yes	Yes	550	550	110	125	125*	125*	1,300	1,310	1,410	1,400	650	493	493	493	474	646	646	563	407	407	493	493	1	-2	19	-3	
25	Coffs Harbour (Unfiltered)	Two Part	153	161	168	Yes	Yes	Yes	Nil	Nil	99	104	109	114	2,500	2,840	2,890	2,890	344	351	368	384	347	296	295	311	340	337	361	379	0	-3	5	2	
26	Coolah	Inclining Block	292	300	135	Yes	Yes	Yes	400	Nil	54	54	54*	70*					292	292	300	270	351	322	358	393	292	292	292	300	3	-2	-2	0	
27	Coolamon	NO WS																																	
28	Cooma-Monaro	Two Part	322	328	328	Yes	Yes	Yes	Nil	Nil	43	43	43	45	2,000	1,970	1,990	2,150	464	431	438	448	448	499	486	444	388	401	408	414	0	1	0	-1	
29	Coonabarabran	683kL Allowance	430	430	437	No	No	No	683	683				64*	1,000	980	996	996		430	430	437	497	507	536	526			430	430				-3	
30	Coonamble (Groundwater)	775kL Allowance	186	186	186	No	No	Yes	775	775	23	24	24	24*	400	400	452	452	184	186	186	190	373	323	339	339	184	184	186	186	1	-2	-1	-3	
31	Cootamundra (Reticulator)	219kL Allowance	281	281	289	No	No	No	219	219	101	101	107*	107*	2,000	2,000	2,000	2,000	321	306	307	340	389	352	405	427	283	268	281	281	3	-7	3	-3	
32	Copmanhurst (Unfiltered)	100kL Allowance	230	250	250	Yes	Yes	Yes	100	100	80	80	90	90	600	690	690	690	320	323	354	305	368	317	330	358	310	310	310	340	-2	-2	-2	6	
33	Corowa	700 kL Allowance	310	310	310	Yes	Yes	Yes	700	700			14	14*	400	400			310	310	310	310	299	294	294	294	310	310	310	310	7	-2	-2	-3	
34	Cowra	Inclining Block	295	302	302	Yes	Yes	Yes	Nil	Nil	25	25	25*	25*	1,500	2,000	2,000	2,500	358	392	401	362	399	374	430	434	330	345	345	352	-1	3	-2	-1	
35	Crookwell	300kL Allowance	550	550	565	Yes	No	No	300	300	70	70	70	70	600	700	725	740	501	550	550	565	495	471	608	666	455	501	550	550	13	8	8	-3	
36	Culcairn (Groundwater)	238kL Allowance	152	152	152	Yes	Yes	Yes	238	238	64	64	64	64	1,800	1,780	1,780	1,780	152	152	152	152	230	189	171	174	152	152	152	152	-2	-2	-2	-3	
37	Deniliquin	1000kL Allowance	453	465	479	Yes	Yes	Yes	1000	1000			48	48	400	430	465	479	413	453	465	479	402	399	430	528	392	413	453	465	-2	3	8	0	
38	Dubbo	Two Part	210	210	210	Yes	Yes	Yes	Nil	Nil	52	52	52	52	3,200	3,250	3,250	3,250	324	364	364	363	408	422	420	336	388	278	314	314	9	-30	11	-3	
39	Dungog (Unfiltered)	230kL Allowance	224	244	264	Yes	Yes	Yes	240	230	85	93	102	115*	2,500	2,540	2,600	2,650	347	245	270	264	287	250	283	359	196	204	224	244	-2	2	8	6	
40	Eurobodalla (Unfiltered)	Two Part	230	230	230	Yes	Yes	Yes	Nil	Nil	40	50	50*	55	1,700	1,670	1,670	1,670	351	324	324	348	325	324	336	337	325	325	330	330	-2	-2	0	-3	
41	Fish River WS (Unfiltered, Bulk Supplier)		MAQ	MAQ	MAQ	Yes	Yes	Yes	MAQ	MAQ																				298					
42	Forbes	1350kL Allowance	334	342	362	No	No	No	1500	1350	30	30	31	32	500	540	555	630	334	334	342	362	293	291	373	351	328	334	334	342	-2	0	-2	-1	
43	Gilgandra (Groundwater)	Two Part	250	250	255	Yes	Yes	Yes	Nil	Nil	30	30	30	31					405	366	366	382	296	323	316	351	320	310	310	310	1	-5	-2	-3	

NOTE: \* Inclining block or multiple tariffs apply as shown in Table 8A

# Table 8 - Water Supply - Residential Charges, Bills

WATER UTILITY		RESIDENTIAL CHARGES												RESIDENTIAL BILLS																				
		Type of Tariff (8a)	Access Charge (or Minimum) (\$) (9)			Charge Independent of Land Value? (10)			Allowance (kL) (11)		Usage Charge for >200kL/a (or > Allowance) (c/kL) (12)				Typical Developer Charge (\$/ET) (13)				Typical Residential Bill (\$/assessment) (13a)				Average Residential Bill (\$/property) (14)				Bill for Customer using 200 kL/a (\$/assessment) (15)				Real Increase in Bill for Customer using 200 kL/a (%) (16)			
			2001/02	1999/00	2000/01	2001/02	1999/00	2000/01	2001/02	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01			
44	Glen Innes	230 kL Allowance	269	269	269	Yes	Yes	Yes	230	230	117	117	117	117					269	269	269	269	358	346	357	370	269	269	269	269	8	-2	-2	-3
45	Gloucester	350 Allowance	200	350	350	No	Yes	Yes	350	350	93	95	100*	100*	1,400	1,360	1,400	1,140	370	200	350	350	365	399	371	340	319	328	350	350	-2	1	4	-3
46	Goldenfields (Bulk Supplier)		Peak Week	Peak Week	Peak Week	Yes	Yes	Yes	Nil	Nil					2,000	2,000	2,000	2,000																
47	Goldenfields (Reticulator)	Two Part	192	192	196	Yes	Yes	Yes	Nil	Nil	101	101	101	101	2,000	2,000	2,000	2,000	473	419	419	473	582	510	355	406	390	394	394	394	-1	-1	-2	-3
48	Goldenfields (Combined)							Yes																										
49	Gosford	Two Part	153	70	70	Yes	Yes	Yes	Nil	Nil	65	65	65	68	2,900	2,860	3,030	2,130	159	163	210	223	214	221	190	200	161	153	153	200	-6	-7	-2	27
50	Goulburn	Inclining Block	212	212	212	Yes	Yes	Yes	Nil	Nil	50	53	53*	58*	1,100	1,130	1,270	1,300	315	388	388	387	311	334	454	489	299	318	318	318	1	4	-2	-3
51	Grafton (Unfiltered)	Two Part	134	134	134	Yes	Yes	Yes	Nil	Nil	50	50	50	50					329	233	234	226	195	176	224	206	217	234	234	234	-1	6	-2	-3
52	Griffith	634kL Allowance	243	260	260	No	No	No	634	634	37	38	41	41	1,600	1,750	1,820	1,820	301	287	330	338	333	283	434	501	238	238	243	260	5	-2	0	4
53	Gundagai	500kL Allowance	310	310	310	No	No	No	500	500	72	62	62	62*	400	480	520	530	310	310	310	310	345	323	387	381	310	310	310	310	-2	-2	-2	-3
54	Gunnedah (Groundwater)	440kL Allowance	230	230	240	No	No	No	440	440	43	52	52*	55*	2,300	2,390	2,390	2,500	280	230	230	259	282	265	326	349	190	220	230	230	4	14	2	-3
55	Gunning (Groundwater)	360kL Allowance	118	118	118	No	No	No	360	360	100	110	110	110					99	118	118	118	270	238	278	358	85	99	118	118	3	14	17	-3
56	Guyra	Inclining Block	200	214	214	Yes	Yes	Yes	Nil	Nil	65	65	69*	73*			555		378	314	336	411	310	301	328	337	310	330	330	352	5	4	-2	4
57	Harden (Reticulator)	300kL Allowance	365	365	391	Yes	Yes	Yes	300	300	80	83	83	88	2,000	2,000	2,000	2,000	617	465	469	579	389	418	391	490	343	353	365	365	-2	1	1	-3
58	Hastings (Unfiltered)	Two Part	175	175	175	Yes	Yes	Yes	Nil	Nil	72	75	75	77	2,500	2,300	2,580	3,200	315	318	315	332	361	320	370	400	318	328	325	325	-10	1	-3	-3
59	Hay (Dual Supply)	300kL Allowance	345	345	345	Yes	Yes	Yes	300	300	75	75	75	75					399	345	345	345	373	352	331	330	345	340	345	345	3	-3	-1	-3
60	Holbrook	<b>NO WS</b>																																
61	Hume (Unfiltered)	400kL Allowance	200	200	200	Yes	No	No	500	400	80	80	110*	90*	2,000	1,500	1,060	1,010	235	200	200	200	464	335	352	404	200	200	200	200	-2	-2	-2	-3
62	Hunter Water	Two Part	25	25	26	Yes	Yes	Yes	Nil	Nil	90	92	92	93	1,000	1,400	1,400	900	186	205	206	224	228	205	178	213	227	217	209	209	-5	-6	-6	-3
63	Inverell	Two Part	180	185	200	Yes	Yes	Yes	Nil	Nil	80	80	80	80	1,700	1,690	1,690	1,690	460	404	409	336	283	322	343	345	340	340	340	345	-3	-2	-2	-1
64	Jerilderie (Dual Supply)	300kL Allowance	377	377	377	Yes	No	No	300	300	71	65	80*	80*					376	377	377	377	425	421	509	556	343	376	377	377	-2	8	-2	-3
65	June	<b>NO WS</b>																																
66	Kempsey (Groundwater)	200kL Allowance	370	370	400	Yes	Yes	Yes	200	200	59	61	61*	66*	3,000	3,500	3,500	3,500	421	513	474	529	378	383	346	376	342	359	370	370	-2	3	1	-3
67	Kyogle	Two Part	200	200	242	Yes	Yes	Yes	Nil	Nil	51	52	57	63	1,000	1,000	1,000	1,000	315	301	311	395	241		259	311	291	296	304	314	-3	0	1	0
68	Lachlan	Inclining Block	220	220	220	Yes	Yes	Yes	Nil	Nil	40	50	50*	57*					380	353	354	420	304	426	484	488	260	260	320	320	0	-2	21	-3
69	Leeton	Inclining Block	215	222	228	Yes	Yes	Yes	Nil	Nil	38	38	38*	41*	3,300	3,270	3,270	2,300	452	418	425	442	310	386	375	425	274	292	292	298	-2	5	-2	-1
70	Lismore (Reticulator)	Two Part	84	85	84	Yes	Yes	Yes	Nil	Nil	85	85	85	85	3,100	3,100	3,100	3,100	288	248	249	261	249	226	230	254	258	254	254	255	-13	-3	-2	-3
71	Lithgow	Inclining Block	250	250	250	Yes	Yes	Yes	Nil	Nil	38	38	38*	38*	2,200	2,230	2,230	2,230	375	348	348	333	343	318	358	402	326	326	326	326	-3	-2	-2	-3
72	Lockhart	<b>NO WS</b>																																
73	North Coast Water (Unfiltered)	Two Part	225	216	218	Yes	Yes	Yes	Nil	Nil	50	51	52*	57	2,600	2,700	3,200	3,360	322	334	327	333	293	285	290	290	322	322	327	320	-2	-2	-1	-5
74	Maclean	<b>NO WS</b>																																
75	Manilla	400kL Allowance	305	337	337	Yes	Yes	Yes	400	400	60	60	60	60	900	1,000	1,100	1,100	305	305	394	352	316	284	333	358	305	305	305	337	-2	-2	-2	7
76	Merriwa	Two Part	315	315	315	Yes	Yes	Yes	Nil	Nil	35	35	35	35	400	400	400	1,000	449	445	445	433	404	379	397	420	385	385	385	385	-1	-2	-2	-3
77	MidCoast (Manning - Unfiltered)	Inclining Block	168	156	146	Yes	Yes	Yes	Nil	Nil	53	53	55*	55*	2,300	2,300	2,300	2,500	221	219	227	340	375	341	332	389	214	224	238	226	3	3	4	-8
78	MidCoast (Great Lakes - Unfiltered)	Inclining Block	360	290	190	Yes	Yes	Yes	Nil	Nil	80	78	22*	59*	2,600	3,110	3,200	3,500	360	360	334	385	373	341	332	389	360	360	360	334	-9	-2	-2	-10
79	MidCoast (Combined - Unfiltered)																																	
80	Moree Plains (Groundwater)	Two Part	190	194	194	Yes	Yes	Yes	Nil	Nil	18	20	25*	25			3,270	3,270	305	266	290	373	313	259	372	244	221	226	230	244	-2	0	0	3
81	Mudgee (Unfiltered)	Two Part	250	240	240	Yes	Yes	Yes	Nil	Nil	88	88	80	81	2,000	3,160	3,160	3,160	480	472	445	484	473	439	437	428	451	426	426	400	-2	-7	-2	-9
82	Mulwaree	295kL Allowance	360	360	360	Yes	Yes	Yes	295	295	105	122	107*	122*	3,000	2,500	2,500	2,500	408	360	360	360	457	428	449	665	310	345	360	360	-2	9	2	-3
83	Murray	250kL Allowance	358	358	380	Yes	Yes	Yes	250	250	20	30	30*	40*	500	700	700	700	358	430	430	383	400	426	400	453	353	358	358	358	-3	0	-2	-3
84	Murrumbidgee (Groundwater)	Unmetered	283	283	283*	No	No	No							1,000	1,000	1,000		257	283	283	283*	264		318	310	221	257	283	283	-2	14	8	-3
85	Murrurundi (Unfiltered)	425 kL Allowance	420	420	425	Yes	Yes	Yes	425	425	96	99	100*	100*	400	400	400	400	410	420	420	425	505	486	472	434	410	410	420	420	-5	-2	0	-3
86	Muswellbrook	Two Part	84	86	95	Yes	Yes	Yes	Nil	Nil	56	59	59	60	2,400	2,370	2,370	2,370	305	277	279	297	278	265	266	285	194	194	202	204	0	-2	2	-2
87	Nambucca (Groundwater)	Two Part	145	145	145	Yes	Yes	Yes	Nil	Nil	65	65	65	65	2,800	2,800	2,800	3,110	294	307	307	307	240	220	286	221	275	275	275	275	4	-2	-2	-3



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# Table 8A - Water Supply - 2001/02 Residential Inclining Block or Multiple Tariffs

WATER UTILITY	Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Tariff	WATER UTILITY	Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Tariff (c/kL)
		(1)	(2)	(3)	(4)	(5)	(6)			(1)	(2)	(3)	(4)	(5)	(6)
1 Albury		Inclining Block	150	Yes	Nil	Up to 300 kL	12	34 Cowra		Inclining Block	302	Yes	Nil	Up to 2,500 kL	25
						>300 kL	45				302			2,501 to 5,000 kL	40
2 Armidale Dumaresq		Inclining Block	153	Yes	Nil	Up to 400 kL	65				302			5,001 to 10,000 kL	80
						401 kL to 700 kL	76				302			>10,000 kL	130
						701 kL to 1000 kL	87	39 Dungog (Unfiltered)	Dungog	230 kL Allowance	264	Yes	230	>230 kL	115
						> 1000 kL	105		Clarence Town	230 kL Allowance	264	Yes	230	>230 kL	115
3 Ballina (Reticulator)	Ballina	Inclining Block	90	Yes	Nil	0 to 350kL	70		Patterson District	230 kL Allowance	336	Yes	230	>230 kL	146
						> 350 kL	95		Gresford	230 kL Allowance	336	Yes	230	>230 kL	146
6 Bathurst		45 kL Allowance	250	Yes	45	46 to 300 kL	50	45 Gloucester	Gloucester	350 kL Allowance	360	Yes	350	> 350 kL	100
						>300 kL	80		Barrington	500 kL Allowance	292	Yes	500	>500 kL	57
14 Bombala	Bombala	Inclining Block	350	Yes	Nil	0 to 300kL	40	50 Goulburn		Inclining Block	212	Yes	Nil	Up to 400 kL	58
	Delegate	Unmetered	166			>300 kL	80						>400 kL	128	
17 Brewarrina	Brewarrina	Unmetered	527	Yes				53 Gundagai	Gundagai	Inclining Block	310	Yes	Nil	Up to 500 kL	62
	Goodooga	Unmetered	390	Yes									>500 kL	72	
18 AIEW		200 kL Allowance	220	Yes	200	201 kL to 400 kL	60	56 Guyra	Guyra	Inclining Block	214	Yes	Nil	Up to 750 kL	73
						>400 kL	162						>750 kL	135	
20 Cabonne	Molong	500 kL Allowance	505.3	No	500	>500 kL	140	54 Gunnedah (Groundwater)	Gunnedah	440 kL Allowance	240	No	440	>440 kL	55
	Cumnock	450 kL Allowance	539.3	No	450	>450 kL	130		Curlewis	440 kL Allowance	350	No	440	>440 kL	55
	Yeoval	450 kL Allowance	389.2	No	450	>450 kL	97		Mullaley	440 kL Allowance	636	No	440	>440 kL	55
21 Carrathool	Hillston	500 kL Allowance	315	Yes	500	500 kL to 1,000 kL	33		Tambar Springs	440 kL Allowance	724	No	440	>440 kL	55
						>1,000 kL	57	61 Hume	Howlong & Lake Hume, Vi	400 kL Allowance	200	No	400	400 to 1000 kL	90
	Carrathool	500 kL Allowance	520	Yes	500	500 kL to 1,000 kL	26						>1000 kL	110	
						>1,000 kL	42	64 Jerilderie (Dual Supply)		300 kL Allowance	377	No	300	300 to 600 kL	80
	Goolgobi/Merriwagga	500 kL Allowance	560	Yes	500	500 kL to 1,000 kL	24						600 to 1200 kL	70	
						>1,000 kL	42						>1200 kL	60	
	Rankins Springs	500 kL Allowance	670	Yes	500	500 kL to 1,000 kL	39	66 Kempsey (Groundwater)		200 kL Allowance	400	Yes	200	200 kL to 2500 kL	66
						>1,000 kL	37						>2500 kL	64	
22 Central Darling	Wilcannia (Filtered)	115 kL Allowance	344	Yes	115	> 115 kL	256	68 Lachlan	Condoblin	Inclining Block	220	Yes	Nil	Up to 300 kL	57
	Wilcannia (Raw)	Unmetered	137	Yes									>300 kL	100	
	White Cliffs	200 kL Allowance	319	Yes	200	>200 kL	200	69 Leeton	Leeton, Whitton, Murrami	Inclining Block	228	Yes	Nil	Up to 400 kL	41
	Ivanhoe (Filtered)	100 kL Allowance	182	Yes	100	>100 kL	254						>400 kL	48	
	Ivanhoe (Raw)	300 kL Allowance	134	Yes	300	>300 kL	111	71 Lithgow		Inclining Block	250	Yes	Nil	Up to 500 kL	38
23 Central Tablelands		Declining Block	120	Yes	Nil	Up to 5,000 kL	99						501 kL to 5,000 kL	100	
						5,001 kL to 9,000	67						>5,000 kL	150	
						>9,000 kL	56	77 Midcoast (Manning - Unfiltered)		Inclining Block	146	Yes	Nil	up to 50 kL	55
24 Cobar (Dual Supply)	Cobar	550 kL Allowance	517	Yes	550	>550 kL	125						>50 kL	63	
	Nymagee Village	Unmetered	405					78 Midcoast (Great Lakes - Unfiltered)		Inclining Block	190	Yes	Nil	up to 50 kL	59
	Mt Hope	Unmetered	548										>50 kL	74	
	Euabalong Village	Unmetered	503					82 Mulwaree	Marulan	295 kL Allowance	360	Yes	295	>295 kL	122
26 Coolah		Inclining Block	135	Yes	Nil	0 to 300 kL	70		Taralga	295 kL Allowance	315	Yes	295	>295 kL	107
						301 to 500 kL	80	83 Murray		250 kL Allowance	380	Yes	250	>250 kL	40
						501 to 800 kL	90		Moama (Dual Supply)	750 kL Allowance	380	Yes	750	>750 kL	40
29 Coonabarabran	Coonabarabran	683 kL Allowance	437	No	683	>683 kL	64	84 Murrumbidgee	Darlington Point	Unmetered	283	No			
	Baradine	795 kL Allowance	465	No	795	>795 kL	59		Coleambally	Unmetered	366	No			
	Binnaway	790 kL Allowance	610	No	790	>790 kL	77	85 Murrurundi (Unfiltered)	Murrurundi	425 kL Allowance	425	Yes	425	All	100
	Coonamble	775 kL Allowance	186	Yes	775	>775 kL	24		Willow Tree	425 kL Allowance	505	Yes	425	All	119
	Gulgambone	856 kL Allowance	368	Yes	856	>856 kL	43	88 Narrabri (Groundwater)	Narrabri	Two Part	308	Yes	Nil	All	33
	Quambone	586 kL Allowance	288	Yes	586	>586 kL	49		Gwabegar	Two Part	150	Yes	Nil	All	50
31 Cootamundra (Reticulator)		219 kL Allowance	289	No	219	>219 kL to 719 kL	107		Wee Wa	Two Part	132	Yes	Nil	All	51
						>719 kL	93		Boggabri	Two Part	316	Yes	Nil	All	60
33 Corowa	Corowa	700 kL Allowance	310	Yes	700	>700 kL	14		Bellata	Two Part	316	Yes	Nil	All	60
	Mulwala	700 kL Allowance	240	Yes	700	>700 kL	14								

NOTE: This Table only lists utilities with inclining block or multiple tariffs for residential customers. The residential tariffs for all utilities are shown in Table 8.



**Table 8A - Water Supply - 2001/02 Residential Inclining Block or Multiple Tariffs**

WATER UTILITY	Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Tariff	WATER UTILITY	Town	Tariff Type	Access Charge (\$)	Access Charge Independent of Land Value ?	Allowance (kL)	Usage Range (kL)	Tariff (c/kL)
		(1)	(2)	(3)	(4)	(5)	(6)			(1)	(2)	(3)	(4)	(5)	(6)
90 Narromine (Groundwater)	Narromine/Trangie Tomingly	Two Part Two Part	215 327	Yes Yes	Nil Nil	All All	35 35	112 Tenterfield	Tenterfield Jennings Urbenville	Two Part Two Part Two Part	243 243 286	Yes Yes Yes	Nil Nil Nil	All All All	64 64 50
95 Parry	Kootingal/Moonbi Werris Creek Attunga Bendemeer	350 kL Allowance 350 kL Allowance 350 kL Allowance 350 kL Allowance	300 467 455 321	Yes Yes Yes Yes	350 350 350 350	>350 kL >350 kL >350 kL >350 kL	78 78 78 78	113 Tumbarumba	Tumbarumba Khancoban	500 kL Allowance 500 kL Allowance	370 406	Yes Yes	500 500	>500 kL >500 kL	74 81
96 Pristine Waters (Unfiltered)	Coutts Crossing Waterview Heights Wooli Minnie Water Glenreagh Corindi Beach	Two Part Two Part 350 kL Allowance 350 kL Allowance 350 kL Allowance 200 kL Allowance	180 180 452 422 250 287	Yes Yes Yes Yes Yes Yes	Nil Nil 350kL 350kL 350kL 200kL	All All >350 kL >350 kL >350 kL >200 kL	50 60 72 72 72 125	114 Tumut	Tumut	Inclining Block	242	Yes	Nil	Up to 400 kL Up to 400 kL	48 67
97 Queanbeyan (Reticulator)	Queanbeyan	Inclining Block	203.5	Yes	Nil	up to 300 kL 301 to 15,000 kL >15,000 kL	67 126 105	116 Uralla	Uralla Bundarra	350 kL Allowance 350 kL Allowance	332 530	Yes Yes	350 350	>350 kL >350 kL	50 50
99 Richmond Valley	Casino  Lower River	Inclining Block  Inclining Block	116  216	Yes  Yes	Nil  Nil	up to 275 kL 275 to 375 kL >375 kL Up to 360 kL >360 kL	40 60 90 90 125	118 Wakool (Dual Supply)	Barham, Murray Downs, T Tooleybuc, Korabigh, Mou Wakool (Raw)	300 kL Allowance Unlimited Unlimited	240 315 294	Yes  Yes	300	>300 kL	60
103 Scone (Unfiltered)	Scone, Aberdeen	Inclining Block	186	Yes	Nil	up to 240 kL 241 to 561 kL 562 to 750 kL	80 109 122	124 Wentworth (Dual Supply)	Wentworth River Band estate Namatjira	250 kL Allowance 251 kL Allowance	445 515 nil	Yes Yes Yes	250 250	>250 kL >250 kL all	198 199 174
105 Shoalhaven		Inclining Block	220	Yes	Nil	up to 300 kL > 300 kL	15 70	125 Wingecarribee		Inclining Block	197	Yes	Nil	Up to 150 kL 151 kL to 5,000 kL >5,000	53 143 169
106 Singleton	Singleton Mt Thorley Jerry's Plains (non - potable)	Two Part Two Part 80 kL Allowance	194 767 393	Yes Yes Yes	Nil Nil 80	All All >80 kL	75 75 121	128 Yarrawumla (Unfiltered)	Bungendore Captains Flat Weetalabah	280 kL Allowance 280 kL Allowance Inclining Block	270 450 330	Yes Yes Yes	280 280 Nil	>280 kL >280 kL up to 550 kL 551 to 700 kL >700 kL	70 70 183 269 353
								130 Young (Reticulator)		265 kL Allowance	370	Yes	265	266 kL to 500 kL  >500 kL	110  124

# Table 8B - Water Supply - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge
		(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)
1 Albury	Albury	Inclining Block	150	Uniform Access Charge	Yes	Nil	up to 300 kL >300 kL	12 45
2 Armidale Dumaresq	Armidale	Inclining Block	155	Uniform Access Charge	Yes	Nil	up to 400 kL 401 kL to 700 kL 701 kL to 1000 kL >1000 kL	65 76 87 105
3 Ballina (Reticulator)	Ballina	Inclining Block	90	Uniform Access Charge	Yes	Nil	0 kL to 350 kL >350 kL	70 95
4 Balranald (Dual Supply)	Balranald (Filtered) Euston	Unmetered(Raw+Filtered) Unmetered(Raw+Filtered)	224 236	Uniform Access Charge Uniform Access Charge	Yes Yes			
5 Barraba	Barraba	300 kL Allowance	434	Uniform Access Charge	Yes	300	>300 kL	50
6 Bathurst	Bathurst	Inclining Block	250	Uniform Access Charge	Yes	Nil	0 to 300 kL >300 kL	50 80
7 Bega Valley (Unfiltered)	Bega Valley	Two Part	155	<b>Service Connection Size*</b> (eg. 20mm \$155; 40mm \$620)	Yes	Nil	All	65
8 Bellingen (Unfiltered)		Two Part	194	Service Connection Size	Yes	Nil	All	57
9 Berrigan (Dual Supply)	Berrigan,Barooga,Finley,Tocumwal (Potable) Berrigan,Barooga,Finley,Tocumwal (Non-Potable)	250 kL Allowance 500 kL Allowance	450	Uniform Access Charge	Yes	250 500	>250 kL >500 kL	55 27
10 Bingara	Bingara	320 kL Allowance	300	Uniform Access Charge	Yes	320	>320 kL	120
13 Bogan	Nyngan	700 kL Allowance	488		Land Value No	700	>700 kL	70
14 Bombala	Bombala Delegate	300 kL Allowance 300 kL Allowance	350 166	Uniform Access Charge Uniform Access Charge	Yes Yes	300 320	>300 kL >300 kL	84 65
15 Boorowa	Boorowa	Two Part	378	Uniform Access Charge	Yes	Nil	All	65
16 Bourke (Dual Supply)	Bourke	Unmetered	517	Uniform Access Charge	Yes			
17 Brewarrina	Brewarrina Goodooga	300 kL Allowance Unmetered	788 390	Uniform Access Charge	Yes Yes	300	>300	263
18 AIEW	Broken Hill	200 kL Allowance	220	<b>Meter Size*</b> (eg. 20mm \$220; 40mm \$870)	Yes	200	201 kL to 400 kL >400 kL	86 111
19 Byron (Reticulator)	Byron	Two Part	93	Meter Size (20mm: \$93, 25mm: \$164, 32mm: \$290, 40mm: \$469, 50mm: \$750, 80mm: \$1970, 100mm: \$3095)	Yes	Nil	All	87
20 Cabonne	Molong Cumnock Yeoval	500 kL Allowance 450 kL Allowance 450 kL Allowance	505 539 389		Land Value No Land Value No Land Value No	500 450 450	>501 kL >450 kL >450 kL	140 130 97
21 Carrathool	Hillston Carrathool Goolgowi/Merriwagga Rankins Springs	500 kL Allowance 500 kL Allowance 500 kL Allowance 500 kL Allowance	315 520 560 670	Uniform Access Charge Uniform Access Charge Uniform Access Charge Uniform Access Charge	Yes Yes Yes Yes	500 500 500 500	500 kL to 1,000 kL >1,000 kL 500 kL to 1,000 kL >1,000 kL 500 kL to 1,000 kL >1,000 kL 500 kL to 1,000 kL >1,000 kL	33 57 26 42 24 42 39 37
22 Central Darling	Wilcannia (Filtered) Wilcannia (Raw) White Cliffs Ivanhoe (Filtered) Ivanhoe (Raw)	115 kL Allowance Unmetered 200 kL Allowance 100 kL Allowance 300 kL Allowance	344 137 319 182 134	Uniform Access Charge Uniform Access Charge Uniform Access Charge Uniform Access Charge Uniform Access Charge	Yes Yes Yes Yes Yes	115 200 100 300	> 115 kL >200 kL >100 kL >300 kL	256 200 254 111
23 Central Tablelands	Central Tablelands	Declining Block	120	<b>Meter Size*</b> (eg. 20mm \$120; 40mm \$480)	Yes	Nil	up to 5,000 kL 5,001 kL to 9,000 kL >9,000 kL	99 67 56
24 Cobar (Dual Supply)	Cobar Nymagee Village Mt Hope Euabalong Village	550 kL Allowance Unmetered Unmetered Unmetered	517 405 548 503	Uniform Access Charge Uniform Access Charge Uniform Access Charge Uniform Access Charge	Yes	550	>550 kL	135
25 Coffs Harbour (Unfiltered)	Coffs Harbour, Nana Glen, Coramba	Two Part	168	Uniform Access Charge		Nil	All	114
26 Coolah	Coolah Shire	Inclining Block	135	Uniform Access Charge	Yes	Nil	0 kL to 300 kL 301 to 500 kL 501 to 800 kL	70 80 90

# Table 8B - Water Supply - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge
		(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)
28 Cooma-Monaro	Cooma, Bredbo, Nimmitabel	Two Part	328	Uniform Access Charge	Yes	Nil	All	45
29 Coonabarabran	Coonabarabran	683 kL Allowance	437			683	>683 kL	64
	Baradine	795 kL Allowance	465	Land Value	No	795	>795 kL	59
	Binnaway	790 kL Allowance	610	Land Value	No	790	>790 kL	77
30 Coonamble (Groundwater)	Coonamble	775 kL Allowance	186	Land value	No	775	>775 kL	24
31 Cootamundra (Reticulator)	Cootamundra	219 kL Allowance	289	Land Value	No	219	219 kL to 719 kL >719 kL	107 93
32 Copmanhurst (Unfiltered)	Copmanhurst Village	100 kL Allowance	250	Uniform Access Charge	Yes	100	>100 kL	90
33 Corowa	Corowa	700 kL Allowance	310	Uniform Access Charge	Yes	700	>700 kL	14
	Mulwala	700 kL Allowance	240	Uniform Access Charge	Yes	700	>700 kL	14
34 Cowra	Cowra	Inclining Block	302	Uniform Access Charge	Yes	Nil	up to 2500 kL 2501 kL to 5000 kL 5001 kL to 10000 kL >10000 kL	30 40 80 130
35 Crookwell	Crookwell	300 kL Allowance	565	Land Value	No	300	>300 kL	70
36 Culcairn (Groundwater)	Culcairn	238kL Allowance	152	Uniform Access Charge	Yes	238	>238 kL	64
37 Deniliquin	Deniliquin	1000 kL Allowance	479	Uniform Access Charge	Yes	1000	>1000 kL	48
38 Dubbo	Dubbo	Two Part	210	Land Value	No	Nil	All	52
39 Dungog (Unfiltered)	Dungog	230 kL Allowance	264	Uniform Access Charge	Yes	230	>230 kL	115
	Clarence Town	230 kL Allowance	264	Uniform Access Charge	Yes	230	>230 kL	115
	Patterson District	230 kL Allowance	336	Uniform Access Charge	Yes	230	>230 kL	146
	Gresford	230 kL Allowance	336	Uniform Access Charge	Yes	230	>230 kL	146
40 Eurobodalla (Unfiltered)	Eurobodalla	Two Part	230	Meter Size*: 25mm:\$368, 32mm:\$598, 40mm\$920, etc	Yes	Nil	All	55
42 Forbes	Forbes	1500 kL Allowance	362	Land Value	No	1350	>1350 kL	32
43 Gilgandra (Groundwater)	Gilgandra	Two Part	255	Uniform Access Charge	Yes	Nil	All	30
44 Glen Innes	Glen Innes	230 kL Allowance	269	Uniform Access Charge	Yes	230	>230 kL	117
45 Gloucester	Gloucester	350 kL Allowance	360	Uniform Access Charge	Yes	350	> 350	100
	Barrington	500 kL Allowance	292	Uniform Access Charge	Yes	500	> 500	57
47 Goldenfields (Reticulator)	Retail	Two Part	196	Uniform Access Charge	Yes	Nil	All	101
49 Gosford	Gosford	Two Part	70	Service Connection Size*	Yes	Nil	All	68
50 Goulburn	Goulburn	Inclining Block	212	Meter Size*	Yes	Nil	up to 400 kL (for 20mm meter)	58
							>400 kL (for 20mm meter)	128
							up to 1600 kL (for 40mm meter)	58
							>1600 kL (for 40mm meter)	128
51 Grafton	Grafton	Two Part	134	Uniform Access Charge	Yes	Nil	All	50
52 Griffith	Griffith (Filtered)	666 kL Allowance	280	Land Value	No	666	>666 kL	42
	Griffith (Unfiltered)		280	Land Value	No			19
53 Gundagai	Gundagai	500 kL Allowance	310	Land Value	No	500	>500 kL	72
54 Gunnedah (Groundwater)	Gunnedah	440 kL Allowance	252	Land Value	No	440	>440 kL	57
	Curlewis	440 kL Allowance	314	Land Value	No	440	>440 kL	57
	Mullaley	440 kL Allowance	572	Land Value	No	440	>440 kL	57
	Tambar Springs	440 kL Allowance	652	Land Value	No	440	>440 kL	57
55 Gunning	Gunning	360 kL Allowance		Land Value	No	360	>360 kL	110
	Dalton	300 kL Allowance		Land Value	No	300	>300 kL	160
56 Guyra	Guyra, Tingha	Inclining Block	214	Uniform Access Charge	Yes	Nil	up to 750 kL >750 kL	73 135
57 Harden (Reticulator)	Harden	300 kL Allowance	378	Uniform Access Charge	Yes	300kL	>300 kL	88
58 Hastings (Unfiltered)	Hastings	Two Part	180	Service Connection Size (eg. 40mm \$680)	Yes	Nil	All	80
59 Hay (Dual Supply)	Hay (Filtered)	300 kL Allowance	345	Uniform Access Charge	Yes	300	>300 kL	75
	Hay (Unfiltered)	1000 kL Allowance	345	Uniform Access Charge	Yes	1000	>1,000 kL	35
61 Hume	Howlong, Lake Hume, Villages, Table Top	400 kL Allowance	400	Land Value	No	400	400 to 1000 kL >1000 kL	90 110
62 Hunter Water		Declining Block	26	Meter Size* (eg. 50mm: \$162, 100mm: \$645, 300mm: \$5,805,	Yes	Nil	up to 1,000 kL	93
							>1000 kL	86
63 Inverell	Inverell/Ashford/Yetman	Two Part	200	Uniform Access Charge	Yes	Nil	All	85
64 Jerilderie (Dual Supply)	Jerilderie	300 kL Allowance	377	Land Value	No	300	301 kL to 600 kL	90
							601 to 1,200 kL	80
							>1,200 kL	70

# Table 8B - Water Supply - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge
		(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)
66 Kempsey (Groundwater)	Kempsey	200 kL Allowance	400	Uniform Access Charge	Yes	200	201 kL to 2500 kL	66
67 Kyogle	Kyogle	Two Part	242	Uniform Access Charge	Yes	0	>2500 kL	64
	Bonalbo (Non-Potable)	Two Part	242	Uniform Access Charge	Yes	0	All	63
	Muli-Muli, Woodenbong	Two Part	242	Uniform Access Charge	Yes	0	All	63
68 Lachlan	Condoblin	Inclining Block	220	Uniform Access Charge	Yes	Nil	up to 300 kL	57
69 Leeton	Leeton, Whitton, Murrami	Inclining Block	235	Uniform Access Charge	Yes	Nil	>300 kL	100
							up to 400 kL	42
70 Lismore (Reticulator)	Lismore, Nimbin	Two Part	86	<b>Service Connection Size*</b>	Yes	Nil	>400 kL	50
71 Lithgow	Lithgow	Inclining Block	250	Uniform Access Charge	Yes	Nil	All	85
73 North Coast (Unfiltered)	North Coast Raw Water	Two Part	218	Uniform Access Charge	Yes	Nil	up to 500 kL	38
		Two Part	133	Uniform Access Charge	Yes	Nil	501 kL to 5,000 kL	100
75 Manilla	Manilla	400 kL Allowance	337	Uniform Access Charge	Yes	400	>5,000 kL	150
76 Merriwa (Groundwater)	Merriwa/Cassilis	Two Part	315	Uniform Access Charge	Yes	Nil	All	35
77 MidCoast (Manning - Unfiltered)		Inclining Block	146	Meter Size (eg. 40mm \$365)	Yes	Nil	up to 200 kL	55
							>200 kL	63
78 MidCoast (Great Lakes - Unfiltered, Reticulator)		Inclining Block	190	Meter Size (eg. 40mm \$475)	Yes	Nil	up to 400 kL	59
							>400 kL	74
80 Moree Plains	Moree, Mungindi, Boggabilla	Inclining Block	460	Uniform Access Charge	Yes	Nil	All	45
81 Mudgee (Unfiltered)	Mudgee	Two Part	400	Uniform Access Charge	Yes	Nil	All	81
	Gulgong	Two Part	400	Uniform Access Charge	Yes	Nil	All	81
82 Mulwaree	Marulan	295 kL Allowance	360	Uniform Access Charge	Yes	295	>295 kL	122
	Taralga	210 kL Allowance	315	Uniform Access Charge	Yes	295	>295 kL	107
83 Murray	Moama (Dual Supply)	250 kL Allowance	380	Uniform Access Charge	Yes	250	>250 kL	40
	Mathoura	750 kL Allowance	380	Uniform Access Charge	Yes	750	>750 kL	40
84 Murrumbidgee	Darlington Point	Unmetered	283		No			
	Coleambally	Unmetered	366		No			
85 Murrurundi (Unfiltered)	Murrurundi	425 kL Allowance	425	Uniform Access Charge	Yes	425	>425 kL	100
	Willow Tree	425 kL Allowance	505	Uniform Access Charge	Yes	425	All	119
86 Muswellbrook	Muswellbrook, Denman, Sandy Hollow	Two Part	95	Uniform Access Charge	Yes	0	All	60
87 Nambucca	Nambucca	Two Part	145	Uniform Access Charge	Yes	Nil	All	65
88 Narrabri (Groundwater)	Narrabri	Two Part	153	Service Connection Size (eg. 40mm \$392)	Yes	0	All	33
	Wee Wa	Two Part	132	Service Connection Size (eg. 40mm \$338)	Yes	0	All	51
	Boggabri	Two Part	316	Service Connection Size (eg. 40mm \$809)	Yes	0	All	60
	Bellata	Two Part	316	Service Connection Size (eg. 40mm \$809)	Yes	0	All	60
	Gwabegar	Two Part	150	Service Connection Size	Yes	0	All	50
89 Narrandera (Groundwater)	Narrandera	Two Part	236	Uniform Access Charge	Yes	Nil	All	44
90 Narromine (Groundwater)	Narramine/Trangie	Two Part	215	Uniform Access Charge	Yes	Nil	All	35
	Tomingley	Two Part	327	Uniform Access Charge	Yes	Nil	All	35
91 Nundle (Groundwater)	Nundle	300 kL Allowance	470	Uniform Access Charge	Yes	300	>300 kL	156
92 Oberon (Unfiltered, Reticulator)	Oberon	Inclining Block	80	Uniform Access Charge	Yes	Nil	up to 5,000 kL	86
							>5,000 kL	123
93 Orange	Orange	305 kL Allowance	261		No	305	>305 kL	52
94 Parkes	Parkes	364 kL Allowance	368		No	364	>364 kL	101
95 Parry	Kootingal/Moonbi	350 kL Allowance	300	Uniform Access Charge	Yes	350	>350 kL	78
	Werris Creek	350 kL Allowance	467	Uniform Access Charge	Yes	350	>350 kL	78
	Attunga	350 kL Allowance	455	Uniform Access Charge	Yes	350	>350 kL	78
	Bendemeer	350 kL Allowance	321	Uniform Access Charge	Yes	350	>350 kL	78
96 Pristine Waters (Unfiltered)	Coutts Crossing	Two Part	180	Uniform Access Charge	Yes	Nil	All	50
	Waterview Heights	Two Part	180	Uniform Access Charge	Yes	Nil	All	60
	Wooli	350 kL Allowance	452	Uniform Access Charge	Yes	350kL	>350 kL	72
	Minnie Water	350 kL Allowance	422	Uniform Access Charge	Yes	350kL	>350 kL	72
	Glenreagh	350 kL Allowance	250	Uniform Access Charge	Yes	350kL	>350 kL	72
	Corindi Beach	200 kL Allowance	287	Uniform Access Charge	Yes	200kL	>200 kL	125
97 Queanbeyan (Reticulator)	Queanbeyan	Inclining Block	204	Uniform Access Charge	Yes	Nil	up to 300 kL	67
							301 to 15,000 kL	126
							>15,000 kL	105

# Table 8B - Water Supply - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Tariff Type	Access Charge for 20 mm Service Connection (or Minimum)	Basis for Access Charge	Access Charge Independent of Land Value ?	Allowance	Usage Range	Usage Charge	
		(1)	(\$) (2)	*Proportional to square of size of service connection or water meter (3)	(4)	(kL) (5)	(kL) (6)	(c/kL) (7)	
98	Quirindi	Quirindi	500 kL Allowance	250	Uniform Access Charge	Yes	500	501 kL to 1,000 kL >1,000 kL	50 47
99	Richmond Valley	Casino	Inclining Block	116	Service Connection Size (eg. 40mm \$191)	Yes	Nil	up to 400 kL	40
		Lower River	Two Part	216	Service Connection Size (eg. 40mm \$557)	Yes	Nil	>400 kL	80
100	Riverina (Groundwater)	Wagga Wagga	Declining Block	120	Uniform Access Charge	Yes	Nil	All	220
102	Rylstone	Rylstone	370 kL Allowance	380	Uniform Access Charge	Yes	Nil	up to 36,000 kL >36,000 kL	65 56
103	Scone (Unfiltered)	Scone, Aberdeen	Declining Block	186	Uniform Access Charge	Yes	Nil	>370 kL	100
								up to 60 kL 61 to 750 kL 751 to 2250 kL	200 121 81
104	Severn	Deepwater	Two Part	211	Uniform Access Charge	Yes	Nil	All	45
105	Shoalhaven	Shoalhaven	Inclining Block	220	Uniform Access Charge	Yes	Nil	up to 300 kL > 300 kL	15 70
106	Singleton	Singleton	Two Part	194	<b>Meter Size*</b> (eg. 40mm \$775)	Yes	Nil	All	75
		Mt Thorley	Two Part	767	Meter Size (eg. 40mm \$1,348, 100mm \$5,417)	Yes	Nil	All	75
		Jerry's Plains (non - potable)	80 kL Allowance	393	Uniform Access Charge	Yes	80	>80 kL	121
107	Snowy River (Unfiltered)	Snowy River	Two Part	236	Uniform Access Charge	Yes	Nil	All	38
108	Sydney Water		Two Part	75	<b>Meter Size*</b> (eg. 40mm \$300, 100mm \$1,875, 300mm \$16,875)	Yes	Nil	All	93
109	Tallaganda	Braidwood	Two Part	172	Uniform Access Charge	Yes	Nil	All	87
110	Tamworth	Tamworth	Two Part	135	<b>Service Connection Size*</b> (eg. 40mm \$540)		Nil	All	60
112	Tenterfield	Tenterfield	Two Part	243	Uniform Access Charge	Yes	Nil	All	64
		Jennings	Two Part	243	Uniform Access Charge	Yes	Nil	All	64
		Urbenville	Two Part	286	Uniform Access Charge		Nil	All	50
113	Tumbarumba	Tumbarumba	500 kL Allowance	370	Uniform Access Charge	Yes	500	>500 kL	74
		Khancoban	500 kL Allowance	406	Uniform Access Charge	Yes	500	>500 kL	81
114	Tumut	Tumut	Inclining Block	242	Meter Size (eg. 40mm \$460, 100mm \$1,243)		Nil	up to 400 kL > 400 kL	43 60
115	Tweed	Tweed	250 kL Allowance	220	Uniform Access Charge	Yes	250	>250 kL	73
116	Uralla	Uralla	350 kL Allowance	332	Uniform Access Charge	Yes	350	>350 kL	50
		Bundarra	350 kL Allowance	530	Uniform Access Charge	Yes	350	>350 kL	50
118	Wakool (Dual Supply)	Barham, Murray Downs, Tooleybuc, Moulamein (Filtered Water)	300 kL Allowance	240	Uniform Access Charge	Yes	300	>300 kL	60
		Tooleybuc, Korlbig, Moulamein (Raw)	Unmetered	315	Uniform Access Charge	Yes			
		Wakool (Raw)	Unmetered	294	Uniform Access Charge	Yes			
119	Walcha	Walcha	Two Part	295	Uniform Access Charge	Yes	Nil	all	80
120	Walgett (Dual Supply)	Walgett	Unmetered	469	Uniform Access Charge	Yes	Unmetered		
121	Warren (Dual Supply)	Warren	650 kL Allowance	340	Uniform Access Charge		650	>650 kL	52
123	Wellington	Wellington	548 kL Allowance	480		Land Value No	548	>548 kL	84
124	Wentworth (Dual Supply)	Wentworth	250 kL Allowance	445	Uniform Access Charge	Yes	250	>250 kL	198
		River Band estate	251 kL Allowance	515	Uniform Access Charge	Yes	250	>250 kL	199
		Namatjira	nil	nil	Uniform Access Charge			all	174
125	Wingecarribee	Wingecarribee	Inclining Block	197	<b>Meter Size*</b>		Nil	up to 150 kL 151 kL to 5,000 kL >5,000 kL	53 143 169
126	Wyong	Wyong	Two Part	80	<b>Service Connection Size*</b> (eg. 50mm \$500, 100mm \$2,000, 200mm \$8,000)	Yes	Nil	all	68
127	Yallaroi (Unfiltered)	Warialda, Gravesend, North Star	425 kL Allowance	443		Land Value No	425	>425 kL	65
128	Yarrowlumla (Unfiltered)	Bungendore	280 kL Allowance	270	Uniform Access Charge	Yes	280	>280 kL	70
		Weetalabah	Inclining Block	330	Uniform Access Charge	Yes	Nil	up to 550kL 550 kL to 700 kL	183 269
		Captains Flat	280 kL Allowance	450	Uniform Access Charge	Yes	280	>280 kL	70
129	Yass	Yass	375 kL Allowance	400	Uniform Access Charge	Yes	375	>375 kL	100
130	Young (Reticulator)	Young	265 kL Allowance	370	Uniform Access Charge		265	266 kL to 1,500 kL 1,501 kL to 5,000 kL 5,001 kL to 10,000 kL >10,000 kL	124 115 80 60

# Table 9 - Water Supply - Health, Levels of Service, Efficiency

WATER UTILITY	HEALTH												LEVELS OF SERVICE									EFFICIENCY														
	Water Quality Compliance (%)												Water Quality Complaints (per 1000 properties) (19)	Water Service Complaints (per 1000 properties) (20)	Average Customer Outage Time (mins/property-unplanned) (21)	Operating Cost (OMA) (\$/property) (22)				OMA + Depreciation (\$/property) (22A)		OMA + Depreciation (\$/property) (22B)		Management Cost (\$/property) (23)												
	Physical (17)			Chemical (17A)			Faecal Coliforms (18)			Total Coliforms (18A)						(c/kL)																				
	1996 NHMRC/ARMCANZ Guidelines			1996 NHMRC/ARMCANZ Guidelines			1996 NHMRC/ARMCANZ Guidelines			1996 NHMRC/ARMCANZ Guidelines																										
	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	1999/00	2000/01	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01				
1 Albury	100	100	95	77	40	93	96	94	94	100	89	79	0	2	15	6	6	11					209	196	189	212	36	36	278	304	118	110	113	106		
2 Armidale Dumaresq	100	100	100	100	100	100	100	100	100	100	100	100	3		39								306	273	278	339	75	76	430	522	143	105	136	162		
3 Ballina (Reticulator)	100	100	99	75	100	99	98	100	100	92	97	99	1	1	2	2	0	0	0	1	69	49	51	5	167	157	191	225	59	65	286	273	49	38	61	58
4 Balranald (Dual Supply)	100		100	100		100			100			100	23	3	25	5	14	20		1	0	1		253	286	316	306	15	14	443	461	33	34	34	41	
5 Barraba				100		100							20	6	8	6	26	30	0	30	4	0	12		197	245	218	230	60	82	362	359	73	75	72	70
6 Bathurst	100	100	100	100	100	100	100	100	100	100	100	99	1	3	7	9	7	8	10	12		18	1		211	232	252	261	50	44	366	380	94	89	96	99
7 Bega Valley (Unfiltered)		100			83	100			96	82		96	0	0	1		7	18			0			242	247	262	254	98	79	402	397	148	149	153	149	
8 Bellingen (Unfiltered)		100	100		100	100			100	100		100	2		3				25			1		143	157	154	152	43	38	330	327	32	38	47	46	
9 Berrigan (Dual Supply)	100	100	100	100	100	100	100	100	100	100	100	95	4	5	3	2	14	12	2	3	1	0	3	0	261	253	253	298	33	43	405	466	84	76	101	98
10 Bingara	50			50			95			95			3	9	8		1	21			0	0	2		158	140	180	170	35	29	270	259	61	53	67	59
11 Bland																																				
12 Blayney																																				
13 Bogan	98	98	98	98	96	98	95	100	97		100	98	6	6	3			8	4		0	1			510	456	483	428	51	59	715	633	117	177	203	185
14 Bombala	67	100	100	67	38	50	100	87	90	100	87	90	8	14	2	4		53	53	49	14	0	61	21	248	291	289	235	56	53	365	311	46	53	61	50
15 Boorowa													16		0	0	14		0	18	3		5		179	254	217	270	65	78	364	424	26	34	31	35
16 Bourke (Dual Supply)	50	50			50			40	67		60	34	31	38	2	4	76	42	67	20	34	30	43		490	481	448	471	66	68	736	776	85	98	89	73
17 Brewarrina	75	60	60	75	80	100	100	100	100	100	100	100	45	63	32	28		40	32	0			4	7	547	540	441	578	24	27	551	703	80	102	72	64
18 Australian Inland Energy & Water	90	91	100	100	100	100	100	100	100	100	100	100		6	4	1		10	6	7					721	689	769	674	111	93	981	883	184	189	202	176
19 Byron (Reticulator)	98	100	97	95	93	98	99	100	100	99	100	100	8	3	2	1		6	1		1	0	3	1	340	252	235	258	88	81	361	313	137	92	88	89
20 Cabonne	86	94	80	69	70	72	81	93	100	65	88	100	2	3	6	6		14	27	20			1		313	311	289	330	74	69	527	529	92	90	90	87
21 Carrathool (Groundwater)	100	100	80	100	100	80	100	100	100	100	100	100	125	123	2	3		11	8	8					549	545	557	540	93	43	760	710	177	206	226	186
22 Central Darling (Dual Supply)	100	93		100	93		95	95		87	95		18		27	23			144	145			2		431	431	396	495	236	46	758	853	75	75	75	75
23 Central Tablelands		100	100		12	15		100	100		100	99	31	24	20	48		41	62	7	1		1		345	326	310	346	60	64	525	547	178	160	150	161
24 Cobar (Dual Supply)	100	100	100	51	100	100	98	100	100	98	100	95	9	99	2	2	10	21	21	19	10	0	1	1	398	460	346	315	77	53	628	485	150	105	105	107
25 Coffs Harbour (Unfiltered)	95	99		100	99		100	92		95	89		9	9	3	4		12	21	17	3	2	3		193	167	163	176	58	63	239	247	82	87	82	88
26 Coolah	100	88	90	100	63	90	97	91	95	87	91	95	44		3	3			7	6	51	1	1	0	243	273	268	299	60	74	337	370	49	54	54	48
27 Coolamon	92			100			100			100																										
28 Cooma-Monaro		75	100		38	100		89	88		85	84	9	0	2	2		5	15	18	36	0			228	193	217	256	53	62	302	342	43	78	81	84
29 Coonabarabran	100	100	78	100	73	67	97	93	100	96	76	93	12		29	53			0	1	6	0	0	5	351	343	354	354	81	70	581	567	123	171	221	205
30 Coonamble (Groundwater)	100	100		94	60		100	90		100	90		14	27	23	212	65	66	52	152	1	0	1	4	118	139	132	111	18	12	237	205		20	20	20
31 Cootamundra (Reticulator)													5	1	20	16	37	29	38		0				215	227	227	227	23	59	106	253	21	44	43	44
32 Copmanhurst (Unfiltered)		50	100		50	100		89	83		92	92			21				35		0				261	533	360	468	159	197	499	605	62	140	159	186
33 Corowa	50	100	99	50	100		84	93	96	74	93	61	5	7	7	8		30	56	8	0				227	171	189	193	19	20	284	286	70	54	72	75
34 Cowra						100	100		95	100		95	5		10		8		5		0		1		228	163	280	409	43	85	445	577	94	25	103	100
35 Crookwell		100	100		50	100	100	98	100	100	85	87	9	13	22	17	6	10	2	15	0	0	0	2	274	235	366	262	109	80	469	381	41	21	58	32
36 Culcairn (Groundwater)	98	100	100	98	100	100	86	90	54	84	80	41	4	4	0	4	11	9	4	7	0	0	0	0	92	132	188	117	58	35	238	162	32	38	31	45
37 Deniliquin	100	99	99	100	100	100	80	100	100	80	100	100	12	10	7	6	12	23	13	8					216	233	259	248	27	23	383	378	63	72	119	116
38 Dubbo	99	99	95	100	100	100	100	100	95	100	100	98		1	2	1	34	4	23	2	7	10	0	2	322	281	252	284	52	51	403	441	89	98	93	82
39 Dungog (Unfiltered)	100			100			100			100			2	4	4		12	63	77				1		79	75	111	131	26	32	169	188	25	26	30	57
40 Eurobodalla (Unfiltered)		89	90		100	100		100	100		100	98	28	19	4	14	4	3	12	6		1			201	202	220	247	71	73	336	367	95	101	98	113
41 Fish River WS (Unfiltered, Bulk Supplier)	75	99	100	100	84	84	97	100	100	97	100	98		0			1				0	0			88	104	85	108	17	17	197	219	45	64	54	65
42 Forbes	91	100	100	91	50	80	99	94	93	100	92	91	2	1	2	2	31		34	1	22	0	4	9	226	224	218	191	23	20	308	273	37	37	40	23
43 Gilgandra (Groundwater)	100	100	100	96	100	100	97	100	100	97	100	100	1	4	4	8	50	152	118	119	0		1	2	181	210	176	184	33	31	349	362	29	44	32	28

# Table 9 - Water Supply - Health, Levels of Service, Efficiency

WATER UTILITY		HEALTH												LEVELS OF SERVICE												EFFICIENCY												
		Water Quality Compliance (%)												Water Quality Complaints (per 1000 properties)				Water Service Complaints (per 1000 properties)				Average Customer Outage Time (mins/property-unplanned)				Operating Cost (OMA) (\$/property)				OMA + Depreciation (\$/property)		Management Cost (\$/property)						
		Physical (17)			Chemical (17A)			Faecal Coliforms (18)			Total Coliforms (18A)			(19)		(20)		(21)		(22)		(22A)		(22B)		(23)												
		1996 NHMRC/ARMCANZ Guidelines			1996 NHMRC/ARMCANZ Guidelines			1996 NHMRC/ARMCANZ Guidelines			1996 NHMRC/ARMCANZ Guidelines			1997/98		1998/99		1999/00		2000/01		1997/98		1998/99		1999/00		2000/01		1997/98		1998/99		1999/00		2000/01		
44	Glen Innes	100	100	100	100	100	100	100	100	100	100	100	100	4	3	4	3	25	20	14	12	1	0	0	1	153	205	172	219	64	75	278	357	16	76	40	87	
45	Gloucester	100	100	100	100	100	100	100	93	85	100	93	83				10	231	154	32					211	275	325	285	70	60	426	391	17	16	47	60		
46	Goldenfields (Bulk Supplier)	100	100	97	100	99	94	92	100	100			100	95												1	178	156	159	169	41	38	236	246	39	40	36	31
47	Goldenfields (Reticulator)	100		100	100	98	98	98	95	96	100	96	91	4	12	6	22	43	145	42	16	5	8	21	415	417	408	434	91	80	606	632	70	85	78	67		
48	Goldenfields (Combined)		100	97		99	94		96	97		97	94																									
49	Gosford	100	100	100	100	100	100	97	98	100	93	94	93	9	4	8	20	3	38	5	59	54	26	37	37	132	157	157	187	56	63	229	260	69	89	75	98	
50	Goulburn	100	100	100	98	100	99	96	93	100	95	96	98	5	3	4	1	36	24	28	7	0	20	1		230	227	240	300	53	65	327	395	87	79	98	135	
51	Grafton (Unfiltered)		100	80	100	100	80	100	96	100	98	95	97			4	5	47	48	44	29					178	146	156	308	47	93	246	365	83	75	75	76	
52	Griffith	51	100	100	33	100	100	88	100	100	88	100	99		1	20	20	4	13	132					365	364	387	30	30	501	521		153	149	157			
53	Gundagai	100	100	100	100	92	100	100	100	100	98	100	100	5	5	6	5	11	5	5	2	4	0	3	3	291	275	274	282	39	45	329	338	51	52	56	61	
54	Gunnedah (Groundwater)													1	2	2	2	38	0	0	0	0	5	1	183	178	185	181	27	26	266	261	41	42	44	47		
55	Gunning (Groundwater)		50	100	25	50	50	66	84	84	66	84	100		6	12	9			12	6	1				170	170	108	146	43	40	211	259	56	56	56	56	
56	Guyra	100			100			100							5	1		0	0	0	0	0	1	207	219	186	204	71	71	323	362	94	48	50	63			
57	Harden (Reticulator)		100	100		100	100		100	84		100	42	17	26	35	31	57	39	38	38	2	0	2	2	341	372	401	442	27	68	334	632	43	42	47	49	
58	Hastings (Unfiltered)	93	73	74	72	39	56	98	100	100	96	100	99		6	7	19	14	15	38		2	3	2	164	184	160	168	57	61	289	293	42	53	54	58		
59	Hay (Dual Supply)		100	100		100	100		100		100	100				0		34	0			0	0		254	237	247	222	10	13	434	409	72	73	71	65		
60	Holbrook																																					
61	Hume (Unfiltered)	100	100	100	100	100	100	100			100					0	0			0	0	40	0	0		234	234	375	491	74	88	472	587	49	49	70	71	
62	Hunter Water	100	100	99					100	100		100	99	9	11	8	8					41	35	28	22	167	167	141	139	35	34	192	139					
63	Inverell		100	100		100	100		100	100		100	100	1		2	1			21	21	5	0	2	0	214	269	272	302	63	87	449	477	46	73	70	73	
64	Jerilderie (Dual Supply)	100	100	100	100	100	100	100	100	100	100	100	100	11	9	9	5	11	12	12	5	30	0	169	169	334	351	292	576	37	70	351	638	65	64	64	205	
65	Junee																																					
66	Kempsey (Groundwater)	100	100	100	81	88	100		100	100	97	100	100	5	4	9	12	28	50	46	0				125	170	171	184	24	35	288	272	57	51	56	63		
67	Kyogle		100	100	2	100	100	88	88	100	96	88	100		7	3	4	40	13	22	0	0	1	3	188	190	210	218	70	54	361	373	84	87	94	105		
68	Lachlan	98	100	78	99	82	99	95	67	97	90	67	91	2	4	2	2	8	7	6	6	0	0	0	0	325	284	338	276	91	59	481	400	83	87	138	83	
69	Leeton	98	100	100	100	100	100	97	100	100	97	100	97	1	1	1	3	2	1	6	14	0	43	0	315	290	330	254	50	35	434	352	119	51	85	68		
70	Lismore (Reticulator)		100	76		100	100		100	100		100	97		3	2	3		3	3		1	2	1	0	183	181	166	211	50	68	309	263	48	44	51	42	
71	Lithgow	100	100	100			100			100			100	16	17	17	11	17	13	13	11	0	0		1	208	171	193	259	59	77	308	373	119	84	90	101	
72	Lockhart																																					
73	North Coast Water (Unfiltered)	80	88	95	20	45	85	95	96	97	82	64	84	5	6	8	11	2	3	5	5	21	0	16	6	137	146	170	166	44	45	304	328	95	100	123	100	
74	Maclean																																					
75	Manilla	99	99	100	99	99	100	99	100	100		100	100	5	6	5	0	24	19	17	5		2	5	171	220	249	294	41	56	334	380	37	35	77	98		
76	Merriwa	100	100	100	100	100	100	100	100	96	82	100	96	18	1	53	7	78	2	7	5	24	0	3	1	266	208	286	318	55	63	528	541	69	85	101	74	
77	MidCoast (Manning - Unfiltered)													102	91			36							186	186			0		34	69						
78	MidCoast (Great Lakes - Unfiltered)													20	36										189	186			0		65	69						
79	MidCoast (Combined - Unfiltered)	96	98	97	58	90	82	96	100	100	75	91	83	62	65	38	25	36	16	42	43					188	186	207	201	69	59	308	320	46	69	33	26	
80	Moree Plains (Groundwater)	25	98		85	100	95	95	100	100	95	100	100			1	1			0	57			32	0	231	250	330	48	40	271	370		54	54	103		
81	Mudgee (Unfiltered)	100	30	60	100	80	85	100	100	100	91	100	98	49	20	21	17	43	28	27	21	46	6	5	4	218	248	282	288	79	65	381	387	53	90	108	110	
82	Mulwaree		100	100		100	100		96	96		96	96	94	2	0	0			21	21	0	0	8	3	260	419	335	319	113	106	578	563	47	42	42	23	
83	Murray		100			100				100			100	1	4	2		4	4			0	0	0	269	286	240	289	29	32	315	367	80	86	81	89		
84	Murrumbidgee (Groundwater)	95	75			75		90	83	100	90	83	90	23		27	4					260	0		88	77	100	110	9	10	186	201		18	20	20		
85	Murrurundi (Unfiltered)	82			99			100	88	100	98	92	88		16	30	20		28	20	18	0	0	20	8	263	180	196	159	64	48	312	274	20	20	17	17	
86	Muswellbrook	100	75	65	100	95	97	100	95	100	100	86	90	6	31	8	4	1	3	2	1	30	2	58	11	208	200	250	287	50	59	347	385	52	40	61	69	

# Table 9 - Water Supply - Health, Levels of Service, Efficiency

WATER UTILITY	HEALTH												LEVELS OF SERVICE									EFFICIENCY																			
	Water Quality Compliance (%)												Water Quality Complaints (per 1000 properties) (19)	Water Service Complaints (per 1000 properties) (20)	Average Customer Outage Time (mins/property-unplanned) (21)	Operating Cost (OMA) (\$/property) (22)				OMA + Depreciation (\$/property) (22B)		Management Cost (\$/property) (23)																			
	Physical (17)			Chemical (17A)			Faecal Coliforms (18)			Total Coliforms (18A)						(c/kL) (22A)																									
	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	1999/00	2000/01	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01													
87	Nambucca (Groundwater)			100	100	100	100	77	100	97	42	100	97	1	1	1	2	10	8	4	4	1	0	0	1	210	174	131	141	42	45	186	200	102	85	57	59				
88	Narrabri (Groundwater)			100			89				100	70	91	100	50	84										225	113	164	156	20	17	238	226	36	22	44	38				
89	Narrandera (Groundwater)			100	100		88	92			100	100		100	100			1	1	2	5				6	210	116	206	212	22	23	261	264	53	28	51	56				
90	Narromine (Groundwater)			100			100							85												174	181	322	269	47	62	389	372	33	33	190	122				
91	Nundle (Groundwater)			100	100	100	91	100	100		100	100	100		100	100	100				0	0			3	263	273	292	396	55	74	565	639		33	33	34				
92	Oberon (Unfiltered, Reticulator)													58	91		3	66	56	49	18				0	207	309	266	347	22	53	260	435	37	105	66	79				
93	Orange			100	100		100	100			100	100		100	100			10	12	2	12				23	192	215	180	193	41	36	295	308	50	66	43	46				
94	Parkes			100			100				100	95	94	90	90	88										0	405	133	331	363	30	32	514	549	56	20	51	53			
95	Parry (Groundwater)			17	58	100	17	100	100		94	96	72	100	99	72										36		218	247	256	43	45	378	394	41	38	41	45			
96	Pristine Waters (Unfiltered)			100		100	100				100	96	96	100	92	91											84	160	160		59		254		22	53	53				
97	Queanbeyan (Reticulator)			95	100	100	100	100	100		100	98	88	100	87	82			24			31	6			0	228	209	222	228	48	65	277	340	83	115	87	90			
98	Quirindi (Groundwater)			90	90		100	100			100	100		100	97												163	208	185	179	41	38	289	270	47	41	47	46			
99	Richmond Valley			97	100		87	50			96	99		94												5	200	229	205	247	14	50	123	318	98	112	89	113			
100	Riverina (Groundwater)			100	85	93	100	98	98		100	100	100	100	100	100										18	203	204	190	198	34	34	319	328	48	59	59	56			
101	Rous (Bulk Supplier)			100	100	100	100	100	100		100	100	100	100	100	100										1	91	90	95	150	26	36	148	204	49	63	49	60			
102	Rylstone			100			57	100			100	100	100	93	100	89											323	260	273	315	59	99	472	514	84	53	52	78			
103	Scone (Unfiltered)			21	95		100	100			100	100		100	98												275	247	281	259	53	48	375	337	60	75	124	89			
104	Severn			100	54		62				97	92		92	92											0	193	161	178	136	33	84	297	273	83	72	92	44			
105	Shoalhaven			100	87	94	100	84	96		100	98	100	99	92	93											0	164	167	160	136	36	33	232	220	83	86	88	54		
106	Singleton			100	100	100	100	100	100		100	100	100	100	100	100											46	297	271	286	330	54	62	421	461	82	70	89	132		
107	Snowy River (Unfiltered)				100			100						100													4	90	63	122	134	64	56	225	236	37	21	39	48		
108	Sydney Water			97	96	96					100	100	100	92	100	99											9	222	233	246	241	62	61	302	241						
109	Tallaganda (Unfiltered)			98	100	100	100	100	100		100	100	92	100	92	92												2	293	277	244	170	64	61	419	333	30	24	31	32	
110	Tamworth			100			100				100	100		100														150	270	226	264	40	44	346	383	39	125	78	96		
111	Temora																																								
112	Tenterfield			100	94		100	79	90		100	92	86	100	94	92											10	178	286	262	348	83	104	405	522	73	136	129	110		
113	Tumbarumba			100		100	70		100		90		100	100		60											2	186	136	193	192	47	33	331	341	24	32	71	57		
114	Tumut			100	88	100	100	75	75		99	100	100	99	100	100											1	215	207	214	231	45	47	342	369	75	89	66	77		
115	Tweed			100	100		64	99	99		100	100	100	100	100	99											26	172	190	170	183	47	47	290	297	64	69	76	80		
116	Uralla			93	93	100	100	100	100		100	100	100	100	100	100												0	265	245	232	232	76	77	345	232	123	115	103	103	
116A	Urana																																								
117	Wagga Wagga																																								
118	Wakool (Dual Supply)																											0	160	143	104	131	14	19	186	218	34	33	22	30	
119	Walcha			100		100	100	100	100		100	100	100	100	100	100												1	225	195	286	348	92	111	427	488		52	76	83	
120	Walgett (Dual Supply)																												422	453	370	370	23	40	676	370	126	202	120	120	
121	Warren (Dual Supply)			92	100	100	92	75	75		100	100	100	92	100	100												20	224	238	244	269	45	43	355	387	52	50	60	60	
122	Weddin																																								
123	Wellington			100	100	100	100	100	100		100	100	100	100	100	100												9	312	315	324	366	100	90	429	484	87	112	115	121	
124	Wentworth (Dual Supply)				98			98						100		100												1	478	260	416	448	20	22	681	706	120	78	81	78	
125	Wingecarribee			93	100	100	100	100	100		100	100	100	99	100	100												180	245	266	179	180	53	58	290	292	108	86	82	83	
126	Wyong			100	100	100	100	100	100		98	100	100	97	100	96													168	161	139	149	168	50	52	254	274	103	46	48	61
127	Yallaroi (Groundwater)																																								
128	Yarrowlumla (Groundwater)						60	97			35	99	100	90		100													206	186	189	201	31	54	254	272	60	61	67	72	
129	Yass			100	100	100	95	100	100		99	99	100	98	99	99													308	256	246	290	308	75	83	435	453	93	107	113	115
130	Young (Reticulator)						100							90															256	240	236	230	256	19	61	131	318	23	25	25	35



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# Table 10 - Sewerage - Utility Characteristics, Financial

WATER UTILITY		UTILITY CHARACTERISTICS																			FINANCIAL																					
		Total No of Assessments				Connected Properties per Assessment		Residential Assessments	Population	Peak Population	Connected Properties	Length of Mains	Properties Served per km of Main	Total Vol of Sewage Collected			Volume of Sewage Treated	Percentage of Total Sewage Collected					Vol of Sewage Treated per Property			Economic Real Rate of Return				Total Turnover (excl. Capital Works Grants)				Residential Revenue	Residential Sewage	Current Replacement Cost (CRC)		Debt to Equity				
		(1)				(Total)	(Residential)	(Proportion of Total)	(2c)	(% of Permanent)	(Total)	(km)	(3)	(ML)			(ML)	Infiltration/inflow	Residential	Non-Residential	Trade Waste	Other	(kL/property)			%				(\$'000)				(% of Annual rates and charges)	(% total collected excl infiltration & inflow)	System Assets (\$'M)	CRC per assessment (\$)	%				
		1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	1998/99	1999/00	2000/01	2000/01	00/01	00/01	00/01	00/01	00/01	1998/99	1999/00	2000/01	97/98	98/99	99/00	00/01	1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	97/98	98/99	99/00	00/01			
1	Albury	17,215	17,649	17,900	18,000	0.96	0.96	0.92	42,500	120	17,300	450	38.4	5,320	5,290	4,960	<b>4,960</b>	2	42	37	18	1	314	307	287	7.1	1.8	0.8	1.7	10,500	6,620	7,090	7,840	68	43	115	6,400	19	28	29	27	
2	Armidale Dumaresq	7,620	7,739	7,740	7,300	0.98	0.98	0.93	23,000		7,200	204	35.2	1,650	1,290	1,590	<b>1,590</b>						218	170	222	-1.7	-1.1	-1.9	-1.2	1,990	2,010	2,080	2,310	66		60	8,200	0	0	0	1	
3	Ballina	12,700	11,868	12,100	12,400	0.96	0.96	0.92	33,300		11,900	279	42.6	4,150	3,590	3,720	<b>3,720</b>						364	308	313	3.7	4.3	4.1	1.1	6,320	6,950	7,300	5,960	81		88	7,100	7	3	2	1	
4	Balranald	750	753	750	770	0.95	0.95	0.87	2,000	110	730	38	19.4	80	80	197	80	1	99				115	115	<b>109</b>	0.6	2.2	2.2	1.3	370	400	400	323	85	<b>90</b>	10	12,800	0	0		5	
5	Barraba	700	721	720	740	1.01	1.01	0.91	1,400	100	740	28	26.5	260	160	174	<b>174</b>				0	0	360	222	234	-2.9	-2.5	0.7	-4.1	170	180	180	175	90		1	1,500	0	0	0	0	
6	Bathurst	10,900	10,762	11,000	11,100	1.08	1.08	0.92	30,600	200	12,000	300	40.1	4,210	4,370	3,410	<b>3,410</b>		60	31	9		363	368	284	0.5	0.3	1.2	0.3	4,410	4,780	5,310	4,920	74		82	7,400	3	4	4	2	
7	Bega Valley	9,420	9,960	10,200	10,200	0.95	0.95	0.90	23,400	150	9,700	271	35.8	1,530	2,500	1,870	<b>1,870</b>						131	187	193	2.3	2.5	1.0	0.1	5,150	5,240	4,960	4,890	82		71	6,900	3	1	1	1	
8	Bellingen	2,670	2,663	2,660	2,800	0.95	0.95	0.92	6,800	100	2,600	72	36.8	600	690	670	682	16	84				237	273	257	0.3	0.4	0.7	0.1	1,270	1,350	1,320	1,380	85	<b>90</b>	25	9,100	4	3	2	1	
9	Berrigan	2,660	2,669	2,790	2,900	0.98	0.98	0.87	5,900	120	2,800	101	27.8	340	530	315	550						155	181	196	-0.5	-0.3	-0.3	-0.8	930	960	1,020	1,040	86		22	7,600	11	10	9	8	
10	Bingara	600	601	610	600	1.00	1.00	0.90	1,200	110	600	18	32.5	120	320	<b>320</b>	<b>320</b>						200	524	536	-2.8	-2.5	-3.4	-3.6	160	170	170	174	89		7	12,500	4	4	3	3	
11	Bland	1,790	1,806	1,820	1,800	0.95	0.95	0.91	3,700	110	1,700	48	36.2	300	300	368	<b>368</b>						185	174	213	0.4	0.1	-0.1		582	600	630	663	<b>90</b>		8	4,500	3	0	0	0	
12	Blayney	1,060	1,222	1,230	1,200	1.03	1.03	0.91	3,000	110	1,300	43	29.6	300	260	264	<b>264</b>	6	80	5	9		236	207	207	5.2	3.4	2.9		622	840	610	559	87	85	5	4,200	0	0	0	0	
13	Bogan	920	926	960	960	1.01	1.01	0.88	2,500		970	20	47.6	470	460	320	456				0	100	497	469	470	2.1	1.5	1.7	3.3	350	340	370	380	<b>90</b>		7	7,300	22	18	14	9	
14	Bombala	790	785	780	780	0.92	0.92	0.86	1,800	110	720	34	21.1	180	180	179	<b>179</b>	15	68	13	4		251	244	248	2.7	2.5	1.9	2.9	320	310	330	331	79	80	5	7,000	26	23	25	22	
15	Boorowa	840	647	700	560	0.94	0.94	0.90	1,200	100	530	20	27.2	110	110	<b>110</b>	102						193	180	192	-5.3	-5.5	-5.5	-6.2	60	70	80	88	85		5	8,200			0	0	
16	Bourke	1,750	1,760	1,720	1,700	0.75	0.75	0.70	4,100		1,300	34	38.1	450	450	<b>450</b>	<b>450</b>						340	340	<b>348</b>	-2.0	-2.2	1.2	-2.8	480	520	520	528	90		7	4,200	24	21	22	18	
17	Brewarrina	480	501	560	560	0.86	0.85	0.87	1,700	110	480	16	29.4	180	220	210	215				0		388	376	449	2.5	6.5	5.1	1.1	150	180	170	180	61		3	5,400	6	5	5	4	
18	Australian Inland E & W	9,530	9,530	9,530	9,500	1.01	1.01	0.94	22,000	100	9,600	215	44.8	2,110	2,250	1,670	<b>1,670</b>						219	220	173	-1.1	-0.7	-0.4	-0.1	2,440	2,520	2,540		88		35	3,700	9	9	0	3	
19	Byron	7,870	9,200	9,700	10,000	0.96	0.96	0.89	27,000	130	9,600	111	86.3	2,650	2,840	2,910	<b>2,910</b>						300	305	303	8.3	5.1	7.5	4.4	7,590	7,370	8,490	7,740	73		61	6,100	14	11	8	9	
20	Cabonne	1,570	1,711	1,710	2,400	0.92	0.92	0.89	3,600	100	2,200	42	54.1	150	110	280	109						95	69	48	5.1	3.2	4.2	4.0	780	780	1,070	1,170	88		17	6,900	5	3	15	13	
21	Carrathool	690	748	750	750	0.95	0.95	0.91	1,900	110	710	20	36.4			72	72				0				102		-1.3	-8.1	-2.1	-3.2	100	90	100	100	<b>90</b>		4	5,300	0	0	0	0
22	Central Darling	360	364	360	360	0.95	0.95	0.88	820	100	340	13	25.9	80	100	<b>100</b>	<b>100</b>						243	275	292		0.1	1.8			100	102			90		2	6,100	0	0	0	0
23	Central Tablelands	<b>NO SGE</b>																																								
24	Cobar	1,700	1,736	1,760	1,800	0.95	0.95	0.93	4,500	110	1,700	43	38.6	700	700	<b>700</b>	<b>700</b>						447	419	419	1.5	-0.4	-0.4	-2.0	460	360	360	416	85		9	5,000	0	0	0	0	
25	Coffs Harbour	18,200	18,651	19,600	19,900	0.93	0.93	0.94	50,500	120	18,500	514	36.1	7,000	6,080	6,430	6,360	19	81				423	333	343	5.0	4.2	2.1	4.0	12,700	12,840	13,600	14,110	88	<b>90</b>	149	7,500	21	18	16	39	
26	Coolah	810	809	810	810	0.96	0.96	0.91	1,600	110	780	26	30.6	220	220	<b>220</b>	<b>220</b>	27	73				286	282	282	2.6	3.9	3.9	5.9	200	210	220	234	90	<b>90</b>	2	2,600	1	1	0	0	
27	Coolamon	910	908	910	860	0.59	0.61	0.89	2,200		510	28	17.9	90	190	45	185				0		159	345	364	12.0	5.7	0.5	0.2	680	260	260	281	90		4	4,200	2	13	13	9	
28	Cooma-Monaro	3,230	3,247	3,290	3,300	0.95	0.95	0.88	7,400	140	3,100	228	13.7	30	760	694	692						301	242	222	1.9	0.9	0.9	0.8	1,270	1,360	1,440	1,520	80		24	7,400	16	15	15	14	
29	Coonabarabran	1,620	1,588	1,590	1,500	1.00	1.00	0.89	3,600		1,500			470	350	442	351						309	233	228	0.6	0.9	-1.0	-0.2	630	680	710	745	80		19	12,500	8	1	7	7	
30	Coonamble	1,330	1,335	1,320	1,500	0.87	0.85	0.93	4,200	110	1,300	51	25.5	550	260	570	260						474	230	202	-2.8	-1.0	-4.3	-3.3	440	450	470	483	86		13	8,900	4		2	2	
31	Cootamundra	2,620	2,620	2,620	2,700	0.98	0.98	0.90	6,800	100	2,600	49	53.0	760	840	925	<b>925</b>				2	98	295	292	356	-9.6	-3.3	-3.3	-4.4	510	460	610	534	86		8	3,000	6		5	13	
32	Copmanhurst																																									



# Table 10 - Sewerage - Utility Characteristics, Financial

WATER UTILITY		UTILITY CHARACTERISTICS																FINANCIAL																								
		Total No of Assessments				Connected Properties per Assessment		Residential Assessments	Population	Peak Population	Connected Properties	Length of Mains	Properties Served per km of Main	Total Vol of Sewage Collected			Volume of Sewage Treated	Percentage of Total Sewage Collected					Vol of Sewage Treated per Property			Economic Real Rate of Return				Total Turnover (excl. Capital Works Grants)				Residential Revenue	Residential Sewage	Current Replacement Cost (CRC)		Debt to Equity				
		(1)				(Total)	(Residential)	(Proportion of Total)	(2c)	(% of Permanent)	(Total)	(km)	(3)	(ML)			(ML)	Infiltration	Residential	Non-Residential	Trade Waste	Other	(kL/property)			(%)				(\$'000)				(% of Annual rates and charges)	(% total collected excl infiltration & inflow)	System Assets (\$'M)	CRC per assessment (\$)	(%)				
		1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	2000/01	1998/99	1999/00	2000/01	2000/01	00/01	00/01	00/01	00/01	00/01	1998/99	1999/00	2000/01	2000/01	97/98	98/99	99/00	00/01	1997/98	1998/99	1999/00	2000/01	2000/01	2000/01	97/98	98/99	99/00	00/01		
87	Nambucca	5,100	5,210	5,830	5,800	0.95	0.95	0.92	13,600	130	5,600	134	41.5	1,540	1,460	1,550	1,450						311	263	261	3.3	2.8	4.3	2.7	2,770	2,730	3,150	2,920	73		44	7,500	21	21	19	17	
88	Narrabri	3,610	3,612	3,780	3,800	0.98	0.98	0.88	10,200	110	3,700	96	38.4	1,370	1,370	848	800						389	370	216	-1.0	-0.2	-2.3	-1.0	1,100	1,240	1,170	1,360	88		42	11,200	16	18	18	18	
89	Narrandera	1,740	1,817	1,820	1,800	0.92	0.92	0.89	4,300	120	1,700	36	47.6	570	570	560	560	15	71	13	1		340	341	331	1.5	4.7	6.2	1.8	660	750	810	896	79	84	12	6,400	0	1	0	0	
90	Narrromine	1,920	1,981	1,950	1,900	0.95	0.95	0.89	4,800		1,900			350	350	350	350						189	189	189	4.3	3.8	0.1	-1.3	750	760	780	826	90		24	12,500	2	2	2	2	
91	Nundle	NO SGE																																								
92	Oberon	1,120	1,136	1,150	1,100	1.01	1.02	0.87	2,500	100	1,200	34	34.3	340	350	350	350	14	80		20		296	303	304	1.0	0.5	1.9	1.1	450	430	520	531	85	90	6	5,500	5	4	3	3	
93	Orange	13,100	13,220	13,300	13,400	1.01	1.01	0.92	34,300		13,500	354	38.2	6,780	6,370	6,210	6,210	35	65				520	475	460	6.6	2.4	3.1	0.0	16,400	7,300	7,370	6,040	85	90	100	7,500	0	0	0	0	
94	Parkes	4,700	4,564	4,430	4,500	0.95	0.95	0.91	11,200	100	4,300	95	45.2	780	780	750	865		33	73			189	184	203	1.1	-2.0	0.8	0.9	960	1,230	1,080	1,090	67		22	5,000	0	0	0	0	
95	Parry	1,160	1,176	1,180	1,200	0.95	0.95	0.96	4,100	100	1,200	34	34.0	190	210	252	252	10	90				172	182	219	-0.5	0.0	0.4	0.8	380	440	450	499	90	90	13	10,600	34	33	31	30	
96	Pristine Waters	204	204	550	570	0.95	0.95	0.90	1,500	100	540	11	47.9	40	40	43	43		99	1	0		192	195	214	0.3	-1.1	-1.1		110	110	500		90		7	12,600	19	24	24	24	
97	Queanbeyan	12,000	12,450	13,000	13,400	1.03	1.04	0.93	29,700		13,800	268	51.6	3,610	3,870	4,070	4,070	2	78	15	5		281	289	294	6.0	11.0	7.1	16.2	6,170	8,440	6,350	13,520	90	80	56	4,200	1	1	1	0	
98	Quirindi	1,140	1,140	1,180	1,200	0.83	0.84	0.87	3,000	100	980	37	26.7	540	360	280	280				0	0		571	363	286	-0.6	2.3	-1.1	0.7	370	460	310	383	87		12	9,800	8	5	4	3
99	Richmond Valley	5,840	5,736	5,880	6,200	0.95	0.95	0.93	16,700	120	5,900	171	34.3	2,040	1,800	2,050	1,760	4	35	2	59		360	322	299	1.4	1.0	0.7	1.6	2,210	2,750	2,020	2,460	90	36	44	7,100	11	9	9	9	
100	Riverina	NO SGE																																								
101	Rous	NO SGE																																								
102	Rylstone	1,040	1,048	1,050	1,000	0.99	0.99	0.91	2,700		1,000			290	290	281	281				0		277	277	271	-3.1	-1.4	-2.1	-3.8	330	380	400	414	89		7	6,300	3	3	1	0	
103	Scone	2,630	2,627	2,640	2,600	1.01	1.02	0.92	7,000	120	2,700	85	31.5	1,160	1,040	1,020	811	39	61				438	389	304	0.6	1.4	0.0	-0.4	1,090	1,120	1,190	1,040	90	90	17	6,600	0	0	0	0	
104	Severn	190	213	210	210	0.95	0.95	0.78	400	100	200	7	28.7	40	40	13	40	36	48	15	0	1	198	198	200	4.2	6.7	6.4	7.5	80	80	90	80	71	75	1	4,700	16	14	11	9	
105	Shoalhaven	34,500	35,285	37,000	37,700	0.94	0.94	0.96	84,000	320	35,400	937	37.8	7,180	6,630	6,190	6,240						216	190	176	5.1	4.5	6.1	8.1	18,700	19,900	22,000	22,210	85		172	4,600	22	19	14	10	
106	Singleton	4,740	4,822	4,700	4,900	0.95	0.95	0.91	13,800	100	4,700	151	31.0	1,310	1,230	1,190	1,190				0		286	275	254	-0.4	0.0	-0.2	-0.1	1,550	1,640	1,580	1,780	79		41	8,200	3	3	2	0	
107	Snowy River	2,160	2,162	2,200	2,300	1.43	1.43	0.91	3,200	500	3,200	72	44.7	420	420	415	415						134	132	129	2.9	2.2	2.8	2.2	1,310	1,250	1,440	1,340	83		21	9,500	16	13	11	9	
108	Sydney Water	1,513,000	#####	1,551,000	1,534,000	1.00	1.00	0.93	3,904,000		1,534,000	22,400	68.4	548,000	526,000	511,000	437,000	4	90	0	6	0	373	350	285	6.1	4.5	4.5	3.9	770,000	704,000	725,000	725,000	0	90	5,890	3,800	19	18	16	16	
109	Tallaganda	550	577	580	540	0.88	0.86	0.83	1,000		470	14	35.0	110	110	77	77	13	87				164	164	163	-0.8	-1.0	-1.0	-0.1	130	140	140	152	86	90	2	4,500	1	0	0	0	
110	Tamworth	14,100	14,907	15,100	14,800	1.00	1.00	0.92	35,800	200	14,800	382	38.6	5,920	4,000	4,040	4,000				19	0	397	264	271	1.9	2.9	3.6	3.8	4,950	6,620	7,070	7,830	73		107	7,300	2	1	5	5	
111	Temora	1,890	1,897	1,950	2,000	1.00	1.00	0.86	4,600	110	2,000	41	47.6	380	510	510	500	25	76				200	257	256	-3.7	-3.7	-4.1	-2.7	280		300	303	79	90	8	4,200	0		0	0	
112	Tenterfield	1,770	1,470	1,470	1,500	0.95	0.95	0.90	3,500		1,400	60	24.2	160	280	287	287				0		116	201	198	2.4	0.7	0.7	-1.3	660	670	700	733	81		13	8,300	4	4	1	1	
113	Tumbarumba	880	947	880	950	0.95	0.95	0.93	1,700	160	900	32	28.0	180	400	289	289	34	66				197	473	321	-1.8	-1.0	-3.3	-6.1	390	390	330	363	87	90	9	9,900	0	0	0	0	
114	Tumut	3,600	3,672	4,320	4,200	0.95	0.95	0.91	11,700	100	4,000	119	33.6	830	1,130	1,090	1,090						259	276	273	-0.4	0.6	1.8	1.3	1,440	1,590	1,940	1,940	76		36	8,600	6	6	5	4	
115	Tweed	23,500	23,356	24,100	25,600	0.91	0.93	0.92	62,500	130	23,300	539	43.3	7,950	7,910	7,830	7,830	10	74		16		359	360	336	5.1	3.7	4.8	5.5	14,300	14,000	16,200	17,720	85	82	184	7,200	9	9	7	7	
116	Uralla	950	975	980	990	1.00	1.01	0.87	2,500	100	990	28	34.9	190	190	160	160	9	88	4			192	189	162	-0.2	-1.8	-0.7		400	380	390		90	90	6	5,700	15	14	14	14	
116A	Urana			300		0.95	0.95	0.91	720	190	290	15	18.8			76	76																		0	0					18	
117	Wagga Wagga	18,500	18,820	19,500	20,800	1.04	1.05	0.93	57,500		21,600	466	46.4	5,269	6,030	5,630	5,630	1	68	17	14		258	297	260	11.5	11.2	3.3	2.9	6,330	6,770	7,090	6,910	71	69	117	5,600	2	1	1	1	
118	Wakool	1,000	1,044	1,000	1,100	0.95	0.95	0.85	2,100	100	1,100	71	15.3	140	140	160	140				0		181	181	129	5.7	4.9	4.2	4.8	480	490	500	495	76		5	4,600	21	17	13	10	
119	Walcha	760	757	760	760	1.01	1.01	0.79	1,600	110	770	29	26.4	230	200	218	218	25	68	7			301	267	284	-1.0	-2.3	-2.2	-1.8	160	160	170	187	79	90	6	7,800	3	2	2	2	
120	Walgett	1,690	1,638	1,640	1,600	0.85	0.85	0.91	6,000	100	1,400	20	69.7	400	400	400	400						287	287	287	-2.1	-1.9	-2.2		430	430	440		90		12	7,100	11	8	6	6	
121	Warren	840	850	850	850	0.92	0.92	0.90	2,400	100	780	16	47.9	240	240	227	227						297	293	290	1.0	2.4	2.8	4.9	290	320	370	411	78		5	5,800	1	5	5	4	
122	Weddin	1,000	1,004	1,010	1,000	0.94	0.93	0.86	2,000	140	950	28	33.7	140	140	166	179	1			99		161	145	189	-2.8	-															

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# Table 11 - Sewerage - Residential Charges, Bills

WATER UTILITY	CHARGES												BILLS															
	Access Amount (or Minimum)				Charge Independent of Land Value ?				Does Council Have Trade Waste Charges ?	Non-Res & Trade Waste Charges	Non-Res & Trade Waste Volume	Typical Developer Charge				Typical Residential Bill				Average Residential Bill				Real Increase in Average Residential Bill				
	(\$)				Yes/No					(% of Annual rates and charges)	(% of Sewage Collected)	(\$/Equivalent Tenement (ET))				(\$/assessment)				(\$/property)				(%)				
	(9)				(10)				(10a)	(10b)	(10c)	(11)				(11a)				(12)				(13)				
	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	2001/02	2000/01	2000/01	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01	
1 Albury	220	250	275	250	Yes	Yes	Yes	Yes	YES	32	56	1000	1000	1500	1500	220	250	275	250	234	240	270	293	0	1	10	6	
2 Armidale Dumaresq	185	190	210	235	Yes	Yes	Yes	Yes		17		1200	1240	1240	1240	185	190	210	235	175	178	167	196	4	0	-8	15	
3 Ballina	370	370	330	330	Yes	Yes	Yes	Yes	YES	19		4100	4200	4200	4200	370	370	330	330	358	390	386	345	-8	7	-3	-14	
4 Balranald	140	304	332	148	Yes	Yes	Yes	Yes	NO	15					680	140	304	332	148	379	386	386	347	1	0	-2	-13	
5 Barraba	236	132	236	236	Yes	Yes	Yes	Yes	NO	6						236	132	236	236	218	182	202	209	27	-18	9	1	
6 Bathurst	301	308	319	319	No	No	No	No	YES	21	40	1100	1190	1500	1490	301	308	319	319	286	272	280	294	0	-7	1	2	
7 Bega Valley	500	420	420	400	Yes	Yes	Yes	Yes	NO	11		2200	2150	2150	2440	500	420	420	400	493	473	392	372	-2	-6	-19	-8	
8 Bellingen	386	390	400	410	Yes	Yes	Yes	Yes	NO	9		6500	5900	5500	6990	386	390	400	410	379	366	378	381	-2	-5	1	-2	
9 Berrigan	260	270	270	275	Yes	Yes	Yes	Yes	NO							260	270	270	275	280	290	301	294	-2	2	2	-5	
10 Bingara	280	285	295	305	Yes	Yes	Yes	Yes		11						280	285	295	305	231	240	229	251	0	2	-6	6	
11 Bland	322	320	330	348	No	No	No	No	NO	3		1000	1000	1000	1000	322	320	320	348	289	295	322	333	1	0	7	1	
12 Blayney	342	350	360	370	Yes	Yes	Yes	Yes	YES	13	14	1000	1000	1024	1080	342	350	360	370	301	309	367	405	-1	1	16	7	
13 Bogan	310	305	326	335	No	No	No	No	NO							310	305	326	335	339	344	340	383	1	0	-3	10	
14 Bombala	294	306	306	323	No	No	Yes	Yes	NO	17	17	1000	1200	1530	1530	294	306	306	323	370	373	390	391	2	-1	2	-3	
15 Boorowa	111	111	111	146	No	No	No	No	NO			500	500	500	500	111	111	111	146	115	78	114	135	-2	-33	42	16	
16 Bourke	401	411	422	422	Yes	Yes	Yes	Yes	NO					400	430	401	411	422	422	504	321	428	481	-2	-38	31	9	
17 Brewarrina	305	305	320	336	No	No	No	Yes	NO	11						305	305	320	336	236	240	200	246	-1	0	-19	20	
18 Australian Inland Energy & Water	196	208	208	218	No	No	No	No	YES							196	208	208	218	183	213	228	235	1	14	5	0	
19 Byron	412+usage	418+usage	429+usage	429+usage	Yes	Yes	Yes	Yes	YES	5		5400	5300	5800	5230	573	579	526	552	458	410	437	492	-2	-12	4	10	
20 Cabonne	309	309	359	504	No	No	No	No	NO	11						309	309	359	504	413	445	628	417	-2	6	38	-37	
21 Carrathool	135	145	145	150	Yes	Yes	Yes	Yes	NO			500	500	504	504	135	145	145	150	122	108	124	123		-13	12	-4	
22 Central Darling	362	370	380	380	Yes	Yes	Yes	Yes	NO					400	400	362	370	380	380	377	384	365	318	1	0	-7	-16	
23 Central Tablelands	NO SGE																											
24 Cobar	190	192	192	192	No	Yes	Yes	Yes	YES	15		700	710	710	710	190	192	192	192	211	200	190	177	1	-7	-7	-10	
25 Coffs Harbour	460	470	486	486	Yes	Yes	Yes	Yes	YES	7		2400	2400	2400	2400	460	470	486	486	541	542	534	557	2	-2	-3	1	
26 Coolah	229	229	235	249	Yes	Yes	Yes	Yes	NO	6						229	229	235	249	193	205	235	251	1	4	12	4	
27 Coolamon	180	220	210	230	Yes	Yes	Yes	Yes	NO				3000	3000	3000	180	220	210	230	264	340	401	413	-1	26	15	0	
28 Cooma-Monaro	391	391	411	419	Yes	Yes	Yes	Yes	NO	20		800	1600	1625	1750	391	391	411	419	368	385	406	388	3	3	3	-7	
29 Coonabarabran	102	102	102	107	No	No	No	No	NO	15		400	820	829	829			351	362	347	354	403	324	-3	0	12	-23	
30 Coonamble	181	230	230	230	No	No	No	No		1						181	230	230	230	258	263	318	265	0	0	19	-20	
31 Cootamundra	130	193	143	143	No	No	No	No	YES	2		700	700	700	700	130	193	143	143	122	150	169	164	0	20	11	-6	
32 Copmanhurst	600	600	600	600	Yes	Yes	Yes	Yes	NO			3600	3690	3688	3850	600	600	600	600	611	536	562	600	-2	-14	3	4	
33 Corowa	200	200	225	255	Yes	Yes	Yes	Yes	NO	17		400	400	560	560	200	200	225	255	245	228	228	252	8	-9	-2	8	
34 Cowra	266	200	312	248	Yes	Yes	Yes	Yes	NO				2500	2500	2500	266	200	240	248	258	248	242	200	26	-6	-4	-20	
35 Crookwell	385	404	404	416	No	No	No	No	NO	2	9	400	450	465	480	385	404	404	416	340	350	399	391	5	1	12	-5	
36 Culcairn	225	225	256	226	Yes	Yes	Yes	Yes	NO		7	1300	1800	2126	2130	225	225	256	226	157	164	181	187	-2	2	8	0	
37 Deniliquin	288	325	334	385	Yes	Yes	Yes	Yes	NO			500	500	500	500	288	325	334	385	210	189	272	272	-16	-12	41	-3	
38 Dubbo	404	424	424	424	No	No	No	No	YES	19	18	2500	2500	2500	2500	404	424	424	424	424	443	398	326	1	2	-12	-21	
39 Dungog	204	260	268	310	Yes	Yes	Yes	Yes	YES			2700	2750	2595	2870	204	260	268	310	179	311	372	365	4	71	17	-5	
40 Eurobodalla	430	430	430	430	Yes	Yes	Yes	Yes	NO			2000	1980	1977	1980	430	430	430	430	430	446	413	427	-4	2	-9	0	
41 Fish River WS	NO SGE																											
42 Forbes	314	314	361	428	No	No	No	No	YES	1	11	500	540	555	630	314	314	361	428	222	254	339	328	0	12	31	-6	
43 Gilgandra	180	180	180	197	Yes	Yes	Yes	Yes	NO	13	3					180	180	180	197	163	157	164	192	-2	-6	3	14	

NOTE: Bills and Charges are in Dollars of the Year

# Table 11 - Sewerage - Residential Charges, Bills

WATER UTILITY	CHARGES												BILLS																
	Access Amount (or Minimum)				Charge Independent of Land Value ?				Does Council Have Trade Waste Charges ?	Non-Res & Trade Waste Charges	Non-Res & Trade Waste Volume	Typical Developer Charge				Typical Residential Bill				Average Residential Bill				Real Increase in Average Residential Bill					
	(\$)				Yes/No					(% of Annual rates and charges)	(% of Sewage Collected)	(\$/Equivalent Tenement (ET))				(\$/assessment)				(\$/property)				(%)					
	(9)				(10)				(10a)	(10b)	(10c)	(11)				(11a)				(12)				(13)					
	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	2001/02	2000/01	2000/01	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01		
44	Glen Innes	215	226	226	250	Yes	Yes	Yes	Yes	NO					215	226	226	250	198	220	253	270	1	9	13	4			
45	Gloucester	315	320	336	346	Yes	Yes	Yes	Yes	YES	1		1600	1560	1610	1660	315	320	336	346	333	274	281	284	1	-19	1	-2	
46	Goldenfields (Bulk Supplier)	NO SGE																											
47	Goldenfields (Reticulator)	NO SGE																											
48	Goldenfields (Combined)	NO SGE																											
49	Gosford	371	371	341	341	Yes	Yes	Yes	Yes	YES			1400	1550	1883	1760	371	371	341	341	360	362	341	311	-5	-1	-8	-12	
50	Goulburn	250	268	281	281	No	No	No	No	YES		13	900	900	900	950	250	268	281	281	257	306	347	404	5	17	11	13	
51	Grafton	380	380	380	380	Yes	Yes	Yes	Yes	YES	9					380	380	380	380	357	367	353	361	4	1	-6	-1		
52	Griffith	218	224	230	230	No	No	No	No	YES	34		1600	2110	1815	1820	218	224	230	230	247	252	349	362	3	0	36	1	
53	Gundagai	182	193	196	206	No	No	No	No	NO		14				182	193	196	206	160	168	186	188	3	3	9	-2		
54	Gunnedah	195	200	200	215	Yes	Yes	Yes	Yes	NO	9		1000	1860	1856	1950	195	200	200	215	184	212	211	225	4	13	-3	4	
55	Gunning	171	200	200	200	No	No	No	No							171	200	200	200	158	332	394	445	5	106	16	10		
56	Guyra	375	350	435	470	Yes	Yes	Yes	Yes	NO	24					375	350	435	470	337	405	450	420	15	18	9	-10		
57	Harden	187	205	205	248	Yes	Yes	Yes	Yes	NO	18					187	205	205	248	146	169	178	218	3	14	3	19		
58	Hastings	410	427	438	462	Yes	Yes	Yes	Yes	YES			1500	2000	2800	2800	410	427	438	462	404	389	417	435	0	-6	5	1	
59	Hay	345	345	345	345	Yes	Yes	Yes	Yes		13					345	345	345	345	575	359	355	342	0	-39	-3	-7		
60	Holbrook	160	164	168	168	No	No	No	No							160	164	168	168	341	354	342	408	-2	2	-5	16		
61	Hume	300	200	200	200	No	Yes	Yes	Yes	NO			1300	2000	2000	2930	300	200	200	200	300	226	211	237	-14	-26	-8	9	
62	Hunter Water	165+usage	203+usage	210+usage	216+usage	Yes	Yes	Yes	Yes				1200	2500	2500	3500	210	248	247	260	236	226	230	230	-1	-6	0	-3	
63	Inverell	255	255	255	255	Yes	Yes	Yes	Yes	NO		8				255	255	255	255	245	242	241	239	6	-3	-2	-4		
64	Jerilderie	427	434	434	434	No	No	No	No	NO			600	600	600	600	427	434	434	434	438	428	516	553	14	-4	18	4	
65	Junee	255	255	255	255	Yes	Yes	Yes	Yes	YES			500	500	500	500	255	255	255	255	236	246	299	284	8	2	19	-8	
66	Kempsey	400	405	424	445	Yes	Yes	Yes	Yes	NO	29		2800	2800	3117	3120	400	405	424	445	356	366	448	416	-2	1	21	-11	
67	Kyogle	178+usage	200+usage	220+usage	242+usage	Yes	Yes	Yes	Yes	NO	16		1000	1000	1000		277	299	301	313	284	158	182	201	6	-45	13	7	
68	Lachlan	275	300	300	300	Yes	Yes	Yes	Yes	NO						275	300	300	300	256	277	299	305	13	6	6	-1		
69	Leeton	300	330	330	327	No	No	No	No	YES	10	44	4500	4500	4500	2800	300	330	330	327	300	338	464	476	-1	10	35	-1	
70	Lismore	300	307	308	317	Yes	Yes	Yes	Yes	YES	28		3600	3600	3600	4120	300	307	308	317	275	284	286	286	6	1	-2	-3	
71	Lithgow	260	273	273	273	No	Yes	No	No				1800	1790	1787	1780	260	273	273	273	245	237	278	250	-2	-5	15	-13	
72	Lockhart	107	107	111	95	No	No	No	No	NO	4	2					107	107	111	95	260	293	341	339	-14	11	14	-4	
73	North Coast Water	NO SGE																											
74	Maclean	350	371	300	416	Yes	Yes	Yes	Yes	YES	5	3	3800	2940	3028	3180	350	371	300	416	353	320	380	390	8	-11	16	0	
75	Manilla	320	320	320	320	Yes	Yes	Yes	Yes	NO			1100	1200	1200	1300	320	320	320	320	302	444	442	459	-4	44	-2	1	
76	Merriwa	270	270	270	270	Yes	Yes	Yes	Yes	NO	8		600	600	600	600	270	270	270	270	250	236	261	261	-12	-7	8	-3	
77	MidCoast (Manning)	450	450	445	450	Yes	Yes	Yes	Yes				2100	2150	2200	3800	450	450	445	450	417	511	461	453	6	20	-12	-5	
78	MidCoast (Great Lakes)	440	445	450	450	Yes	Yes	Yes	Yes				3300	3470	3600	3800	440	445	450	450	432	493	461	453	1	12	-8	-5	
79	MidCoast (Combined)									YES	17	19																	
80	Moree Plains	380		418	480	No		Yes	Yes	NO	2				700	700	380		418	480	412	421	518	510	3	0	21	-5	
81	Mudgee	310	330	350	330	No	No	No	No	NO	15		1500	1620	1620	1620	310	330	350	330	316	299	344	321	3	-7	13	-9	
82	Mulwaree	250	380	380	380	No	No	No	No	NO	41		2500	2500	2500	2500	250	380	380	380	391	322	396	383	0	-19	21	-6	
83	Murray	289	289	293	302	Yes	Yes	Yes	Yes	YES	11		600	700	700	700	289	289	293	302	326	383	353	340	-7	15	-10	-7	
84	Murrumbidgee	346	346	346	346	No	No	No	No	NO	6				1000	1000	346	346	346	346	216	150	248	283	-5	-32	62	11	
85	Murrurundi	310	310	310	314	Yes	Yes	Yes	Yes	NO	13		800	850	845	896	310	310	310	314	344	298	282	244	-2	-15	-7	-17	
86	Muswellbrook	252	271	288	298	Yes	Yes	Yes	Yes	YES	2	15	2000	2500	4290	4290	252	271	288	298	250	277	298	333	5	9	6	9	

# Table 11 - Sewerage - Residential Charges, Bills

WATER UTILITY	CHARGES												BILLS																		
	Access Amount (or Minimum)				Charge Independent of Land Value ?				Does Council Have Trade Waste Charges ?	Non-Res & Trade Waste Charges	Non-Res & Trade Waste Volume	Typical Developer Charge				Typical Residential Bill				Average Residential Bill				Real Increase in Average Residential Bill							
	(\$)				Yes/No					(% of Annual rates and charges)	(% of Sewage Collected)	(\$/Equivalent Tenement (ET))				(\$/assessment)				(\$/property)				(%)							
	(9)				(10)				(10a)	(10b)	(10c)	(11)				(11a)				(12)				(13)							
	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	2001/02	2000/01	2000/01	1998/99	1999/00	2000/01	2001/02	1998/99	1999/00	2000/01	2001/02	1997/98	1998/99	1999/00	2000/01	1997/98	1998/99	1999/00	2000/01				
87	Nambucca	394	394	394	394	Yes	Yes	Yes	Yes	NO	5			1600	1650	1650	1830	394	394	394	394	385	385	352	358	-2	-2	-10	-2		
88	Narrabri	296	296	296	296	Yes	Yes	Yes	Yes	NO	8			1800	1740	1742	1800	296	296	296	296	231	244	286	302	9	4	15	3		
89	Narrandera	251	304	304	309	No	No	No	No	NO	14	13						251	304	304	309	255	349	393	411	10	34	10	2		
90	Narromine	350	358	368	378	No	No	No	No					600	940	940	940	350	358	368	378	342	342	386	439	-5	-2	11	11		
91	Nundle	NO SGE																													NO SGE
92	Oberon	120	120	220	220	No	No	No	No	YES	14			1100	1100	1100	1160	120	120	120	120	248	277	340	362	2	10	20	3		
93	Orange	334	343	278	278	No	No	No	No	YES	3			1200	1270	2700	2790	334	343	278	278	357	365	324	292	-1	0	-13	-13		
94	Parkes	157	160	169	169	No	No	No	No		19			1200	2200	3110	3200	157	160	169	169	123	145	142	146	-9	15	-3	0		
95	Parry	396	390	575	300	Yes	Yes	Yes	Yes	NO	4			700	500	500	500	396	390	575	300	297	338	352	391	11	12	2	8		
96	Pristine Waters	555	565	705	650	Yes	Yes	Yes	Yes					1700	1700	1700	1700	555	565	705	650	563	515	525	525	1	-10	0	-3		
97	Queanbeyan	257	263	263	277	No	No	No	No	NO		20		1100	1080	1084	1080	257	263	263	277	277	320	335	343	-2	13	3	-1		
98	Quirindi	245	245	260	273	Yes	Yes	Yes	Yes	NO	3							245	245	260	273	261	258	258	269	-3	-3	-2	1		
99	Richmond Valley	345	350	350	385	Yes	Yes	Yes	Yes	NO				4900	4010	4129	4400	345	350	350	385	344	370	375	414	7	5	-1	7		
100	Riverina	NO SGE																													NO SGE
101	Rous	NO SGE																													NO SGE
102	Rylstone	324	380	380	401	Yes	Yes	Yes	Yes	NO	10						367	324	380	380	401	284	335	354	380	3	16	4			
103	Scone	346	346	346	290	No	No	No	No	NO	9			2000	2030	2083	2080	346	346	346	290	326	326	365	327	-2	-2	9	-13		
104	Severn	440	462	440	475	Yes	Yes	Yes	Yes	NO	29	15						440	462	440	475	424	366	363	353	-1	-15	-3	-6		
105	Shoalhaven	470	500	500	510	Yes	Yes	Yes	Yes	YES	6			1630	1700	1735	1790	470	500	500	510	471	480	503	477	2	0	3	-8		
106	Singleton	246	266	271	271	Yes	Yes	Yes	Yes	NO	21			1000	1050	1072	1120	246	266	271	271	239	242	259	251	-3	-1	5	-6		
107	Snowy River	268+usage	279+usage	277+usage	292+usage	Yes	Yes	Yes	Yes	NO	17			1400	2000	2000	2000	338	309	336	356	359	284	336	340	1	-22	16	-2		
108	Sydney Water	286	290	305	319	Yes	Yes	Yes	Yes			6		5100	5200	5300	3900	286	290	305	319	278	283	285	301	1	0	-1	3		
109	Tallaganda	110	264	263	108	No	No	Yes	Yes	NO				3000	3040	3100	3000	110	264	263	108	197	206	222	286	3	2	5	26		
110	Tamworth	276	396	396	396	Yes	Yes	Yes	Yes	YES	14			1300	1250	1282	1360	276	396	396	396	249	364	358	370	5	44	-3	0		
111	Temora	90	90	104	135	Yes	Yes	Yes	Yes	NO	6							90	90	104	135	80	76	107	120	-2	-7	38	9		
112	Tenterfield	260	273	273	279	Yes	Yes	Yes	Yes	NO	15			1600	1500	1500	1500	260	273	273	279	263	291	310	314	-2	9	4	-2		
113	Tumbarumba	363	300	310	319	Yes	Yes	Yes	Yes	NO	12							363	300	310	319	384	356	301	285	-7	-9	-17	-9		
114	Tumut	374	374	428	440	Yes	Yes	Yes	Yes	YES	12			1400	2720	3100	3400	374	374	428	440	330	351	320	366	-2	4	-11	11		
115	Tweed	394	400	400	405	No	Yes	Yes	Yes	YES	4			2770	2770	2820	3220	394	400	400	405	416	417	402	411	-2	-2	-6	-1		
116	Uralla	389	389	391	395	Yes	Yes	Yes	Yes	NO				1100				389	389	391	395	349	347	379	379	-1	-2	7	-3		
116A	Urana			175				Yes		NO														496							
117	Wagga Wagga	198	204	231	237	No	No	Yes	Yes	YES	29	31		1200	1040	1200	1200	198	204	231	237	244	264	244	204	3	6	-9	-20		
118	Wakool	410	410	337	337	No	No	No	No	NO	24							410	410	337	337	382	401	422	357	2	3	3	-18		
119	Walcha	206	210	210	250	Yes	Yes	Yes	Yes	NO		7						206	210	210	250	182	182	198	233	-3	-2	6	15		
120	Walgett	223	223	234	234	Yes	Yes	Yes	Yes									223	223	234	234	245	281	289	289	8	13	1	-3		
121	Warren	320	320	352	423	Yes	Yes	Yes	Yes	YES	9							320	320	352	423	275	330	367	415	5	18	9	10		
122	Weddin	127	135	138	142	Yes	Yes	Yes	Yes	NO	16							127	135	138	142	112	115	106	111	-20	0	-9	2		
123	Wellington	280	300	335	370	No	No	No	No	NO	2	3		1000	1000	1000		280	300	335	370	286	333	350	439	5	14	3	22		
124	Wentworth	300	365	315	315	Yes	Yes	Yes	Yes	NO	11	4		1400	1920	1920	1920	300	365	315	315	300	327	362	347	-3	7	9	-7		
125	Wingecarribee	365+usage	365+usage	372+usage	372+usage	Yes	Yes	Yes	Yes	YES	27			3100	3100	3350	3560	511	511	466	482	539	426	472	390	5	-22	9	-20		
126	Wyong	356	347	347	347	Yes	Yes	Yes	Yes	YES	11			1400	1320	1341	1400	356	347	347	347	351	331	343	339		-7	2	-4		
127	Yallaroi	273	273	277	277	No	Yes	No	No									273	273	277	277	227	240	254	259	-2	4	4	-1		
128	Yarrowlumlula	564	585	585	585	No	Yes	Yes	Yes						1480	1480	1550		564	585	585	585	379	531	526	594	-22	37	-3	10	
129	Yass	231	231	281	303	Yes	Yes	No	No	NO	2			1500	1570	1570	1570	231	231	281	303	269	269	356	375	1	-2	30	2		
130	Young	200	220	220	220	Yes	Yes	Yes	Yes	YES	11			700	700	700	702	200	220	220	220	158	179	196	200	6	11	7	-1		



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# Table 11A - Sewerage - 2001/02 Residential Multiple Tariffs

WATER UTILITY		Town	Access Charge (or Minimum) (\$) (1)	Access Charge Independent of Land Value ? (2)
4	Balranald	Balranald	148	No
		Euston	211	No
9	Berrigan	Berrigan	275	Yes
		Barooga	200	Yes
		Finley	275	Yes
		Tocumwal	275	Yes
14	Bombala	Bombala	323	Yes
		Delegate	575	Yes
17	Brewarrina	Brewarrina	336	Yes
		Goodooga	147	Yes
20	Cabonne	Molong	369	No
		Canowindra	504	No
21	Carrathool	Hilston	150	Yes
		Goolgowi	80	Yes
		Rankins Springs	145	Yes
27	Coolamon	Coolamon	230	Yes
		Ganmain	230 - capital contribution paid 560 - no capital contribution paid	Yes Yes
29	Coonabarabran	Coonabarabran	107	No
		Baradine	680	Yes
30	Coonamble	Coonamble	230	No
33	Corowa	Gulargambone	191	
		Corowa	255	Yes
36	Culcairn	Mulwala	350	Yes
		Culcairn	226	Yes
54	Gunnedah	Henty	162	Yes
		Walla Walla	270	Yes
		Gunnedah	215	Yes
61	Hume	Curlewis	444	Yes
		Howlong	200	Yes
		Lara Lakes/Lake Hume	nil	No
		Burrumbuttock	450	Yes
72	Lockhart	Jindera	210	Yes
		Lockhart	114	No
84	Murrumbidgee	The Rock	95	No
		Darlington Point	346	No
		Coleambally	174	No
88	Narrabri	Narrabri	148	Yes
		Wee Waa	175	Yes
		Boggabri	133	Yes
90	Narromine	Narromine	378	No
		Trangie	346	No
95	Parry	Kootingal	575	Yes
		Werris Creek	300	Yes
96	Pristine Waters	Corindi Beach	705	Yes
		Coutts Crossing	650	Yes
99	Richmond Valley	Casino	385	Yes
		Lower River	495	Yes
112	Tenterfield	Tenterfield	279	Yes
		Urbenville	508	Yes
118	Wakool	Wakool	275	No
		Barham, Moulamein, Tooleybuc, Murray Downs	451	No
124	Wentworth	Wentworth	325	Yes
		Namatjira	350	Yes
128	Yarrowlumla	Bungendore	585	Yes
		Weetalabah	912	Yes
		Captains Flat	515	Yes

NOTE: This Table only lists utilities with multiple tariffs for residential customers. The residential tariffs for all utilities are shown in Table 11.

# Table 11B - Sewerage - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Access Charge (or Minimum)	Access Charge Independent of Land Value?	Basis for Access Charge square of size of service connection or water meter	*Proportional to	Usage Charges (for estimated volume discharged to sewer = water usage x sewer discharge factor)
		(\$) (1)	(2)	(3)	(4)	(4)
1	Albury	Albury	250	Yes	Uniform Access Charge	36c/kL
2	Armidale Dumaresq	Armidale	235	No	Uniform Access Charge	WC: Hotel:\$77.50, Hospital/School,Church:\$35, Nonratable:\$69
3	Ballina	Ballina	330	Yes	\$130/pedestal	
4	Balranald	Balranald	148	No	Uniform Access Charge	
		Euston	211	No	Uniform Access Charge	
5	Barraba	Barraba	236	Yes	Uniform Access Charge	
6	Bathurst	Bathurst	328	No	Uniform Access Charge	\$328 for first WC, \$114 for each additional WC
7	Bega Valley	Bega Valley	400	Yes	Service connection size* (eg. 40mm \$1,600)	90c/kL
8	Bellingen	Bellingen, Urunga, Dorrigo	410	Yes	Uniform Access Charge	94c/kL
9	Berrigan	Berrigan	275	Yes	Uniform Access Charge	
		Barooga	200	Yes	Uniform Access Charge	
		Finley	275	Yes	Uniform Access Charge	
		Tocumwal	275	Yes	Uniform Access Charge	
10	Bingara	Bingara	305	Yes	Uniform Access Charge	
11	Bland	Bland	348	No	Uniform Access Charge	
12	Blayney	Blayney	370	Yes	Uniform Access Charge	
13	Bogan	Nyngan	335	No	Uniform Access Charge	
14	Bombala	Bombala	323	Yes	Uniform Access Charge	
		Delegate	575	Yes	Uniform Access Charge	
15	Boorowa	Boorowa	146	No	Uniform Access Charge	
16	Bourke	Bourke	422	Yes	Uniform Access Charge	
17	Brewarrina	Brewarrina	336	Yes	Uniform Access Charge	Urinals \$29each, Pedestals 1-5 \$84each, Pedestals 5+\$29each
		Goodooga	147	Yes	Uniform Access Charge	Urinals \$29each, Pedestals 1-5 \$84each, Pedestals 5+\$29each
18	AIEW	Broken Hill	320	No	Uniform Access Charge	
19	Byron	Byron	429	Yes	\$429 for up to 1 kL/d of usage, \$429 for each additional kL/d of usage (ie. \$858 for usage of 1 to 2 kL/d, \$1287 for usage of 2 to 3 kL/d)	62c/kL for all water usage 80c/kL for estimated trade waste volume
20	Cabonne	Molong	369	No	Uniform Access Charge	
		Canowindra	504	No	Uniform Access Charge	
21	Carrathool	Hilston	150	Yes	Uniform Access Charge	
		Goolgowi	80	Yes	Uniform Access Charge	
		Rankine Springs	145	Yes	Uniform Access Charge	
22	Central Darling	Wilcannia	380	Yes	Uniform Access Charge	
24	Cobar	Cobar	242	Yes	Uniform Access Charge	
25	Coffs Harbour	Coffs Harbour	506	No	Water Closet/Cistern: \$60, Schools/Church:\$38	
26	Coolah	Coolah and Dunedoo	249	Yes	Uniform Access Charge	
		Coolah	230	Yes	Uniform Access Charge	\$10 for running past (capital contributed), \$340 for running past (no contribution), additional WCs (>2): \$70/WC, additional WCs (>2): \$55/WC
27	Coolamon	Coolamon	230	Yes	Uniform Access Charge	
		Ganmain	230 - capital contribution paid 560 - no capital contribution paid	Yes	Uniform Access Charge	
28	Cooma-Monaro	Cooma,Nimmitabel	446	Yes	Water consumption: \$446 for water consumption of under 100 kL, increasing to \$10,597 for consumption over 8,000 kL	
29	Coonabarabran	Coonabarabran	107	No	Land value+\$71 per WC and \$36 per urinal	
		Baradine	680	Yes	Land value+\$71 per WC and \$36 per urinal	
30	Coonamble	Coonamble	230	No	Land value	
		Gulgargambone	191	No	Land value	
31	Cootamundra	Cootamundra	143	No	Land value	
32	Copmanhurst	Junction Hill	600	Yes	Uniform Access Charge	
33	Corowa	Corowa	255	Yes	Uniform Access Charge	
		Mulwala	350	Yes	Uniform Access Charge	
34	Cowra	Cowra	248	Yes	Uniform Access Charge	
35	Crookwell	Crookwell	416	No	Land value	
36	Culcairn	Culcairn	226	Yes	Uniform Access Charge	
		Henty	162	Yes	Uniform Access Charge	
		Walla Walla	270	Yes	Uniform Access Charge	
37	Deniliquin	Deniliquin	385	Yes	Uniform Access Charge	
38	Dubbo	Dubbo	424	No	Land value, Pedestal charges	
39	Dungog	Dungog	310	Yes	Uniform Access Charge	
40	Eurobodalla	Eurobodalla	430	Yes	Meter Size* (eg. 40mm \$1,720, 100mm \$10,750)	
42	Forbes	Forbes	428	No	Land Value	

# Table 11B - Sewerage - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Access Charge (or Minimum)	Access Charge Independent of Land Value?	Basis for Access Charge square of size of service connection or water meter	*Proportional to	Usage Charges (for estimated volume discharged to sewer = water usage x sewer discharge factor)
		(\$) (1)	(2)	(3)	(4)	
43	Gilgandra	Gilgandra 197	Yes	Uniform Access Charge		Schools/ Hospitals: WC \$33, Cistern \$28
44	Glen Innes	Glen Innes 250	Yes	Uniform Access Charge		
45	Gloucester	Gloucester 346	Yes	Schools, Churches, Clubs, Motels, etc. WC: \$37, Cistern: \$31		
49	Gosford	Gosford 254	Yes	<b>Service connection size*</b> (eg. 20mm: \$254, 50mm: \$1588, 100mm: \$6350, 200mm: \$25,400)		<b>70c/ kL</b> (mean discharge factor = 0.8)
50	Goulburn	Goulburn				\$29/Cistern - \$76/WC - \$38/WC (Schools and Churches)
51	Grafton	Grafton 380	Yes	Uniform Access Charge		WC/Cistern: \$67, Schools/Churches: \$34
52	Griffith	Griffith 253	No		Land Value	
53	Gundagai	Gundagai 206	No		Land value	
54	Gunnedah	Gunnedah 215	Yes	Uniform Access Charge		
		Curlewis 444	Yes	Uniform Access Charge		
55	Gunning	Gunning 205	No		Land value	
56	Guyra	Guyra 470	Yes	Uniform Access Charge		
57	Harden	Harden 248	Yes	Uniform Access Charge		Non rateable based on WCs and Urinals
58	Hastings	Hastings 462	Yes	Uniform Access Charge		<b>55c/kL</b>
59	Hay	Hay 345	Yes	Uniform Access Charge		
60	Holbrook	Holbrook 173	No		Land Value	
61	Hume	Howlong 200	Yes	Uniform Access Charge+\$60/WC and \$25/Urinal		
		Lara Lakes	No		Land value+\$60/WC and \$25/Urinal	
		Lake Hume	No		Land value+\$60/WC and \$25/Urinal	
		Burrumbuttock 450	Yes	Uniform Access Charge+\$60/WC and \$25/Urinal		
		Jindera 210	Yes	Uniform Access Charge+\$60/WC and \$25/Urinal		
62	Hunter Water	432	Yes	<b>Meter Size*</b> (Appropriate sewer discharge factor is applied to obtain the access charge. eg. 40 mm with 0.8 discharge factor results in access charge of \$1,382)		<b>41c/kL</b>
63	Inverell	Inverell, Ashford, Delungra, Gilgai 255	Yes	Uniform Access Charge (Motels, hotels, clubs in Inverell: \$690)		
64	Jerilderie	Jerilderie 446	No		Land Value	Non rateable based on WCs (\$33) and Urinals (\$25)
65	Junee	Junee 255	Yes	Uniform Access Charge		Unconnected \$125, WC\$67, Urinals\$25
66	Kempsey	Kempsey 458	Yes	Uniform Access Charge		
67	Kyogle	Kyogle, Wooden Bong, Bonalbo 242	Yes	Uniform Access Charge		<b>126c/kL</b> ( discharge factor = 40% )
68	Lachlan	Lachlan 300	Yes	Uniform Access Charge		
69	Leeton	Leeton, Yanco 327	No		Land Value	
70	Lismore	Lismore, Nimbin 190	Yes	Uniform Access Charge		<b>131c/kL</b>
71	Lithgow	Lithgow, Wallerawang, Portland 273	No		Land Value	
72	Lockhart	Lockhart 114	No		Land Value	
		The Rock 95	No		Land Value	
74	Maclean	Maclean 416	Yes	Uniform Access Charge		
75	Manilla	Manilla 320	Yes	Uniform Access Charge		
76	Merriwa	Merriwa 270	Yes	Uniform Access Charge		
77	MidCoast (Manning)	346	Yes	<b>Meter Size*</b>		<b>120c/kL</b>
78	MidCoast (Great Lakes)	346	Yes	<b>Meter Size*</b>		<b>140c/kL</b>
80	Moree Plains	Moree, Mungindi 480	Yes	Uniform Access Charge		
81	Mudgee	Mudgee, Gulgong 330	No		Land Value	
82	Mulwaree	Marulan 380	No		Land Value	
83	Murray	Moama, Mathoura 302	Yes	Uniform Access Charge		
84	Murrumbidgee	Darlington Point 346	No		Land Value	
		Coleambally 174	No		Land Value	
85	Murrurundi	Murrurundi 314	Yes	Uniform Access Charge		
86	Muswellbrook	Muswellbrook, Denman 298	Yes	Uniform Access Charge		
87	Nambucca	Nambucca 394	Yes	Uniform Access Charge		
88	Narrabri	Narrabri 148	Yes	Uniform Access Charge		
		Wee Waa 175	Yes	Uniform Access Charge		
		Bogabri 133	Yes	Uniform Access Charge		

# Table 11B - Sewerage - 2001/02 Non-Residential Tariffs

WATER UTILITY	Town	Access Charge (or Minimum)	Access Charge Independent of Land Value?	Basis for Access Charge square of size of service connection or water meter	*Proportional to	Usage Charges (for estimated volume discharged to sewer = water usage x sewer discharge factor)
		(\$) (1)	(2)	(3)	(4)	(4)
89	Narrandera	Narrandera	309	No		Land Value
90	Narromine	Narromine	378	No		Land Value
		Trangie	346	No		Land Value
92	Oberon	Oberon	120	No		Land Value
93	Orange	Orange	278	No		Land Value
94	Parkes	Parkes	169	No		Land Value
95	Parry	Werris Creek	575	Yes	Uniform Access Charge	
		Kootingal	300	Yes	Uniform Access Charge	
96	Pristine Waters	Corindi Beach	705	Yes	Uniform Access Charge	
		Coutts Crossing	650	Yes	Uniform Access Charge	
97	Queanbeyan	Queanbeyan	277	No		Land value Additional \$138 per WC for over 2 WCs
98	Quirindi	Quirindi	273	Yes	Uniform Access Charge	
99	Richmond Valley	Casino	385	Yes	Uniform Access Charge	Additional WC/urinal/cistern where greater than two \$55
		Lower River	495	Yes	Uniform Access Charge	Additional WC/urinal/cistern where greater than two \$55
102	Rylstone	Rylstone	401	Yes	Uniform Access Charge	Pedestal: \$64, Urinals: \$25
103	Scone	Scone, Aberdeen	290	No		Land value Up to 4 WC allowed, Additional WC/Urinals: \$72, Non ratable Urinals: \$27
104	Severn	Deepwater	475	Yes	Uniform Access Charge	
105	Shoalhaven	Shoalhaven	510	Yes	Uniform Access Charge	85 c/kL
106	Singleton	Singleton	271	Yes	Uniform Access Charge	
107	Snowy River	Snowy River	292	Yes	Uniform Access Charge+usage	52c/kL for estimated sewage volume based on discharge factors of 0.88, 0.63 and 0.56 for the winter, summer/spring and autumn 4 monthly periods respectively. The winter usage charge provides an upper limit for usage charges in the summer/spring and autumn periods respectively.
108	Sydney Water		319	Yes	Meter Size* (eg. 40mm: \$1,280, 100mm: \$7,980, 300mm: \$71,800)	106c/kL for discharges over 500kL/a (1.37kL/d)
109	Tallaganda	Braidwood	263	Yes	Uniform Access Charge, Availability:\$108, Usage:\$155	
110	Tamworth	Tamworth	396	Yes	Uniform Access Charge	Additional charge by WC for motels/hotels
111	Temora	Temora	136	Yes	Uniform Access Charge	
112	Tenterfield	Tenterfield	279	Yes	Uniform Access Charge	
		Urbenville	508	Yes	Uniform Access Charge	
113	Tumbarumba	Tumbarumba, Khancoban	370	Yes	Uniform Access Charge	Pedestal: 2 to 5 @ \$50 each; further pedestals @ \$20 each
114	Tumut	Tumut	440	Yes	Uniform Access Charge	
115	Tweed	Tweed	400	Yes	Uniform Access Charge	
116	Uralla	Uralla	395	Yes	Uniform Access Charge	Pedestal: \$41
117	Wagga Wagga	Wagga Wagga	462	Yes	Access charge includes first 24 fixture units (equivalent to 4 pans). Additional charge of \$58 for each 6 additional fixture units (equivalent to 1 WC).	
118	Wakool	Wakool	275	No		Land Value
		Barham, Moulamein, Tooleybuc, Murray Downs	451	No		Land Value
119	Walcha	Walcha	250	Yes	Uniform Access Charge-additional water closets \$29 and \$57	
120	Walgett	Walgett	243	Yes	Uniform Access Charge	
121	Warren	Warren	423	Yes	Pedestal charge - \$211/pedestal/urinal	
122	Weddin	Grenfell	142	Yes	Uniform Access Charge	
123	Wellington	Wellington	370	No		Land Value Schools and Churches: WC/Cistern:\$75, Additional : \$45
124	Wentworth	Wentworth	325	Yes	Uniform Access Charge	
		Namatjira	350	Yes	Uniform Access Charge	
125	Wingecarribee	Wingecarribee	372	Yes	Meter Size* 20mm: \$372, 25mm: \$584, 32mm: \$956, 40mm: \$1,496, 50mm: \$2,336)	40c/kL
126	Wyong	Wyong	125	Yes	Service connection size*, 40mm: \$500	60c/kL
127	Yallaro	Warialda	292	No		Land Value
128	Yarrowlunla	Bungendore	585	Yes	Uniform Access Charge	
		Weetalabah	912	Yes	Uniform Access Charge	
		Captains Flat	515	Yes	Uniform Access Charge	
129	Yass	Yass	303	No		Land value
130	Young	Young	220	Yes	Uniform Access Charge	Pedestal: \$110



# Table 12 - Sewerage - Environmental, Levels of Service, Efficiency

WATER UTILITY	ENVIRONMENTAL										LEVELS OF SERVICE									EFFICIENCY																							
	BOD				SS				Sewer Main Chokes & Collapses		Sewer Overflows to the Environment		Odour Complaints		Service Complaints		Average Customer Outage Time		Operating Cost (OMA)				OMA+ Depreciation		Management Cost																		
	EPA Discharge Licence Compliance		90 %-ile Limit	EPA Discharge Licence Compliance		90 %-ile Limit	(per 100 km of Main)		(per 100 km of Main)		(per 1000 properties)		(per 1000 properties)		(mins/property-unplanned)		(\$/property)		(c/KL)	(\$/property)		(\$/property)																					
	(%)	(%)	(mg/L)	(%)	(%)	(mg/L)	(16)	(17)	(18)	(19)	(20)	(21)	(21A)	(21B)	(22)																												
(14)	(14a)	(15)	(15a)	(16)	(17)	(18)	(19)	(20)	(21)	(21A)	(21B)	(22)																															
1997/98	1998/99	1999/00	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	2000/01	1997/98	1998/99	1999/00	2000/01	2000/01														
44	Glen Innes	100	100	100	100	20	100	100	100	100	30	46	29	7	5	26	8	13	0	2	1	2	15	9	9	8	0	0	0	102	142	107	107	35	37	167	158	56	40	51			
45	Gloucester	75	100	100	100	35	75	100	100	90	35	164	140	27	0	0		0	0	3	67	52	44	7	0			155	132	135	177	57	81	237	282	23	18	26	58				
46	Goldenfields (Bulk)	NO SGE																																							NO SGE	0	
47	Goldenfields (Retic)	NO SGE																																							NO SGE	0	
48	Goldenfields (Comb)	NO SGE																																							NO SGE	0	
49	Gosford	100	100	100	100	No Limit	100	100	100	100	50	48	56	28	23	2	2	16	0	0	1	1	14	13	14	11	3	1	1	208	193	185	213	69	81	280	308	106	92	79	107		
50	Goulburn	75	83	50	75	21	58	50	41	50	32	372	338	219	20	20	13	9	0	0	0	0	35	64	50	37			265	220	222	266	80	95	282	329	69	66	91	114			
51	Grafton	100	100	99	98	20	94	95	93	89	30	52	92	36	39		15	30	2	2	1	0	29	21	23	12	0	0	200	177	222	208	82	68	325	311	94	78	84	89			
52	Griffith	94	100	100	90	20	71	100	100	90	20	86	15	44	103	0	12	3	15	0	3	58	7	45	22	7	31	1	369	284	304	66	77	429	437	187	88	62					
53	Gundagai	97	96	95	96	20	94	96	95	96	30	41	24	22	27	0	1	0	0	0	0	0	8	8	5	8	0	0	0	149	158	185	149	169	180	206	51	44	49	60			
54	Gunnedah	100	100		100	20	100	100		90	30	144	215	171	116	20	0	0	53	0	0	0	1	43	26	56	0	0	2	0	102	103	93	97	48	43	196	181	22	21	22	21	
55	Gunning	100	100	75	75	20	100	75	75	75	30	25	62	62	0	0	0		0	0	0	0	9	9	23	9	0	2	0	296	213	200	217	220	237	299	357	64	20	20	20		
56	Guyra	100	100	100	100	20	100	100	100	100	30	22	22	28	0	11	11	6	6	0	0	1	3	9	81	14	11	1		0	240	301	277	220	58	45	408	353	100	148	144	98	
57	Harden	100	100	92	92	20	100	92	75	83	30	256	24	40	47	2	2	4	4	0	0	0	0	113	0	32	31	0	0	0	147	197	180	209	91	106	294	334	53	58	60	61	
58	Hastings	94	79	81	90	10	99	93	99	97	15	44	38	22	20	9	4	6	12	1	1	0	0	7	1	6	8	0		194	235	186	225	63	70	300	340	46	60	54	69		
59	Hay	100		100	100	20	88		100	100	30	336	673	403		0	0			1	3	1	1	33	2	82			196	243	215	262	62	79	384	423	56	64	55	71			
60	Holbrook													120			0		0	0	3					38	0		2	242	270	288	244		228	403	359	70	74	147	79		
61	Hume	100	100				100	100				2	2	8	8	0	5	0	0	0	0	0	0	2	56	0	0	0		174	174	187	247	120	142	285	348	54	54	79	88		
62	Hunter Water	99	100	100	100		99	100	100	100		68	54	50	57		54	47	53	2	2	2	2				2	2	2	2	153	134	150	147	41	46	218	147				0	
63	Inverell	100	93	96	95	20	100	74	88	85	30	19	70	171	204	10	9	21	10	0	0	0	0	9	6	49	46	0	8	4	1	178	175	154	177	87	114	293	315	29	46	49	52
64	Jerilderie	100	100	100	100	20	100	100	100	100	30	70	333	0	0	0	0	0	0	33	17	12	0	24	15	25		0		288	281	189	286	22	50	268	368	87	82	82	134		
65	Junee	100	92	100	100	20	100	83	100	100	20	5	47	54	52	5	0	0	3	0	0	0	0	71	6	58	63	0	3	113	153	195	194	135	143	275	280			30	67	48	
66	Kempsey	100	100	100	100	20	97	99	100	100	30	19	18	30					3	1	2	3	8	2	8	8	0		174	261	266	284	74	88	408	426	79	74	80	89			
67	Kyogle	97	97	87	95	20	50	50	33	29	30	275	57	38	54			35	3	3	6	4	40	61	8	14	2	1	1	199	203	201	245	79	148	386	425	85	79	83	91		
68	Lachlan	NL	NL	100	100	20	NL	NL	100	100	30	244	20	32		6	0			8	0	3	3	5	29	10	12	0	0	166	149	160	168	45	45	274	286	39	36	41	44		
69	Leeton	100	90	100	100	50	90	84	100	100	50	44	77	35	115	9	54	0	13	6	0	2	3	11	9	9	41	0	1	0	20	289	227	235	212	64	48	340	328	124	46	68	59
70	Lismore	94	100	100	100	15	81	88	100	93	20	51	113	101	114			0	0	0	2		43	9	36	42	0	3	8	4	237	247	239	216	66	85	377	347	36	46	36	35	
71	Lithgow	75	75	75	75	20	75	80			30			39			0		0	0	0	0	0	4	25	20			261	231	214	243	82	103	311	311	72	64	58	91			
72	Lockhart	100	100	100	100	20	100	100	100	100	30	54	30	30	15		0	0		0	2	0	3	22	111	20	9	0	1	3	1	196	223	176	212	91	99	407	391	47	53	32	41
73	North Coast Water	NO SGE																																								NO SGE	
74	Maclean	80	74	77	81	15	80	96	92	100	20	95	75	29	56	46	50	3	3	1	2	1	0	9	21	21	14	0	2	0	1	175	136	163	209	77	101	286	319	41	22	36	72
75	Manilla	100	100	100	100	20	100	100	100	100	30	522	496	409	315	43		52	0	0	0	0	0	10	7	117		0	2	12	6	214	214	227	217	99	99	367	395	43	46	88	94
76	Merriwa	90	100	100	100	20	90	80	75	100	30	347	124	148		167	95		0	0	0	0	13	0	27		0	2	0	0	255	218	215	197	128	119	382	363	118	76	64	51	
77	MidCoast (Manning)	97	99	100	100	20	90	98	99	99	30	17	15			18	13		1	2			14	55		0	1		0	220	180							77	69				
78	MidCoast (Great Lakes)	100	100	97	97	30	99	99	95	95	30	17	13				9		3	4			5	15		0	0		0	267	242							66	62		0		
79	MidCoast (Combined)	98	99	99	94	22	94	98	97	92	26	17	14	14	5	14	11		11	2	3	0	0	9	44	8	12	1	0	0	242	209	234	265	86	104	423	474	72	66	60	61	
80	Moree Plains			98		20			95		30			421	105			0	0	0	2	6		7	226	46			17	2	264	446	302	77	110	298	389			48	60	51	
81	Mudgee	100	100	100	100	30	90	92	90	95	30	162	142	78	1	111	89	16	7	3	0	0	0	56	2	25	22	0	3	0	1	180	221	210	233	72	72	318	346	30	79	79	90
82	Mulwaree	100	100	100	100	No Limit	100	100	100	100	No Limit	27	0	0		41	0	0		0	0	0	0	0	0	4		0		364	129	155	110	149	101	342	306	54	18	18	18		
83	Murray	NL	NL	NL	NL		NL	NL	NL	NL		29	21	14	23	0	0	3	0	6	0	2	0	10		11	0	0	0	167	214	148	165	54	61	332	337	71	86	73	77		
84	Murrumbidgee	100	100	50	50	10</																																					

# Table 12 - Sewerage - Environmental, Levels of Service, Efficiency

WATER UTILITY		ENVIRONMENTAL										LEVELS OF SERVICE									EFFICIENCY																							
		BOD				SS				Sewer Main Chokes & Collapses		Sewer Overflows to the Environment		Odour Complaints		Service Complaints		Average Customer Outage Time		Operating Cost (OMA)				OMA+ Depreciation		Management Cost																		
		EPA Discharge Licence Compliance		90 %-ile Limit		EPA Discharge Licence Compliance		90 %-ile Limit		(per 100 km of Main)		(per 100 km of Main)		(per 1000 properties)		(per 1000 properties)		(mins/property-unplanned)		(\$/property)		(c/kL)		(\$/property)		(\$/property)																		
		(14)		(14a)		(15)		(15a)		(16)		(17)		(18)		(19)		(20)		(21)		(21A)		(21B)		(22)																		
1997/98 1998/99 1999/00 2000/01		2000/01		1997/98 1998/99 1999/00 2000/01		2000/01		1997/98 1998/99 1999/00 2000/01		1997/98 1998/99 1999/00 2000/01		1997/98 1998/99 1999/00 2000/01		1997/98 1998/99 1999/00 2000/01		1997/98 1998/99 1999/00 2000/01		1997/98 1998/99 1999/00 2000/01		1997/98 1998/99 1999/00 2000/01		1999/00 2000/01		1997/98 1998/99 1999/00 2000/01																				
87	Nambucca	96	92	97	92	20	99	94	74	91	30	31	30	35	15	15	5	0	0	0	1	8	12	5	0	0	0	253	221	201	231	76	82	340	367	119	78	72	86					
88	Narrabri	100		100	74	20	40		100	74	30							0	0			0					185	180	152	167	41	73	439	343	28	33	51	36						
89	Narrandera	100	92	88	100	15	100	83	24	83	20	492	275	81	118	0	0	0	0	1	0	0	0	101	0	54	0	0	0	0	0	4	244	210	210	236	62	70	319	346	62	66	56	53
90	Narromine	NL	NL	NL	NL		NL	NL	NL	NL				308			0		0	0	1		26	81				153	156	156	317	650	163	402	500	28	28	28	178					
91	Nundle	<b>NO SGE</b>																																										
92	Oberon	90	90	100	100	20		100	100		25	46	77	77	9	0	0	6	3	0	0	0	0	27	21	22	3	0	0	3	0	242	229	218	234	72	74	313	333	46	52	52	54	
93	Orange	100	96	100	96	15	100	96	98	96	30				76			43	1	1	0	1	53	0	42	22	0	0	120	186	144	157	30	34	340	377	40	53	42	45				
94	Parkes	63	66	66	50	20	13	55	60	33	25	116	103	91		66	92	61	53	1	1	2	1	25	12	20	24	0	1	1	109	251	131	124	71	70	207	197	27	29	29	30		
95	Parry	100	66	71	100	20	100	50	57	40	30	0	9	0	9	0	0		0	0	0	0	0	0	0	1	8	0	0	0	149	162	134	142	73	64	359	371	24	30	31	37		
96	Pristine Waters	95	100	100	100	20		80	54		30	0	0		9	0	0		0	0		0	49		0			472	464	233	233	237	295	608	233	18	20	55	55					
97	Queanbeyan	100	100	100	100	10	100	100	100	98	20	90	58	95	26	9	21	10	0	0	0	0	16	5	19	5			0	175	181	158	174	54	59	206	316	71	81	67	73			
98	Quirindi	96	100	100	93	20	58	60	42	61	30	57	15	71	85		2	5	3	0	0	0	0	47	33	50	31	3		1	1	164	180	182	197	50	70	328	342	21	34	29	40	
99	Richmond Valley	99	88	100	100	20	92	95	77	77	30	35	21	13	11	10	8	4	9	1	1	3	2		6	5	0	1	1	218	244	208	279	37	80	231	408	89	88	79	108			
100	Riverina	<b>NO SGE</b>																																										
101	Rous	<b>NO SGE</b>																																										
102	Rylstone	100	100		100	30					30			29			7		0	0	0	0	38	0	23	89	0	0	278	247	253	299	92	106	435	488	37	22	26	39				
103	Scone	51	87	100	100	20	84	82	100	100	30	128	83	72	71	5	4	0		1	0	0	0	44	11	38	30	0	268	268	276	242	71	62	395	360	109	59	131	92				
104	Severn	NL	NL	83	83	40	NL	NL	75	75	45	0		0		0		0		0	0	0	0	18	5	0	0	176	89	124	70	63	106	252	200	61	54	79	25					
105	Shoalhaven	100	98	95	95	20	100	77	79	85	30	33	25	28	27	5	5	4	4	0	0	1	1	19	16	13	7		252	280	265	259	139	148	350	361	103	106	107	100				
106	Singleton	100	100	100	100	30	100	96	100	100	30	54	54	7	3	2	2	7	0	1	1	0	1	18	23	5	5	6	6	3	3	184	306	180	195	65	76	333	348	66	79	56	81	
107	Snowy River	85	96	93	92	10	81	85	85	81	15			42	42	1	45	3	3	0	2	2	0	21	38	10	9	0	1	145	145	163	166	124	132	292	288	37	41	45	48			
108	Sydney Water	100	100	100	100		100	99	99	99		88	84	63	69		79	63	69	1	1	1	1					1	1	2	2	232	242	234	229	67	69	304	229		0	0		
109	Tallaganda	60	83	75	92	20	50	83	75	83	30	81	96	89	111	0	0	0	7	0	0	0	20	55	22	8	1	1	1	8	189	210	202	212	102	131	272	292	25	36	20	30		
110	Tamworth	94	98	90	74	30	48	69	72	94	25	99	78	128	102	2	3	3	4	0	0	1	1	47	46	31	27		162	233	223	267	85	98	336	384	39	71	57	75				
111	Temora		90	100		20			80		30	250	38	200	207			220		0	0	0	1	58	22	54	51	4	4	6	5	130	130	147	139	56	55	191	183	23	23	27	25	
112	Tenterfield	100	96	97	100	40	69	71	72	88	45	34	99	110	134		20	2	2	0	0	0	2	12	60	47	55	0	4	0	1	154	261	233	244	116	121	380	404	47	125	114	101	
113	Tumbarumba	100	85	100	98	20	100	80	90	92	30		91	72	9		43		0	0	0	1	7	3	28	17	0	0	0	1	262	211	166	250	35	78	404	471	17	41	37	47		
114	Tumut	99	100	100	100	40	98	100	100	100	45	227	190	29	174	0	2	2	3	0	0	1	0	0	19	51	48	0	5	241	233	173	200	63	73	353	388	77	90	42	63			
115	Tweed	100	99	98	99	15	100	97	98	92	20	12	5	8	18	2	3	2	1	1	1	1	2	2	92	3	6	0	1	1	4	193	220	233	224	65	67	380	366	67	75	87	75	
116	Uralla	100	100	100	100	15	80	100	100	100	20	145	67	53	21			0		0	0	0	0	43	13	15	6		2	2	260	284	220	220	116	136	380	220	146	113	122	122		
116A	Urana					54					160			0			7					25				11																		
117	Wagga Wagga	100	100	94	96	20	100	100	89	89	30	151	126	77	113	0	0	0	1	0	0	0	0	99	11	63	70	4		1	14	117	128	119	111	40	43	157	148	29	28	30	30	
118	Wakool	NL	NL	NL	NL		NL	NL	NL	NL		33	46	26	0		7		0	0	11	4	0	10	0		0	0	6	1	145	172	220	160	149	104	341	270	23	23	27	24		
119	Walcha	100	100	100	75	20	67	92	92	50	30	62	28	34	34	39	28		34	46	7	10	4	31	45	13	16	2	1	0	0	126	179	199	197	75	69	319	317		43	43	39	
120	Walgett		90					90								4				0	0			41				0	172	157	170	170	59	58	417	170	84	62						



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### 3. 2000/01 WATER SUPPLY AND SEWERAGE CHARGES/BILLS

This section contains the following Figures for 2001/2002 water supply and sewerage charges and bills:

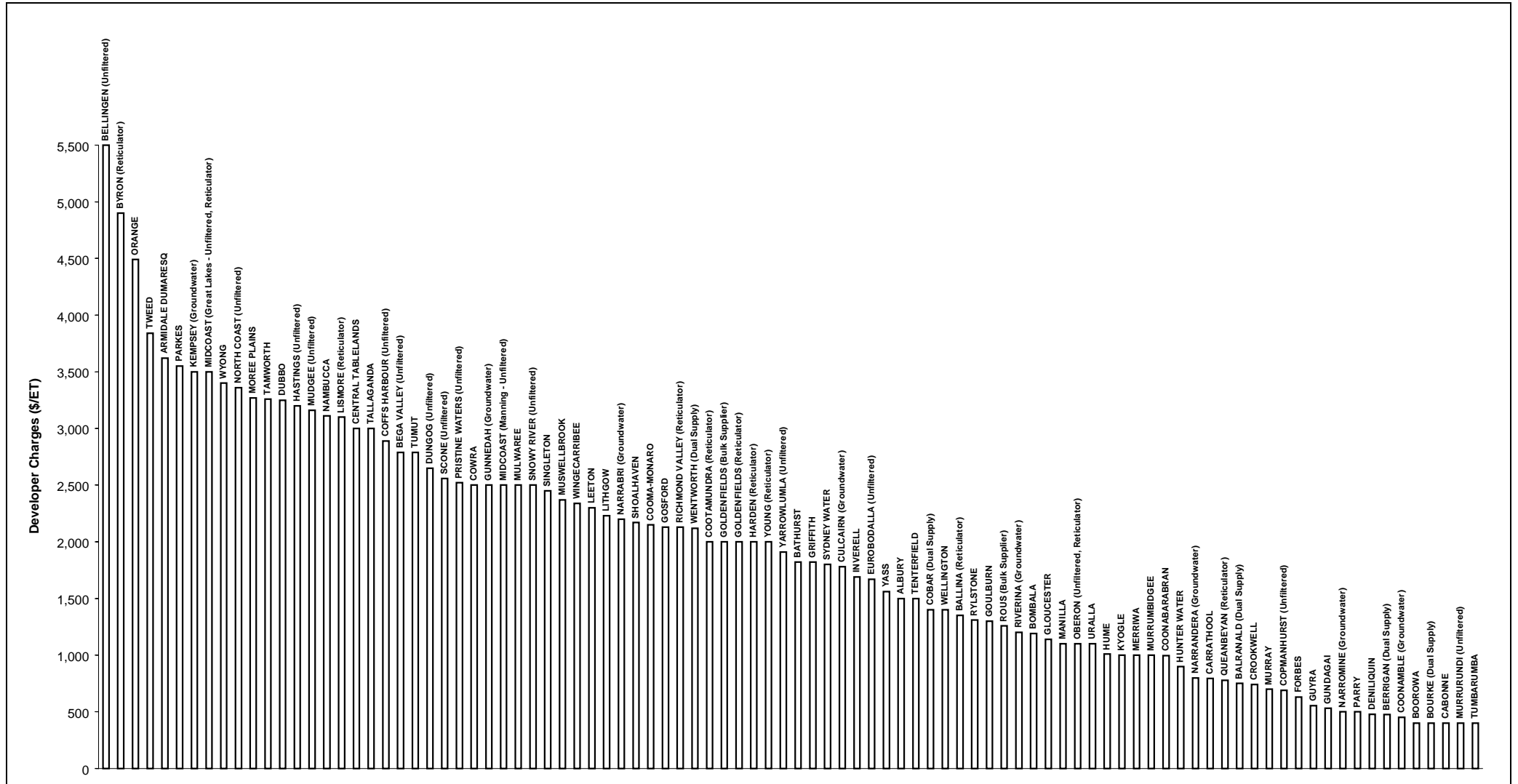
1. Typical Developer Charge for Water Supply – 2000/01
2. Residential Annual Water Allowance, Water Usage Charge and Access Charge – 2000/01
3. Typical Residential Bill - Water Supply
4. Typical Developer Charge for Sewerage – 2000/01
5. Typical Residential Bill – Sewerage
6. Typical Developer Charge for Water Supply and Sewerage – 2000/01
7. Typical Residential Bill - Water Supply and Sewerage

#### GENERAL NOTES

1. As for the 1998/99 and 1999/00 NSW Water Supply and Sewerage Performance Comparisons reports, this report has been prepared on a “**per connected property**” basis for consistency with national performance reporting. A connected property is a property that is connected to the 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 (eg. blocks of flats or units) with a single assessment.
2. The ratio of the number of connected properties to the number of assessments is reported to be about 0.95 for most utilities, although it ranges from 0.75 to 1.43. The data required for the calculation of this ratio was not well reported. DLWC has therefore estimated this ratio for many utilities (shown in **italics bold** in columns (2) and (2a) of Tables 7 and 10).
3. The **typical residential bill** is the annual bill paid by a typical residential customer 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 usage charges.
4. The 2001/02 typical residential bill is based on a customer of the water utility’s principal water supply or sewerage system, using the utility’s 2000/01 average annual residential water consumption. These tariffs are shown in Tables 8 and 8A for water supply and Table 11 for sewerage. The typical residential bill for 2000/01 and previous years is based on the reported average annual residential water consumption for that year (these consumptions are shown in column 5 of Table 7).

5. The 2000/01 residential revenue, as a percentage of total rates and charges revenue is reported in column (7a) of Tables 7 and 10. A number of utilities did not report a breakdown of their rates and charges revenue into residential and non-residential. The percentage residential revenue for such utilities has been estimated by DLWC on the basis of reported values for similar utilities and is shown in italics bold in Tables 7 and 10. These latter values have been used for estimating the average residential bill for these utilities.
6. The average residential bill (Tables 8, 11 and Figures 8, 28, 80) comprises the water utility's revenue from residential rates and charges, including residential sales of water divided by the number of connected residential properties. Except for utilities with an inclining block tariff or an annual water allowance, and those with access charges not independent of land value, the average residential bill is less than the typical residential bill due to pensioner rebates and vacant lots.
7. The typical developer charges reported for Sydney Water Corporation and Hunter Water Corporation are for new release areas.
8. Drinking water quality guidelines have become more stringent. As for the 1998/99 and 1999/00 NSW Water Supply and Sewerage Performance Comparisons reports, this report reports compliance with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines.
9. The average annual residential water consumption per connected property (Tables 5, 7 and Figure 22) refers to potable water consumption. Where a water utility has not separately reported its residential water consumption, such consumption has been estimated using the Statewide average of 59% of the utility's total potable water consumption (bottom of col (1) of Table 6).
10. For consistency with national performance reporting, unaccounted for water now includes system water loss (ie. leakage).
11. 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 \$227/property comprises \$146/property for the bulk supply from Goldenfields (bulk supplier) plus \$81 for the reticulator (Cootamundra).
12. To improve the coverage of social and environmental issues, the larger utilities (over 10,000 assessments) have reported their performance for an additional 22 social and environmental performance indicators (refer to Figures 25A, 40A, 68A, 96A and Appendix C – indicators 11, 23 to 26 and 38 to 43 for Water Supply and indicators 9, 17 to 20, 32 and 38 to 42 for Sewerage). All utilities will be asked to report on these indicators in 2001/02.
13. **Unfiltered** – refers to a utility with over 50% of its supply comprising unfiltered surface water supply ie. the utility does not have a water treatment works involving at least filtration and disinfection for 50% of its supply.  
**Groundwater** – refers to a utility with over 50% of its supply comprising good quality unfiltered groundwater.  
**Reticulator** – refers to a utility which purchases over 70% of its source water from a bulk supplier and reticulates water to householders in its area.  
**Bulk Supplier** – refers to a utility whose main task is to provide a piped bulk water supply to other utilities, rather than reticulating water to householders.  
**Dual Supply** – refers to a utility with a potable reticulated water supply for indoor uses and a separate non-potable supply for outdoor uses.
14. The performance indicators for Sydney Water Corporation and Hunter Water Corporation have been obtained from WSAA Facts 2001.

# 1 Typical Developer Charge for Water Supply – 2001/02

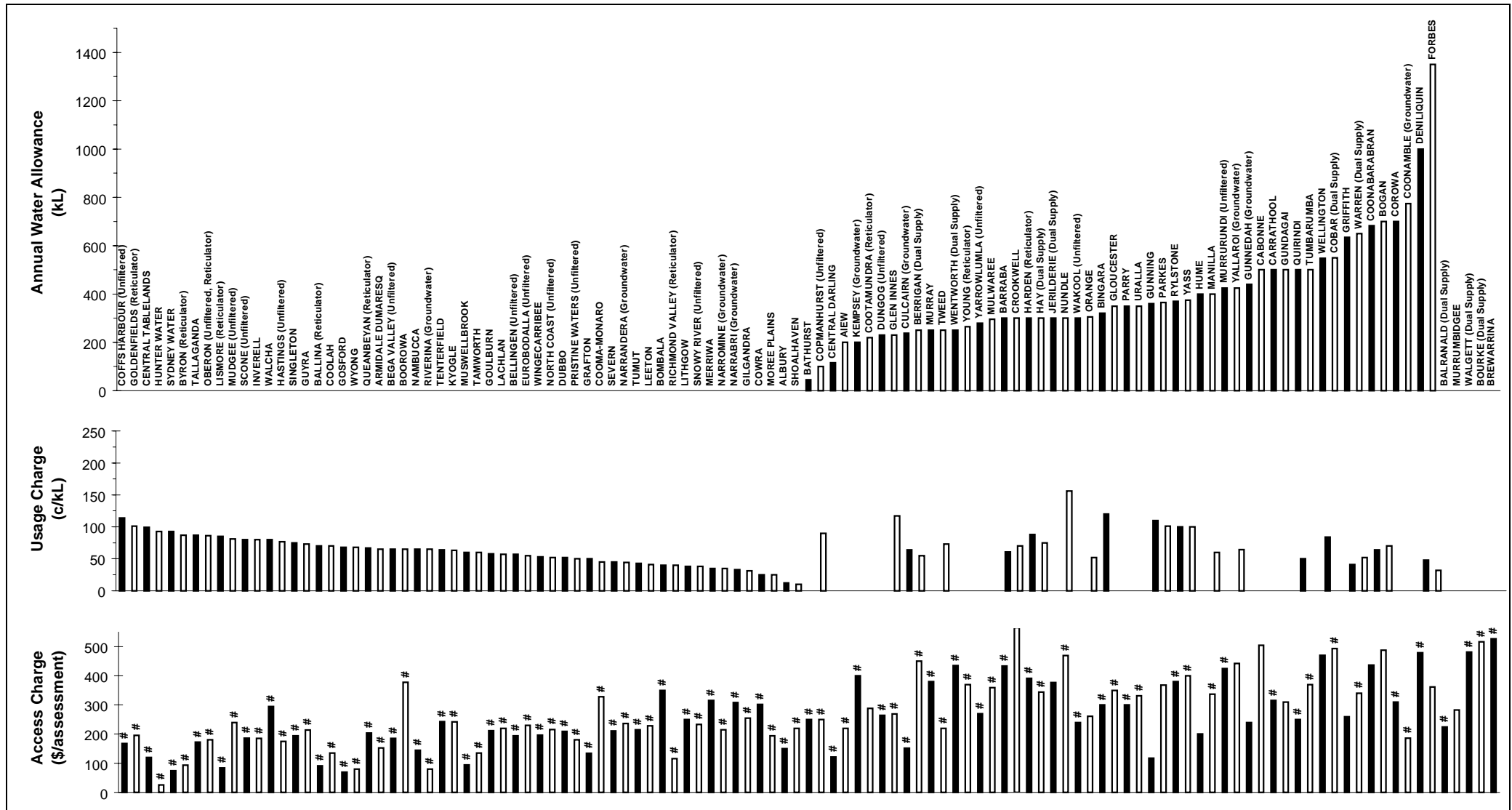


Parameter: Typical Water Supply Developer Charge (Q36)

## Notes:

1. This figure shows ranked values of the 2001/02 typical developer charge for water supply for each council. Developer charges for the previous 3 years are shown in Table 8.
2. The Statewide median typical water supply developer charge was about \$2,300 per equivalent tenement (ET) (Table 1).
3. 88 councils levied developer charges, 26 councils did not levy developer charges.
4. For general notes see page 43.

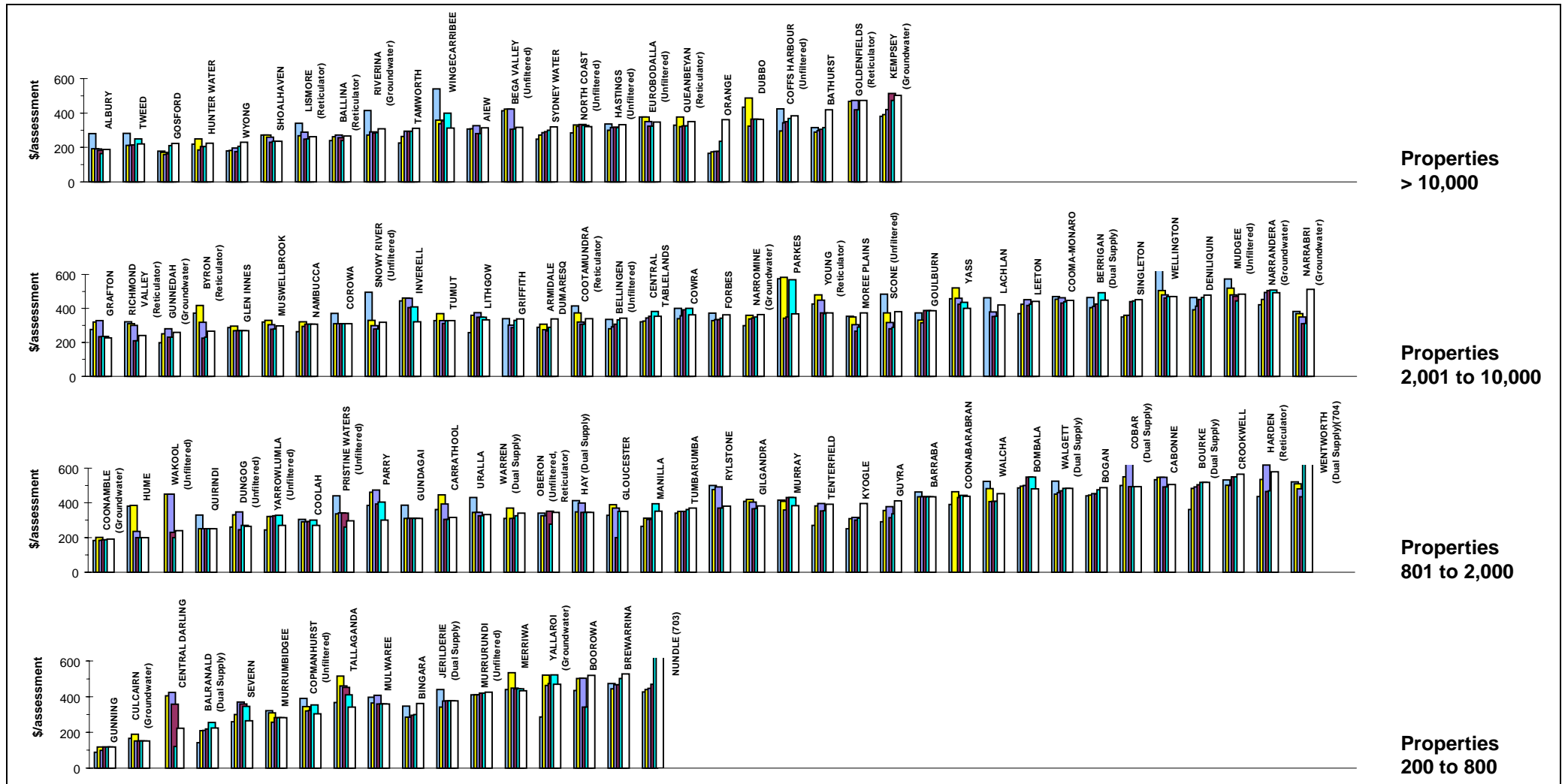
## 2 Residential Annual Water Allowance, Usage Charge And Access Charge – 2001/02



### Notes:

1. The residential water usage charge shown is for usage in excess of 200 kL/a or any water allowance. Councils with a two-part tariff have the usage charge shown for all water usage. Further information on water supply tariff structures is shown in Tables 8, 8A and 8B.
2. The Statewide median water usage charge was 65 c/kL. 20% of councils had a usage charge greater than 90 c/kL. 80% of councils had a usage charge greater than 45 c/kL.
3. The residential water access charge for the councils with a water allowance is the minimum charge or rate.
4. 98 NSW water utilities have a residential access Charge independent of land value. Such utilities are indicated with an “#” on the bottom graph.

### 3 Typical Residential Bill – Water Supply

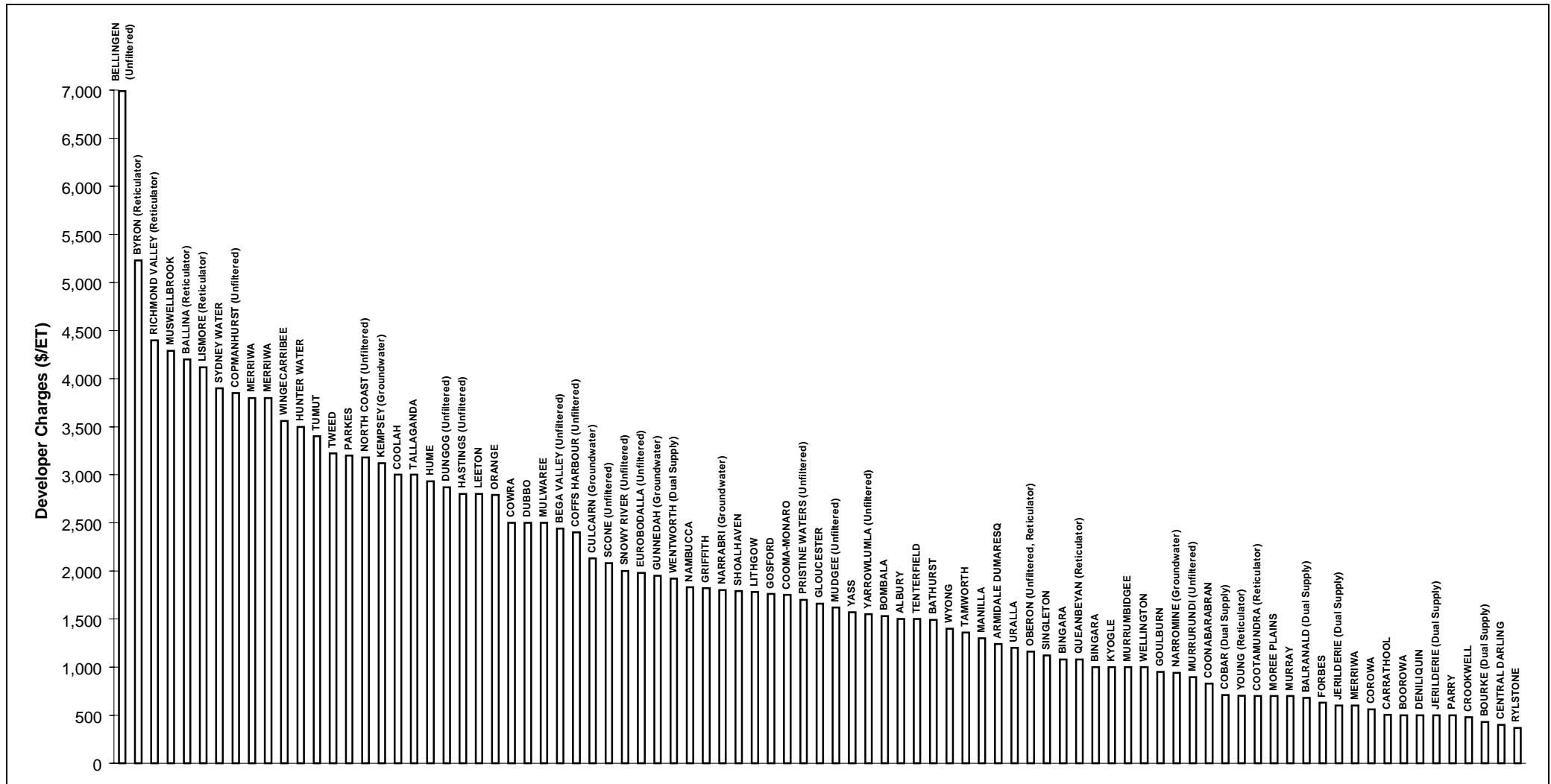


**Parameter:** Access Charge (Q32a) + Average Annual Residential Consumption (Fig.22) x Usage Charge (Q33b)

**Notes:**

1. This figure shows ranked values of the 2001/02 typical residential bill for water supply for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the typical residential bill for water supply for the 36 councils shown **range** from about \$220 to \$515 per assessment. Results for the previous 5 years are also shown in Jan 2001\$. Refer also to Table 8.
2. The Statewide median 2001/02 typical residential bill for water supply was \$310 per assessment (refer to Table 1 – percentage of connected properties basis).
3. For general notes see page 43.

## 4 Typical Developer Charge For Sewerage – 2001/02

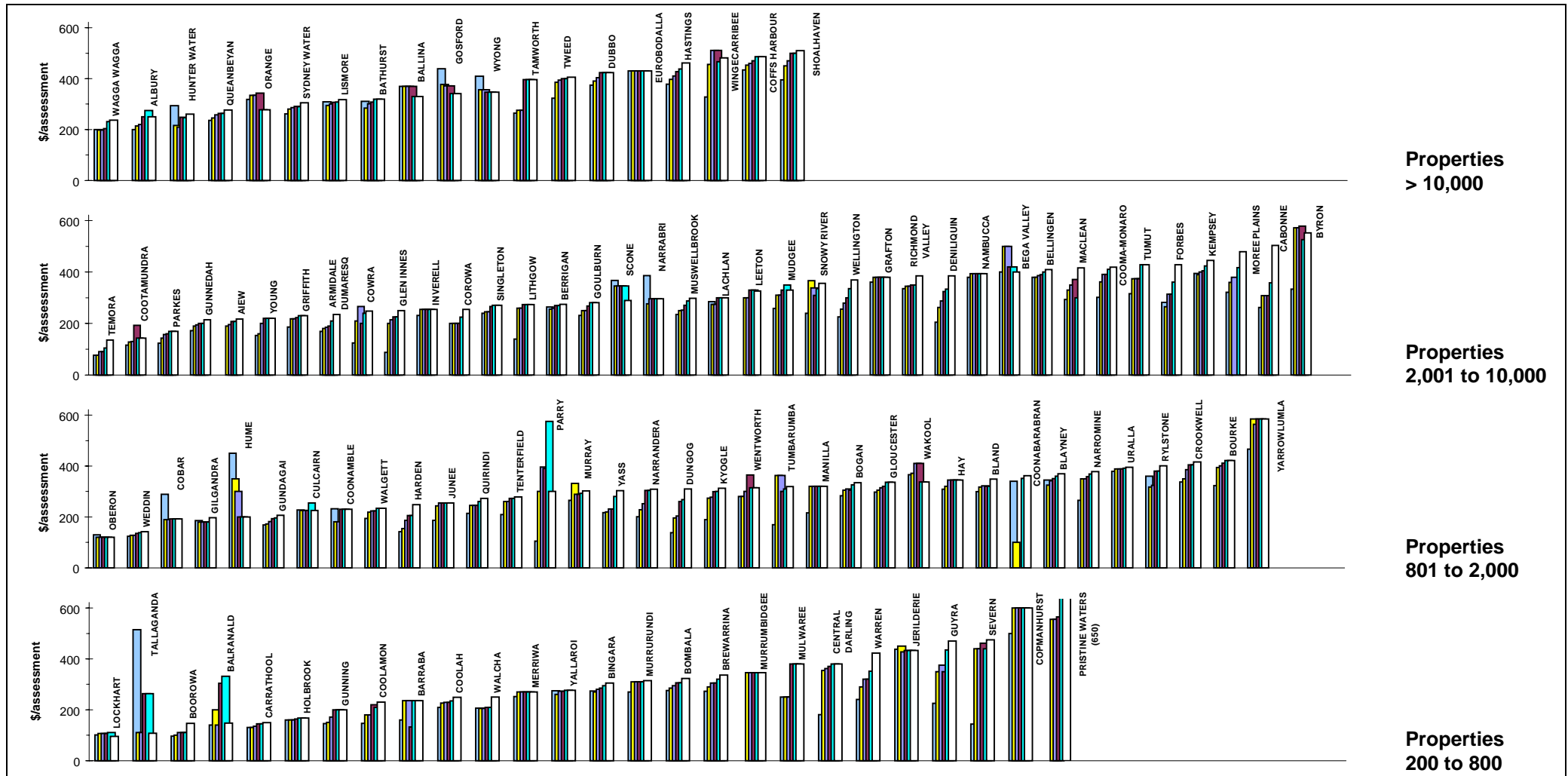


**Parameter:** Typical Sewerage Developer Charge (Q36)

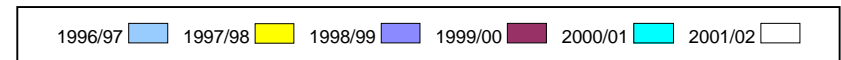
**Notes:**

1. This figure shows ranked values of the 2001/02 typical developer charge for sewerage for each council. Developer charges for the previous 3 years are shown in Table 11.
2. The Statewide median typical sewerage developer charge was about \$1,800 per equivalent tenement (ET) (Table 2).
3. 81 councils levied developer charges, 37 councils did not levy developer charges.
4. For general notes see page 43.

## 5 Typical Residential Bill – Sewerage



Parameter: Access Charge (Q31a).

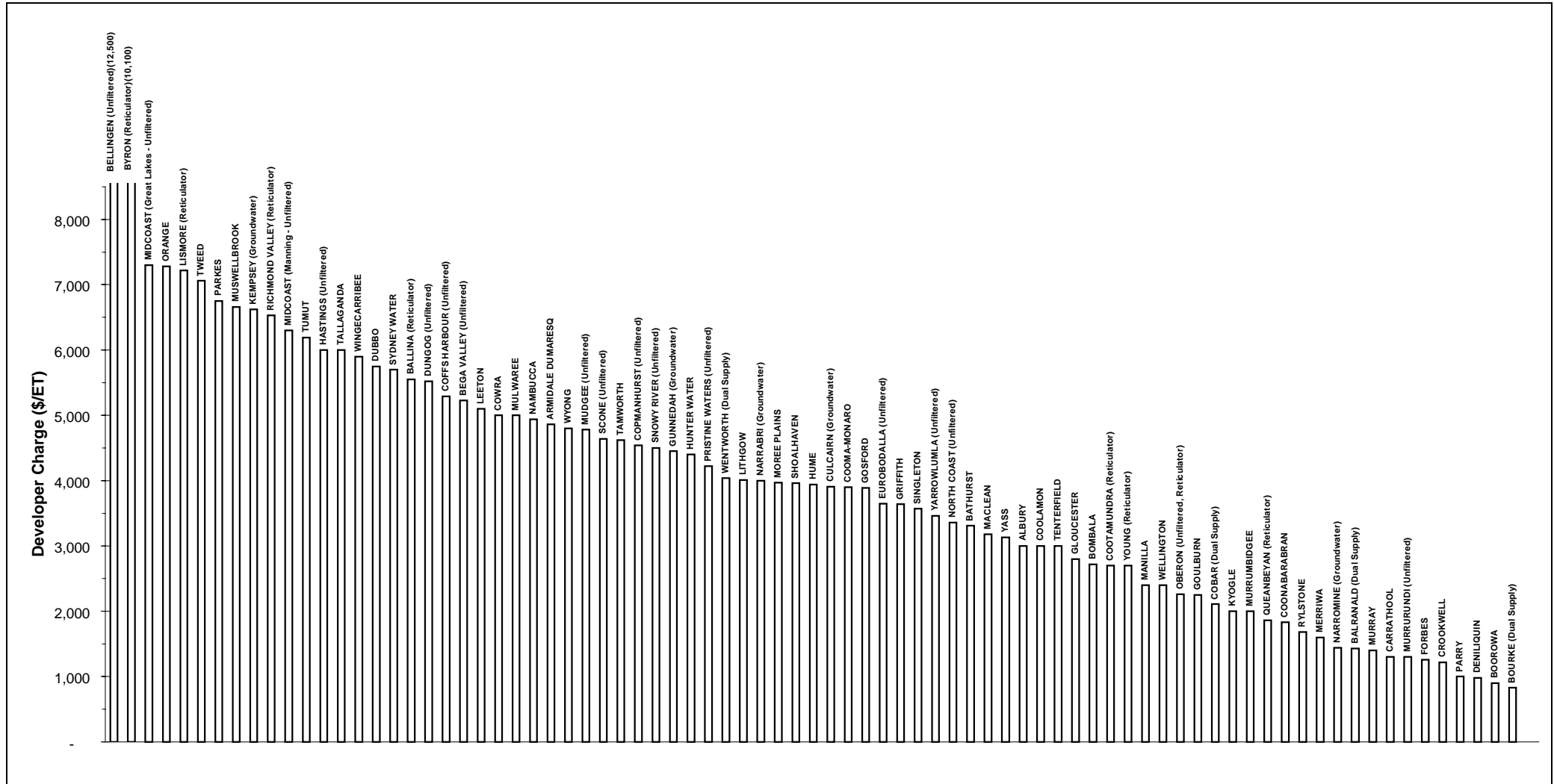


### Notes:

1. This figure shows ranked values of the 2001/02 typical residential bill for sewerage for each council in 4 groups based on the number of water supply connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the typical residential bill for sewerage bill for the 38 councils shown *ranges* from about **\$80 to \$550** per assessment. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide median 2001/02 typical residential bill for sewerage was \$335 per assessment (refer to Table 2 – percentage of connected properties basis).
3. For general notes see page 43.



## 6 Typical Developer Charge for Water Supply and Sewerage – 2001/02

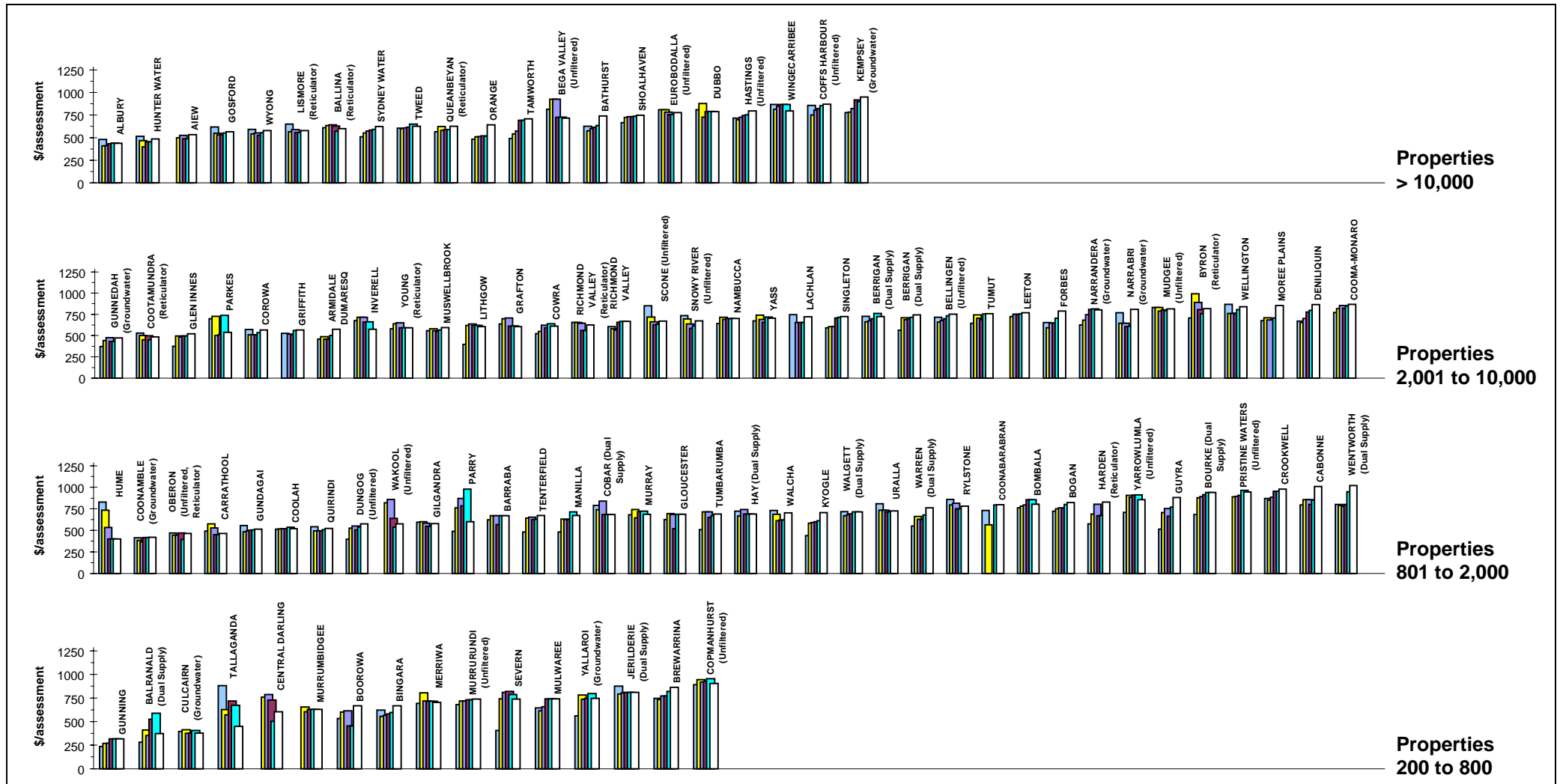


**Parameter:** Typical Water Supply Developer Charges (Fig. 1) + Typical Sewerage Developer Charges (Fig. 3)

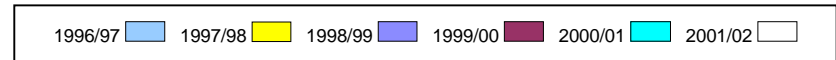
**Notes:**

1. This figure shows ranked values of the 2001/02 typical developer charge for water supply and sewerage for each council.
2. The Statewide median typical developer charge for water supply and sewerage was \$4,800 per equivalent tenement (ET).
3. For general notes see page 43.

# 7 Typical Residential Bill – Water Supply and Sewerage



Parameter: Typical Water Supply Residential Bill (Fig. 3) + Typical Sewerage Residential Bill (Fig. 5)



**Notes:**

1. This figure shows ranked values of the 2001/02 typical residential bill for water supply and sewerage for each council in 4 groups based on the number of water supply connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the typical residential bills for water supply and sewerage for the 35 councils shown range from about \$475 to \$870 per assessment. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide 2001/02 median typical residential bill for water supply and sewerage was \$650 per assessment (Table 5).
3. For general notes see page 43.

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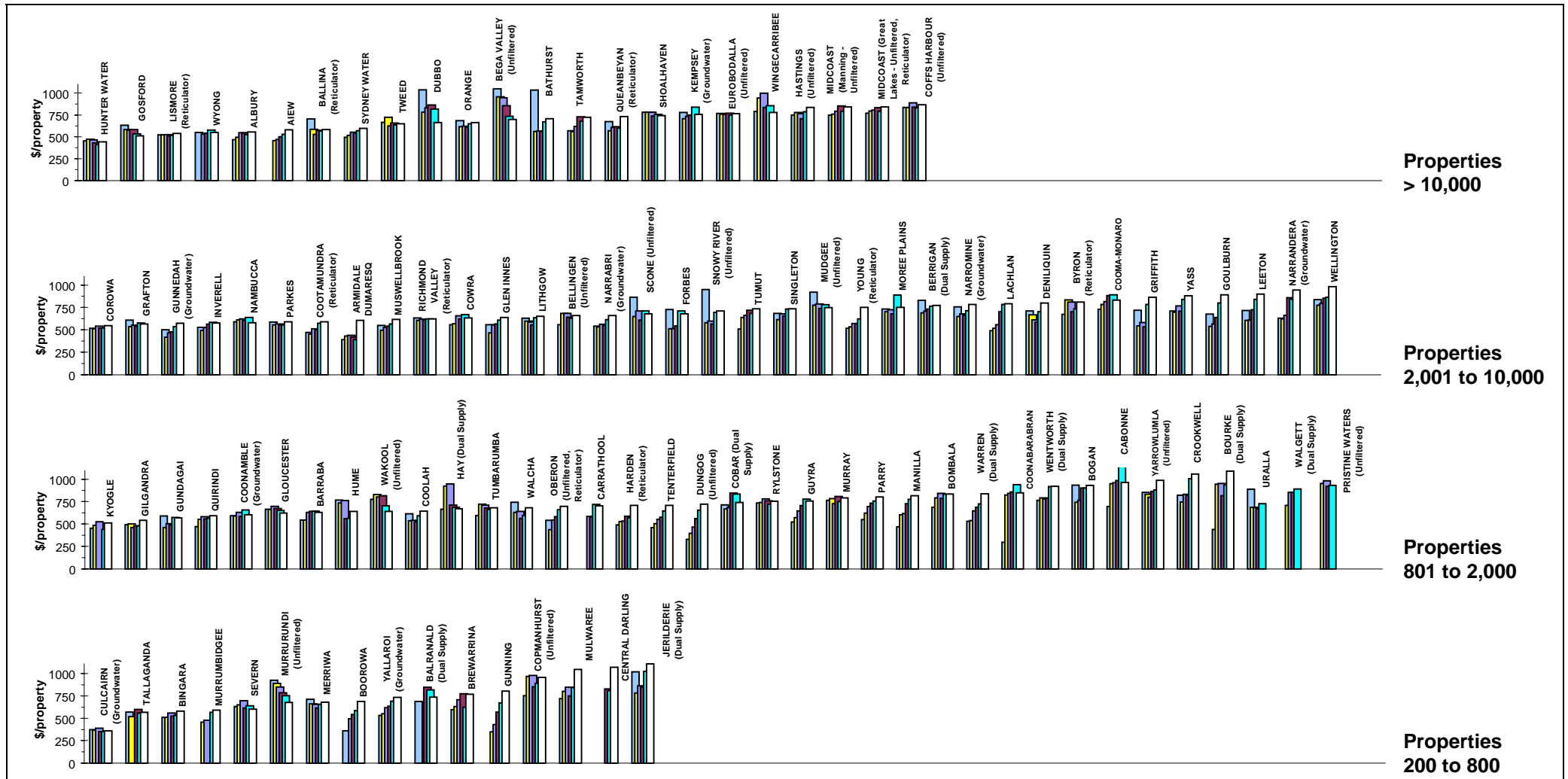
## **4. 2000/01 WATER SUPPLY AND SEWERAGE FIGURES**

8. Average Residential Bill
9. Real Increase in Previous Year's Average Residential Bill
10. Revenue
11. Economic Real Rate of Return
12. Operating Sales Margin, Return on Assets, Debt Service Ratio, Interest Cover
13. Debt to Equity
14. Turnover, Loan Payment, Operating Results, Total Debt

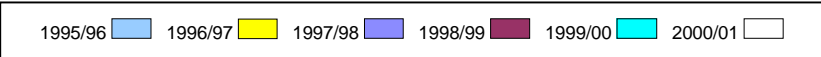
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# 8 Average Residential Bill

# Water Supply and Sewerage



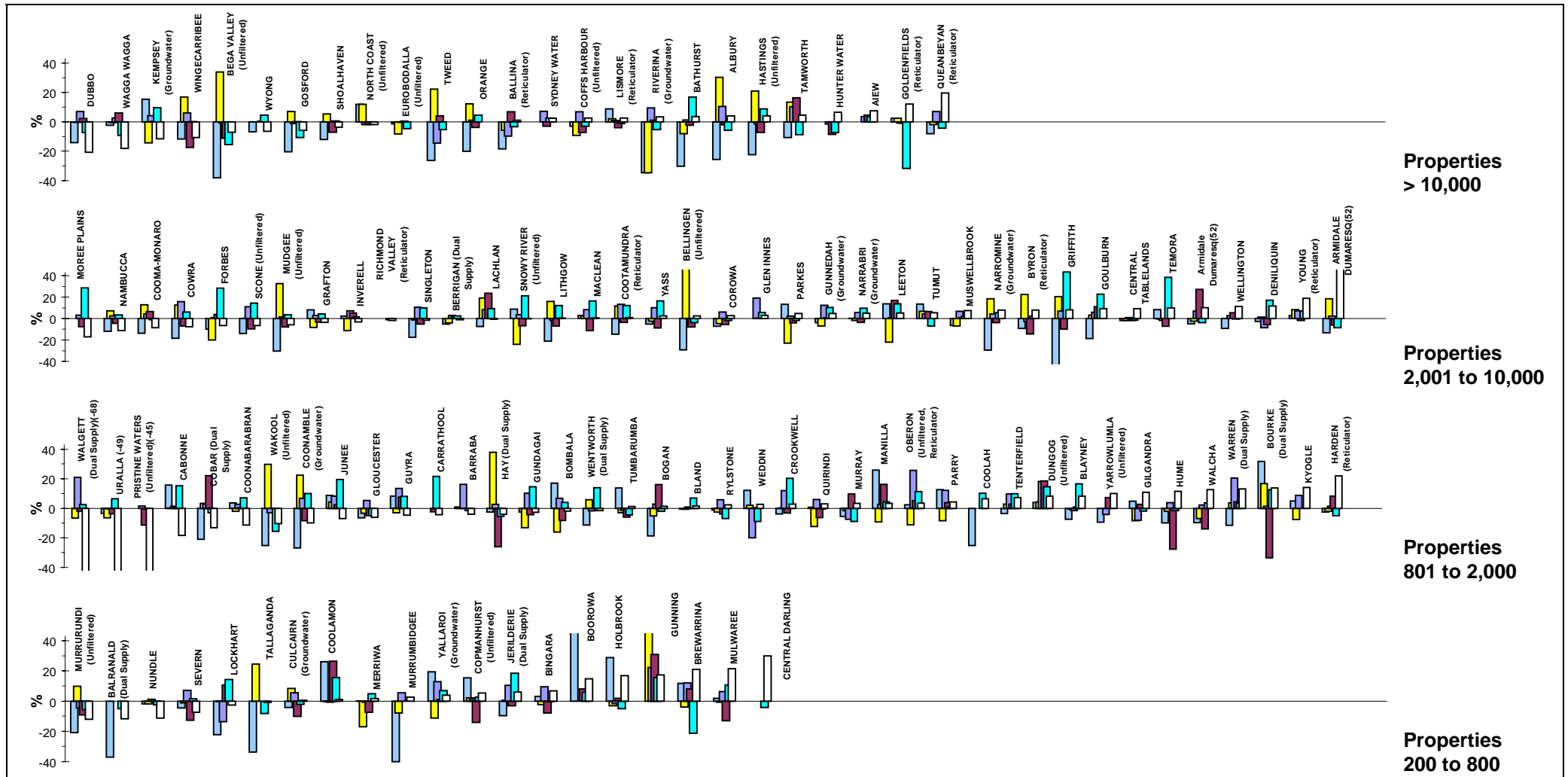
Parameter: Water Supply Average Residential Bill (Fig 28) + Sewerage Average Residential Bill (Fig 80)



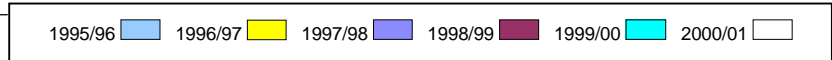
- Notes:**
- This figure shows ranked values of the 2000/01 average residential bill for water supply and sewerage for each council in 4 groups based on the number of water supply connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the water supply and sewerage average residential bills for the 35 councils shown *range* from about \$545 to \$1,050 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The Statewide median average residential bill for water supply and sewerage was \$680 per connected property.
  - For general notes see page 43.

# 9 Real Increase in Previous Year's Average Residential Bill

# Water Supply and Sewerage



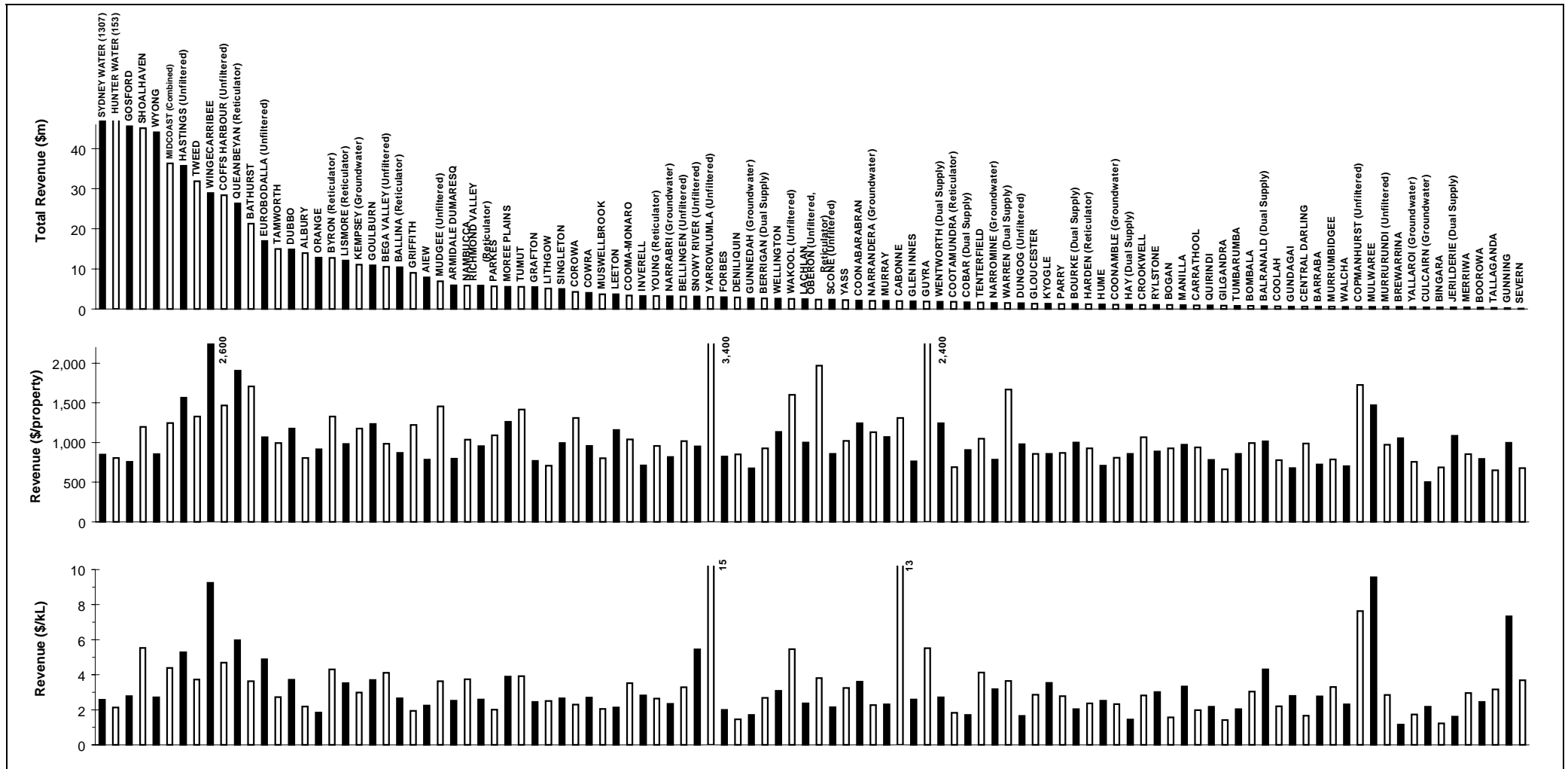
**Parameter:**  $\frac{[\text{Water Supply Average Residential Bill for (Fig 28) + Sewerage Average Residential Bill (Fig 80)] \times 100}{[\text{Water Supply Average Residential Bill (Fig 28) + Sewerage Average Residential Bill (Fig 80)] \text{ for previous year } \times (1 + \text{CPI increase})}$



- Notes:**
- This figure shows ranked values of the 2000/01 real increase in the water supply and sewerage average residential bill for each council in 4 groups based on the number of water supply connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the real increase in the average residential bill for the 38 councils shown **ranges** from about **-10% to 50%**. Results for the previous 5 years are also shown.
  - For general notes see page 43.

# 10 Revenue

# Water Supply and Sewerage



**Parameter:** Water Supply Revenue (W13) + Sewerage Revenue (S14)

**Parameter:**  $\frac{\text{Water Supply Revenue (W13)}}{(\text{No. Water Supply Assessments (Q4a)+(Q4b)}) \times (\text{No. of Connected Properties/Assessment from Table7})} + \frac{\text{Sewerage Revenue (S14)}}{(\text{No. Sewerage Assessments (Q4a)+(Q4b)}) \times (\text{No. of Connected Properties/Assessment from Table10})}$

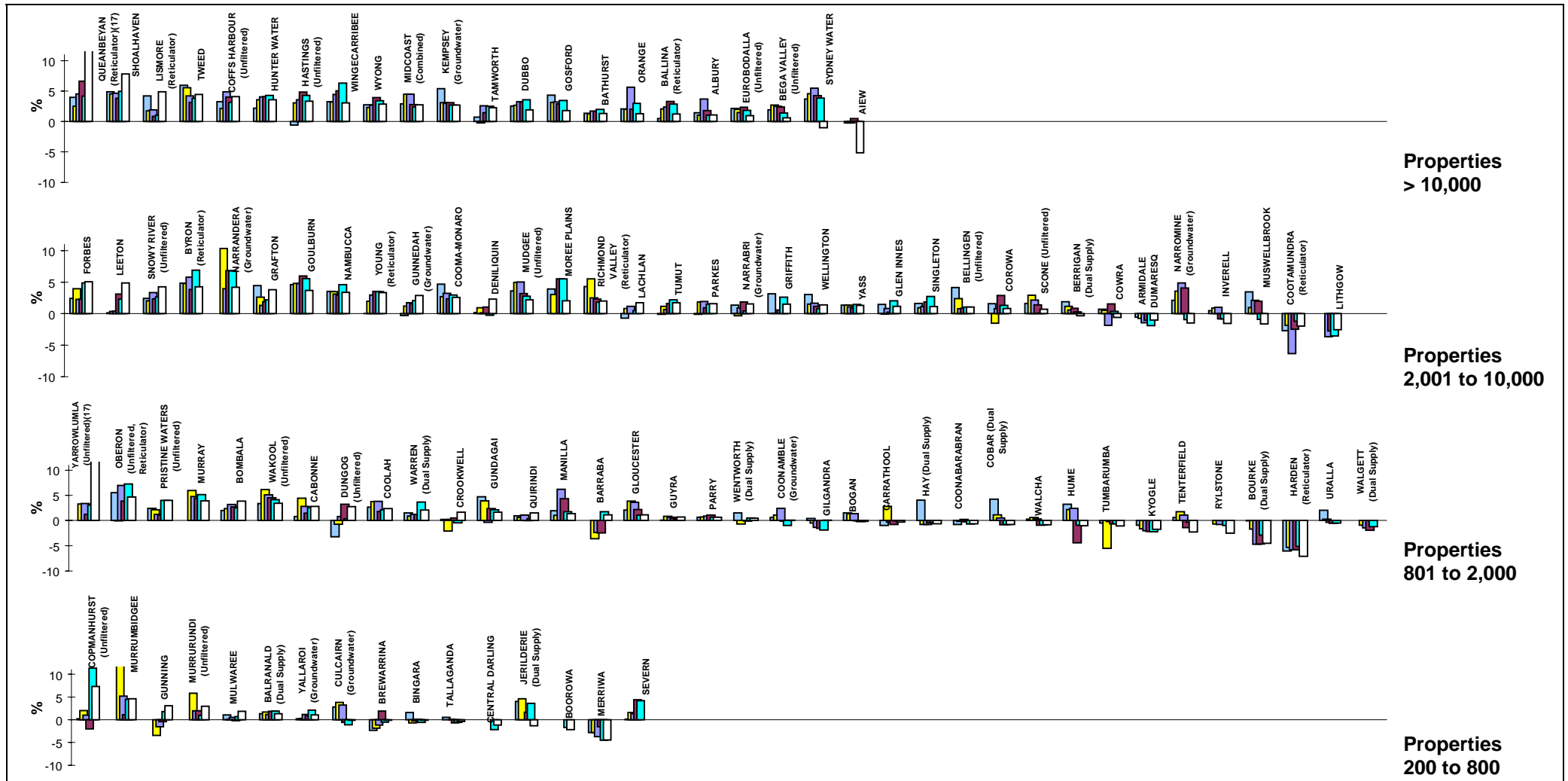
**Parameter:**  $\frac{\text{Water Supply Revenue (W13)}}{\text{Water Consumption (Q12i)} \times 1000} + \frac{\text{Sewerage Revenue (S14)}}{\text{Sewage Treated (Q12d)} \times 1000}$

**Note:**  
1. For general notes see page 43.



# 11 Economic Real Rate of Return

# Water Supply and Sewerage



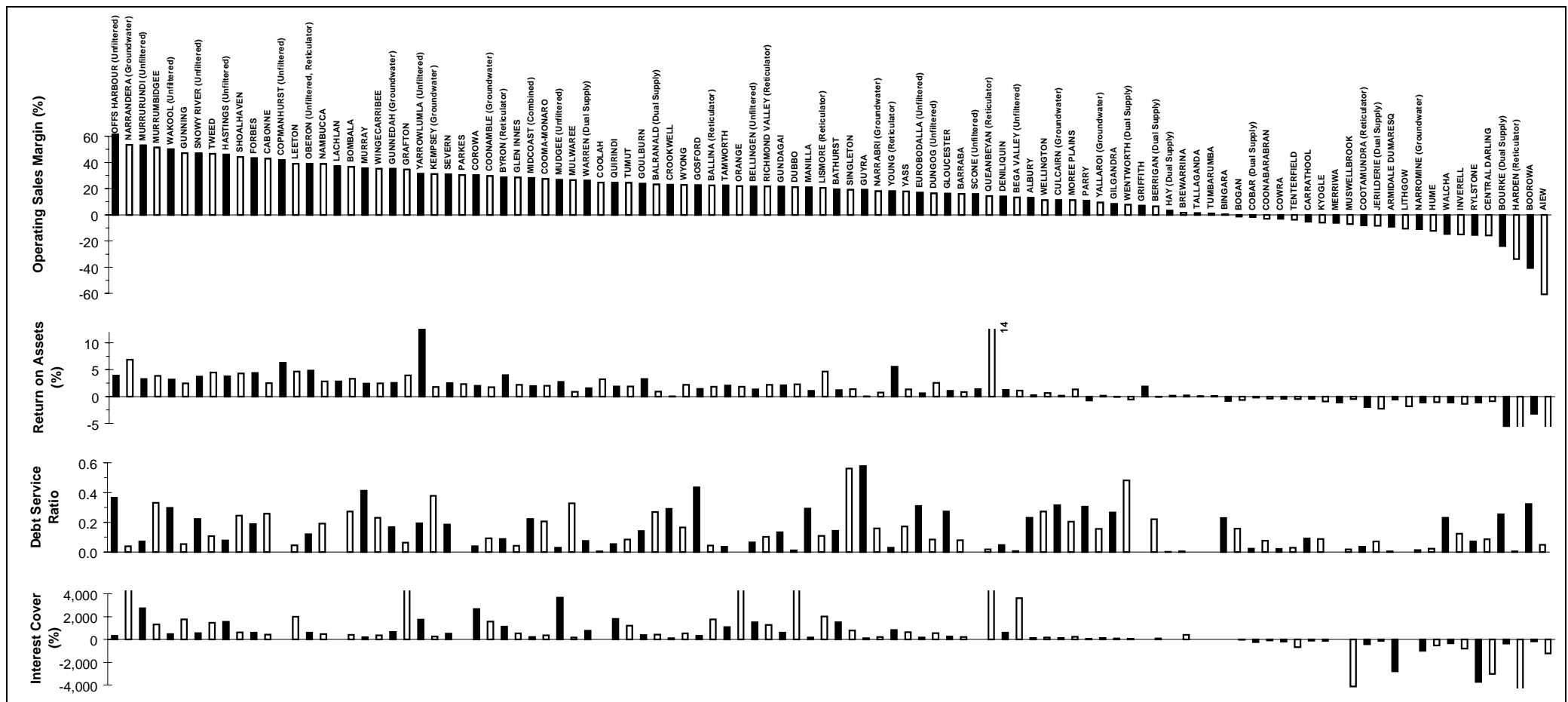
**Parameter:** 
$$\frac{[\text{Revenue (S14+W19)} - \text{Grants for Acquisition of Assets (S12a+W11a)} - \text{Total Expenses (S5+W5)} + \text{Interest Expense (S4a+W4a)} - \text{Interest Income (S10+W9)}] \times 100}{\text{Written Down Replacement Cost of Property, Plant \& Equipment (S45+W44)}}$$

**Notes:**

- This figure shows 2000/01 ranked values of the water supply and sewerage economic real rate of return for each council in 4 groups based on the number of water supply connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the real rates of return for the 35 councils shown *range* from about **19% to -3%**. Results for the previous 5 years are also shown.
- The Statewide median economic real rate of return for water supply and sewerage was 2.6% (Table 5).
- For general notes see page 43.

## 12 Operating Sales Margin, Return on Assets, Debt Service Ratio and Interest Cover

## Water Supply and Sewerage



**Parameter:** 
$$\frac{[\text{Total Revenue (S14+W13)} - \text{Grants for Capital Works (S12a+W11a)} - \text{Developer Provided Assets (S13b+W12b)} - \text{Total Expense (S5+W5)} + \text{Interest Expenses (S4a+W4a)}] \times 100}{\text{Total Revenue (S14+W13)} - \text{Grants for Capital Works (S12a+W11a)} - \text{Developer Provided Assets (S13b+W12b)} - \text{Interest on Investments (S10+W9)}}$$

**Parameter:** 
$$\frac{[\text{Total Revenue (S14+W13)} - \text{Grants for Capital Works (S12a+W11a)} - \text{Total Expenses (S5+W5)}] \times 100}{\text{Total Equity (S42+W41)}}$$

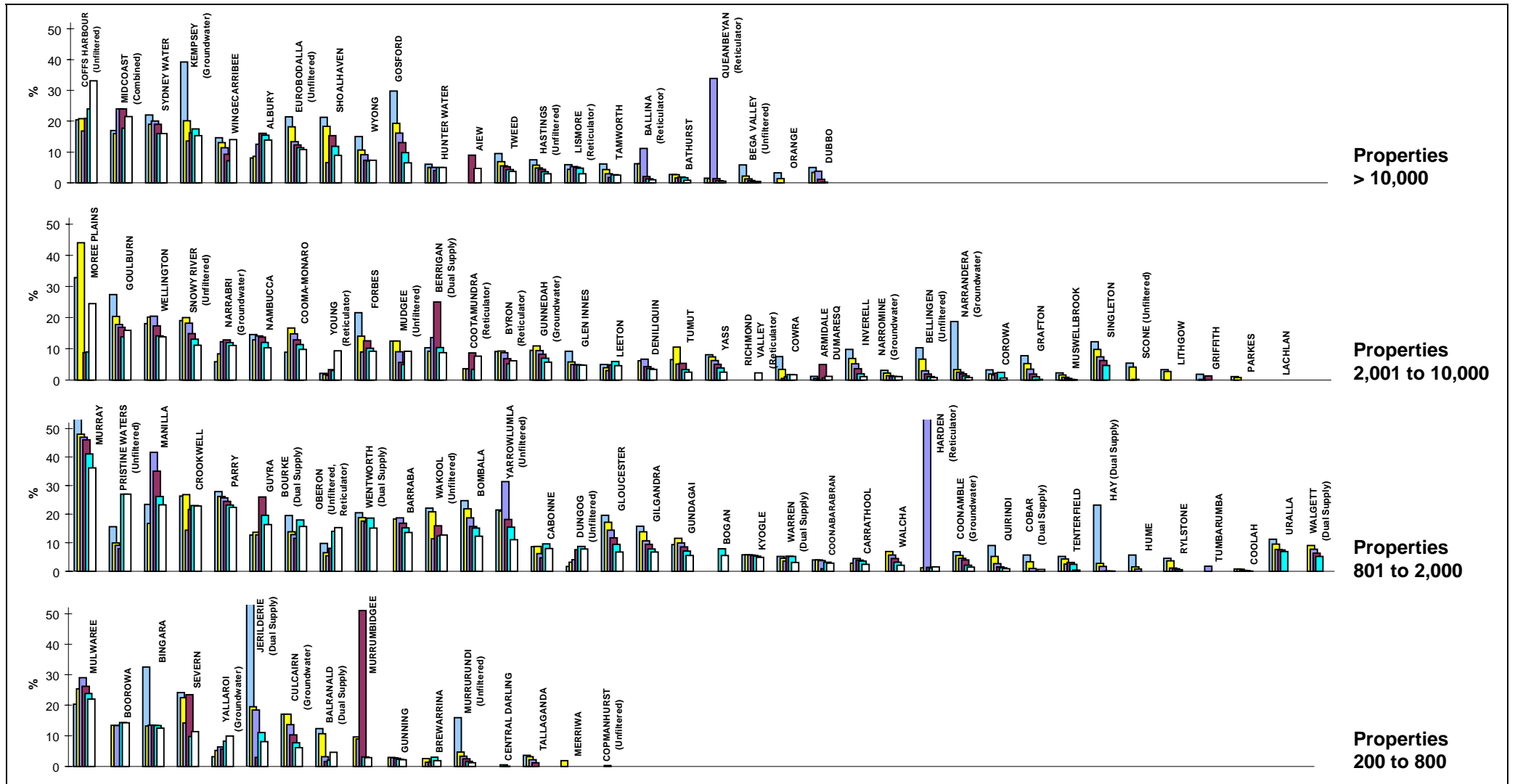
**Parameter:** 
$$\frac{\text{Payment of Debts (S18+W17)} + \text{Interest Expense (S4a+W4a)}}{[\text{Total Revenue (S14+W13)} - \text{Grants for Capital Works (S12a+W11a)} - \text{Developer Provided Assets (S13b+W12b)}]}$$

**Parameter:** 
$$\frac{[\text{Total Revenue (S14+W13)} - \text{Grants for Capital Works (S12a+W11a)} - \text{Total Expenses (S5+W5)} + \text{Interest Expense (S4a+W4a)}] \times 100}{\text{Interest Expense (S4a+W4a)}}$$

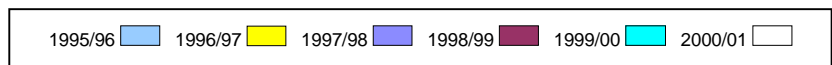
**Note:**  
1. For general notes see page 43.

# 13 Debt to Equity

# Water Supply and Sewerage



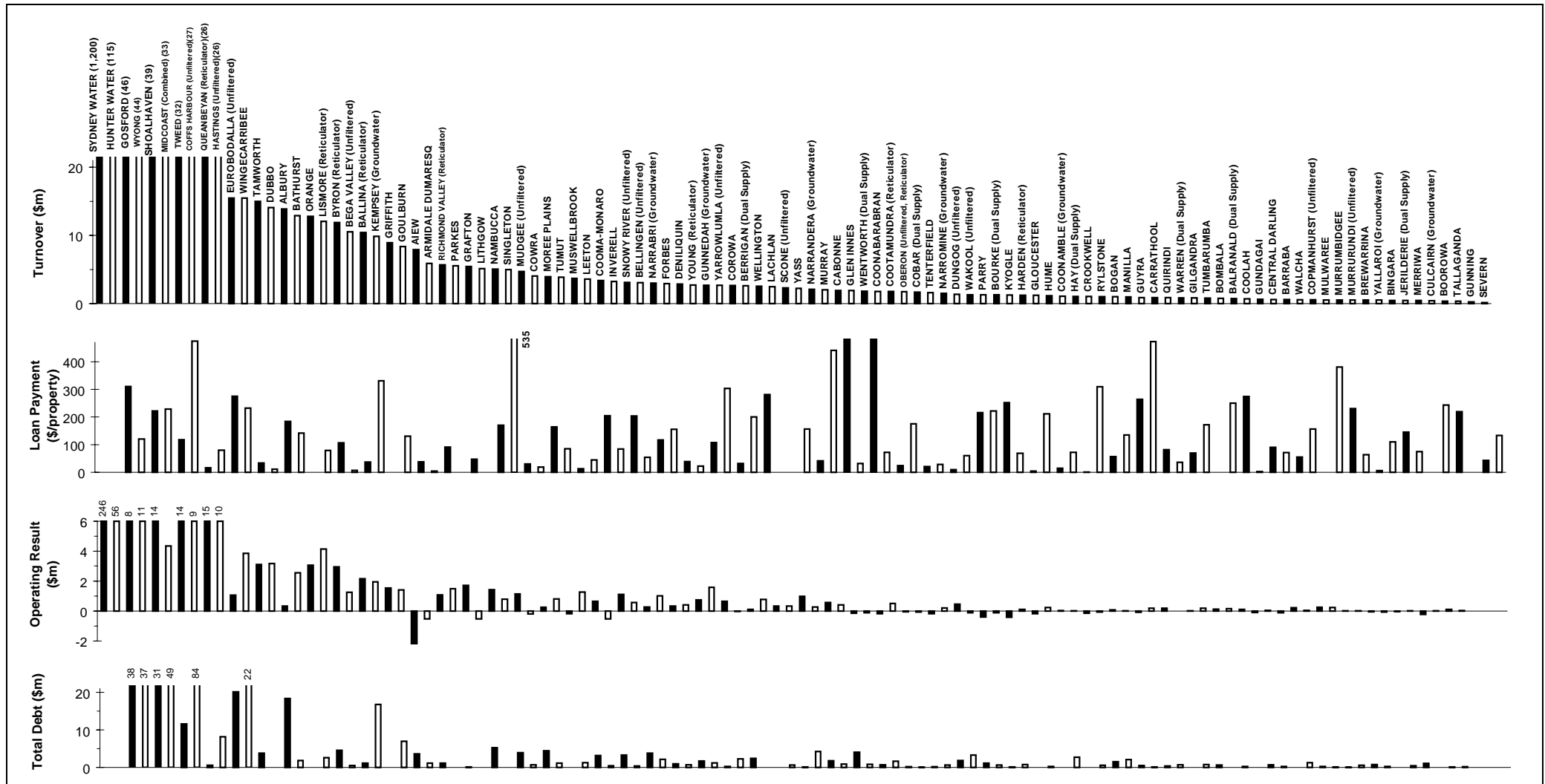
Parameter: 
$$\frac{[\text{Bank Overdraft (S34+W33)} + \text{Borrowing (S36+W35)}] \times 100}{\text{Total Equity (W42+W41)}}$$



- Notes:**
- This figure shows 2000/01 ranked values of the water supply and sewerage debt to equity for each council in 4 groups based on the number of water supply connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the debt to equity for the 35 councils shown *ranges* from about 25% to 0%. Results for the previous 5 years are also shown.
  - The Statewide median debt to equity ratio for water supply and sewerage was 7% (Table 5).
  - For general notes see page 43.

# 14 Turnover, Loan Payment, Operating Result, Total Debt

# Water Supply and Sewerage



**Parameter:** 
$$\frac{[\text{Total Revenue (S14+W13)} - \text{Grants for Capital Works (S12a+W11a)}] \div 1,000,000}{}$$

**Parameter:** 
$$\frac{\text{Payment of Debts (S18+W17)} + \text{Interest Expense (S4a+W4a)}}{\text{No. of water Assessments(Q4a+Q4b)} \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$[\text{Operating Result (S16+W15)} - \text{Grants for Capital Works (S12a+W11a)}] \div 1,000,000$$

**Parameter:** 
$$[\text{Borrowings (S36 + W35)} + \text{Bank Overdraft (S34 + W33)}] \div 1,000,000$$

**Note:**

- For general notes see page 43.

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## 5. 2000/01 WATER SUPPLY FIGURES

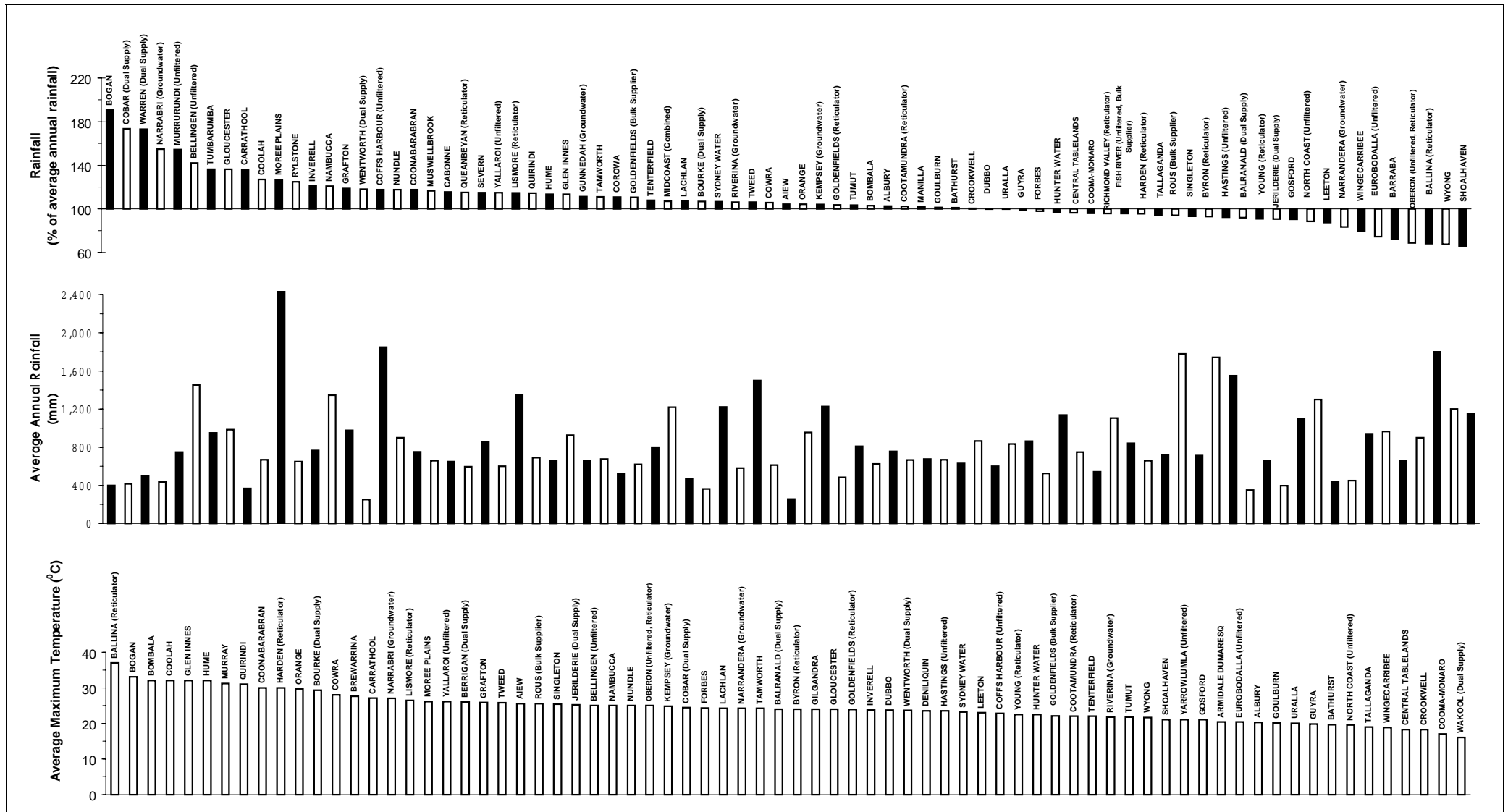
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# 15 Rainfall, Temperature

# Water Supply



Parameter: 2000/01 Rainfall (Q17a) x 100  
Average Annual Rainfall (Q17b)

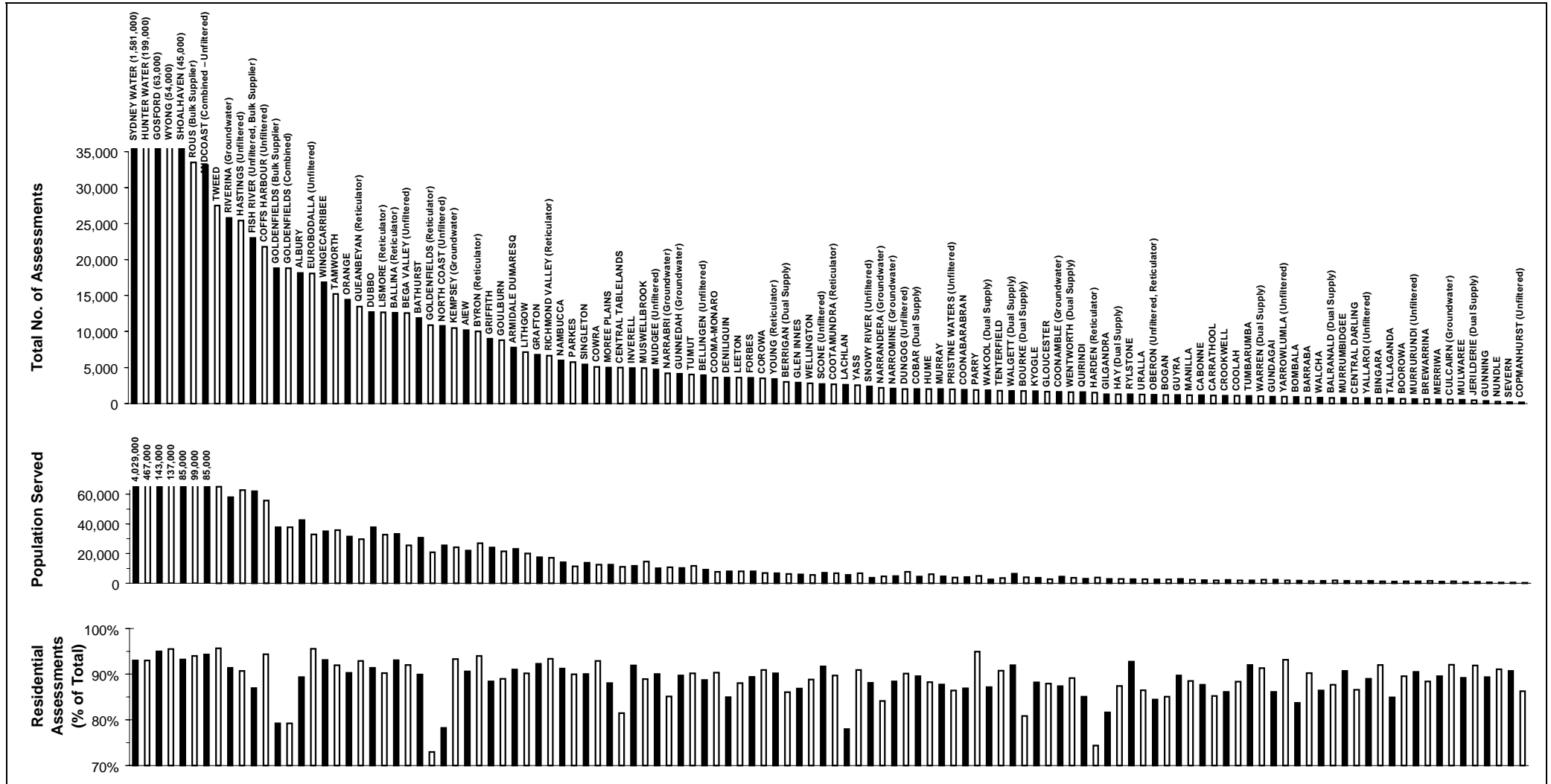
Parameter: Average Annual Rainfall (Q17b)

Parameter: 2000/01 Average Maximum Temperature (Q17c)

Note:  
1. For general notes see page 43.



# 16 Population, Assessments Served

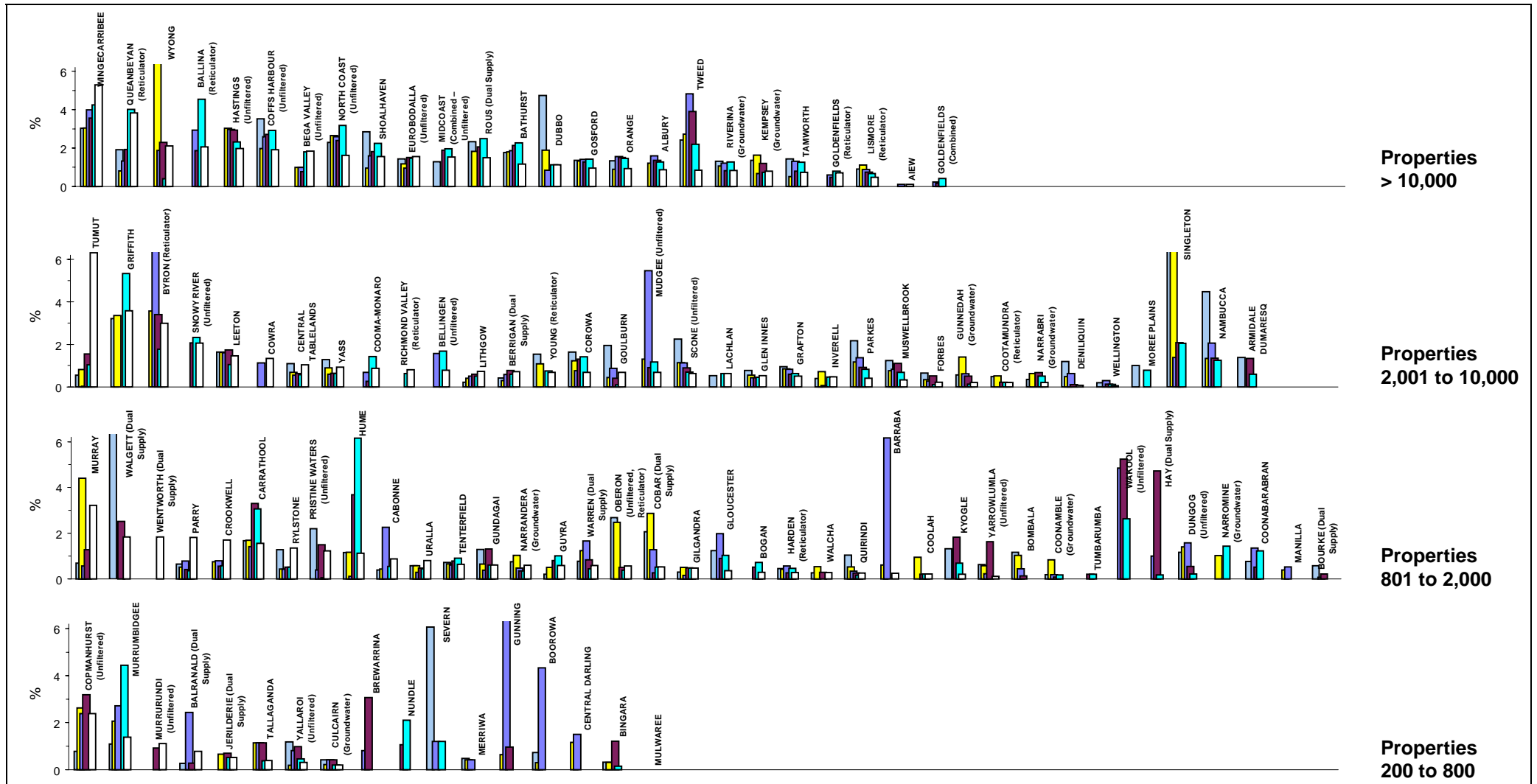


Parameter: No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)  
 Parameter: Population Served (Q1a)  
 Parameter:  $\frac{\text{No. of Residential Assessments (Q4a)} \times 100}{\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}}$

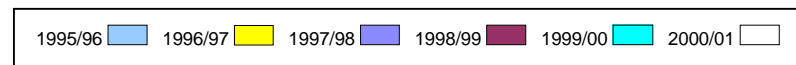
Note:  
 1. For general notes see page 43.

# 17 New Residential Dwellings Connected

# Water Supply



**Parameter:** 
$$\frac{\text{No. of New Residential Dwellings Connected in Year (Q6)} \times 100}{\text{No. of Residential Assessments (Q4a)} \times \text{No. of connected Residential Properties per Residential Assessment}}$$

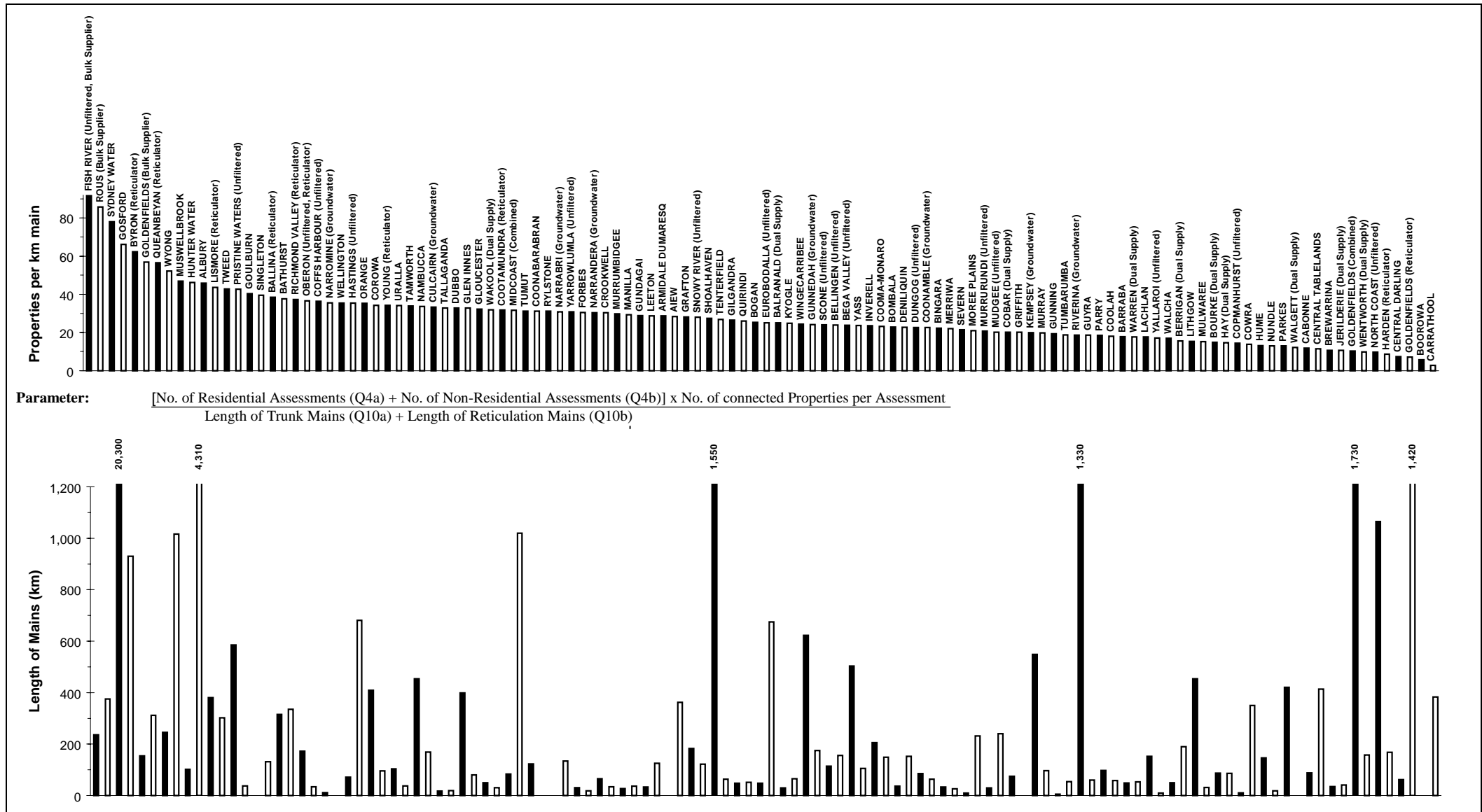


**Notes:**

1. This figure shows 2000/01 ranked values of the percentage of new residential dwellings connected to water supply for each council in 4 groups based on the number of connected properties served. **Each white bar represents one Council.** As an example, for the property range from 2,001 to 10,000, the percentage of new connections for the 34 councils shown **ranges** from about 6% to 0%. Results for the previous 5 years are also shown.
2. The Statewide median percentage of new residential dwellings connected to water supply is 1.0 % of the existing number of connected residential properties (refer to Table 1 – percentage of connected properties basis).
3. For general notes see page 43.

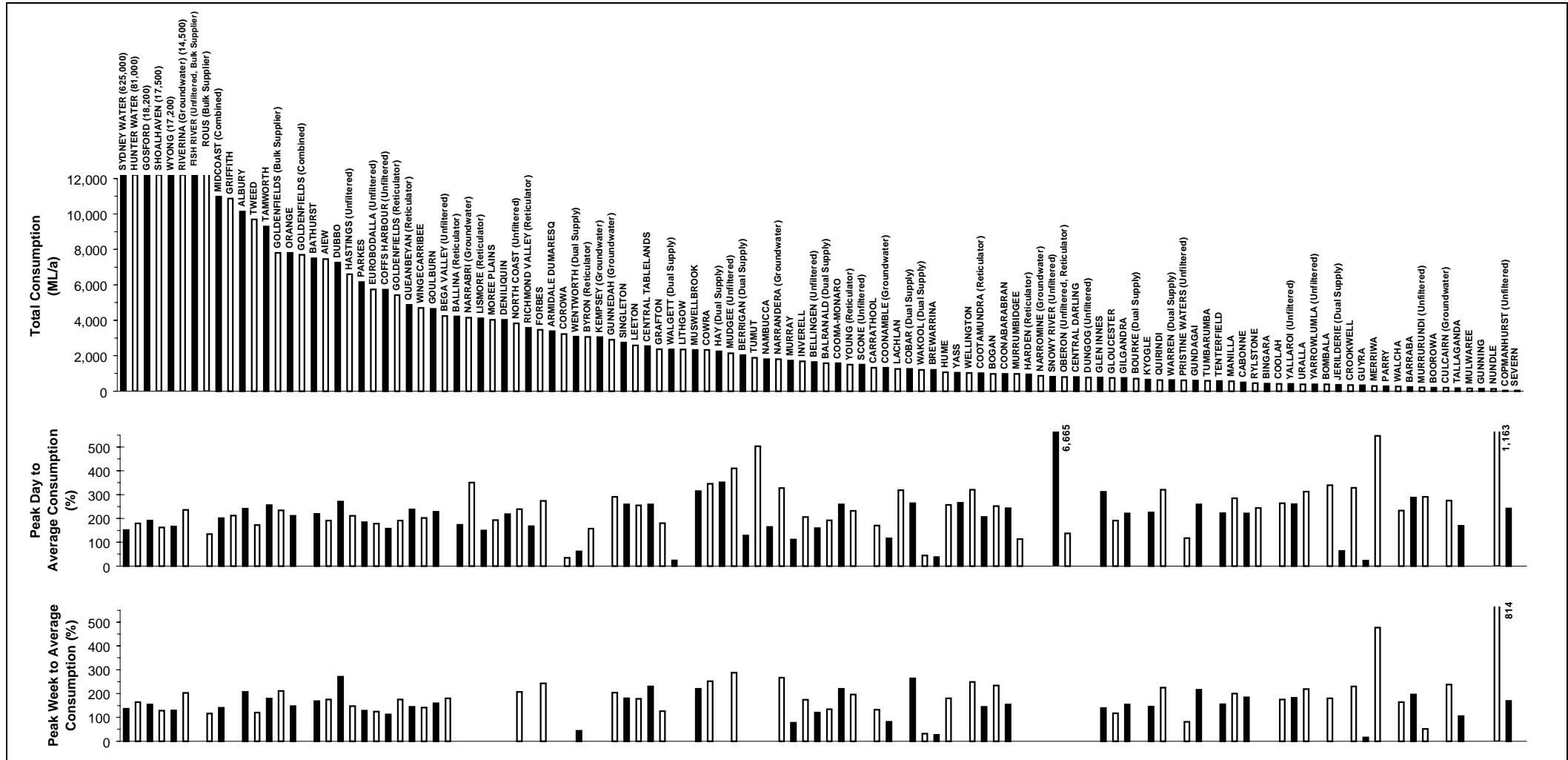
# 18 Properties Served per km of main

# Water Supply



- Notes:**
- The top graph shows the ranked values of number of connected properties per km of water main for each council. *Each bar represents one council.* The bottom graph of this figure shows the total length of mains for the corresponding councils.
  - The Statewide median water supply connected properties per km of main is 33 (refer to Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

# 19 Annual Total Consumption



**Parameter:**  $\frac{\text{Total Annual Potable Water Consumption (Q12i)} + \text{Raw Water Component (Q14)} - \text{Recycled Water (Q218)}}{\text{Total Annual Potable Water Consumption (Q12i)}}$

**Parameter:**  $\frac{\text{Peak Day Consumption (Q13a)} \times 365 \times 100}{\text{Total Annual Potable Water Consumption (Q12i)}}$

**Parameter:**  $\frac{\text{Peak Week Consumption (Q13b)} \times 52 \times 100}{\text{Total Annual Potable Water Consumption (Q12i)}}$

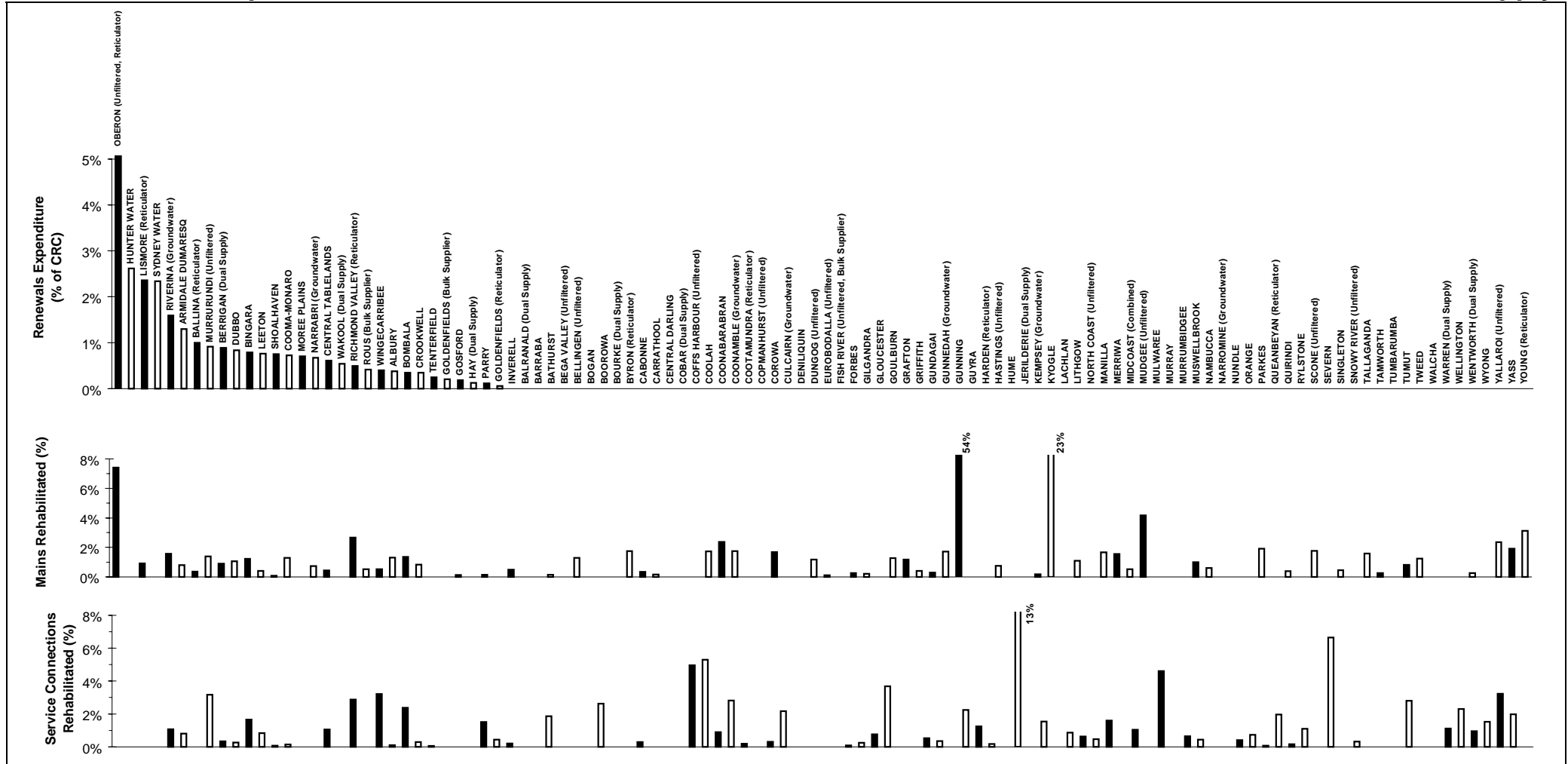
**Parameter:**  $\frac{\text{Peak Week Consumption (Q13b)} \times 52 \times 100}{\text{Total Annual Potable Water Consumption (Q12i)}}$

**Notes:**

- The top graph shows the annual total consumption. The second graph shows the percentage of peak day to average potable water consumption for each council. *Each bar represents one council.* The third graph shows the percentage peak week to average potable water consumption.
- For general notes see page 43.

## 20 Renewals Expenditure, Mains Rehabilitated, Service Connections Rehabilitated

## Water Supply



**Parameter:** 
$$\frac{\text{Renewals Expenditure (W16c)} \times 100}{\text{Current Replacement Cost of System Assets (W42)}}$$

**Parameter:** 
$$\frac{\text{Length of Mains Rehabilitated (Q11a)} \times 100}{\text{Total Length of Mains (Q10c)}}$$

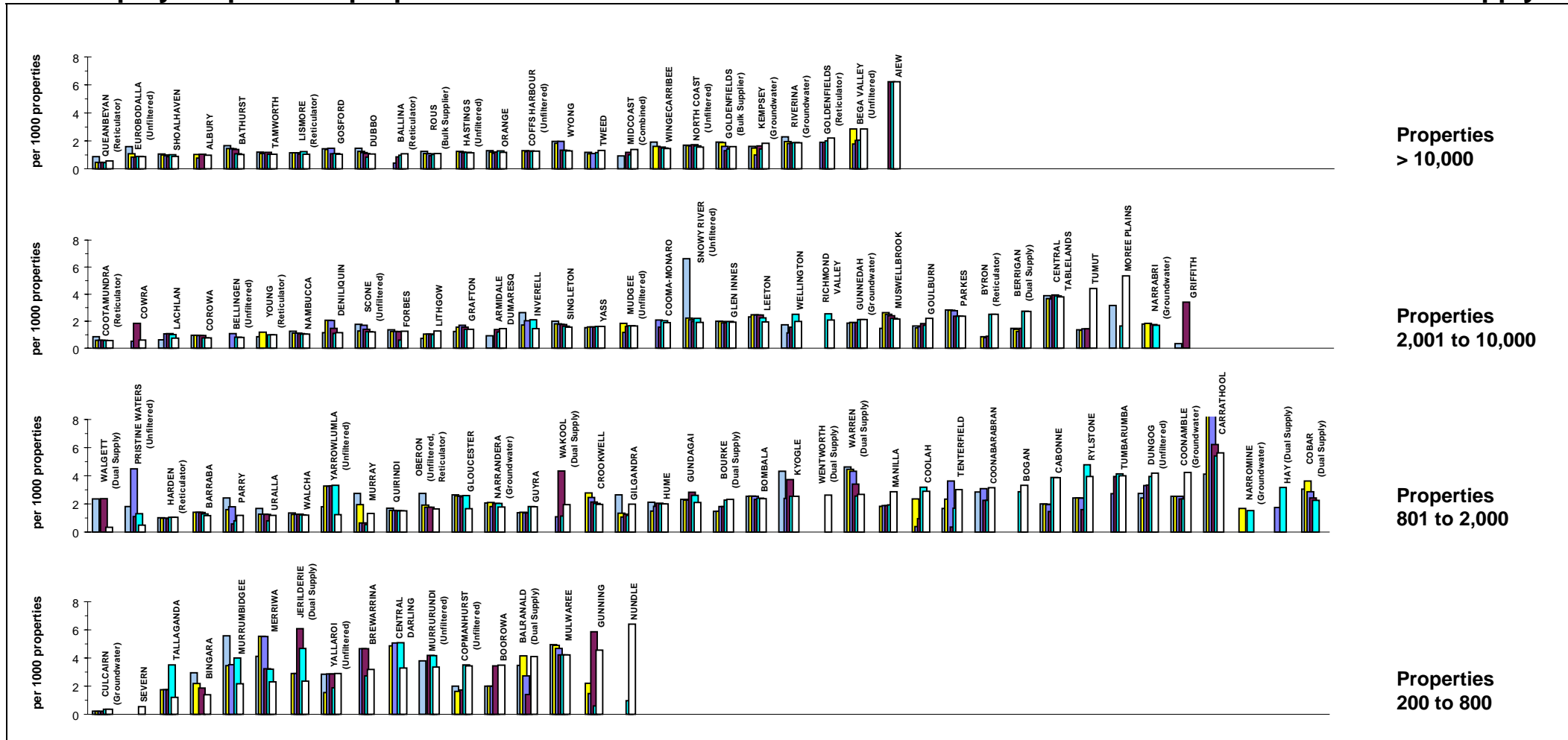
**Parameter:** 
$$\frac{\text{Service Connections Rehabilitated (Q11b)} \times 100}{\text{Residential Properties Connected (Q2a + Q2b) + Non-Residential Properties Connected (Q3)}}$$

**Notes:**

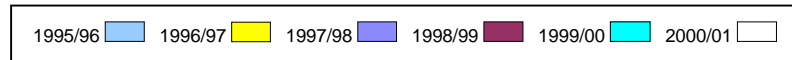
1. This first graph shows ranked values of the 2000/01 renewals expenditure as a percentage the current replacement cost (CRC) of system assets, The second graph shows the percentage of mains rehabilitated and the third graph shows the percentage of service connection rehabilitated.
2. The Statewide median renewals expenditure is 0% (refer to Table 1 - percentage of connected properties basis).
3. For general notes see page 43.

# 21 Employees per 1000 properties

# Water Supply



Parameter: 
$$\frac{\text{Equivalent Full-time Employees (Q30)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

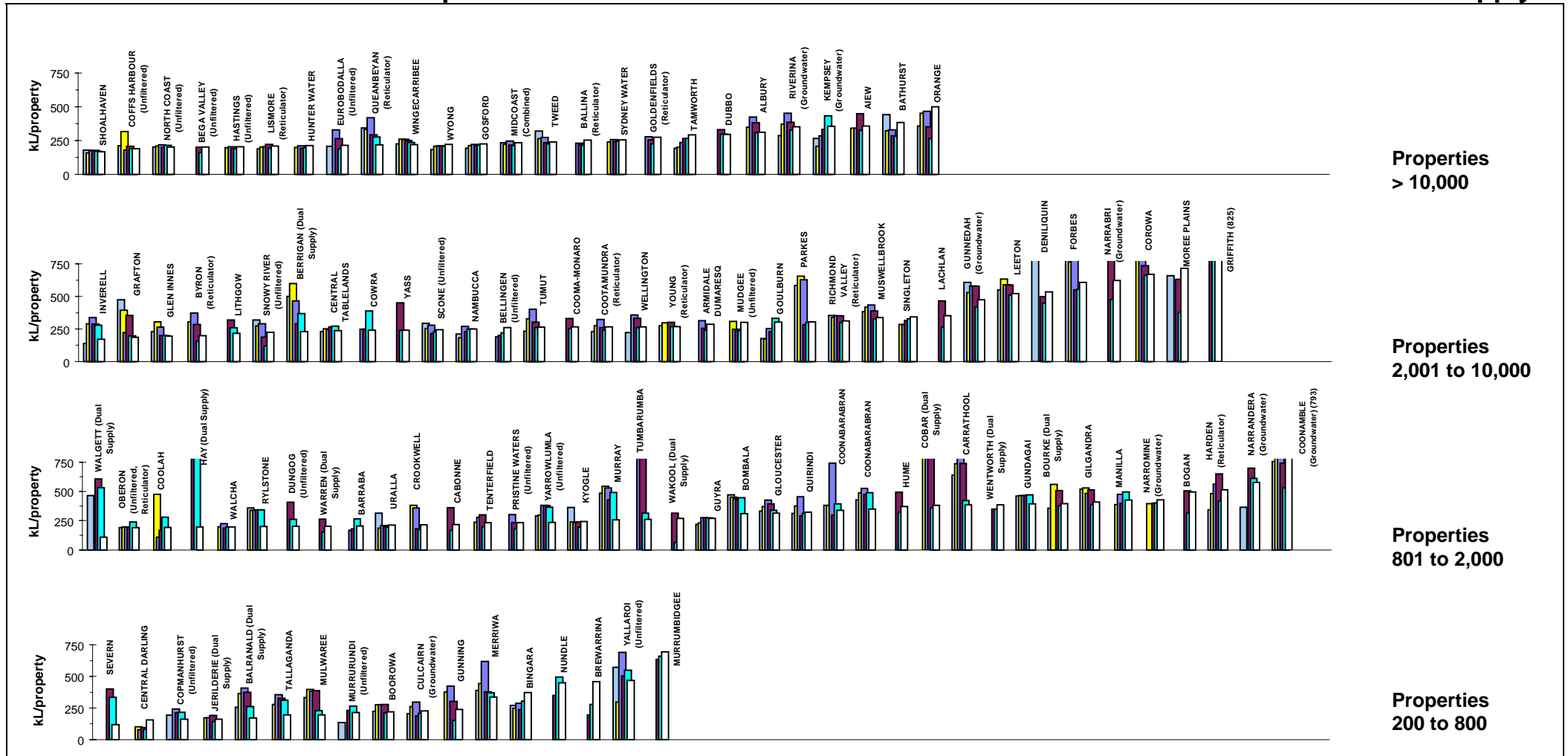


### Notes:

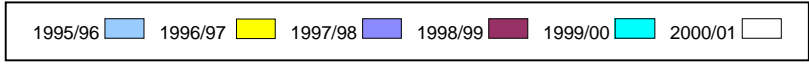
- This figure shows ranked values of the 2000/01 water supply employees per 1000 properties for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the water supply employees per 1000 connected properties for the 31 councils shown **range** from about **0.6 to 4** per connected property. Results for the previous 5 years are also shown.
- The Statewide median number of water supply employees is 1.3 per 1000 connected properties (refer to Table 1 - percentage of connected properties basis).
- For general notes see page 43.

# 22 Annual Residential Consumption

# Water Supply



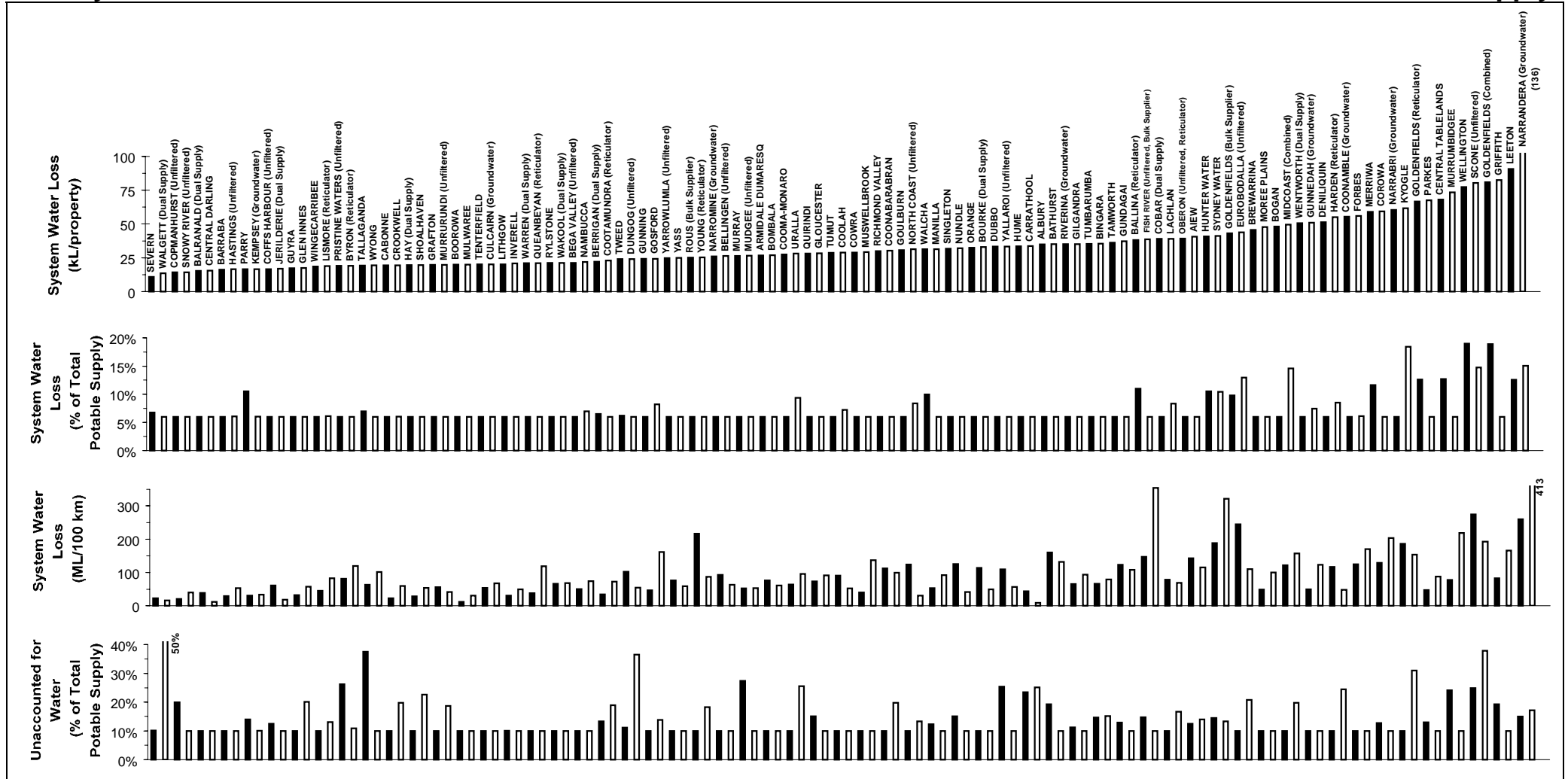
Parameter: Annual Residential Consumption (Q12a) x 1000  
 No. of Residential Assessments (Q4a) x No. of Connected Residential Properties per Residential Assessment



- Notes:
- This figure shows ranked values of the 2000/01 average annual residential water consumption per connected property for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the annual residential water consumption in 2000/01 for the 34 councils shown **ranges** from about **170 to 825 kL/a** per connected property. Results for the previous 5 years are also shown.
  - The Statewide median annual residential water consumption is 230 kL/a per connected property (refer Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

# 23 System Water Loss

# Water Supply



Parameter:  $\frac{\text{Estimated Leakage (Q12a)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

Parameter:  $\frac{\text{Estimated Leakage (Q12a)} \times 100}{\text{Total Water Consumption (Q12i)}}$

Parameter:  $\frac{\text{Estimated Leakage (Q12h)}}{\text{Length of Mains (Q10c)}}$

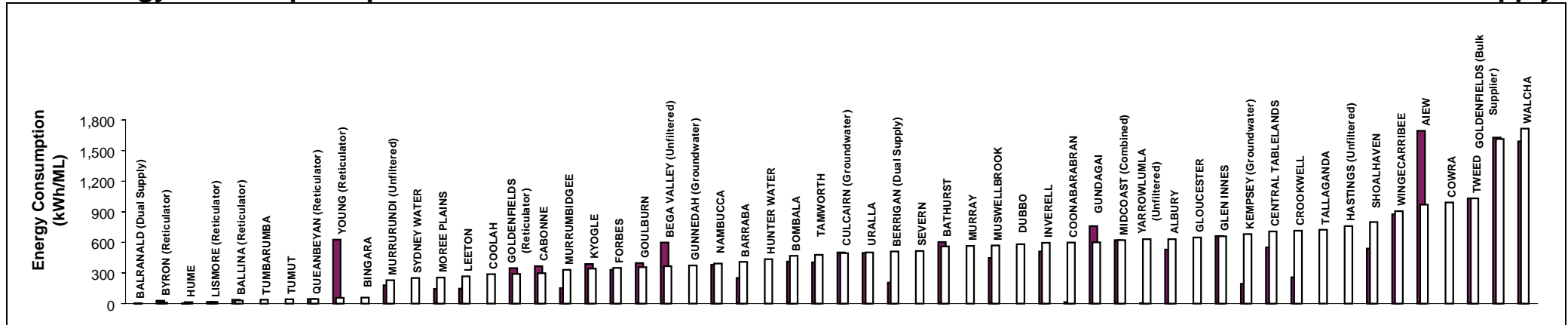
Parameter:  $\frac{\text{Unaccounted for Water (Q12g)} \times 100}{\text{Total Water Consumption (Q12i)}}$

Note:  
1. For general notes see page 43.



## 24 Energy Consumption per ML

## Water Supply



Parameter:  $\frac{\text{Total Energy Usage (Q29)} \times 1000}{\text{Total Potable Water Consumption (Q12i)}}$

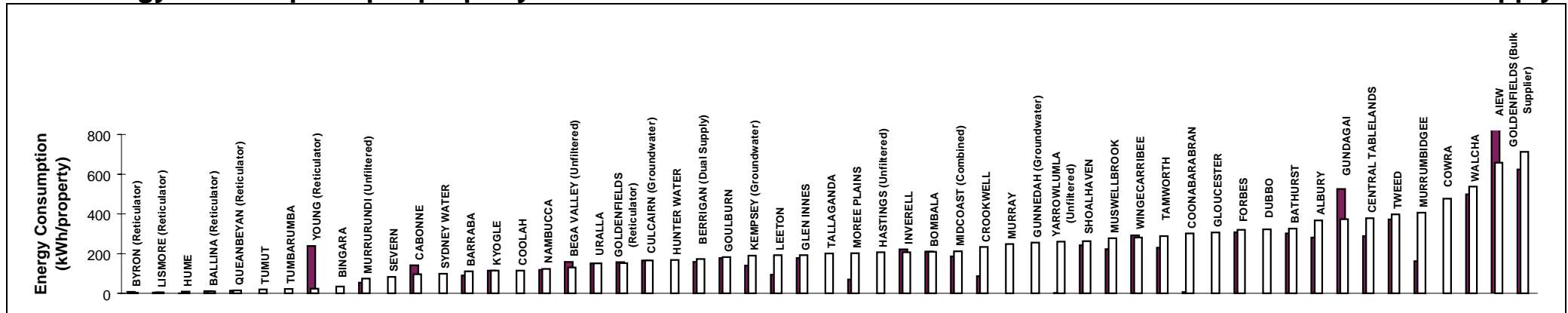
1999/00 2000/01

### Notes:

1. This figure shows ranked values of the 2000/01 total energy consumption per ML. The energy consumption per ML for the 50 councils shown *ranges* from about 2 to 1,710 kWh per ML.
2. For general notes see page 43.

## 25 Energy Consumption per property

## Water Supply



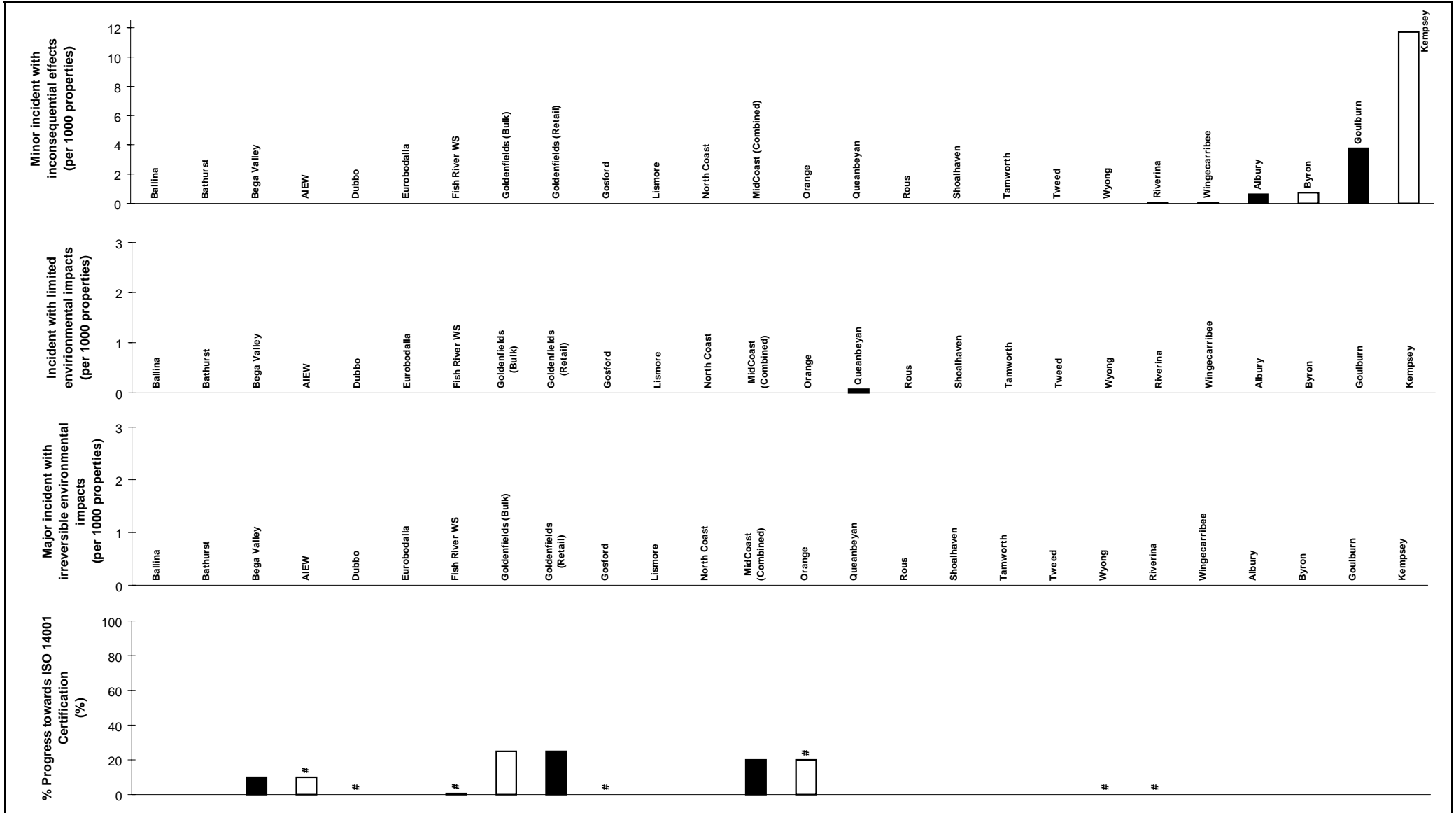
Parameter:  $\frac{\text{Total Energy Usage (Q29)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

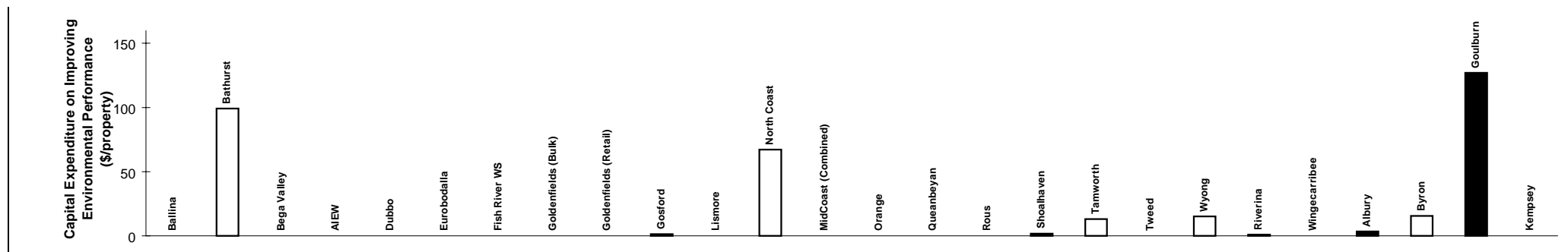
1999/00 2000/01

### Notes:

1. This figure shows ranked values of the 2000/01 total energy consumption per connected property. The energy usage per connected property for the 50 councils shown *ranges* from about 1 to 710 kWh per connected property.
2. For general notes see page 43.

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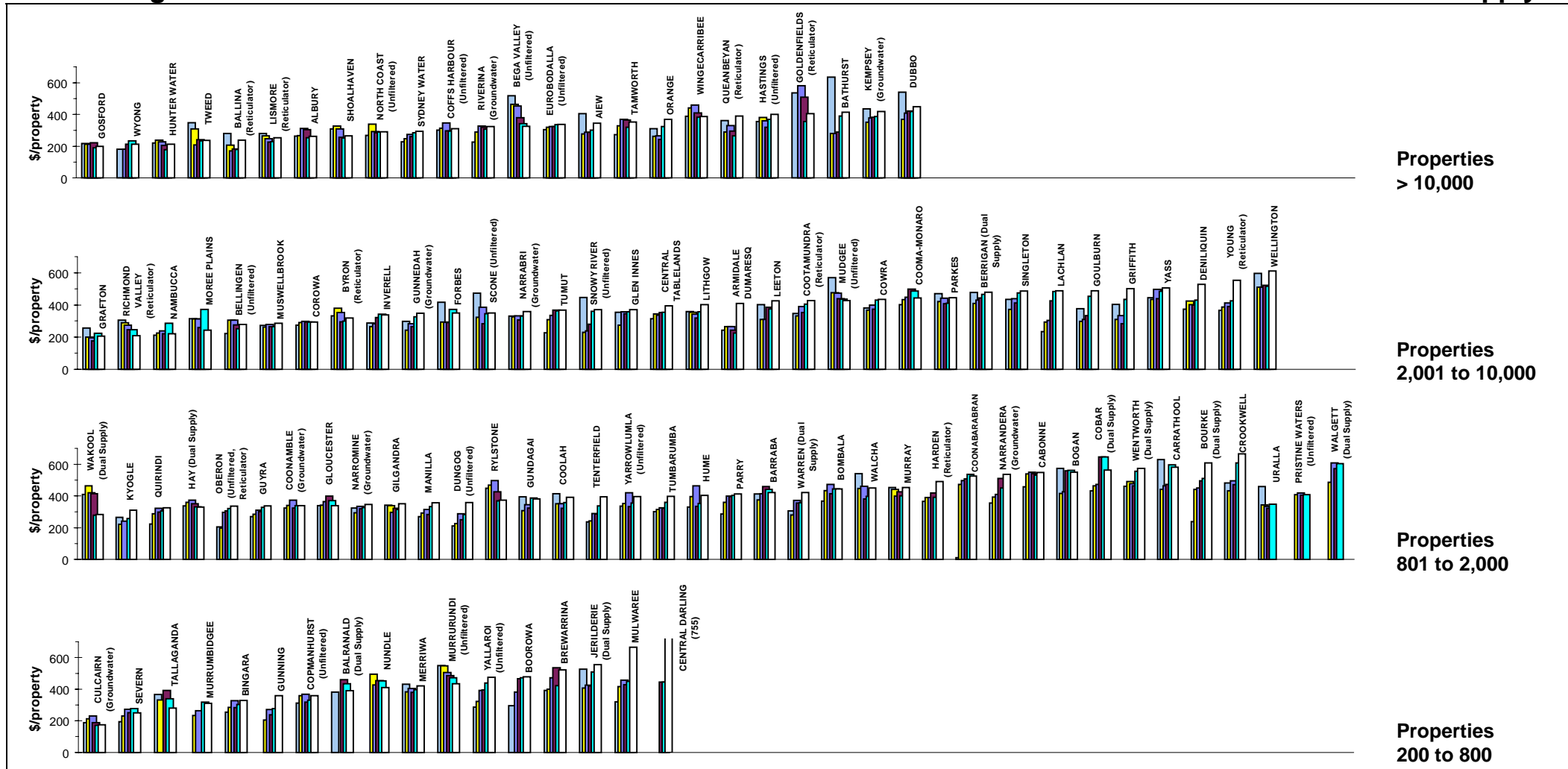
<b>Parameter:</b>	Total Number of Minor Incident with Inconsequential Effects
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Incident with Limited Environmental Impacts
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Major Incident with Irreversible Environmental Impacts
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	% Progress Towards ISO 14001 Certification
<b>Parameter:</b>	Capital Expenditure on Improving Environmental Performance (\$)
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$

**Notes:**

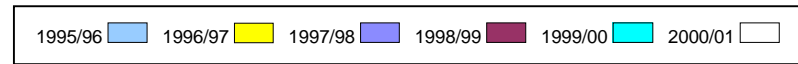
1. For general notes see page 43.
2. International Standard ISO 14001 – *Environmental management systems – Specification with guidance for use*.
3. Councils which have prepared an Environmental Management Plan (EMP) are indicated with an “#” on the fourth graph.

# 26 Average Residential Bill

# Water Supply



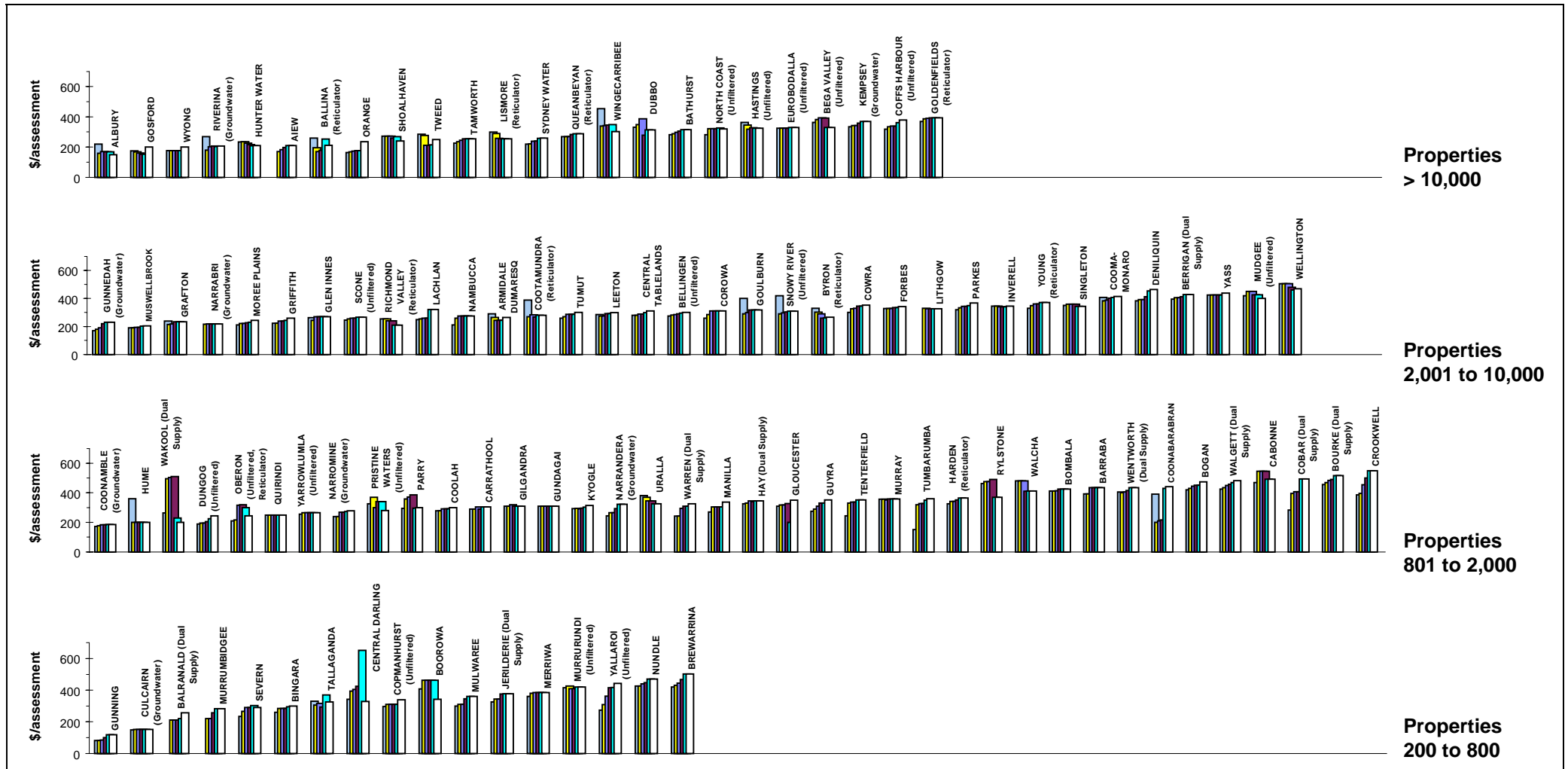
Parameter: Residential Rates & Service Availability Charges (W6a) + Residential User Charges (W7a)  
 No. of Residential Assessments (Q4a) x No. of Connected Residential Properties per Residential Assessment



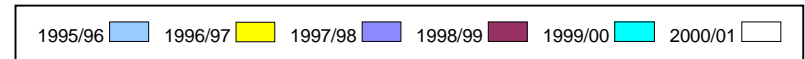
- Notes:
- This figure shows ranked values of the 2000/01 average residential bill for water supply for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the average residential bill in 2000/01 for the 34 councils shown **ranges** from about **\$235 to \$680** per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The 2000/01 Statewide median average residential bill for water supply is \$325 per connected property (refer Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

## 27 Bill for Residential Customer using 200 kL/a

## Water Supply



Parameter: Water Usage Charge (Q33) for 200kL + Minimum Annual Residential Charge (Q32b)

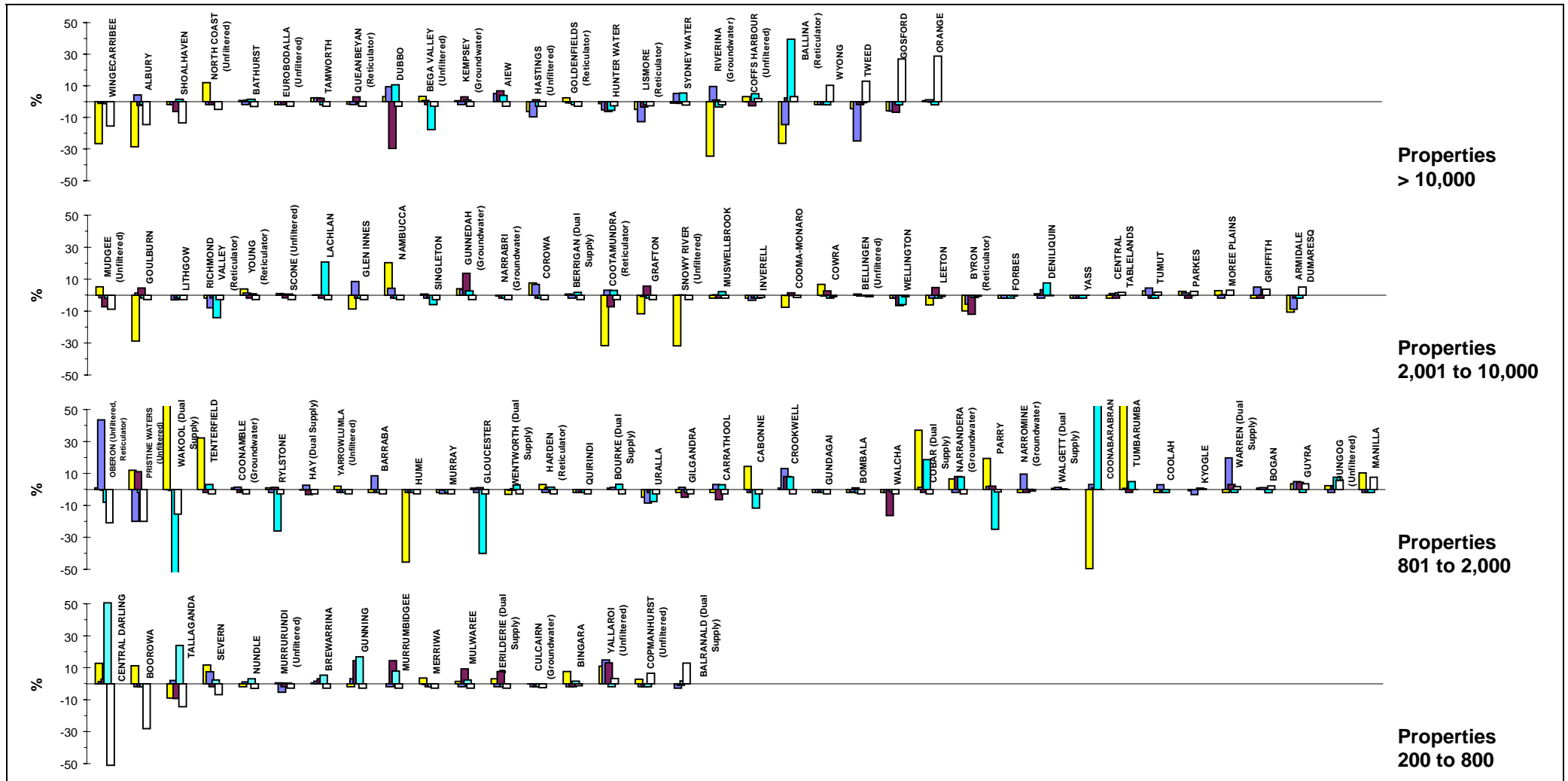


### Notes:

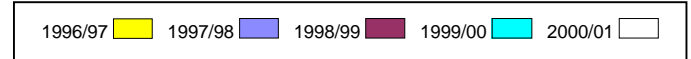
1. This figure shows ranked values of the 2000/01 bill for a residential customer using 200 kL/a for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the bill for a residential customer using 200 kL/a for the 34 councils shown *ranges* from about \$205 to \$470. Results for the previous 5 years are also shown in Jan 2001\$.
2. The 2000/01 Statewide median bill for a residential customer using 200 kL/a is \$255 (refer to Table 1 – percentage of connected properties basis).
3. For general notes see page 43.

# 28 Real Increase over Previous Year's Bill for Residential Customer using 200 kL/a

# Water Supply

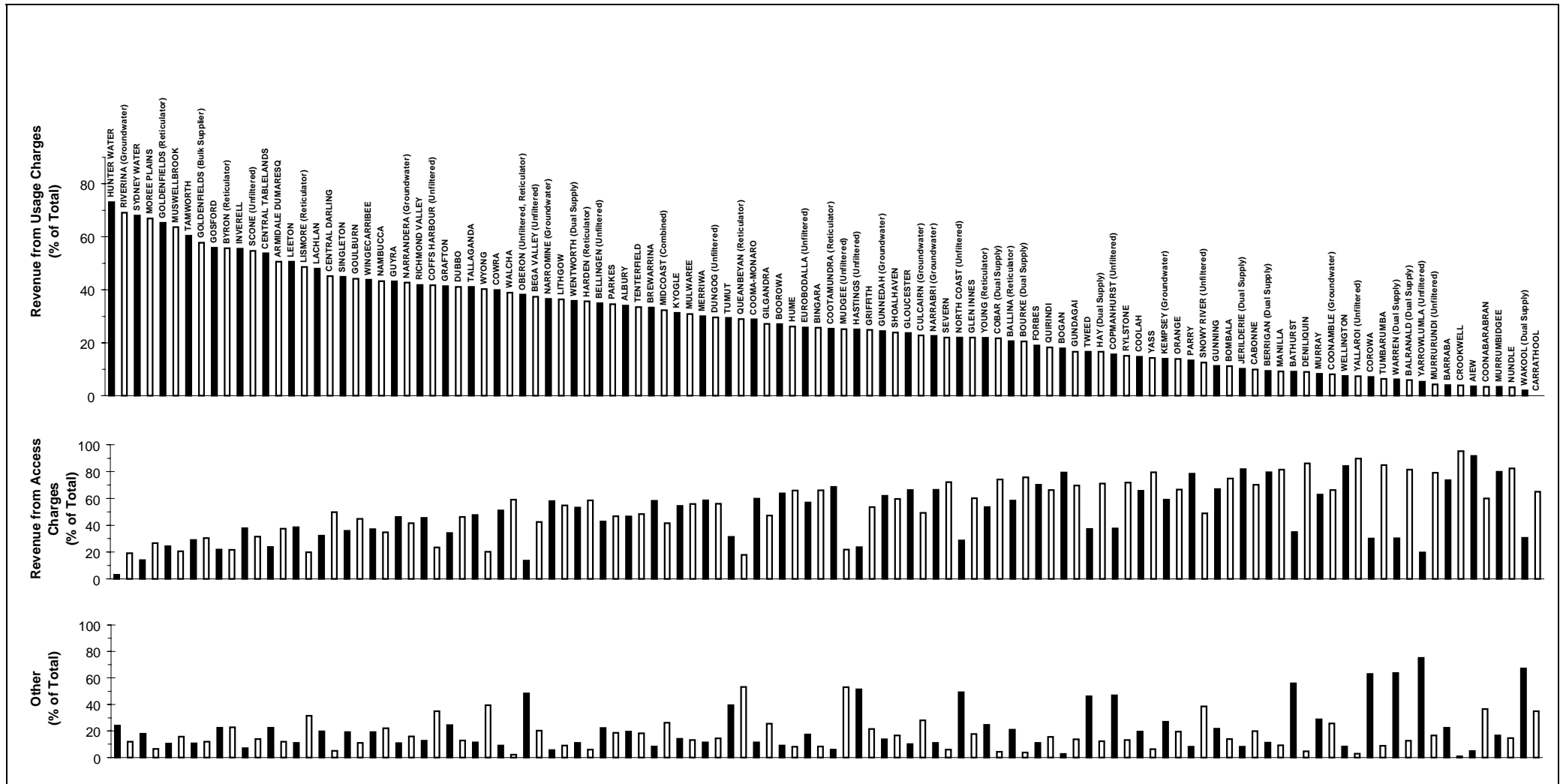


Parameter:  $\frac{\text{Water Usage Charge (Q33) for 200kL} + \text{Minimum Residential Charge (Q32b) for Current Year} \times 100}{(\text{Water Usage Charge (Q33) for 200kL} + \text{Minimum Annual Residential Charge (Q32b) for Previous Year}) \times (1 + \text{CPI Increase})} - 100\%$



### Notes:

- This figure shows ranked values of the 2000/01 real increase over previous year's bill for a residential customer using 200 kL/a for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the real increase in 2000/01 for the 34 councils shown **ranges** from about **-9% to 5%**. Results for the previous 5 years are also shown.
- The Statewide median real increase over previous year's bill for a residential customer using 200 kL/a is **-3%** (refer to Table 1 – percentage of connected properties basis).
- For general notes see page 43.



Parameter:  $\frac{[\text{Revenue from User Charges (W7)}] \times 100}{\text{Total Revenue (W13)}}$

Parameter:  $\frac{[\text{Revenue from Rates and Service Availability Charges (W6)}] \times 100}{\text{Total Revenue (W13)}}$

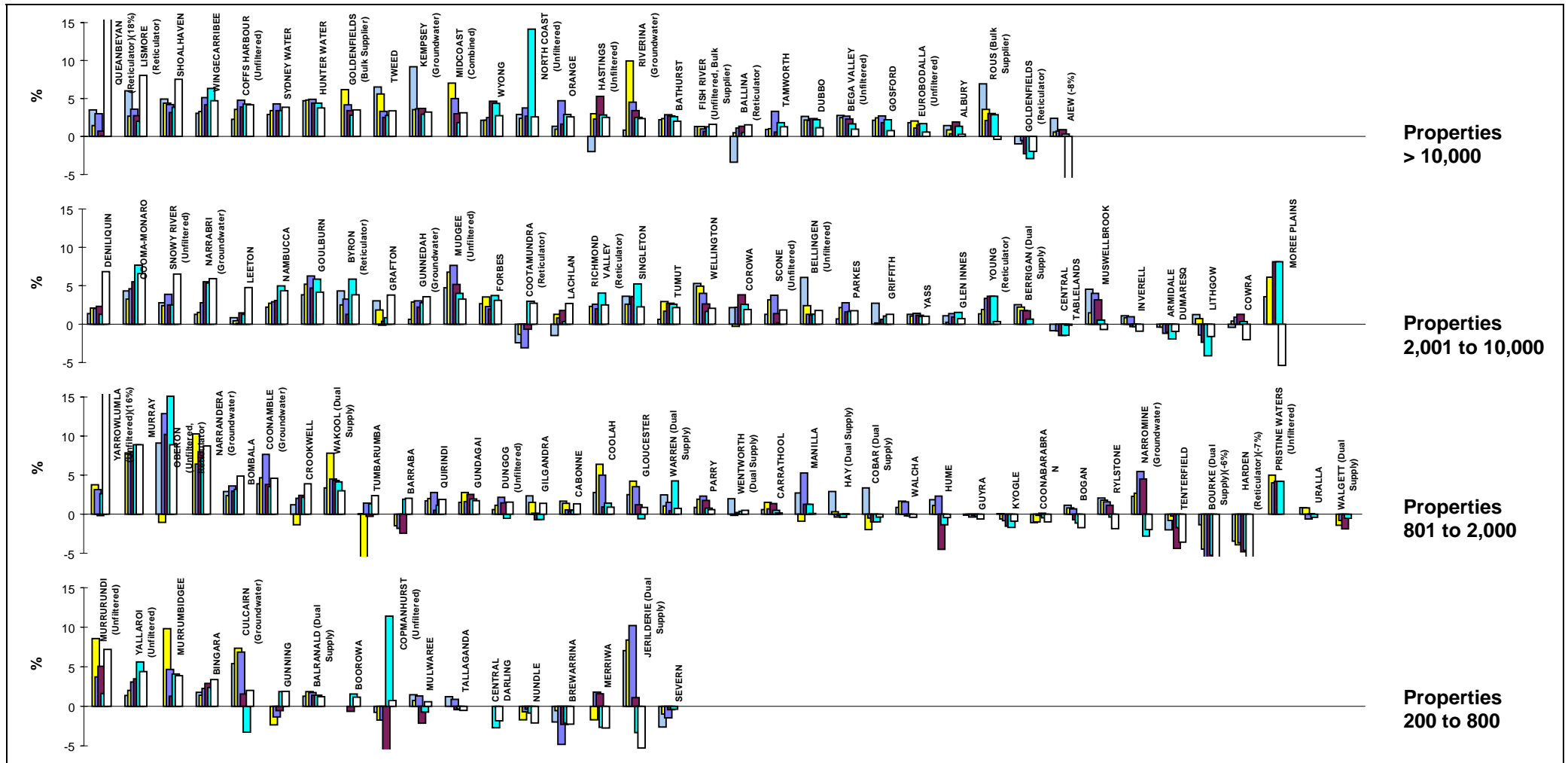
Parameter:  $\frac{[\text{Revenue from Other (W13 - W6 - W7)}] \times 100}{\text{Total Revenue (W13)}}$

Note:  
1. For general notes see page 43.



# 30 Economic Real Rate of Return

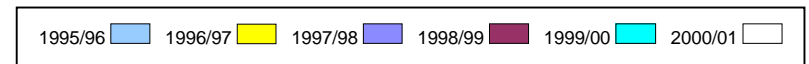
# Water Supply



Parameter: 
$$\frac{[\text{Operating Result (W15)} + \text{Interest Expense (W4a)} - \text{Interest Income (W9)} - \text{Grants for Acquisition of Assets (W11a)}] \times 100}{\text{Written Down Replacement Cost of Property, Plant \& Equipment (W44)}}$$

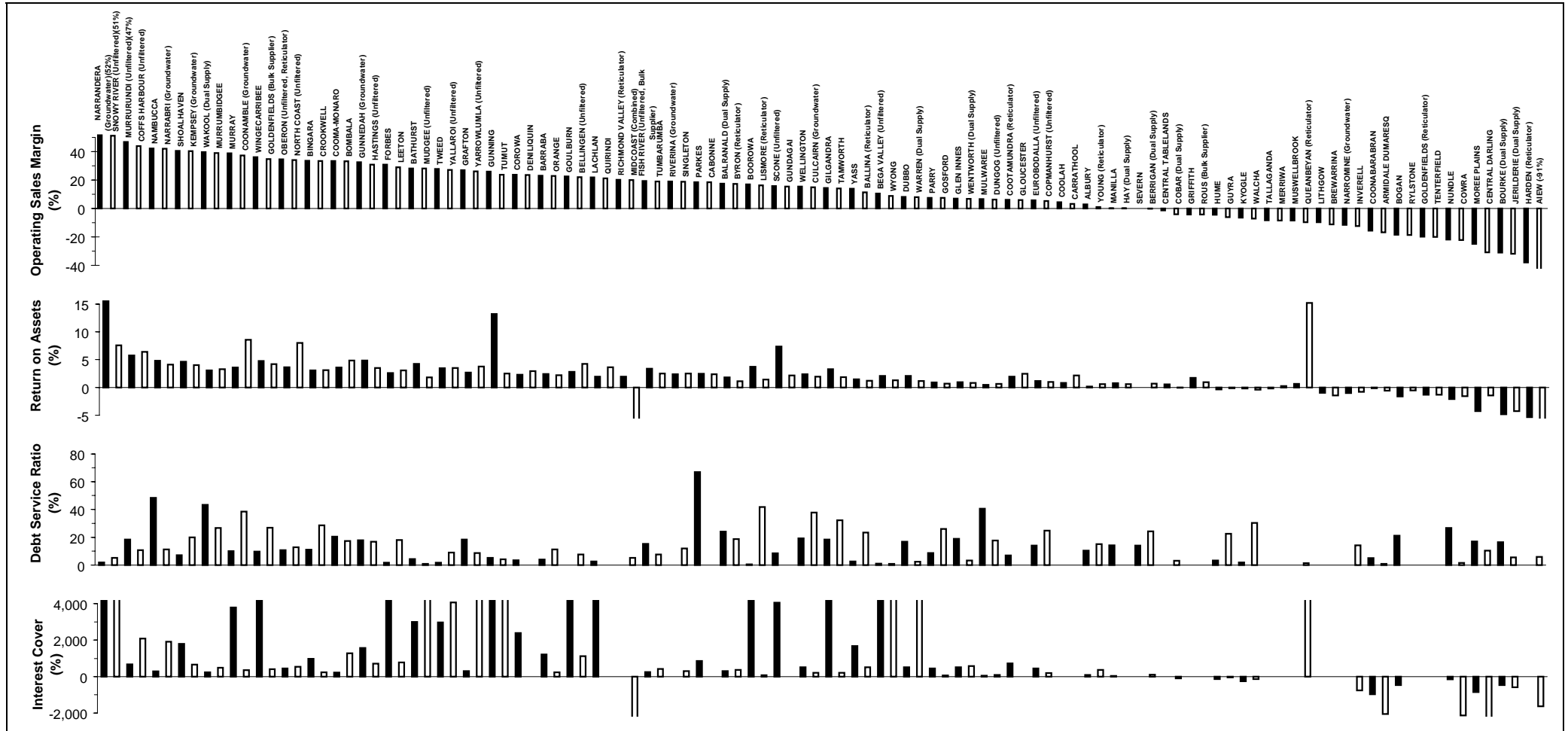
### Notes:

1. This figure shows ranked values of the 2000/01 water supply economic real rate of return for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the real rate of return for the 33 councils shown **ranges** from about 28% to -5.5%. Results for the previous 5 years are also shown.
2. The Statewide median water supply real rate of return is 2.6% (refer to Table 1 - percentage of connected properties basis).
3. For general notes see page 43.
4. The Economic Real Rate of Return (ERRR) includes developer provided assets. This has a significant effect on the 2000/01 ERRR for Queanbeyan and Young.



# 31 Operating Sales Margin, Return on Assets, Debt Service Ratio and Interest Cover

## Water Supply



**Parameter:** 
$$\frac{[\text{Operating Result (W15)} + \text{Interest Expenses (W4a)} - \text{Interest Income (W9)} - \text{Grants for Capital Works (W11a)} - \text{Developer Provided Assets (W12b)}] \times 100}{\text{Total Revenue (W13)} - \text{Grants for Capital Works (W11a)} - \text{Developer Provided Assets (W12b)} - \text{Interest Income (W9)}}$$

**Parameter:** 
$$\frac{[\text{Operating Result (W15)} + \text{Interest Expenses (W4a)} - \text{Grants for Capital Works (W11a)}] \times 100}{\text{Total Assets (W32)}}$$

**Parameter:** 
$$\frac{[\text{Interest Expenses (W4a)} + \text{Repayment of Debt (W17)}] \times 100}{\text{Total Revenue (W13)} - \text{Grants for Capital Works (W11a)} - \text{Developer Provided Assets (W12b)}}$$

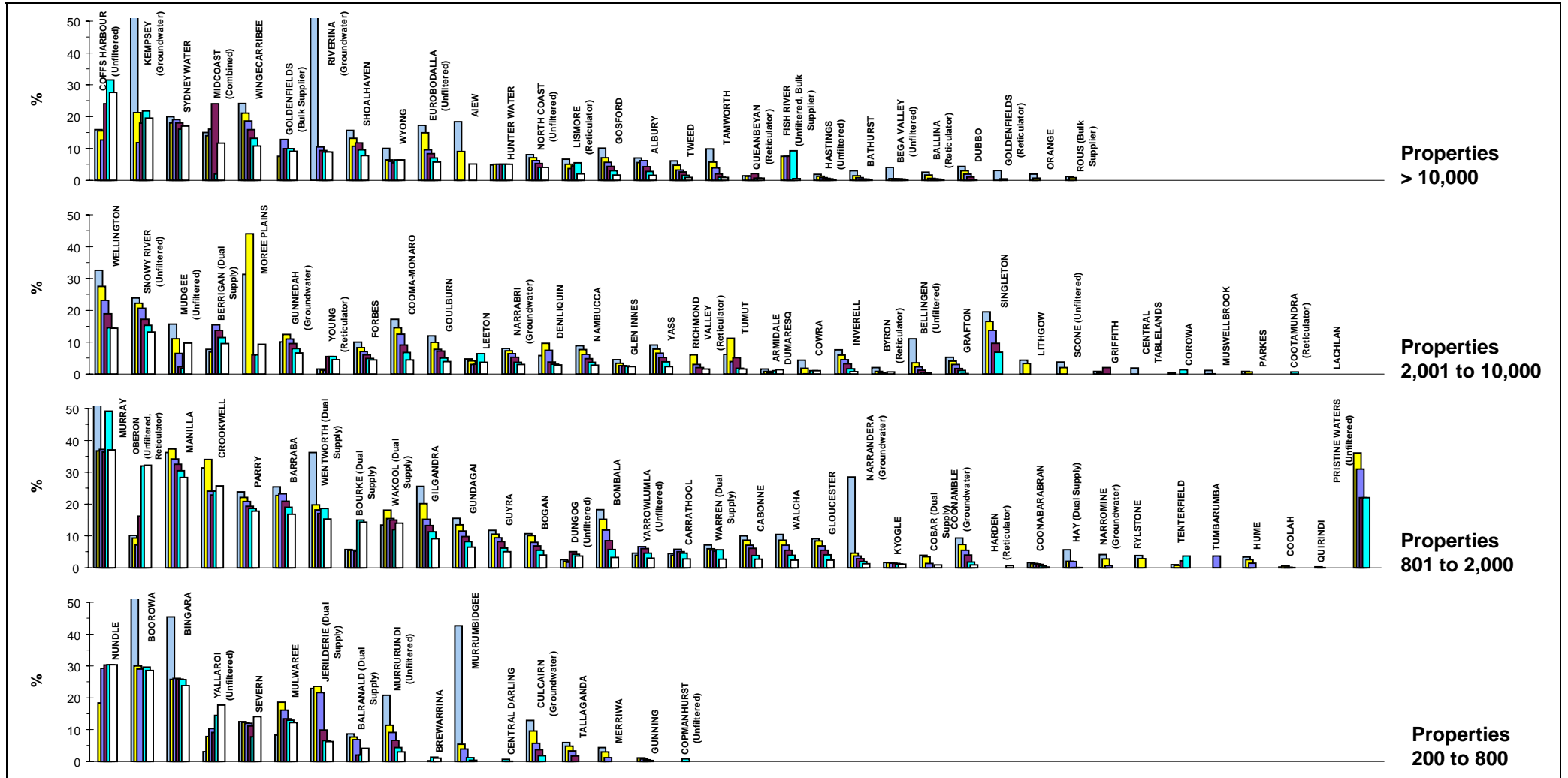
**Parameter:** 
$$\frac{[\text{Operating Result (W15)} + \text{Interest Expenses (W4a)} - \text{Grants for Capital Works (W11a)}] \times 100}{\text{Interest Expenses (W4a)}}$$

**Note:**

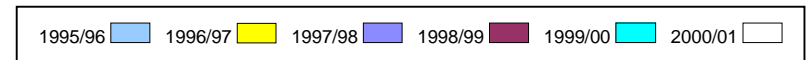
1. For general notes see page 43.

# 32 Debt to Equity

# Water Supply



Parameter:  $\frac{[\text{Bank Overdraft (W33)} + \text{Borrowings (W35)}] \times 100}{\text{Total Equity (W41)}}$

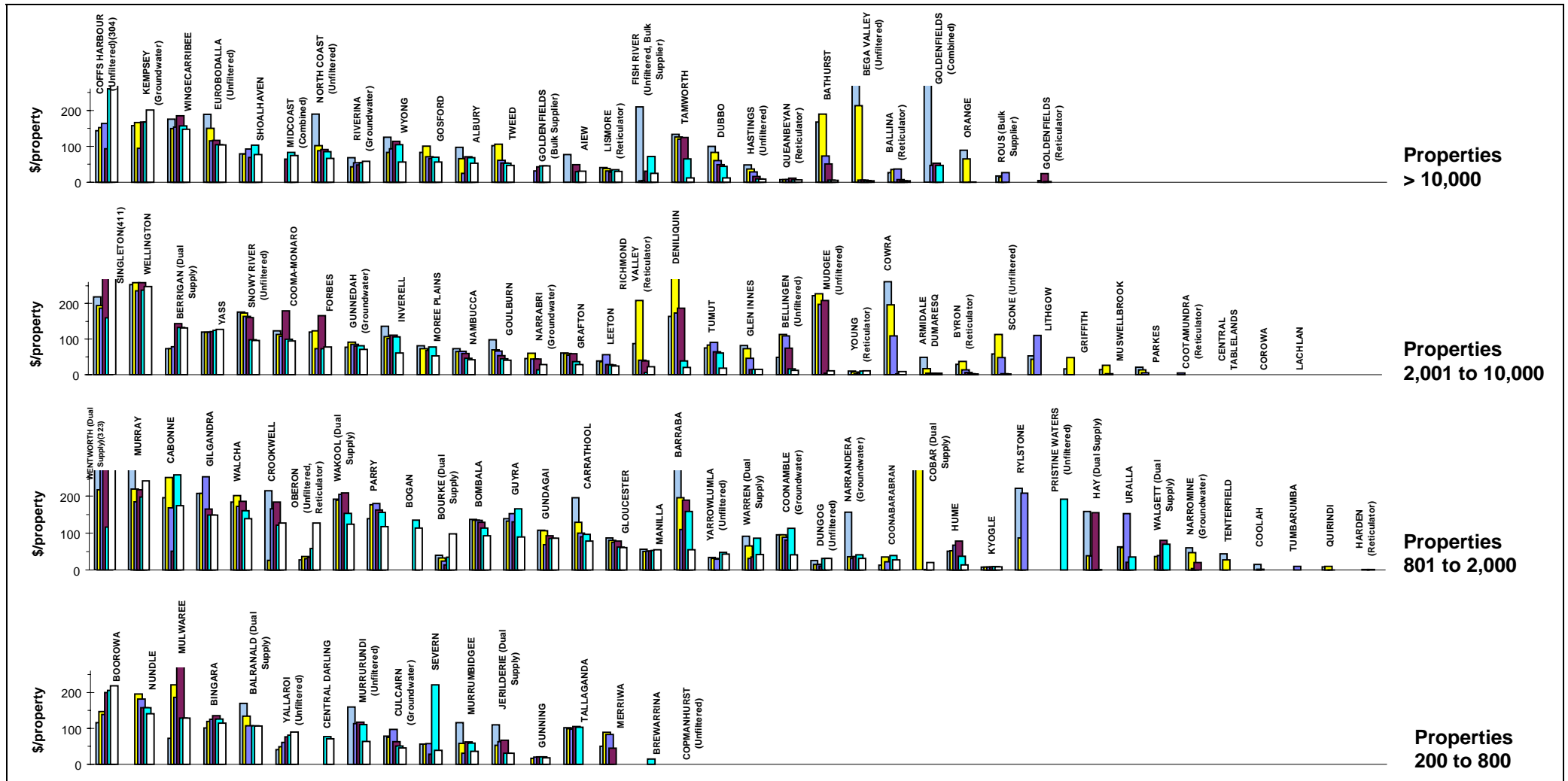


### Notes:

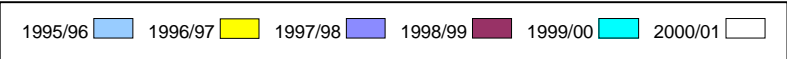
1. This figure shows ranked values of the 2000/01 water supply debt to equity for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the debt to equity for the 32 councils shown **ranges** from about 15 to 0 percent. The 7 councils on the right reported zero debt. Results for the previous 5 years are also shown.
2. The Statewide median debt to equity is 3% (refer to Table 1 – percentage of connected properties basis).
3. For general notes see page 43.

### 33 Loan Payment

### Water Supply

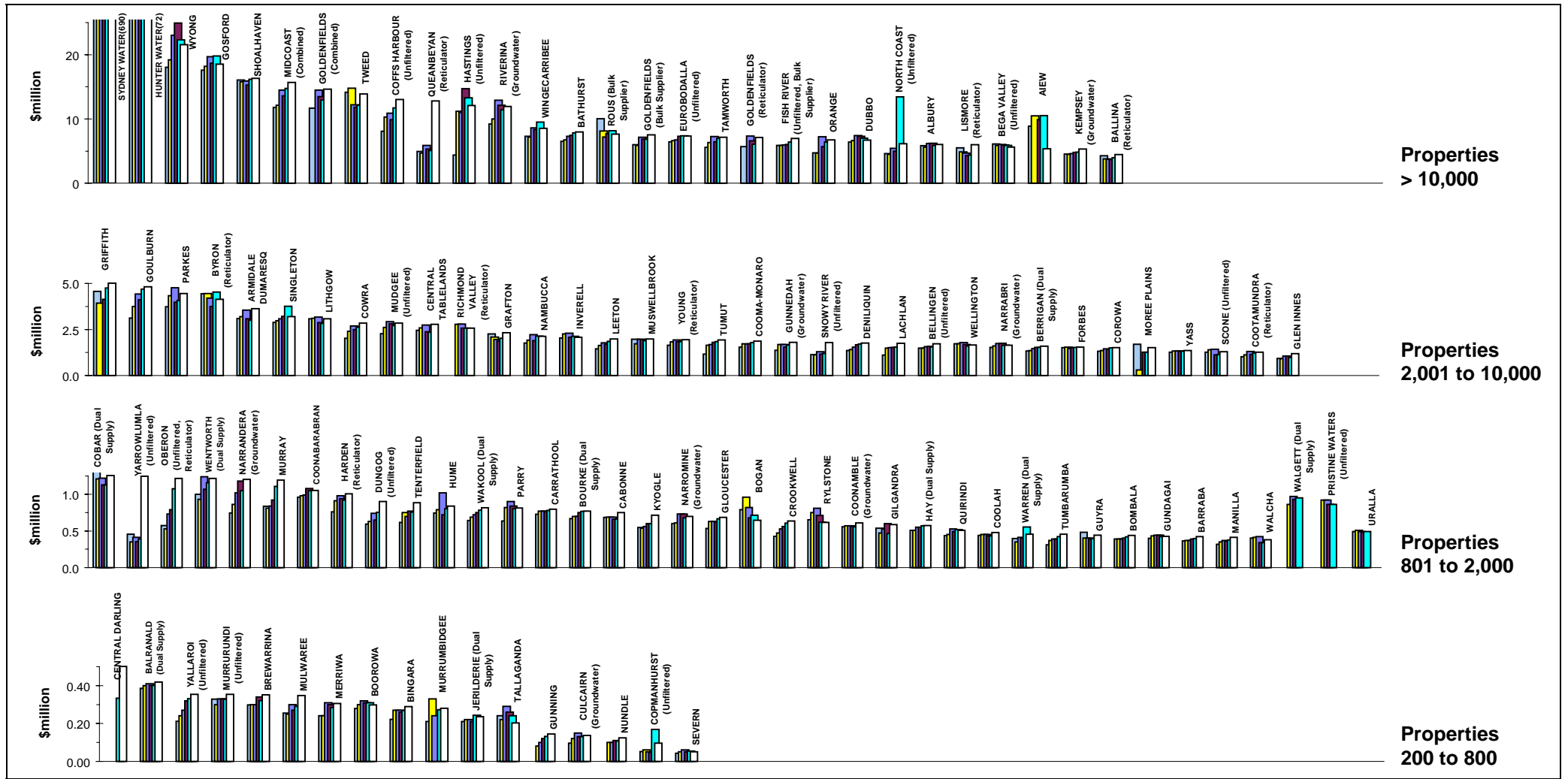


Parameter:  $\frac{\text{Repayment of Debt (W17)} + \text{Interest Expenses (W4a)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

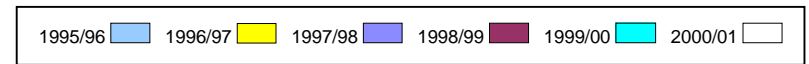


**Notes:**

1. This figure shows the 2000/01 ranked values of the water supply loan payment for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the water supply loan payments for the 31 councils shown *range* from about \$410 to \$0 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide median water supply loan payment is \$50 per connected property (refer to Table 1 – percentage of connected properties basis).
3. For general notes see page 43.



Parameter: [Total Revenues (W13) - Grants for Acquisition of Assets (W11a)] ÷ 1,000,000

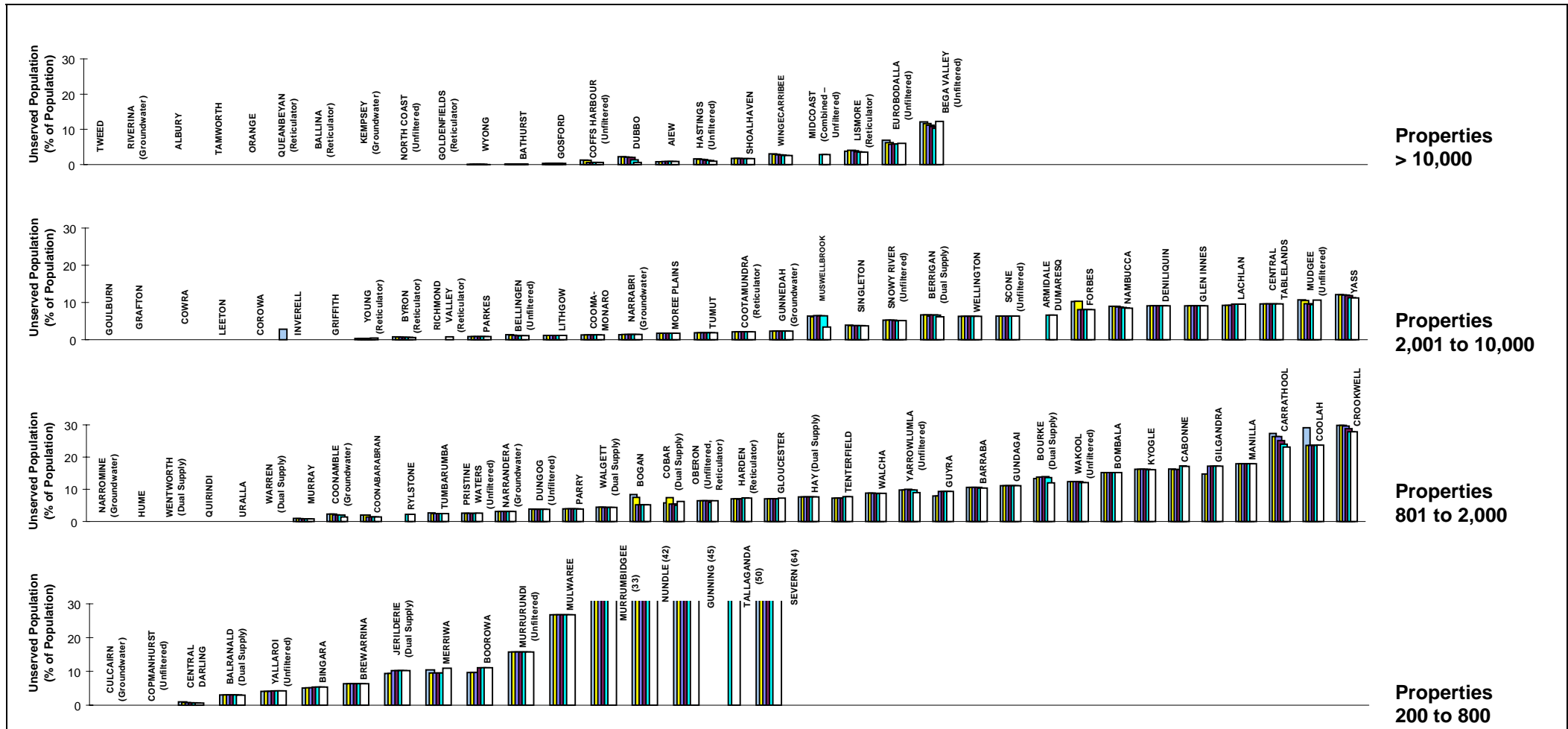


Notes:

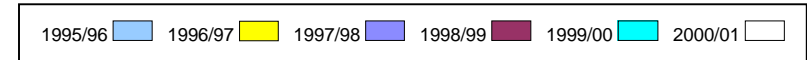
1. This figure shows the 2000/01 ranked values of the water supply turnover (ie. revenue less grants for capital works) for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the turnover for the 34 councils shown *ranges* from about \$15 m to \$1.2 m. Results for the previous 5 years are also shown in Jan 2001\$.
2. For general notes see page 43.

# 35 Urban Population without Water Supply

# Water Supply



**Parameter:**  $\frac{\text{Unserviced Urban Population in Council Area (Q7b)} \times 100}{\text{Population Served (Q1a)} + \text{Unserviced Population (Q7b)}}$

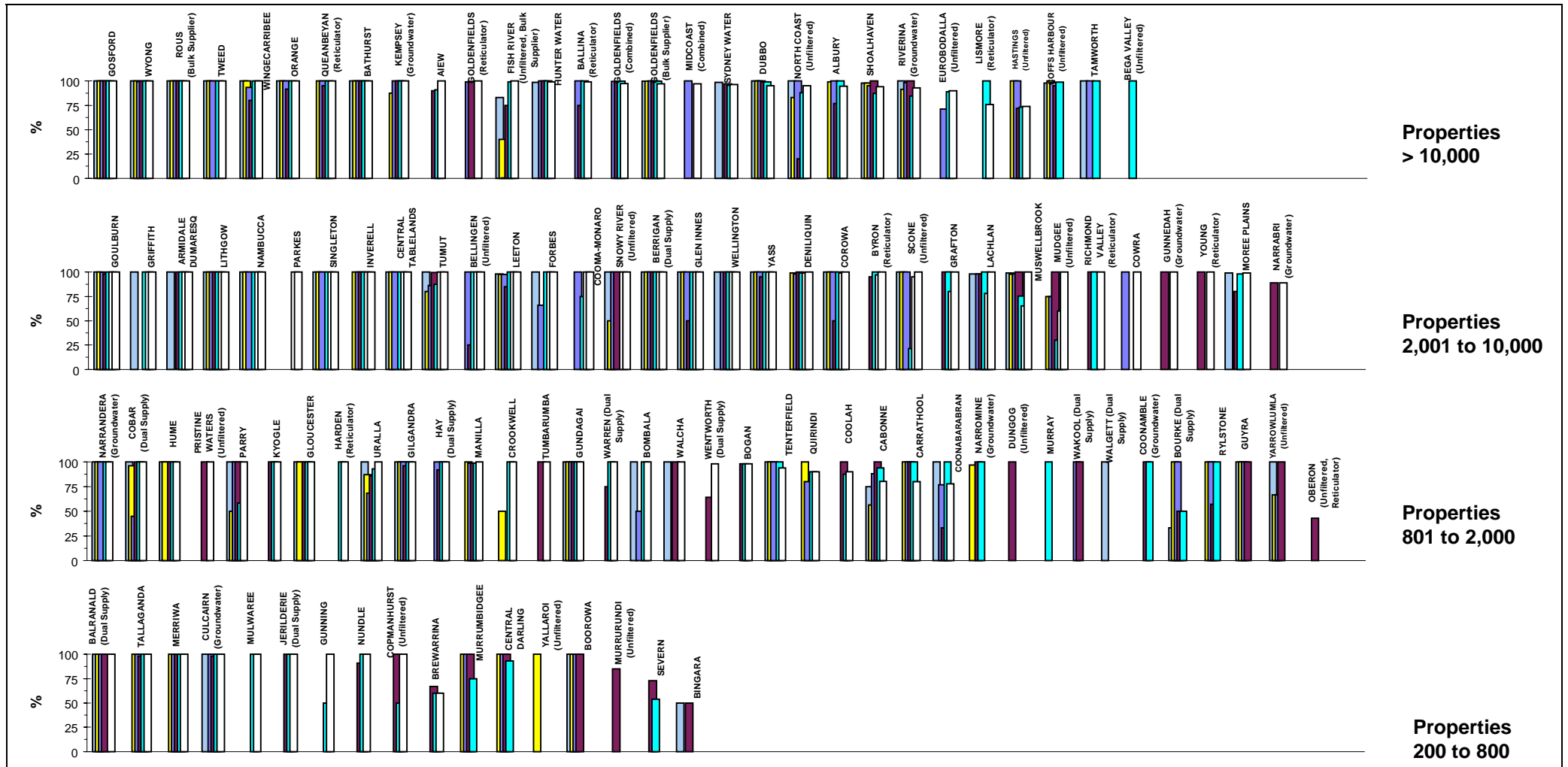


**Notes:**

- This figure shows 2000/01 ranked values of the percentage of urban population without a reticulated public water supply service for each council in 4 groups based on the number of connected properties served. *Each white bar represents one Council.* As an example, for the property range from 2,001 to 10,000, the percentage of urban population without a reticulated public water supply for the 35 councils shown *ranges* from about 0 to 12%. Results for the previous five years are also shown.
- The Statewide median urban population without a reticulated public water supply was 0.7 % based on 112 reporting councils (Table 1).
- 25% of councils had an urban population of at least 500 without a reticulated public water supply; 10% of councils had a population of at least 1000 without a reticulated water supply.
- The percentage of urban population without a reticulated public water supply for the median council was 4%.
- 80% of councils had over 90% of their urban population served by a reticulated public water supply. Overall, over 97% of the urban population in non-metropolitan NSW received a reticulated public water supply service.

# 36 Physical Water Quality Compliance

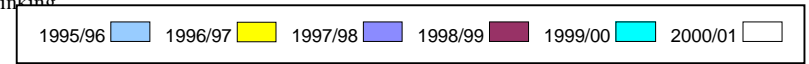
# Water Supply



**Parameter:** Percentage of distribution system water samples complying with physical criteria of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines (Q42a and Q42b).

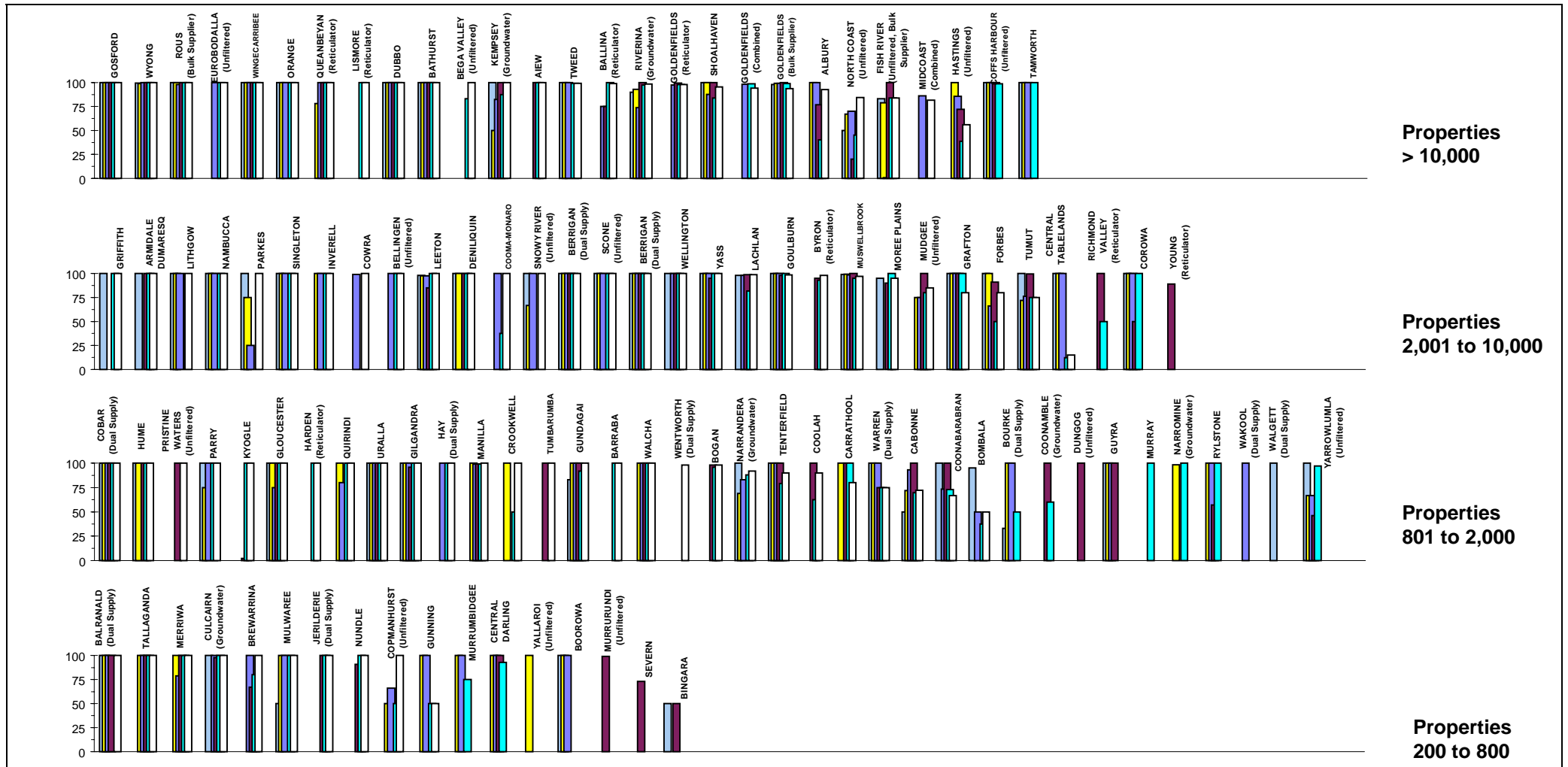
**Note:**

- This figure shows the 2000/01 ranked values of distribution system compliance with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for physical water quality for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the physical water quality compliance for the 27 councils shown **range** from about **100 to 60%**. Results for the previous 5 years are also shown.
- Results for 1998/99 and 1999/00 are also on the basis of the 1996 Guidelines. From 1995/96 to 1997/98, results are based on 1987 NHMRC/AWRC Drinking Water Quality Guidelines.
- For councils with more than one water treatment works, the reported compliance for 1998/99 to 2000/01 has been pro-rated on the basis of the number of samples tested at each treatment works. For 1995/96 to 1997/98, the compliance for each council's principal treatment works has been reported.
- The Statewide median physical water quality compliance is 100 percent (refer to Table 1 - percentage of connected properties basis).
- For general notes see page 43.



# 37 Chemical Water Quality Compliance

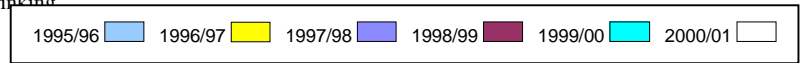
# Water Supply



**Parameter:** Percentage of distribution system water samples complying with chemical criteria of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines (Q42c and Q42d).

**Note:**

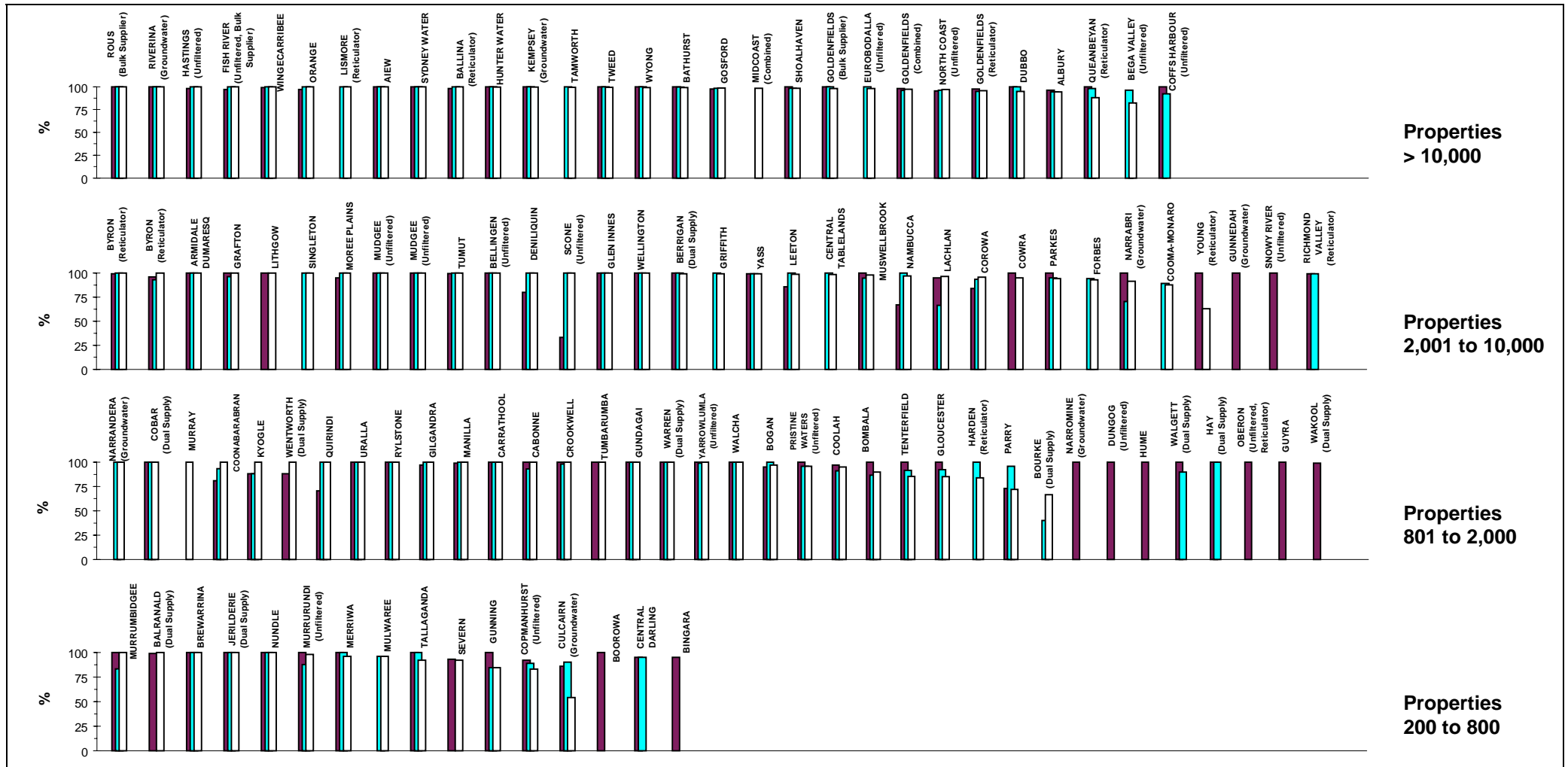
- This figure shows the 2000/01 ranked values of distribution system compliance with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for chemical water quality for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the chemical water quality compliance for the 28 councils shown *range* from about 100 to 15%. Results for the previous 5 years are also shown.
- Results for 1998/99 and 1999/00 are also on the basis of the 1996 Guidelines. From 1995/96 to 1997/98, results are based on 1987 NHMRC/AWRC Drinking Water Quality Guidelines.
- For councils with more than one water treatment works, the reported compliance for 1998/99 to 2000/01 has been pro-rated on the basis of the number of samples tested at each treatment works. For 1995/96 to 1997/98, the compliance for each council's principal treatment works has been reported.
- The Statewide median chemical water quality compliance is 100 percent (refer to Table 1 - percentage of connected properties basis).
- For general notes see page 43.



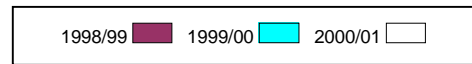


# 38 Faecal Coliforms Water Quality Compliance

# Water Supply



Parameter: Percentage of distribution system water samples complying with faecal coliform criteria of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines (Q42k and Q42l)



Notes:

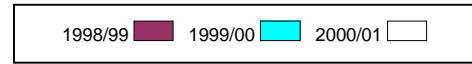
- This figure shows the 2000/01 ranked values of distribution system compliance with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for faecal coliform water quality for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, results for the 30 councils are shown. The 4 councils on the right did not report compliance for 2000/01. Results for the previous 2 years are also shown.
- Microbiological compliance covers both faecal coliforms and total coliforms. The health-related parameter is faecal coliforms – 98% of all samples tested contained no faecal coliforms. The detailed performance of each treatment works or chlorination station in non-metropolitan NSW is shown in Appendix D1.
- For councils with two or more treatment works, the reported compliance for 1998/99 to 2000/01 have been pro-rated on the basis of the number of samples tested at each treatment works.
- The Statewide median microbiological water quality compliance is 99% (refer to Table 1 – percentage of connected properties basis).
- For general notes see page 43.

# 39 Total Coliforms Water Quality Compliance

# Water Supply



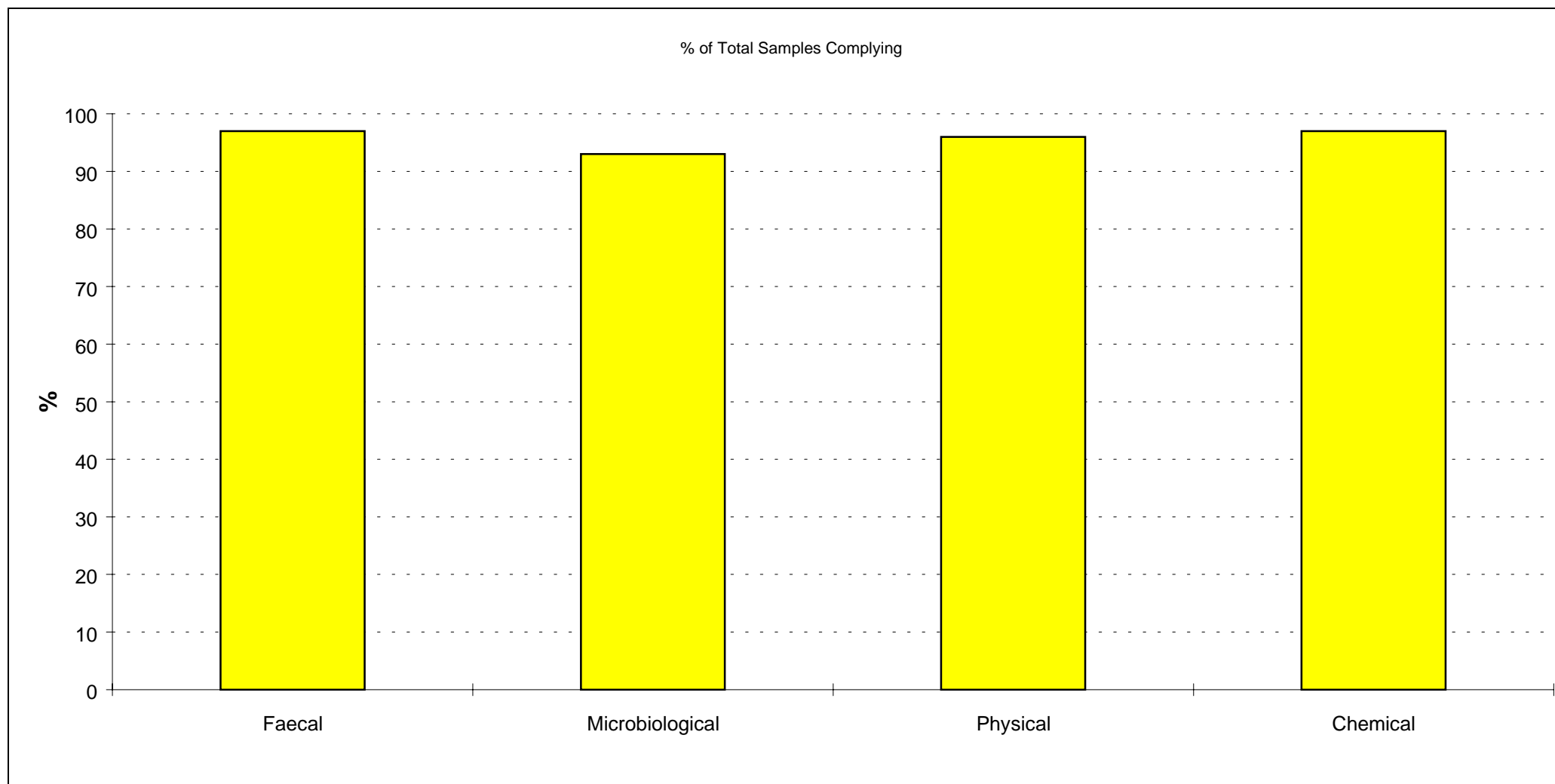
**Parameter:** Percentage of distribution system water samples complying with total coliforms criteria of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines (Q42m and Q42 n)



- Notes:**
- This figure shows the 2000/01 ranked values of distribution system compliance with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for total coliforms water quality for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, results for the 30 councils are shown. The 4 councils on the right did not report compliance for 2000/01. Results for the previous 2 years are also shown.
  - Microbiological compliance covers both faecal coliforms and total coliforms. The health-related parameter is faecal coliforms – 98% of all samples tested contained no faecal coliforms. The detailed performance of each treatment works or chlorination station in non-metropolitan NSW is shown in Appendix D1.
  - Results for 1998/99 and 1999/00 are also on the basis of the 1996 Guidelines.
  - For councils with two or more treatment works, the reported compliance for 1998/99 to 2000/01 have been pro-rated on the basis of the number of samples tested at each treatment works.
  - The Statewide median microbiological water quality compliance is 99% (refer to Table 1 – percentage of connected properties basis).
  - For general notes see page 43.

## 40 Compliance with 1996 Australian Drinking Water Guidelines

## Water Supply



### Comments:

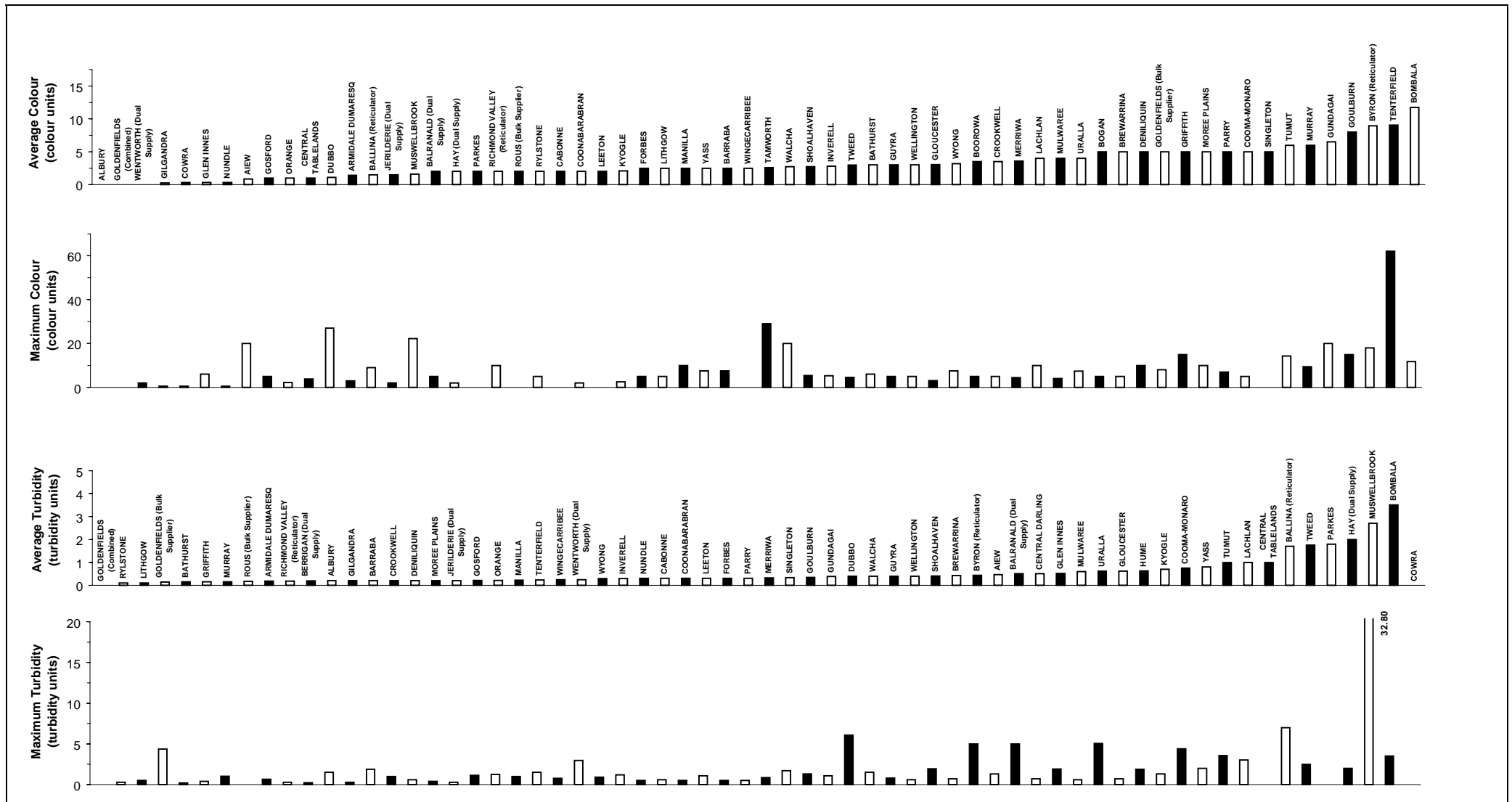
1. **Faecal Coliform Water Quality Guidelines (health related)** – 97% of all samples tested for non-metropolitan NSW and 57% of councils complied with these guidelines for contamination by faecal coliforms.
2. **Microbiological Water Quality Guidelines (1996)** - 93% of all samples tested for non-metropolitan NSW and 43% of councils complied with these guidelines for contamination by faecal coliforms or total coliforms.
3. **Physical Water Quality Guidelines (1996)** - 96% of all samples tested for non-metropolitan NSW and 50% of councils complied with these guidelines.
4. **Chemical Water Quality Guidelines (1996)** – 97% of all samples tested for non-metropolitan NSW and 50% of councils complied with these guidelines.
5. 17% of councils did not report on microbiological, physical and chemical water quality compliance. All councils, including those responsible only for reticulation, should carry out the necessary water quality sampling and report thereon in future.
6. For general notes see page 43.

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# 41 Turbidity and Colour for Filtered Supplies



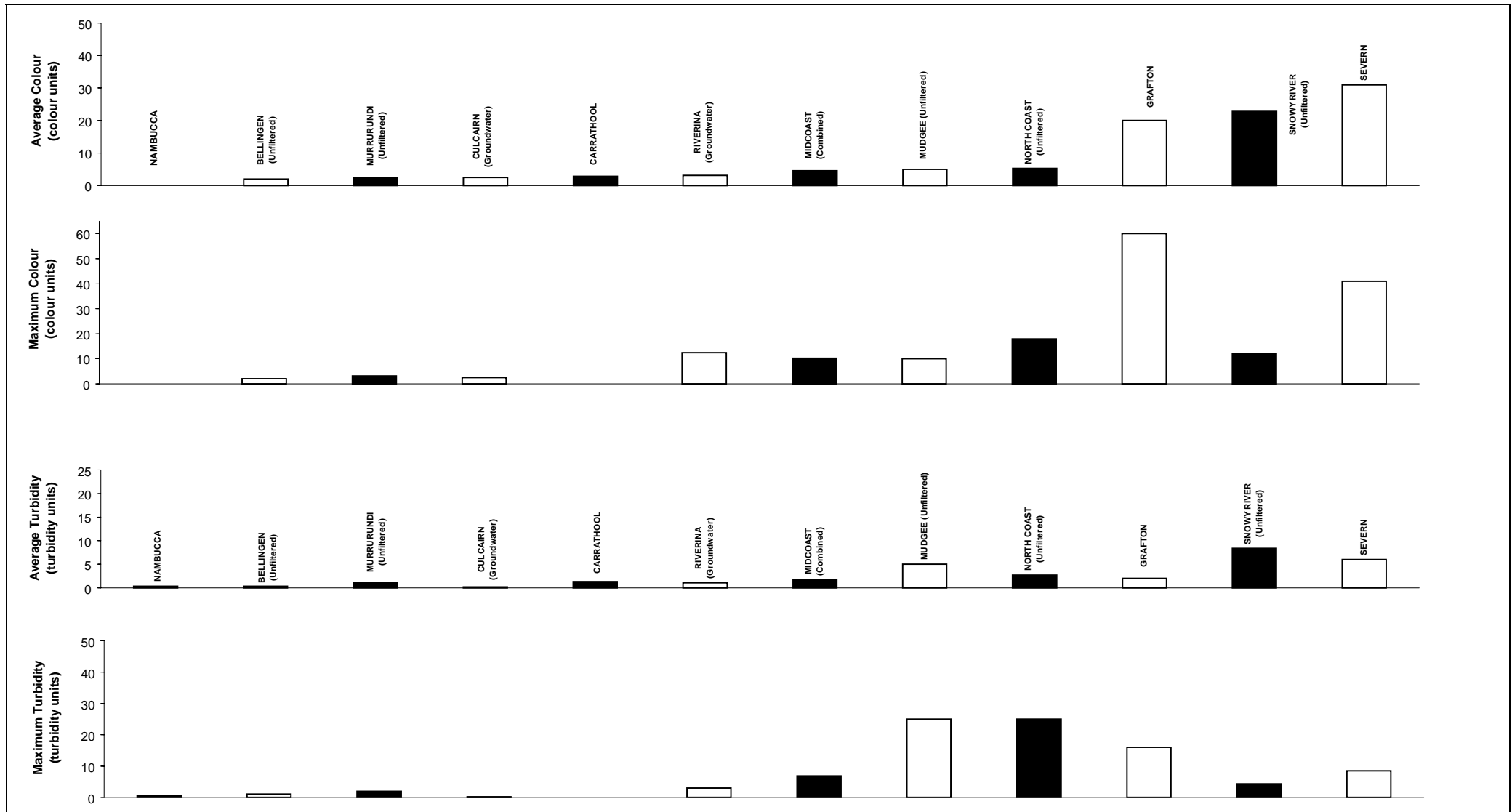
Parameter: Treated Water Average Turbidity (Q40d), Maximum Turbidity (Q40c), Treated Water Average Colour (Q39d), Maximum Colour (Q39c).

Notes:

1. Only councils with at least filtration and disinfection for over 50% of their supply have been considered. The reported results are the weighted average for each council's water supply. A number of councils have some unfiltered supplies (<50% of their total supply) which increases the reported colour and turbidity values (Appendix D1).
2. 95% of the 60 reporting councils had average turbidity not exceeding 2 turbidity units. 83% of these councils had average turbidity not exceeding 1 turbidity unit.
3. 95% of the 58 reporting councils had average colour not exceeding 8 colour units. 90% of these councils had average colour not exceeding 5 colour units.
4. 5% of councils were unable to report on these items. All councils should carry out the necessary sampling and report thereon in future.

## 42 Turbidity and Colour for Unfiltered Supplies

## Water Supply



**Parameter:** Treated Water Average Turbidity (Q40f), Maximum Turbidity (Q40f), Treated Water Average Colour (Q39f), Maximum Colour (Q39d).

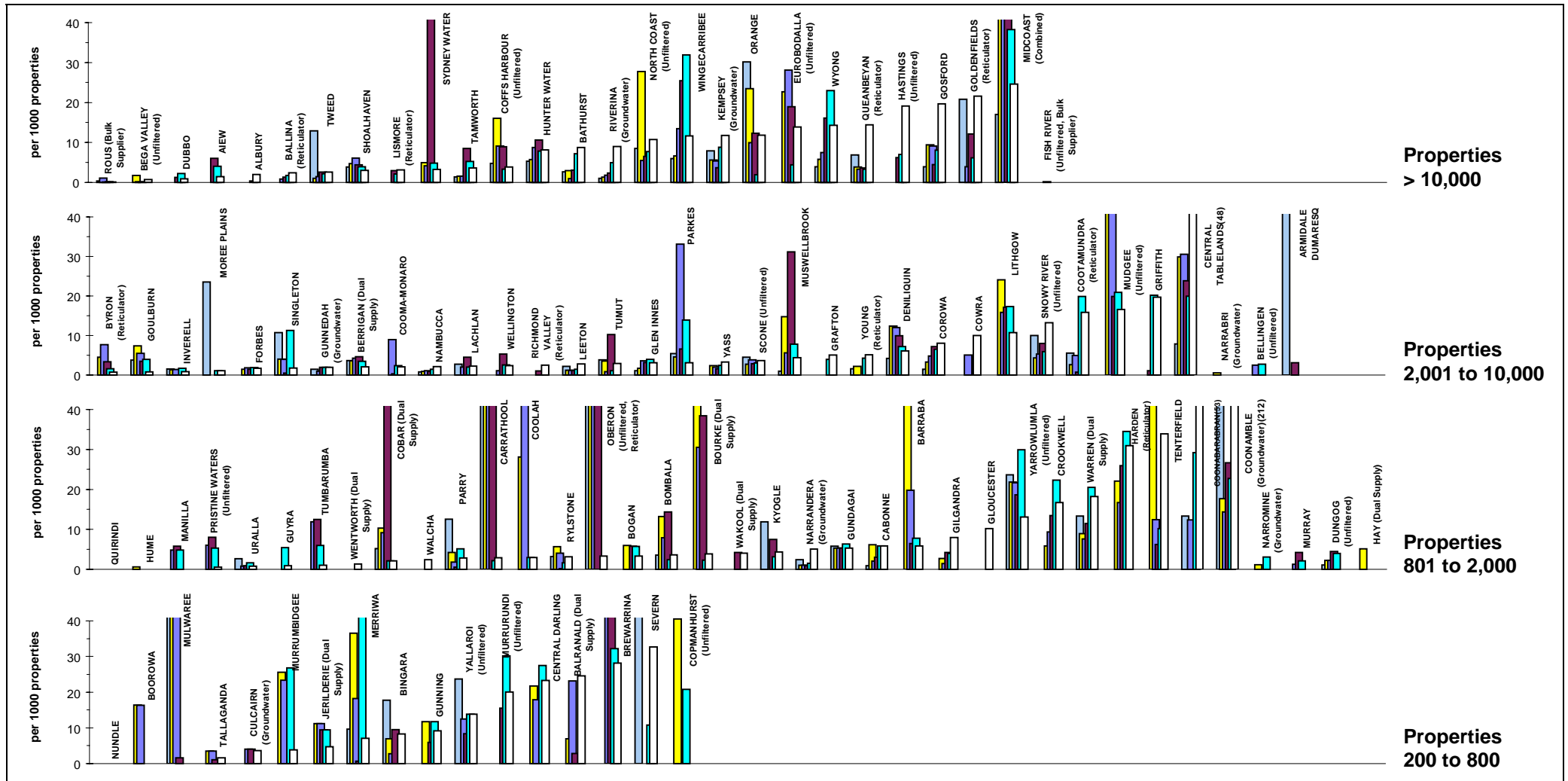
**Notes:**

1. Only unfiltered reporting supplies have been considered.
2. All of the 12 reporting councils had average colour not exceeding 3 colour units. 75% of these councils had average colour not exceeding 5 colour units.
3. All of the 12 reporting councils had average turbidity not exceeding 8 turbidity units. 75% of these councils had average turbidity not exceeding 3 turbidity units.
4. For general notes see page 43.

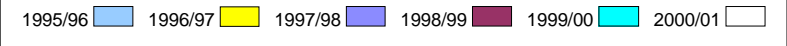


# 43 Water Quality Complaints

# Water Supply



Parameter:  $\frac{\text{No. of Water Quality Complaints (Q19)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

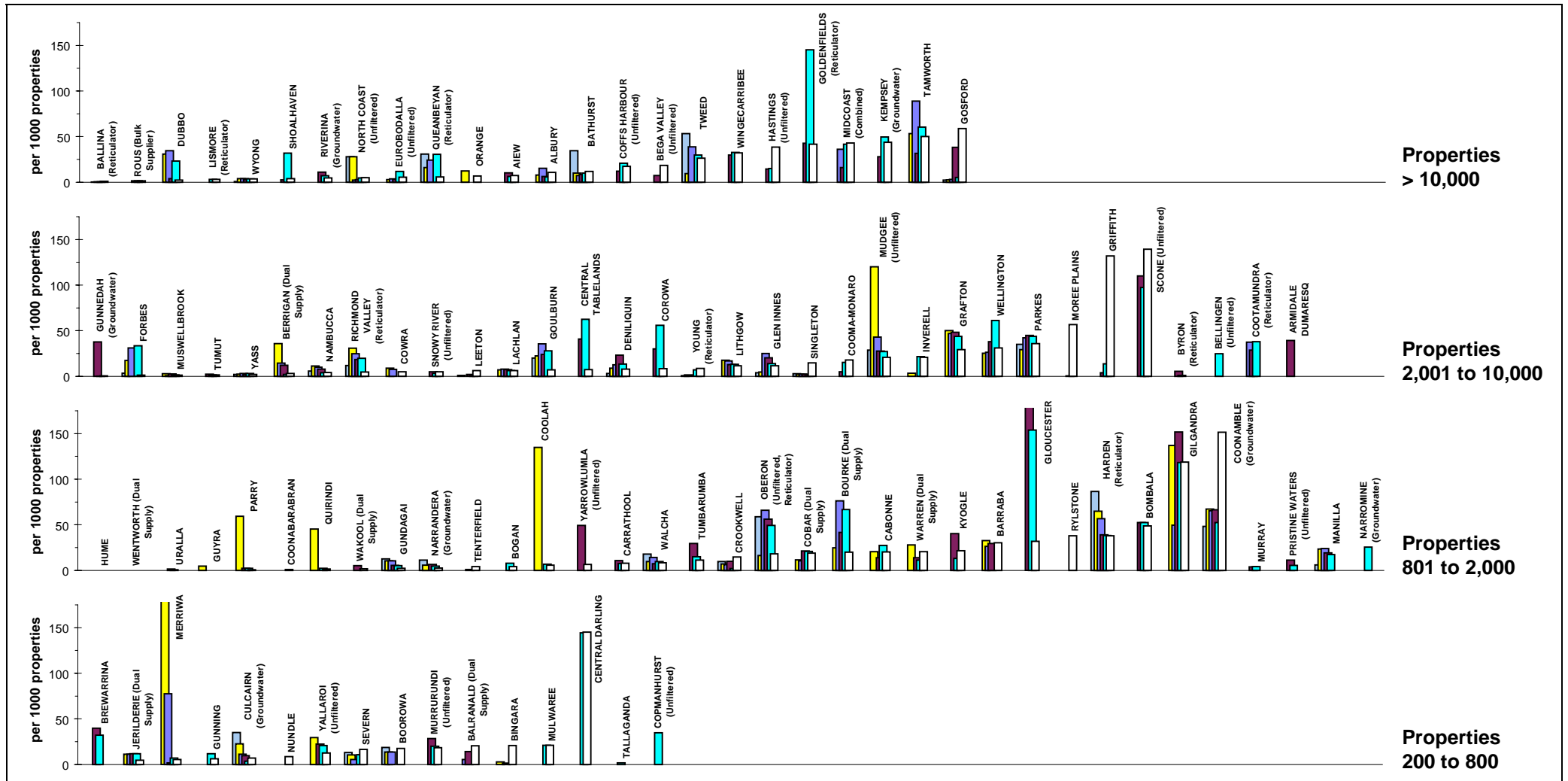


### Notes:

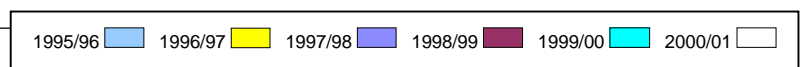
- This figure shows the 2000/01 ranked values of the number of water quality complaints per 1000 connected properties for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the water quality complaints for the 31 councils shown **range** from about **1 to 48** per 1000 connected properties. Results for the previous 5 years are also shown.
- The Statewide median number of water quality complaints is 8 per 1000 connected properties (refer to Table 1 – percentage of connected properties basis).
- For general notes see page 43.

# 44 Water Service Complaints

# Water Supply



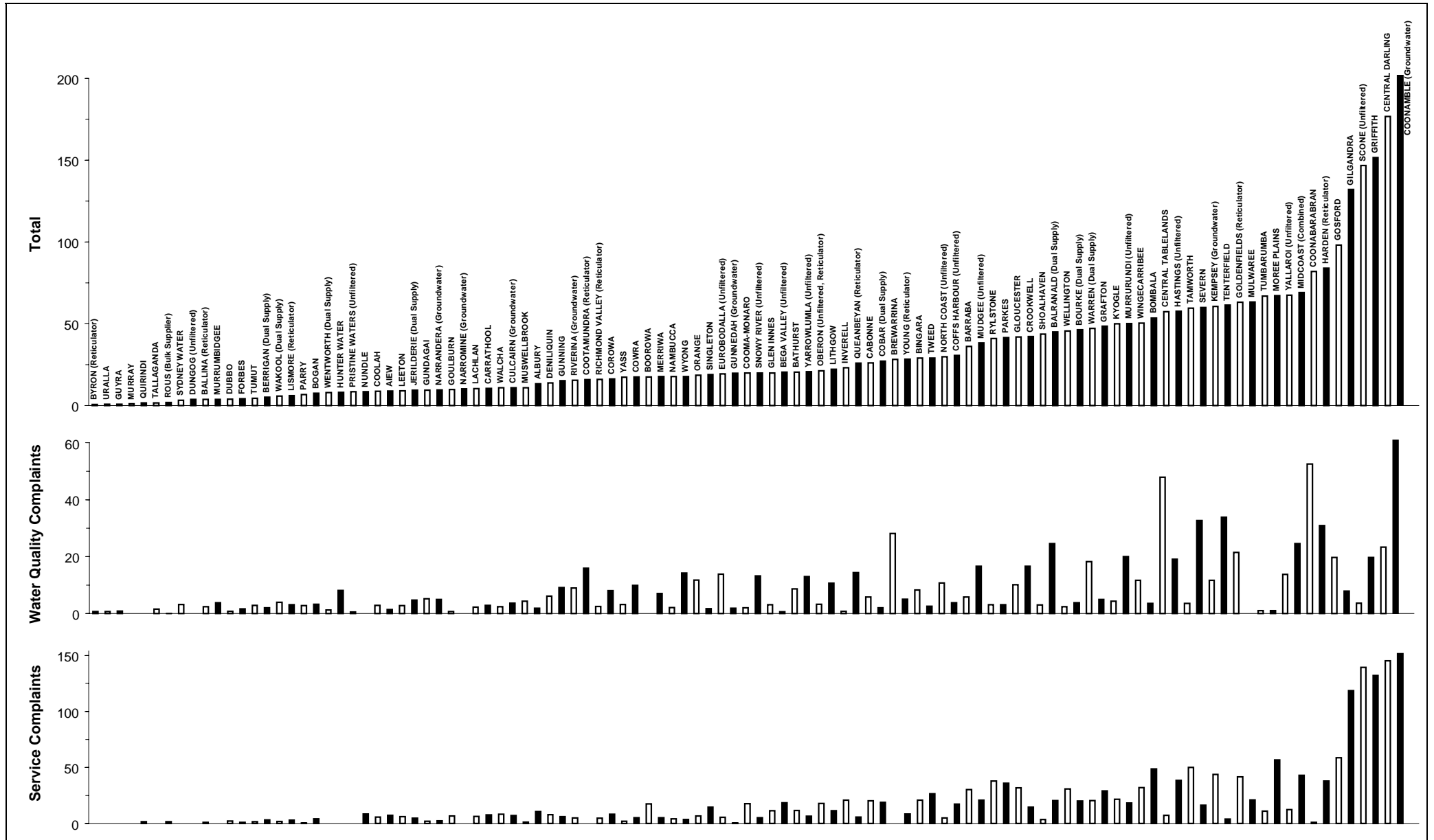
Parameter:  $\frac{\text{No. of Water Service Complaints (Q20)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

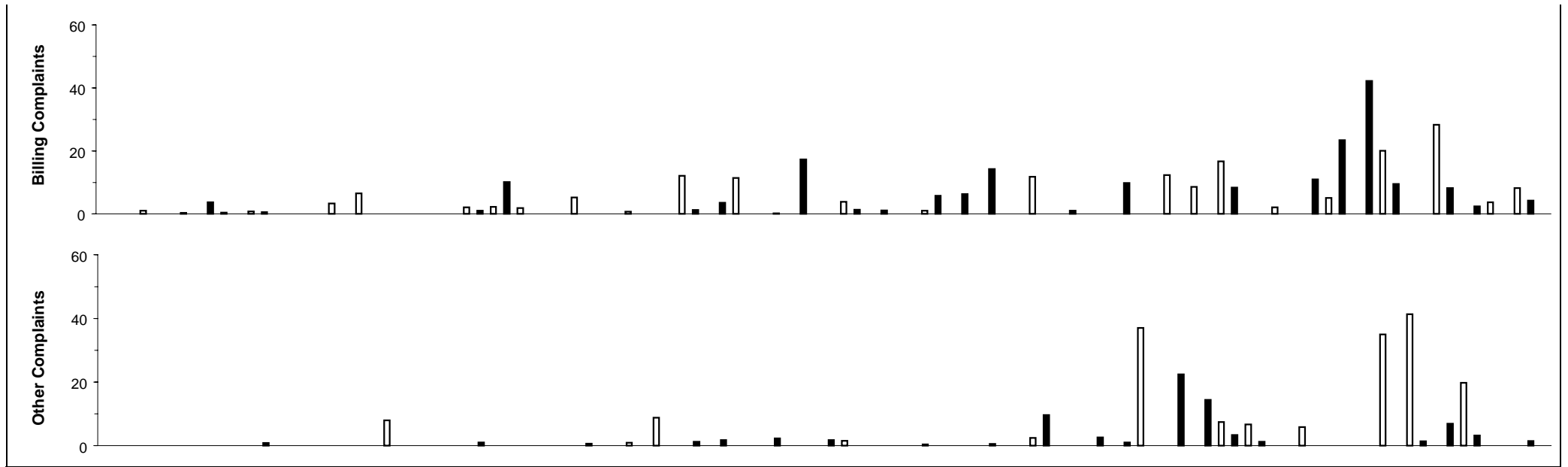


- Notes:
- This figure shows the 2000/01 ranked values of the number of service complaints per 1000 properties for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the service complaints for the 29 councils shown *range* from about *0 to 140* per 1000 connected properties. Results for the previous 5 years are also shown.
  - The Statewide median number of service complaints is 9 per 1000 connected properties (refer to Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

# 45 Total Complaints (per 1000 properties)

# Water Supply



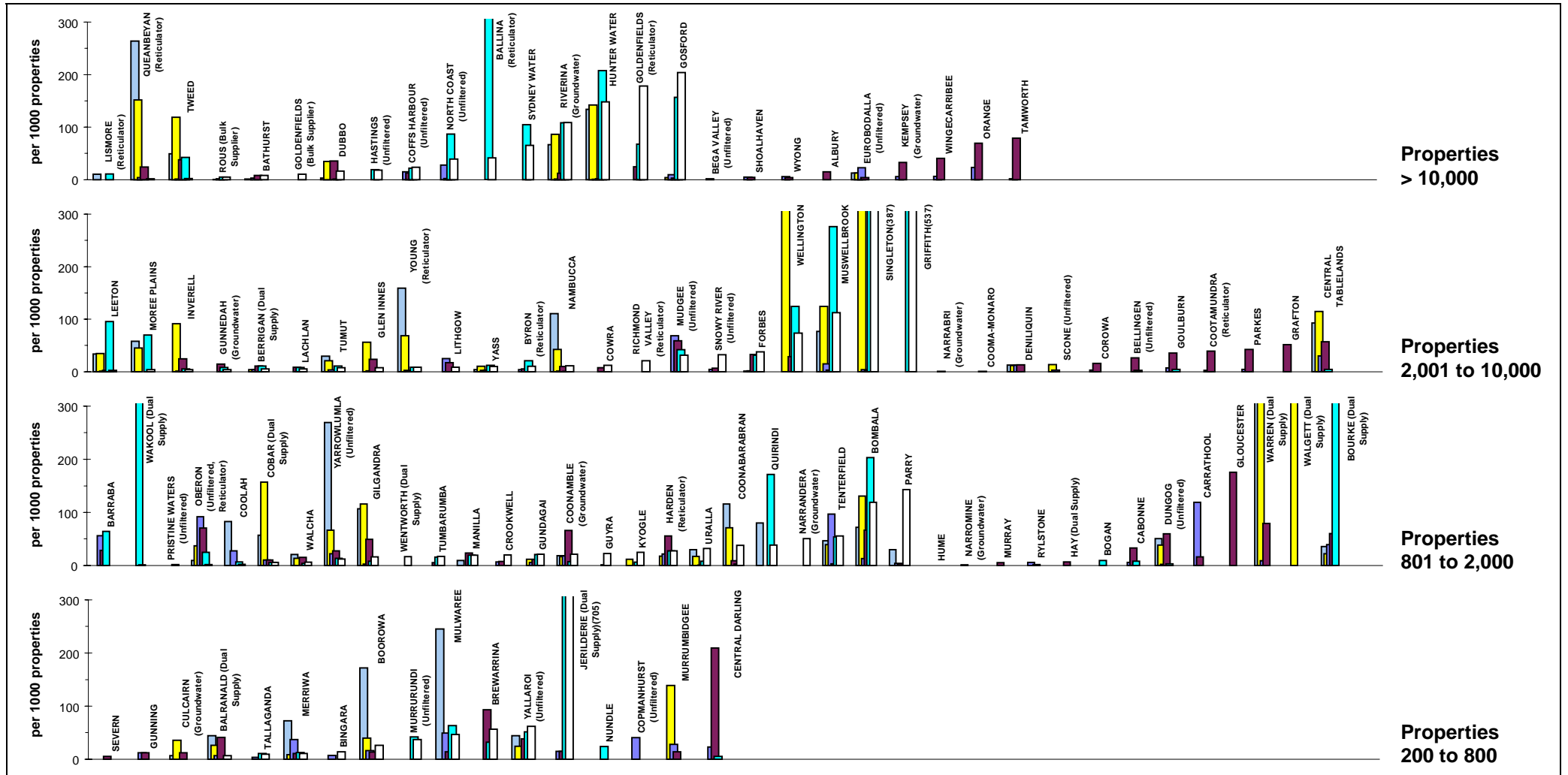


- Parameter:** Total No. of Complaints [(Q19a) + (Q20a) + (Q22) + (Q23)] x 1000  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment
- Parameter:** No. of Water Quality Complaints Reported (Q19a)  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment
- Parameter:** No. of Water Service Complaints Reported (Q20a)  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment
- Parameter:** No. of Billings Complaints Reported (Q22)  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment
- Parameter:** No. of Other Complaints Reported (Q23)  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

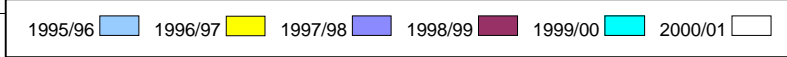
**Note:**  
 1. For general notes see page 43.

# 46 Customer Interruption Frequency

# Water Supply



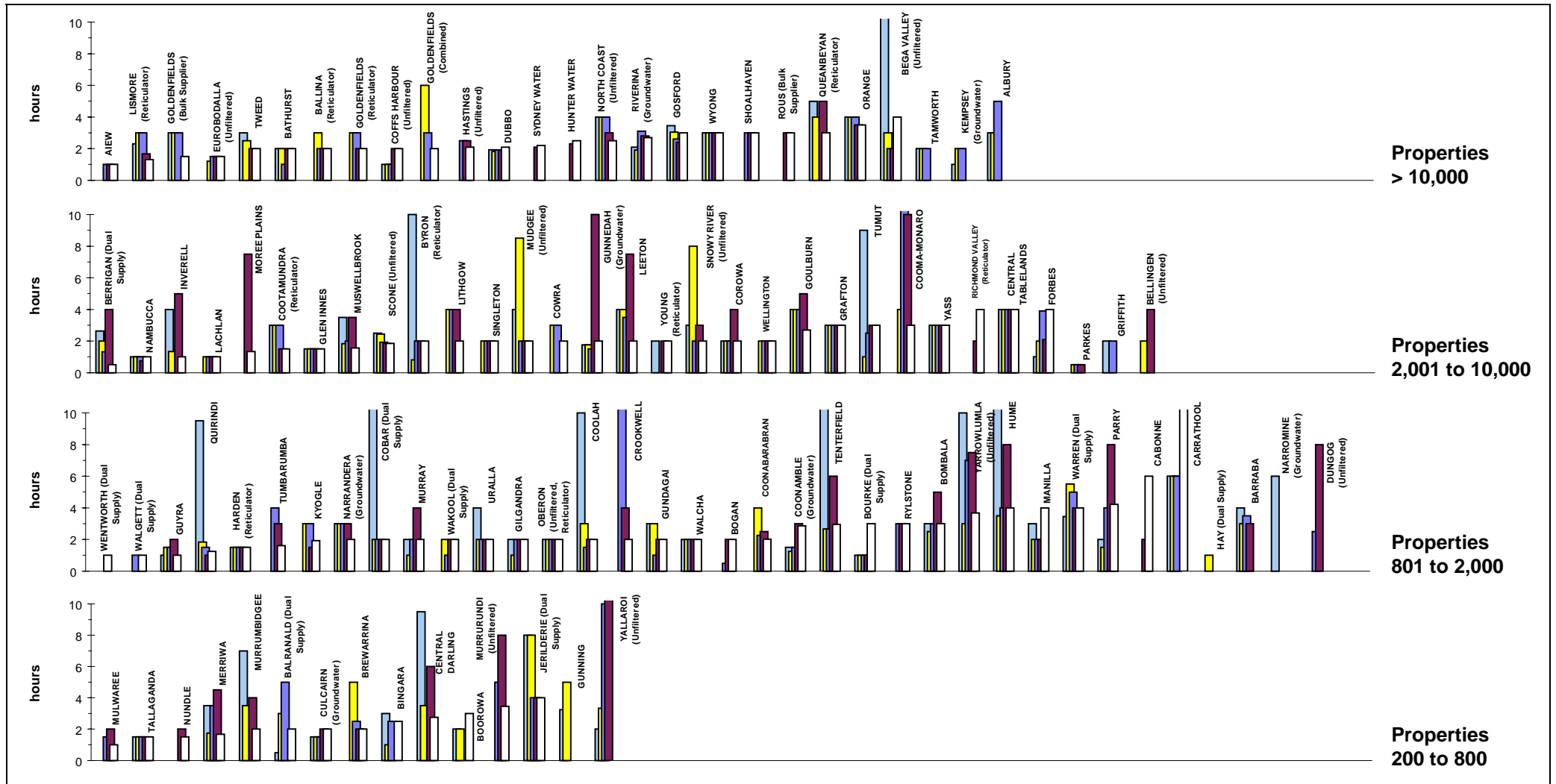
**Parameter:**  $\frac{\text{No. of Properties Affected by an Unplanned Interruption to Supply (Q25a)} \times 1000}{(\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}) \times \text{No. of Connected Residential Properties per Assessment}}$



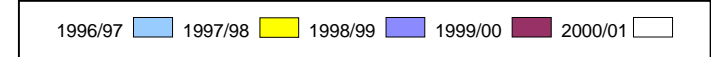
- Notes:**
- This figure shows the 2000/01 ranked values of customer interruption frequency per 1000 properties for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the interruption frequencies for the 22 councils shown *range* from 3 to 525. Results for the previous 5 years are also shown.
  - The Statewide median customer interruption frequency is 20 (refer to Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

# 47 Average Duration of Interruptions

# Water Supply



**Parameter:** Average Time Taken to Restore an Interrupted Supply (Q26) in hours

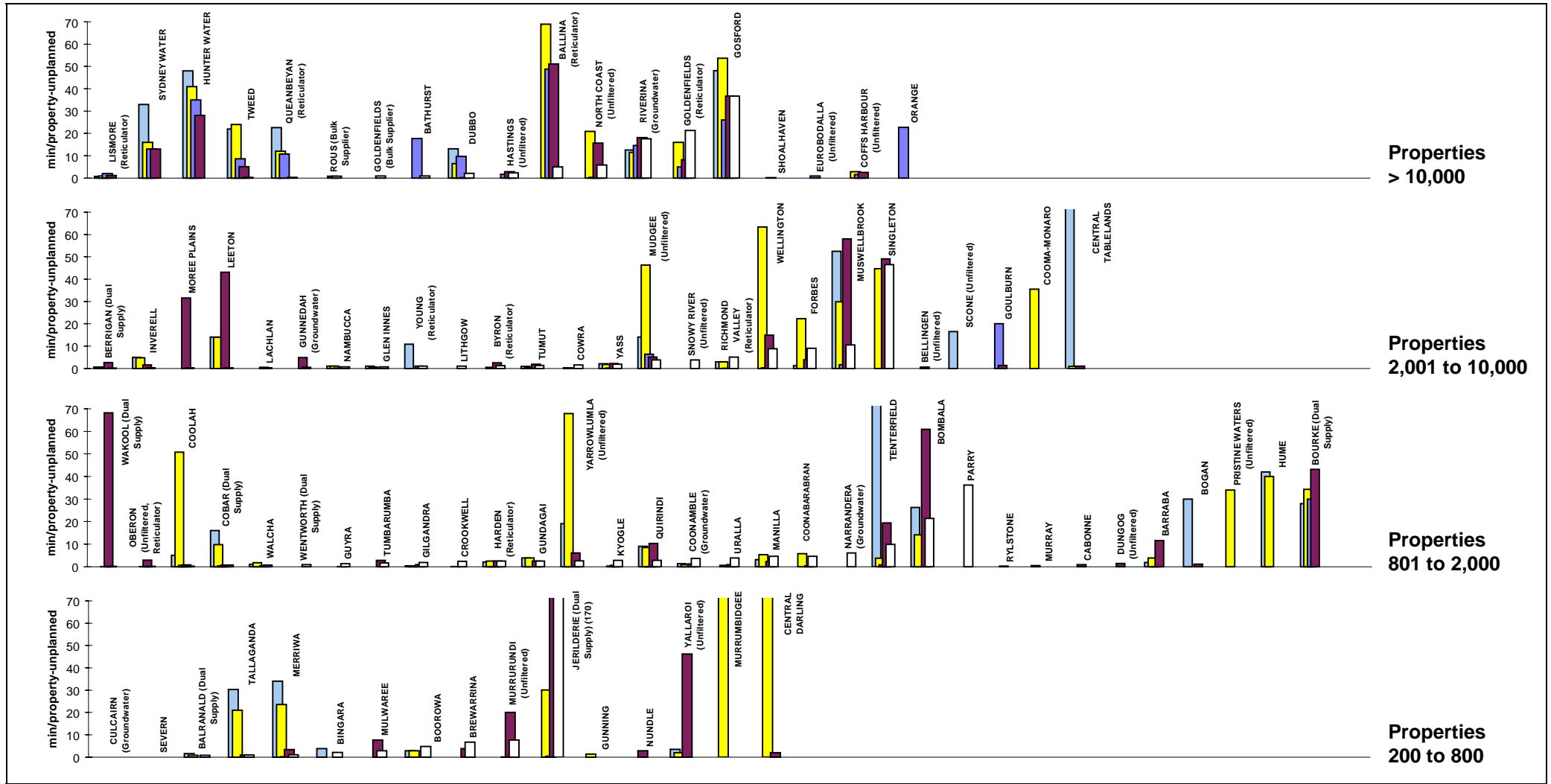


**Notes:**

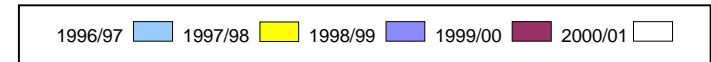
1. This figure shows the 2000/01 ranked values of the average duration of interruptions for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the average duration of interruptions for the 28 councils shown **ranges** from about **0.5 to 4** hours. Results for the previous 4 years are also shown.
2. The Statewide median average duration of interruptions is 2 hours (refer to Table 1 - percentage of connected properties basis).
3. For general notes see page 43.

# 48 Average Customer Outage Time

# Water Supply



**Parameter:**  $\frac{\text{Unplanned Interruption to Supply (Q25)} \times \text{Average Time taken to Restore an Interrupted Supply} \times 60}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

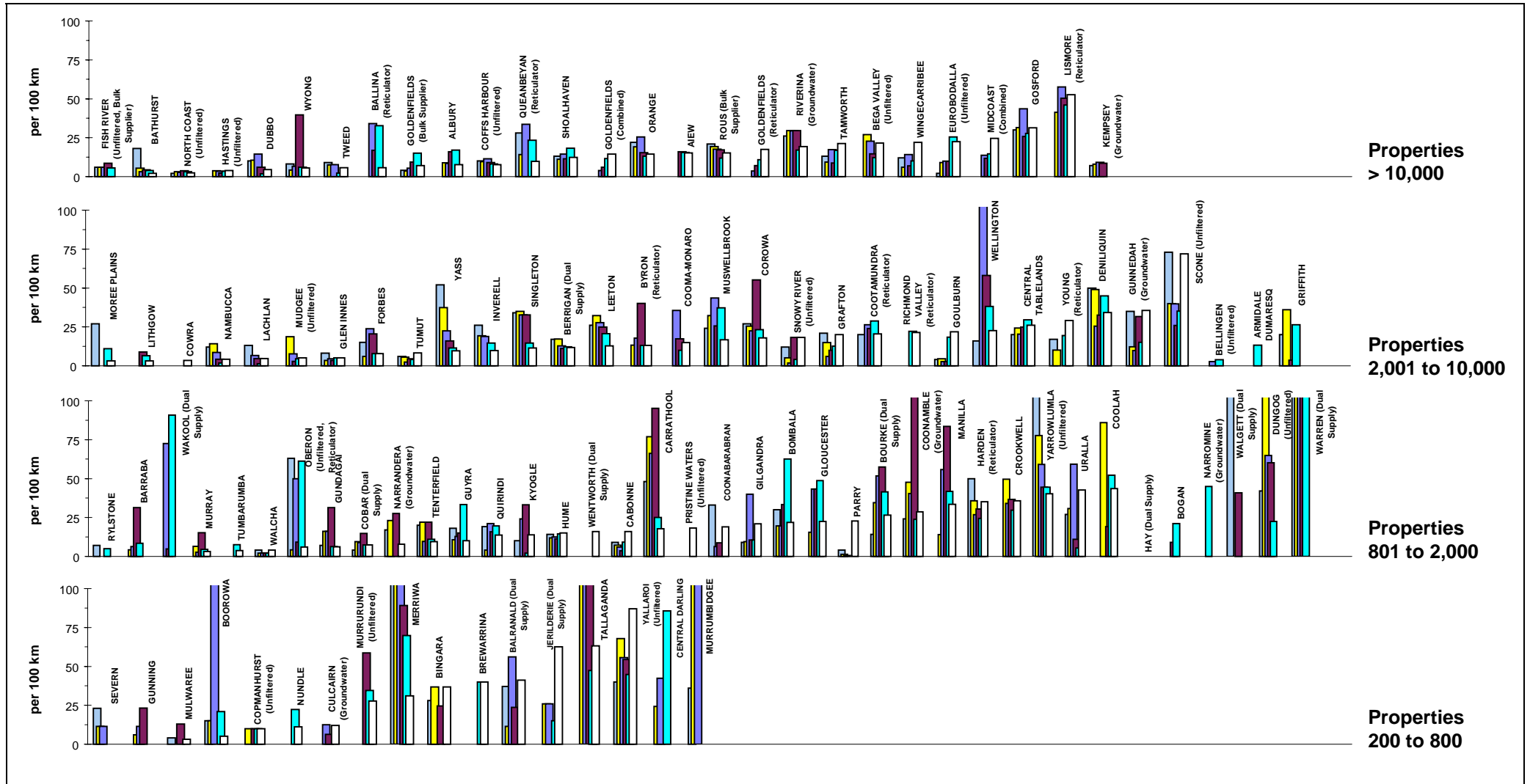


### Notes:

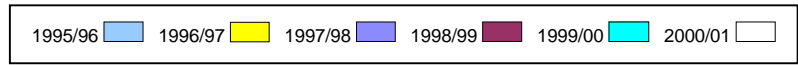
- This figure shows the 2000/01 ranked values of the average customer outage time per property (unplanned) for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the average customer outage times for the 21 councils shown **ranges** from about **0 to 45 minutes**. Results for the previous 4 years are also shown.
- The Statewide median average customer outage time is 2 minutes (refer to Table 1 - percentage of connected properties basis).
- For general notes see page 43.

# 49 Number of Water Main Breaks

# Water Supply



Parameter:  $\frac{\text{No. of Pipeline Breaks (Q28a)} \times 100}{\text{Length of Distribution and Trunk Mains (Q10c)}}$

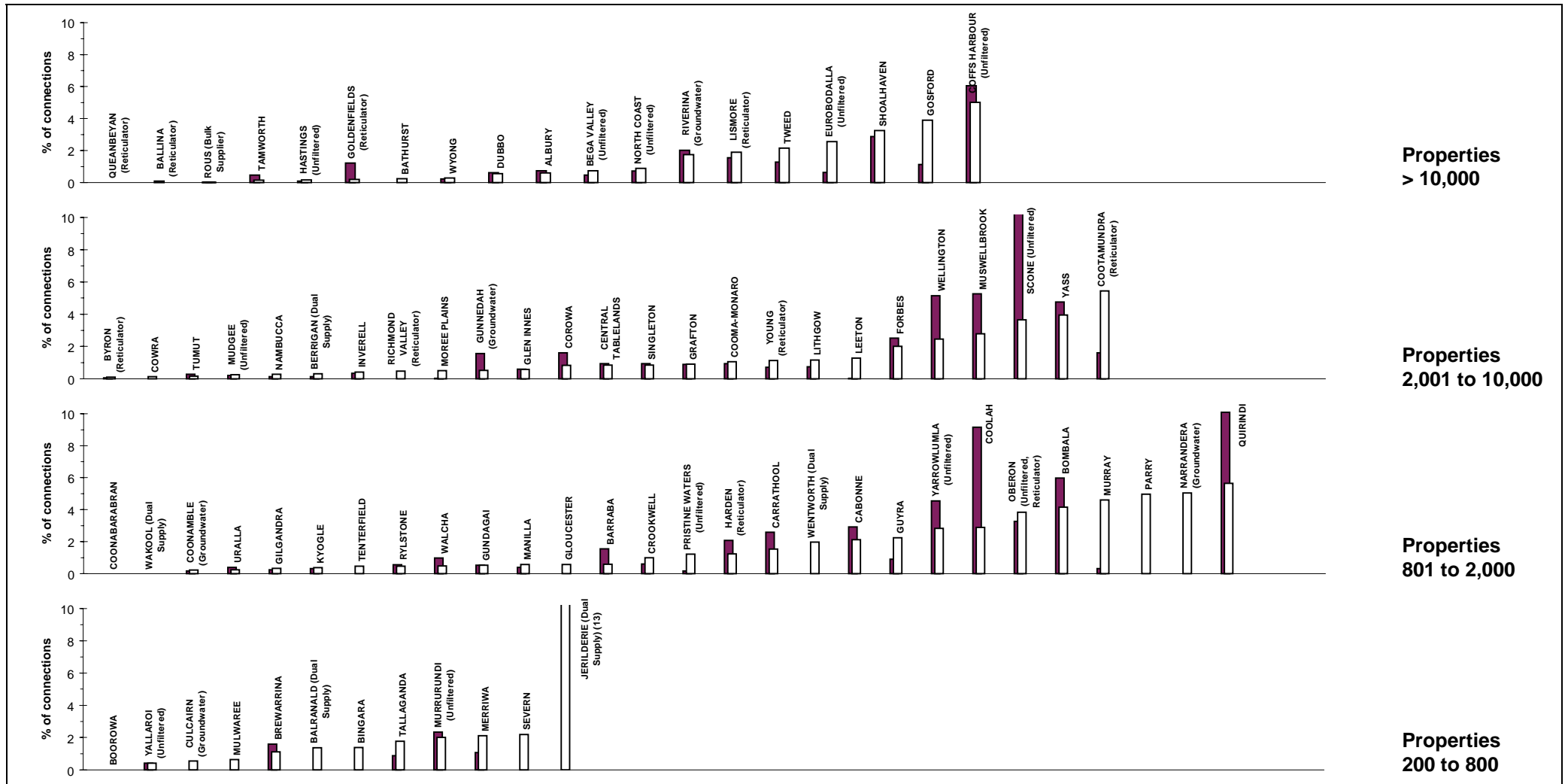


- Note:
1. This figure shows the 2000/01 ranked values for water supply main breaks for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the number of main breaks for the 29 councils shown **range** from **3 to 72** breaks per 100 km of water mains. Results for the previous 5 years are also shown.
  2. The Statewide median number of water supply main breaks is 18 per 100km of water main (refer to Table 1 – percentage of connected properties basis).
  3. For general notes see page 43.

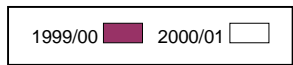


# 50 Service Connection Failures

# Water Supply



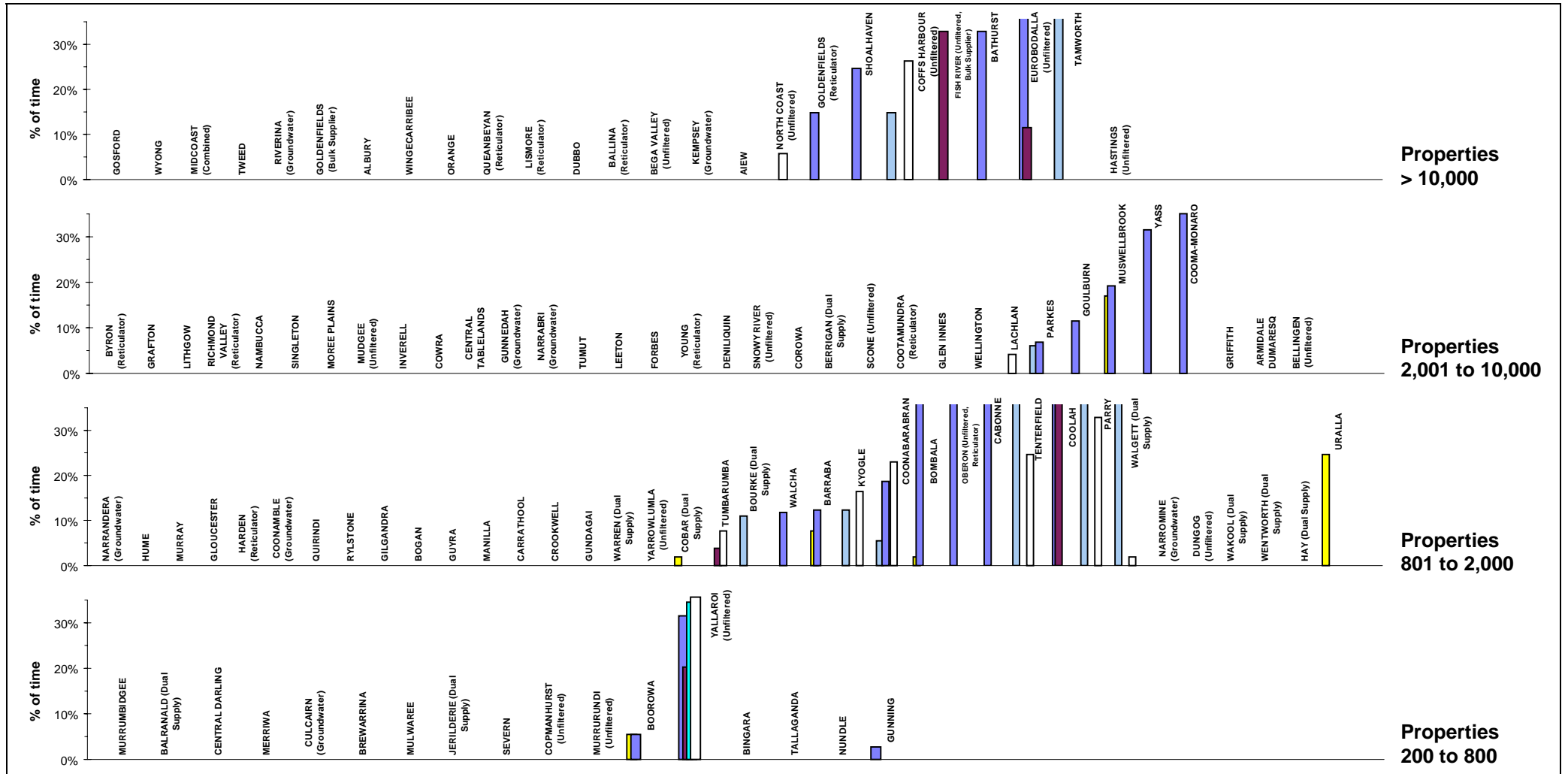
Parameter: 
$$\frac{\text{No. of Service Connections Failures (Q28b)} \times 100}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$



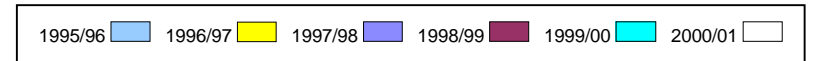
- Note:
- This figure shows the 2000/01 ranked values for water supply service connection failures for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the number of service connection failures for the 25 councils shown **range** from about **Nil to 5.5%**. Results for the previous year are also shown.
  - For general notes see page 43.

# 51 Drought Water Restrictions

# Water Supply

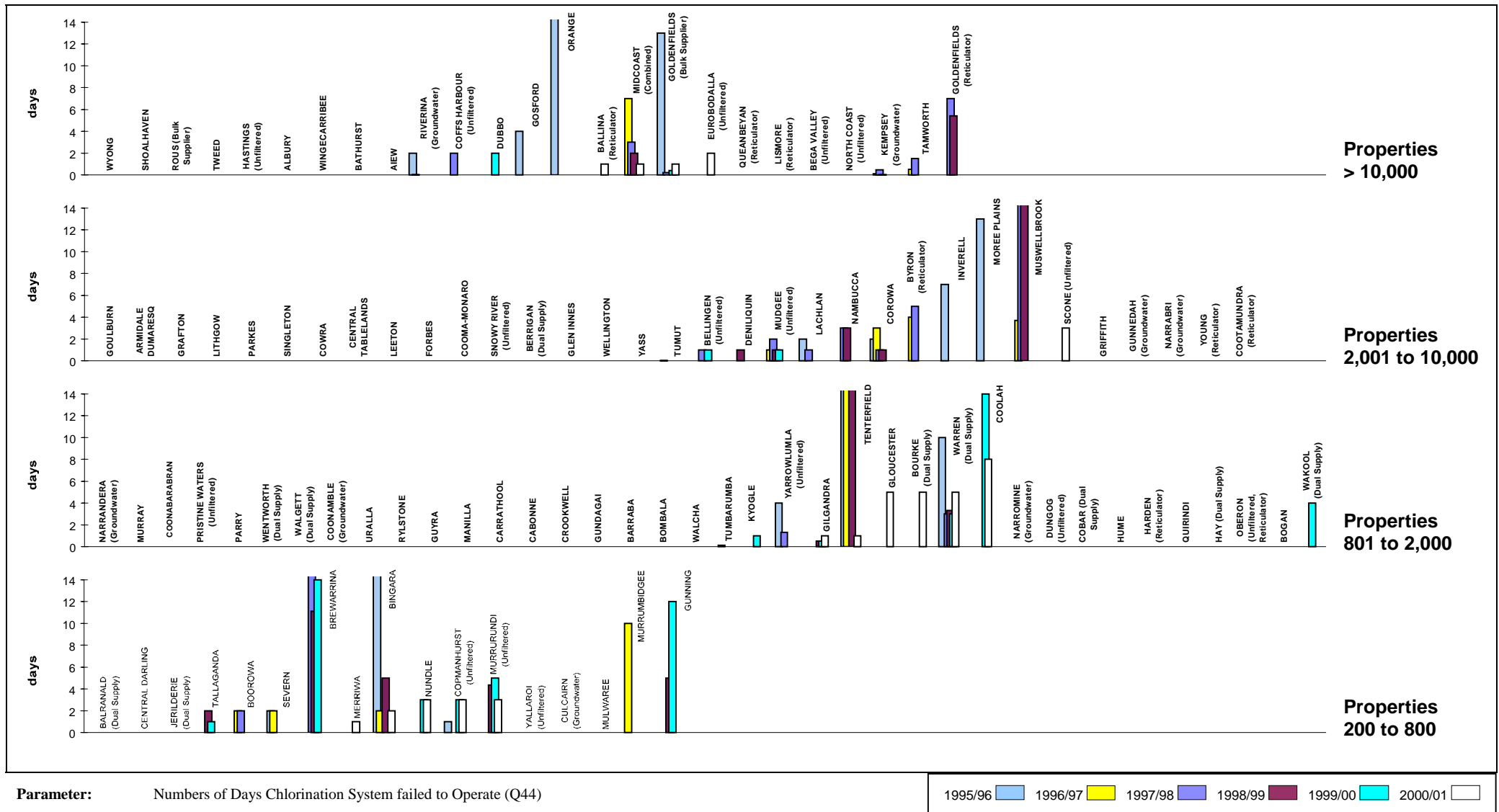


Parameter: No. of Days of Water Restrictions Due to Drought (Q27) x 100  
356 Days

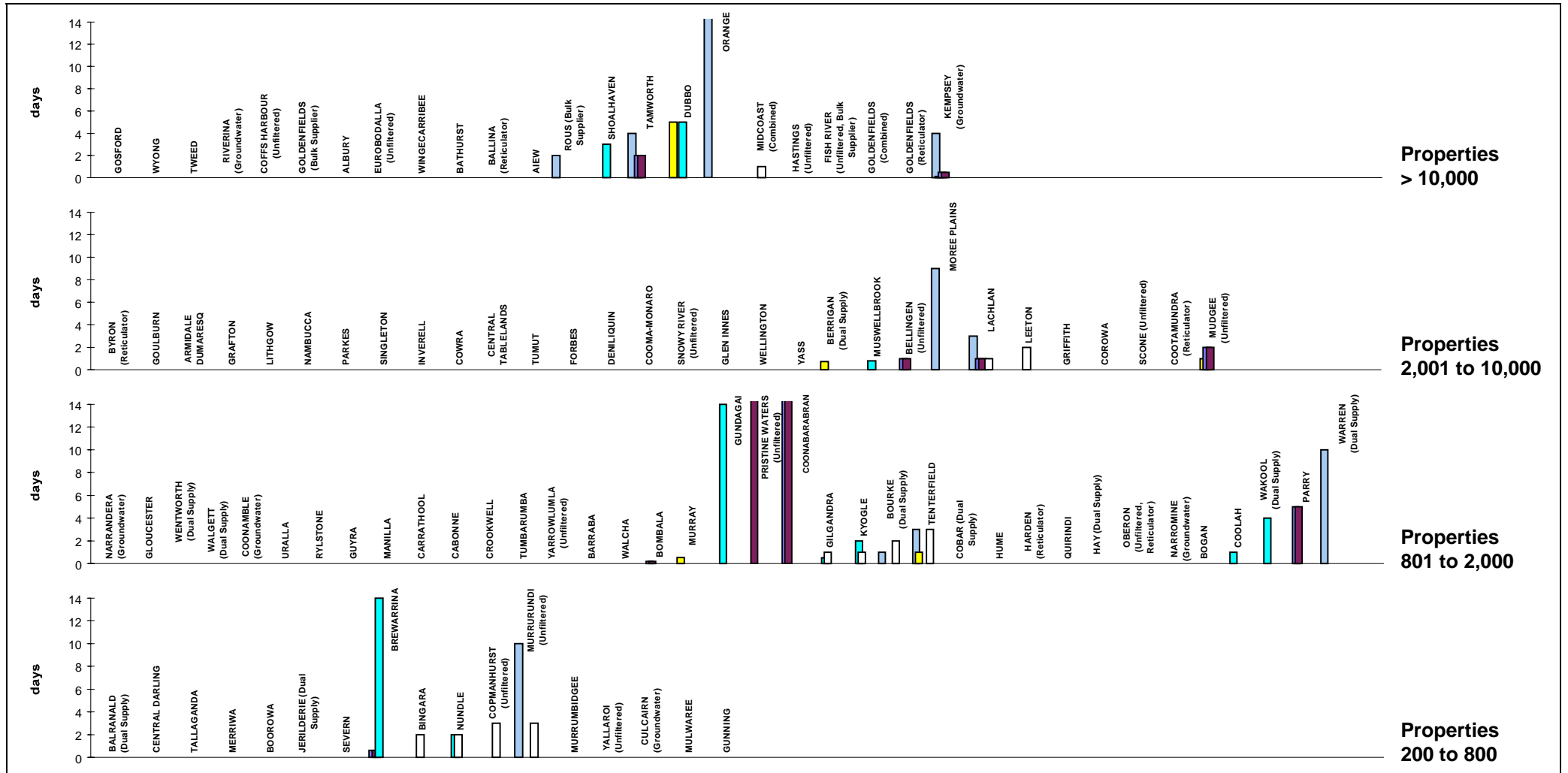


**Notes:**

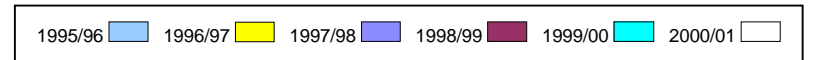
- This figure shows the 2000/01 ranked values of water restrictions due to drought for each council in 4 groups based on the number of connected properties served. **Each bar white represents one council.** As an example, for the property range from 2,001 to 10,000, only 1 of the 26 councils shown reported water restrictions. The 8 councils on the right did not report on this item. Results for the previous 5 years are also shown.
- The Statewide median water restrictions is 0% (refer to Table 1 - percentage of connected properties basis).
- For general notes see page 43.



- Note:**
- This figure shows the 2000/01 ranked number of days the chlorination system for potable water supplies did not operate for each council in 4 groups based on the number of connected properties served. *Each bar white represents one council.* As an example, for the property range from 2,001 to 10,000, the number of days the chlorination system did not operate for the 28 councils shown *range* from 0 to 3 days. The 5 councils on the right did not report chlorination system malfunction for 2000/01. Results for the previous 5 years are also shown.
  - For councils with more than one chlorination system, the weighted average (based on capacity) of days was used (Appendix D1).
  - For general notes see page 43.



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

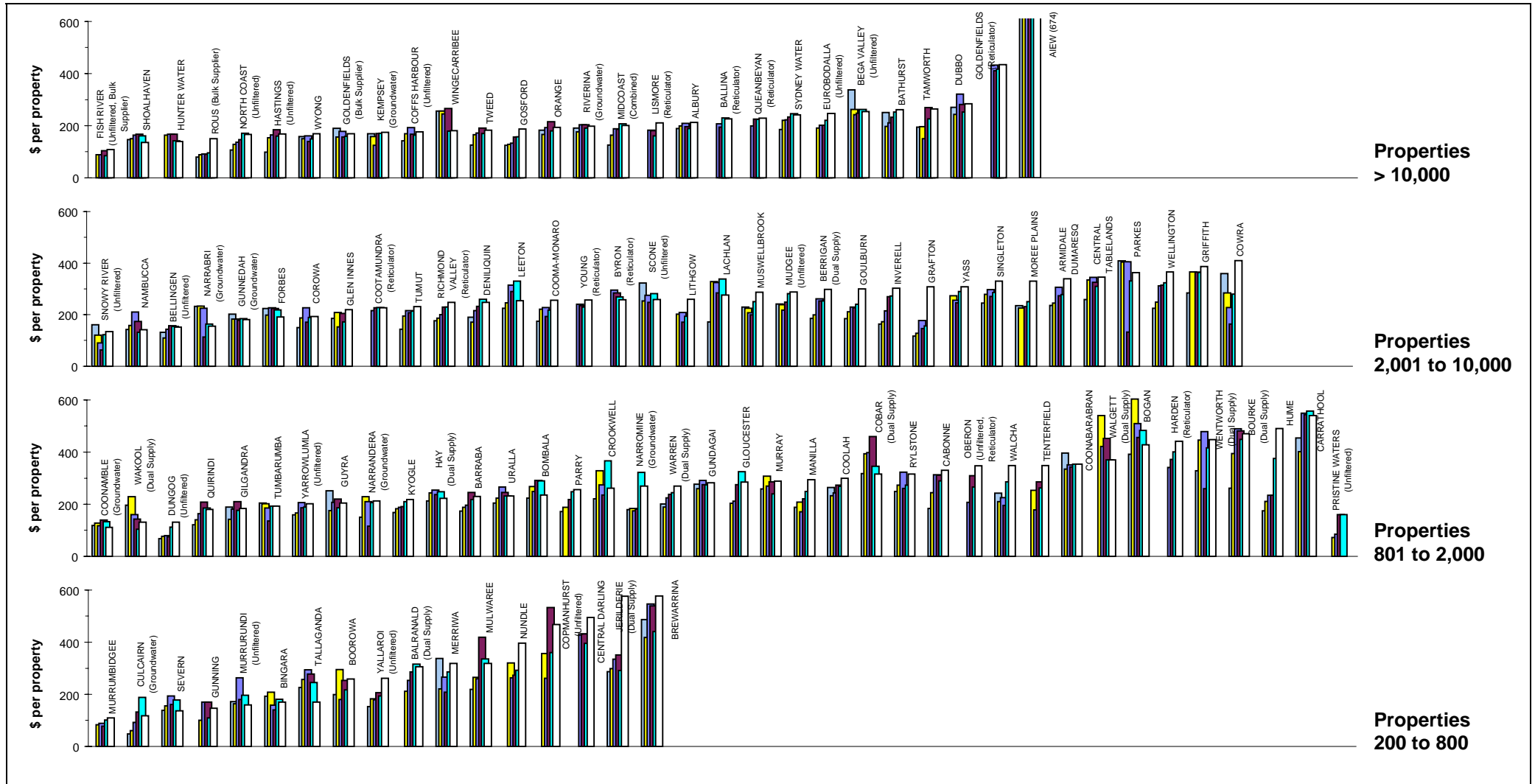


Notes:

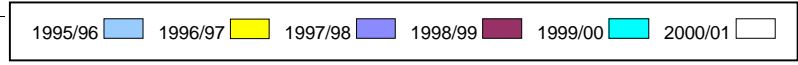
- This figure shows the 2000/01 ranked number of days of major malfunction of treatment processes for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the number of days of treatment work malfunction for the 25 councils shown **range** from 0 to 2 days. Results for the previous 5 years are also shown.
- For councils with more than one treatment works, the weighted average days of malfunction (based on treatment works capacity) was used (Appendix D1).
- For general notes see page 43.

# 54 Operating Cost (OMA) per property

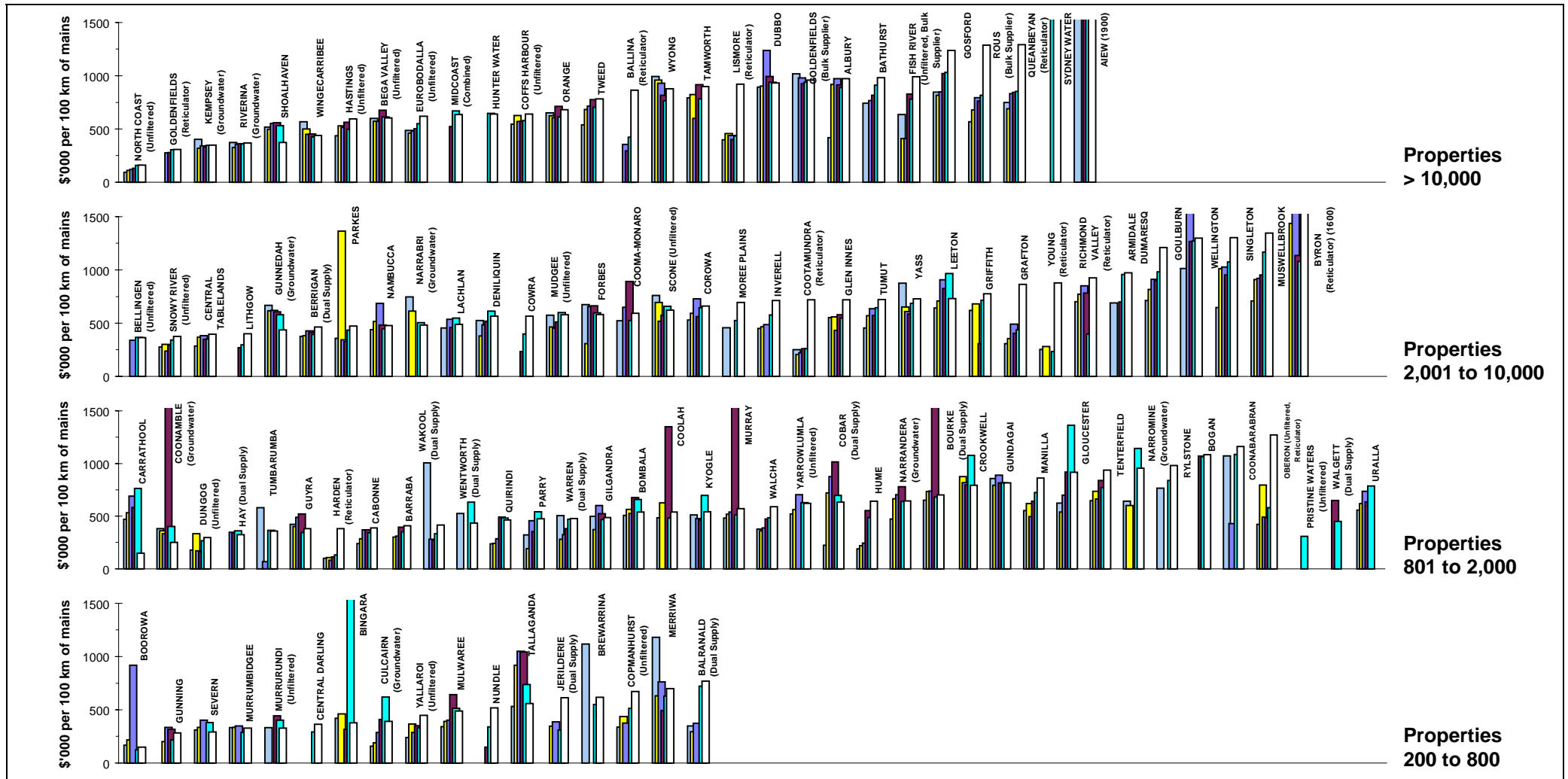
# Water Supply



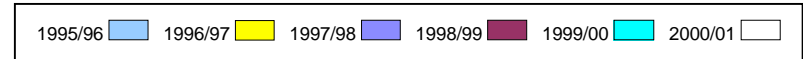
**Parameter:** 
$$\frac{[\text{Management Expenses (W1)} + \text{Total Operations Expenses (W2)} - \text{Purchase of Water (W2o)} + \text{Bulk Supplier's OMA}]}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$



- Notes:**
- This figure shows the 2000/01 ranked values of the water supply operating cost (OMA - operation, maintenance and administration) per property for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the operating costs for the 34 councils shown **range** from about **\$135 to \$410** per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The Statewide median operating cost per connected property is \$200 (refer to Table 1 – percentage of connected properties basis).
  - For general notes see page 43.

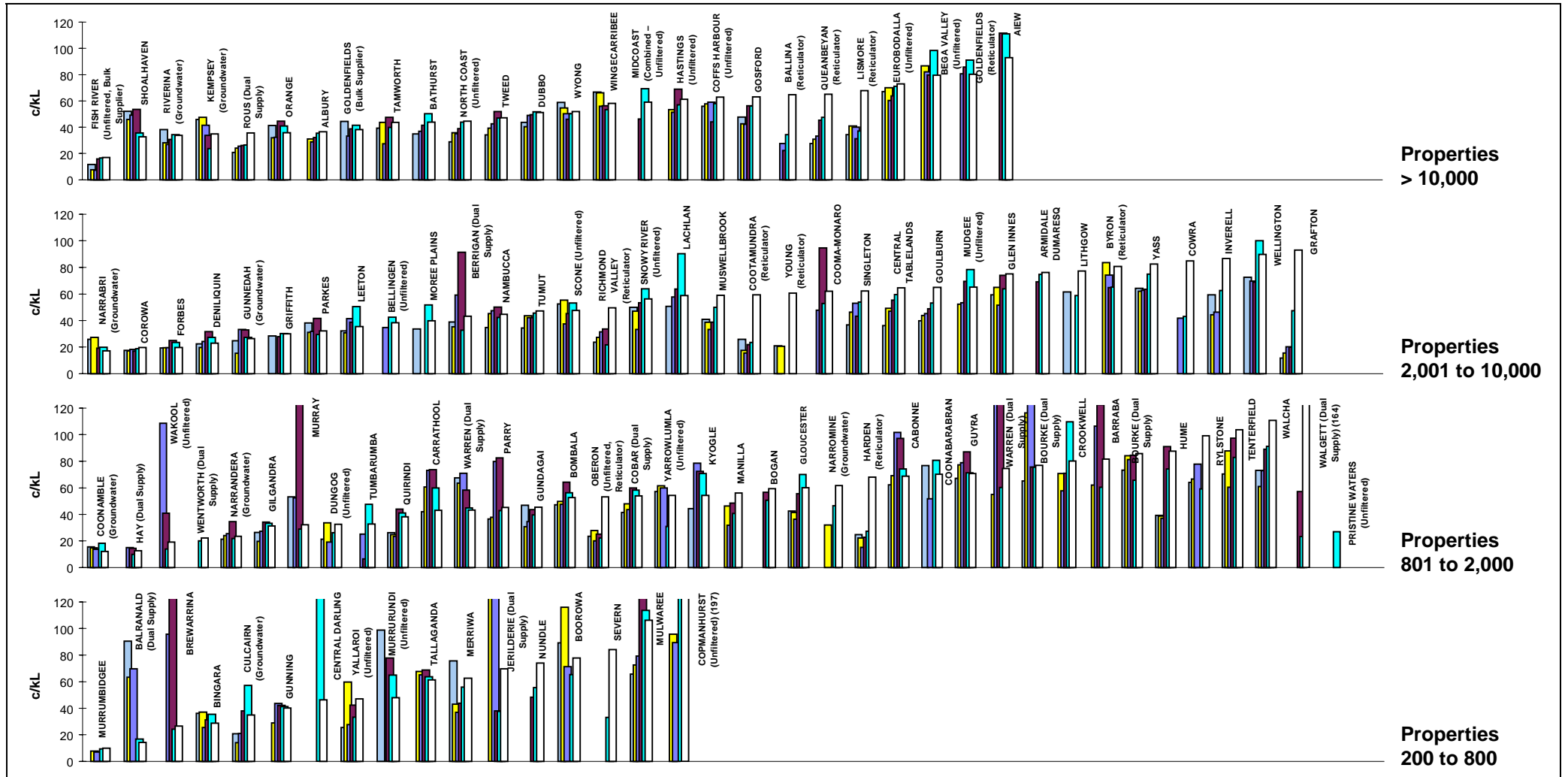


Parameter:  $\frac{\text{Management Expenses (W1)} + \text{Total Operations Expenses (W2)} - \text{Purchase of Water (W2o)}}{\text{Length of Distribution Trunk Mains (Q10c)} \times 10}$

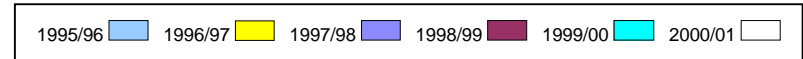


Notes:

1. This figure shows the 2000/01 ranked values of the water supply operating cost (OMA - operation, maintenance and administration) per 100 km of main for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the operating costs for the 34 councils shown **range** from about \$360,000 to \$1,600,000 per 100 km of main. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide median operating cost per 100 km of main is \$680,000 (refer to Table 1 – percentage of connected properties basis).
3. For general notes see page 43.



Parameter:  $\frac{\text{Management Expenses (W1)} + \text{Total Operations Expenses (W2)} - \text{Purchase of Water (W2o)}}{\text{Total Potable Water Consumption (Q12i)}}$



Notes:

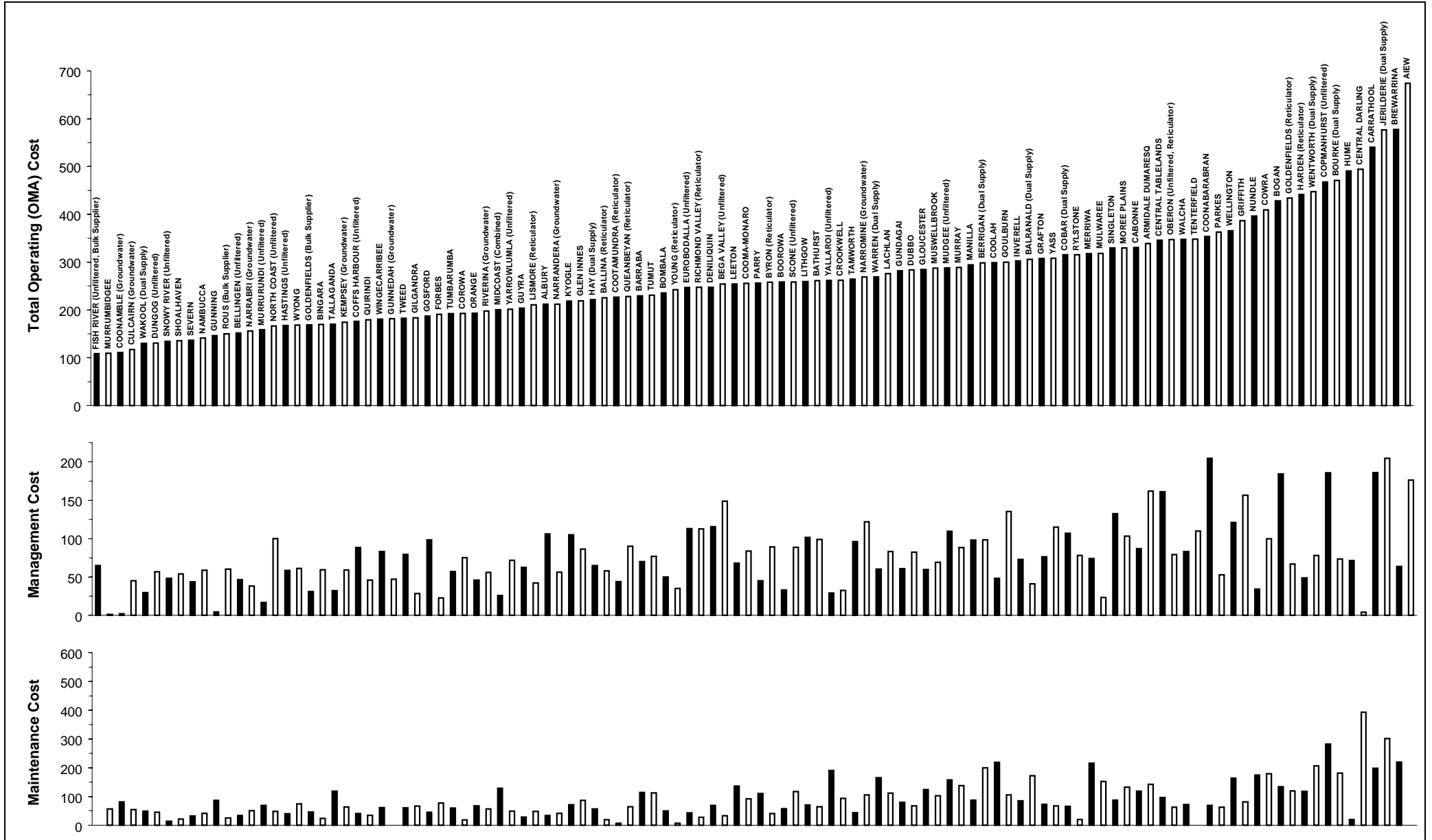
- This figure shows the 2000/01 ranked values of the water supply operating cost (OMA - operation, maintenance and administration) per kL for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the operating costs for the 34 councils shown range from about 17 to 93 c/kL. Results for the previous 5 years are also shown in Jan 2001\$.
- The Statewide median operating cost is 59 c/kL (refer to Table 1 – percentage of connected properties basis).
- For general notes see page 43.

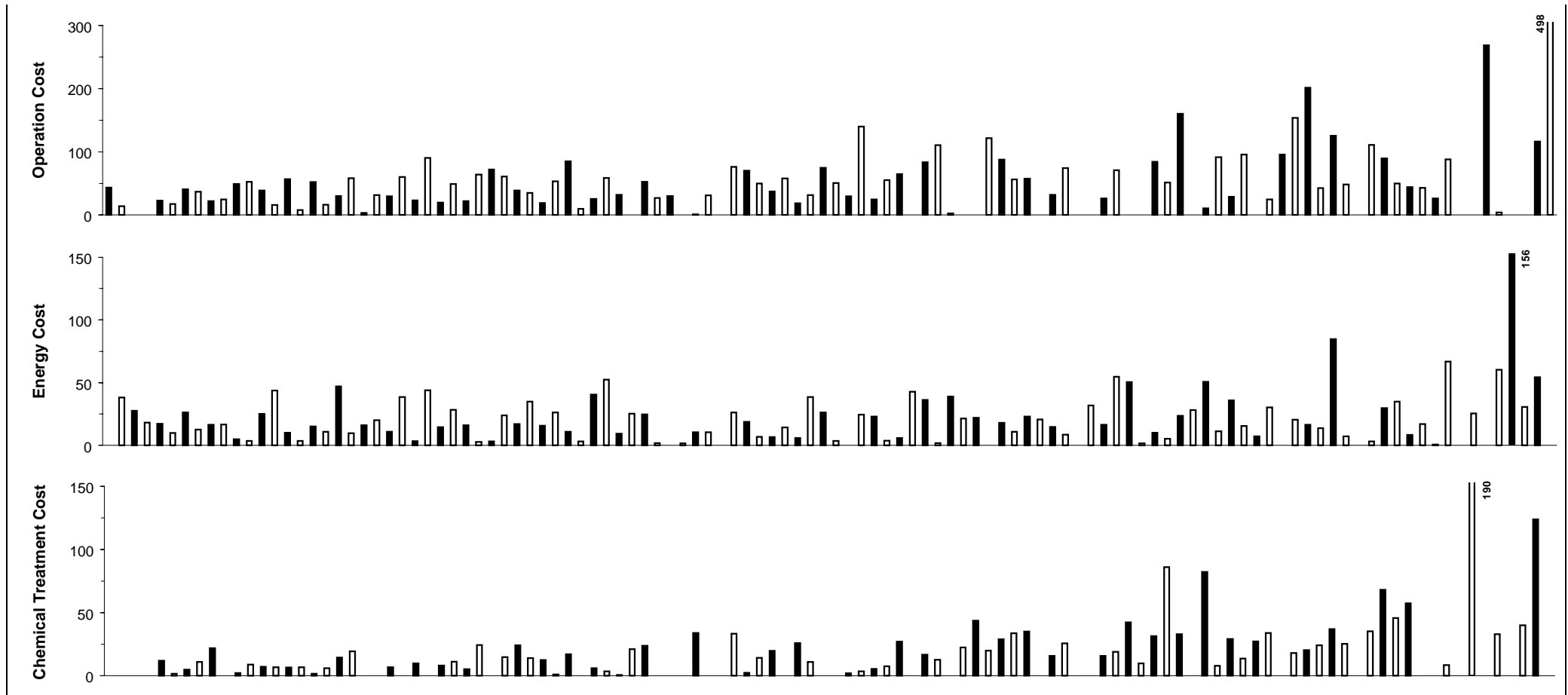
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# 57 Components of Operating Cost (1) - (\$/property)

# Water Supply





**Parameter:** 
$$\frac{\text{Total Operation and Maintenance Expenses (W1 + W2) - Purchase of Water (W2o)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Management Expenses (W1)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Dams \& Weir Maintenance (W2b) + Mains Maintenance (W2d) + Reservoir Maintenance (W2f) + Pumping Station Maintenance (W2i) + Treatment Maintenance (W2l) + Other Maintenance (W2n)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Dams \& Weir Operation (W2a) + Mains Operation (W2c) + Reservoir Operation (W2e) + Pumping Station Operation (W2g) + Treatment Operation (W2j) + Other Operation (W2m)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

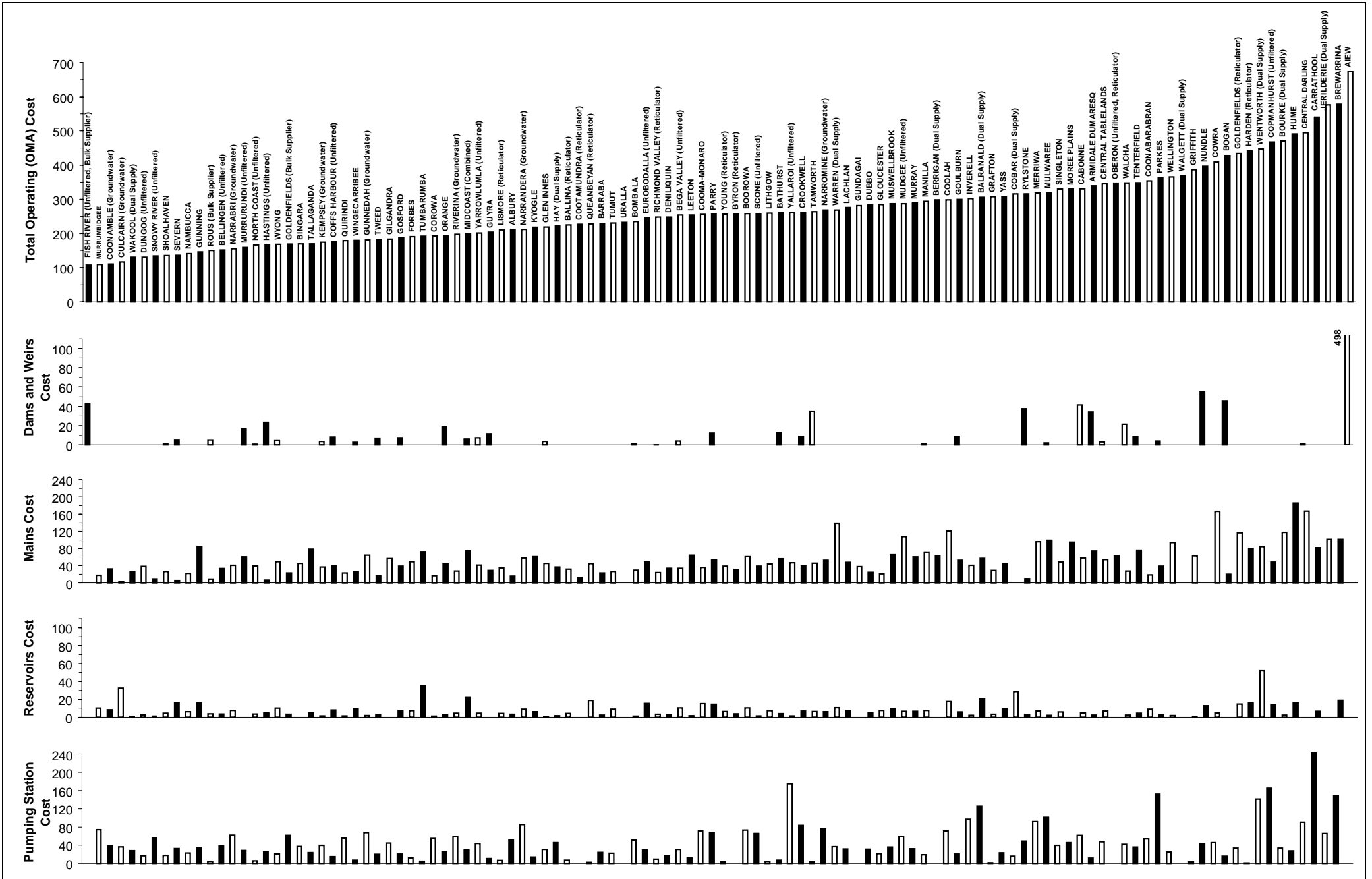
**Parameter:** 
$$\frac{\text{Pump Station Energy Expenses (W2h)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

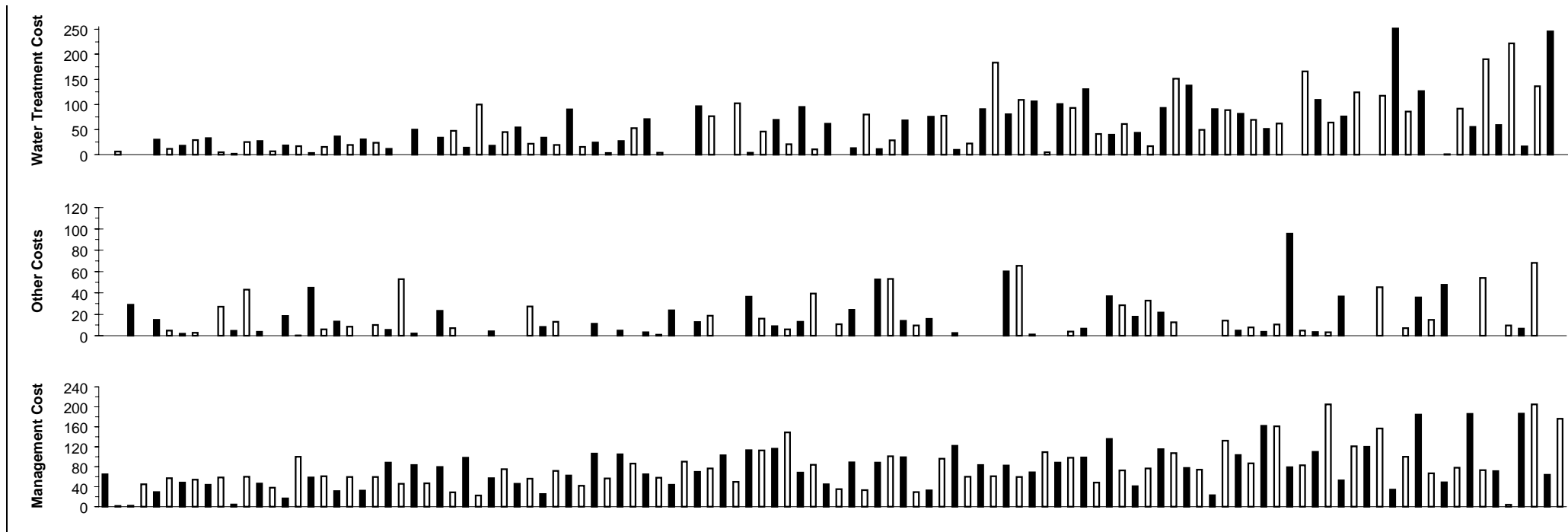
**Parameter:** 
$$\frac{\text{Chemical Treatment Expenses (W2k)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

- Notes:**
1. The Statewide median operating cost (OMA – operation, maintenance and administration) is \$200 per connected property (refer to Table 1 – percentage of connected property basis).
  2. For general notes see page 43.

# 58 Components of Operating Cost (2) - (\$/property)

# Water Supply



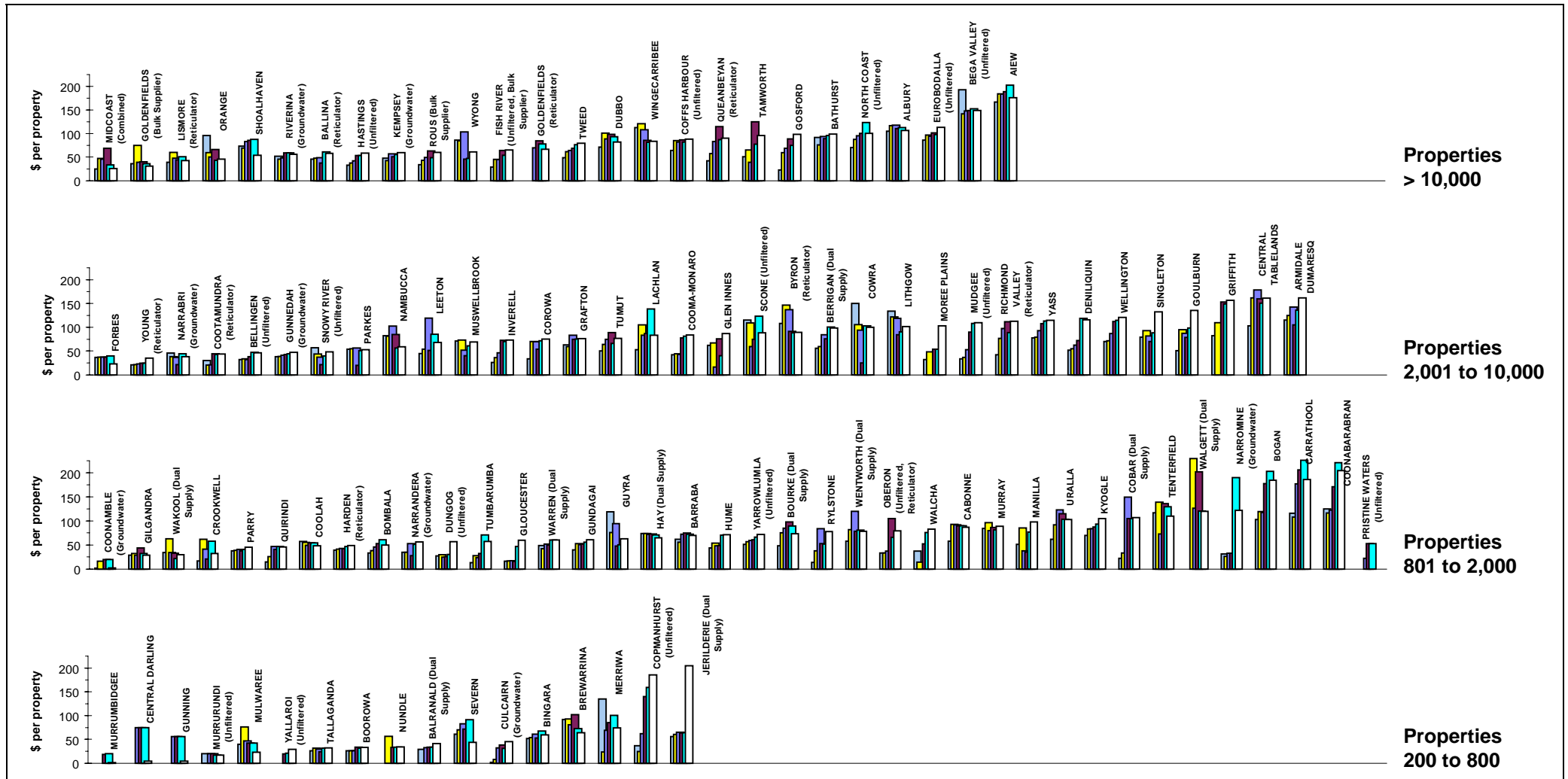


- Parameter:**  $\frac{\text{Total Operation and Maintenance Expenses (W2) – Purchase of Water (W2o)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{\text{Operation and Maintenance Expenses of Dams \& Weirs (W2a + W2b)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{\text{Operation and Maintenance Expenses of Mains (W2c + W2d)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{\text{Operation and Maintenance Expenses of Reservoirs (W2e + W2f)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{[\text{Operation and Maintenance Expenses of Water Pumping Stations (W2g + W2i) + Energy Expenses (W2h)}]}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{[\text{Operation and Maintenance Expenses of Water Treatment (W2j + W2l) + Chemical Expenses (W2k)}]}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{\text{Other Operation and Maintenance Expenses (W2m + W2n)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
- Parameter:**  $\frac{\text{Management Expenses (1)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

- Notes:**
1. The Statewide median operating cost (OMA – operation, maintenance and administration) is \$200 per connected property (refer to Table 1 – percentage of connected property basis).
  2. For general notes see page 43.

# 59 Management Cost per property

# Water Supply



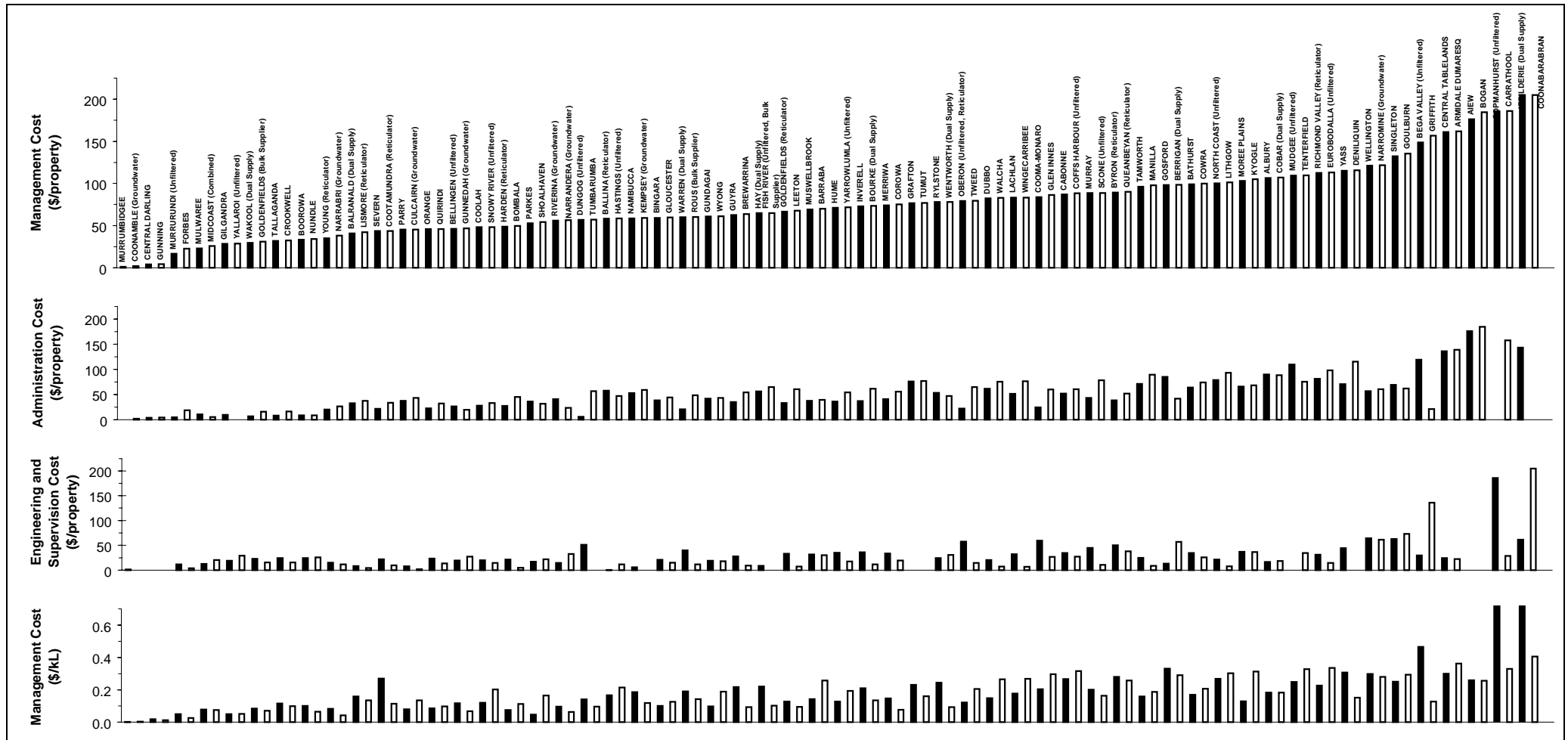
**Parameter:** Administration Cost (W1a) + Engineering Cost (W1b)  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment



- Notes:**
- This figure shows the 2000/01 ranked values of the management cost per property for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the management costs for the 34 councils shown **range** from about \$45 to \$160 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The Statewide median management cost is \$80 per connected property (refer to Table 1 – percentage of connected properties basis).
  - For general notes see page 43.

# 60 Components of Management Cost

# Water Supply



**Parameter:**  $\frac{\text{Management Expenses (W1)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Parameter:**  $\frac{\text{Administration Expenses (W1a)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

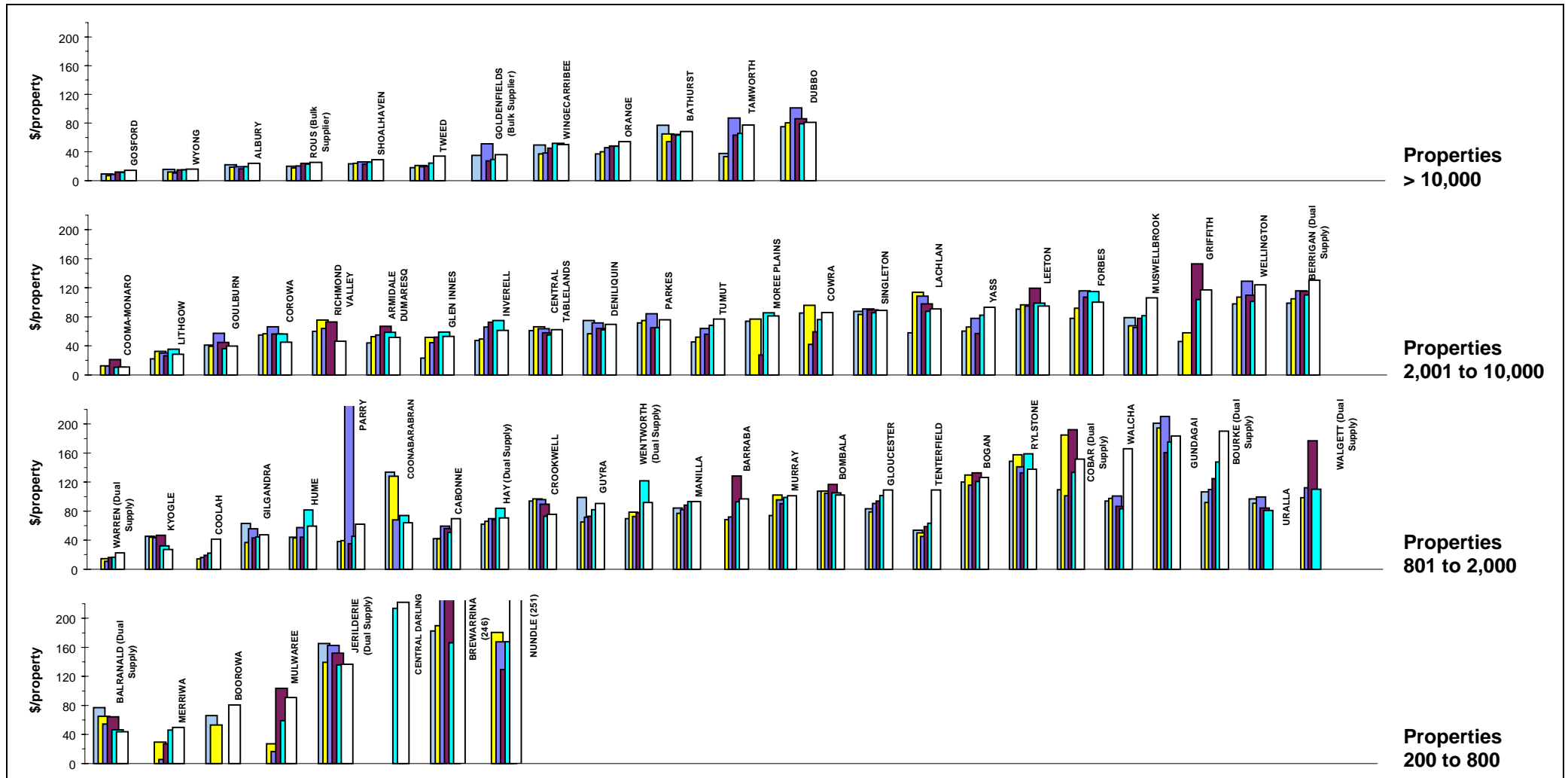
**Parameter:**  $\frac{\text{Engineering and Supervision Expenses (W1b)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Parameter:**  $\frac{\text{Management Expenses (W1)}}{\text{Potable Water Consumption (Q12i)} \times 1000}$

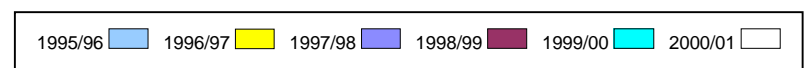
- Notes:**
1. The Statewide median management cost is \$80 per connected property (refer to Table 1 – percentage of connected properties basis).
  2. For general notes see page 43.

# 61 Treatment Cost

# Water Supply



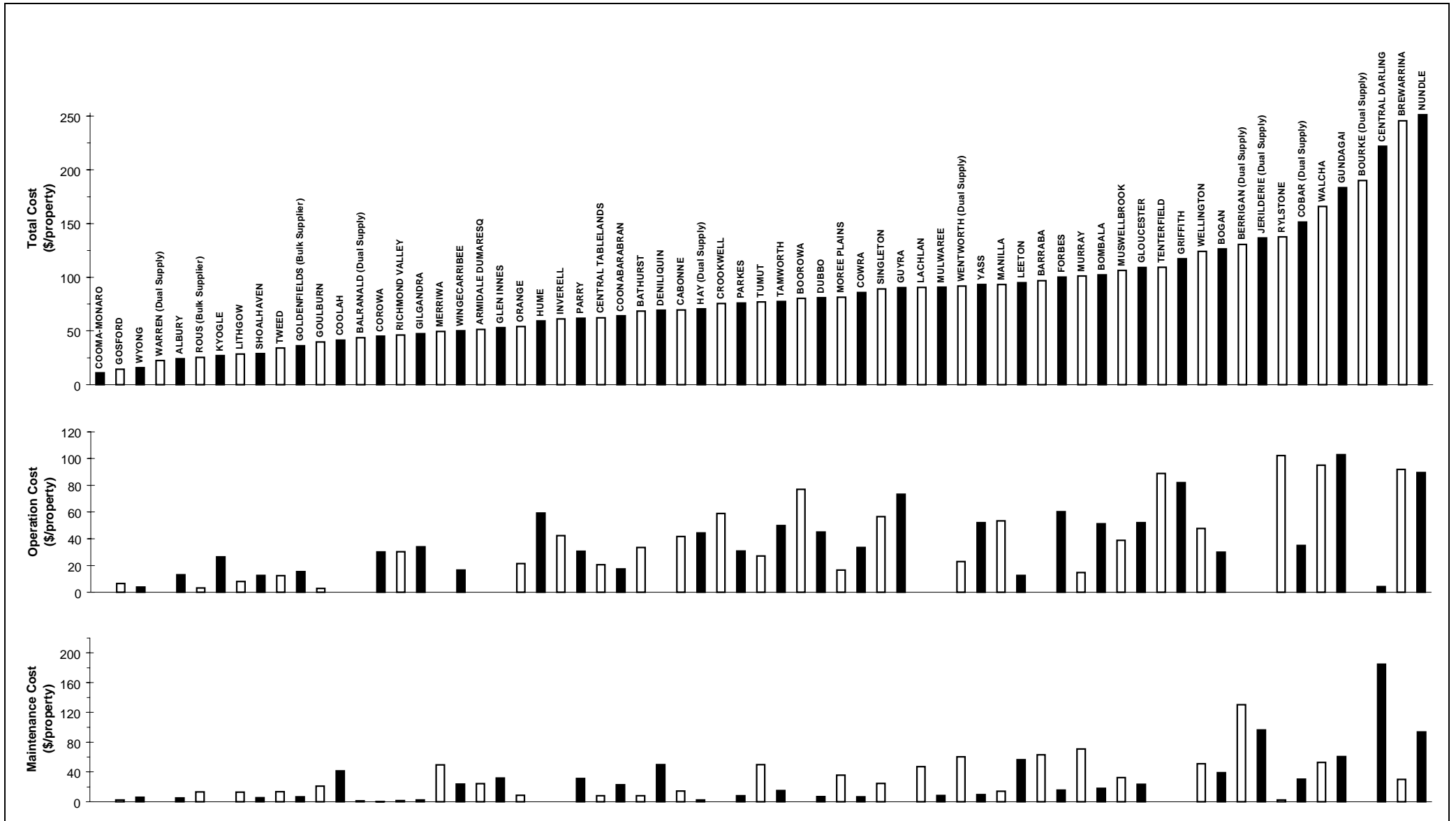
Parameter:  $\frac{\text{Treatment Operation Expenses (W2j)} + \text{Treatment Chemical Cost (W2k)} + \text{Treatment Maintenance Expenses (W2l)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

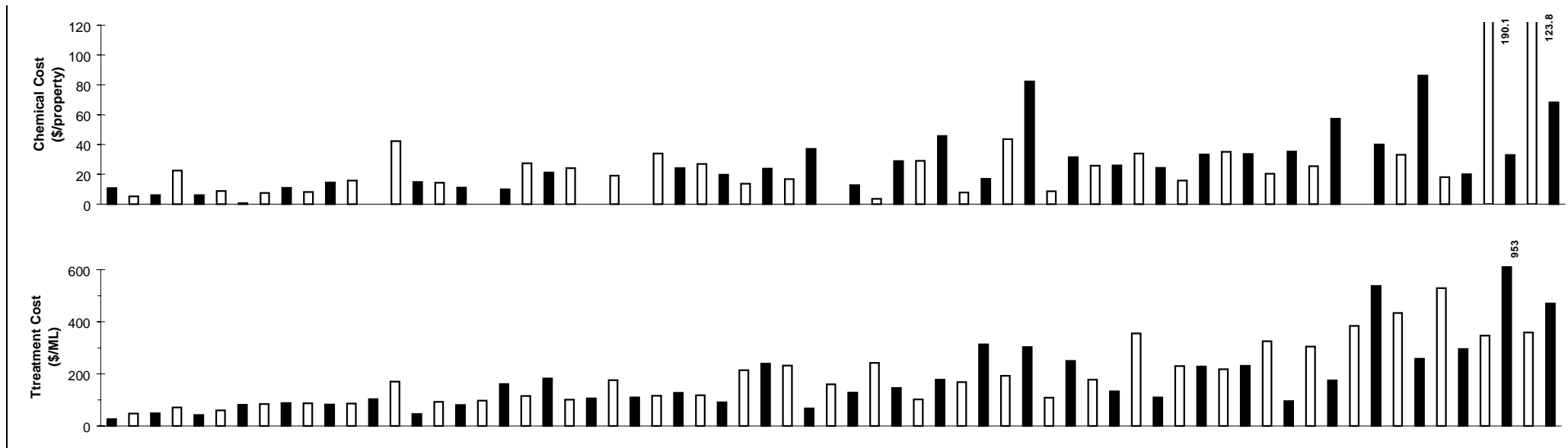


- Notes:**
- This figure shows ranked values of the 2000/01 water treatment cost for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the treatment cost for the 23 councils shown **range** from about **\$11 to \$130** per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - Only councils with a water treatment works involving at least filtration and disinfection for over 50% of their supply have been considered.
  - The Statewide median water treatment cost is \$30 per connected property (refer to Table 1 – percentage of connected properties basis).
  - For general notes see page 43.

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**Parameter:** 
$$\frac{\text{Total Treatment Operation and Maintenance Expenses (W2j + W2k + W2l)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Treatment Operation Expenses (W2j)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Treatment Maintenance Expenses (W2k)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Treatment Chemical Expenses (W2l)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

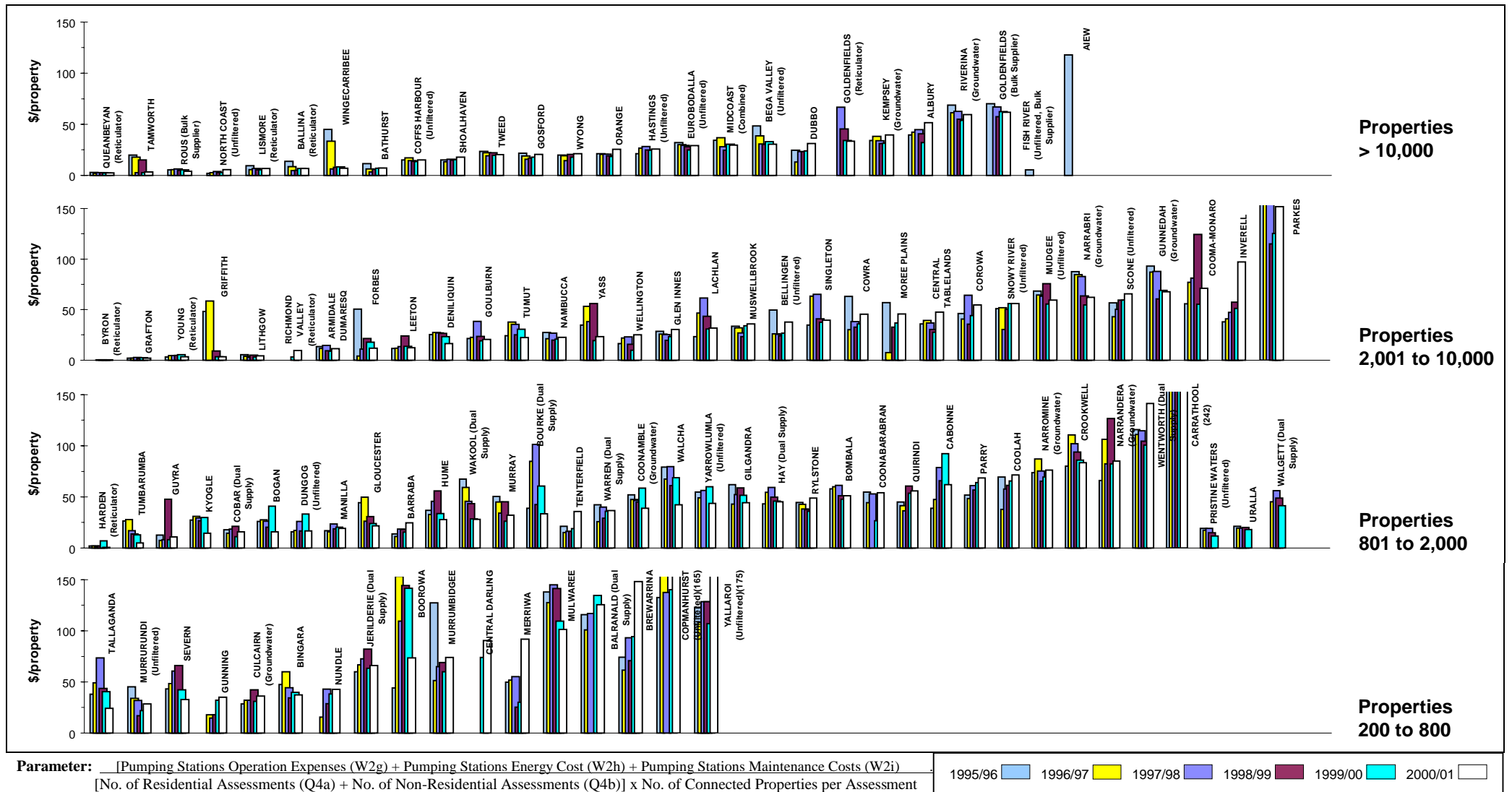
**Parameter:** 
$$\frac{\text{Total Treatment Operation and Maintenance Expenses (W2j + W2k + W2l)}}{\text{Total Potable Water Consumption (Q12i)} \times 1000}$$

**Notes:**

1. Only councils with a water treatment works involving at least filtration and disinfection for over 50% of their supply have been considered.
2. For general notes see page 43.

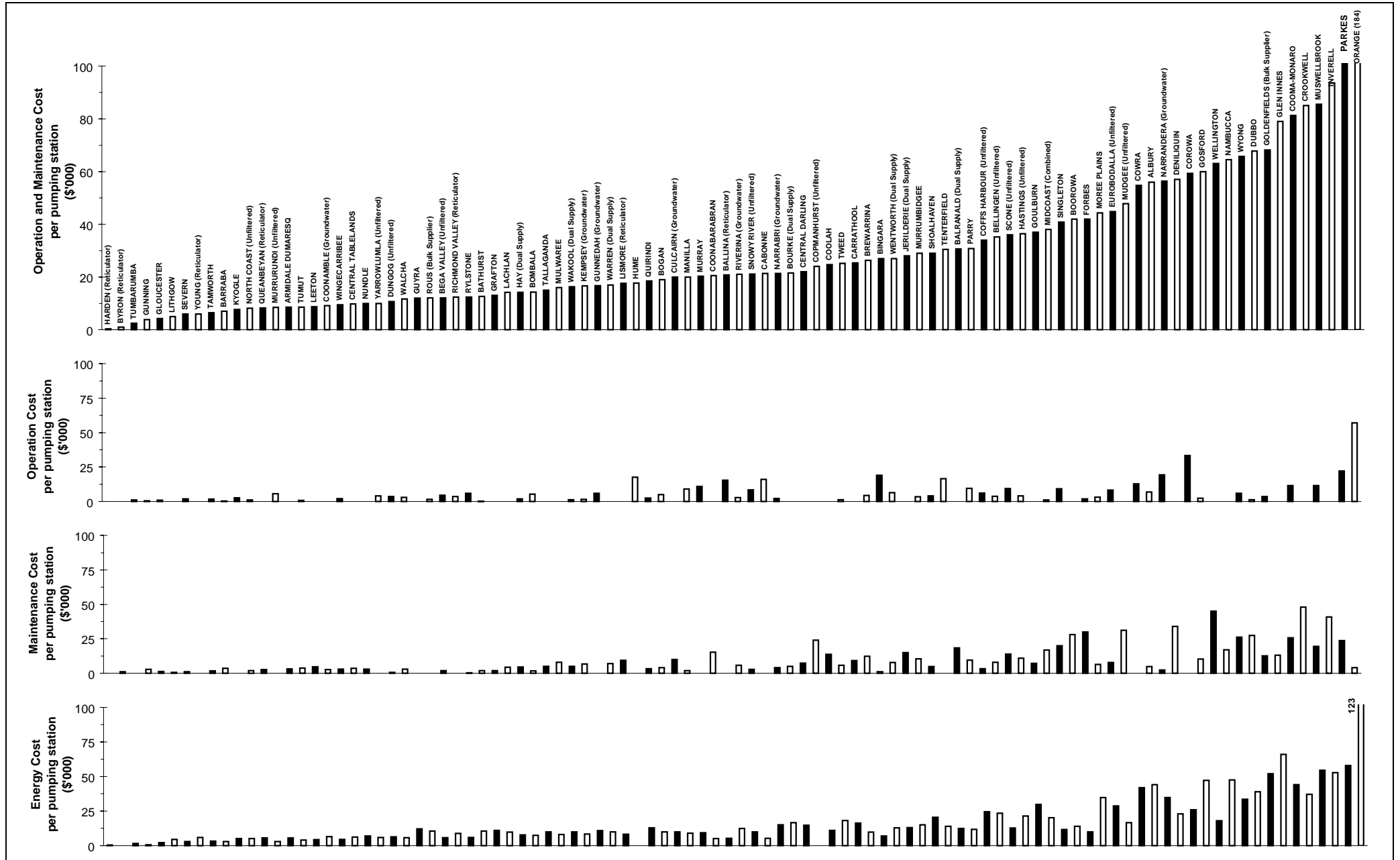
# 63 Pumping Cost

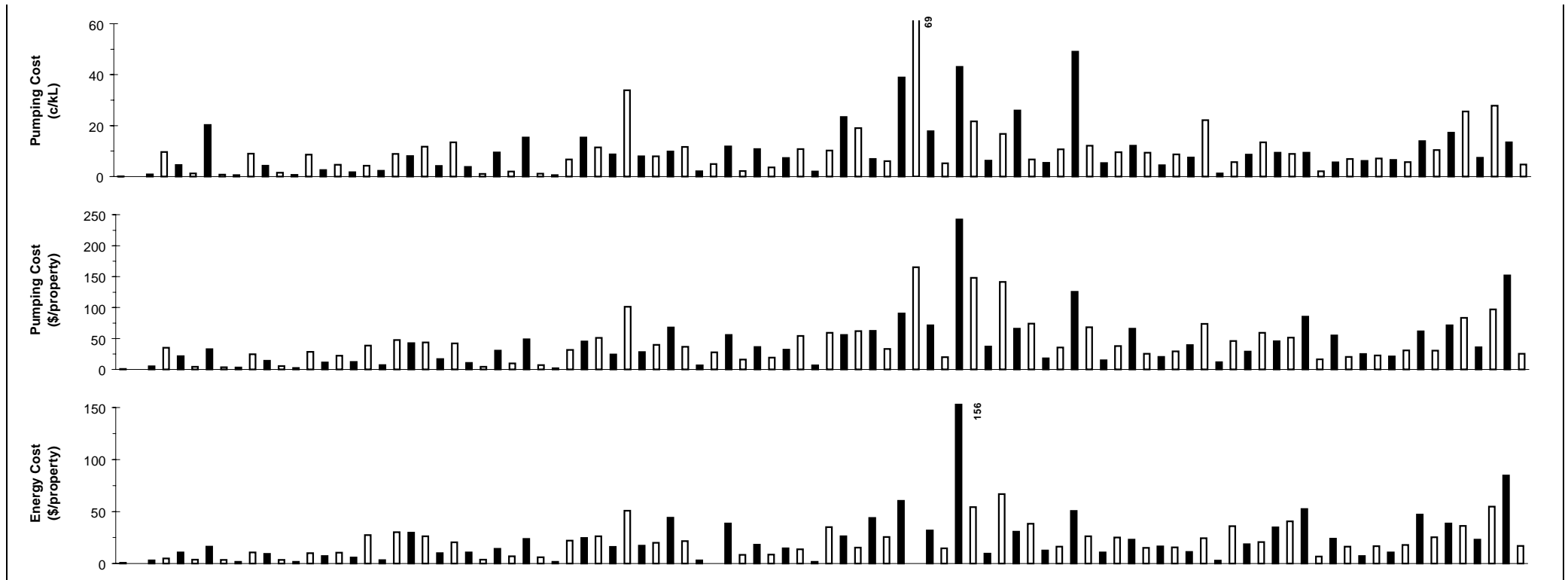
# Water Supply



- Notes:**
- This figure shows ranked values of the 2000/01 water pumping cost for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the water pumping costs for the 31 councils shown **range** from about \$0 to \$150 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The Statewide median water pumping cost (including energy costs) is \$20 per connected property (refer to Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

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**Parameter:**  $\frac{\text{Total Pumping Station Operation and Maintenance Expenses (W2g + W2h + W2i)}}{\text{Number of Pumping Stations (Q8g) x 1000}}$

**Parameter:**  $\frac{\text{Pumping Station Operation Expenses (W2g)}}{\text{Number of Pumping Stations (Q8g) x 1000}}$

**Parameter:**  $\frac{\text{Pumping Station Maintenance Expenses (W2i)}}{\text{Number of Pumping Stations (Q8g) x 1000}}$

**Parameter:**  $\frac{\text{Pumping Station Energy Expenses (W2h)}}{\text{Number of Pumping Stations (Q8g) x 1000}}$

**Parameter:**  $\frac{\text{Total Pumping Station Operation and Maintenance Expenses (W2g + W2h + W2i) x 100}}{\text{Total Potable Water Consumption (Q12i) x 1000}}$

**Parameter:**  $\frac{\text{Total Pumping Station Operation and Maintenance Expenses (W2g + W2h + W2i)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] \times \text{No. of Connected Properties per Assessment}}$

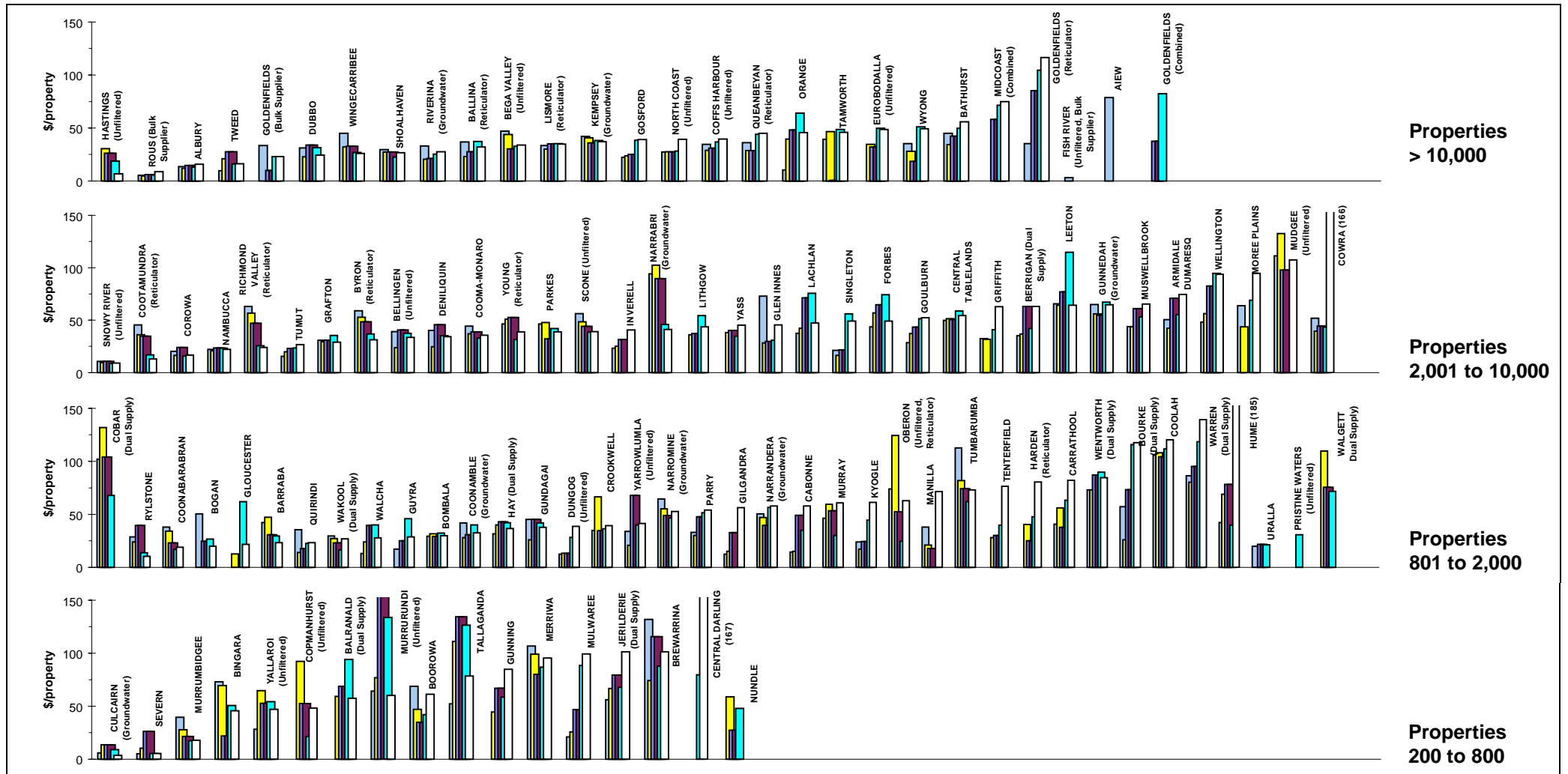
**Parameter:**  $\frac{\text{Pumping Station Energy Expenses (W2h)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-residential Assessments (Q4b)] \times \text{No. of Connected Properties per Assessments}}$

**Note:**

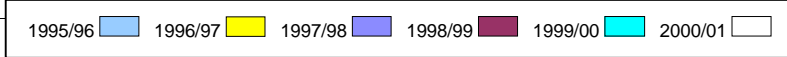
1. For general notes see page 43.

# 64A Water Main Cost

# Water Supply



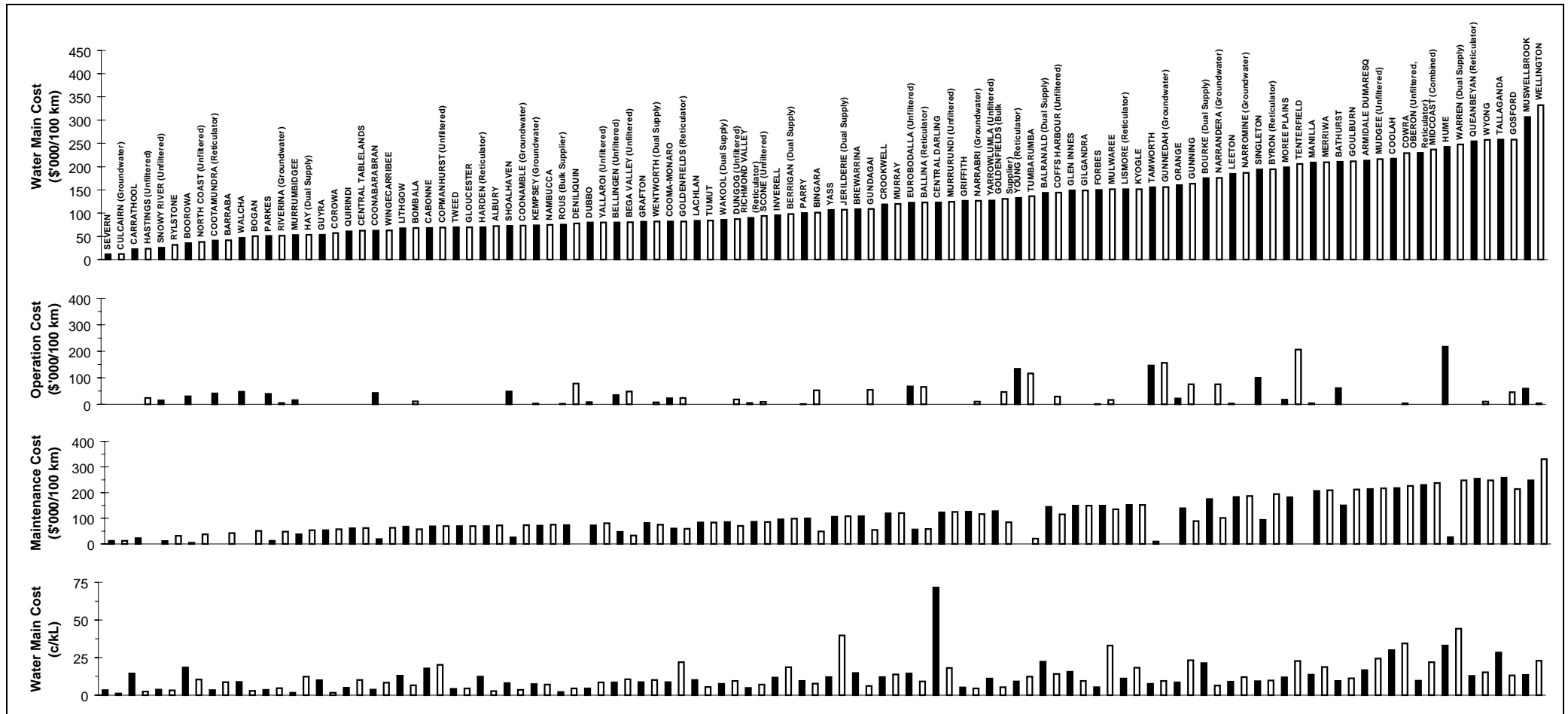
**Parameter:** [Pumping Stations Operation Expenses (W2g) + Pumping Stations Energy Cost (W2h) + Pumping Stations Maintenance Costs (W2i) / (No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)) x No. of Connected Properties per Assessment]



- Notes:**
- This figure shows ranked values of the 2000/01 water main cost for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the water main costs for the 32 councils shown *range* from about \$10 to \$166 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The Statewide median water main cost is \$40 per connected property (refer to Table 1 - percentage of connected properties basis).
  - For general notes see page 43.

# 65 Components of Water Main Cost

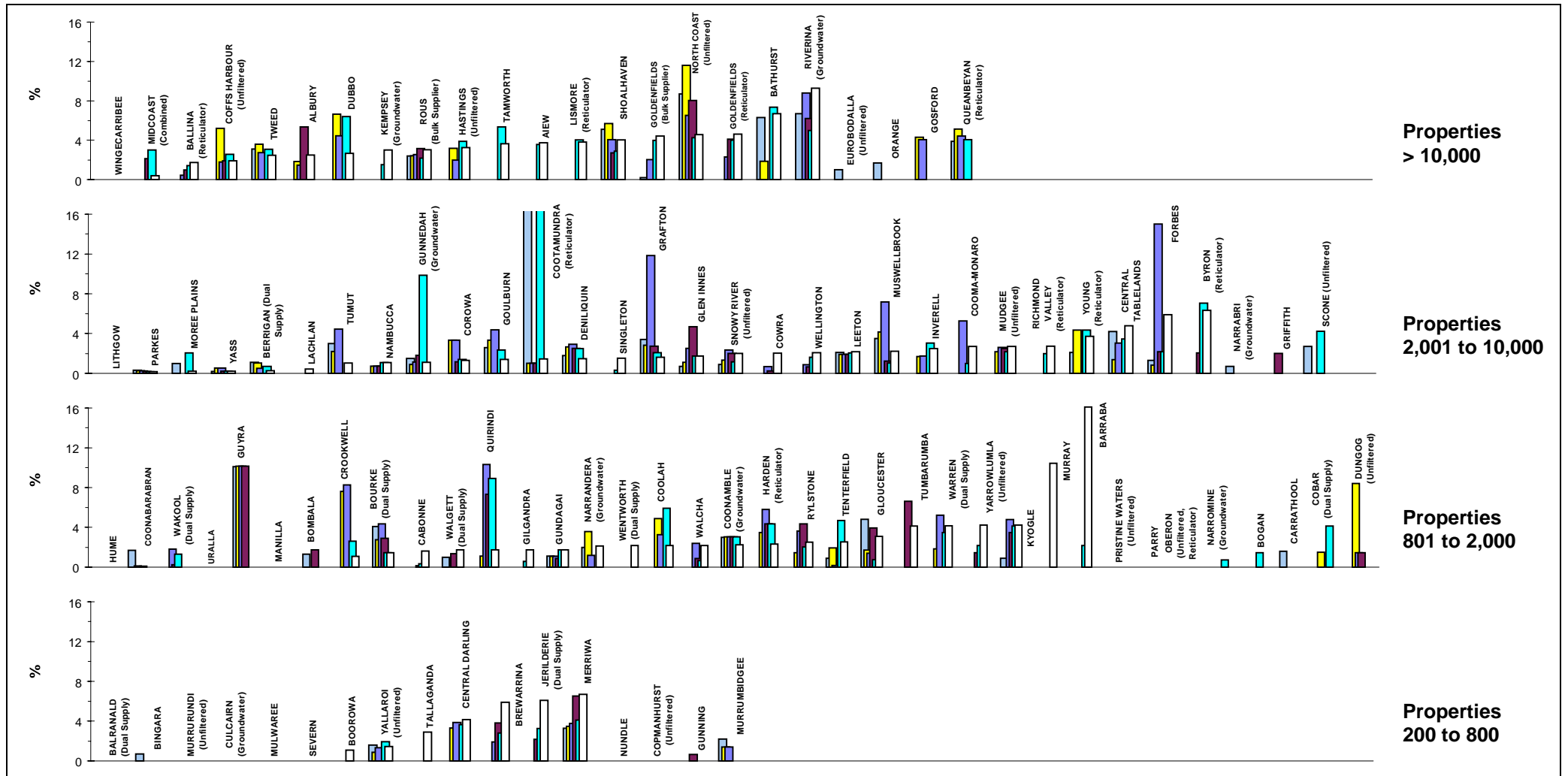
# Water Supply



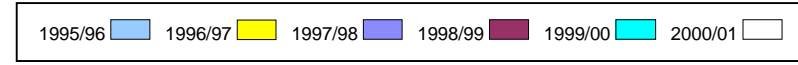
- Parameter:  $\frac{\text{Total Mains Operation and Maintenance Expenses (W2c + W2d)}}{\text{Total Length of Mains (Q10c)} \times 10}$
- Parameter:  $\frac{\text{Water Main Operation Cost (W2c)}}{\text{Total Length of Mains (Q10c)} \times 10}$
- Parameter:  $\frac{\text{Water Main Maintenance Cost (W2d)}}{\text{Total Length of Mains (Q10c)} \times 10}$
- Parameter:  $\frac{\text{Total Mains Operation and Maintenance Expenses (W2c + W2d)}}{\text{Total Potable Water Consumption (Q12i)} \times 10}$

- Notes:
1. The Statewide median water main cost is \$40 per connected property (refer Table 1 – percentage of connected properties basis).
  2. For general notes see page 43.

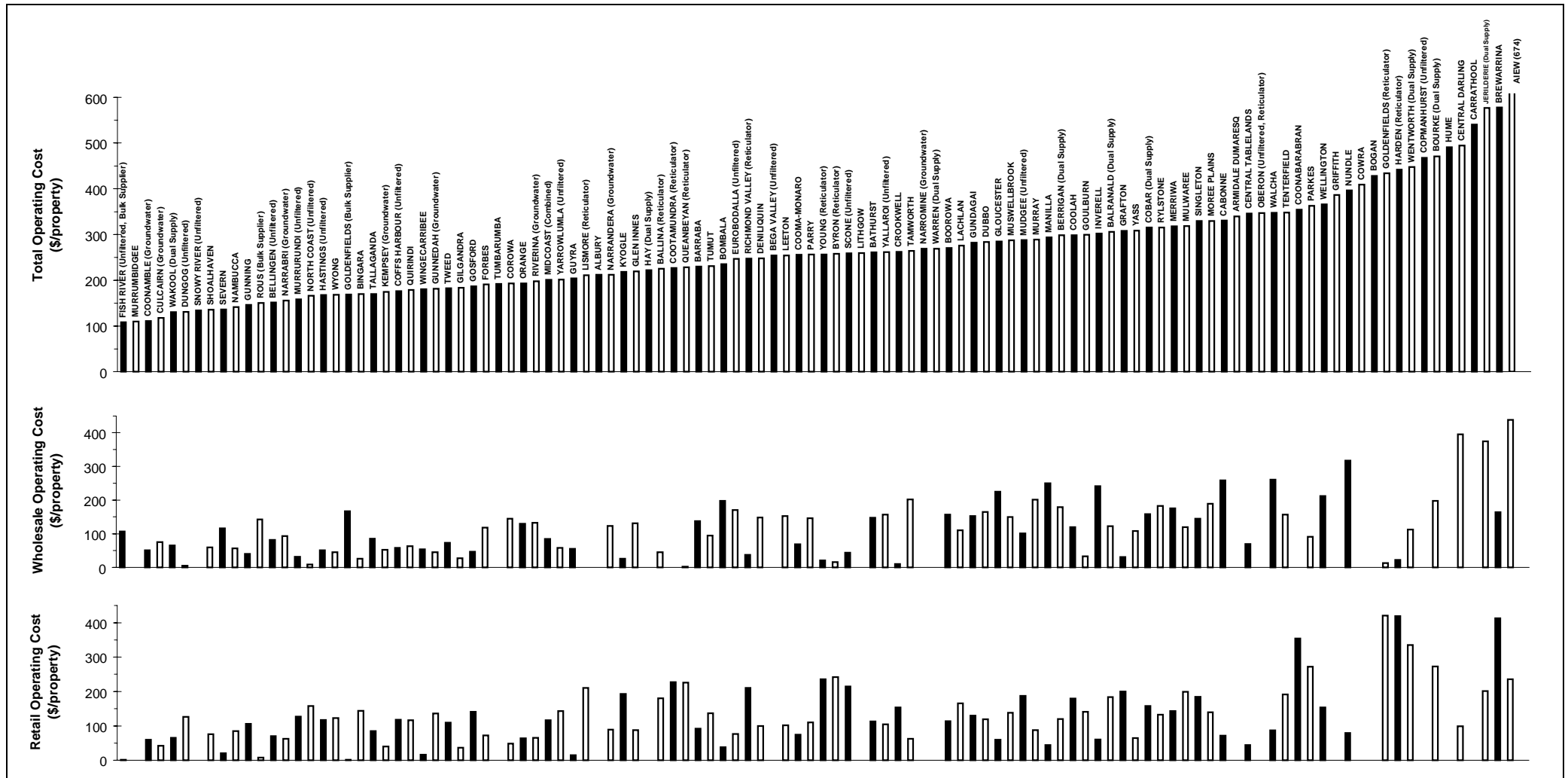




Parameter:  $\frac{\text{Total Number of Days Lost for All Reasons in Year (Q31)} \times 100}{\text{Equivalent full time employees (Q30)} \times \text{available number of working days in year (ie. 230)}}$



- Notes:
- This figure shows ranked values of the 2000/01 total days lost for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the total lost for the 29 councils shown *range* from about *nil* to *6%*. Results for the previous 5 years are also shown.
  - The Statewide median days lost is 2.5% (refer to Table 1 - percentage of connected properties basis).
  - For general notes see page 43.



Parameter 1: 
$$\frac{[\text{Operation and Maintenance Expenses (W2)} + \text{Management Expenses (W1)}]}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

Parameter 2: Headworks Component (Q18a) x Total Operating Cost (Parameter 1)

Parameter 3: Distribution and Reticulation Component (Q18b) x Total Operating Cost (Parameter 1)

- Notes:
1. The Statewide median (total) operating cost (OMA – operation, maintenance and administration) is \$200 per connected property (refer to Table 1 – percentage of connected properties basis).
  2. For general notes see page 43.

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## 6. 2000/01 SEWERAGE FIGURES

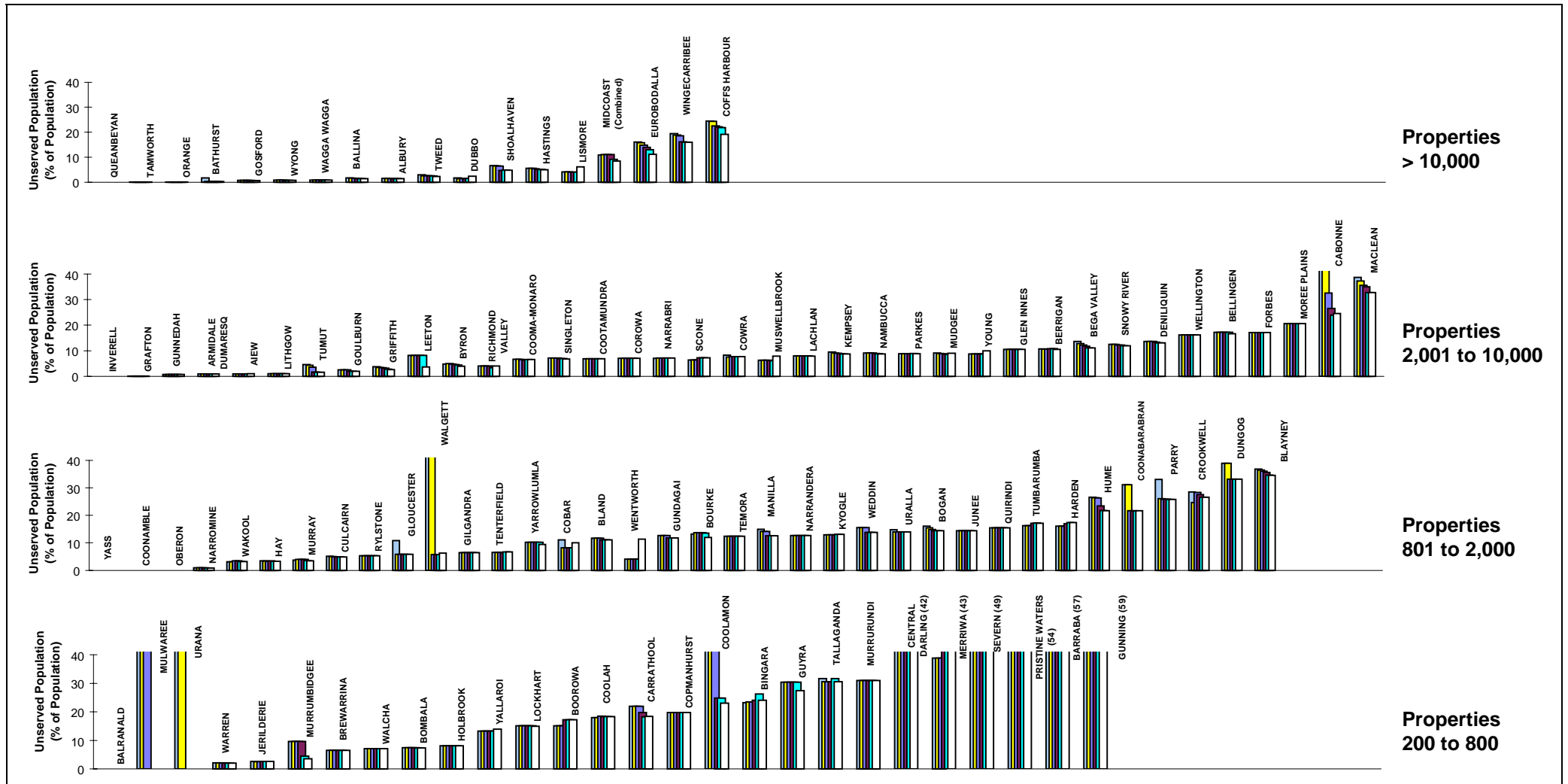
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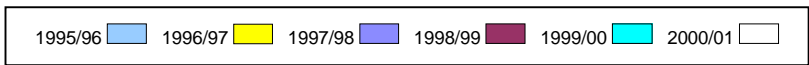
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# 68 Urban Population without Sewerage

# Sewerage

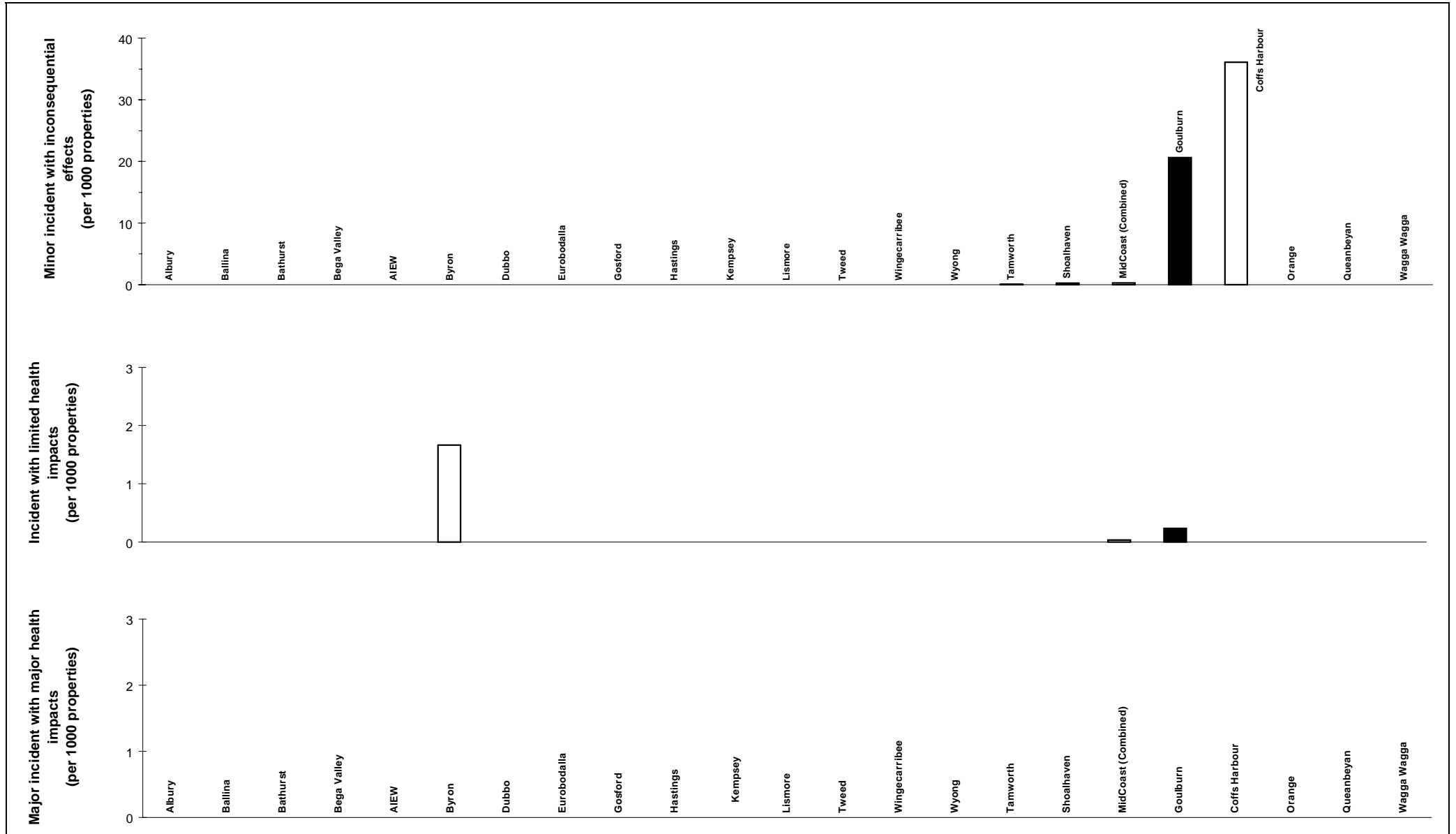


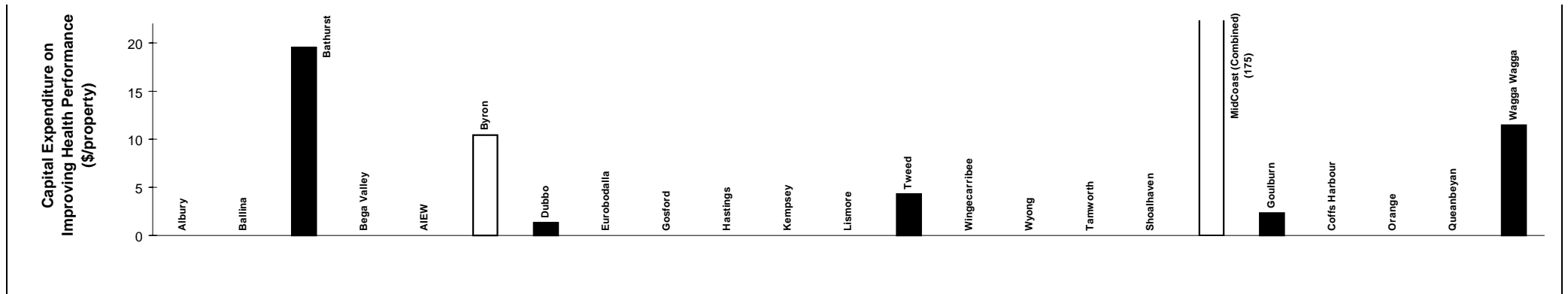
Parameter: Unsewered Urban Population (Q6b)  
 Population Served (Q1a) + Unsewered Urban Population (Q6b)



- Notes:
1. This figure shows 2000/01 ranked values of the percentage of urban population without a reticulated sewerage service for each council in 4 groups based on the number of connected properties served for the each council. *Each white bar represents one Council.* As an example, for the property range from 2001 to 10,000, the percentage of urban population without a sewerage service for the 36 councils shown *ranges* from about 0 to 33%. Results for the previous five years are also shown. The Statewide median urban population without a reticulated sewerage service was 2.7% .
  2. 50% of councils had an urban population of at least 500 without a reticulated sewerage service and 25% of councils had a population of at least 1000 without a reticulated sewerage service.
  3. The percentage of urban population without a reticulated sewerage service for the median council was 8%.
  4. 85% of councils provided a reticulated sewerage service to over 80% of their urban population. Overall, 93.7% of the urban population in non-metropolitan NSW received a reticulated sewerage service.

## 68A Public Health Incidents & Capital Expenditure





<b>Parameter:</b>	Capital Expenditure on Improving Health Performance
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Minor Incident with Inconsequential Effects
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Incident with Limited Health Impacts
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Major Incident with Major Health Impacts
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Capital Expenditure on Improving Health Performance
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$

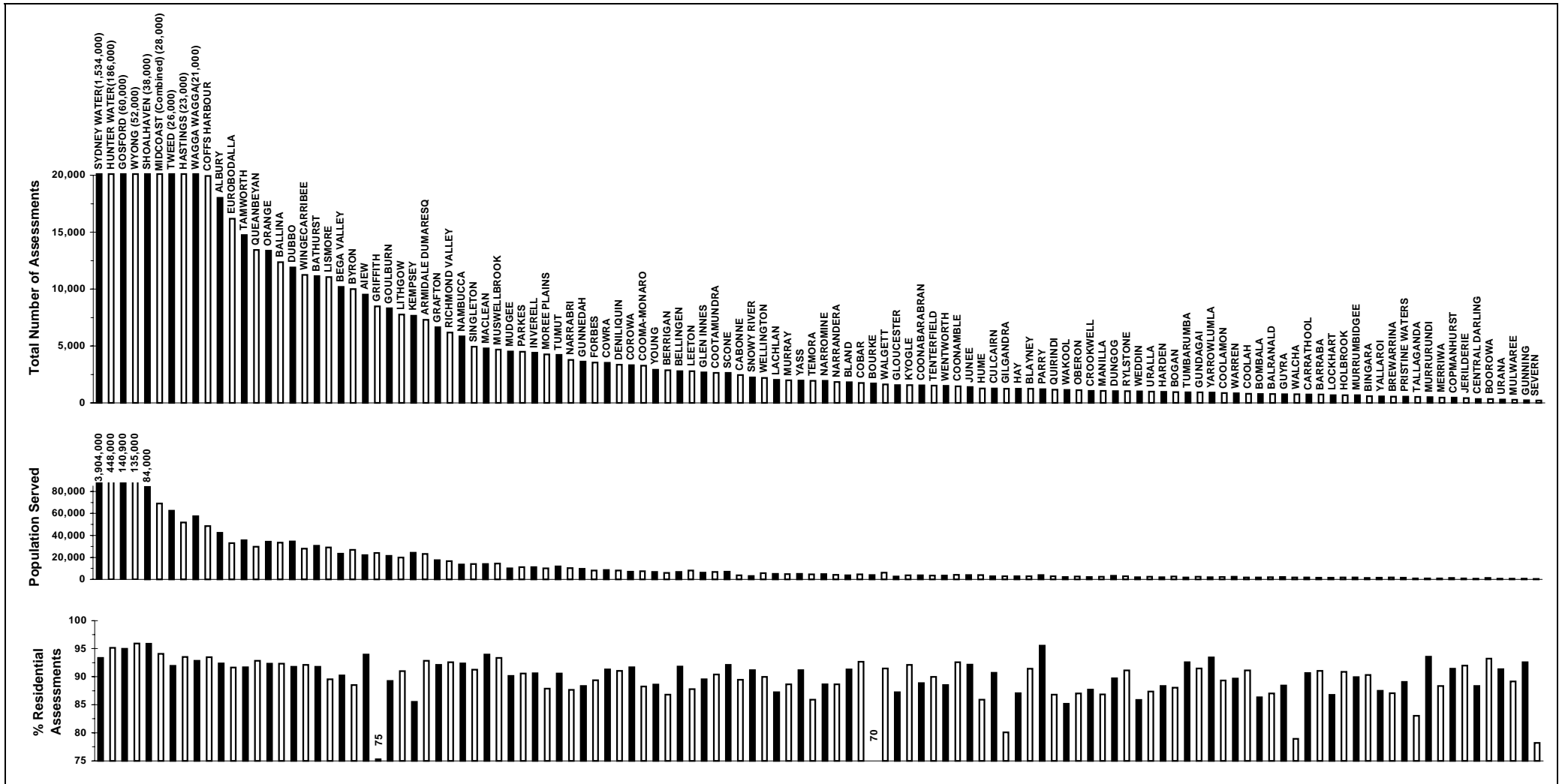
**Notes:**

1. For general notes see page 43.



# 69 Population, Assessments Served

# Sewerage



Parameter: No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)

Parameter: Average Population Served (Q1a)

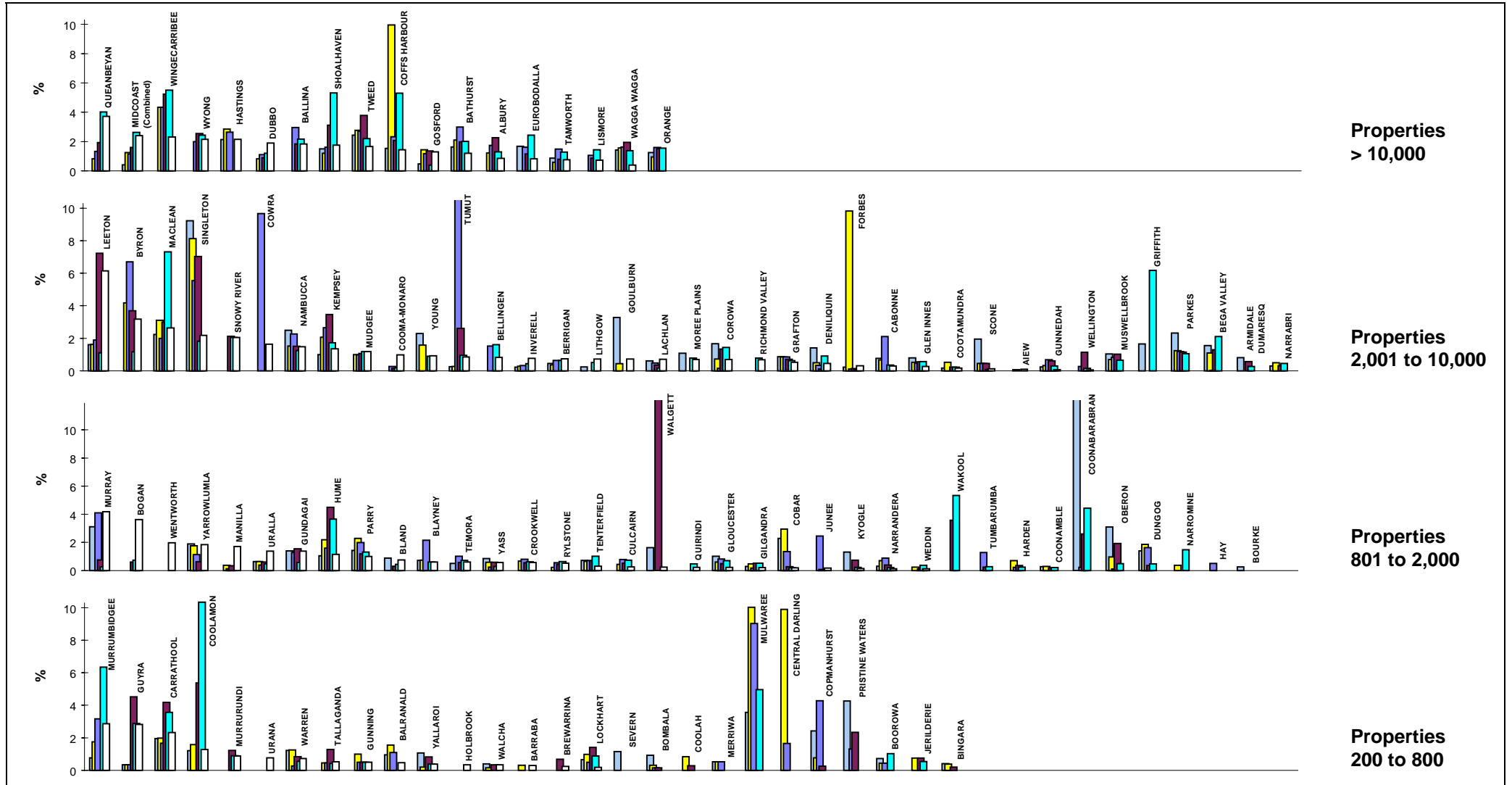
Parameter: 
$$\frac{\text{No. of Residential Assessments (Q4a)} \times 100}{\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}}$$

**Note:**

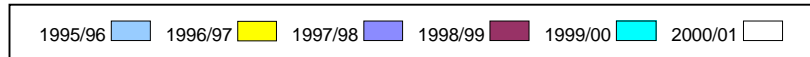
- For general notes see page 43.

# 70 New Residential Dwellings Connected

# Sewerage



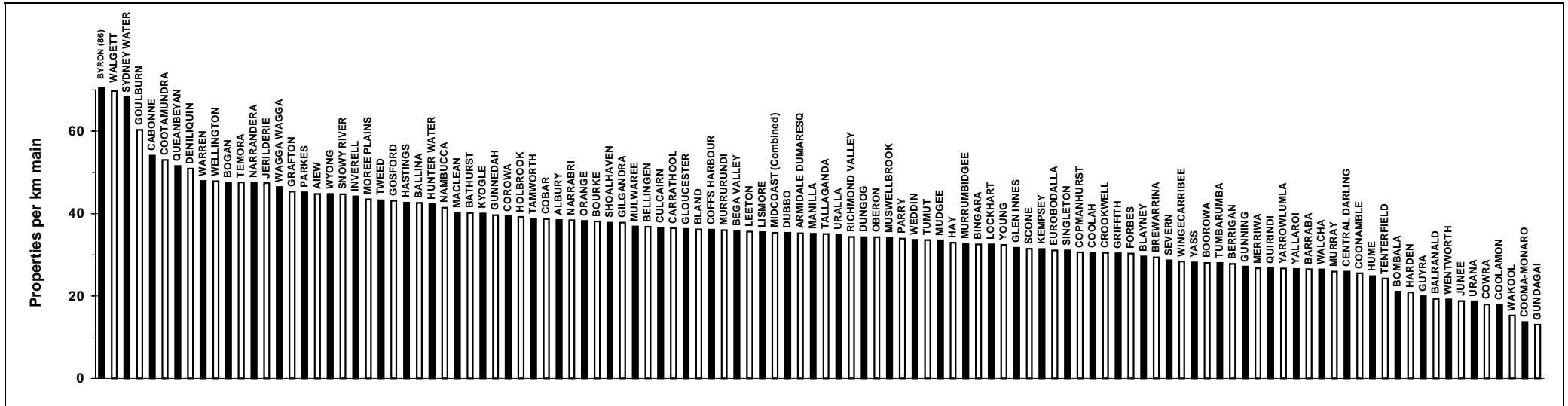
Parameter:  $\frac{\text{No. of New Residential Dwellings Connected in Year (Q5)} \times 100}{\text{No. of Residential Assessments (Q4a)} \times \text{No. of Connected Residential Properties per Assessment}}$



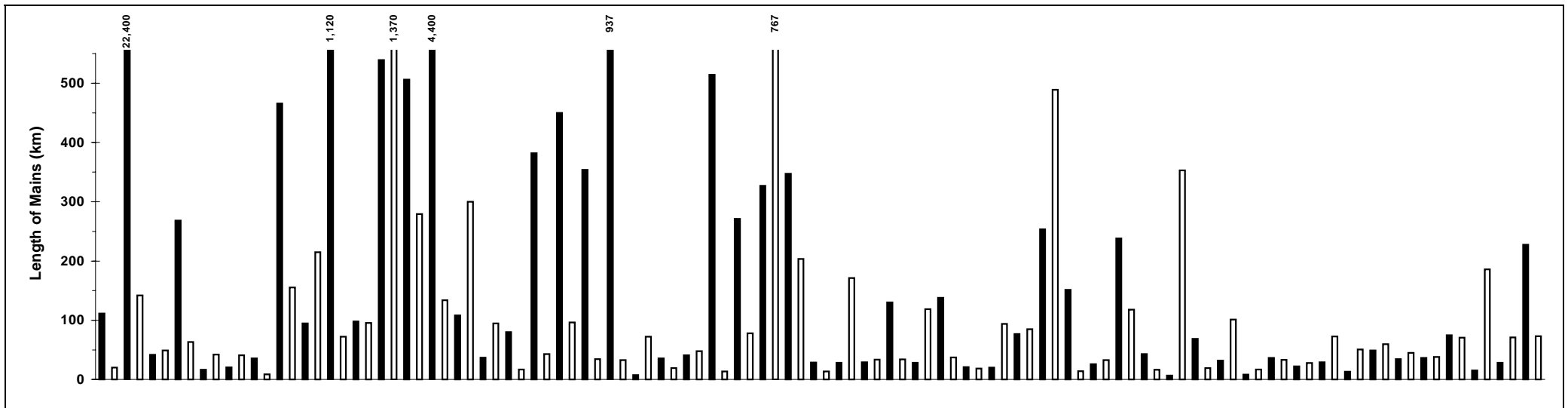
- Notes:**
- This figure shows ranked values of the 2000/01 number of new residential dwellings connected to sewerage for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the total number of new residential dwellings connected for the 32 councils shown *range* from about 6% to 0%. The 5 councils on the right did not report their 2000/01 new residential properties connected. Results for the previous 5 years are also shown.
  - The Statewide median new residential dwellings connected to sewerage is 1.4% of the existing number of connected residential properties (refer to Table 2 - percentage of properties basis).
  - For general notes see page 43.

# 71 Properties Served per km of Main

# Sewerage



Parameter: 
$$\frac{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Properties (Q4b)}] \times \text{No. of Connected Properties per Assessment}}{\text{Length of Reticulation/Gravity Mains (Q10a)} + \text{Length of Rising Mains (Q10b)}}$$

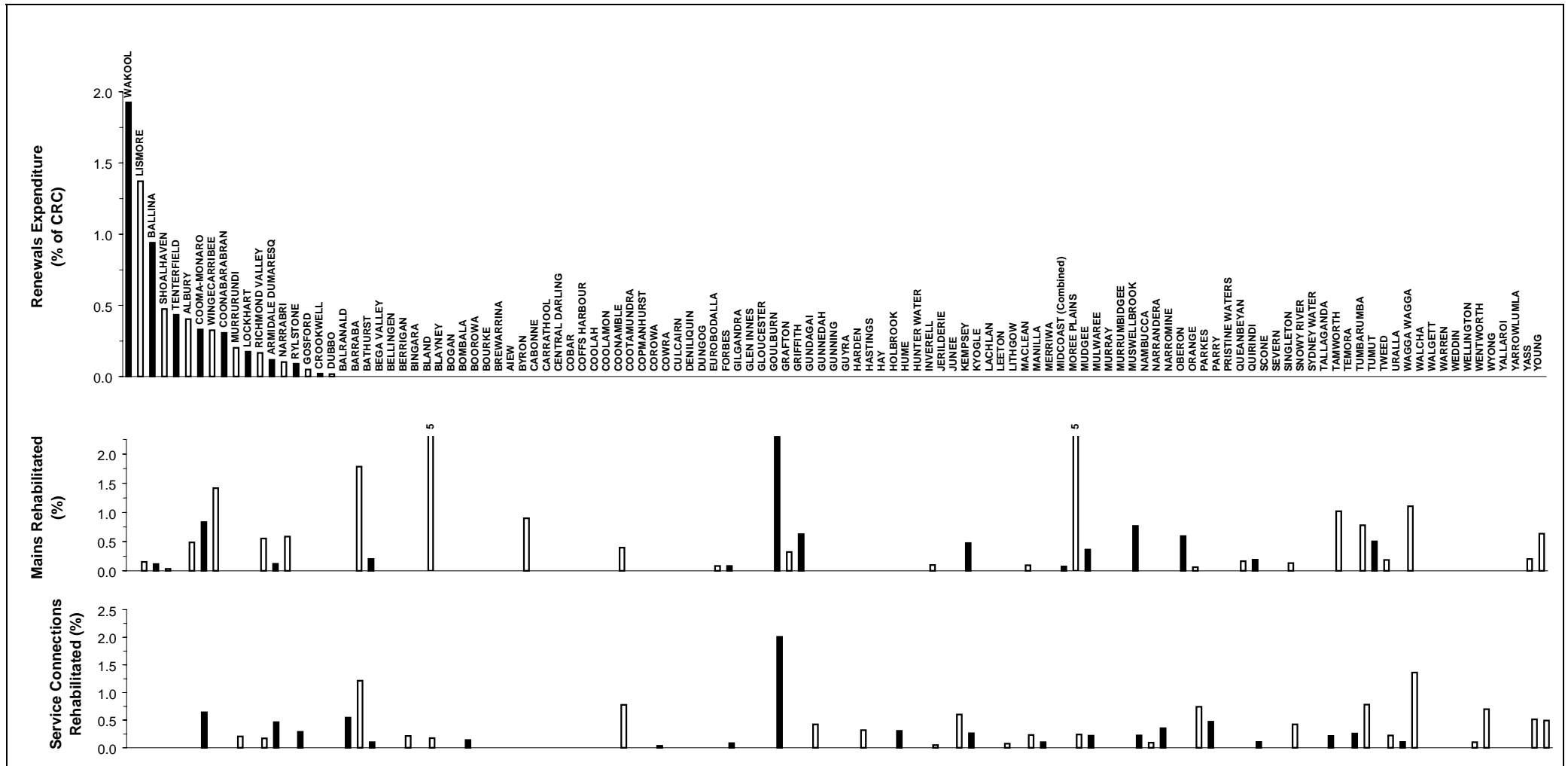


Parameter: Length of Reticulation/Gravity Mains (Q10a) + Length of Rising Mains (Q10b)

Note:  
1. For general notes see page 43.

# 72 Renewals Expenditure

# Sewerage



Parameter:  $\frac{\text{Asset Renewals (S17c)} \times 100}{\text{Current Replacement Cost of System Assets (S43)}}$

Parameter:  $\frac{\text{Length of Mains Rehabilitated (Q11a)} \times 100}{\text{Total Length of Mains (Q10c)}}$

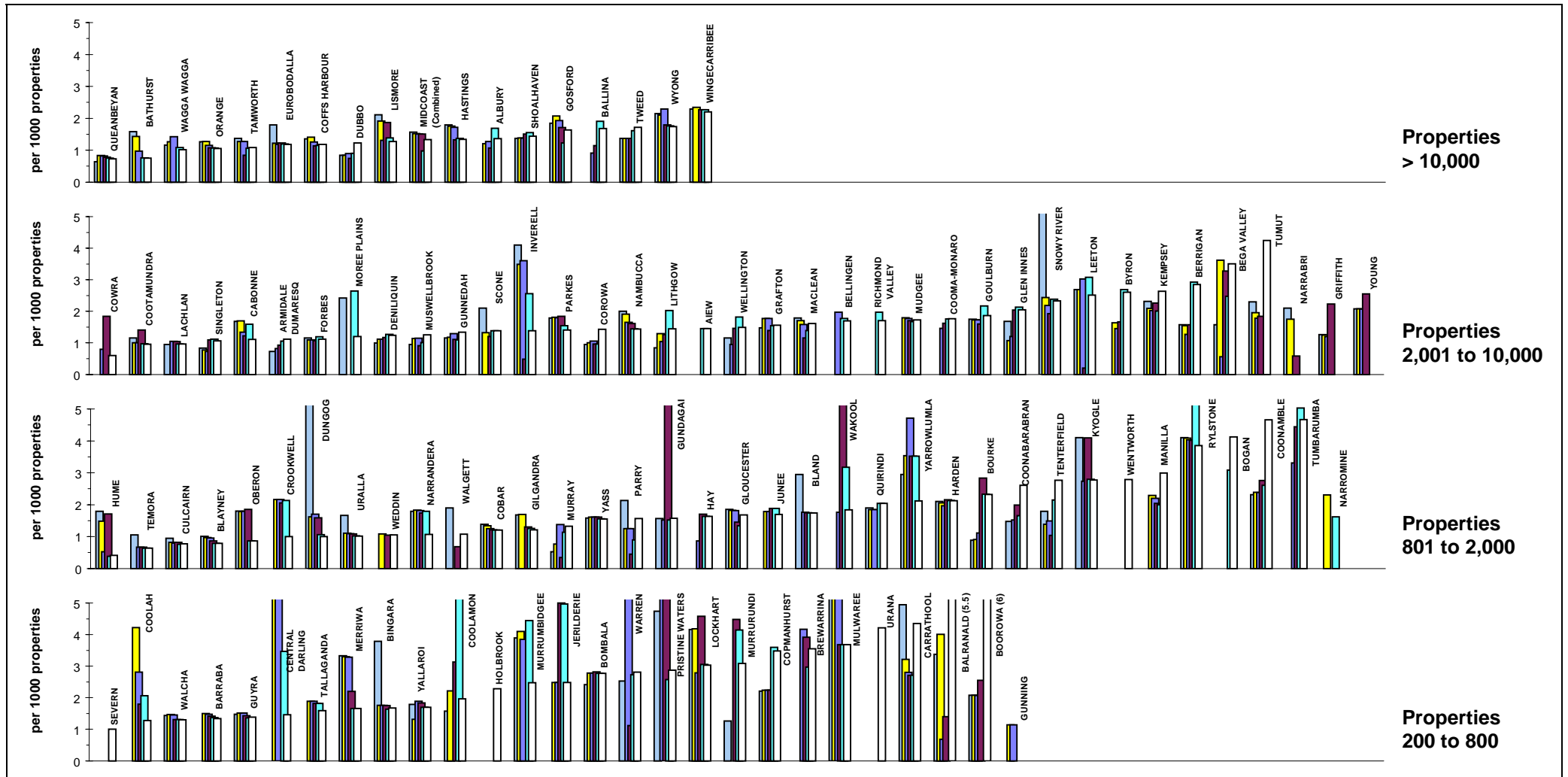
Parameter:  $\frac{\text{Service Connections Rehabilitated (Q11b)} \times 100}{\text{Residential Properties Connected (Q2a) + Non-Residential Properties Connected (Q11b)}}$

**Notes:**

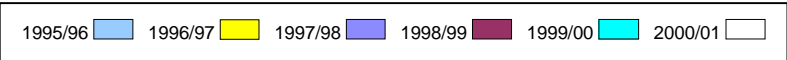
- The first graph shows ranked values of the renewals expenditure as a percentage of current replacement cost of system assets in 2000/01 for each council; the second graph shows the percentage of mains rehabilitated and the third graph shows the percentage of service connections rehabilitated.
- The Statewide median renewals expenditure is nil (refer to Table 2 - percentage of connected properties basis).
- For general notes see page 43.

# 73 Employees

# Sewerage

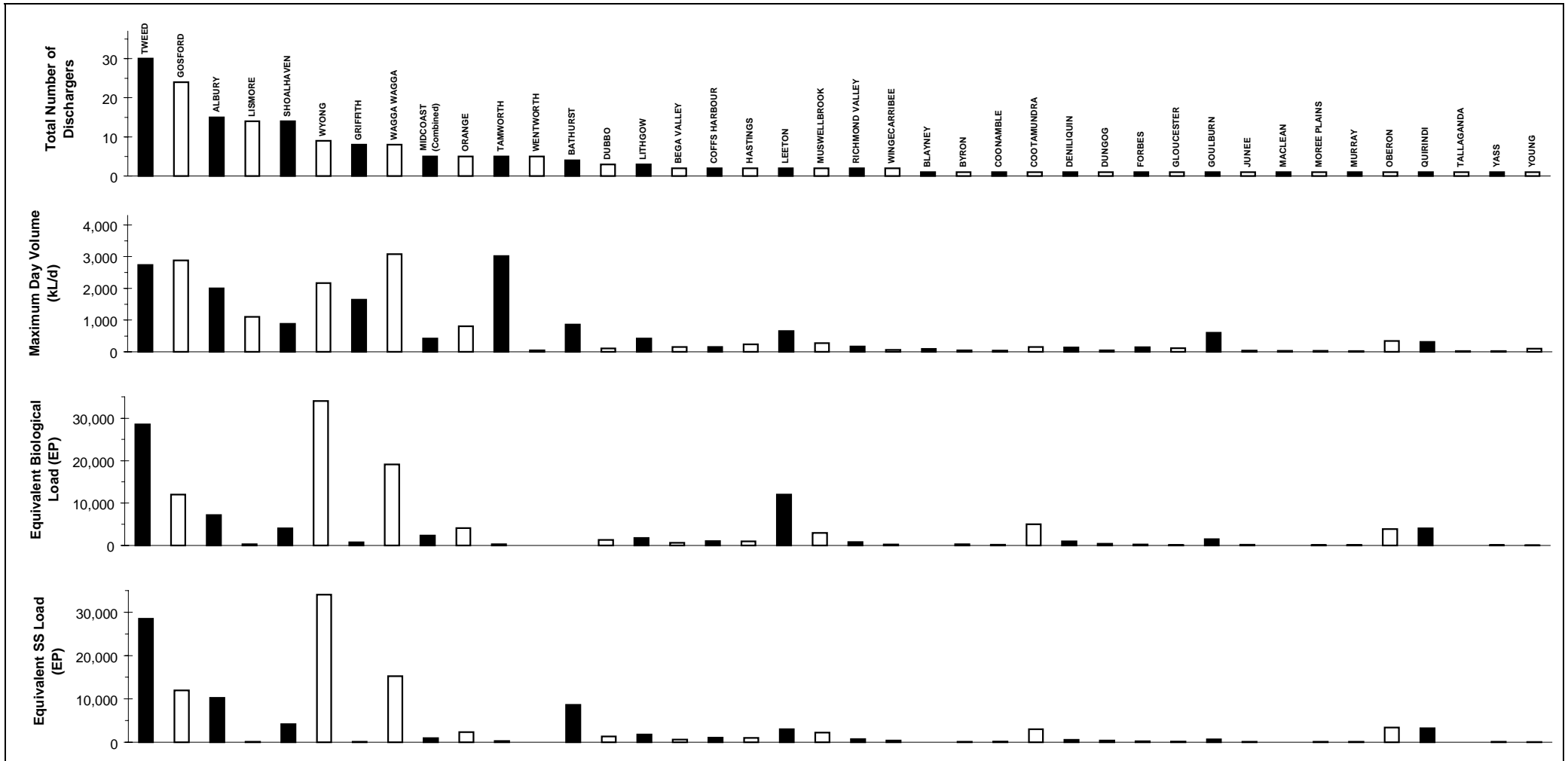


Parameter:  $\frac{\text{Equivalent Full-time Employees (Q29)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$



**Notes:**

1. This figure shows ranked values of the sewerage employees in 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewerage employees for the 34 councils shown **range** from about **0.6 to 4** per 1000 connected properties. Results for the previous 5 years are also shown.
2. The Statewide median number of sewerage employees is 1.4 per 1000 connected properties (refer to Table 2 - percentage of connected properties basis).
3. For general notes see page 43.

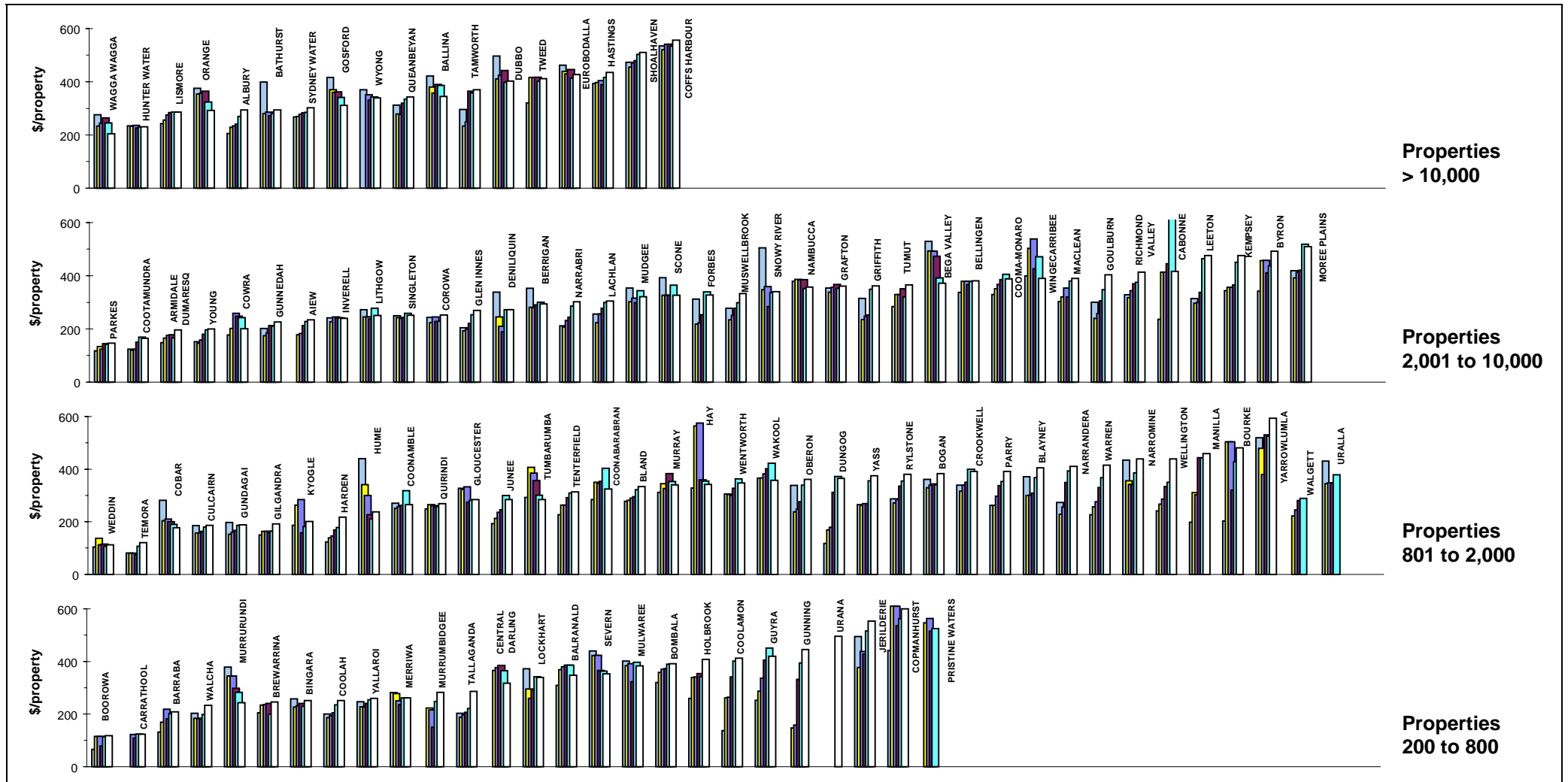


**Parameters:**  
 Number of Large Dischargers  
 Maximum Day Volume  
 Equivalent Biological Load  
 Equivalent Suspended Solids Load

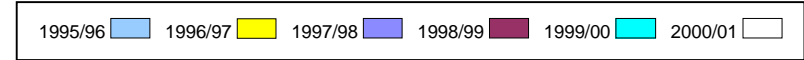
- Notes:**
1. A total of 40 councils have 184 large trade waste dischargers (>20 kL/d).
  2. As indicated on page xix all councils should levy appropriate non-residential sewerage charges and trade waste fees and charges for all liquid trade waste dischargers into the council's sewerage system, including all commercial properties. DLWC has developed sewerage and trade waste pricing software to assist councils.
  3. For general notes see page 43.

# 75 Average Residential Bill

# Sewerage



**Parameter:** Residential Rates and Service Availability Charges (S6a)  
 [No. of Residential Assessments (Q4a) x No. of Connected Properties per Residential Assessment]

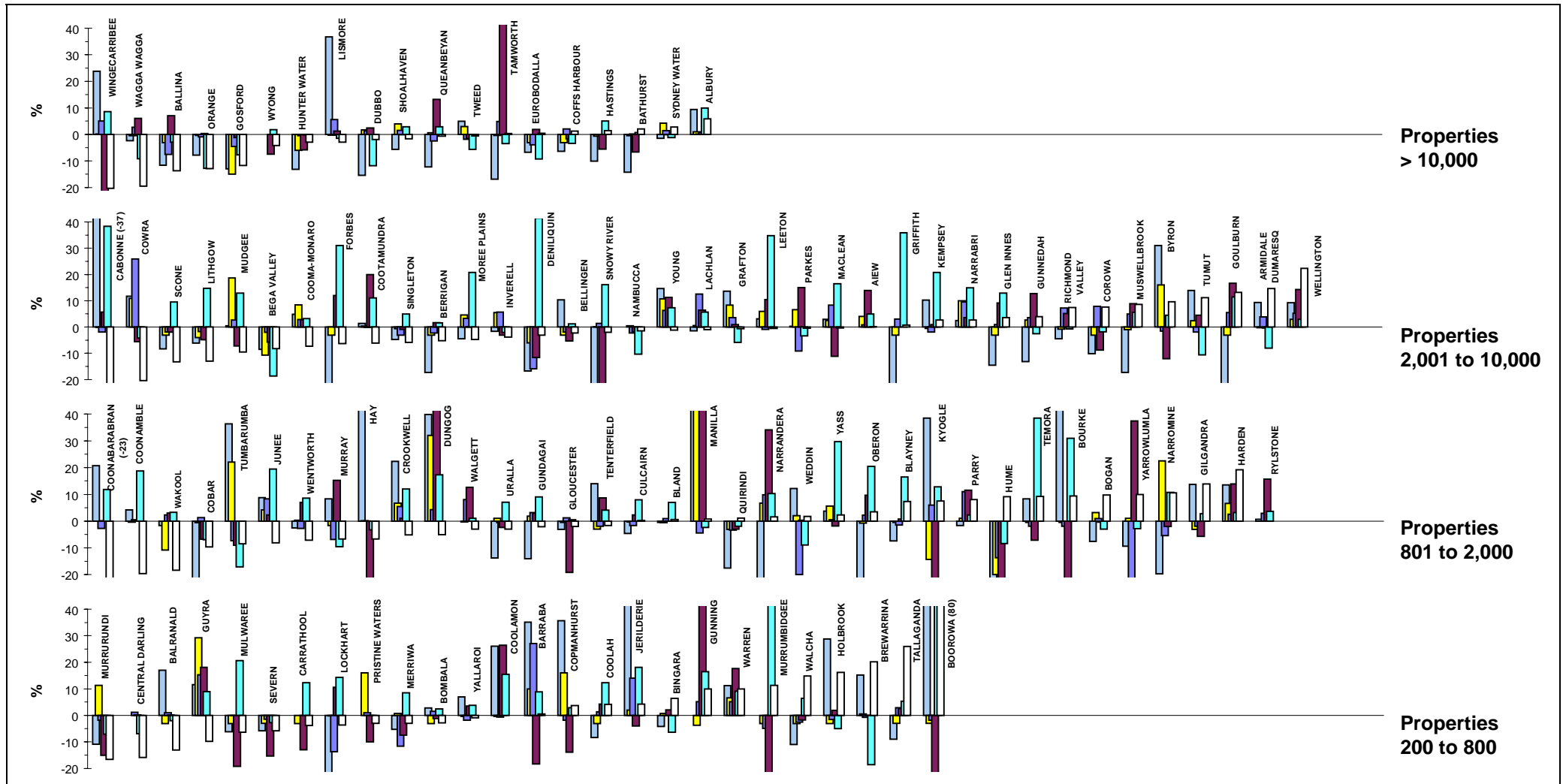


**Notes:**

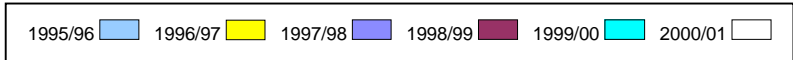
1. This figure shows ranked values of the 2000/01 average residential bill for sewerage for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewerage bills for the 37 councils shown **range** from about **\$150 to \$510** per connected property. Results for the previous 5 years are also shown.
2. The 2000/01 Statewide median average residential bill for sewerage is \$335 per connected property (refer to Table 2 – percentage of connected properties basis).
3. For general notes see page 43.

# 76 Real Increase over Previous Year's Average Residential Bill

# Sewerage

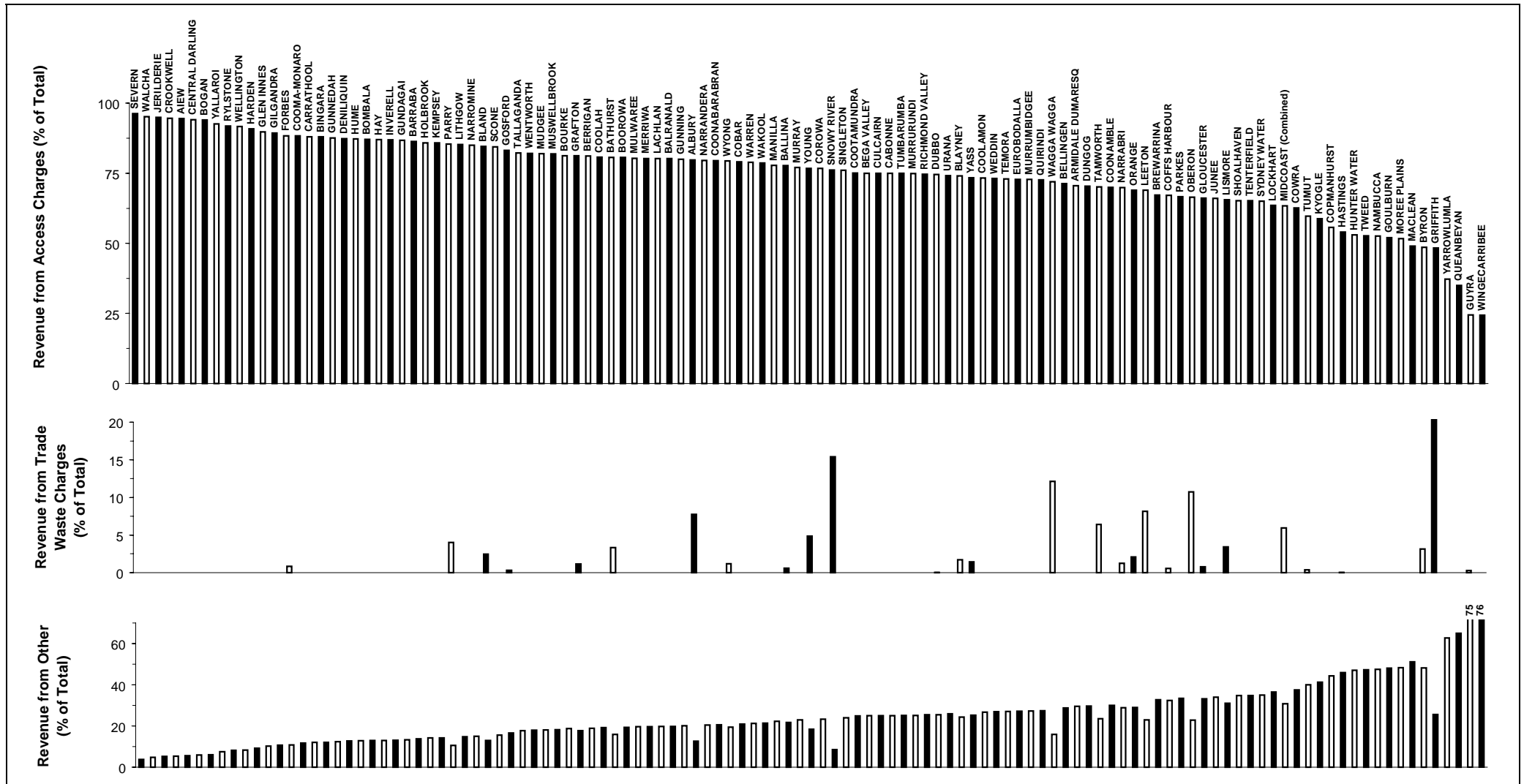


**Parameter:**  $\frac{\text{Average Sewerage Bill for Residential Customers (2000/01)} \times 100}{\text{Average Sewerage Bill for Residential Customers (1999/00)} \times (1 + \text{CPI increase})}$



- Notes:**
- This figure shows ranked values of the 2000/01 real increase over the previous year's average residential bill for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the real increases over the previous year's average residential bill for the 37 councils shown **range** from about -37% to 22%. Results for the previous 5 years are also shown.
  - The 2000/01 Statewide median increase over the previous year's average residential bill is -2% per property (refer to Table 2 – percentage of connected properties basis).
  - For general notes see page 43.





Parameter:  $\frac{\text{Rates and Services Availability Charges (S6)} \times 100}{\text{Total Revenue (S14)}}$

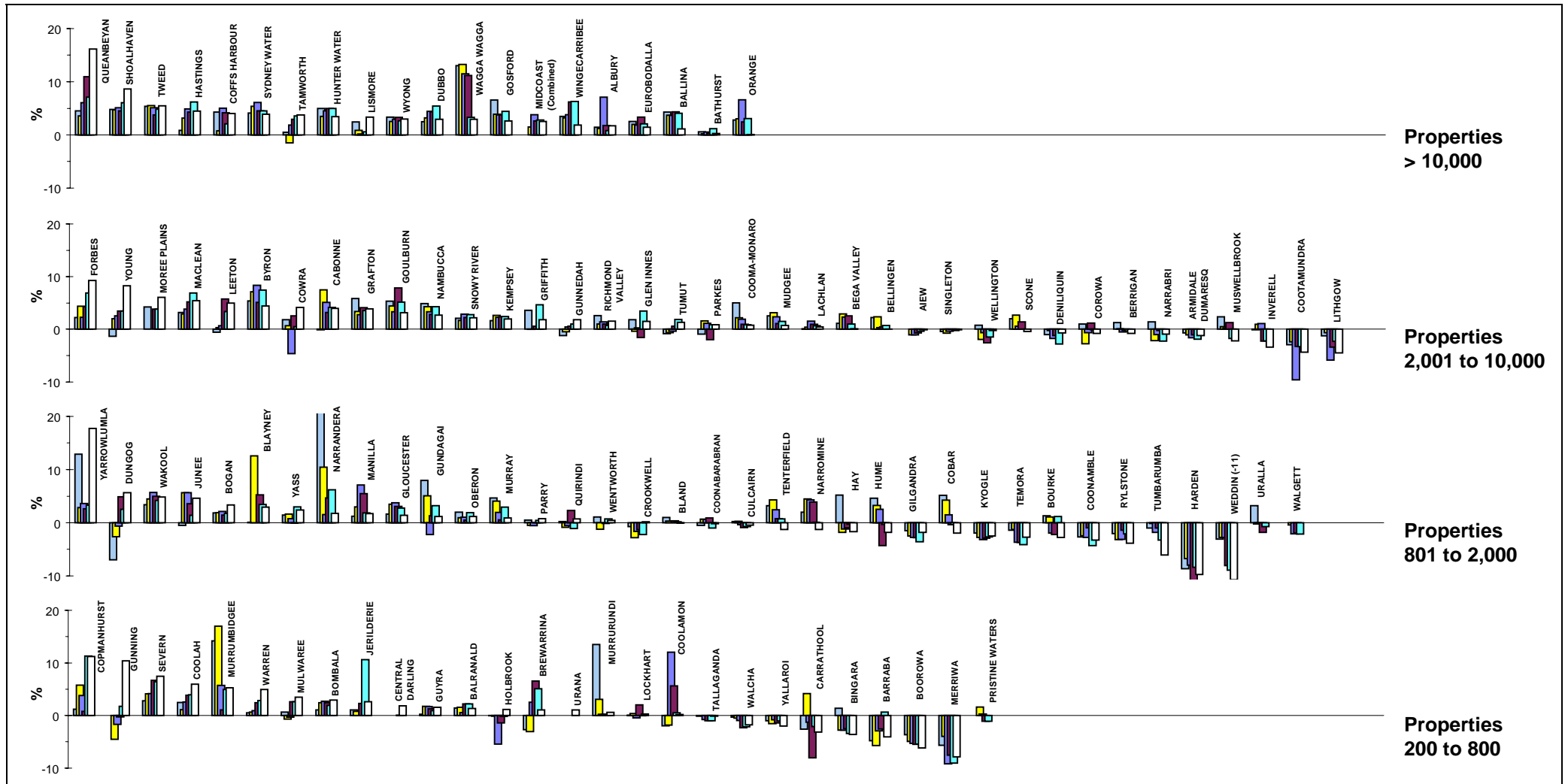
Parameter:  $\frac{\text{Trade Wastes Charges (S7)} \times 100}{\text{Total Revenue (S14)}}$

Parameter:  $\frac{[\text{Other Sales and Charges (S8)} + \text{Extra Charges (S9)} + \text{Interest on Investments (S10)} + \text{Other Revenue (S11)} + \text{Other Grants (S12c)} + \text{Contributions (S13)}] \times 100}{\text{Total Revenue (S14)}}$

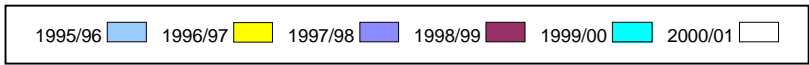
Note:  
1. See general notes on page 43.

# 78 Economic Real Rate of Return

# Sewerage



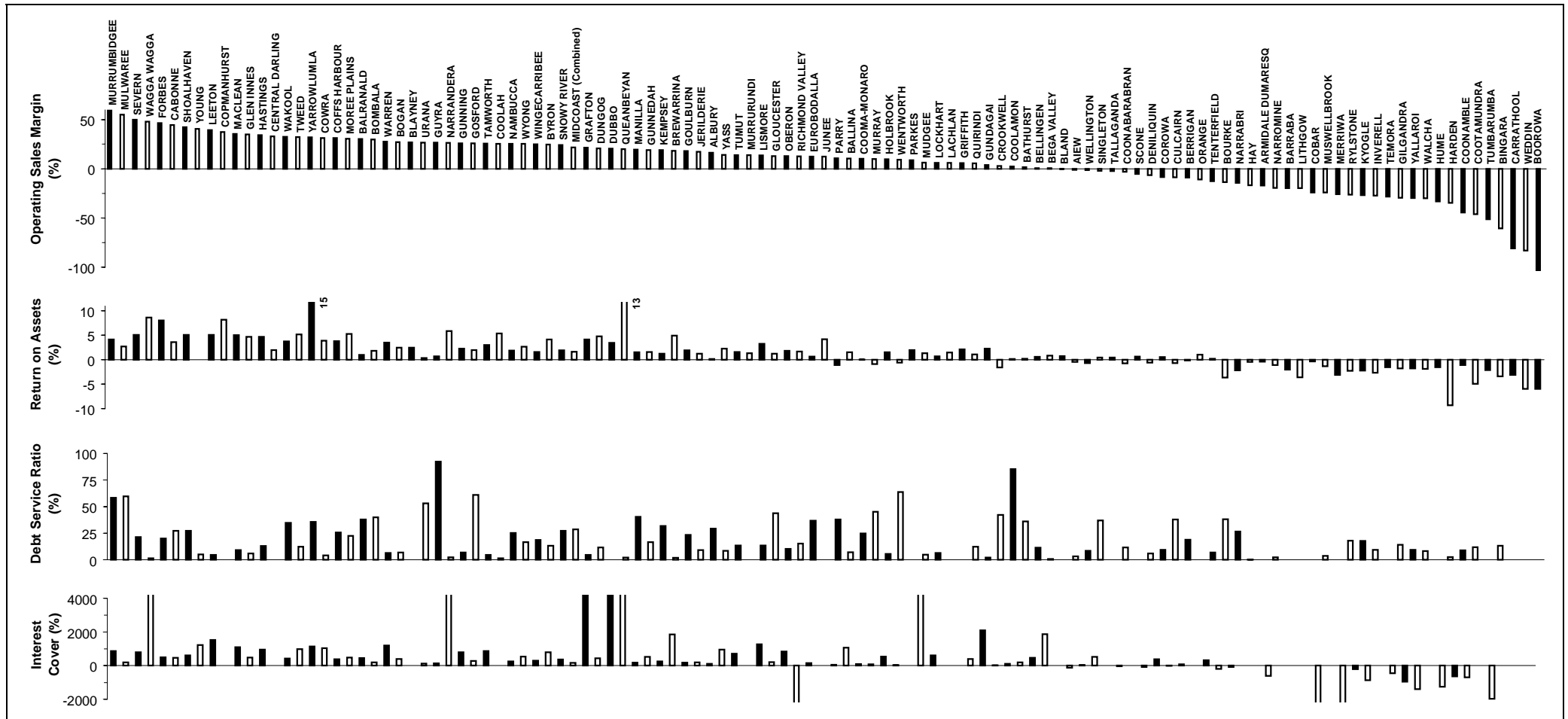
**Parameter:**  $\frac{[\text{Total Revenue (S14)} - \text{Grants for Acquisition of Assets (S12a)} - \text{Total Expenses (S5)} + \text{Interest Expense (S4a)} - \text{Interest Income (S10)}] \times 100}{\text{Written Down Replacement Cost of Property, Plant \& Equipment (S43)}}$



- Notes:**
1. This figure shows 2000/01 ranked values of the sewerage economic real rate of return for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the real rates of return for the 37 councils shown **range** from about **9% to -4%**. Results for the previous 5 years are also shown.
  2. The Statewide median sewerage economic real rate of return is 2.6% (refer to Table 2 - percentage of connected properties basis).
  3. The Economic Real Rate of Return (ERRR) includes developer provided assets. This has a significant effect on the 2000/01 ERRR for Queanbeyan and Yarrowlumla.
  4. For general notes see page 43.

# 79 Operating Sales Margin, Return on Assets, Debt Service Ratio and Interest Cover

## Sewerage



**Parameter:** 
$$\frac{[\text{Total Revenue (S14)} - \text{Grants for Capital Works (S12a)} - \text{Developer Provided Assets (S13b)} - \text{Total Expense (S5)} + \text{Interest Expenses (S4a)} - \text{Interest Income (S10)}] \times 100}{\text{Total Revenue (S14)} - \text{Grants for Capital Works (S12a)} - \text{Developer Provided Assets (S13b)} - \text{Interest Income (S10)}}$$

**Parameter:** 
$$\frac{[\text{Total Revenue (S14)} - \text{Grants for Capital Works (S12a)} - \text{Total Expenses (S5)} + \text{Interest Expenses (4a)}] \times 100}{\text{Total Assets (S33)}}$$

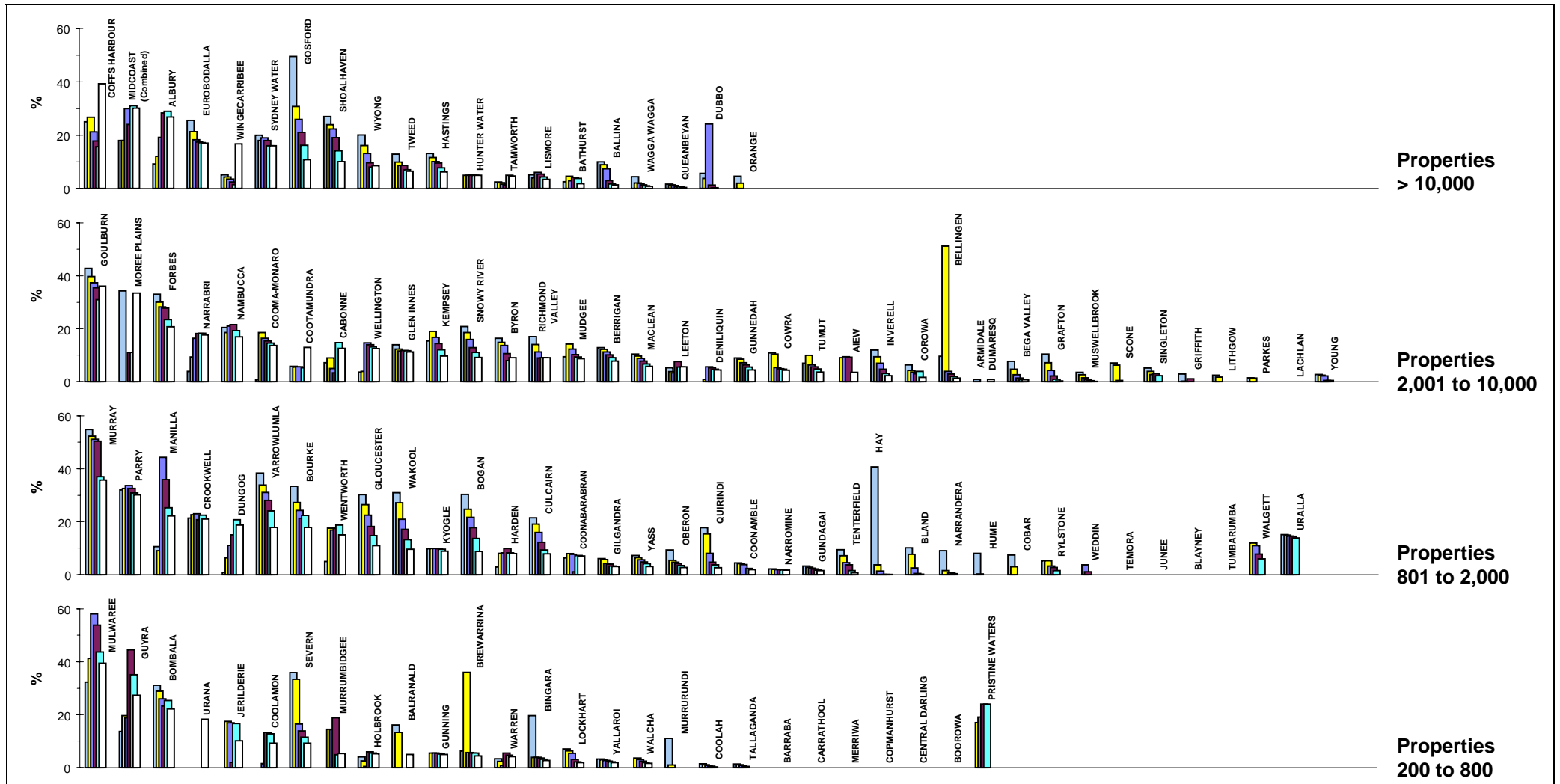
**Parameter:** 
$$\frac{[\text{Payment of Debts (S18)} + \text{Interest Expense (S4a)}] \times 100}{\text{Total Revenue (S14)} - \text{Grants for Capital Works (S12a)} - \text{Developer Provided Assets (S13b)}}$$

**Parameter:** 
$$\frac{[\text{Total Revenue (S14)} - \text{Grants for Capital Works (S12a)} - \text{Total Expenses (S5)} + \text{Interest Expense (S4a)}] \times 100}{\text{Interest Expense (S4a)}}$$

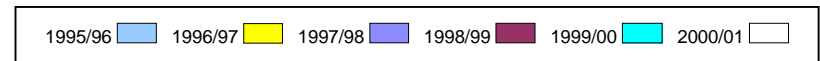
**Note:**  
1. For general notes see page 43.

# 80 Debt to Equity

# Sewerage



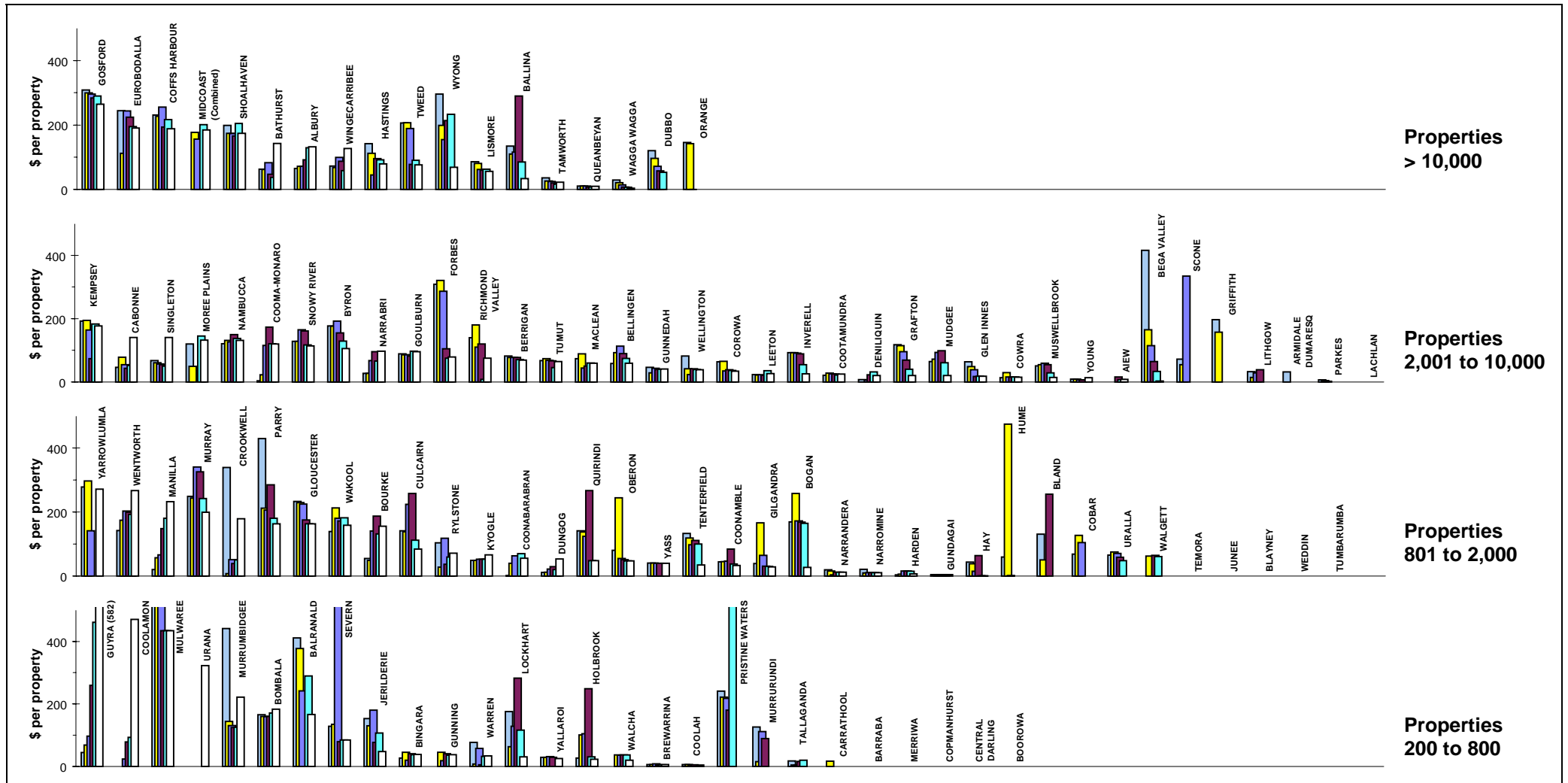
Parameter: 
$$\frac{[\text{Bank Overdraft (S34)} + \text{Borrowing (S36)}] \times 100}{\text{Total Equity (S42)}}$$



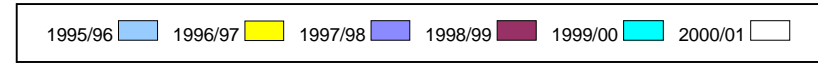
- Notes:**
1. This figure shows 2000/01 ranked values of the debt to equity for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the debt to equity for the 36 councils shown **range** from about **36% to nil**. Results for the previous 5 years are also shown.
  2. The Statewide median debt to equity is 9% (refer to Table 2 – percentage of connected properties basis).
  3. For general notes see page 43.

# 81 Loan Payment

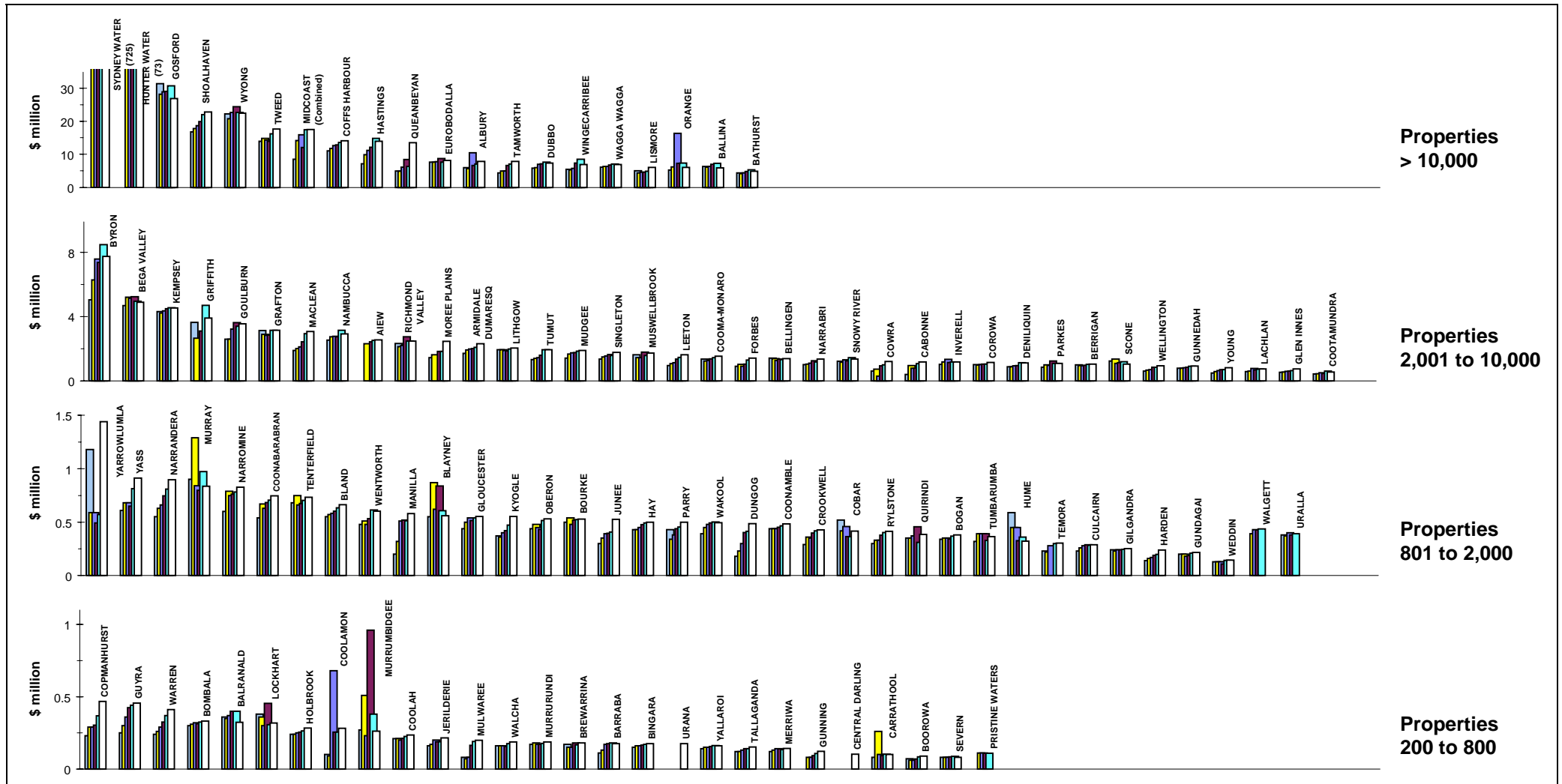
# Sewerage



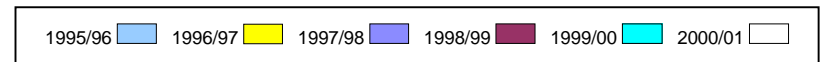
Parameter:  $\frac{\text{Payment of Debts (S18) + Interest Expense (S4a)}}{\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}} \times \text{No. of Connected Properties per Assessment}$



- Notes:**
1. This figure shows 2000/01 ranked values of the sewerage loan payment per property for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewerage loan payments for 35 councils shown **range** from about **\$180 to nil** per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  2. The Statewide median sewerage loan payment is \$80 per connected property (refer to Table 2 - percentage of connected properties basis).
  3. For general notes see page 43.



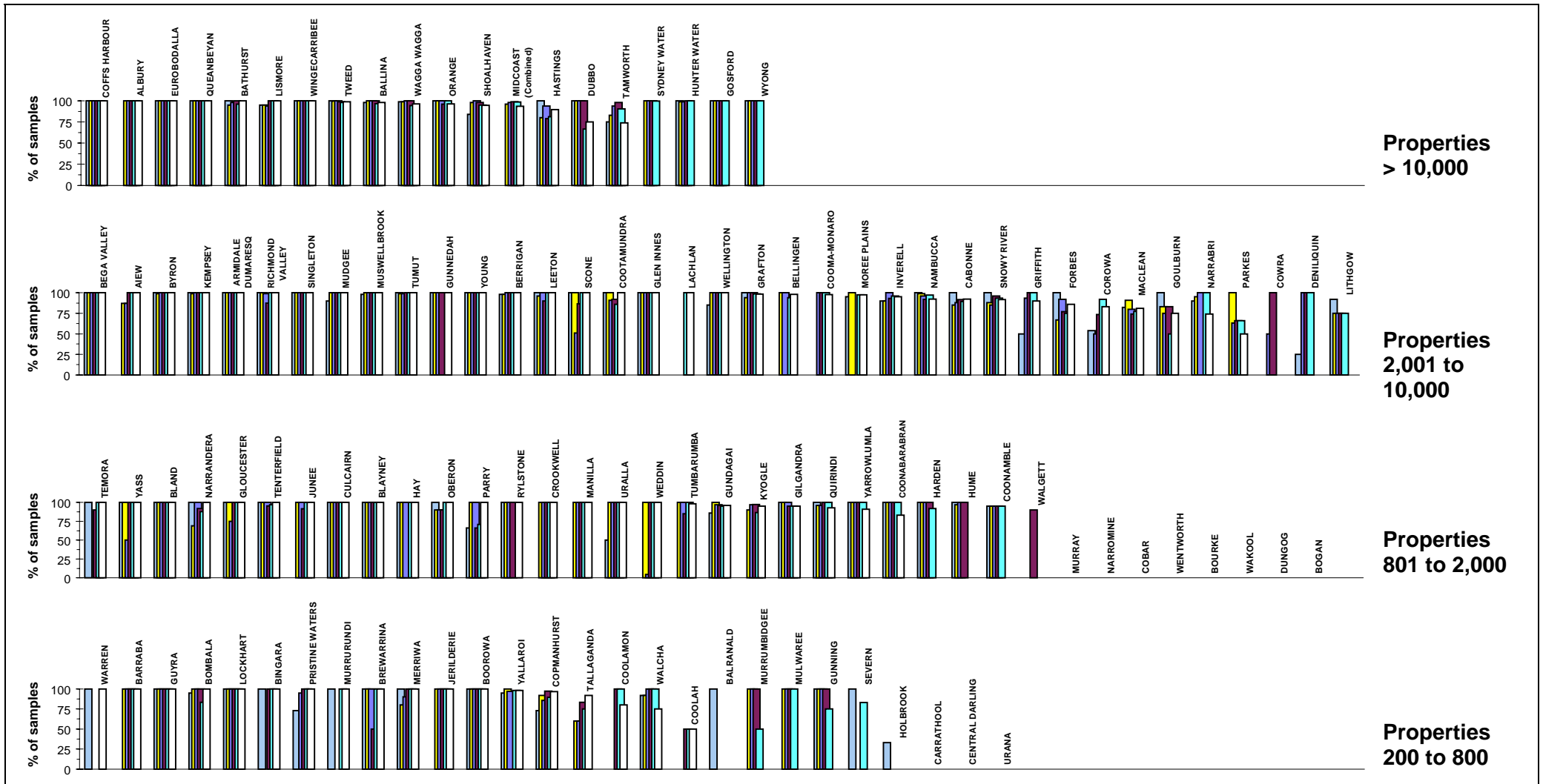
Parameter: [Total Revenues (S14) - Grants for Acquisition of Assets (S12a)] ÷ 1,000,000



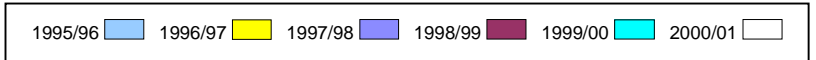
- Note:**
- This figure shows 2000/01 ranked values of the sewerage turnover (ie. revenue less grants for capital works) for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the turnover for the 37 councils shown **range** from about **\$7.7 M to \$0.5 M**. Results for the previous 5 years are also shown in Jan 2001S.
  - For general notes see page 43.

# 83 Compliance with BOD in Licence

## Sewerage



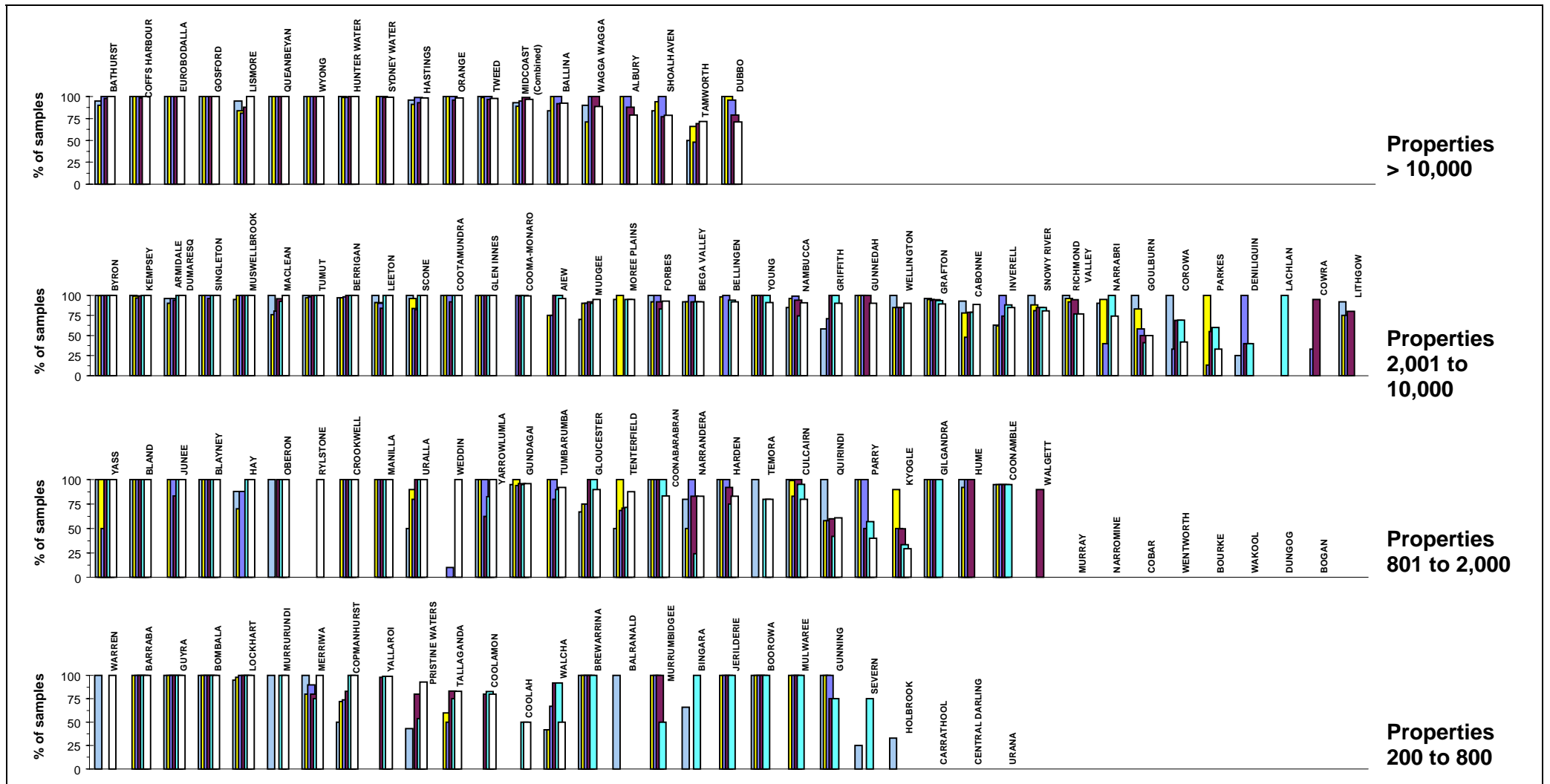
**Parameter:** Percentage of samples complying with 90 percentile EPA licence limits for Biochemical Oxygen Demand (BOD) (Q51a).



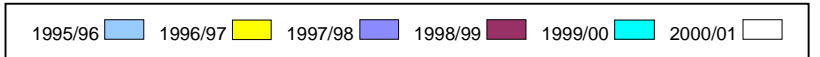
**Note:**  
1. For general notes see page 43.

# 84 Compliance with SS in Licence

## Sewerage



Parameter: Percentage of samples complying with 90 percentile EPA licence limits for Suspended Solids (SS) (Q51b).

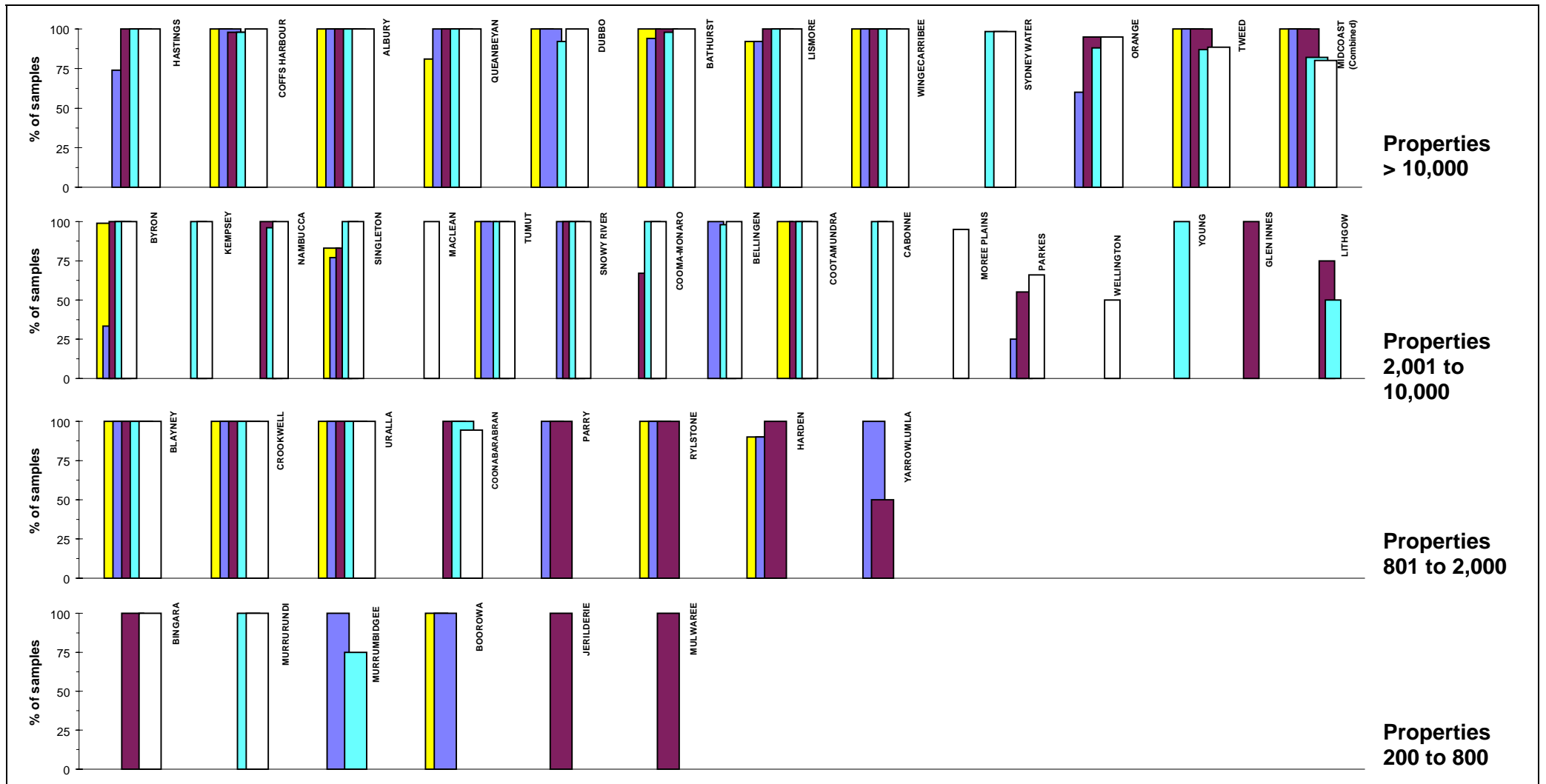


Note:  
1. For general notes see page 43.

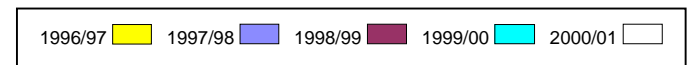


# 85 Compliance with total N in Licence

## Sewerage



Parameter: Percentage of samples complying with 90 percentile EPA licence limits for Total Nitrogen (Q51c).

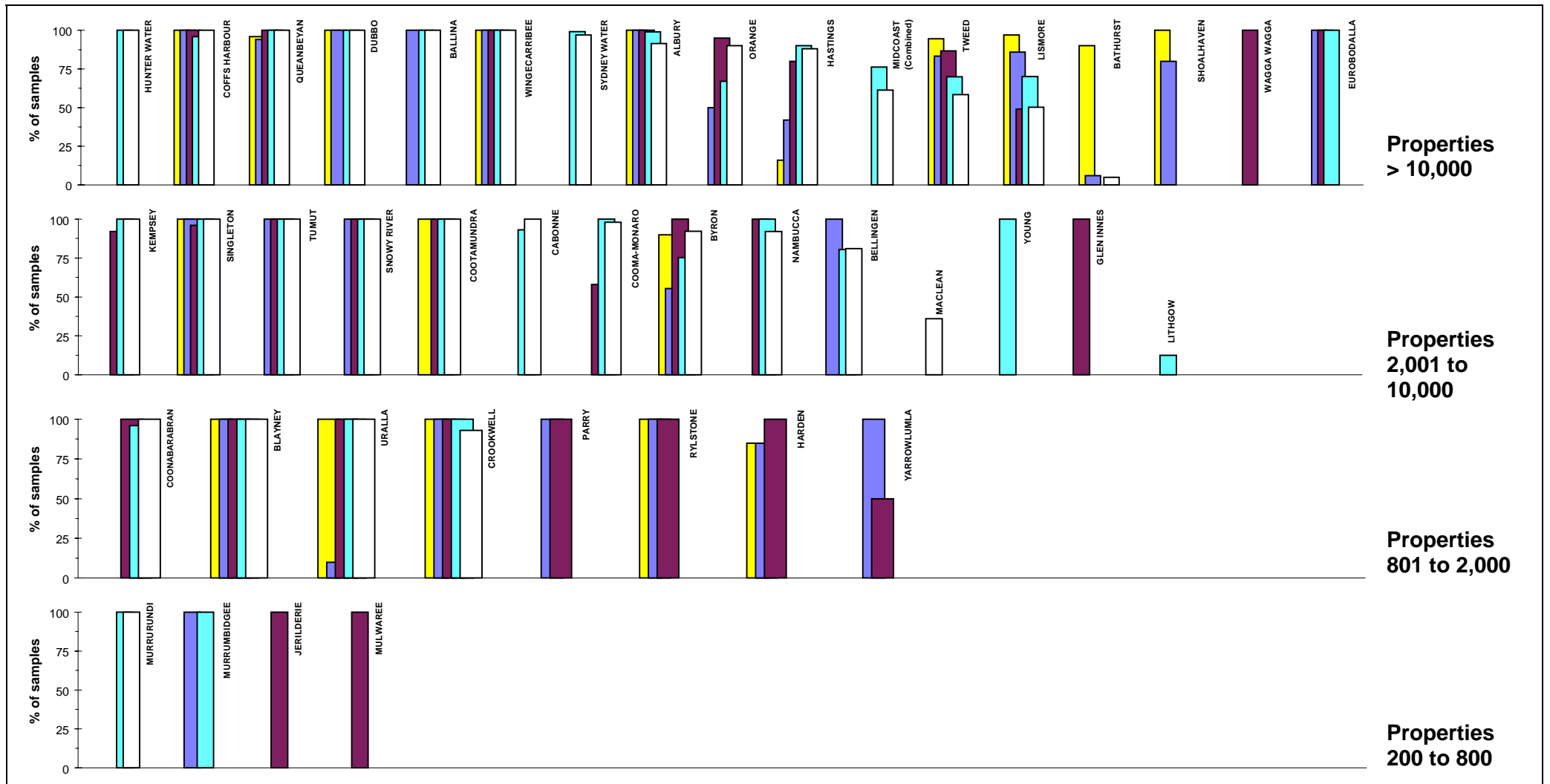


**Note:**

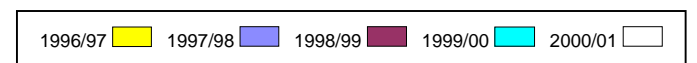
1. For general notes see page 43.

# 86 Compliance with total P in Licence

## Sewerage



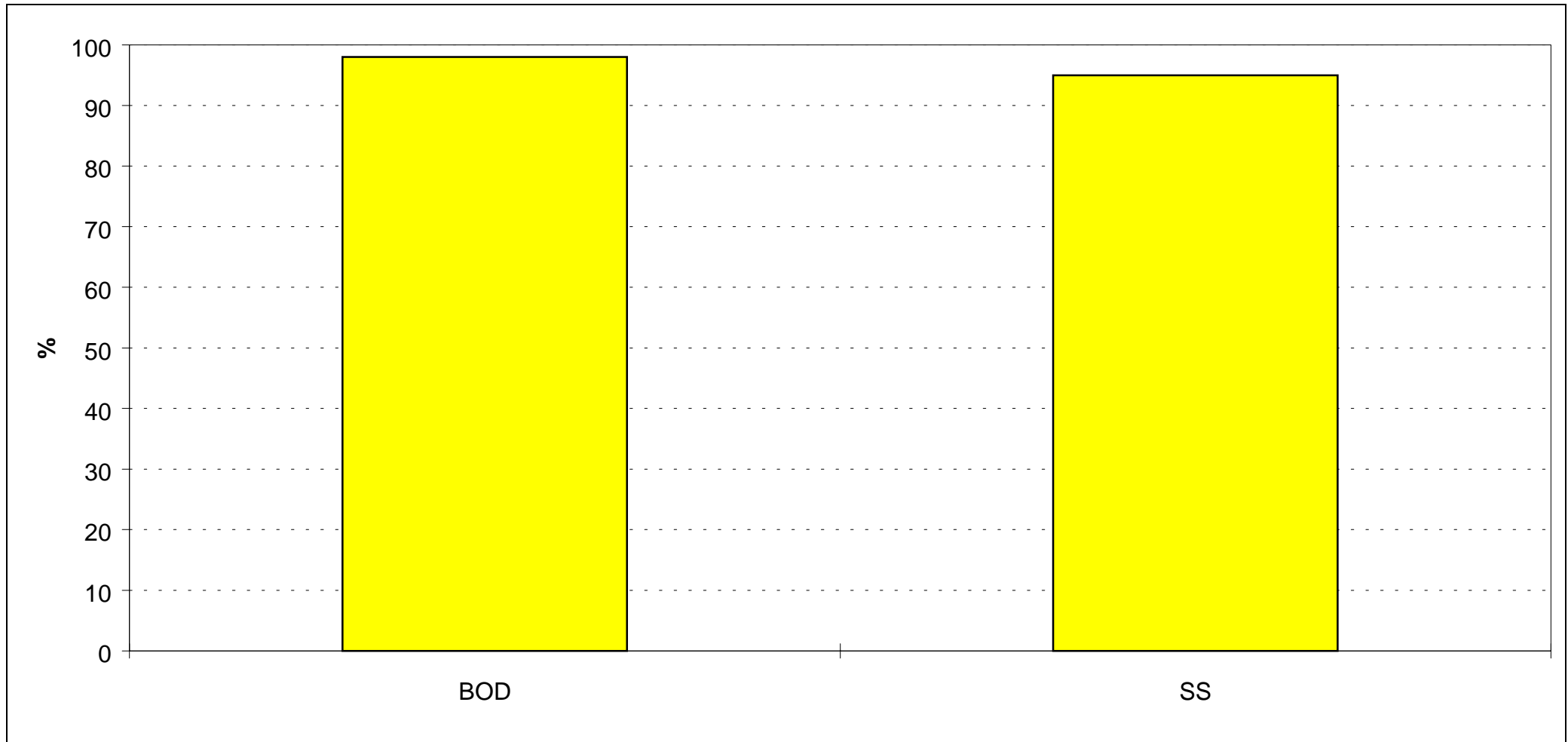
Parameter: Percentage of samples complying with 90 percentile EPA licence limits for Total Phosphorus (Q51f).



Note:  
1. For general notes see page 43.

## 87 Compliance with EPA Licence – 2000/01

## Sewerage



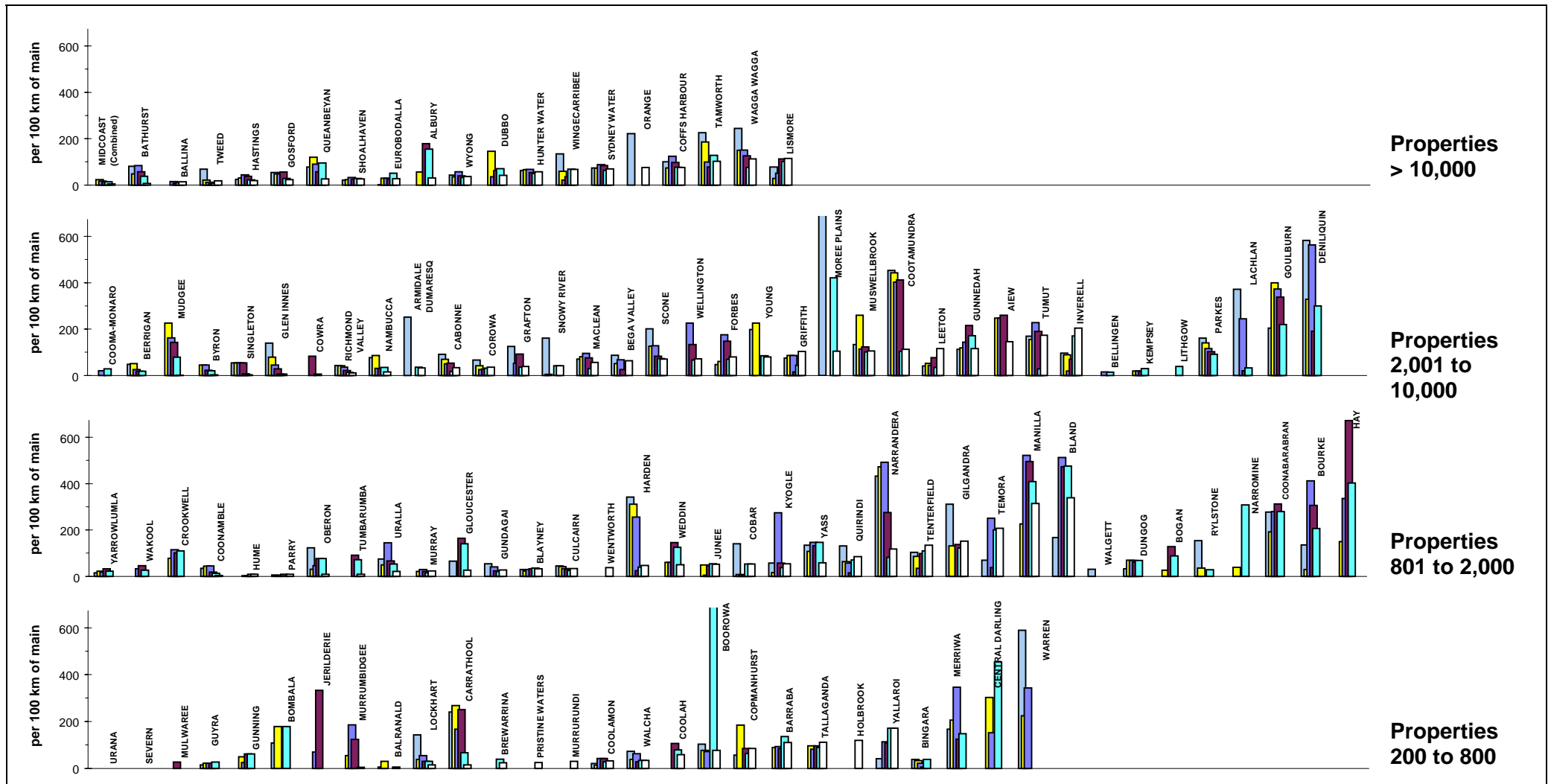
### Comment:

1. **BOD** – 98% of all samples tested for non-metropolitan NSW complied with the 90 percentile limit of their EPA licence in regard to BOD; 52% of councils complied with these limits.
2. **SS** – 95% of all samples tested for non-metropolitan NSW complied with the 90 percentile limit of their EPA licence in regard to SS; 37% of councils complied with these limits.
3. For councils with more than one sewage treatment works, the reported compliance has been pro-rated on the basis of the number of sampling days at each treatment works.
4. The major cause of non-compliance is due to the growth of algae in maturation ponds, being measured as BOD and SS. Most treatment works in non-metropolitan NSW have maturation ponds due to previous EPA preference for ponding over chlorination. Negotiations with the EPA to develop an appropriate licensing 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.
5. Typical numbers of sampling days reported for treatment works are:
 

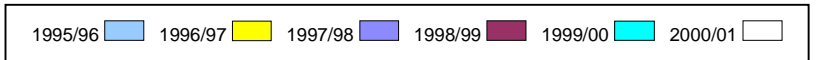
< 4 000 ep	15
about 15 000 ep	40
>25 000 ep	>100
6. 8% of councils did not report on their BOD and SS compliance. All councils with an EPA discharge licence should carry out the necessary sampling of effluent quality and report thereon in future.

# 88 Sewer Main Chokes and Collapses

## Sewerage



Parameter: 
$$\frac{\text{Total No. of Confirmed Sewer Chokes (Q21)} \times 100}{\text{Length of Reticulation/Gravity Mains (Q10a)} + \text{Length of Rising Mains (Q10b)}}$$

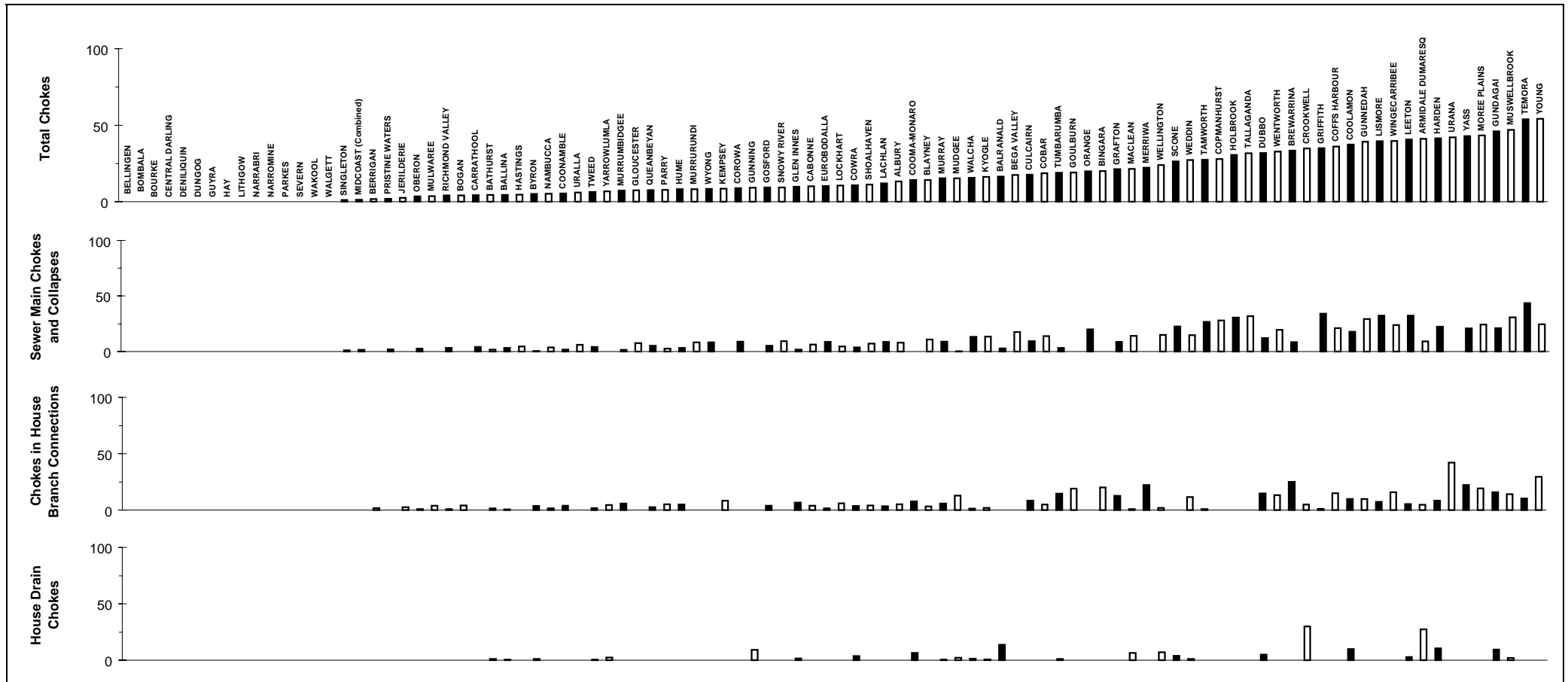


### Notes:

1. This figure shows ranked values of the sewer main chokes and collapses for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the number of sewer main chokes and collapses for the 29 councils shown **ranges** from about **0 to 205** chokes per 100 km of sewer main. Results for the previous 5 years are also shown.
2. The Statewide median sewer main chokes and collapses is 30 per 100 km of sewer main (refer to Table 2 - percentage of connected properties basis).
3. 17% of councils were unable to report on this item and these councils should institute a system to record and report such occurrences.
4. For general notes see page 43.

# 89 Total Chokes (per 1000 properties)

## Sewerage



**Parameter:**  $\frac{[\text{No. of Confirmed Sewer Chokes (Q21)} + \text{No. of Chokes in House Branch Connections (Q23)} + \text{No. of Chokes in House Drains (Q24)}] \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Parameter:**  $\frac{\text{No. of Confirmed Sewer Chokes (Q21)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

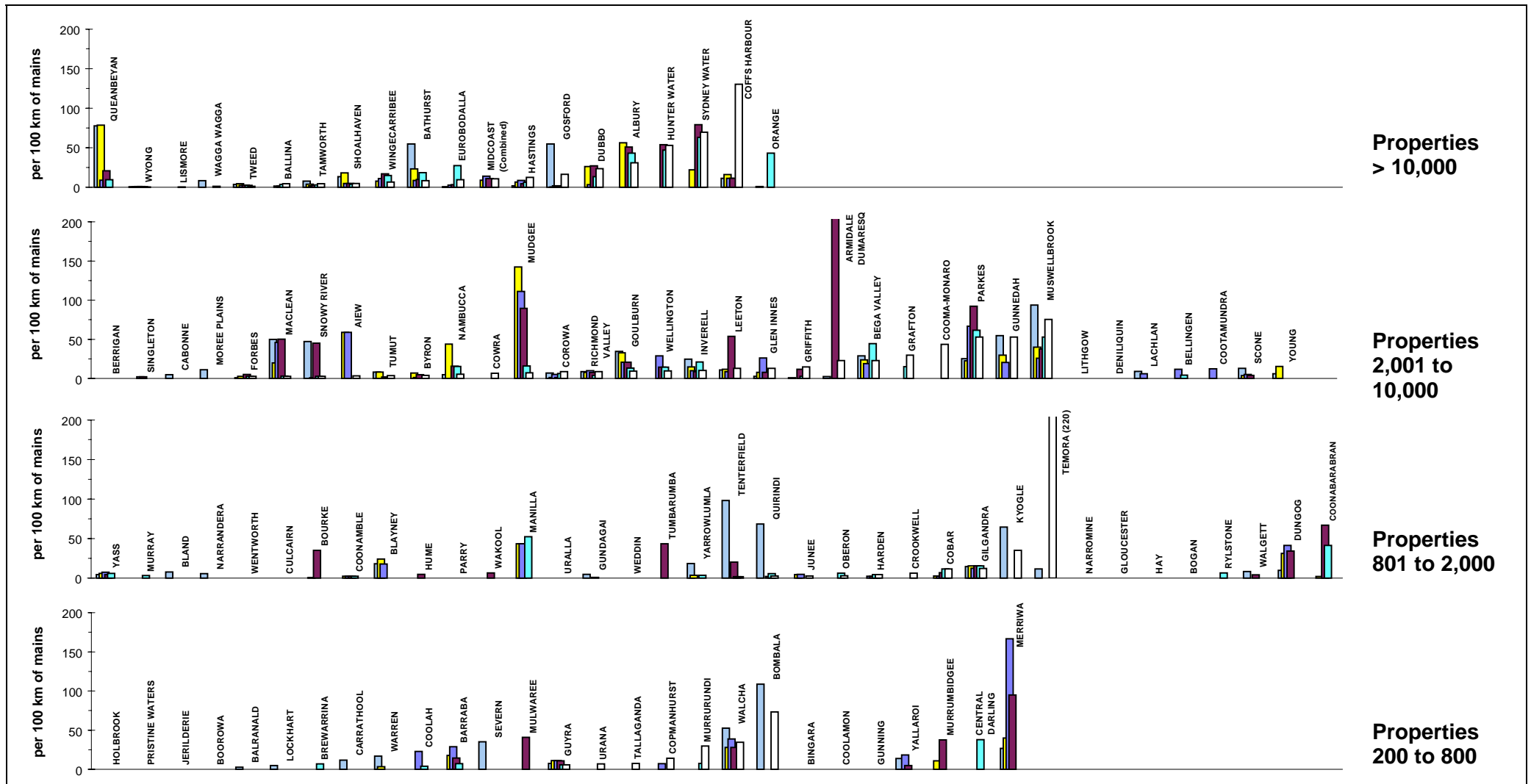
**Parameter:**  $\frac{\text{No. of Chokes in House Branch Connections (Q23)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Parameter:**  $\frac{\text{No. of Chokes in House Drains (Q24)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Note:**  
1. For general notes see page 43.

# 90 Sewer Overflows to the Environment

## Sewerage



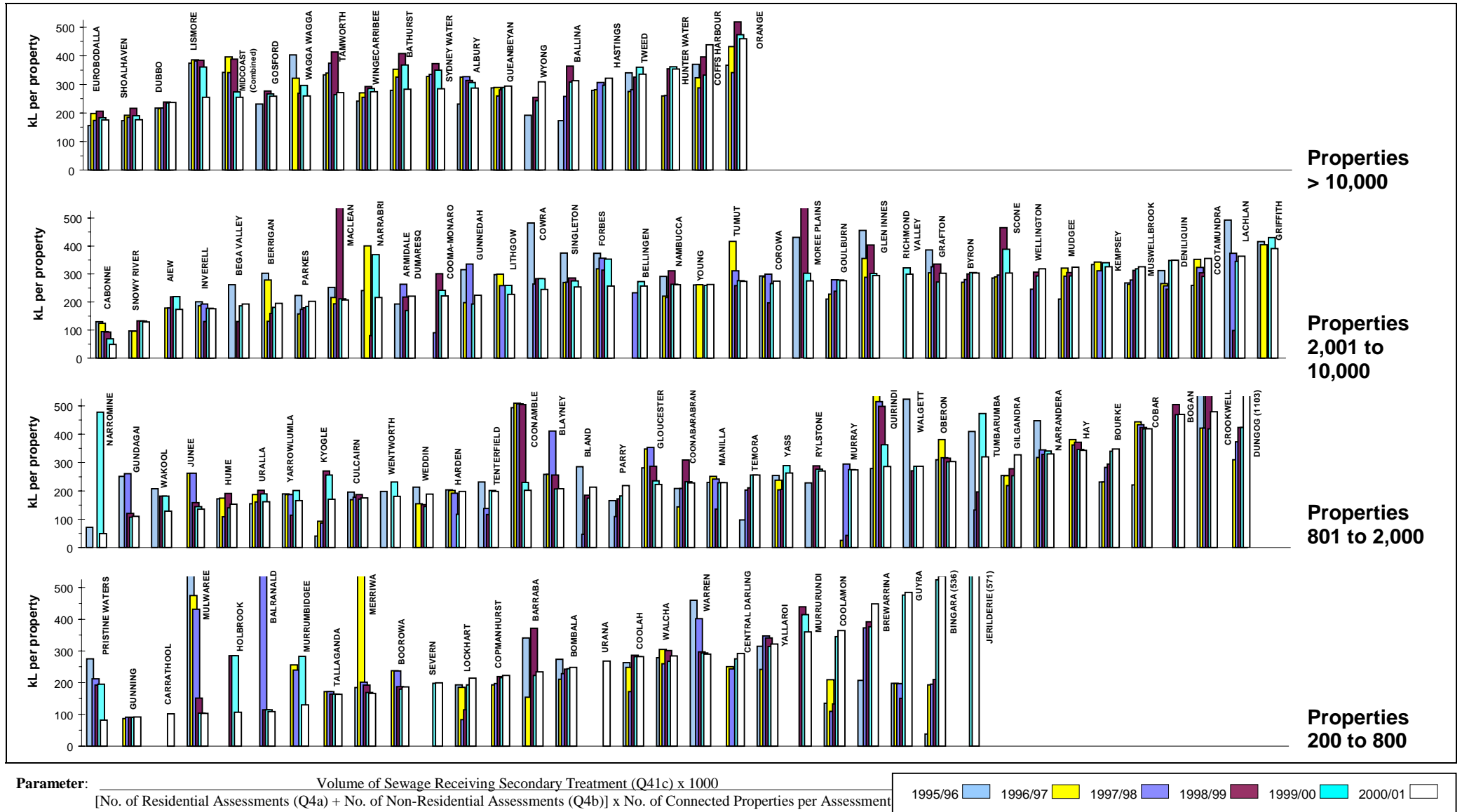
**Parameter:** 
$$\frac{\text{Total No. of Sewage Overflows (Q20)} \times 100}{\text{Length of Reticulation/Gravity Mains (Q10a)} + \text{Length of Rising Mains (Q10b)}}$$

**Notes:**

1. This figure shows ranked values of the sewer overflows to the environment for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewer overflows to the environment for the 28 councils shown range from *nil* to 75 overflows per 100 km of sewer mains. Results for the previous 5 years are also shown.
2. The Statewide median sewer overflows to the environment is 4 per 100 km of sewer main (refer to Table 2 - percentage of connected properties basis).
3. Some 30% of councils reported no sewer overflows.
4. 21% of councils were unable to report on this item and these councils should institute a system to record and report such occurrences.
5. For general notes see page 43.

# 91 Volume Treated per property

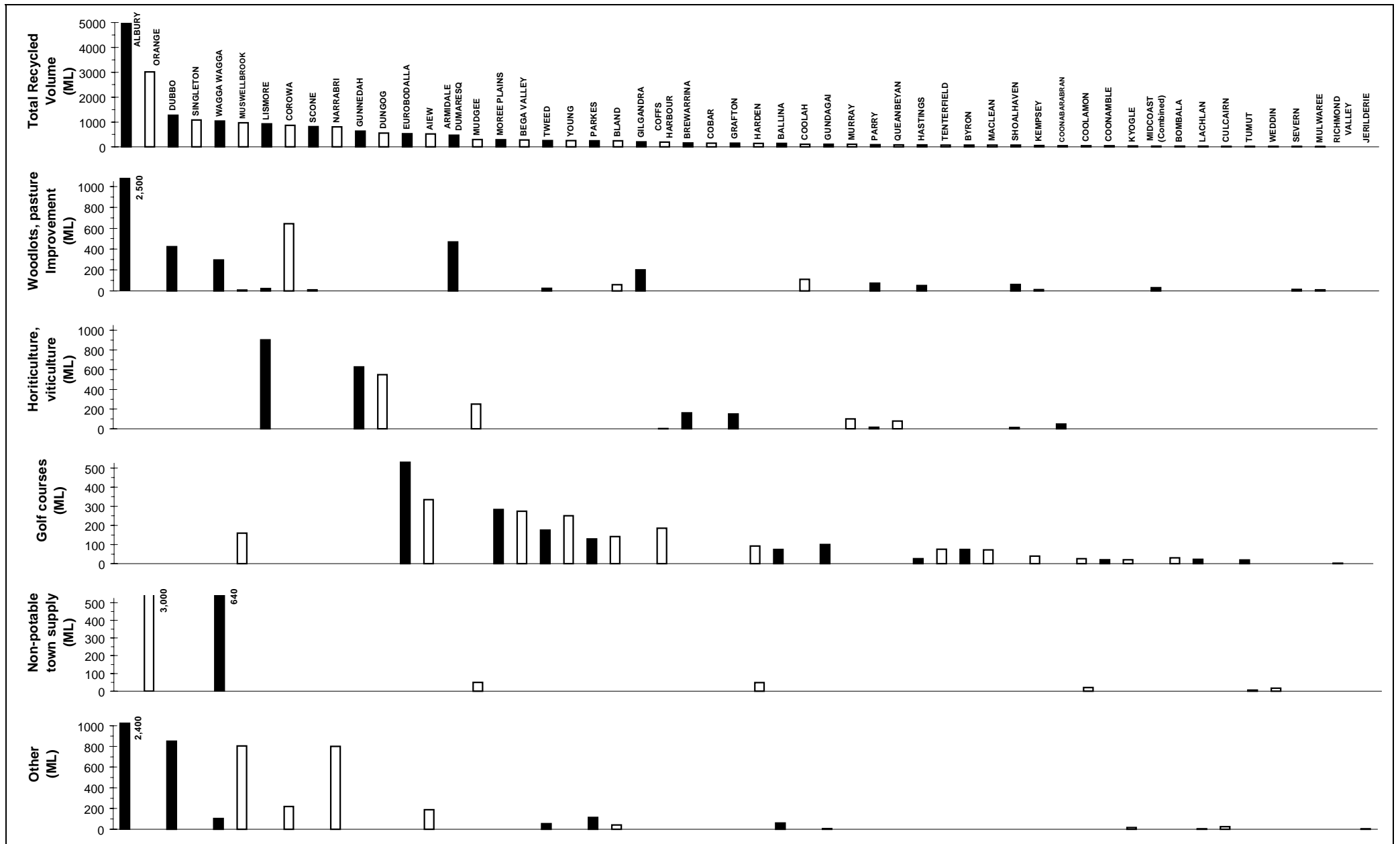
## Sewerage



- Notes:**
1. This figure shows ranked values of the volume of sewage treated per connected property in 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the volume of sewage treated per connected property for the 37 councils shown **ranges** from about **50 kL/a to 440 kL/a**. Results for the previous 5 years are also shown.
  2. The Statewide median volume of sewage treated per connected property is 260 kL/a (refer to Table 2 - percentage of connected properties basis).
  3. For general notes see page 43.

# 92 Recycled Water

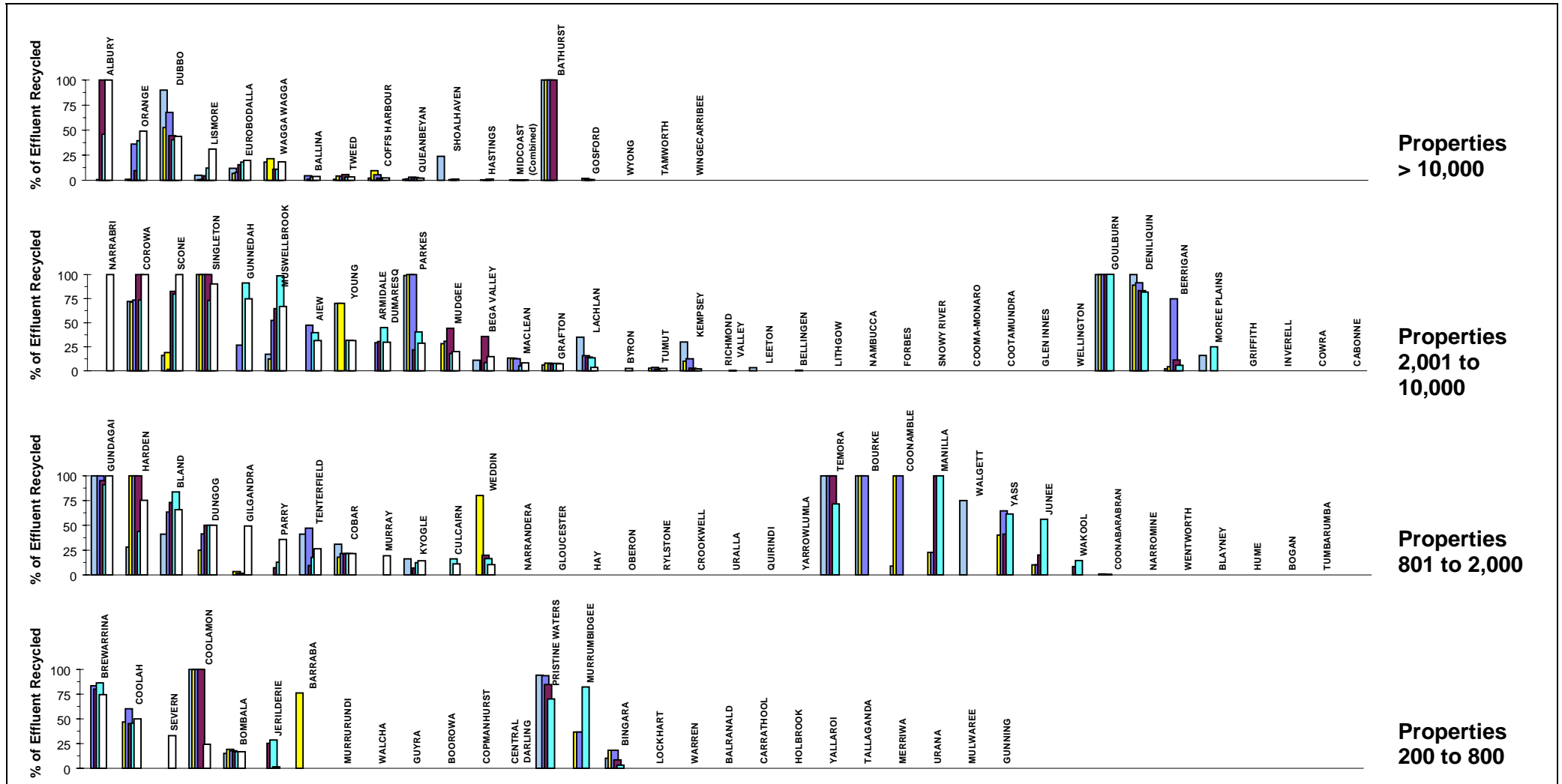
# Sewerage



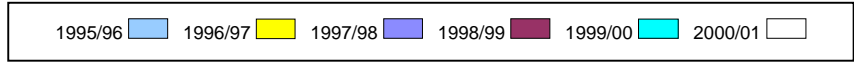


# 93 Recycled Water (% of Effluent Recycled)

## Sewerage



Parameter:  $\frac{\text{Volume Recycled (Q42)} \times 100}{\text{Volume of Sewage Receiving Secondary Treatment (Q41c)}}$

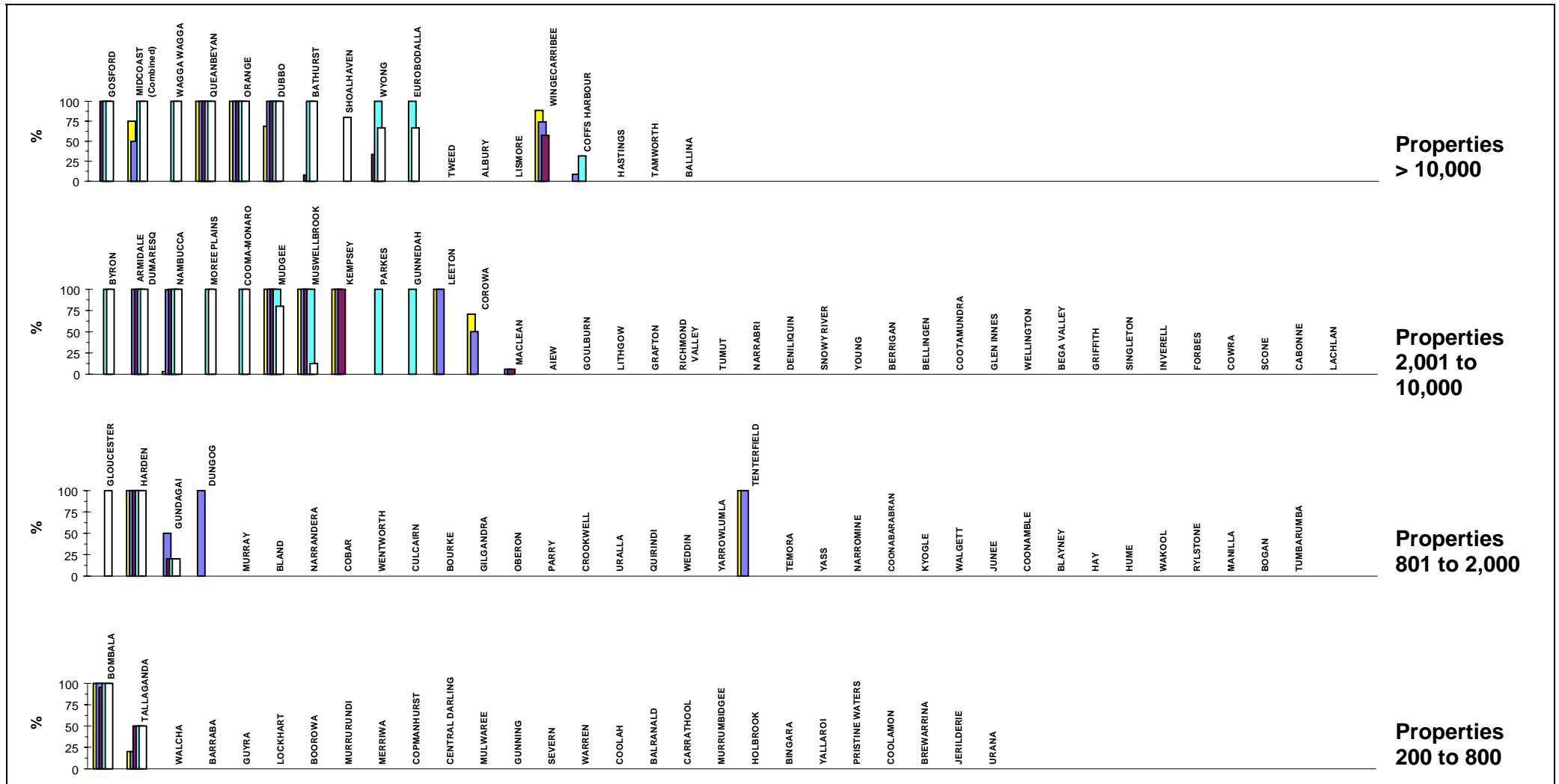


**Notes:**

1. This figure shows ranked values of the recycled water in 2000/01 for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the recycled water for 19 of the 29 councils shown **range** from **100% to 1%**. 10 of the councils indicated no use of recycled water. The 8 councils on the right did not report their 2000/01 use of recycled water. Results for the previous 5 years are also shown.
2. The Statewide median reuse of recycled water is 1% (refer to Table 2 - percentage of connected properties basis).
3. Reuse of recycled water is carried out by about 49% of councils.
4. Statewide some 13% of the effluent from sewage treatment works is recycled.
5. 19 councils recycled 50% of their sewage effluent and a further 8 councils recycled over 50% of their effluent in 2000/01. For general notes see page 43.

# 94 Biosolids Reuse

# Sewerage



Parameter: Percentage of Biosolids Reused (Q43b)

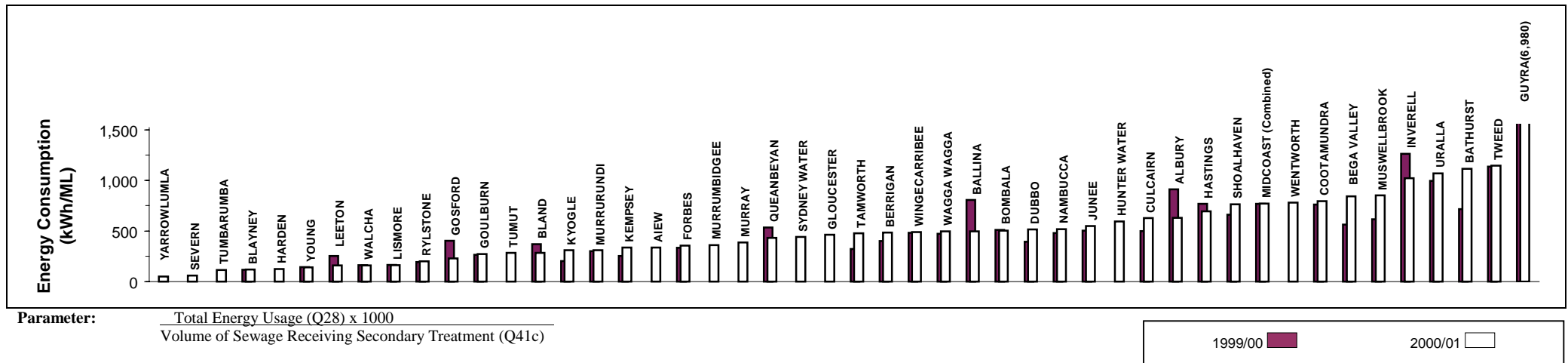


Notes:

1. This figure shows ranked values of the percentage of Biosolids Reused in 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the percentage of biosolids reused for the 28 councils shown **ranges** from about **100 % to nil**. Results for the previous 4 years are also shown.
2. The Statewide median percentage of biosolids reused is 80% (refer to Table 2 - percentage of connected properties basis).
3. For 2000/01, the 58 reporting councils produced 91,000 tonnes of biosolids, of which 17,500 tonnes was sent to landfill and 7,000 to farmland. 66,500 tonnes was otherwise managed (mostly reused/recycled).
4. For general notes see page 43.

## 95 Energy Consumption (kWh/ML) - 2000/01

Sewerage

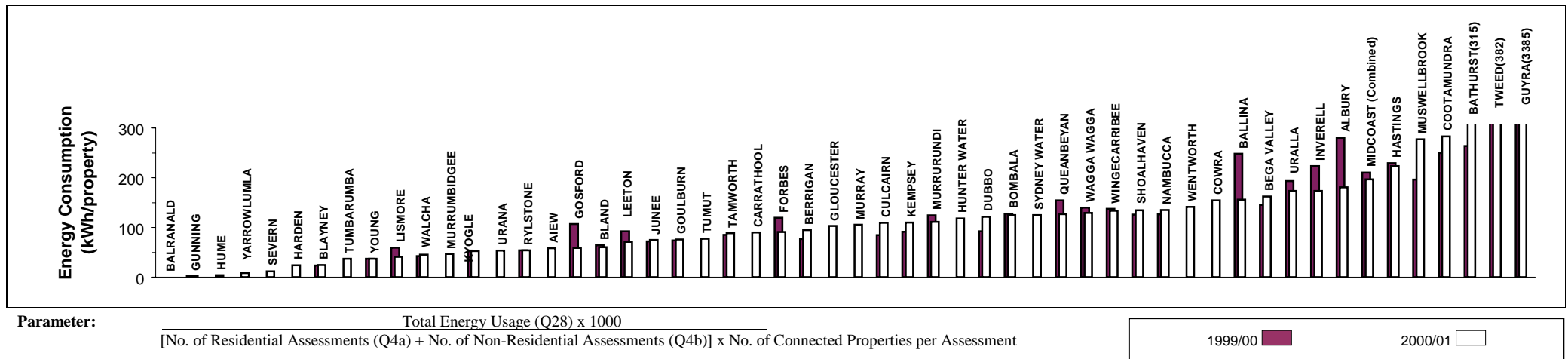


**Notes:**

1. This figure shows ranked values of the energy usage per ML of sewage treated in 2000/01 for each council. **Each white bar represents one council.** The energy usage for the 48 councils shown **range** from about **50 to 7,000 kWh per ML**. Results for the previous year are also shown. Only 40% of councils provided a response to this item and all councils should report in future.
2. The Statewide median energy usage is 500 kWh/ML (refer to Table 2 - percentage of connected properties basis).
3. For general notes see page 43.

## 96 Energy Consumption per property

Sewerage

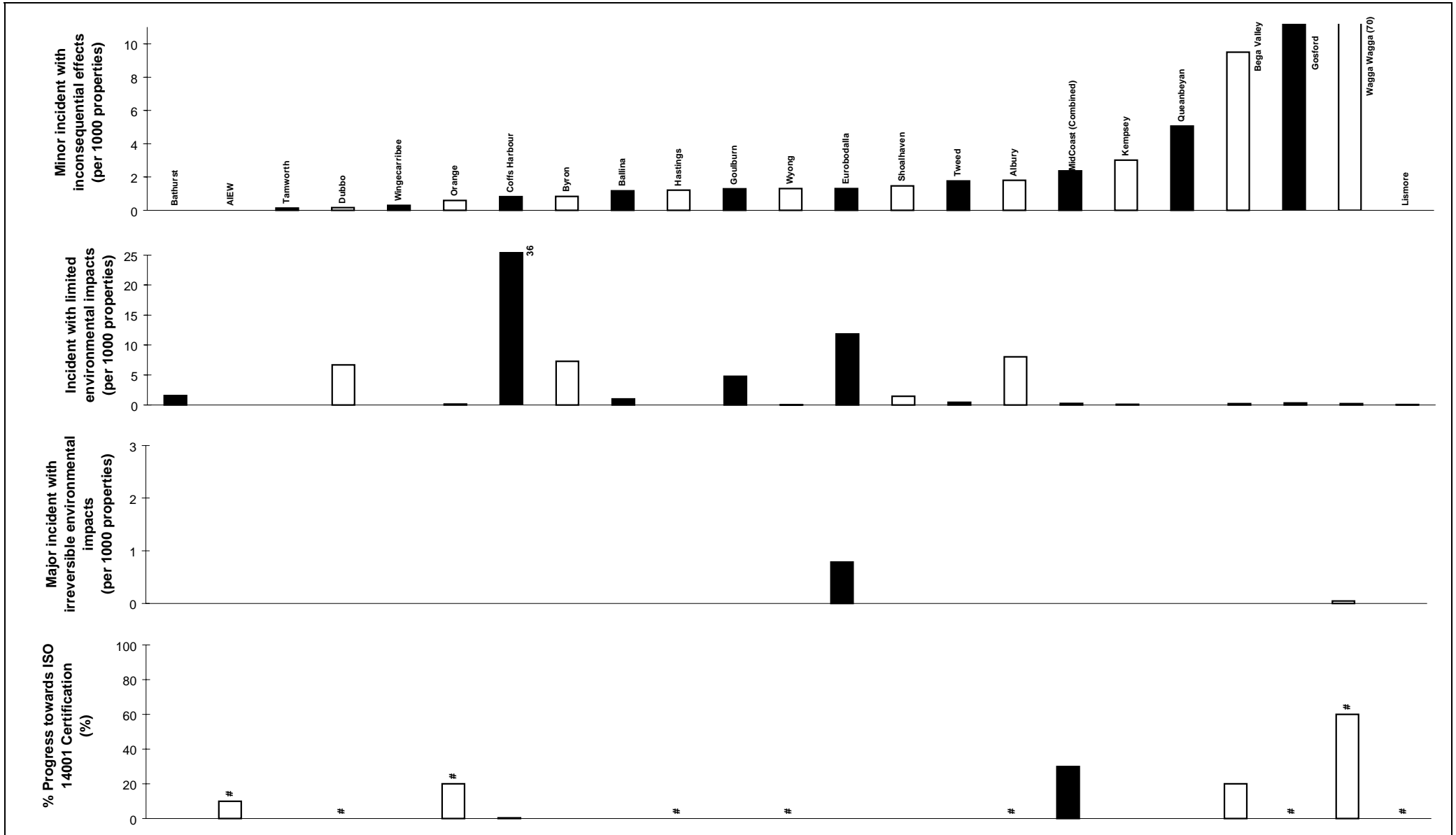


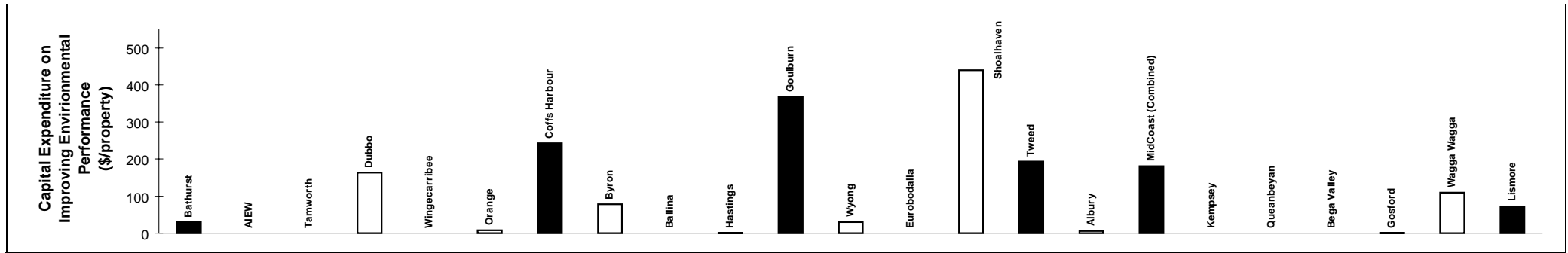
**Notes:**

1. This figure shows ranked values of the energy usage per property in 2000/01 for each council. **Each white bar represents one council.** The energy usage for the 54 councils shown **ranges** from about **0.1 to 3400 kWh per connected property**. Results for the previous year are also shown. Only 58% of councils provided a response to this item and all councils should report thereon in future.
2. The Statewide median energy usage is 130 kWh per connected property (refer to Table 2 - percentage of connected properties basis).
3. For general notes see page 43.

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# 96A Environmental Incidents, Management Systems & Capital Expenditure





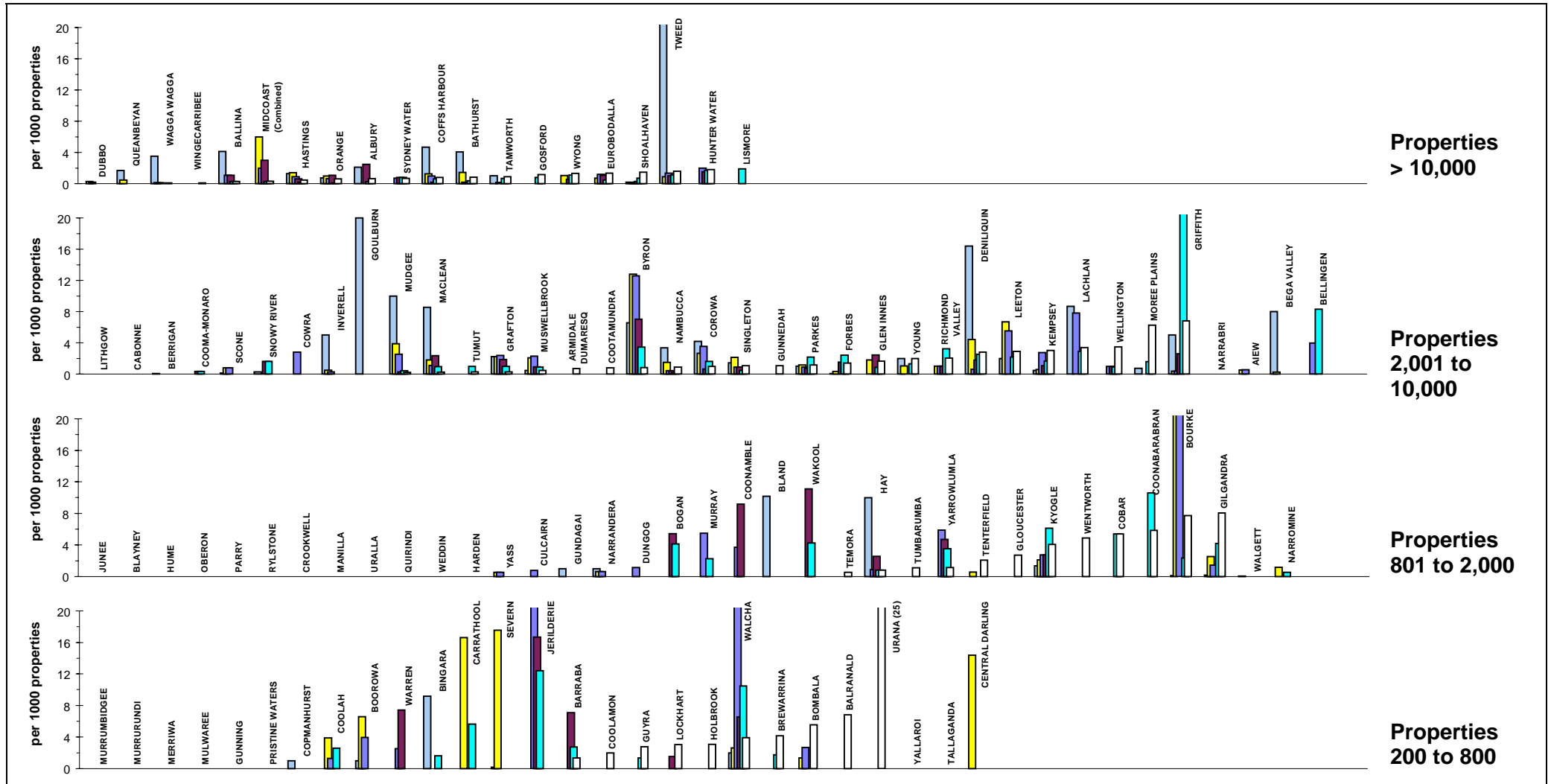
<b>Parameter:</b>	Total Number of Minor Incident with Inconsequential Effects
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Incident with Limited Environmental Impacts
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	Total Number of Major Incident with Irreversible Environmental Impacts
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$
<b>Parameter:</b>	% Progress Towards ISO 14001 Certification
<b>Parameter:</b>	Capital Expenditure on Improving Environmental Performance
	$[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}$

**Notes:**

1. For general notes see page 43.
2. International Standard ISO 14001 – *Environmental management systems – Specification with guidance for use.*
3. Councils which have prepared an Environmental Management Plan (EMP) are indicated with an “#” on the fourth graph.

# 97 Odour Complaints

## Sewerage

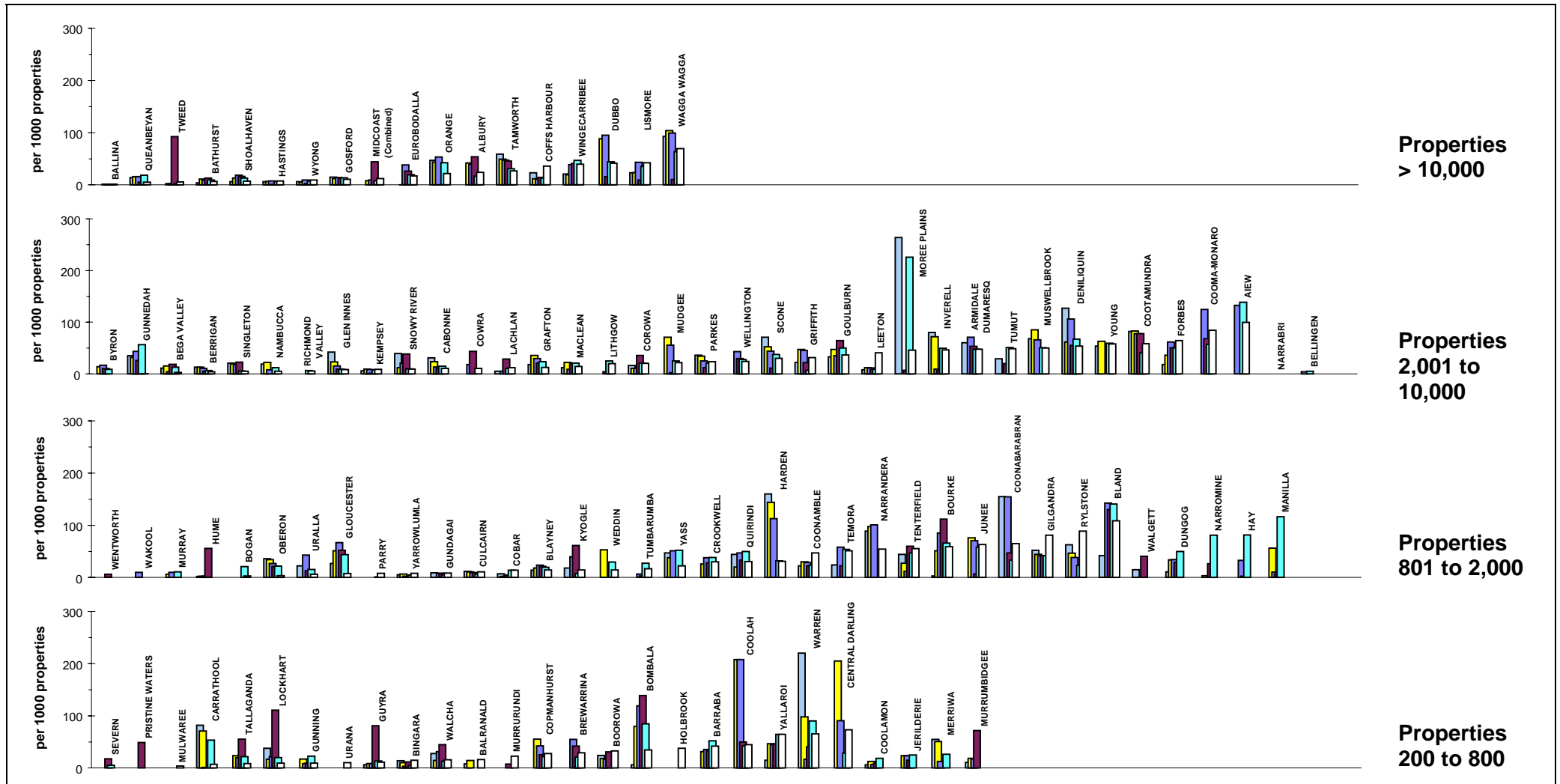


**Parameter:**  $\frac{[\text{No. of Odour Complaints from treatment works (Q14a)} + \text{No. of Odour Complaints from pumping stations (Q14b)}] \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

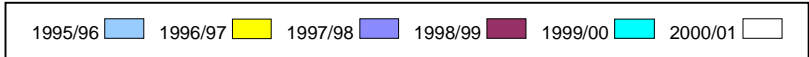
- Notes:**
- This figure shows ranked values of the number of sewage odour complaints for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the number of odour complaints for the 29 councils shown **range** from **0 to 6** complaints per thousand connected properties. Results for the previous 5 years are also shown.
  - The Statewide median number of odour complaints is 0.6 per 1000 properties (refer to Table 2 - percentage of connected properties basis).
  - Some 31% of reporting councils reported no odour complaints.
  - 25% of councils were unable to report on this item and these councils should institute a system to record and report such occurrences.
  - For general notes see page 43.

# 98 Sewerage Service or Choke Complaints

## Sewerage



Parameter: 
$$\frac{\text{No. of Service or Choke Complaints (Q15)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

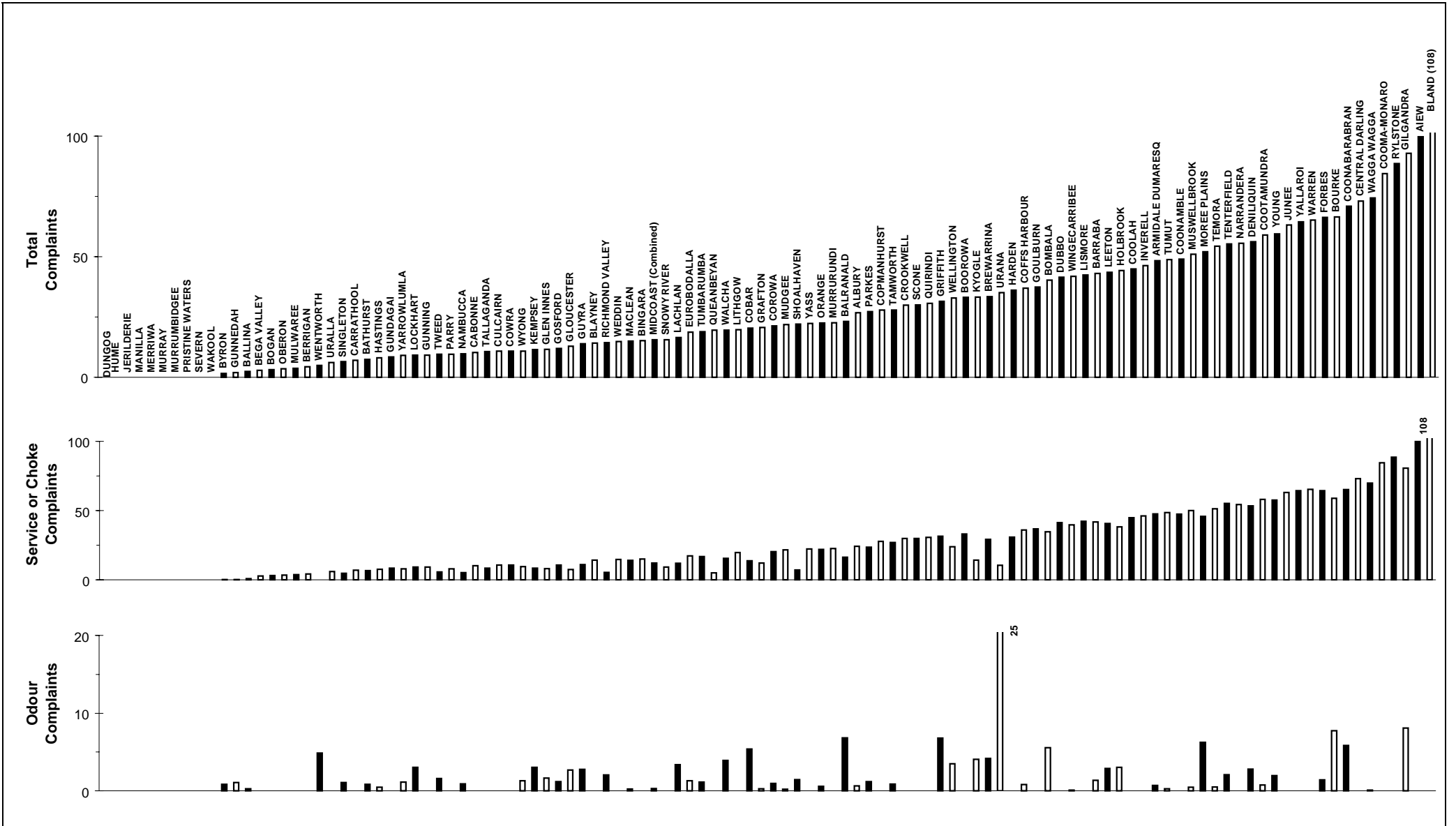


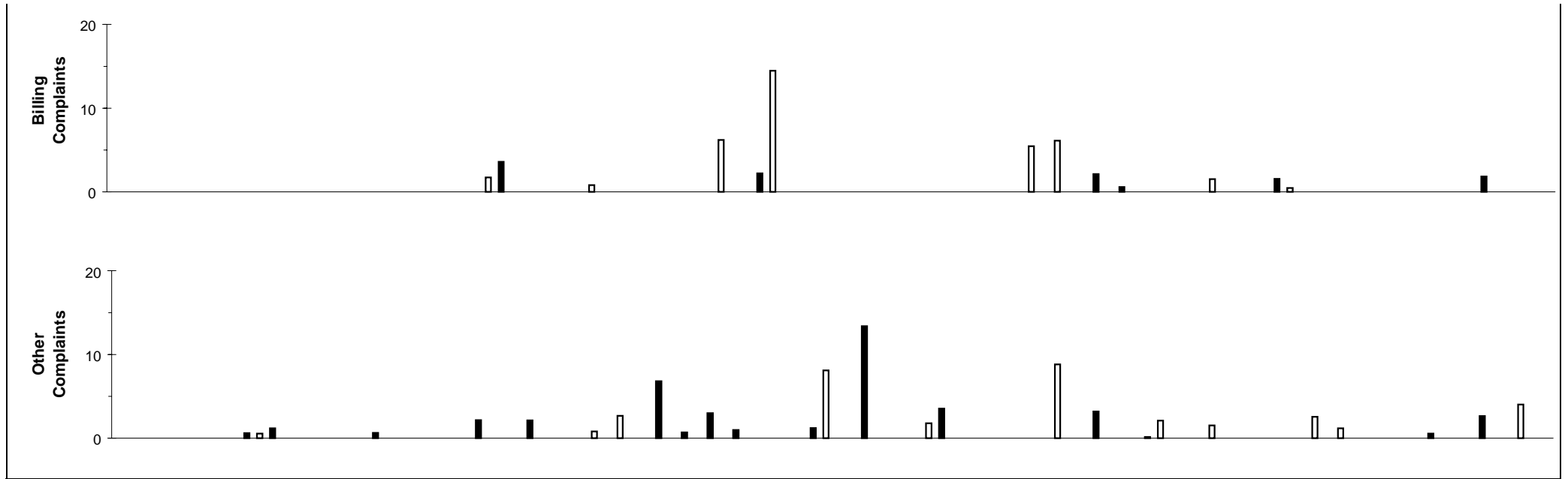
- Notes:**
- This figure shows ranked values of the number of sewerage service or choke complaints for 2000/01 for each council in 4 groups based on the number of properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the number of service or choke complaints for the 35 councils shown **ranges** from **0.1 to 100** complaints per thousand properties. Results for the previous 5 years are also shown.
  - The Statewide median number of sewerage service or choke complaints is 11 per 1000 properties (refer to Table 2 - percentage of properties basis).
  - Some 10% of reporting councils reported no sewerage service or choke complaints.
  - For general notes see page 43.



# 99 Total Complaints (per 1000 properties)

# Sewerage





**Parameter:** 
$$\frac{[\text{No. of Sewerage Service or Choke Complaints (Q15)} + \text{Odour Complaints } [(Q14a) + (14b)] + \text{Billings Complaints (Q18)} + \text{Other Complaints (Q19)}] \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{No. of Sewerage Service or Choke Complaints (Q15)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{No. of Odour Complaints } [(Q14a) + (14b)] \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

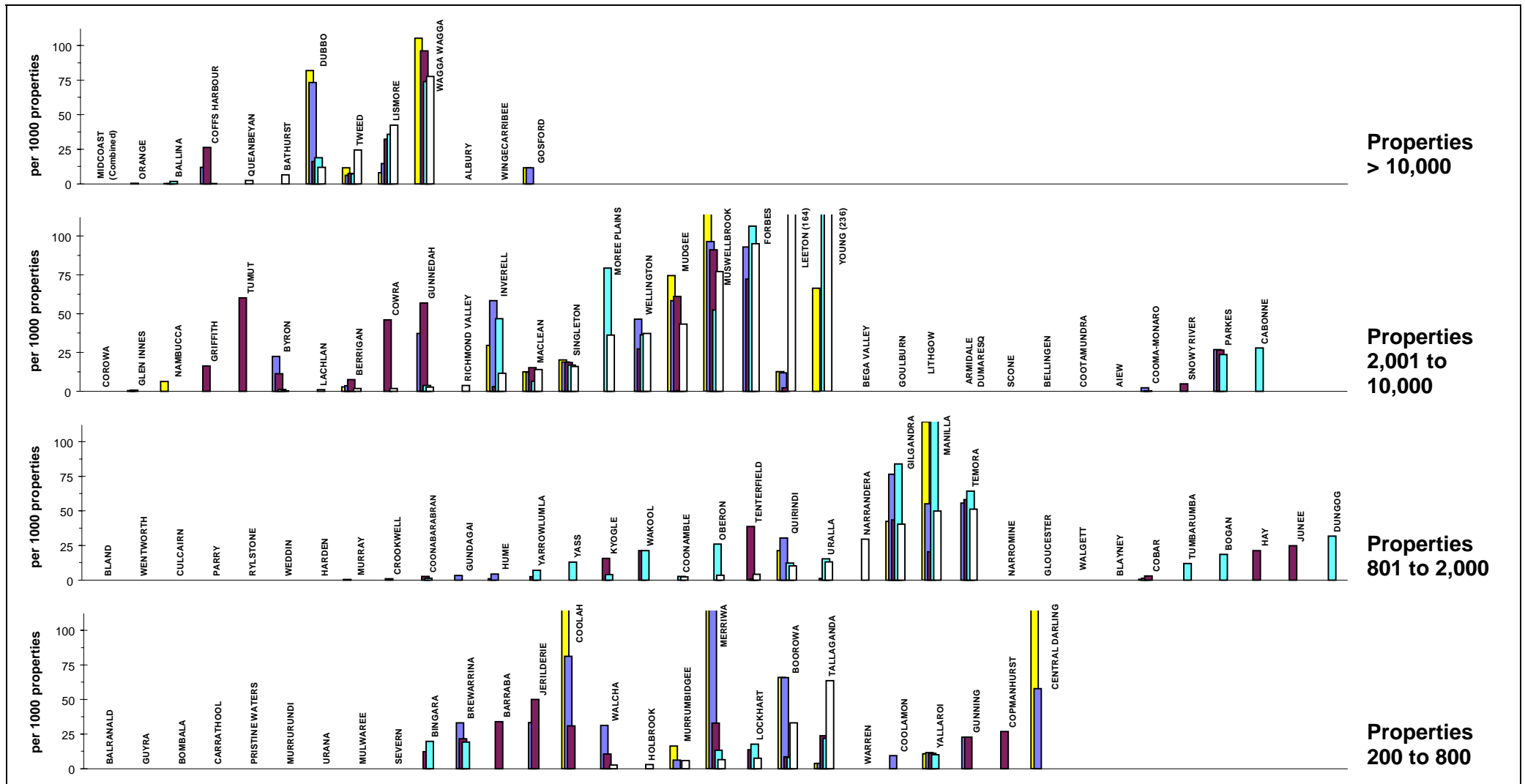
**Parameter:** 
$$\frac{\text{No. of Billings Complaints (Q18)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{No. of Other Complaints (Q19)} \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Note:**  
1. For general notes see page 43.

# 100 Customer Interruption Frequency

## Sewerage



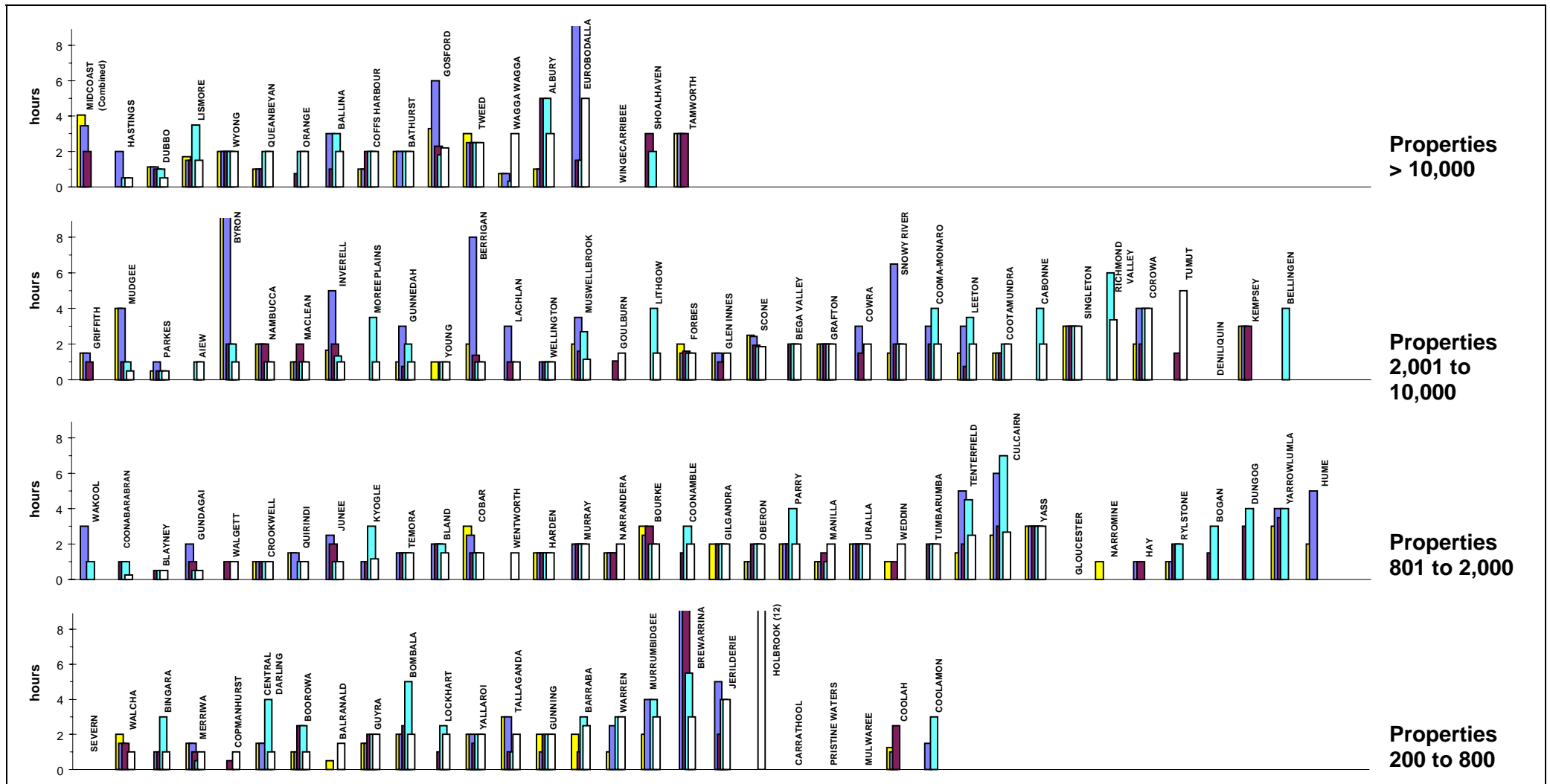
Parameter: 
$$\frac{[\text{No. of Properties affected by an unplanned interruption to service (Q25)}] \times 1000}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

### Notes:

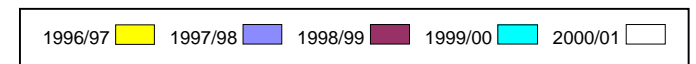
1. This figure shows ranked values of the customer interruption frequency for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range 2,001 to 10,000 the interruption frequencies for the 21 councils shown **range from 0 to 236** per thousand connected properties. Results for the previous 4 years are also shown.
2. The Statewide median customer interruption frequency is 2 per thousand connected properties (refer to Table 2 - percentage of connected properties basis).
3. Some 7% of councils reported no unplanned interruptions to service.
4. 36% of councils were unable to report on this item and these councils should institute a system to record and report such occurrences.
5. For general notes see page 43.

# 101 Average Duration of Interruptions

# Sewerage



Parameter: Average time taken to restore an interrupted service (Q26)

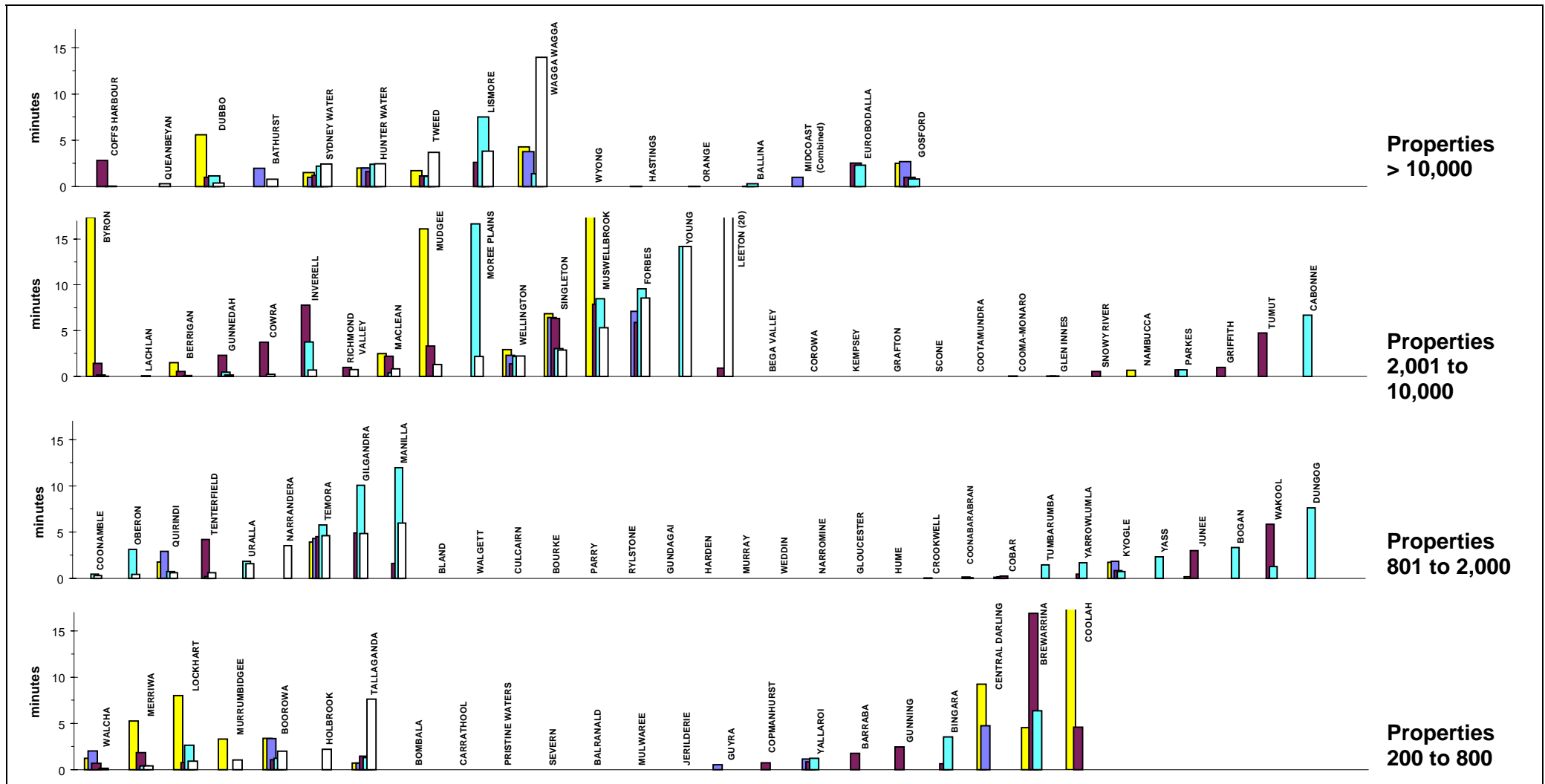


### Notes:

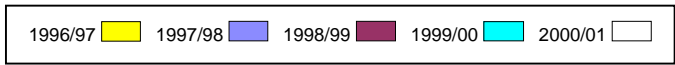
1. This figure shows ranked values of the average duration of interruptions to service for 2000/01 for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range 2,001 to 10,000 the duration of interruptions for the 32 councils shown *ranges* from 0 to 5 hours. Results for the previous 4 years are also shown.
2. The Statewide median duration of interruptions is 2 hours (refer to Table 2 - percentage of connected properties basis).
3. 20% of councils were unable to report on this item and these councils should institute a system to record and report such occurrences.
4. For general notes see page 43.

# 102 Average Customer Outage Time

## Sewerage



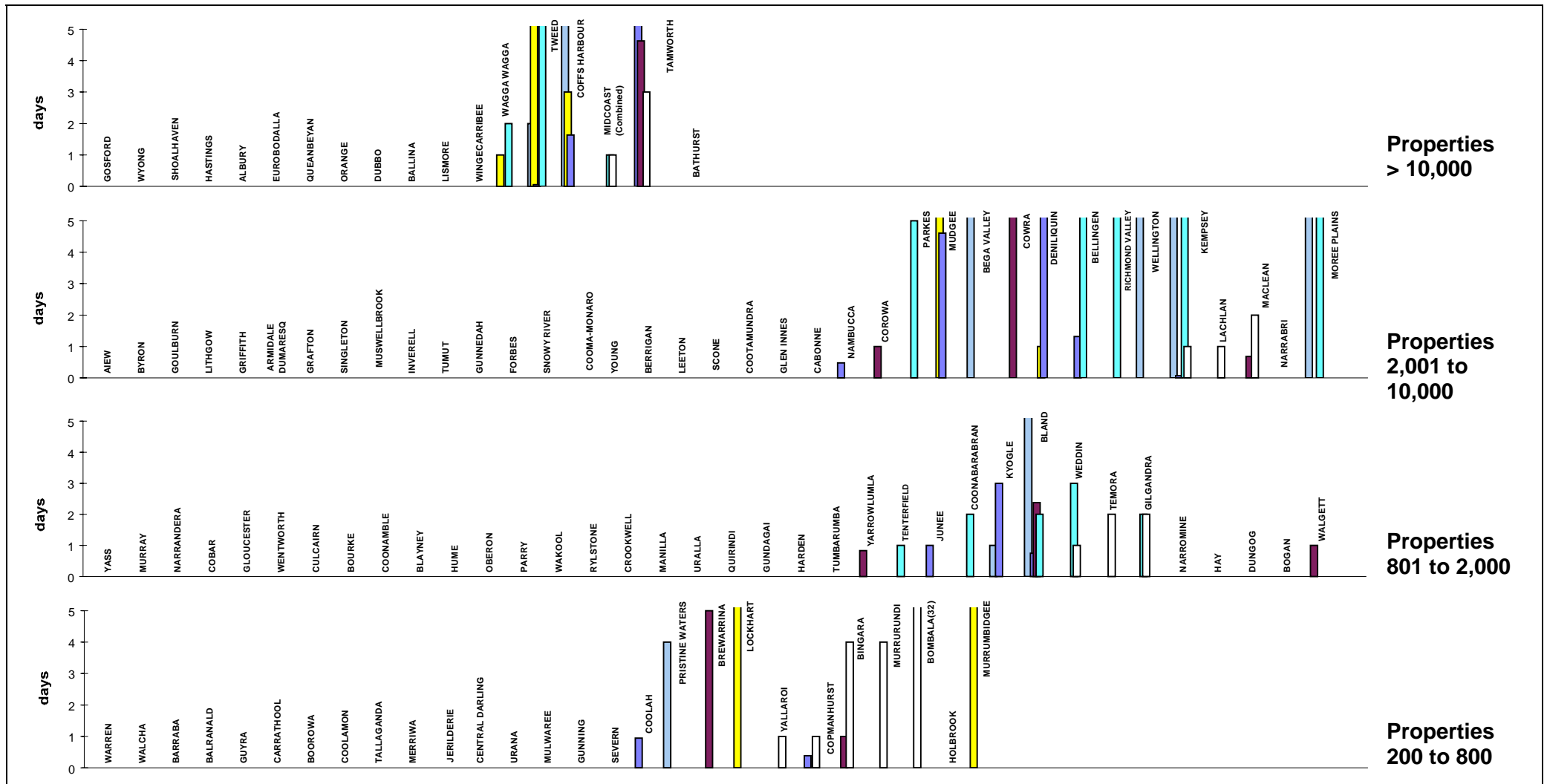
**Parameter:**  $\frac{\text{No. of Properties affected by an unplanned interruption to service (Q25)} \times \text{Average time taken to restore an interrupted service (Q26)} \times 60}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$



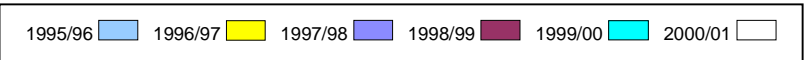
- Notes:**
- This figure shows ranked values of the average customer outage time for 2000/01 for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range 2,001 to 10,000 the average customer outage time for the 16 councils shown *ranges* from 0 to 20 minutes. Results for the previous 4 years are also shown.
  - The Statewide median customer outage time is 1 minute (refer to Table 2 - percentage of connected properties basis).
  - 68% of councils were unable to report on this item and these councils should institute a system to record and report such occurrences.
  - For general notes see page 43.

# 103 Treatment Works Malfunction

## Sewerage



Parameter: No. of Days with Major Malfunction of Treatment Processes (Q53)

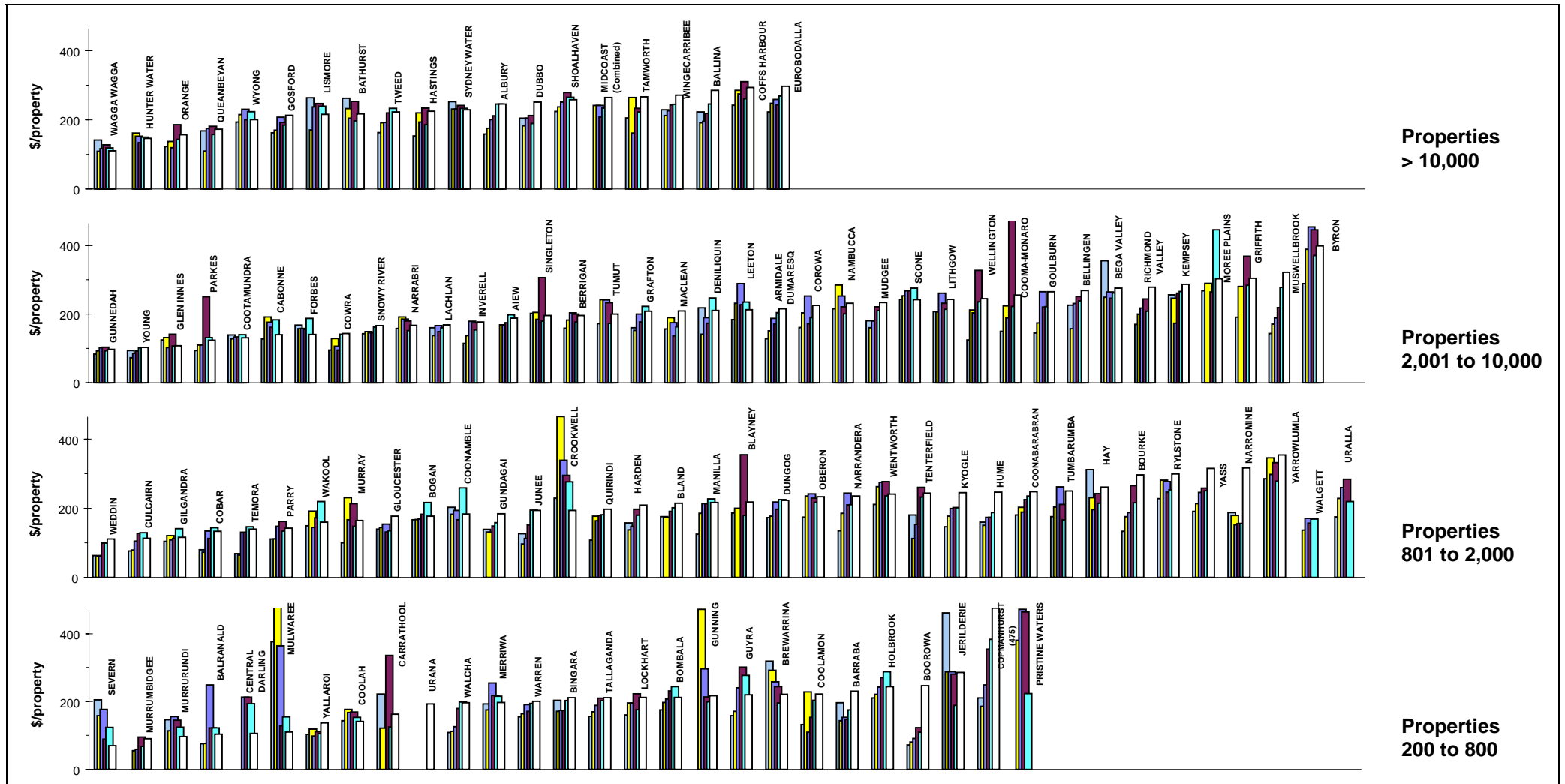


**Notes:**

1. This figure shows ranked values of the 2000/01 number of days of treatment works malfunction for each council in 4 groups based on the number of connected properties served. *Each white bar represents one Council.* As an example, for the property range from 2001 to 10,000, number of days of malfunction for the 35 councils shown *ranges* from about 0 to 2. Results for the previous 5 years are also shown.
2. For councils with more than one treated works, the weighted average (based on treatment works capacity) was used (Appendix D2).
3. For general notes see page 43.

# 104 Operating Cost (OMA) per property

# Sewerage



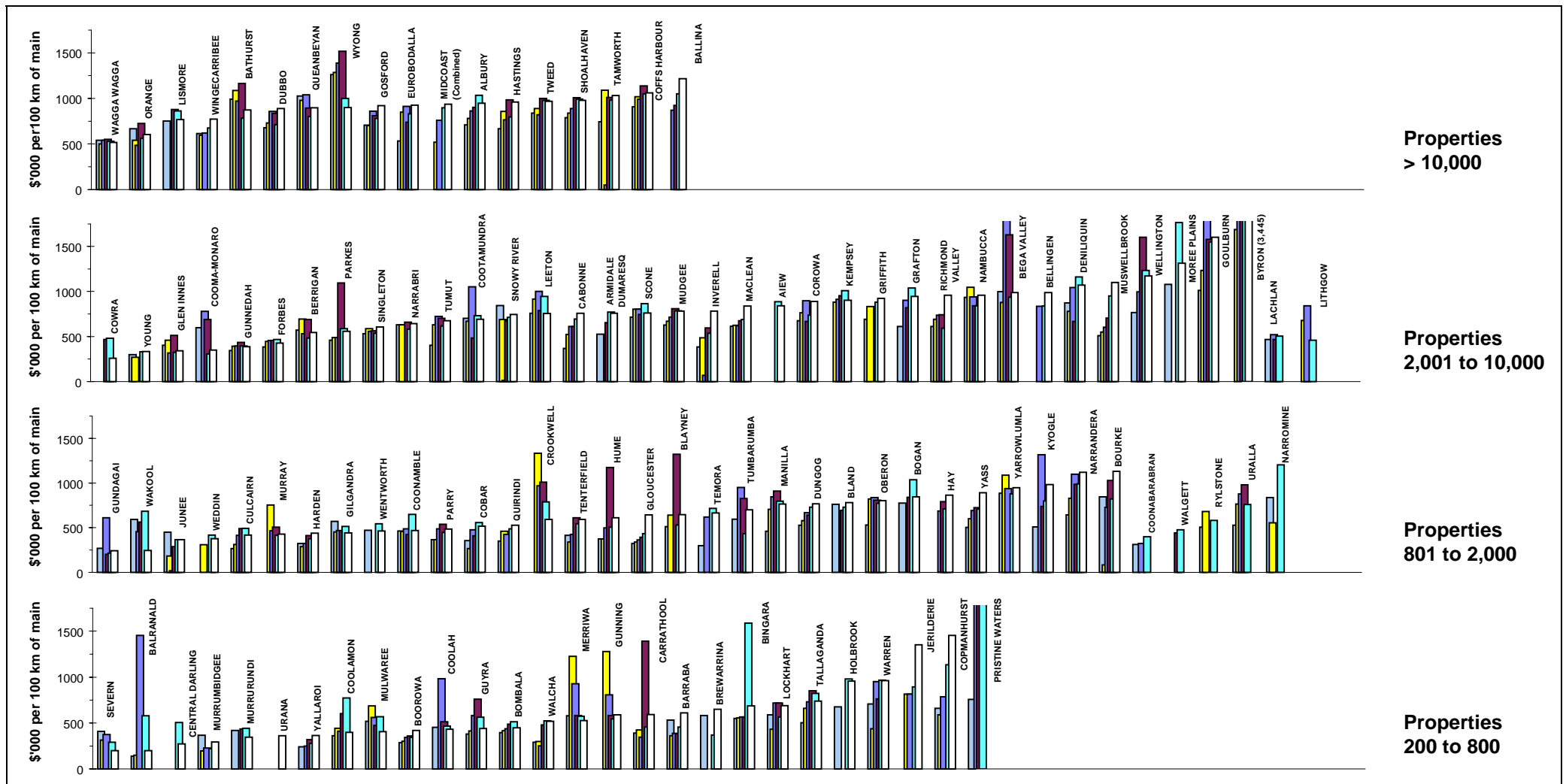
**Parameter:**  $\frac{\text{Management Expenses (S1) + Total Operation and Maintenance Expenses (S2)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$



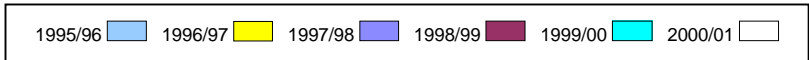
- Notes:**
- This figure shows ranked values of the 2000/01 sewerage operating cost (OMA - operation, maintenance and administration cost) per connected property for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewerage operating cost for the 37 councils shown ranges from about \$95 to \$400 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  - The 2000/01 Statewide median sewerage operating cost is \$225 per connected property (refer to Table 2 – percentage of connected property basis).
  - For general notes see page 43.

# 105 Operating (OMA) Cost per 100 km of main

# Sewerage



Parameter:  $\frac{\text{Management Expenses (S1)} + \text{Total Operation and Maintenance Expenses (S2)}}{\text{Length of Reticulation Mains (Q10a)} + \text{Length of Rising Mains (Q10b)}} \times 10$



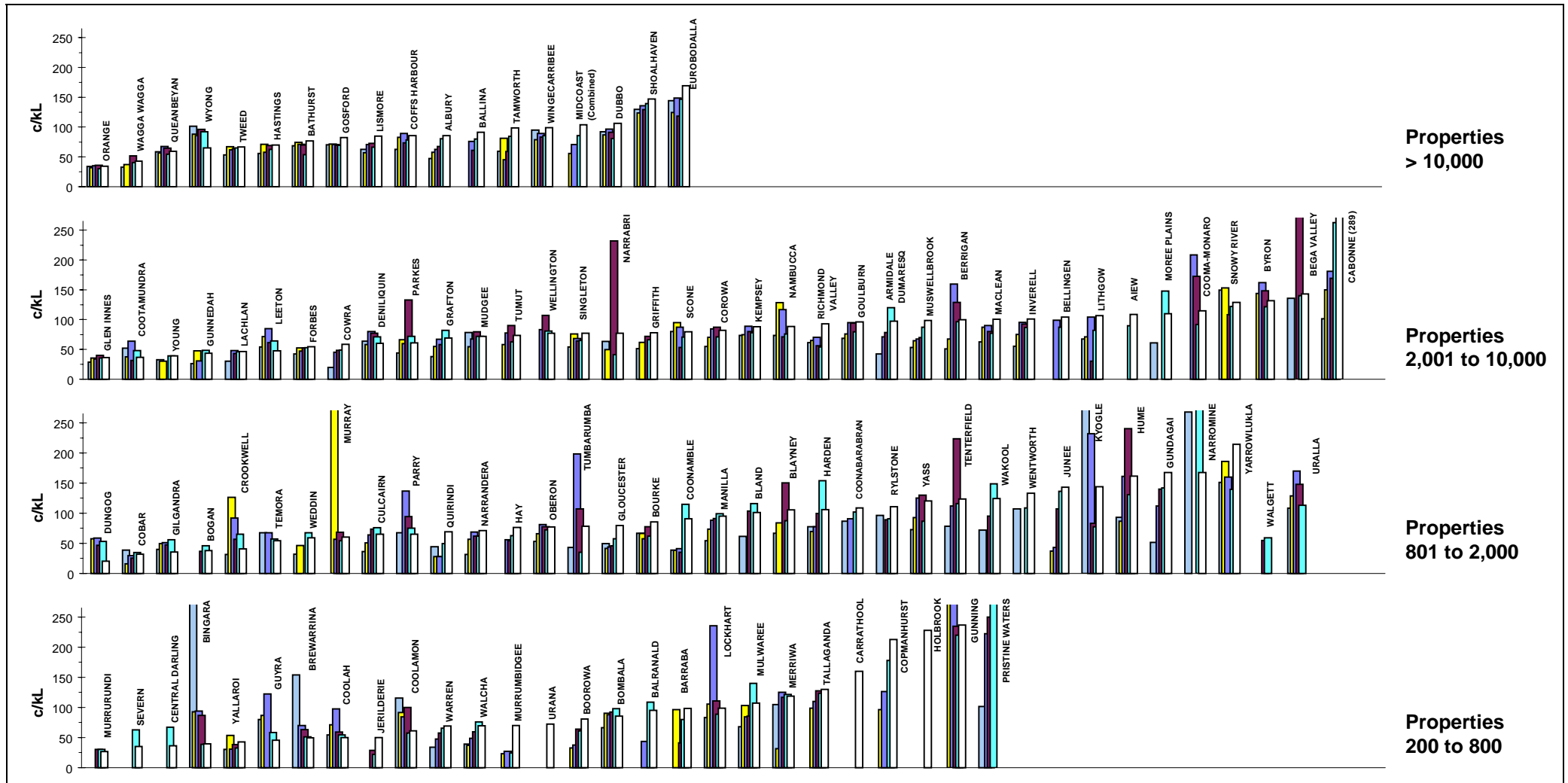
### Notes:

1. This figure shows ranked values of the sewerage operating cost (OMA - operation, maintenance and administration) per 100 km of main for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewerage operating costs for the 34 councils shown **range** from about **\$250,000 to \$3.4M** per 100 km of main. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide median sewerage operating cost is \$900,000 per 100 km of sewer main (refer to Table 2 - percentage of connected properties basis).
3. For general notes see page 43.

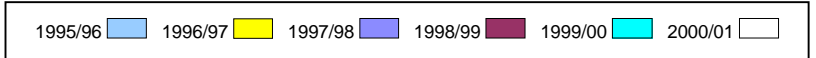


# 106 Operating (OMA) Cost per kL

# Sewerage



Parameter:  $\frac{[\text{Management Expenses (S1)} + \text{Total Operation and Maintenance Expenses (S2)}]}{\text{Volume of Sewage Receiving Secondary Treatment (Q41c)} \times 10}$



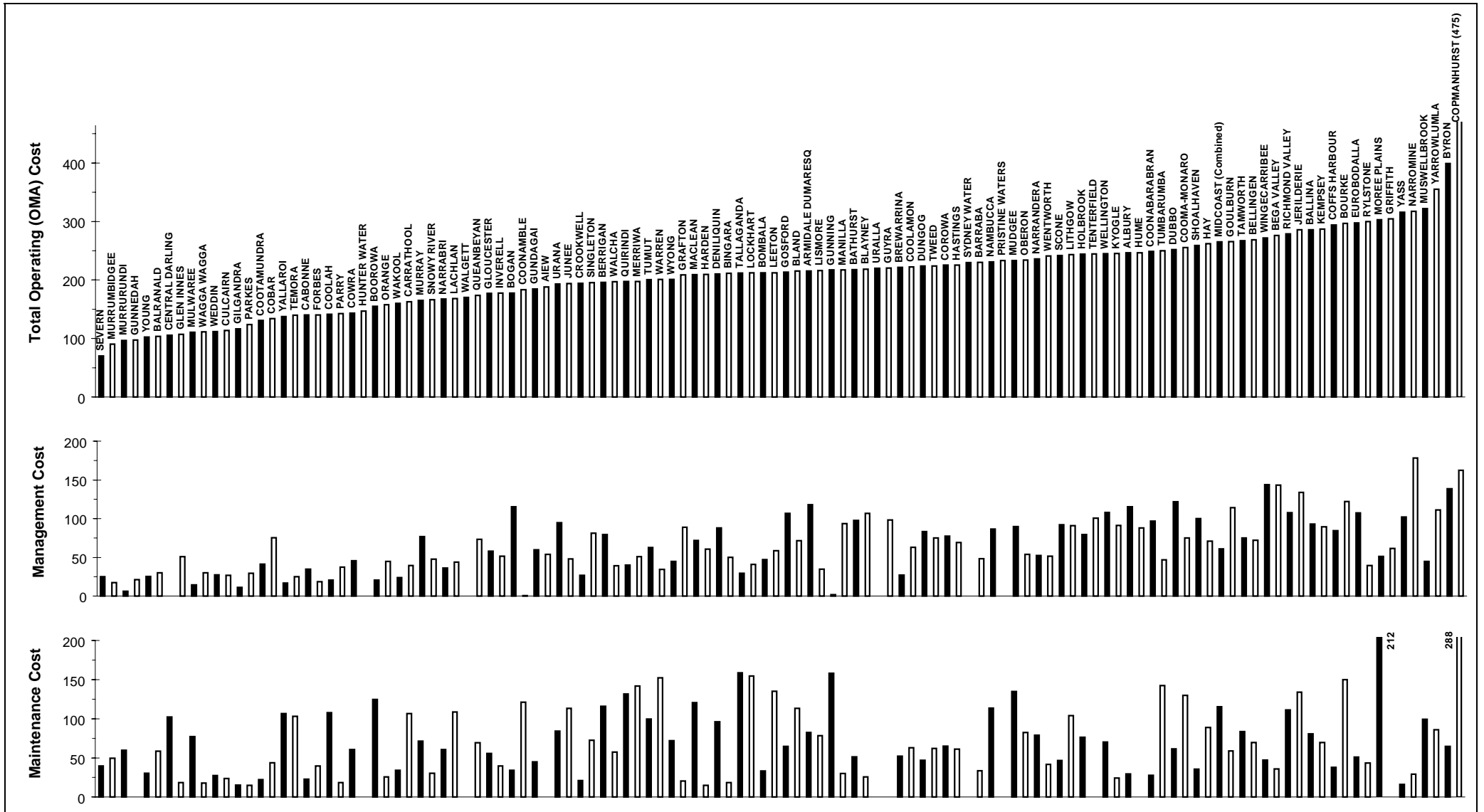
### Notes:

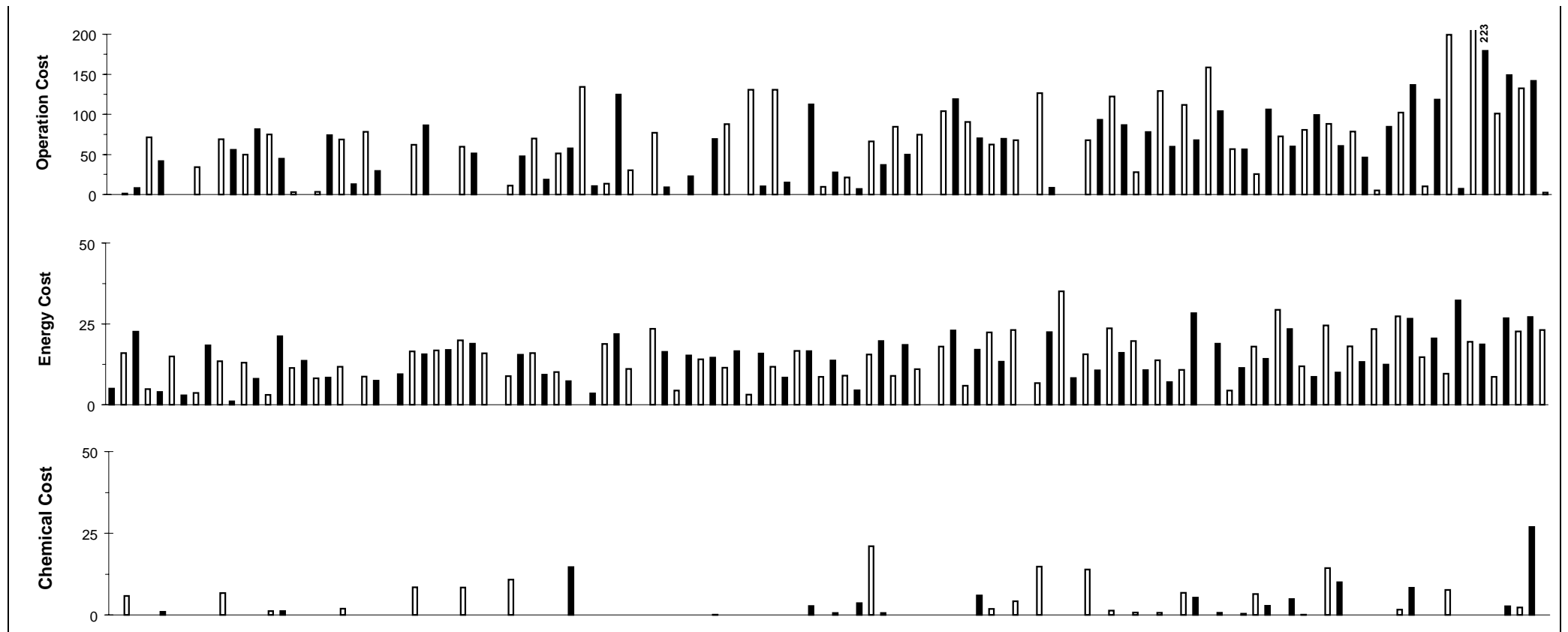
1. This figure shows ranked values of the sewerage operating cost (OMA - operation, maintenance and administration) per kL for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewerage operating costs for the 34 councils shown **range** from about 35 c/kL to 289 c/kL. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide median sewerage operating cost is \$82 c/kL (refer to Table 2 - percentage of connected properties basis).
3. For general notes see page 43.

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# 107 Components of Operating Cost (1) (\$/property)

# Sewerage





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

[No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

**Parameter:** Management Expenses (S1)

[No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

**Parameter:** Total Maintenance Costs [ Mains (S2b) + Pumping Stations (S2e) + Treatment Works (S2k) + Other (S2m) + Effluent Management (S2i) + Biosolids Management (S2j)]

[No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

**Parameter:** Total Operation Costs [Mains (S2a) + Pumping Stations (S2c) + Treatment Works (S2f) + Other (S2l)] + Effluent Management (S2i) + Biosolids Management (S2j)

[No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

**Parameter:** Energy Cost [Pumping Stations (S2d) + Treatment Works (S2h)]

[No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

**Parameter:** Chemical Cost (S2g)

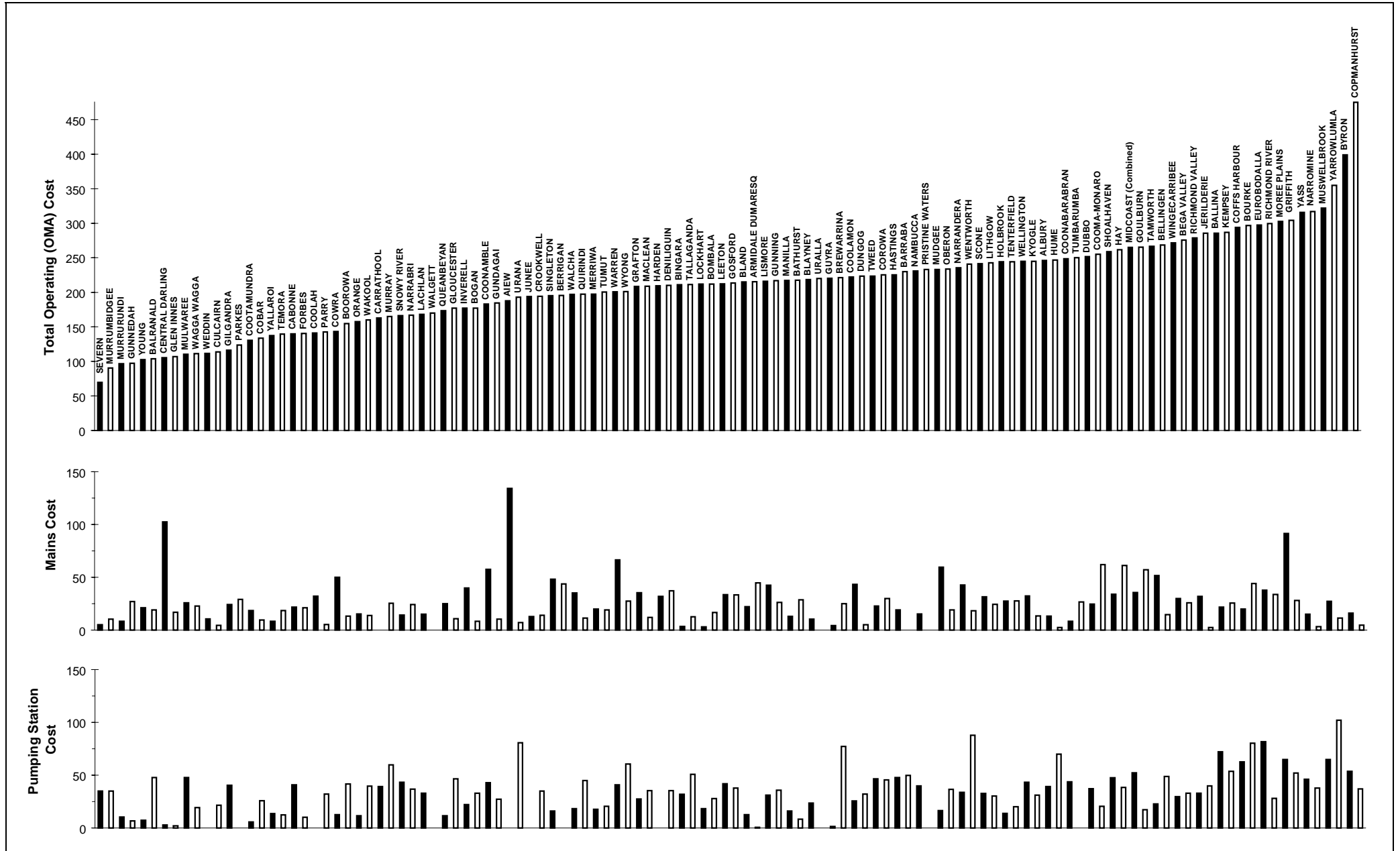
[No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment

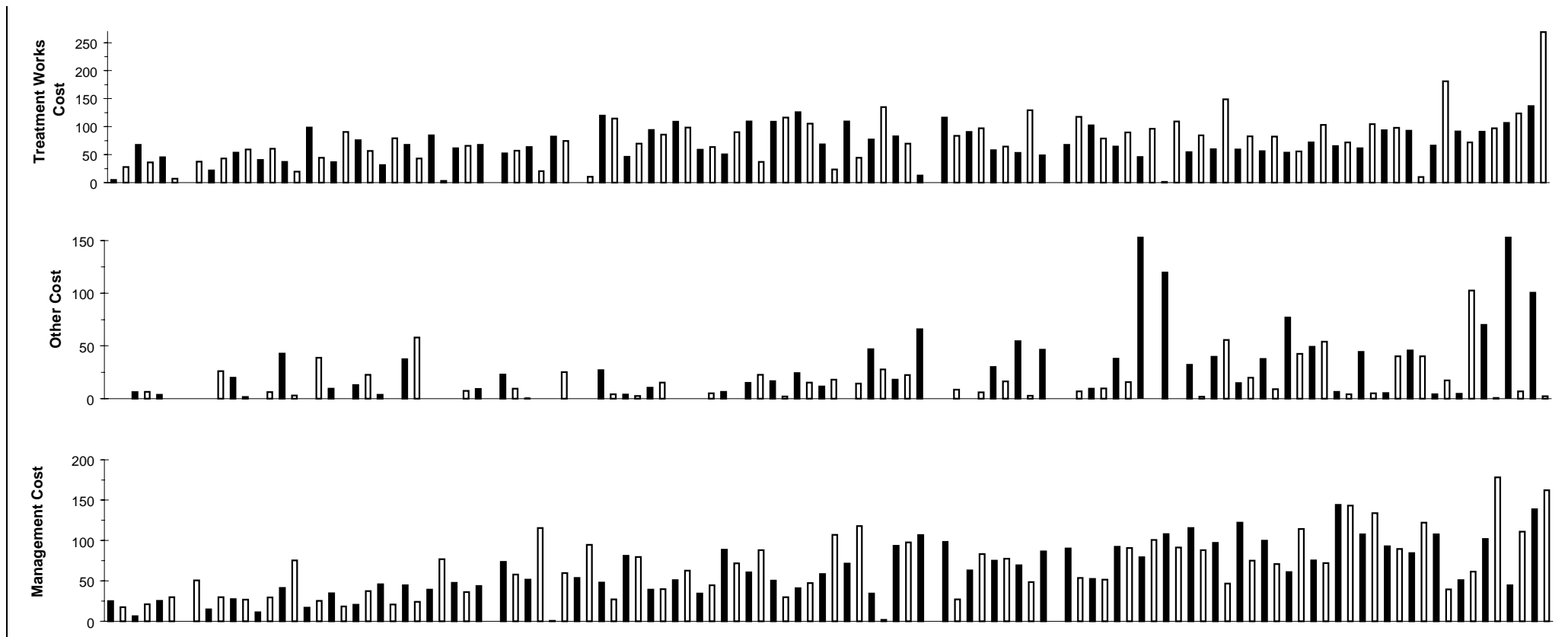
**Notes:**

1. The Statewide median sewerage operating cost (OMA – operation, maintenance and administration) is \$225 per connected property (refer to Table 2 – percentage of connected properties basis).
2. For general notes see page 43.

# 108 Components of Operating Cost (2) (\$/property)

# Sewerage





**Parameter:** 
$$\frac{\text{Total Operations (ie. Operation and Maintenance) Expenses (S2)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Mains Operations Expenses (S2a} + \text{S2b)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Pumping Stations Operations Expenses (S2c} + \text{S2d} + \text{S2e)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Treatment Works Operations Expenses (S2f} + \text{S2g} + \text{S2h} + \text{S2k)} + \text{Effluent Management Expenses (S2i)} + \text{Biosolids Management Expenses (S2j)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Parameter:** 
$$\frac{\text{Other Operations Expenses (S2l} + \text{S2m)} + \text{Effluent Management Expenses (S2i)} + \text{Biosolids Management Expenses (S2j)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q3b)}] \times \text{No. of Connected Properties per Assessment}}$$

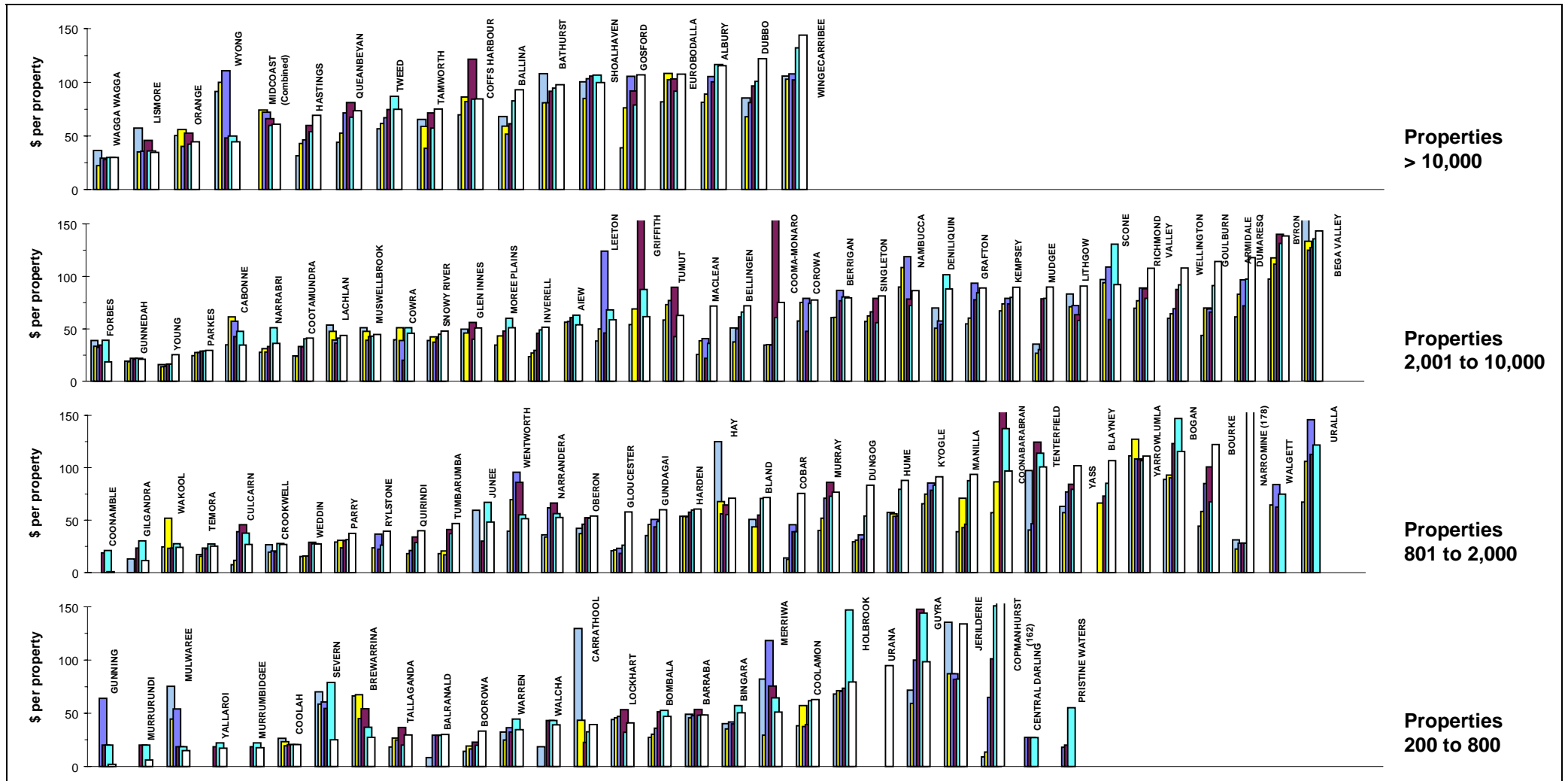
**Parameter:** 
$$\frac{\text{Management Expenses (S1)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

**Notes:**

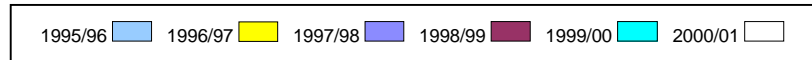
1. The Statewide median sewerage operating cost (OMA – operation, maintenance and administration) is \$225 per connected property (refer to Table 2 – percentage of connected properties basis).
2. For general notes see page 43.

# 109 Management Cost per property

## Sewerage



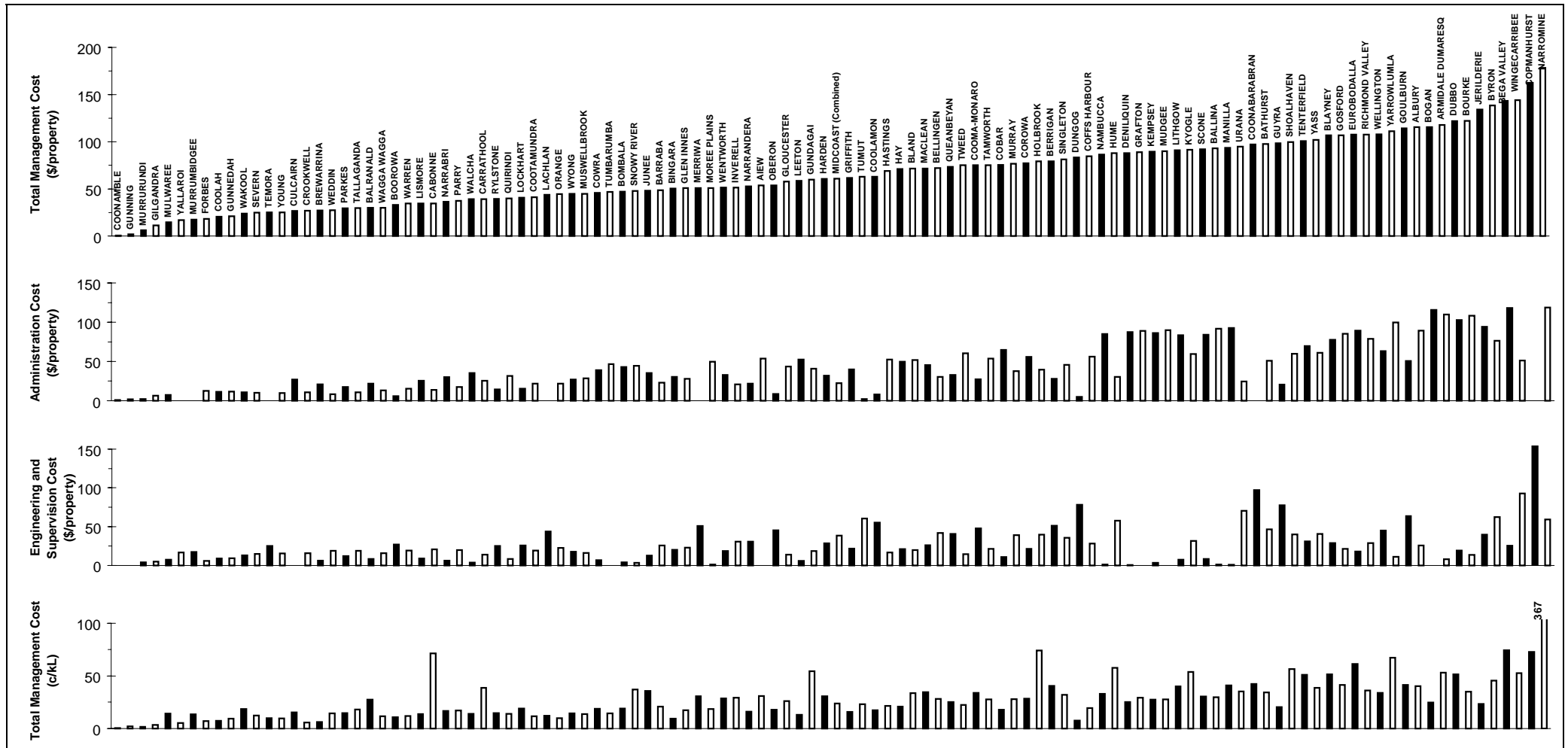
Parameter: \_\_\_\_\_ Total Management Expenses (\$1)  
 [No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)] x No. of Connected Properties per Assessment



- Notes:
- This figure shows ranked values of the sewerage management cost for 2000/01 for each council in 4 groups based on the number of connected properties served. *Each white bar represents one council.* As an example, for the property range from 2,001 to 10,000, the sewerage management costs for the 37 councils shown range from about \$15 to \$140 per connected property. Results for the previous 5 years are also shown in Jan 2000\$.
  - The Statewide median sewerage management cost is \$75 per connected property (refer to Table 2 - percentage of connected properties basis).
  - For general notes see page 43.

# 110 Components of Management Cost

# Sewerage



Parameter: 
$$\frac{\text{Total Management Expenses (S1)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

Parameter: 
$$\frac{\text{Administration Expenses (S1a)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

Parameter: 
$$\frac{\text{Engineering and Supervision Expenses (S1b)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$$

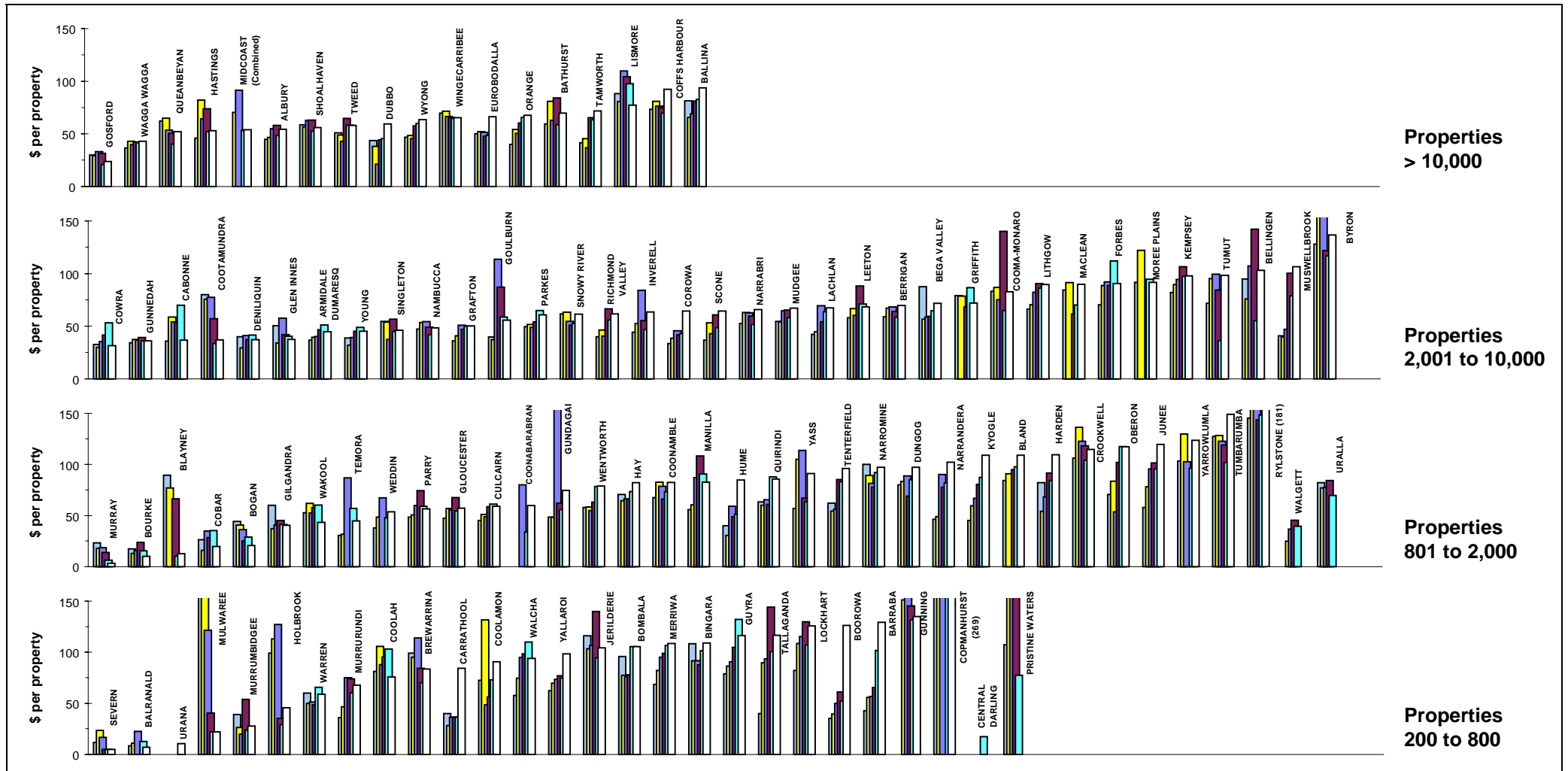
Parameter: 
$$\frac{\text{Total Management Expenses (S1)}}{\text{Volume of Sewage Receiving Secondary Treatment (Q41c)} \times 10}$$

- Notes:
1. The Statewide sewerage management cost is \$75 per connected property (refer to Table 2 – percentage of connected properties basis).
  2. For general notes see page 43.

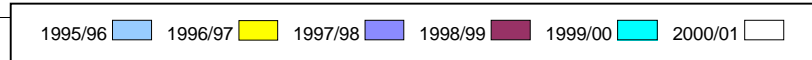


# 111 Treatment Cost

# Sewerage



Parameter:  $\frac{\text{Treatment Works Operation Expenses (S2f)} + \text{Chemical Cost (S2g)} + \text{Energy Cost (S2h)} + \text{Maintenance Expenses (S2k)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$



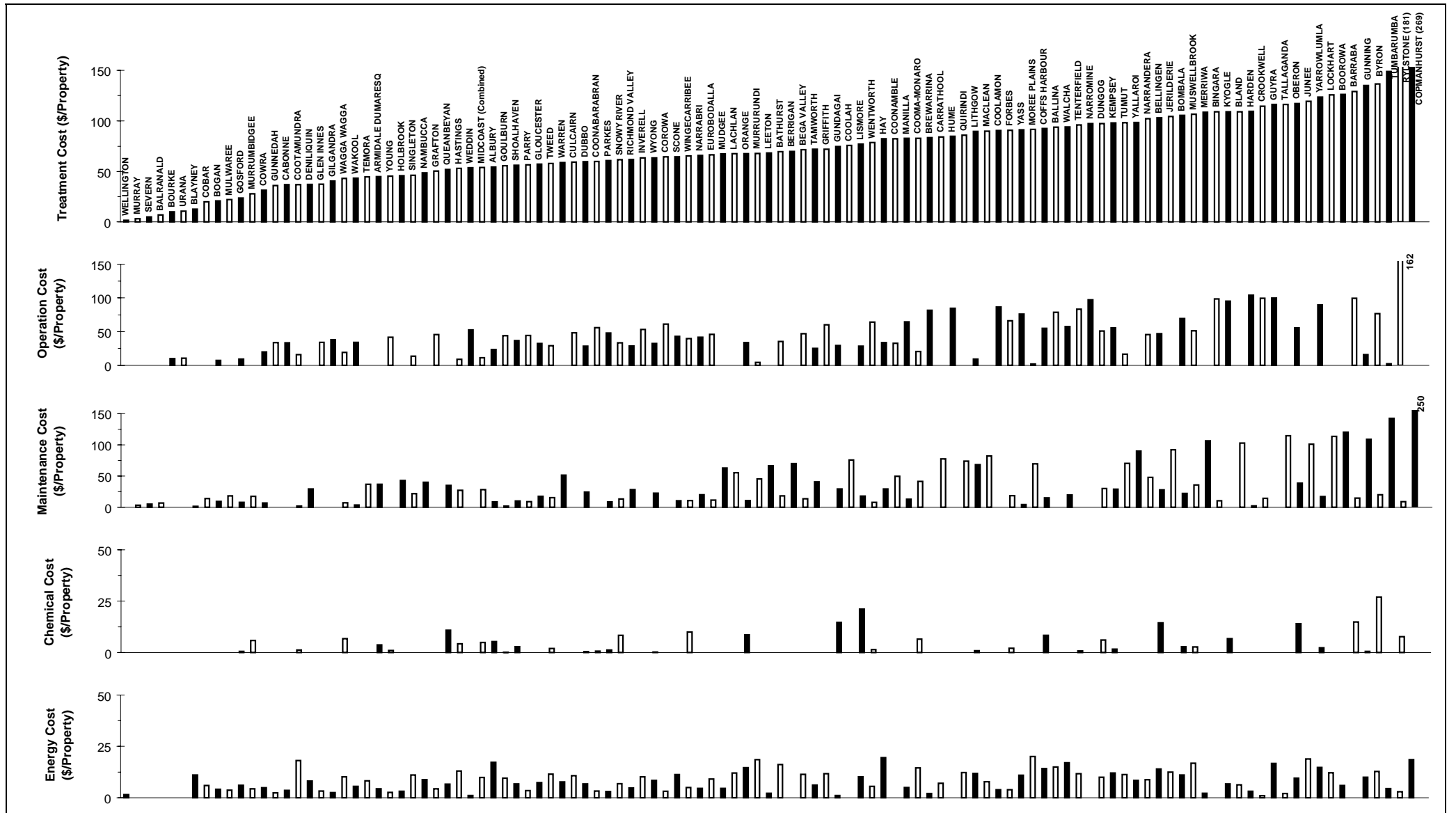
### Notes:

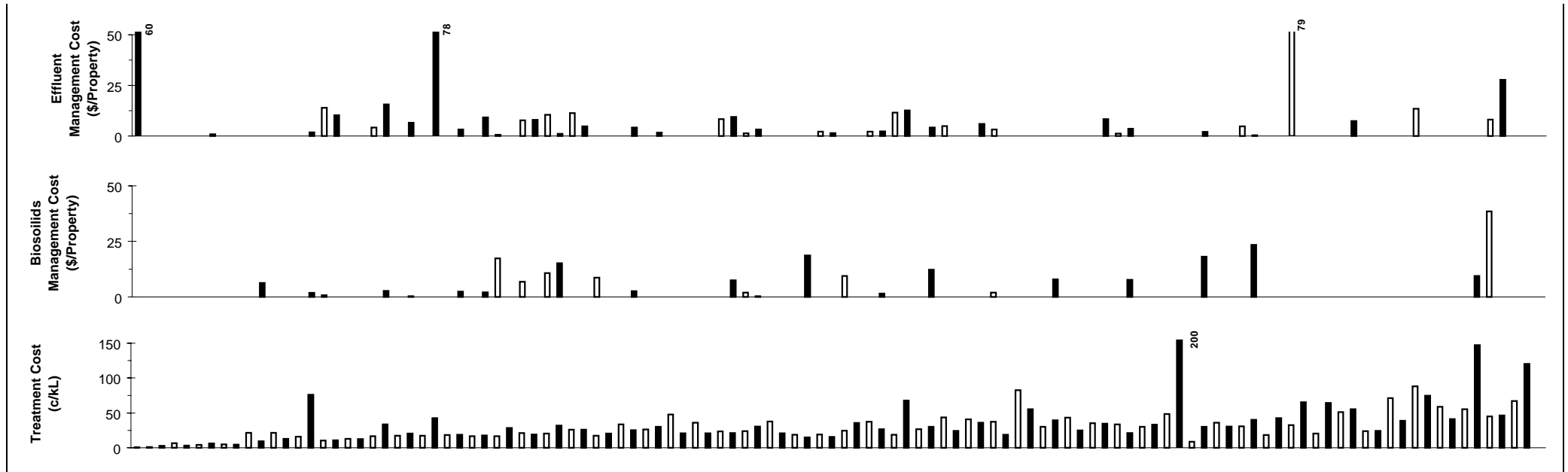
1. This figure shows ranked values of the sewage treatment cost per property for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the sewage treatment costs for the 35 councils shown **range** from about **\$25 to \$140** per property. Results for the previous 5 years are also shown in Jan 2001\$.
2. The Statewide median sewage treatment cost is \$60 per connected property (refer to Table 2 - percentage of properties basis)
3. For general notes see page 43.

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# 112 Components of Treatment Cost

# Sewerage



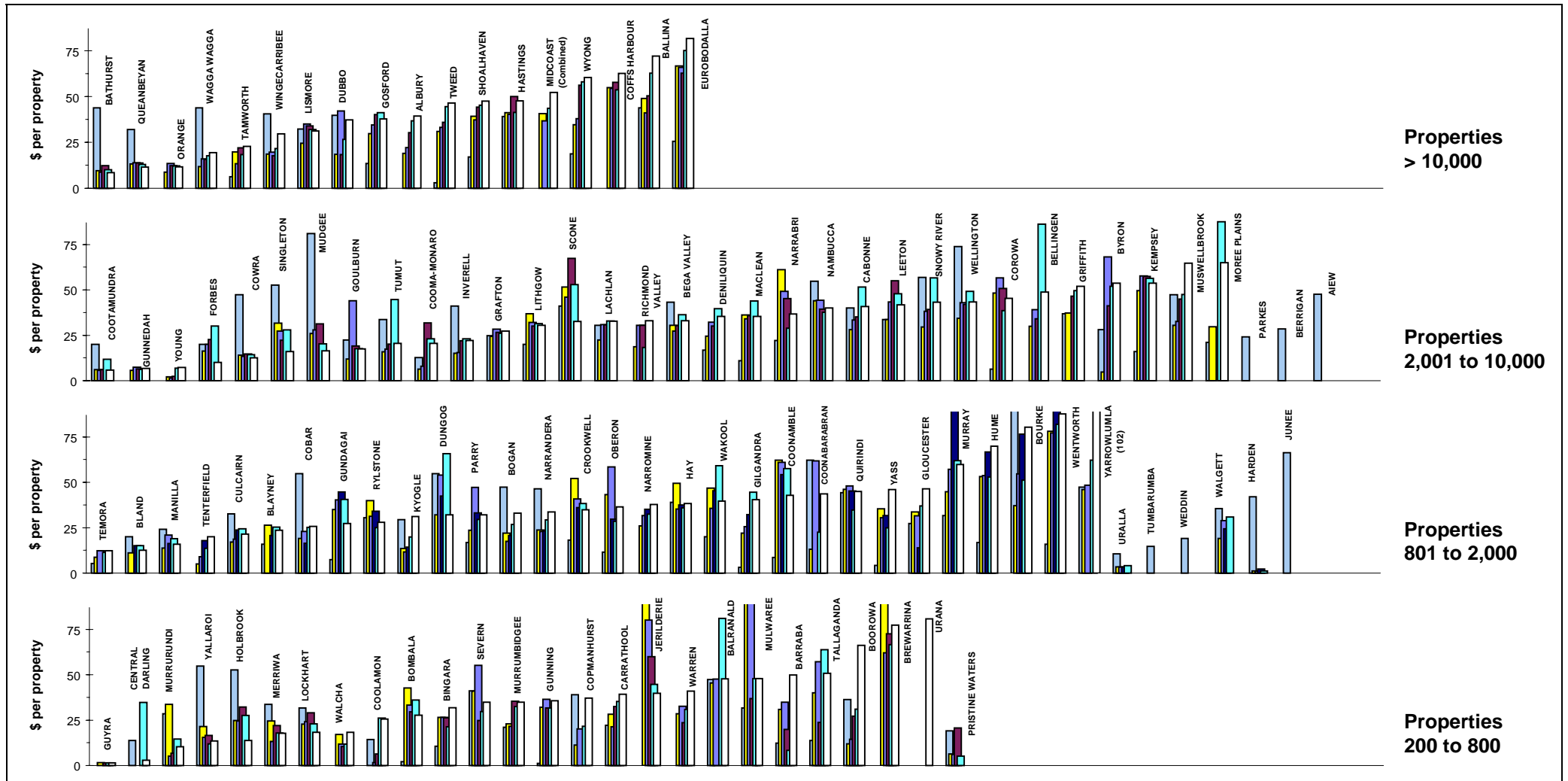


<b>Parameter:</b>	$\frac{\text{Treatment Expenses (S2f + S2g + S2h + S2k)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Treatment Operation Expenses (S2f)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Treatment Maintenance Expenses (S2k)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Treatment Chemical Cost (S2g)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Treatment Energy Cost (S2h)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Effluent Management Cost (S2i)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Biosolids Management Cost (S2j)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$
<b>Parameter:</b>	$\frac{\text{Treatment Expenses (S2f + S2g + S2h + S2k)}}{\text{Volume of Sewage Receiving Secondary Treatment (Q41c)} \times 10}$

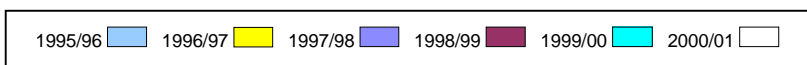
- Notes:**
1. The Statewide median sewage treatment cost (excluding effluent and biosolids management costs) is \$60 per connected property (refer to Table 2 – percentage of connected properties basis).
  2. For general notes see page 43.

# 113 Pumping Cost

# Sewerage



Parameter:  $\frac{\text{Pumping Station Operation Cost (S2c) + Maintenance Cost (S2d) + Energy Cost (S2e)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

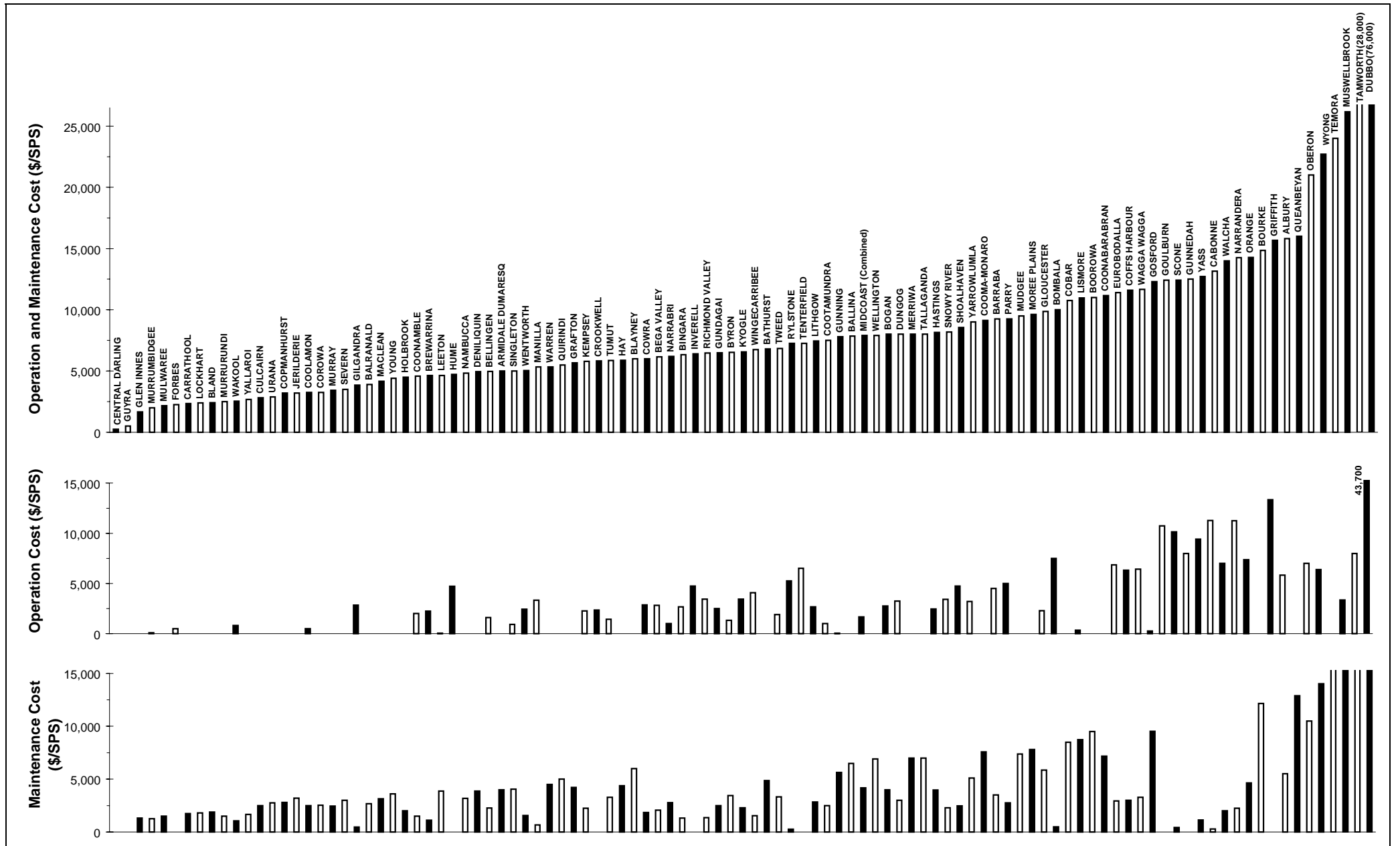


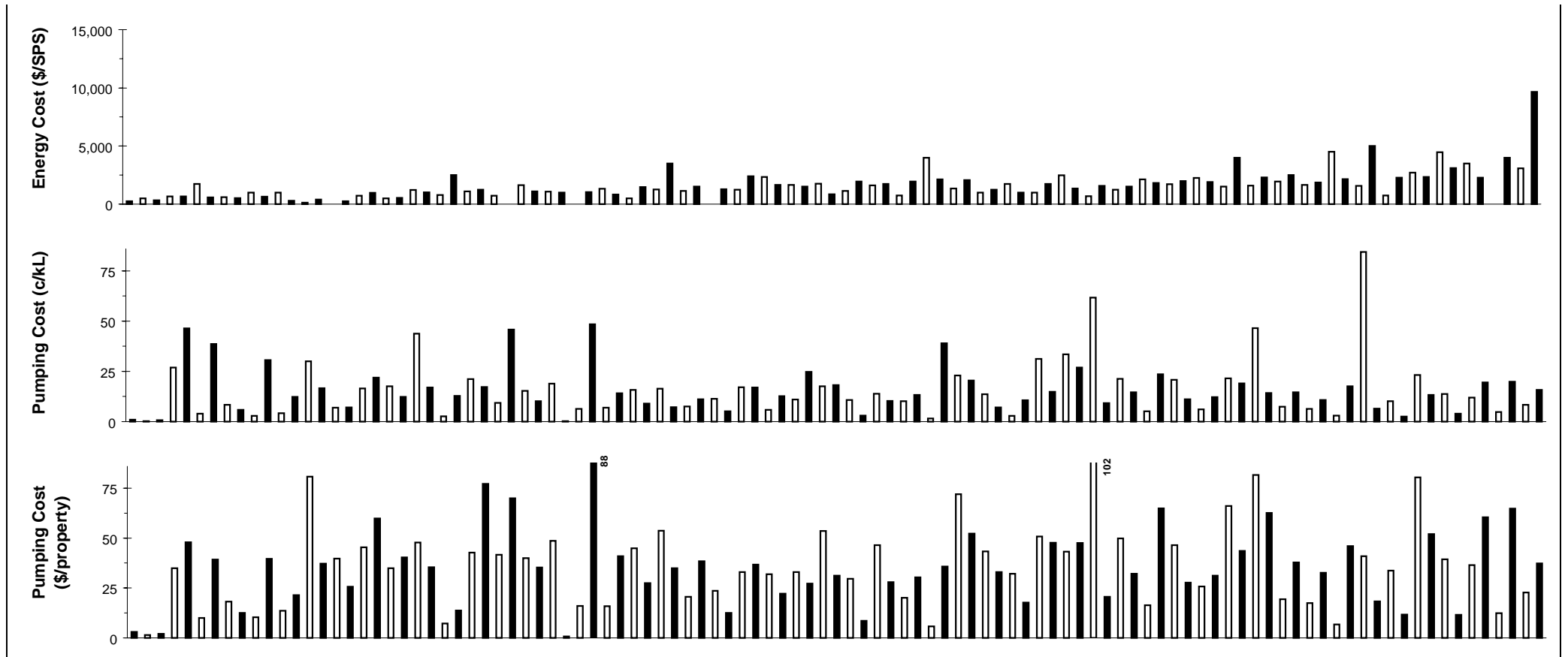
- Notes:**
1. This figure shows ranked values of the sewage pumping cost per property for 2000/01 for each council in 4 groups based on the number of connected properties served. *Each bar represents one council.* As an example, for the second graph (population range 2,001 to 10,000), the sewage pumping costs for the 35 councils shown range from about \$10 to \$65 per connected property. Results for the previous 5 years are also shown in Jan 2001\$.
  2. The Statewide median sewage pumping cost is \$35 per connected property (refer to Table 2 - percentage of connected properties basis).
  3. For general notes see page 43.

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# 114 Components of Pumping Cost

# Sewerage





**Parameter:**  $\frac{\text{Pumping Stations Operation Expenses (S2c)} + \text{Pumping Stations Energy Cost (S2d)} + \text{Pumping Stations Maintenance Expenses (S2e)}}{\text{No. of Pumping Stations (Q9a)}}$

**Parameter:**  $\frac{\text{Pumping Stations Operation Expenses (S2c)}}{\text{No. of Pumping Stations (Q9a)}}$

**Parameter:**  $\frac{\text{Pumping Stations Maintenance Expenses (S2e)}}{\text{No. of Pumping Stations (Q9a)}}$

**Parameter:**  $\frac{\text{Pumping Stations Energy Cost (S2d)}}{\text{No. of Pumping Stations (Q9a)}}$

**Parameter:**  $\frac{\text{Pumping Stations Operation Expenses (S2c)} + \text{Pumping Stations Energy Cost (S2d)} + \text{Pumping Stations Maintenance Expenses (S2e)}}{\text{Volume of Sewage Receiving Secondary Treatment (Q41c)} \times 10}$

**Parameter:**  $\frac{\text{Pumping Stations Operation Expenses (S2c)} + \text{Pumping Stations Energy Cost (S2d)} + \text{Pumping Stations Maintenance Expenses (S2e)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

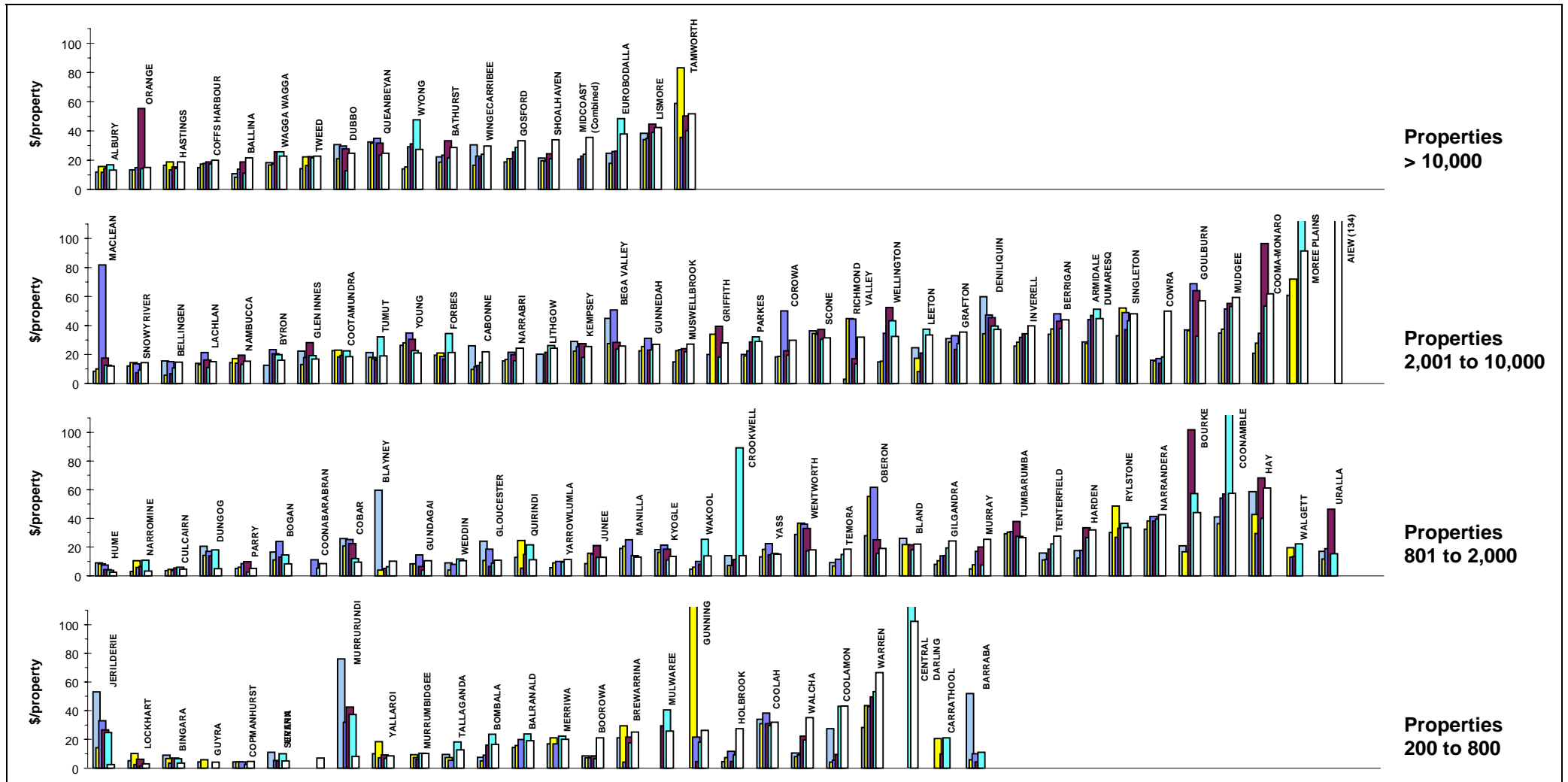
**Notes:**

1. The Statewide median sewage pumping cost (including energy costs) is \$35 per connected property (refer to Table 2 – percentage of connected properties basis).
2. For general notes see page 43.

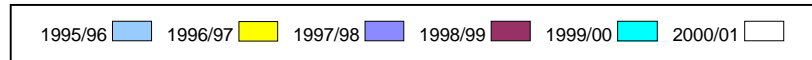


# 115 Sewer Main Cost

# Sewerage



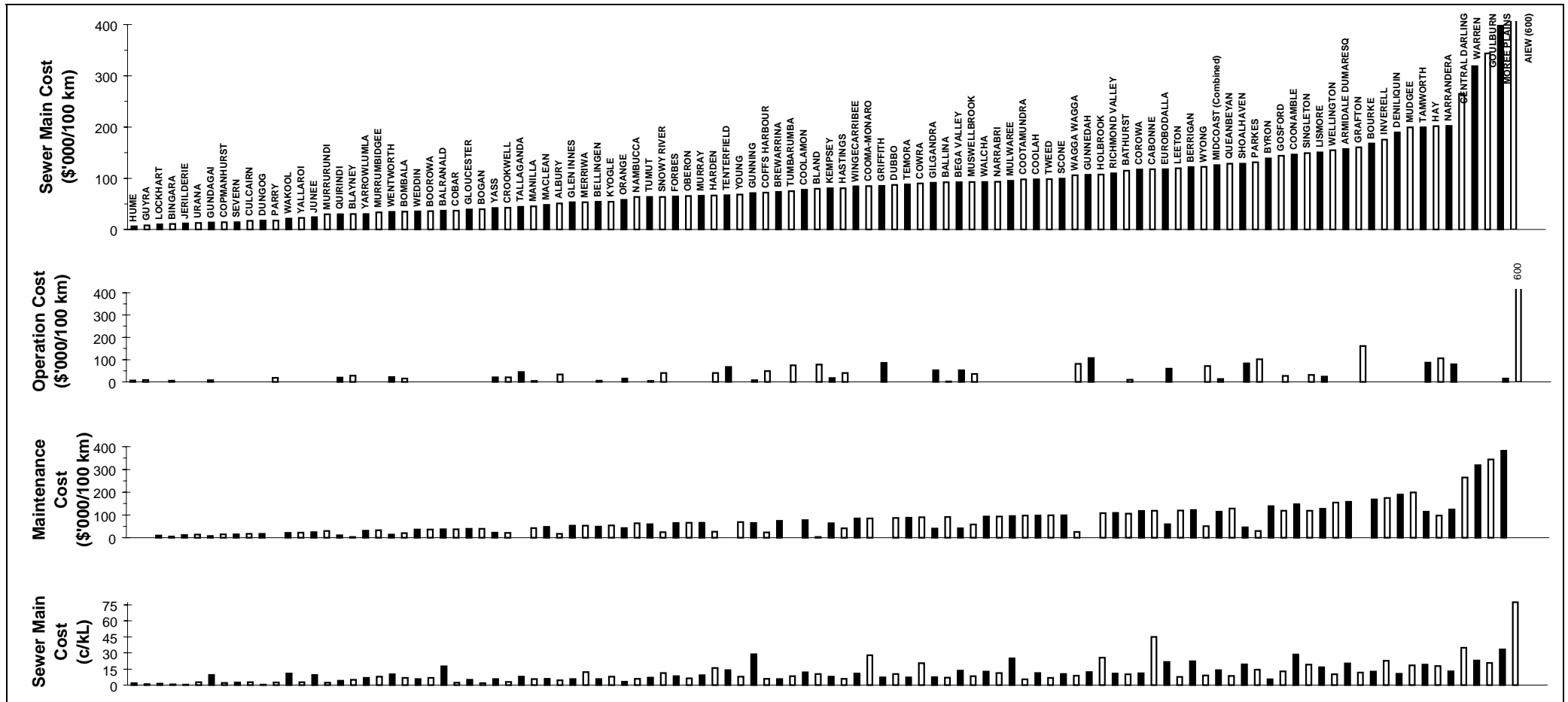
Parameter:  $\frac{\text{Pumping Station Operation Cost (S2c) + Maintenance Cost (S2d) + Energy Cost (S2e)}}{[\text{No. of Residential Assessments (Q4a) + No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$



- Notes:
- This figure shows ranked values of the sewer main cost per property for 2000/01 for each council in 4 groups based on the number of connected properties served. **Each bar represents one council.** As an example, for the second graph (population range 2,001 to 10,000), the sewer main costs for the 37 councils shown range from about \$10 to \$134 per connected property. Results for the previous 5 years are also shown in Jan 2000\$.
  - The Statewide median sewer main cost is \$27 per connected property (refer to Table 2 - percentage of connected properties basis).
  - For general notes see page 43.

# 116 Components of Sewer Main Cost

# Sewerage



Parameter:  $\frac{\text{Sewer Main Operation Expenses (S2a)} + \text{Sewer Main Maintenance Cost (S2b)}}{\text{Length of Main (Q10a + Q10b)} \times 10}$

Parameter:  $\frac{\text{Sewer Main Operation Expenses (S2a)}}{\text{Length of Main (Q10a + Q10b)} \times 10}$

Parameter:  $\frac{\text{Sewer Main Maintenance Cost (S2b)}}{\text{Length of Main (Q10a + Q10b)} \times 10}$

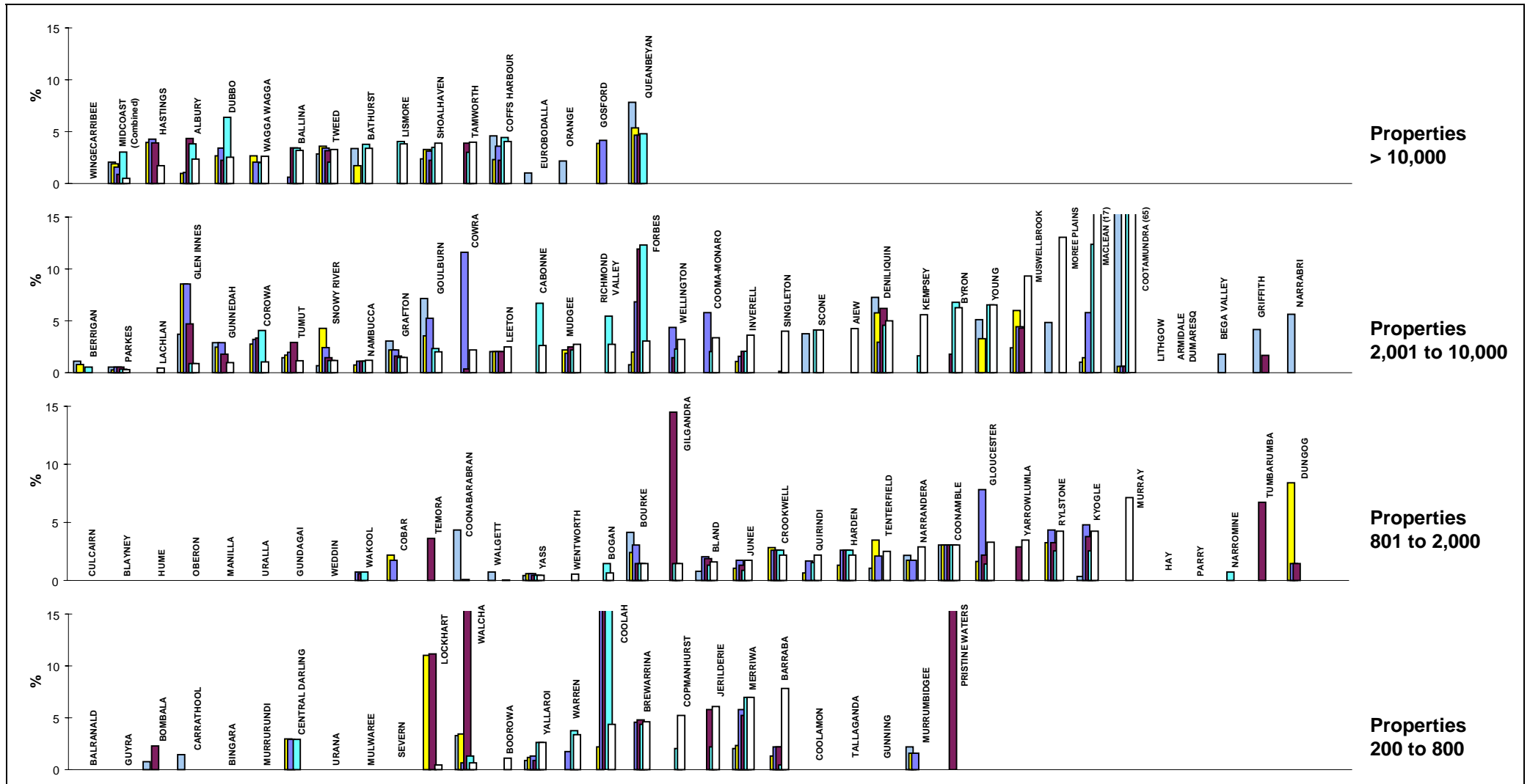
Parameter:  $\frac{\text{Sewer Main Operation Expenses (S2a)} + \text{Sewer Main Maintenance Cost (S2b)}}{\text{Total Volume of Sewerage Treated (Q39)} \times 10}$

### Notes

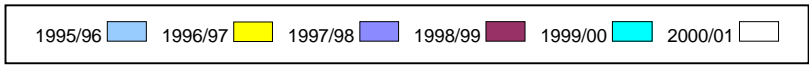
1. The Statewide median sewer main cost is \$27 per connected property (refer to Table 2 – percentage of connected properties basis).
2. For general notes see page 43.

# 117 Total Days Lost

# Sewerage



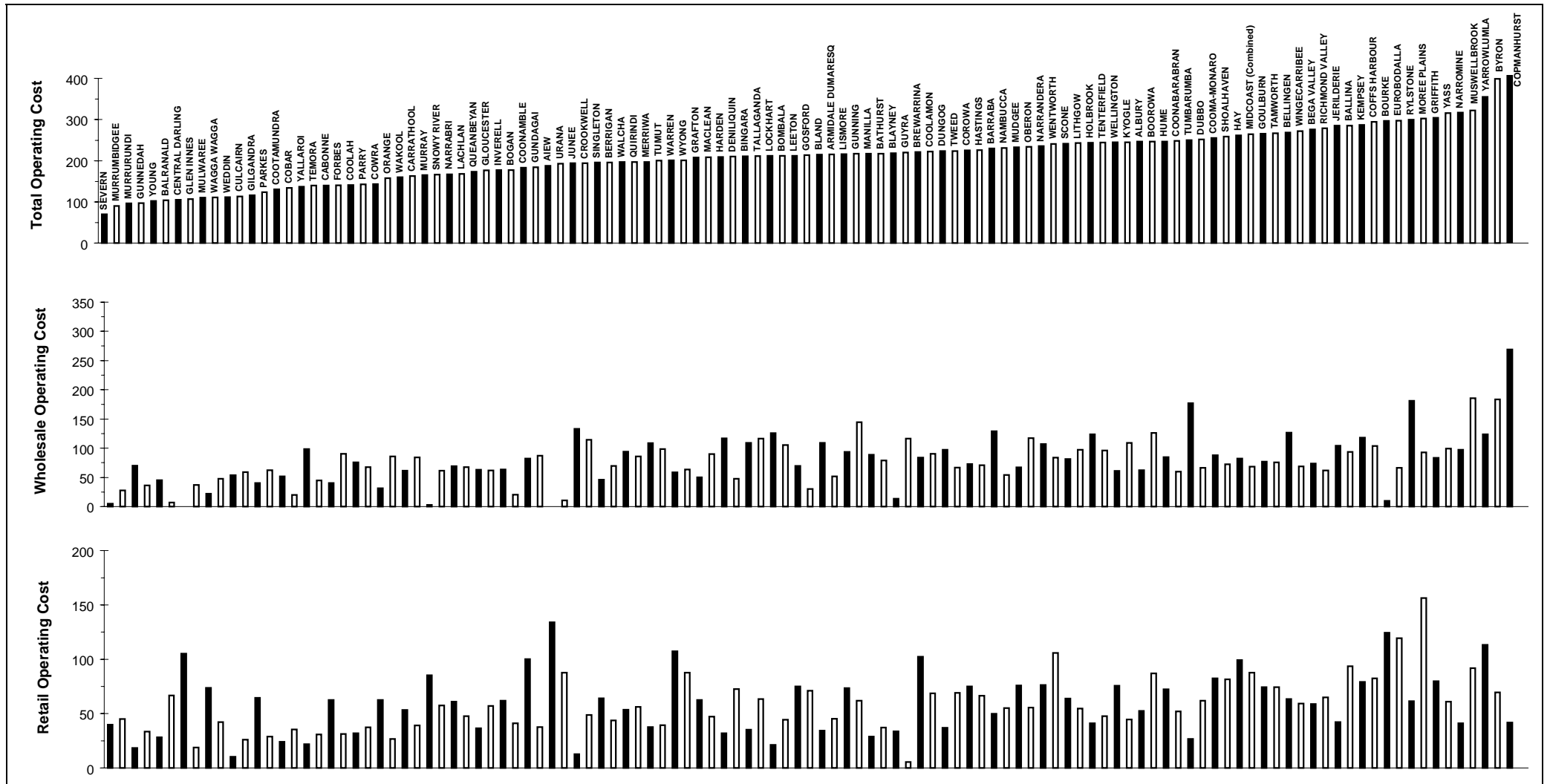
Parameter: 
$$\frac{\text{Total Numbers of Days Lost in Year (Q30)} \times 100}{\text{Equivalent full time employees (Q29)} \times \text{available number of working days in year (ie. 230)}}$$



- Notes:
1. This figure shows ranked values of the 2000/01 percentage of days lost for each council in 4 groups based on the number of connected properties served. **Each white bar represents one council.** As an example, for the property range from 2,001 to 10,000, the percentage of days lost for the 30 councils shown **range** from about **0 to 6%**. Results for the previous 5 years are also shown.
  2. The Statewide median the percentage of days lost is 2.7% (refer to Table 1 - percentage of connected properties basis).
  3. For general notes see page 43.

# 118 Retail/Wholesale Operating Cost (\$/property)

# Sewerage



**Parameter:**  $\frac{\text{Total Operation and Maintenance Expenses (S1 + S2)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Parameter:**  $\frac{\text{Treatment Operation and Maintenance Expenses (W2f + W2g + W2h + W2i + W2j + W2k)} + \text{Pro-rata Share of Management Expenses (S1)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Parameter:**  $\frac{\text{Mains O\&M (S2a + S2b)} + \text{Pumping Station O\&M (S2c + S2d + S2e)} + \text{Pro-rata Share of Management Expenses (S1)}}{[\text{No. of Residential Assessments (Q4a)} + \text{No. of Non-Residential Assessments (Q4b)}] \times \text{No. of Connected Properties per Assessment}}$

**Note:**  
1. For general notes see page 43.

# **APPENDIX A**

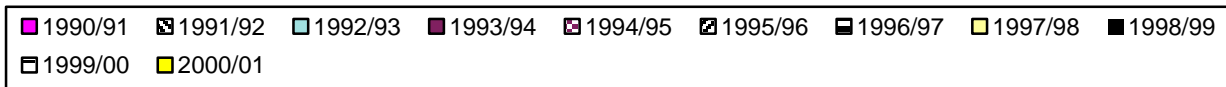
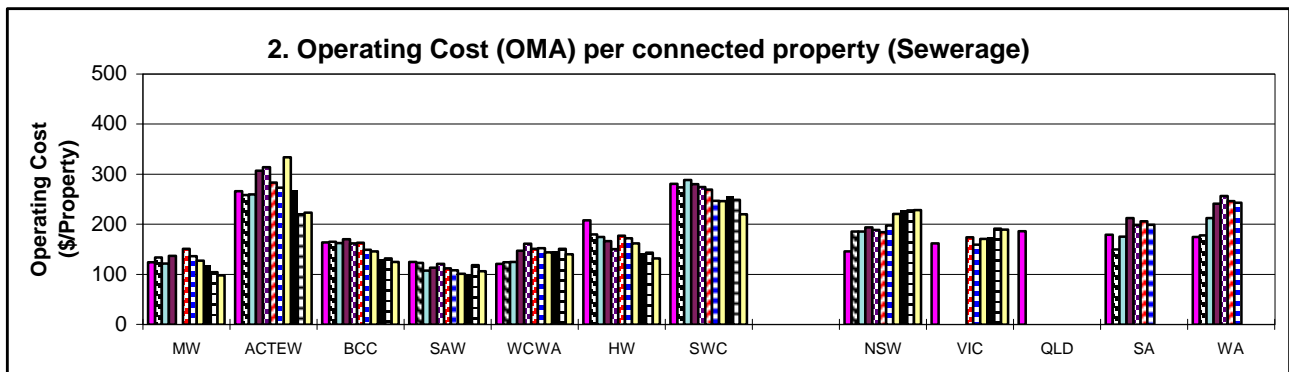
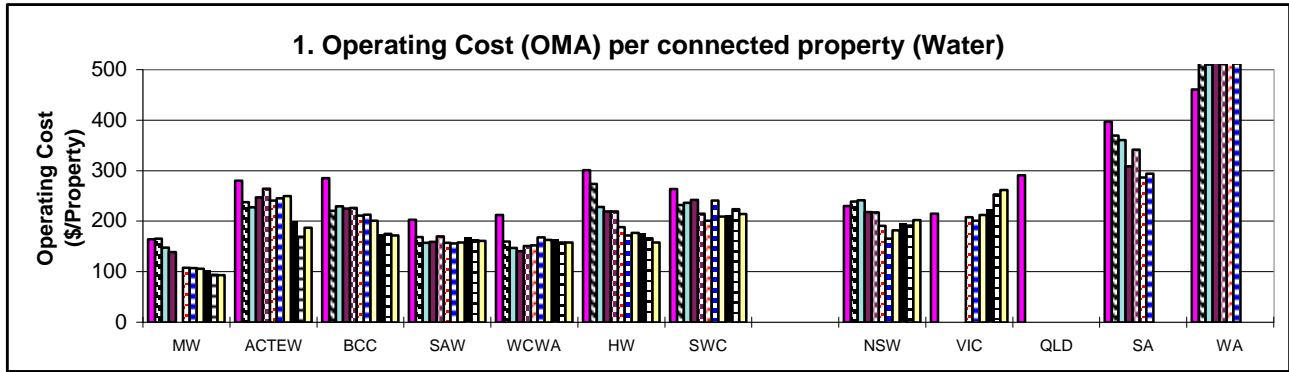
## **ARMCANZ PERFORMANCE COMPARISONS 1990/91 - 2000/01**

*(Refer also to page xi)*

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# ARMCANZ PERFORMANCE COMPARISONS 1990/91 - 2000/01

## Water Supply and Sewerage Services



### Metropolitan Water Utilities

MW	Melbourne Water Consolidated*
ACTEW	ACT Electricity and Water
BCC	Brisbane City Council
SAW	SA Water Corporation (Adelaide)
WCWA	WA Water Corporation (Perth)
HW	Hunter Water
SWC	Sydney Water Corporation

### Country Water Utilities

NSW	NSW Country
VIC	VIC Country
QLD	QLD Country
SA	SA Country
WA	WA Country

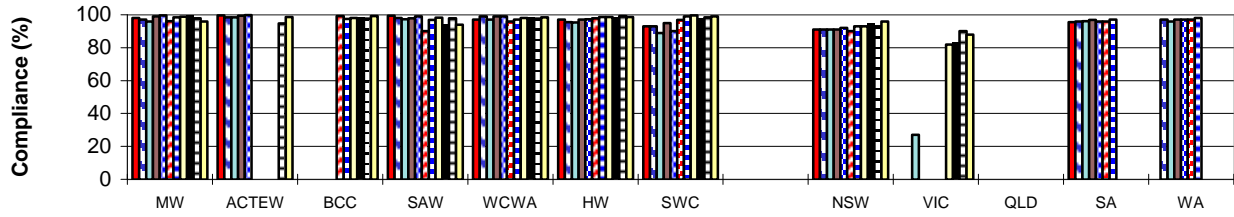
\* Melbourne Water was disaggregated into 4 constituent utilities in 1994.  
 Melbourne Water Consolidated results shown for 1994/95 to 2000/01 are either aggregated results of the constituent utilities or consolidated results reported in WSAA Facts (see note 2).

- NOTES:**
- Operating Cost (OMA) is the Operation, Maintenance and Administration Cost
  - Results for the metropolitan water utilities for 1994/95 to 2000/01 obtained from "The Australian Urban Water Industry - WSAA Facts 2001", Water Services Association of Australia, 2001
  - Results for Victoria for 1996/97 to 2000/01 obtained from "Urban Water Review 2000/2001", Victorian Water Industry Association, 2001.
  - Results for SA Country and WA Country for 1991/92 to 1996/97 obtained from "Government Trading Enterprises Performance Indicators 1991/92 to 1996/97", Steering Committee on National Performance Monitoring of Government Trading Enterprises, April 1998.

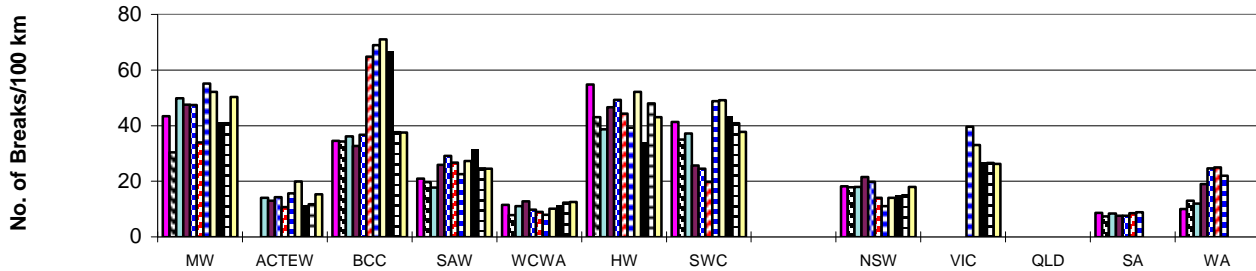
# ARMCANZ PERFORMANCE COMPARISONS 1990/91 - 2000/01

## Water Supply and Sewerage Services

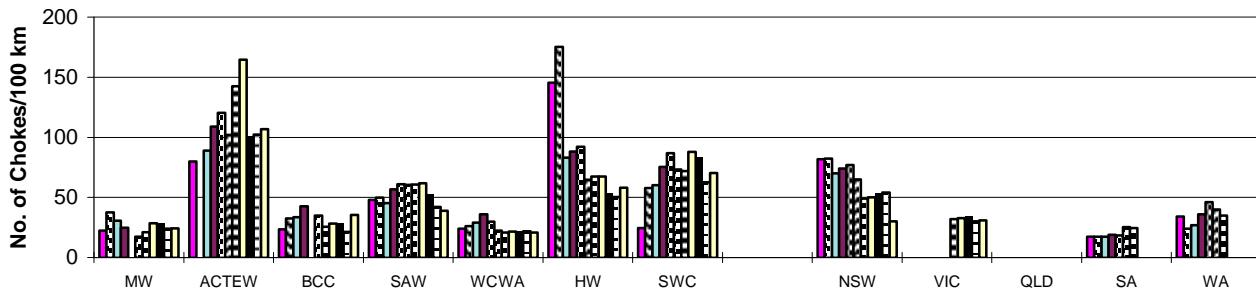
### 3. Compliance with 1996 NHMRC/ARMCANZ Microbiological Australian Drinking Water Guidelines



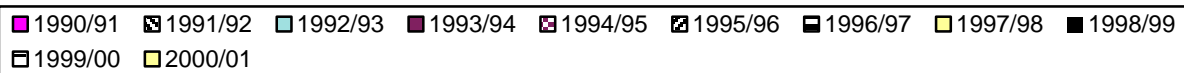
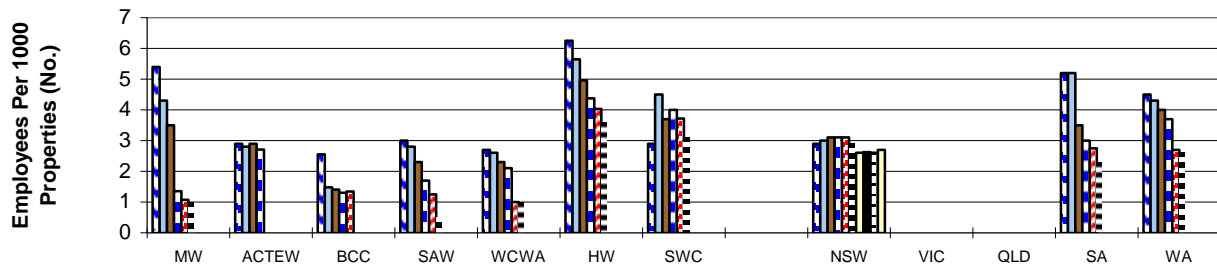
### 4. Water Main Breaks



### 5. Confirmed Sewer Chokes



### 6. Employees (Water & Sewerage)



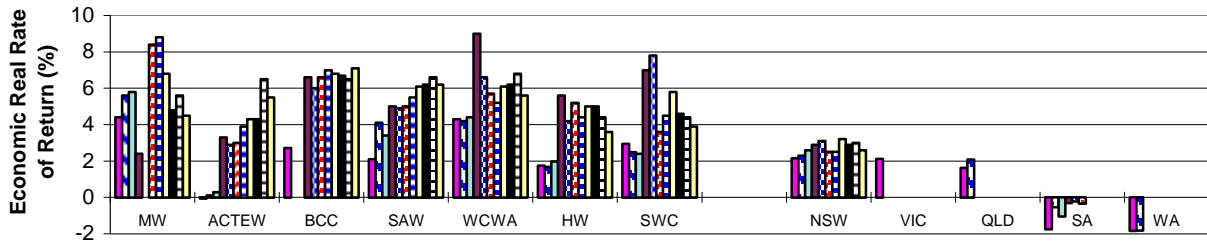
**NOTE** Limited data for the above parameters is available for country water utilities in the eastern states other than NSW.  
(In Queensland, many councils do not disinfect their drinking water supplies.)



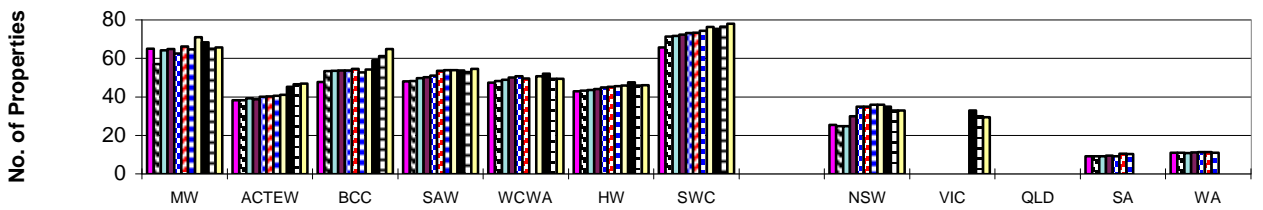
# ARMCANZ PERFORMANCE COMPARISONS 1990/91 - 2000/01

## Water Supply and Sewerage Services

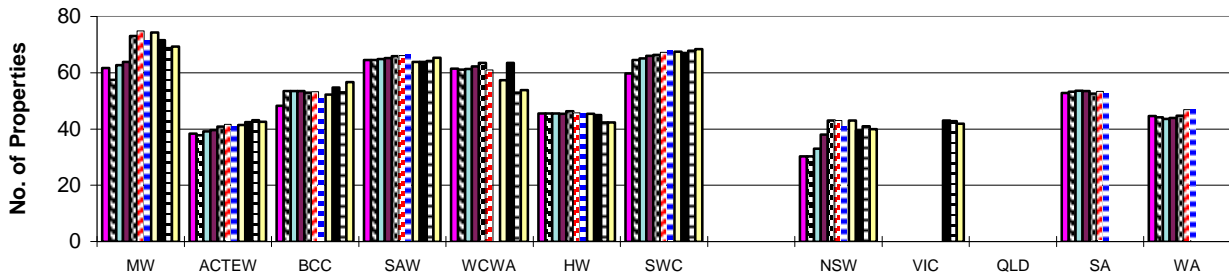
### 7. Economic Real Rate of Return (Water & Sewerage)



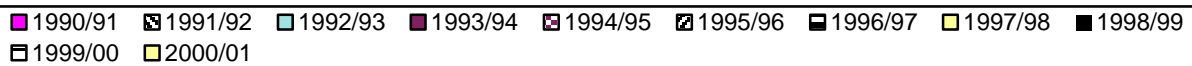
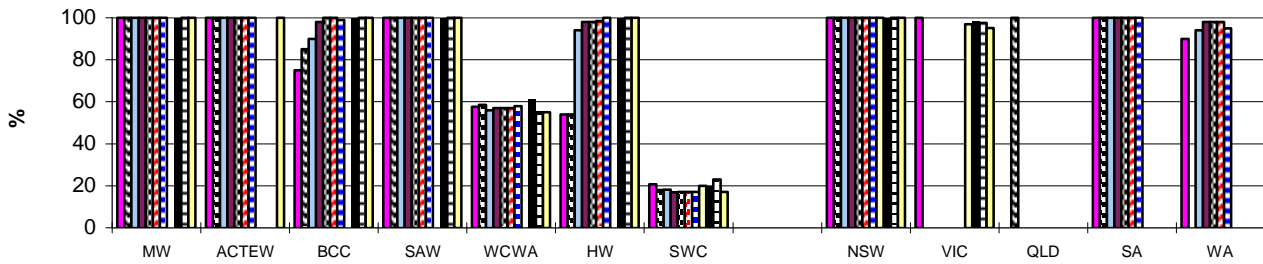
### 8. Properties Served per km of Main (Water)



### 9. Properties Served per km of Main (Sewerage)



### 10. % of Sewage Receiving Secondary Treatment



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## **APPENDIX B**

# **NSW ANNUAL WATER SUPPLY AND SEWERAGE REPORTING FORMS**

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# ANNUAL WATER REPORT FOR 2000/01

**COUNCIL**

## WATER SUPPLY BUSINESS

### POPULATION AND DWELLINGS

1	Population Served:	Permanent <sup>3</sup> : <input type="text"/> persons	<input type="text"/>	Peak: <input type="text"/> persons
2	Residential Properties Connected:	a. No. of Single Dwellings <sup>1</sup> : <input type="text"/> No.	b. No. of Multiple Dwellings <sup>2</sup> : <input type="text"/> No.	
		c. Average No. of Properties per Multiple Dwelling: <input type="text"/> No.		
3	Non-Residential Properties Connected:	<input type="text"/> No.		
4	Assessments:	Residential <sup>3</sup> : <input type="text"/> No.	<input type="text"/>	Non-Residential <sup>3</sup> : <input type="text"/> No.
5	Premises Metered:	Residential: <input type="text"/> No.		Non-Residential: <input type="text"/> No.
6	New Residential Dwellings Connected in year:	<input type="text"/> No.		
7	Unserved Urban Premises (in Council Area):	Premises: <input type="text"/> No.		Population: <input type="text"/> persons

### ASSETS EMPLOYED

8	Water Supply Assets:	Capacity	Capacity	Capacity
	Service Reservoirs: <input type="text"/> No. <input type="text"/> ML	Dams: <input type="text"/> No. <input type="text"/> ML	Treatment Works: <input type="text"/> No. <input type="text"/> ML/d	
	Pumping Stations: <input type="text"/> No. <input type="text"/> ML/d	Weirs: <input type="text"/> No. <input type="text"/> ML	Bores: <input type="text"/> No. <input type="text"/> ML/d	
9	Delivery Capacity into Reticulation:	Total: <input type="text"/> ML/d		
10	Length of Mains:	Trunk Mains: <input type="text"/> km	Reticulation: <input type="text"/> km	Total Length <sup>3</sup> : <input type="text"/> km
11	Rehabilitations This Year:	Length of Mains Rehabilitated: <input type="text"/> km	Service Connections Rehabilitated: <input type="text"/> No.	

### WATER CONSUMPTION

12	Annual Consumption:	a. Residential <sup>3</sup> : <input type="text"/> ML	<input type="text"/>
	<i>(For potable supply only. For non-potable water component see Item 14)</i>	b. Commercial: <input type="text"/> ML	
		c. Industrial: <input type="text"/> ML	
		d. Rural: <input type="text"/> ML	
		e. Institutional: <input type="text"/> ML	
		f. Bulk Sales: <input type="text"/> ML	
		g. Public Parks: <input type="text"/> ML	
		h. Unaccounted for Water (including System Water Loss) <sup>3,4</sup> : <input type="text"/> ML	<input type="text"/>
		i. (System Water Loss <sup>3,4</sup> ): <input type="text"/> ML	<input type="text"/>
		j. Total Potable Water Consumption <sup>3</sup> : <input type="text"/> ML	<input type="text"/>
13	Peak Consumption:	Peak Day: <input type="text"/> ML/d	Peak Week: <input type="text"/> ML/d
14	Non-Potable Water Component in a Dual Supply System:	<input type="text"/> ML	

### WATER RESOURCES

15	Source Usage & Yield:	<b>SOURCE USAGE</b>	<b>YIELD</b>
	a. Council's Off-stream Dams:	<input type="text"/> ML	<i>(The yield is the annual demand that could be met for the critical drought. The yield is not the present demand.)</i>
	b. Council's On-stream Dams:	<input type="text"/> ML	
	c. Run-of-River Pumping (without off-stream dam):	<input type="text"/> ML	
	d. River Release (from DLWC dams):	<input type="text"/> ML	
	e. Groundwater:	<input type="text"/> ML	
	f. Surface Water:	<input type="text"/> ML/a	
	g. Recycled Water:	<input type="text"/> ML	h. Ground Water: <input type="text"/> ML/a
	i. Bulk Purchases (filtered):	<input type="text"/> ML	j. Recycled Water: <input type="text"/> ML/a
	k. Bulk Purchases (unfiltered):	<input type="text"/> ML	l. Bulk Purchases: <input type="text"/> ML/a
	m. Total Water Usage:	<input type="text"/> ML	n. Total Yield of Sources: <input type="text"/> ML/a
16	Bulk Purchases:	Source (Supply Scheme): <input type="text"/>	Price: <input type="text"/> c/kL
17	Climate	Rainfall: 2000/01 Rainfall: <input type="text"/> mm	Average Annual Rainfall: <input type="text"/> mm
		2000/01 Temperatures: Average Maximum: <input type="text"/> °C	Average Minimum: <input type="text"/> °C

**FINANCIAL** - Financial data is provided by Council in Special Schedule No.3 to its Financial Statement. This data includes amounts under the item "Operation and Maintenance Expenses". Please break-up the total under this item into "headworks" and "distribution and reticulation" components.

18	Operation and Maintenance Expenses:	Headworks <sup>5</sup> Component: <input type="text"/> % of total O & M Expenses	
		Distribution and Reticulation Component: <input type="text"/> % of total O & M Expenses	

- Notes** Indicates the reader should refer to the definition of this item in Attachment 1.
- 1 This comprises all single dwellings (detached houses, duplexes with 2 connections or townhouses with a connection for each townhouse) with a separate connection to Council's water supply reticulation.
  - 2 This comprises only those multiple dwellings with a single connection, eg. a block of flats or a group of townhouses with a single connection to Council's water supply reticulation.
  - 3  Indicates Council should provide an estimate in this box of the accuracy and reliability of the data according to the following confidence grades: 1 (accuracy within ± 1%), 2 (± 5%), 3 (± 10%), 4 (± 25%), 5 (± 50%), 6 (± 100%), 7 (not within ± 100%). For further information see Attachment 1.
  - 4 If Unaccounted for water is less than 10% or System Water Loss (ie. Leakage) is less than 6% of Total Water Consumption, this data should be carefully re-examined as Statewide analysis has found these to be the minimum values for other than bulk water suppliers.
  - 5 Headworks include dams, bores, water treatment works and associated mains, tunnels and pumping stations.

(see over)

**LEVELS OF SERVICE**

19 **Water Quality Complaints:** No. of Water Quality Complaints Reported<sup>3</sup>: [ ] No. [ ]  
 Common Water Quality Complaints: [ ]

20 **Water Service Complaints:** No. of Water Service Complaints Reported: [ ] No. [ ]  
 Common Water Service Complaints: [ ]

22 **Billing Complaints:** No. of Billing Complaints: [ ] No. [ ]

23 **Other Complaints:** No. of Other Complaints: [ ] No. [ ]

24 **Responses to Complaints:** No. of Responses to Written Complaints: [ ] No. [ ]

25 **Unplanned Interruption to Supply:** No. of Properties Affected<sup>3</sup>: [ ] No. [ ] Properties affected by an unplanned interruption to supply. Include each occurrence of interruption.

26 **Average Time taken to Restore an Interrupted Supply<sup>3</sup>:** [ ] hr [ ]

27 **No. Days of Water Restrictions Due to Drought:** [ ] days

28 **Breaks/Failures:** Pipeline Breaks<sup>3</sup>: [ ] No. [ ] Service Connection Failures<sup>3</sup>: [ ] No. [ ]

**ENERGY/EMPLOYEES**

29 **Total Energy Usage<sup>3</sup>:** [ ] MWh [ ]

30 **Equivalent Full-time Employees** [ ] No. (Include staff engaged in operation, maintenance and management, including billing; exclude staff engaged on design or construction)

31 **Total No. of Days Lost in year:** [ ] days (Include employee days lost for all reasons eg. industrial disputes, sick leave, industrial accidents)

**2001/2002 WATER CHARGES**

31A **Did Council adopt a new tariff structure for 2001/02?** Residential (Y/N) [ ] Non-Residential (Y/N) [ ]

32 **Residential Access (or Availability) Charges:** Show annual Access Charge or Minimum Amount for a single dwelling (ie. a non-vacant lot)  
 Uniform Access Charge \$ [ ] OR Minimum Amount (based on Land Value) \$ [ ]

33 **Residential Usage Charges:**  
 0 to [ ] kL/a Price: [ ] c/kL  
 [ ] to [ ] kL/a Price: [ ] c/kL  
 [ ] to [ ] kL/a Price: [ ] c/kL

34 **Non-Residential Access (or Availability) Charges:** (Tick appropriate box to indicate Council's Basis for Non-Residential Access Charges)  
 a. Land Value: [ ] b. Uniform Access Charge: [ ] c. Service Connection Size (see below): [ ] d. Meter Size (see below): [ ]  
 e. Other: [ ] f. Describe: [ ]  
 g. Annual Access Charge for the following sizes: 20mm service connection or meter: \$ [ ] 40mm service connection or meter: \$ [ ]

35 **Non-Residential Usage Charges:**  
 0 to [ ] kL/a Price: [ ] c/kL  
 [ ] to [ ] kL/a Price: [ ] c/kL  
 [ ] to [ ] kL/a Price: [ ] c/kL

36 **Typical Developer Charge:** For 2001/02: \$ [ ] per ET (Equivalent Tenement) For 2000/01: \$ [ ] per ET

**2000/01 WATER QUALITY AND TREATMENT WORKS PERFORMANCE**

If no water treatment works, complete Table as far as practicable. For businesses with 2 or more water treatment works, show details on copies of this page.

37 **Water Treatment Works :** Name: [ ] Capacity: [ ] ML/d

38 **Type of Treatment Works:** [ ] Volume Treated<sup>3</sup>: [ ] ML [ ]

	Max	Avg	Max	Avg
39 <b>Colour Units:</b>	Raw Water [ ]	[ ]	Treated Water [ ]	[ ]
40 <b>Turbidity Units:</b>	Raw Water [ ]	[ ]	Treated Water [ ]	[ ]
41 <b>Chemical Usage per year:</b>	Alum: [ ] t	Alkali: [ ] t	Chlorine: [ ] t	Fluoride: [ ] t

42 **Percentage Test Compliance With 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines:** (Percent of No. of Samples)  
 Physical/Chemical: a. Physical: [ ] % of [ ] samples c. Chemical: [ ] % of [ ] samples  
 Key Characteristics: e. Turbidity: [ ] % of [ ] samples g. pH: [ ] % of [ ] samples  
 i. Colour: [ ] % of [ ] samples  
 Microbiological: k. Faecal Coliforms: [ ] % of [ ] samples m. Total Coliforms: [ ] % of [ ] samples

43 **Common Reasons for Less than 100% Test Compliance:**  
 [ ]

44 **Number of Days Chlorination System failed to Operate<sup>3</sup>:** [ ] days [ ]

45 **No. of Days of Major Malfunction of Treatment Processes<sup>3</sup>:** [ ] days [ ] (This is the number of days in the year when a significant portion of the treatment works was either not operating (other than routine maintenance) or not functioning properly.)

[ ] Indicates that the reader should refer to the definition of this item in Attachment 1.

[ ] Indicates Council should provide an estimate in this box of the accuracy and reliability of the data according to the following confidence grades:

1 (accuracy within ± 1%), 2 (± 5%), 3 (± 10%), 4 (± 25%), 5 (± 50%), 6 (± 100%), 7 (not within ± 100%). For further information refer to Attachment 1. For other notes refer to front page.

Report Completed by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# ANNUAL SEWERAGE REPORT FOR 2000/01

**COUNCIL**

**SEWERAGE BUSINESS**

## POPULATION AND DWELLINGS

1	Population Served:	Permanent <sup>2</sup> : <input type="text"/> persons	Peak: <input type="text"/> persons
2	Residential Properties Connected:	a. No. of Single Dwellings <sup>1</sup> : <input type="text"/> No.	b. No. of Multiple Dwellings <sup>2</sup> : <input type="text"/> No.
		c. Average No. of Properties per Multiple Dwelling: <input type="text"/> No.	
3	Non-Residential Properties Connected:	<input type="text"/> No.	
4	Assessments:	Residential <sup>3</sup> : <input type="text"/> No. <input type="checkbox"/>	Non-Residential <sup>3</sup> : <input type="text"/> No. <input type="checkbox"/>
5	New Residential Dwellings Connected in year:	<input type="text"/> No.	
6	Unserved Urban Premises (in Council Area):	Premises: <input type="text"/> No.	Population: <input type="text"/> persons
7	Area Sewered (ie. catchment):	<input type="text"/> ha	

## ASSETS EMPLOYED

8	Sewage Treatment Works:	<input type="text"/> No.	Total Capacity: <input type="text"/> EP
9	Pumping Stations:	<input type="text"/> No.	Total Capacity: <input type="text"/> ML/d
10	Length of Mains: Reticulation/gravity:	<input type="text"/> km	Rising mains: <input type="text"/> km
			Total Length <sup>3</sup> : <input type="text"/> km <input type="checkbox"/>
11	Rehabilitations This Year:	Length of Mains Rehabilitated: <input type="text"/> km	House Connections Rehabilitated: <input type="text"/> No.

## SEWAGE COLLECTED

12	Volumes of Sewage:	a. Infiltration/Inflow <sup>3</sup> : <input type="text"/> ML	<input type="checkbox"/>	
		b. Residential Sewage <sup>3</sup> : <input type="text"/> ML	<input type="checkbox"/>	
		c. Non-residential Sewage <sup>3</sup> : <input type="text"/> ML	<input type="checkbox"/>	
		d. Trade Waste <sup>3</sup> : <input type="text"/> ML	<input type="checkbox"/>	
		e. Total Transported through Sewerage Network <sup>3</sup> : <input type="text"/> ML	<input type="checkbox"/>	
12A	No. of Large Trade Waste Dischargers (>20 kL/d per discharger) <sup>3</sup> :	<input type="text"/> No.	<input type="checkbox"/>	
12B	Discharges from Large Trade Waste Dischargers (>20 kL/d per discharger):	Maximum Day volume: <input type="text"/> kL/d		
		Equivalent BOD Load: <input type="text"/> EP	Equivalent SS Load: <input type="text"/> EP	
13	Treated Sewage Effluent Discharges:	Ocean Discharges: <input type="text"/> ML	River Discharges: <input type="text"/> ML	
		Land Discharges: <input type="text"/> ML		

## LEVELS OF SERVICE

14	Sewage Odour Complaints:	Treatment works <sup>3</sup> : <input type="text"/> No. <input type="checkbox"/>	Pumping stations: <input type="text"/> No.
	<i>(Include all complaints whether phone, verbal, letter)</i>		
15	Sewage Service or Choke Complaints Reported <sup>3</sup> :	<input type="text"/> No.	
16	Common Service Complaints:	<input type="text"/>	
18	Billing Complaints:	No. of Billing Complaints: <input type="text"/> No.	
19	Other Complaints:	No. of Other Complaints: <input type="text"/> No.	
20	Sewer Overflows to the Environment <sup>3</sup> :	<input type="text"/> No. <input type="checkbox"/>	<i>(Record any overflow/surcharge in Council sewers, access chambers and pumping stations. Count each access chamber, pumping station etc. overflow as one overflow. Exclude overflows in sewer risers and sidelines (house connections) and at customers' gully traps.)</i>
21	Sewer Main Chokes and Collapses <sup>3</sup> :	<input type="text"/> No. <input type="checkbox"/>	<i>(Sewer Main Chokes and Collapses are confirmed partial or total blockages in Council sewer reticulation mains resulting in an interruption to the sewerage service or overflow of a customer's gully trap. Exclude blockages in sewer risers and sidelines (house branch connections) or customers' internal drains.)</i>
22	Sewer Main Chokes Attended to Within 5 hr:	<input type="text"/> No.	
23	Chokes in House Branch Connections:	<input type="text"/> No.	<i>(Record blockages in Council's sewer risers and sidelines (house branch connections) up to the customers' gully traps. Exclude blockages in customers' house drains (internal drains) )</i>
24	Chokes in House Drains:	<input type="text"/> No.	<i>(Record blockages in customers' internal drains (house drains).)</i>
25	Properties Affected by an Unplanned Interruption to Service <sup>3</sup> :	<input type="text"/> No. <input type="checkbox"/>	<i>(Include each occurrence of interruption)</i>
26	Average Time to Restore an Interrupted Service <sup>3</sup> :	<input type="text"/> hr	<input type="checkbox"/>
27	Pipe Breaks (Rising Mains Only) <sup>3</sup> :	<input type="text"/> No.	<input type="checkbox"/>

## ENERGY/EMPLOYEES

28	Total Energy Usage <sup>3</sup> :	<input type="text"/> MWh <input type="checkbox"/>	
29	Equivalent Full-time Employees:	<input type="text"/> No.	<i>(Include staff engaged in operation, maintenance and management including billing. Exclude staff engaged on design and construction.)</i>
30	Total No. of Days Lost in Year:	<input type="text"/> days	<i>(Include employee days lost for all reasons eg. industrial disputes, sick leave, industrial accidents.)</i>

Indicates that the reader should refer to the definition of this item in Attachment 1.  
For other notes see over page

(see over)

**2001/2002 SEWERAGE CHARGES**

**31a Did Council Adopt a New Tariff Structure for 2001/02** Residential (Y/N)  Non-Residential (Y/N)

**31 Residential Access (or Availability) Charges:** Show annual access charge or Minimum Amount for a single dwelling (ie. a non-vacant lot)  
 Uniform Access Charge \$  OR Minimum Amount (based on Land Value) \$

**32 Does Council have Usage Charges for Residential Sewerage Services?:**  Yes/No  
 If Yes, what is the Usage Charge:  c/kL

**33 Non-Residential Access (or Availability) Charges:** (Tick appropriate box to indicate Council's Basis for Non-Residential Access Charges)  
 Land Value:  Uniform Access Charge:  Water Service Connection Size:  Water Meter Size:  Pedestal Charges:   
 Other:  Describe:   
 Annual Access Charge for the following sizes:  
 20mm water service connection or meter: \$  40mm water service connection or meter: \$

**34 Does Council have Usage Charges for Non-Residential Sewerage Services?:**  Yes/No  
 If Yes, what is the Usage Charge:  c/kL

**35 Does Council have Trade Waste Charges?:**  Yes/No *If yes, please attach or fax (9895 5968) a copy of Council's trade waste charges with this reporting form.*

**36 Typical Developer Charge:** For 2001/02: \$  per ET (Equivalent Tenement) For 2000/01: \$  per ET

**2000/01 TREATMENT WORKS PERFORMANCE**

For businesses with 2 or more Sewerage Treatment Works show details on copies of this page.

**37 Sewerage Treatment Works Name:**  Capacity:  EP

**38 Type of Treatment Works:**   
 Nitrogen Removal (Yes/No):  Phosphorus Removal (Yes/No):

**39 Volume Received through Sewerage Network<sup>2</sup>:**  ML

**40 Tankered Flows:** Septic Tank Effluent:  kL c Tank Sludge/Pan:  kL Grease Trap Waste:  kL

**41 Volume of Sewage Receiving Treatment:**  
*(Tertiary treatment involves disinfection of the effluent. The processes used for tertiary treatment may also polish the effluent (eg. sand filtration reduces BOD and SS) or reduce nutrients (eg. breakpoint chlorination).)*  
 a. No Treatment<sup>3</sup>:  ML  b. Primary<sup>3</sup>:  ML   
 c. Secondary<sup>3</sup>:  ML  d. Tertiary<sup>3</sup>:  ML

**42 Volume Recycled:**  
*(Refers to recycled effluent for watering of golf courses etc. and excludes internal recycling within the treatment works.)*  
 a. Woodlots, pasture Improvement:  ML b. Horticulture, viticulture:  ML  
 c. Golf courses:  ML d. Non-potable town supply:  ML  
 e. Other:  ML f. Total:  ML

**43 Biosolids** *Biosolids Produced<sup>3</sup>:* a. dry solids:  t   
*Biosolids reused/recycled<sup>3</sup>:* b. % recycled:  %   
*Biosolids Management:* c. to farmland:  % d. to land fill:  % e. to other:  %

**44 Average Dry Weather Flow:** Permanent Population:  L/s Peak Population:  L/s

**45 Peak Dry Weather Flow:** Permanent Population:  L/s Peak Population:  L/s

**46 Peak Wet Weather Flow:**  L/s

**47 Qualification of Operators** (eg. DLWC Certificate):

**48 EPA Discharge Licence Expiry Date:**

**49 Effluent Volume Licensed:**  ML/d

**50 90 Percentile Licence Limits:** Councils which have only 100% limits should report on the basis of these values.  
 a. BOD mg/L  b. SS mg/L  c. Total N mg/L  d. NH3N mg/L  e. Oil & Grease mg/L  f. Total P mg/L  g. Faecal coliforms cfu/100mL

**51 Percentage of Samples Complying with 90 Percentile Licence Limits at Licensed Point of Discharge:**  
 a.  % b.  % c.  % d.  % e.  % f.  % g.  %  
*(Results for SS should be the measured values for effluent at the licensed point of discharge. The effluent should not be filtered to remove algae prior to testing.)*

**52 Sampling Days (including DLWC Sampling Days)<sup>3</sup>:**  days

**53 Days with Major Malfunction of Treatment Processes<sup>3</sup>:**  days   
*(This refers to the number of days in the year when a significant portion of the treatment works was either not operating (other than routine maintenance) or not functioning properly (odours, loss of MLSS etc).)*

**Notes**  Indicates that the reader should refer to the definition of this item in Attachment 1.  
 1 This comprises all single dwellings (detached houses, duplexes with 2 connections or townhouses with a connection for each townhouse) with a separate connection to Council's sewerage reticulation.  
 2 This comprises only those multiple dwellings with a single connection, eg. a block of flats or a group of townhouses with a single connection to Council's sewerage reticulation.  
 3  indicates Council should provide an estimate in this box of the accuracy and reliability of the data according to the following confidence grades:  
 1 (accuracy within ± 1%), 2 (± 5%), 3 (± 10%), 4 (± 25%), 5 (± 50%), 6 (± 100%), 7 (not within ± 100%). For further information see Attachment 1.

Report Completed by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# ATTACHMENT 1

## NSW ANNUAL WATER SUPPLY AND SEWERAGE PERFORMANCE REPORTING

### BACKGROUND

The NSW annual water supply and sewerage performance reporting system has been developed in response to a need recognised by the Department of Land and Water Conservation/Local Government Liaison Committee for Water Supply and Sewerage. NSW has been a national leader in performance reporting since commencement of reporting in 1986. The main objectives of performance reporting are:

- To enable self-monitoring by each council of trends in its performance indicators and to compare its performance with that of similar councils to assist it to improve performance.
- To assist Local and State Government to obtain an overview of the present position and future needs of water supply and sewerage businesses in NSW and to facilitate national performance comparisons.
- Public accountability to the community.

Performance comparisons and benchmarking are an important element of the associated reforms under the Council of Australian Governments' (COAG) National Competition Policy, and are also regarded as essential by the Minister for Land and Water Conservation, the NSW Independent Pricing and Regulatory Tribunal and the Local Government and Shires Associations.

Nearly all non-metropolitan councils are now participating in the NSW Performance Reporting system, and the value of the system has been greatly enhanced by such full participation.

The NSW Water Supply and Sewerage Performance Comparisons Report illustrating the Statewide results is issued each year to all councils. The Report enables each council to compare its performance against similar sized or relevant councils, and also against Statewide results.

To meet its obligations under the COAG agreements, NSW will also continue to provide the key performance indicators for the larger NSW utilities (over 10 000 assessments) for inclusion in the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) national performance monitoring report for "Non Major Urban" water supply and sewerage utilities. A copy of this national report will continue to be provided to all non-metropolitan NSW councils with water supply or sewerage businesses.

As for previous years, financial information will be obtained by DLWC from Special Schedule Nos 3 to 6 of Council's 2000/01 Financial Statement.

### GENERAL

To facilitate analysis of results, if the information to answer a particular question is not known or is unavailable, "N/A" should be entered in the relevant space. If the answer to a particular question is zero, "0" or "NIL" should be entered, not " -".

*For consistency with national performance reporting, from 1998/99, most NSW performance indicators will be reported on the basis of "per connected property", rather than the previous "per assessment" basis. Councils are therefore requested to carefully estimate the values requested for Q2 and Q3 to indicate the total number of properties connected to Council's water supply and sewerage businesses.*

### ACCURACY AND RELIABILITY

For consistency with national performance reporting, an estimate of the confidence grading (ie. the reliability and accuracy of data) is required for a number of key data items. The appropriate confidence grading (1 to 7) should be inserted in the box provided. The grading should be based on the following:

- 1 - based on sound records with accuracy estimated to be within  $\pm 1\%$  [eg. number of assessments],
- 2 - based on sound records, accuracy estimated to be within  $\pm 5\%$  [eg. length of mains],
- 3 - based on records with minor shortcomings, accuracy estimated to be within  $\pm 10\%$  [eg. total water consumption],
- 4 - based on records with some shortcomings, accuracy estimated to be within  $\pm 25\%$  [eg. residential consumption],
- 5 - based on limited data, accuracy estimated to be within  $\pm 50\%$  [eg. unaccounted for water],
- 6 - based on limited data, accuracy estimated to be within  $\pm 100\%$  [eg. leakage],
- 7 - based on poor data, accuracy estimated to be not within  $\pm 100\%$ .

### WATER SUPPLY

#### Q1 to Q7 Population and Dwellings

These questions refer to the figures at 30 June 2001. In Q1, exclude population in unserved areas.

#### Q2 No. of Residential Properties Connected

As noted above, the performance indicators in the NSW Performance Comparisons report are now based on "connected properties" rather than "assessments" for consistency with national reporting. Therefore, Q2 should be estimated as carefully as possible as this will affect the indicators shown in the report.

Council's reticulation mains (ie. a direct connection to Council's 100mm or larger diameter mains).

A multiple dwelling is a block of flats or a group of townhouses with only a single connection for the whole group to Council's reticulation mains ie. each flat or townhouse does not have a separate service connection directly to Council's reticulation mains.

Example: No. of Single Dwellings = 5000  
No. of Multiple Dwellings = 300  
Av No. of Properties per Multiple Dwelling = 4

*No. of Residential Properties Connected*  
= 5000 + 300 x 4 = 6200

A single dwelling has a separate service connection to

**Q4 Assessments**

This is the number of annual bills rendered by Council, broken into residential and non-residential.

**Q6 New Residential Properties Connected in Year**

This is the number of new residential properties (ie. houses, villas, units, flats) connected within the financial year.

**Q7 Unserved Urban Premises in Council Area**

Refers to the total number of premises in urban zoned land (in towns or villages) not served by a reticulated council water supply. Also indicate the estimated population in these premises. If Council has more than one water supply scheme reported on separate forms, only answer this question once (on the main scheme).

**Q11 Rehabilitations this Year**

This comprises the renewal or replacement of existing mains or service connections for this year. It excludes any maintenance work (refer to Local Government Asset Accounting Manual).

**Q12 Consumption**

The various categories of consumption are as follows:

- Residential - Domestic in-house and ex-house.
- Commercial - Offices, shops, clubs, hotels, motels, caravan parks etc.
- Industrial - eg. a canning or whitegoods factory, flour mill, paper mill, timber mill, poultry, feed lot, sale yard, abattoir, mining.
- Rural – Farms or hobby-farms outside urban zoned land, includes stock and domestic uses. Also include market gardens, agricultural irrigation.
- Institutional - Hospitals, schools, colleges etc.
- Bulk Sales - Sales to other councils/water utilities.
- Public Parks - Uses such as watering of public parks, gardens, ovals etc. (Fire fighting & mains flushing is included in Unaccounted-for-water – see below).
- Unaccounted-for-Water - includes allowance for system water loss (ie. leakage), theft and illegal connections, illegal use of unmetered customer fire services, fire fighting (street hydrants), mains flushing, under-registration of customer meters, errors in system meters. Statewide analysis indicates this category should be at least 10% for other than bulk water suppliers.
- System Water Loss (ie. leakage) - Leakage studies carried out for 40 NSW towns indicate an average leakage from water supply distribution systems of about 17% of annual consumption (range 6% to 35%). A minimum of 6% is therefore suggested for other than bulk suppliers.

**Q14 Non-potable Water Component in a Dual Supply System**

This is the non-potable water component in a dual supply system. The potable supply for a dual system should be reported in Q12.

**Q15 Council Dams**

Most NSW councils with dams have an off-stream dam with run-of-river pumping to the storage.

**Recycled Water**

Recycled water and/or non-potable water is used in a dual water supply system. The volume of recycled water shown in Q15g of the Water Report should be consistent with the volume shown in Q42d of the Sewerage Report (recycled water for non-potable town water supply).

**Total Water Usage**

The Total Water Usage (Q15k) should equal the sum of Total Potable Water Consumption (Q12i) plus the Non-Potable Water Component in a Dual Supply System (Q14).

**Estimated annual yield of sources**

This refers to the annual demand level which could just be supplied by council's present water supply system during a repetition of the worst historical drought. The yield is not the present annual demand.

**Q19 to Q24 Complaints Reported (note Q21 has been deleted)**

Complaints refer to instances of customer dissatisfaction and each complaint reported to a Council employee, whether in person, by telephone, or in writing should be recorded and the total entered in Council's Report. Exclude billing inquiries and customer reporting of minor malfunctions eg. leaking house services. Include customer reports of dirty water.

**Q25 Interruption to Supply (Unplanned)**

The number of properties affected by unplanned interruptions to supply should be recorded for each occurrence of interruption. Interruption to supply is where the customer is without a service due to a break in a council water main. Exclude instances of reduced levels of service (eg. low pressure) or bursts/leaks in service connections.

**Q27 No. of Days of Water Restrictions due to Drought**

Include all days of water restrictions no matter what level of restriction is applied.

**Q28 Number of Breaks/Failures**

Pipeline breaks are where Council's water main has to be shut down. Service connection failures are failures in the service connection linking Council's water main to a customer's property.

**Q31A Did Council Adopt a New Tariff Structure**

A new tariff structure is a change in the basis for charging Council's customers for water supply. It is not a change in the magnitude of the access charge or the usage charge.

Eg. a new tariff structure may involve changing the residential tariff from one based on land value with a 300kL allowance to a two part tariff.

A two-part tariff has an access charge and a charge per kL for all water usage. An inclining block tariff has an access charge, a low charge/kL for usage up to 200 kL/a and a higher charge/kL for greater usage.

For non-residential tariffs, a new tariff structure may involve replacing a uniform access charge with an access charge based on the square of the size of the water supply service connection.

**Q42 Percentage test compliance with 1996 NHMRC/ ARMCANZ Australian Drinking Water Guidelines**

Compliance is to be reported on the basis of the 1996 guidelines. Sampling location and frequency should also be on the basis of the guidelines (refer to Attachment 2).

Physical/chemical compliance is the overall compliance with physical or chemical requirements. In addition, each of the key characteristics of turbidity, pH and colour should be reported. For microbiological compliance, Faecal Coliform compliance is more significant than Total Coliform compliance, as Total Coliforms may not be of faecal origin.

Note that compliance refers to the number of samples not the number of tests. One sample may have a number of tests performed to measure compliance.

Note also the number of samples reported should be those taken for system performance monitoring from

representative locations in the water supply system and not those taken for operational monitoring ie. the chemical samples should exclude daily fluoride and chlorine testing and the physical samples should exclude daily pH, turbidity and colour testing.

**System performance monitoring** is a wide ranging assessment of the quality of water as supplied to Council's customers. **Operational monitoring** is used as a trigger for immediate short term corrective action to improve water quality and to check that equipment is working properly, but not to assess compliance with the guidelines.

## SEWERAGE

### Q1 to Q6 Population and Dwellings

See comments for Q1, Q2, Q4, Q6 and Q7 for water supply.

### Q11 Rehabilitations

See comments for Q11 for Water Supply

### Q12 Infiltration/Inflow

This refers to the estimated groundwater infiltration and stormwater inflow into Council's sewerage system.

#### Residential sewage

This refers to the sewage from residential dwellings connected to the sewerage system. This volume may be estimated based on the volume of water supplied to residential dwellings in winter or more accurately reported if able to be measured.

#### Non-Residential Sewage

This refers to the sewage from non-residential areas connected to the sewerage system. This volume may be estimated based on the volume of water supplied to non-residential areas in winter or more accurately reported if able to be measured.

#### Trade Waste

This is the volume of trade waste received in the sewerage system. This volume should be measured for large trade waste dischargers, but an estimate may be required to incorporate all such discharges.

Trade waste dischargers may include cafes, restaurants, butcher shops, bakeries, hotels, motels, clubs, laundries, hair dressing salons, service stations, workshops, car washes, photo and x-ray processors, laboratories and factories. Each trade waste discharger needs a grease arrestor or other pre-treatment to ensure its waste complies with the trade waste agreement issued to the discharger by Council.

If Council discharges tip leachate into the sewer, this should also be included as trade waste.

Large trade waste dischargers (>20kL/d) may include food and beverage processing, sale yards, abattoirs and vineyards.

### Q12A No. of Large Trade Waste Dischargers (>20kL/d)

This is the number of trade waste dischargers licenced to discharge over 20kL/d into the sewerage system.

### Q12B Discharges from Large Trade Waste Dischargers

The maximum day volume of trade waste, the equivalent BOD load and the equivalent SS load should be reported for large trade waste dischargers (ie. those licenced to discharge over 20kL/d into the sewerage system).

### Q13 Effluent Discharges

For Land discharges of effluent, exclude the volume of effluent recycled (Q42f).

### Q14 to Q19 Complaints Reported (note Q17 has been deleted)

See comments for Q19 to Q24 for Water Supply.

### Q23 Chokes in House Branch Connections, and Q24 Chokes in House Drains

For consistency with national performance reporting, chokes in councils' sewer risers and sidelines (house branch connections) and in customers' internal drains (house drains) are to be reported in these items respectively.

### Q26 Average Time to Restore an Interrupted Service

This is the average time to restore the sewerage service after an unplanned interruption. A service interruption is where the customer is without a satisfactory sewerage service due to a partial or complete blockage in Council's reticulation.

### Q31A, Q33 Tariff Structure

See comments for Q31A for Water Supply.

### Q35 Does Council Have Trade Waste Charges?

If council has trade waste charges, a copy of these should be forwarded to DLWC.

### Q38 Type of Treatment Works

Nutrient removal requires the provision of specific biochemical processes (eg. nitrification/denitrification for nitrogen removal or biological nutrient removal (BNR) for nitrogen and phosphorous removal), or the addition of chemicals (eg. alum addition to precipitate phosphorous).

### Q41 Volume of Sewage Receiving Treatment

For each of the four levels of treatment shown, record the volume of sewage receiving treatment eg. For an IDEA treatment works with nutrient removal which received 200 ML of sewage, with wet weather by-pass of 5%, the values entered would be:

No Treatment	10 ML
Primary Treatment	190 ML
Secondary Treatment	190 ML
Tertiary Treatment	190 ML

### Q42 Volume Recycled

This refers to sewage effluent recycled for low value uses (eg. woodlots, pasture improvement), for high value uses (eg. horticulture, viticulture), for golf-courses, for non-potable town water supply (eg. watering of race-courses, parks and ovals, industrial uses or mining uses), and for other uses. It excludes any internal recycling within the sewage treatment works. Also see comments for Q15 for Water Supply.

### Q43 Biosolids

This refers to how Council manages its biosolids (sludge) ie. to farmland, to landfill or other. The percentage reuse or recycling should also be provided.

### Q50, Q51 90 Percentile Licence Limits

Some councils only have 100 percentile licence limits for their sewage treatment works. In this case, the 100 percentile limits should be reported in Q50 and the corresponding percentage of samples complying with the 100 percentile limits reported in Q51. Note that the percentages in Q51 refer to the number of samples not the number of tests. One sample may have a number of tests performed to measure compliance.

### Q52 Sampling Days

This refers to the number of sampling days for each sewage treatment works, including the days for DLWC sampling.

# ATTACHMENT 2

## 1996 AUSTRALIAN DRINKING WATER GUIDELINES: SAMPLING LOCATION AND FREQUENCY

### GUIDELINES

Since 1998/99, compliance for drinking water quality in country NSW has been reported on the basis of the **1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines**. These guidelines supersede the 1987 guidelines and reflect the latest World Health Organisation findings and recommendations on drinking water quality.

The guidelines outline the aesthetic and health characteristics required for good quality drinking water. Although the guidelines are not standards, it is recommended that NSW councils adopt a “best practice” approach for the supply of drinking water using the 1996 Guidelines.

The measurable characteristics fall into the following categories:

- **Microbiological,**
- **Physical,**
- **Chemical, and**
- **Radiological.**

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

**Most NSW councils would need to significantly increase their sampling frequency to comply with the 1996 Guidelines eg. Table 1 indicates that the number of microbiological samples required annually for systems supplying populations of 5,000, 10,000, 20,000, 50,000 and 100,000 is respectively 52, 64, 88, 160 and 280.**

### SAMPLING LOCATION

Samples for system performance monitoring should be taken from representative locations within the system. These should include headworks, service reservoirs, the start of the distribution system and at representative points throughout the distribution system. Suggested locations for each characteristic are shown on pages 35 to 39 (all references to pages in this attachment refer to the 1996 Guidelines Summary). Pages 35 to 39 also indicate other characteristics which may need to be monitored for a particular water supply.

### SAMPLING FREQUENCY

The frequency of sampling is dependent on the type of characteristic. The suggested sampling frequency for various water supply characteristics are shown on pages 35 to 39.

The sampling frequency required for **microbiological quality** is provided in page 23 and summarised in Table 1. These should be increased following repair work or interruptions to supply.

**Table 1 - Microbiological Quality Sampling Frequency**

<b>Population</b>	<b>Recommended No. of Samples</b>
<1,000	Refer to pages 16 to 18 of Guidelines Summary
1,000 to 5,000	Preferably 1 sample per week (if less, refer to pages 16 to 18 of Guidelines Summary)
5,000 to 100,000	1 sample per week plus 1 per month for each 5,000 above 5,000 population
>100,000	6 samples per week plus 1 per month for each 10,000 above 100,000 population

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

**Table 2 - Physical Quality Sampling Frequency**

<b>Characteristic</b>	<b>Sampling Frequency</b>
pH	Fortnightly
Colour, turbidity	Monthly
Hardness, TDS	Quarterly

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

**Table 3 - Chemical Quality Sampling Frequency**

<b>Characteristic</b>	<b>Sampling Frequency</b>
Chlorine, fluoride, aluminium	Weekly if the water supply is dosed with these chemicals
Iron, manganese	Fortnightly
Ammonia, copper, hydrogen sulphide, nitrates, lead, zinc	Monthly

**Radiological** sampling should be carried out every 5 years for surface water, every 2 years for groundwater and more frequently if the guideline is exceeded (page 36).

**Disinfection by-products** (organic) should be monitored monthly (page 36).

### PERFORMANCE

Performance is regarded as satisfactory if over the preceding 12 months sampling location and frequency have complied with the Guidelines, and all guideline values for each characteristic have been met. Guideline values for microbiological characteristics are shown on pages 22 to 25 and are summarised in Table 4. Guideline values for physical characteristics are shown on page 26 and for chemical characteristics on pages 27 and 28.

**Table 4 - Microbiological Performance**

<b>Indicator</b>	<b>Guideline Value</b>
	Performance is regarded as satisfactory if, over the preceding 12 months:
<b>Scheduled Samples</b>	The minimum number of scheduled samples has been tested, and
<b>Faecal Coliforms</b>	At least 98% of scheduled samples contain no faecal coliforms, and
<b>Total Coliforms</b>	At least 95% of scheduled samples contain no total coliforms (except that a higher level of coliform contamination may be tolerated if certain other guidelines are met – refer to page 23 of the Guidelines Summary)

# 2000/01 - TBL ACCOUNTING SUPPLEMENT - WATER SUPPLY

## WATER UTILITY

A global trend in business practices encourages the reporting of activities in accordance with "triple bottom line" (TBL) accounting, which is a framework incorporating financial, environmental and social activities. This methodology provides a more complete picture of the performance of a business than provided by conventional annual financial reporting. This supplement provides additional environmental and social information to that previously reported by Australian non major urban water utilities and will be integrated into future performance reporting.

### ENVIRONMENTAL PERFORMANCE - Water Supply

An environmental management plan (EMP) is a necessary part of ensuring compliance with environmental objectives. The EMP is a structured management system for improving environmental performance which is integrated with a water utility's overall management activities. The environmental policy is the driver for implementing and improving the EMP so that the utility can maintain and improve environmental performance. Guidelines for environmental management systems are provided in ISO 14001.

#### 1 Environmental Incidents

This performance indicator provides a mechanism for assessing the number of physical disturbances caused to the environment (ie. environmental incidents), with some attempt to quantify the impact of the incidents. The result therefore reflects the environmental impact plus the effectiveness of the utility's risk management strategies.

**Category 1** - minor incident with inconsequential effects No. of Incidents  
( a reportable incident , but not a breach of environmental regulations; an odour or noise complaint)

**Category 2** - incident with limited environmental impacts No. of Incidents  
(a minor breach of environmental regulations eg. non-maintenance of the required environmental flows)

Details:

**Category 3** - major incident with irreversible environmental impact No. of Incidents  
(a major breach of environmental regulations eg. dam failure or widespread or permanent ecosystem damage)

Details:

#### 2 Environmental Management Systems

This indicator provides a reflection of the level of sophistication or readiness of a water utility's environmental management and its commitment to remediation programs.

Environmental Management Plan (EMP) Prepared? Yes/No

EMP developed in consultation with Catchment Management Board Yes/No

% Progress Towards ISO 14001 Certification: % (100% is Certified)

Environmental Consultative Processes in Place? Yes/No

#### 3 Environmental and Health Improvements (Capital Works and Innovation)

This indicator recognises the need to shift the focus away from purely compliance-based reporting towards active environmental improvement and innovation.

Water Conservation Policy Documented? Yes/No

Capital Expenditure on Improving Environmental Performance: \$ ('000)

Capital Expenditure on Improving Health Performance: \$ ('000)

### SOCIAL PERFORMANCE - Water Supply

#### 4 Public Health Incidents

This performance indicator provides a mechanism for assessing the number of incidents where there is risk to public health, with some attempt to quantify the impact of the incidents. The result reflects not only the health risk which can be attributed to a water utility's operations but also the effectiveness of the utility's risk management strategies.

**Category 1** - minor incident with inconsequential effects No. of Incidents  
(eg. minor failure of water treatment processes; "boil water" notice issued as a result of failure of treatment processes)

**Category 2** - incident with limited health impacts No. of Incidents  
(eg. extended non-compliance with health-related parameters of the 1996 Australian Drinking Water Guidelines)

Details:

**Category 3** - major incident with major health impacts No. of Incidents  
(eg. water borne disease outbreaks and/or hospitalisations)

Details:

**Note:**

This supplement is based on the Victorian Water Industry Association's TBL performance reporting, of which items 1 and 4 are based on Melbourne Water's "PERFORM" reporting.

# 2000/01 - TBL ACCOUNTING SUPPLEMENT - SEWERAGE WATER UTILITY

A global trend in business practices encourages the reporting of activities in accordance with "triple bottom line" (TBL) accounting, which is a framework incorporating financial, environmental and social activities. This methodology provides a more complete picture of the performance of a business than provided by conventional annual financial reporting. This supplement provides additional environmental and social information to that previously reported by Australian non major urban water utilities and will be integrated into future performance reporting.

An environmental management plan (EMP) is a necessary part of ensuring compliance with environmental objectives. The EMP is a structured management system for improving environmental performance which is integrated with a water utility's overall management activities. The environmental policy is the driver for implementing and improving the EMP so that the utility can maintain and improve environmental performance. Guidelines for environmental management systems are provided in ISO 14001.

## ENVIRONMENTAL PERFORMANCE - Sewerage

### 1 Environmental Incidents

This performance indicator provides a mechanism for assessing the number of physical disturbances caused to the environment (ie.environmental incidents), with some attempt to quantify the impact of the incidents. The result therefore reflects the environmental impact plus the effectiveness of the utility's risk management strategies.

**Category 1** - minor incident with inconsequential effects  No. of Incidents  
( a reportable incident , but not a breach of environmental regulations; an odour or noise complaint)

**Category 2** - incident with limited environmental impacts  No. of Incidents  
(a minor breach of environmental regulations eg. a sewer overflow)

Details:

**Category 3** - major incident with irreversible environmental impact  No. of Incidents  
(a major breach of environmental regulations eg. a major sewage overflow or widespread or permanent ecosystem damage)

Details:

### 2 Environmental Management Systems

This indicator provides a reflection of the level of sophistication or readiness of a water utility's environmental management and its commitment to remediation programs.

Environmental Management Plan (EMP) Prepared?  Yes/No  
EMP developed in consultation with Catchment Management Board  Yes/No  
% Progress Towards ISO 14001 Certification:  % (100% is Certified)  
Environmental Consultative Processes in Place?  Yes/No

### 3 Environmental and Health Improvements (Capital Works and Innovation)

This indicator recognises the need to shift the focus away from purely compliance-based reporting towards active environmental improvement and innovation.

Capital Expenditure on Improving Environmental Performance:  \$ ('000)  
Capital Expenditure on Improving Health Performance:  \$ ('000)

## SOCIAL PERFORMANCE - Sewerage

### 4 Public Health Incidents

This performance indicator provides a mechanism for assessing the number of incidents where there is risk to public health, with some attempt to quantify the impact of the incidents. The result reflects not only the health risk which can be attributed to a water utility's operations but also the effectiveness of the utility's risk management strategies.

**Category 1** - minor incident with inconsequential effects  No. of Incidents  
(eg. minor failure of sewage treatment processes)

**Category 2** - incident with limited health impacts  No. of Incidents  
(eg. algal problems/outbreaks)

Details:

**Category 3** - major incident with major health impacts  No. of Incidents  
(eg. water borne disease outbreaks and/or hospitalisations)

Details:

#### Note:

This supplement is based on the Victorian Water Industry Association's TBL performance reporting, of which items 1 and 4 are based on Melbourne Water's "PERFORM" reporting.

**COUNCIL OF / COUNCIL OF THE CITY OF .....**

**SPECIAL SCHEDULE NO. 3**

**WATER SUPPLY OPERATING STATEMENT**

**(Gross Including Internal Transactions)**

**for the year ended 2000/2001**

**(\$'000)**

	2000/01	1999/00
<b>A. EXPENSES &amp; REVENUES</b>		
<u>Expenses</u>		
1. Management Expenses		
a. Administration		
b. Engineering and Supervision		
2. Operation and Maintenance Expenses		
- Dams and Weirs		
a. Operation Expenses		
b. Maintenance Expenses		
- Mains		
c. Operation Expenses		
d. Maintenance Expenses		
- Reservoirs		
e. Operation Expenses		
f. Maintenance Expenses		
- Pumping Stations		
g. Operation Expenses (excluding energy costs)		
h. Energy Costs		
i. Maintenance Expenses		
- Treatment		
j. Operation Expenses (excluding chemical costs)		
k. Chemical Costs		
l. Maintenance Expenses		
- Other		
m. Operation Expenses		
n. Maintenance Expenses		
o. Purchase of Water		
3. Depreciation		
a. System Assets		
b. Plant and Equipment		
4. Miscellaneous Expenses		
a. Interest Expenses		
b. Other Expenses		
5. <b>Total Expenses</b>		
<u>Revenues</u>		
6. Rates & Service Availability Charges		
a. Residential		
b. Non-Residential		
7. User Charges		
a. Sales of Water : Residential		
b. Sales of Water : Non-Residential		
8. Extra Charges		
9. Interest Income		
10. Other Revenues		
11. Grants		
a. Grants for Acquisition of Assets		
b. Grants for Pensioner Rebates		
c. Other Grants		
12. Contributions		
a. Developer Charges		
b. Developer Provided Assets		
c. Other Contributions		
13. <b>Total Revenues</b>		
14. Gain or Loss on Disposal of Assets		
15. Operating Result		
15a. <b>Operating Result</b> (less Grants for Acquisition of Assets)		

**COUNCIL OF / COUNCIL OF THE CITY OF .....**

**SPECIAL SCHEDULE NO. 3 (Cont'd)**

**WATER SUPPLY OPERATING STATEMENT  
(Gross Including Internal Transactions)  
for the year ended 2000/2001  
(\$'000)**

	2000/01	1999/00
<b>B. CAPITAL TRANSACTIONS</b>		
<u><b>Non-Operating Expenditures</b></u>		
16. Acquisition of Fixed Assets		
a. Subsidised Scheme		
b. Other New System Assets		
c. Renewals		
d. Plant & Equipment		
17. Repayment of Debt		
a. Loans		
b. Advances		
c. Finance Leases		
18. Transfer to Sinking Fund		
19. <b>Totals</b>		<hr/> <hr/>
<u><b>Non-Operating Funds Employed</b></u>		
20. Proceeds from Disposal of Assets		
21. Borrowing Utilised		
a. Loans		
b. Advances		
c. Finance Leases		
22. Transfer from Sinking Fund		
23. <b>Totals</b>		<hr/> <hr/>
<b>C. RATES AND CHARGES</b>		
24. Number of Assessments		
a. Residential (occupied)	.....	
b. Residential (unoccupied)	.....	
c. Non-Residential (occupied)	.....	
d. Non-Residential (unoccupied)	.....	
25. Number of ETs for which Developer Charges were received	..... ET	
26. Total Amount of Pensioner Rebates	\$.....	



**COUNCIL OF / COUNCIL OF THE CITY OF .....**

**SPECIAL SCHEDULE NO. 4**

**WATER SUPPLY – NET ASSETS COMMITTED  
(Gross Including Internal Transactions)  
as at 2000/2001  
(\$'000)**

	<u>Current</u>	<u>Non-Current</u>	<u>Total</u>
<b><u>ASSETS</u></b>			
27. Cash and Investments			
a. Developer Charges			
b. Specific Purpose Grants			
c. Accrued Leave			
d. Unexpended Loans			
e. Sinking Fund			
f. Other			
28. Receivables			
a. Specific Purpose Grants			
b. Rates and Charges			
c. Other			
29. Inventories			
30. Property, Plant and Equipment			
a. System Assets			
b. Plant and Equipment			
31. Other Assets			
32. <b>Total Assets</b>	_____	_____	_____
	_____	_____	_____
<b><u>LIABILITIES</u></b>			
33. Bank Overdraft			
34. Creditors			
35. Borrowings			
a. Loans			
b. Advances			
c. Finance Leases			
36. Provisions			
37. <b>Total Liabilities</b>	_____	_____	_____
	_____	_____	_____
38. <b>NET ASSETS COMMITTED</b>	_____	_____	_____
	_____	_____	_____
<b><u>EQUITY</u></b>			
39. Accumulated Surplus			
40. Asset Revaluation Reserve			
41. <b>Total Equity</b>			
<b>Note to System Assets :</b>			
42. Current Replacement Cost of System Assets			
43. Accumulated Current Cost Depreciation of System Assets			
44. Written Down Current Cost of System Assets			

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**COUNCIL OF / COUNCIL OF THE CITY OF .....**

**SPECIAL SCHEDULE NO. 5**

**SEWERAGE OPERATING STATEMENT  
(Gross Including Internal Transactions)  
for the year ended 2000/2001  
(\$'000)**

	2000/01	1999/00
<b>A. EXPENSES &amp; REVENUES</b>		
<u>Expenses</u>		
1. Management Expenses		
a. Administration		
b. Engineering and Supervision		
2. Operation and Maintenance Expenses		
-Mains		
a. Operation Expenses		
b. Maintenance Expenses		
-Pumping Stations		
c. Operation Expenses (excluding energy costs)		
d. Energy Costs		
e. Maintenance Expenses		
-Treatment		
f. Operation Expenses (excluding chemical, energy, effluent and biosolids management costs)		
g. Chemical Costs		
h. Energy Costs		
i. Effluent Management		
j. Biosolids Management		
k. Maintenance Expenses		
- Other		
l. Operation Expenses		
m. Maintenance Expenses		
3. Depreciation		
a. System Assets		
b. Plant and Equipment		
4. Miscellaneous Expenses		
a. Interest Expenses		
b. Other Expenses		
5. <b>Total Expenses</b>		
<u>Revenues</u>		
6. Rates & Service Availability Charges		
a. Residential		
b. Non-Residential		
7. Trade Waste Charges		
8. Other Sales and Charges		
9. Extra Charges		
10. Interest Income		
11. Other Revenues		
12. Grants		
a. Grants for Acquisition of Assets		
b. Grants for Pensioner Rebates		
c. Other Grants		
13. Contributions		
a. Developer Charges		
b. Developer Provided Assets		
c. Other Contributions		
14. <b>Total Revenues</b>		
15. Gain or Loss on Disposal of Assets		
16. Operating Result		
16a. <b>Operating Result</b> (less Grants for Acquisition of Assets)		

**COUNCIL OF / COUNCIL OF THE CITY OF .....**

**SPECIAL SCHEDULE NO. 5 (Cont'd)**

**SEWERAGE OPERATING STATEMENT  
(Gross Including Internal Transactions)  
for the year ended 2000/2001  
(\$'000)**

	2000/01	1999/00
<b>B. CAPITAL TRANSACTIONS</b>		
<u><b>Non-Operating Expenditures</b></u>		
17. Acquisition of Fixed Assets		
a. Subsidised Scheme		
b. Other New System Assets		
c. Renewals		
d. Plant & Equipment		
18. Payment of Debt		
a. Loans		
b. Advances		
c. Finance Leases		
19. Transfer to Sinking Fund		
20. <b>Totals</b>		
<u><b>Non-Operating Funds Employed</b></u>		
21. Proceeds from Disposal of Assets		
22. Borrowing Utilised		
a. Loans		
b. Advances		
c. Finance Leases		
23. Transfer from Sinking Fund		
24. <b>Totals</b>		
<b>C. RATES AND CHARGES</b>		
25. Number of Assessments		
a. Residential (occupied)	.....	
b. Residential (unoccupied)	.....	
c. Non-Residential (occupied)	.....	
d. Non-Residential (unoccupied)	.....	
26. Number of ETs for which Developer Charges were received	..... ET	
27. Total Amount of Pensioner Rebates	\$......	

**COUNCIL OF / COUNCIL OF THE CITY OF .....**

**SPECIAL SCHEDULE NO. 6**

**SEWERAGE SERVICES – NET ASSETS COMMITTED**

**(Gross Including Internal Transactions)**

**as at 2000/2001**

**(\$'000)**

	<u>Current</u>	<u>Non-Current</u>	<u>Total</u>
<b><u>ASSETS</u></b>			
28. Cash and Investments			
a. Developer Charges			
b. Specific Purpose Grants			
c. Accrued Leave			
d. Unexpended Loans			
e. Sinking Fund			
f. Other			
29. Receivables			
a. Specific Purpose Grants			
b. Rates and Charges			
c. Other			
30. Inventories			
31. Property, Plant and Equipment			
a. System Assets			
b. Plant and Equipment			
32. Other Assets			
33. <b>Total Assets</b>	_____	_____	_____
	_____	_____	_____
<b><u>LIABILITIES</u></b>			
34. Bank Overdraft			
35. Creditors			
36. Borrowings			
a. Loans			
b. Advances			
c. Finance Leases			
37. Provisions			
38. <b>Total Liabilities</b>	_____	_____	_____
	_____	_____	_____
39. <b>NET ASSETS COMMITTED</b>	_____	_____	_____
	_____	_____	_____
<b><u>EQUITY</u></b>			
40. Accumulated Surplus			
41. Asset Revaluation Reserve			
42. <b>Total Equity</b>			
<b>Note to System Assets :</b>			
43. Current Replacement Cost of System Assets			
44. Accumulated Current Cost Depreciation of System Assets			
45. Written Down Current Cost of System Assets			

## NOTES TO SPECIAL SCHEDULE NOS. 3 AND 5

**Administration** comprises the following:

- Administration Staff
  - Salaries and Allowance
  - Travelling Expenses
  - Accrual of Leave Entitlements
  - Employment Overheads
- Meter Reading
- Bad and Doubtful Debts
- Other Administrative/Corporate Support Services

**Engineering and Supervision** comprises the following:

- Engineering Staff
  - Salaries and Allowance
  - Travelling Expenses
  - Accrual of Leave Entitlements
  - Employment Overheads
- Other Technical and Supervision Staff
  - Salaries and Allowance
  - Travelling Expenses
  - Accrual of Leave Entitlements
  - Employment Overheads

**Operation Expenses** comprise the day to day operational expenses excluding maintenance expenses.

**Maintenance Expenses** comprise the day to day repair and maintenance expenses. (Refer to Section 5 of the Asset Accounting Manual regarding capitalisation principles and the distinction between capital and maintenance expenditure).

**Other Expenses** include all expenses not recorded elsewhere.

**Other Revenues** include all revenues not recorded elsewhere.

Other Contributions include capital contributions for water supply or sewerage services received by Council under Section 565 of the Local Government Act.

## Formulae for Calculation of Performance Indicators in Tables 5 to 6

Table Col No.	Performance Indicator	Background to Formula	Formula
<b>5. 2000/01 NSW Water Utility Performance Summary</b>			
<b>Water Supply</b>			
(1)	Water Supply Assessments (No.)	Where this data is ambiguous or missing, the figure has been determined from Special Schedule No. 3 or previous years' data.	From Col (1) Table 7
(2)	Annual Water Consumption (ML)	Where a water utility has not reported total potable water consumption, the previous year's consumption has been used and is shown in italics bold	From Col (4) Table 7
(3)	Average Annual Residential Consumption (kL/ connected property)	Where a water utility has not reported residential water consumption, the residential consumption has been estimated as 59% of the reported annual potable water consumption. As shown in Note 7 of Table 6, the average reported residential consumption is 59% of the total potable water supplied.	From Col (5) Table 7
(4)	Turnover (\$M)	Revenue excluding grants for acquisition of assets (Base Water Supply Rates & Charges + Pay for Use Water Supply Charges + Extra Charges + Interest + Excludes receipts from government for Acquisition of Asset Grants + Pensioner Rebates + Other Operational grants + Developer Charges Contributions + Developer Provided Asset Contribution + Other Contributions + Other Fees & Receipts)	From Col (7) Table 7
(5)	Tariff Pay-for-Use? (Yes/No)		
(6)	Residential Tariff Independent of Land Value? (Yes/No)		From Col (10) Table 8
(7)	Water Quality Compliance - Physical and Chemical	(Lower value of either the physical or chemical water quality compliance	From Cols (17) & (17A) Table 9
(8)	Water Quality Compliance - Microbiological - Faecal Coliforms (%)	Number of samples tested that meet the water quality requirements divided by the total number of samples tested. Note that this is the number of samples not tests, one sample may have a number of tests performed.	From Col (18) Table 9
<b>Sewerage</b>			
(9)	Turnover (\$M)	Revenue excluding grants for acquisition of assets (Base Sewerage Rates & Charges + Pay for Use Sewerage Charges + Extra Charges + Interest + Excludes receipts from government for Acquisition of Asset Grants + Pensioner Rebates + Other Operational grants + Developer Charges Contributions + Developer Provided Asset Contribution + Other Contributions + Other Fees & Receipts)	From Col (7) Table 10
(10)	Residential Tariff Independent of Land Value? (Yes/No)		From Col (10) Table 11
(11)	EPA Licence Compliance - BOD (%)		From Col (14) Table 12
(12)	EPA Licence Compliance - SS (%)		From Col (15) Table 12
<b>Water Supply and Sewerage</b>			
(13)	Typical Residential Bill (\$/assessment)	Sum of water and sewerage Typical Residential Bills	Col (13a) Table 8 + Col (11a) Table 11
(14)	Typical Developer Charge (\$/ET)	Sum of water and sewerage Typical Developer Charges	Col (13) Table 8 + Col (11) Table 11
(15)	Economic Real Rate of Return (%)	Revenue (water supply and sewerage) less (current cost depreciation + OMA) divided by written down replacement value of water supply and sewerage operational assets.	$\frac{[(W_{15} + W_{4a} - W_9 - W_{11a} - W_{14}) + (S_{16} + S_{4a} - S_{10} - S_{12a} - S_{15})] \times 100}{(S_{45} + W_{44})}$
(16)	Debt/Equity (%)	Debt (water supply and sewerage) divided by equity (water supply and sewerage).	$\frac{[(W_{33} + W_{35}) + (S_{34} + S_{35})] \times 100}{(W_{41} + S_{42})}$
(17)	OMA Cost (\$/connected property)	Total water supply and sewerage operations, maintenance and administration costs (excluding cost of purchasing water) divided by number of connected properties.	Col (22) Table 9 + Col (21) Table 12
(18)	Management Cost (\$/connected property)		Col (23) Table 9 + Col (22) Table 12
(19)	Current Replacement Cost of System Assets (\$M)	The value of the infrastructure assets (water supply and sewerage) expressed in terms of how much it would cost to construct the asset today as distinct from the historical cost.	Col (7b) Table 7 + Col (7b) Table 10
(20)	Strategic Business Plans Prepared? (Yes/No)		
<b>6. 2000/01 Water Consumptions in Non-Metropolitan NSW</b>			
(1)	Residential		Q <sub>12a</sub>
(2)	Commercial		Q <sub>12b</sub>
(3)	Industrial		Q <sub>12c</sub>
(3A)	Rural		Q <sub>12d</sub>
(4)	Institutional		Q <sub>12e</sub>
(5)	Bulk		Q <sub>12f</sub>
(6)	Public		Q <sub>12g</sub>
(7)	Unaccounted for Water (see note E)	Includes leakage (system water loss), theft and illegal connections, illegal use of unmetered customer fire services, fire fighting (street hydrants), mains flushing, under-registration of customer meters, errors in system meters and total estimated non-metered consumption.	Q <sub>12h</sub>
(8)	System Water Loss (see note E)	Includes leakage, errors of customer meters and estimated non-metered consumption (Master Meter Volumes less (Total Metered Consumption plus Total Estimated Non-metered Consumption)	Q <sub>12i</sub>
(9)	Total Potable Supply (see note E)		Q <sub>12j</sub> = (1) + (2) + (3) + (4) + (5) + (6) + (7)
(10)	Non-Potable Supply	Includes untreated water for industry or dual supplies and may also include recycled water	Q <sub>14</sub>
(11)	Total Annual Water Consumption	Includes potable plus non-potable supply less recycled water for non-potable supply	Q <sub>12j</sub> + Q <sub>14</sub> - Q <sub>15g</sub>
(12)	Recycled Water for Non-Potable Town Water Supply		Q <sub>15g</sub>
(13)	Recycled Water for Agricultural use and Non-Potable Town Water Supply		Q <sub>42f</sub> (sewerage)
(14)	Surface Water Consumption	Surface water plus ground water should equal total annual water consumption	Q <sub>15a</sub> + Q <sub>15b</sub> + Q <sub>15c</sub> + Q <sub>15d</sub> = Q <sub>11</sub> - Q <sub>15e</sub>
(15)	Ground Water Consumption	Surface water plus ground water should equal total annual water consumption	Q <sub>15e</sub>

### Notes:

- References to Q (eg. Q<sub>12a</sub>) refer to questions on each council's Annual Water Supply Reporting Form.
- References to W (eg. W<sub>13</sub>) refer to items in Special Schedules Nos 3 and 4 of each council's Annual Financial Statement. Similarly, references to S (eg. S<sub>16</sub>) refer to each council's Special Schedules Nos 5 and 6.
- References to Col (1) to Col (23) (eg. Col (1)) refer to columns in Tables 7 to 12.
- References to (1) to (20) (eg. (4)) refer to columns in Tables 5 and 6.
- Where Council data is missing or ambiguous, the figure has been determined from other supporting information (eg. Financial data, previous year data)

## Formulae for Calculation of Performance Indicators in Tables 7 to 9

Table	Col No.	Performance Indicator	Background to Formula	Formula
<b>7. Water Supply - 2000/01 Business Characteristics, Financial</b>				
	(1)	Total No. of Assessments (assessments) (see note H)	Where this data is ambiguous or missing, the figure has been determined from other supporting information (financial data, previous years data).	$(Q_{4a} + Q_{4b})$
	(2)	No. of Connected Properties per Assessment (see note G)	Many councils have provided insufficient data to calculate the number of Connected Properties per Assessment (Columns (2)). A value has been estimated by DLWC for such councils	$[Q_{2a} + (Q_{2c} \times Q_{2b}) + Q_3] \div (1)$
	(2a)	No. of Connected Residential Properties per Residential Assessment	Many councils have provided insufficient data to calculate the number of Connected Residential Properties per Residential Assessment (Columns (2a)). A value has been estimated by DLWC for such councils	$[Q_{2a} + (Q_{2c} \times Q_{2b})] \div Q_{4a}$
	(2b)	Residential Assessments (% of total assessments) (See Note H)		$Q_{4a} \times 100 \div (Q_{4a} + Q_{4b})$
	(2c)	Population		$Q_{1a}$
	(2d)	Peak Population (% of permanent)		$(Q_{1b} \div Q_{1a}) \times 100$
	(2e)	Connected Properties	Includes all connected properties (residential plus non-residential)	$(1) \times (2)$
	(2f)	Length of Mains (km) (see note H)	Length of Mains includes all trunk and reticulation mains.	$Q_{10c}$
	(3)	Properties Served per km of Main (connected properties/km)		$[(1) \times (2)] \div Q_{10c}$
	(4)	Total Annual Consumption (ML)	Where a water utility has not reported total potable consumption, the previous year's consumption has been adopted and is shown in italics bold	$Q_{12j} + Q_{14} - Q_{15g}$ (Check = $Q_{15m} - Q_{15g}$ )
	(5)	Average Annual Residential Consumption (kL/ connected property) (see Note H)	Where a water utility has not reported residential consumption, an estimate has been made using the percentage of total potable supply found in Table 6 (italics bold)	$Q_{12a} \times 1000 \div [Q_{4a} \times (2a)]$
	(6)	Economic Real Rate of Return (%)	Revenue (trading) less (current cost depreciation + OMA) divided by written down replacement value of assets.	$(W_{15} + W_{4a} - W_9 - W_{11a} - W_{14}) \times 100 \div W_{44}$
	(7)	Total Turnover (excl Capital Works Grants) (\$'000)	Revenue excluding grants for acquisition of assets	$(W_{13} - W_{11a}) \div 1000$
	(7a)	Residential Revenue (% of rates and charges total)		$(W_{6a} + W_{7a}) \times 100 \div (W_6 + W_7)$
	(7b)	Residential Consumption (% of potable consumption excl unaccounted for water)		$(Q_{12a} \div (Q_{12j} - Q_{12b})) \times 100$
	(7c)	Current Replacement Cost (CRC) of System Assets (\$M)	The value of the infrastructure assets (how much it would cost to construct the asset today as distinct from the historical cost).	$W_{42} \div 1,000,000$
	(7d)	CRC per Assessment (\$)	CRC divided by total assessments	$W_{42} \div (1)$
	(8)	Debt to Equity (%)	All overdrafts, repayable borrowings, interest bearing non-repayable borrowings, advances and leases divided by total equity.	$(W_{33} + W_{35}) \times 100 \div W_{41}$
<b>8. Water Supply - 2001/02 Charges, 2000/01 Bills</b>				
	(9)	Access Charge (\$)	Fixed charge.	$Q_{32a}$
	(10)	Independent of Land Value? (Yes/No)		from $Q_{32b}$
	(11)	Allowance (kL)		from $Q_{33a}$
	(12)	Usage Charge for >200kL/a or for > Allowance (c/kL)		$Q_{33b}, Q_{33c}$ or $Q_{33h}$
	(13)	Typical Developer Charge 2001/02 (\$/Equivalent Tenement(ET))		$Q_{36a}$ (see note D & note H)
	(13a)	Typical Residential Bill 2001/02 (\$) (see note H)	Calculated using the average residential water consumption for the past year times the charges for the projected year plus the access charge.	$Q_{32a} + (5) \times Q_{33b} \div 100$
	(14)	Average Residential Bill 2000/01 (\$) (see Note H)	Calculated using the residential rates and usage charges divided by the number of connected residential properties. This will be less than the typical bill due largely to pensioner rebates.	$(W_{6a} + W_{7a}) \div [Q_{4a} \times (2a)]$
	(15)	Bill for Customer Using 200kL/a 2000/01 (\$)		from $Q_{32}$ and $Q_{33}$
	(16)	Real Increase in Bill for Customer using 200 kL/a 2000/01 (%)	The difference between the present years bill and (previous years bill increased by CPI), divided by (previous years bill increased by CPI)	$[(15) \div ((15) \text{ previous year} \times (1+CPI))] - 1$
<b>9. Water Supply - 2000/01 Levels of Service, Efficiency</b>				
	(17)	Water Quality Compliance - Physical (%)		see note E
	(17A)	Water Quality Compliance - Chemical (%)		see note E
	(18)	Water Quality Compliance - Microbiological - Faecal Coliforms (%)		see note F
	(18A)	Water Quality Compliance - Microbiological - Total Coliforms(%)		see note F
	(19)	Water Quality Complaints (per 1000 properties)		$Q_{19a} \times 1000 \div (2e)$
	(20)	Water Service Complaints (per 1000 properties)		$Q_{20a} \times 1000 \div (2e)$
	(21)	Average Customer Outage Time (min)	No. of interruptions multiplied by average time to restore supply divided by connected properties	$(Q_{25} \times Q_{26} \times 60) \div (2e)$
	(22)	Operating Cost OMA (\$/property)	Total operations, maintenance and administration costs (excluding cost of purchasing water) divided by total number of connected properties.	$[W_1 + W_{2(a \text{ to } n)}] \div (2e)$
	(23)	Management Cost (\$/property)	Total management costs divided by total number of connected properties.	$W_1 \div (2e)$

### Notes:

- References to Q (eg.  $Q_{4a}$ ) refer to questions on each council's Annual Water Supply Reporting Form.
  - References to W (eg.  $W_{15}$ ) refer to items in Special Schedules Nos 3 and 4 of each council's Annual Financial Statement.
  - References to (1) to (23) (eg. (2)) refer to columns in Tables 7 to 9.
  - Developer Charges under \$400/ET have not been included in Table 8.
  - Sum for each treatment works, the lesser of  $Q_{42a}$  and  $Q_{42c}$ , multiplied by  $Q_{42b}$  for that treatment works. Divide the total by the sum of  $Q_{42b}$  for all treatment works.
  - Sum for each treatment works,  $Q_{42k}$ , multiplied by  $Q_{42l}$  for that treatment works. Divide the total by the sum of  $Q_{42l}$  for all treatment works.
- A water utility complied with the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for faecal coliforms if the required number of samples was tested and:  
**At least 98% of the samples contained no faecal coliforms**
- For utilities which did not comply, the percentage of samples complying is shown.
- Many councils have provided insufficient data to calculate the number of Connected Properties per Assessment (Columns (2) and (2a)). A value has been estimated by DLWC for such councils
  - Where council data is missing or ambiguous, the figure has been determined from other supporting information (eg. Special Schedule No.3, previous year's data).



## Formulae for Calculation of Performance Indicators in Tables 10 to 12

Table No.	Column Performance Indicator	Background to Formula	Formula
<b>10. Sewerage - 2000/01 Business Characteristics, Financial</b>			
(1)	Total No. of Assessments (assessments)	Where this data is ambiguous or missing, the figure has been determined from other supporting information (financial data, previous years data).	$(Q_{4a} + Q_{4b})$ (see note H)
(2)	No. of Connected Properties per Assessment (see Note F)	Many councils have provided insufficient data to calculate the number of Connected Properties per Assessment (Columns (2)). A value has been estimated by DLWC for such councils	$[Q_{2a} + (Q_{2c} \times Q_{2b}) + Q_3] \div (1)$
(2a)	No. of Connected Residential Properties per Residential Assessment	Many councils have provided insufficient data to calculate the number of Connected Residential Properties per Residential Assessment (Columns (2a)). A value has been estimated by DLWC for such councils	$[Q_{2a} + (Q_{2c} \times Q_{2b})] \div Q_{4a}$
(2b)	Residential Assessments (% of total) ( see Note H)		$Q_{4a} \times 100 \div (Q_{4a} + Q_{4b})$
(2c)	Population		$Q_{1a}$
(2d)	Peak Population (% of permanent population)		$(Q_{1b} \div Q_{1a}) \times 100$
(2e)	Connected Properties	Includes all connected properties (residential plus non-residential)	$(1) \times (2)$
(2f)	Length of Mains (km)	Length of Mains includes all reticulation/gravity and rising mains.	$Q_{10c}$
(3)	Properties Served per km of Main (connected properties/km)		$[(1) \times (2)] \div (Q_{10c})$
(4)	Total Volume of Sewage Collected (ML)		$Q_{12c}$
(4a)	Total Volume of Sewage Treated (ML)		greater of $Q_{41b}$ , $Q_{41c}$ and $Q_{41d}$
(4b)	Infiltration/Inflow (% of total sewerage collected)	Groundwater infiltration and stormwater inflow into Council's sewerage system divided by total sewerage collected	$Q_{12a} \div (4)$
(4c)	Residential (% of total sewerage collected)		$Q_{12b} \div (4)$
(4d)	Non-residential (% of total sewerage collected)		$Q_{12c} \div (4)$
(4e)	Trade Waste (% of total sewerage collected)		$Q_{12d} \div (4)$
(4f)	Other (% of total sewerage collected)		$[(4) - (4b) - (4c) - (4d) - (4e)] \div (4)$
(5)	Volume of Sewage Treated per Property (kL/property)		(greater of $Q_{41b}$ , $Q_{41c}$ and $Q_{41d}$ ) $\div [(1) \times (2)]$
(6)	Economic Real Rate of Return (%)	Revenue less (current cost depreciation + OMA) divided by written down replacement value of assets.	$(S_{16} + S_{4a} - S_{10} - S_{12a} - S_{15}) \times 100 \div S_{45}$
(7)	Total Turnover (excl Capital Works Grants) (\$'000)	Revenue excluding grants for acquisition of assets	$(S_{14} - S_{12a}) \div 1000$
(7a)	Residential Revenue (% of rates and charges total)		$S_{6a} \times 100 \div (S_6 + S_7 + S_8)$
(7b)	Residential Sewerage (% of total collected excl infiltration/inflow)		$(4c) \times 100 \div [(4) - (4b)]$
(7c)	Current Replacement Cost (CRC) of System Assets (\$M)	The value of the infrastructure assets (how much it would cost to construct the asset today as distinct from the historical cost).	$S_{43} \div 1,000,000$
(7d)	CRC per Assessment (\$)	CRC divided by total assessments	$S_{43} \div (1)$
(8)	Debt to Equity (%)	All overdrafts, repayable borrowings, interest bearing non-repayable borrowings, advances and leases divided by total equity.	$(S_{34} + S_{36}) \times 100 \div S_{42}$
<b>11. Sewerage - 2001/02 Charges, 2000/01 Bills</b>			
(9)	Access Amount (\$)	Fixed charge.	$Q_{31a}$
(10)	Independent of Land Value? (Yes/No)		from $Q_{31b}$
(10a)	Trade Waste Charges? (Yes/No)		$Q_{35}$
(10b)	Trade Waste Charges (% of total rates and charges)		$S_7 \times 100 \div (S_6 + S_7 + S_8)$
(10c)	Trade Waste Volume (% of sewerage collected)		$Q_{12d} \times 100 \div Q_{12c}$
(11)	Typical Developer Charge (\$/equivalent tenement (ET))		$Q_{36a}$ (see note D)
(11a)	Typical Residential Bill 2001/02 (= residential access charge) (\$)	Residential access charge	$Q_{31a}$ (see note H)
(12)	Average Residential Bill 2000/01 (\$) ( see note H)	Calculated using the residential rates and usage charges divided by the number of connected residential properties. This will be less than the typical bill due largely to pensioner rebates.	$S_{6a} \div [Q_{4a} \times (2a)]$
(13)	Real Increase in Average Residential Bill (%)	The difference between the present years bill and (previous years bill increased by CPI), divided by (previous years bill increased by CPI)	$[(12) \div [(12) \text{ previous year} \times (1 + \text{CPI})] - 1)$
<b>12. Sewerage - 2000/01 Levels of Service, Efficiency</b>			
(14)	EPA Licence Compliance BOD (%)		$Q_{51a}$ (see note E)
(14a)	BOD 90 Percentile Discharge Licence Limit		$Q_{50a}$ (see note F)
(15)	EPA Licence Compliance SS (%)		$Q_{51b}$ (see note E)
(15a)	SS 90 Percentile Discharge Licence Limit		$Q_{50b}$ (see note F)
(16)	Sewer Main Chokes and Collapses (per 100 km of main)		$Q_{21} \times 100 \div Q_{10c}$
(17)	Sewage Overflows to the Environment (per 100 km of main)	All overflows and floodings are determined to be caused by (or from) Utility assets.	$Q_{20} \times 100 \div Q_{10c}$
(18)	Odour Complaints (per 1000 properties)		$(Q_{14a} + Q_{14b}) \times 1000 \div [(1) \times (2)]$
(19)	Service Complaints (per 1000 properties)		$Q_{15} \times 1000 \div [(1) \times (2)]$
(20)	Average Customer Outage Time (min)		$Q_{25} \times Q_{26} \times 60 \div [(1) \times (2)]$
(21)	Operating Cost OMA (\$/property)	Total operations, maintenance and administration costs (excluding cost of purchasing water) divided by total number of connected properties.	$(S_1 + S_2) \div [(1) \times (2)]$
(22)	Management Cost (\$/property)	Total management costs divided by total number of connected properties.	$S_1 \div [(1) \times (2)]$

### Notes:

- A. References to Q (eg.  $Q_{4a}$ ) refer to questions on each council's Annual Sewerage Reporting Form.
- B. References to S (eg.  $S_{1a}$ ) refer to items in Special Schedules Nos 5 and 6 of each council's Annual Financial Statement.
- C. References to (1) to (21) (eg. (2)) refer to columns in Tables 10 to 12.
- D. Developer Charges under \$400/ET have not been included in Table 11.
- E. For multiple treatment works, the Licence Compliance indicators are calculated as a weighted average, on the basis of the number of sampling days for each treatment works. For example, BOD Compliance for 3 treatment works is calculated as follows:  

$$\text{BOD Compliance} = \frac{\left\{ \begin{array}{l} (Q_{51a} \times Q_{52}) \text{ at works 1} + \\ (Q_{51a} \times Q_{52}) \text{ at works 2} + \\ (Q_{51a} \times Q_{52}) \text{ at works 3} \end{array} \right\} \div \left\{ \begin{array}{l} Q_{52} \text{ at works 1} + \\ Q_{52} \text{ at works 2} + \\ Q_{52} \text{ at works 3} \end{array} \right\}}{\text{SS, Total N and Total P Compliance are similarly calculated}}$$
- F. The discharge licence limit shown is that required to be met for at least 50% of the total licenced treatment works capacity.  
 eg. for a utility with 3 treatment works:  

Works 1	Capacity 10,000EP	BOD discharge licence limit 10mg/L
Works 2	Capacity 8,000EP	BOD discharge licence limit 20mg/L
Works 3	Capacity 5,000EP	BOD discharge licence limit 30mg/L

 50% of the total treatment works capacity is 11,500 EP ((10,000 + 8,000 + 5,000) / 2 = 11,500) and the discharge licence limit which must be met for 11,500 EP is 20mg/L (8,000 EP must meet 20 mg/L and 10,000 EP must meet 10 mg/L).
- G. Many councils have provided insufficient data to calculate the number of Connected Properties per Assessment (Columns (2) & (2a)). A value has been estimated by DLWC for such councils on the basis of results for similar councils and is shown in *italics bold* in Table 10.
- H. Where council data is missing or ambiguous, the number of assessments has been determined from other supporting information (eg. Special Schedule No.5, previous year's data).

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## **APPENDIX C**

### **2000/01 COUNCIL PERFORMANCE REPORTS**

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Water is drawn from Porters Creek and the Shoalhaven River to supply Nowra, Bomaderry, St. Georges Basin, Shoalhaven Heads and Sussex Inlet. Bamarang, Danjera and Porters Creek Dams have a total storage capacity of 13,600 ML. The Shoalhaven system has 2 conventional water treatment works (88 ML/d), 1 microfiltration works at Kangaroo Valley (1 ML/d) and 1 chlorination station (11 ML/d), 40 service reservoirs (191 ML), 26 pumping stations (330 ML/d), 1 weir (30 ML), 117 ML/d delivery capacity into the reticulation, 450 km of trunk mains and 1100 km of reticulation. 70% of the supply is fully treated (Northern areas) and 30% is unfiltered (chlorinated - Southern areas). The number of microbiological test samples was 359 and the number of physical/chemical samples was 166. There was 100% compliance with faecal coliform water quality and 94% compliance with physical/chemical quality. There were no failures of the chlorination system or the treatment system. The current replacement cost of system assets was \$153M (\$3,400/assessment), cash and investments were \$13.9M, debt was \$11.9M and turnover was \$16.3M (excluding capital works grants.)

Business Planning

Strategic Business Plan (SBP)	Year Prepared	1995/96	Year Updated:	1999/00	Is Further Development Required <sup>4</sup> ?	NO
Financial Sustainability of Business	Demonstrated?	YES	Year Updated:	1999/00	Is Further Development Required <sup>4</sup> ?	NO

Triple Bottom Line (TBL) Performance Indicators

				Council Result	Ranking <sup>1</sup> >10,000 Properties	Ranking <sup>2</sup> All Councils	Statewide Median <sup>3</sup>	
UTILITY CHARACTERISTICS		1	Population Served:	85,000	(0.94 connected properties per assessment)			
		2	Number of Assessments:	45,200	Number of Connected Properties	42,490		
		3	Residential Assessments (% of total)		93	4	5	92
		4	New Residential Dwellings Connected to Water Supply (%)		1.6	2	1	1.0
		5	Properties Served per km (properties/km of main)		27		3	33
		6	Rainfall (% of average annual rainfall)		66	5	5	100
		7	Annual Total Consumption (at Master Meters - ML)		17,500		1	7500
		8	Peak Week to Average Consumption (%)		144		1	145
		9	Renewals Expenditure (% of current replacement cost of system assets)		0.7		1	0.0
		10	Employees (employees/1000 properties)		0.9		1	1.3
		11	Employees Undergoing 2 or more Days of Training (number of employees)					
SOCIAL	Charges/Bills	12	Description of Residential <sup>5</sup> Tariff Structure 2001/02:	Inclining Block; Independent of Land Value				
		13	Residential Water Usage Charge 2001/02 <sup>5</sup> (c/kL)	For usage up to 300kL				
		14	Residential Access Charge 2001/02 (\$/assessment)	15		5	65	
		15	Typical Residential Bill 2001/02 (\$/assessment)	220		2	195	
		16	Typical Developer Charge 2001/02 (\$/equivalent tenement)	245	2	1	310	
		17	Average Residential Bill 2000/01 (\$/connected property)	2,170	3	3	2,300	
		18	Bill for Residential Customer using 200kL/a (2000/01) (\$/assessment)	266	2	1	325	
		19	Real increase over previous year's Bill for Residential Customer using 200kL/a (%)	240	3	2	255	
		20	Urban Population without Reticulated Public Water Supply (%)	-13	1	3	-3.0	
	Health	21	Physical and Chemical Water Quality Compliance (%)	Water Quality Compliance on basis of 1996 NHMRC/ARMCANZ Guidelines				
		22	Microbiological Water Quality Compliance (%)	1.7	4	3	0.7	
		23	Category 1 Public Health Incidents - Minor (per 1000 properties)	94	5	5	100	
		24	Category 2 Public Health Incidents - Limited Effects (per 1000 properties)	93	5	5	99	
		25	Category 3 Public Health Incidents - Major (per 1000 properties)	3.2	5		0	
		26	Capital Expenditure on Improving Public Health Performance (\$/Property)	0	1		0	
		27	Water Quality Complaints (per 1000 properties)	0	1		0	
	Levels of Service	28	Water Service Complaints (per 1000 properties)	0	1		0	
		29	Customer Interruption Frequency (per 1000 properties)	1.4	3		3	
		30	Average customer outage time (min)	3	2	2	8	
31		Number of Main breaks (per 100km)	4	2	2	9		
32		Drought Water Restrictions (% of time)				20		
33		Total Days Lost (%)				2		
34		Average Annual Residential Consumption (kL/property, potable)	12	3	3	18		
ENVIRONMENTAL	Natural Resource Management	35	Unaccounted for water (including system water loss) (%)	0	1		0	
		36	Energy Consumption (kWh/ML)	4	2	2	8	
		37	Energy Consumption (kWh/property)				9	
		38	Renewable Energy Consumption (kWh/property)				20	
	39	% Progress towards ISO 14001 Certification (100% is certified)	167	1	1	230		
	40	Category 1 Environmental Incidents - Minor (per 1000 properties)	23		5	10		
	41	Category 2 Environmental Incidents - Limited Effects (per 1000 properties)	800	4	4	500		
	42	Category 3 Environmental Incidents - Major (per 1000 properties)	260	4	4	400		
	43	Capital Expenditure on Improving Environmental Performance (\$/Property)						
	ECONOMIC	Financial	44	Revenue from Usage Charges (% of total)	0	2		0
45			Revenue from Access Charges (% of total)	0	0		0	
46			Revenue from Other (% of total)	0	0		0	
47			Economic Real Rate of Return (%)	0	0		0	
48			Debt to Equity (%)	0	0		0	
49			Interest Cover (%)	2	2		0	
50			Operating Cost (OMA) per 100km of main (\$'000)	24		3	35	
Efficiency		51	Operating Cost (OMA) per property (\$/property)	60		3	35	
		52	Operating Cost (OMA) per kL (c/kL)	17		3	20	
		53	Management Cost (\$/property)	7.0	1	1	2.6	
		54	Treatment Cost (\$/property)	8	2	2	3	
		55	Pumping Cost (\$/property)	660		1	520	
		56	Energy Cost (\$/property)	372	1	1	680	
		57	Water Main Cost (\$/property)	136	1	1	200	

1 Ranking for each performance indicator is based on dividing the results for councils in the >10,000 connected properties group into 5 equal divisions of 20%, ie: a ranking of 1 indicates the Council is in the top 20% of Councils; a ranking of 5 indicates the Council is in the bottom 20% of Councils.

2 Ranking (1 to 5) for all councils.

3 The Statewide Median is on a percentage of connected properties basis as indicated in Tables 1 and 3 of the 2000/01 NSW Performance Comparisons Report.

4 Annual review of the key projections and actions in Council's Business Plan are required, together with annual updating of Council's Financial Plan. The Business Plan should be updated after 3 years.

5 Residential and Non-residential Tariff: Uniform Access Charge (\$220), Inclining Block; for usage up to 300 kL = 15 c/kL; for usage >300kL = 70 c/kL.

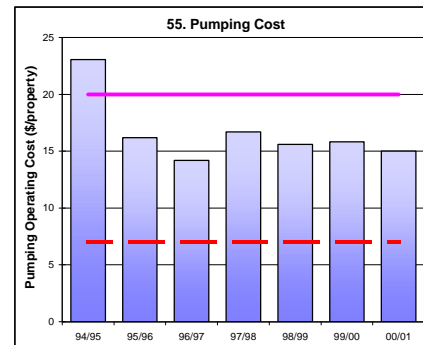
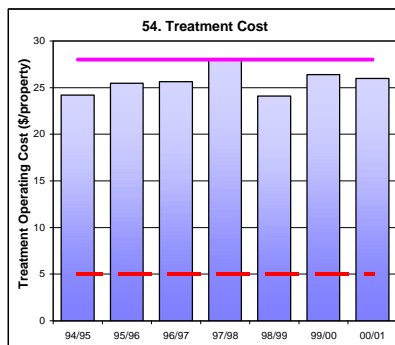
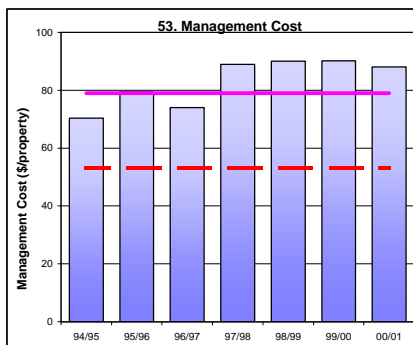
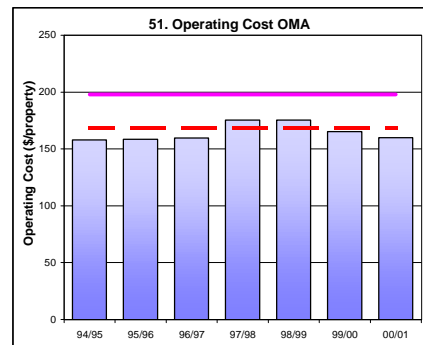
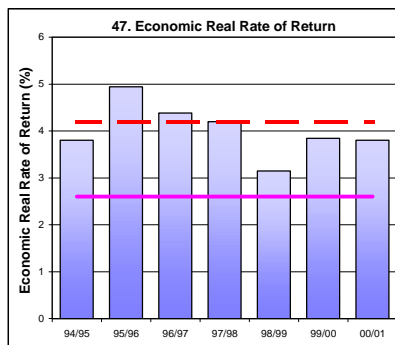
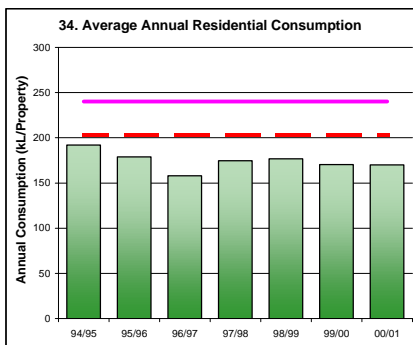
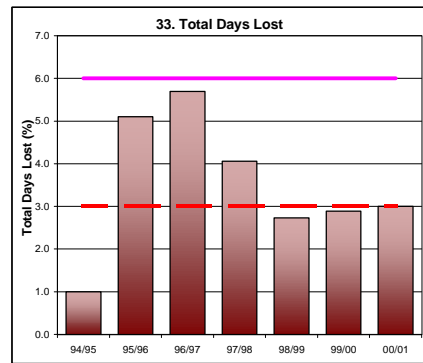
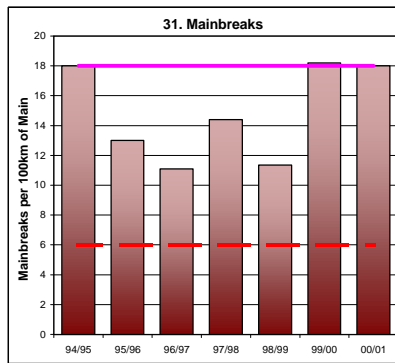
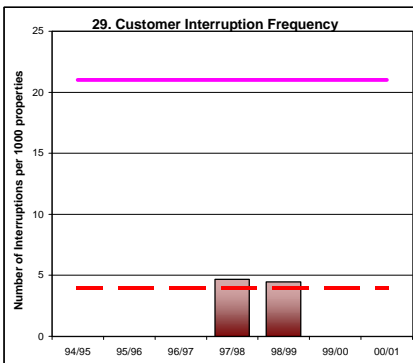
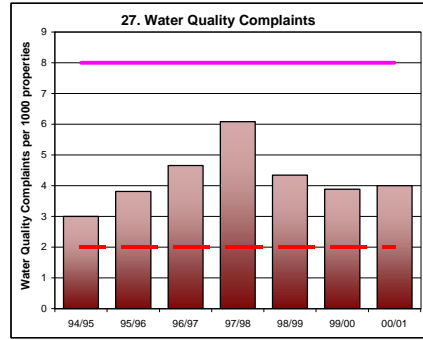
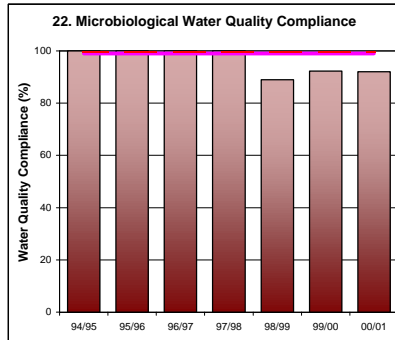
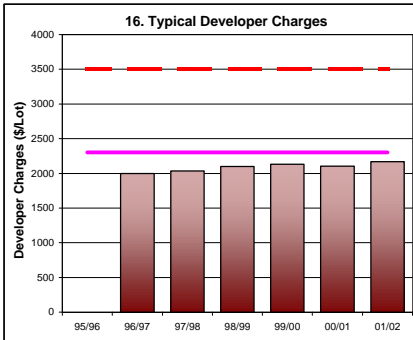
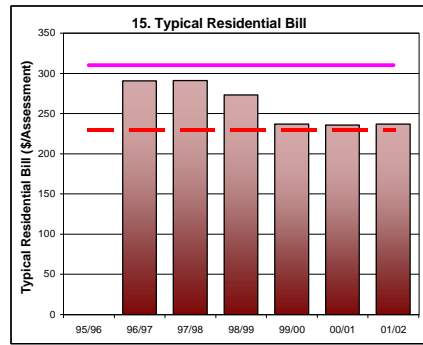
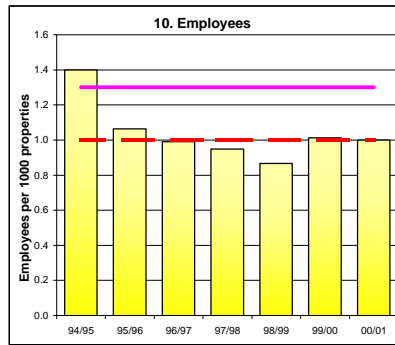
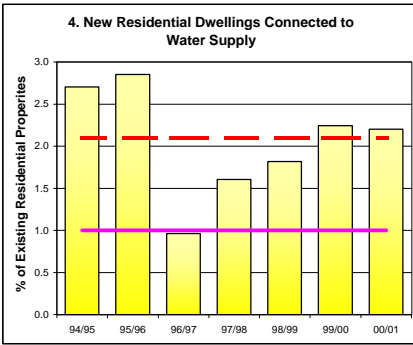
Water consumption by non-residential customers 39% of water consumption excluding unaccounted-for water.

Revenue from non-residential customers 17% of annual rates and charges, including water sales.

6 The operating cost (OMA)/property was \$136. The components of operating cost/property were: management (\$54), operation (\$37), maintenance (\$22), energy (\$12) and chemical (\$11).

# Shoalhaven City Council - Water Supply Performance - 2000/01

(Results shown for 7 years together with 2000/01 Statewide Median and Top 20%)



1 Costs are in Jan 2001\$.

2 Microbiological water quality compliance for 1998/99 to 2000/01 was on the basis of the 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines. Compliance prior to 1998/99 was on the basis of the 1987 NHMRC/AWRC Guidelines.

## LEGEND

2000/01 State Median ————  
2000/01 Top 20% - - - - -

Council has 10 sewage treatment works, 9 provide secondary treatment and 1 provides tertiary treatment. The system comprises 98,000 EP treatment capacity (comprising 7 Intermittently Decanted Extended Aeration, 2 Intermittently Decanted Extended Aeration/trickling filters and 1 continuous extended aeration treatment works), 197 pumping stations (546 ML/d), 127 km of rising mains, 810 km of reticulation, and 5 ocean, 3 river and 1 land discharges. The total number of sampling days at the treatment works was 150. There were no major malfunctions of the treatment processes. The current replacement cost of system assets was \$172M (\$4,600/assessment), cash and investments were \$7.5M, debt was \$16.6M and turnover was \$22.2M (excluding capital works grants).

**Business Planning**

Strategic Business Plan (SBP)	Year Prepared: 1995/96	Year Updated: 1999/00	Is Further Development Required <sup>4</sup> ?	NO
Financial Sustainability of Business	Demonstrated? YES	Year Updated: 1999/00	Is Further Development Required <sup>4</sup> ?	NO

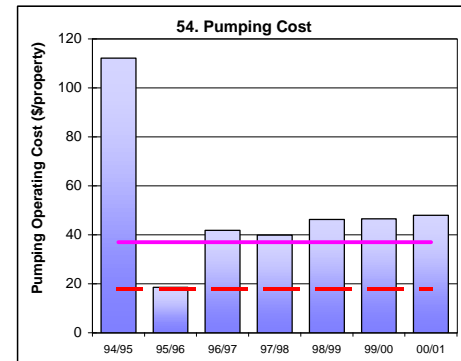
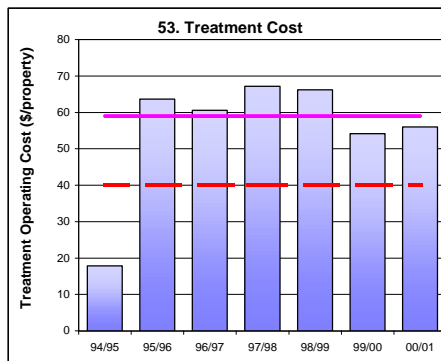
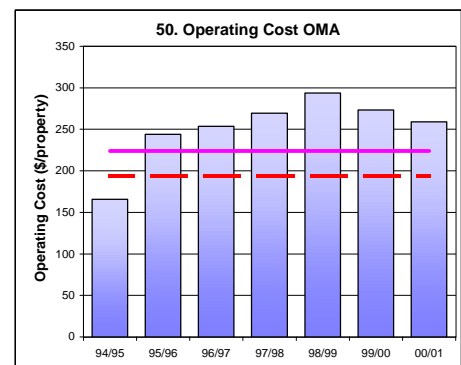
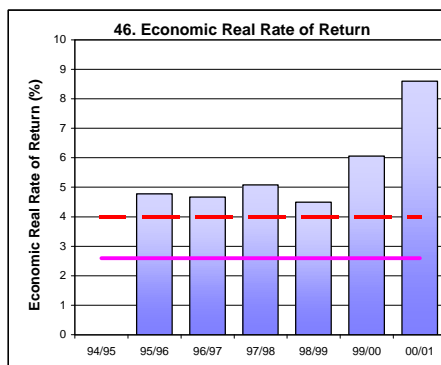
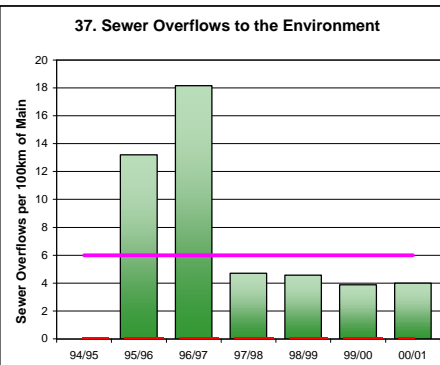
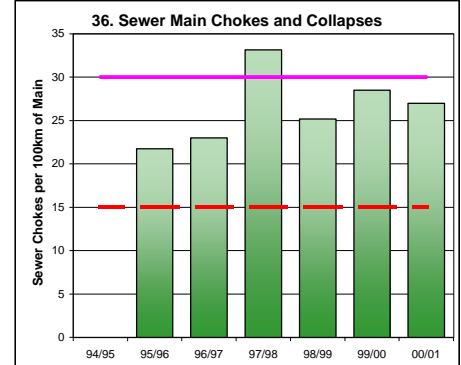
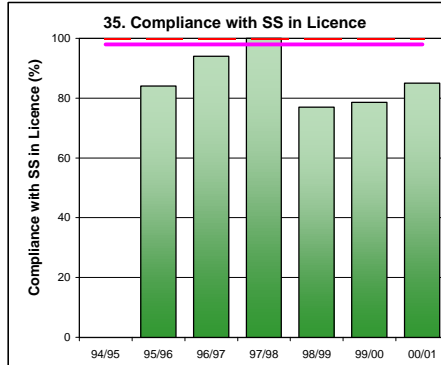
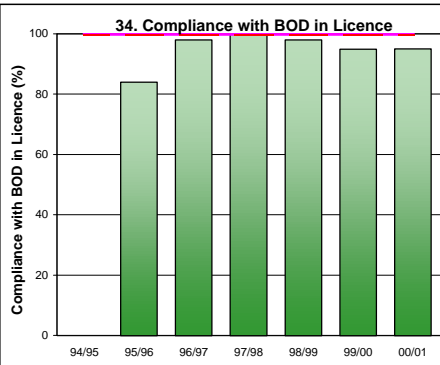
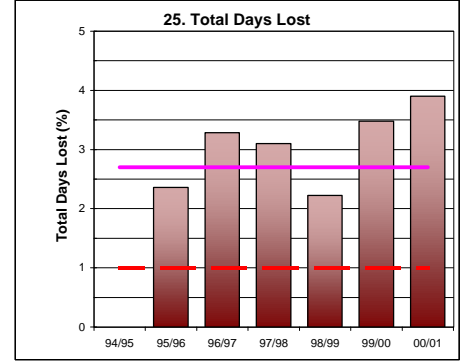
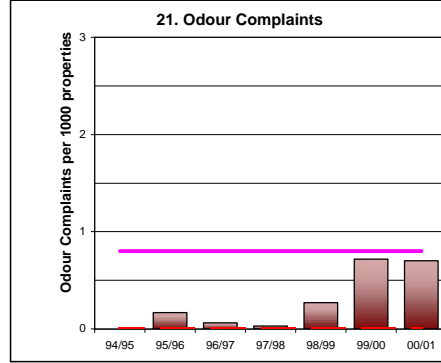
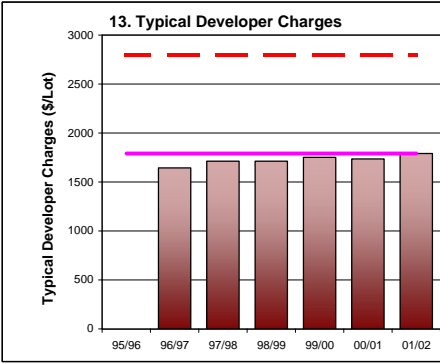
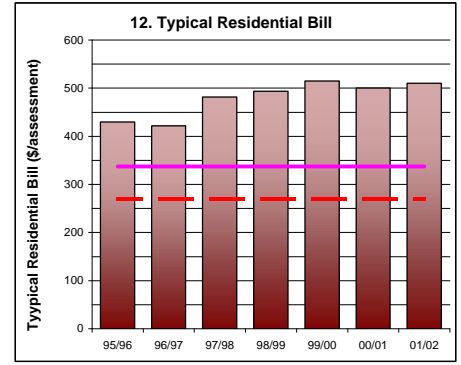
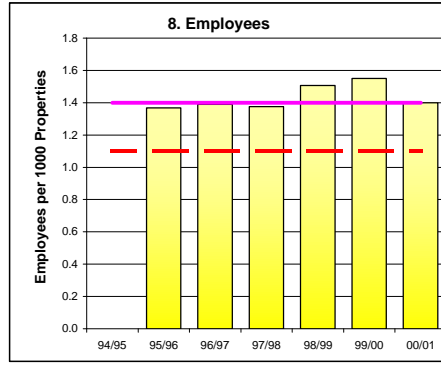
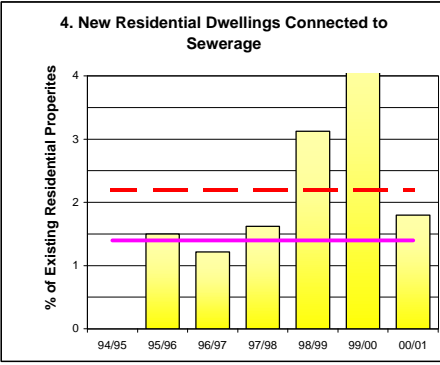
**Triple Bottom Line (TBL) Performance Indicators**

		Council Result	Ranking <sup>1</sup> >10,000 Properties	Ranking <sup>2</sup> All Councils	Statewide Median <sup>3</sup>		
UTILITY CHARACTERISTICS	1 Population Served: 84,000 (0.94 connected properties per assessment)						
	2 Number of Assessments: 37,700 Number of Connected Properties: 35,400						
	3 Residential Assessments (% of total)	96		5			
	4 New Residential Dwellings Connected to Sewerage (%)	1.8	1	1	1.4		
	5 Properties Served per km of Main	38		2	40		
	6 Volume of Sewage Collected (ML)	6,190	2	1	3700		
	7 Renewals Expenditure (% of current replacement cost of system assets)	0.5		1	0.0		
	8 Employees (per 1000 properties)	1.4	4	2	1.4		
	9 Employees Undergoing 2 or more Days of Training (number of employees)						
10 Description of Residential <sup>5</sup> Tariff Structure 2001/02: Access Charge/property; Independent of Land Value							
SOCIAL	Charges/Bills	11 Residential Access Charge 2001/02 <sup>5</sup> (\$/assessment)	510		5	345	
		12 Typical Residential Bill 2001/02 (\$/assessment)	510	5	5	335	
		13 Typical Developer Charge 2001/02 (\$/equivalent tenement)	1,790	3	3	1,800	
		14 Average Residential Bill 2000/01 (\$/connected property)	510	5	5	335	
		15 Real Increase over Previous Year's Average Residential Bill (%)	-2	5	3	-2.0	
	Health	16 Urban Properties without Reticulated Sewerage Service (%)	4.8	4	3	2.7	
		17 Category 1 Public Health Incidents - Minor (per 1000 properties)	0.3	4		0	
		18 Category 2 Public Health Incidents - Limited Effects (per 1000 properties)	0	1		0	
		19 Category 3 Public Health Incidents - Major (per 1000 properties)	0	1		0	
		20 Capital Expenditure on Improving Public Health Performance (\$/Property)	0	1		0	
		Level of Service	21 Odour Complaints (per 1000 properties)	1.0	4	4	0.6
			22 Service Complaints (per 1000 properties)	7	2	1	11
			23 Customer Interruption Frequency (per 1000 properties)				2
			24 Average Customer Outage Time (min)				1
			25 Total Days Lost (%)	3.9	5	4	2.7
ENVIRONMENTAL	Natural Resource Management	26 Volume of Sewage Treated per property (kL/a)	176	1	1	260	
		27 Recycled Water (% of effluent recycled)	1	4	4	1	
		28 Biosolids Reuse (%)	80	2	2	80	
		29 Treated Sewage (% of sewage collected)	100				
		30 Energy Consumption (kWh/ML)	760		4	500	
		31 Energy Consumption (kWh/property)	140		4	130	
		32 Renewable Energy Consumption (kWh/property)					
		33 90 Percentile Licence Limits for Effluent Discharge: BOD 20 mg/L; SS 30 mg/L					
		34 Compliance with BOD in Licence (%)	95	4	4	100	
		35 Compliance with SS in Licence (%)	85	5	4	98	
		36 Sewer Main Chokes and Collapses (per 100 km of main)	27	2	3	30	
		37 Sewer Overflows to the Environment (per 100 km of main)	4	2	3	4	
		38 % Progress towards ISO 14001 Certification (100% is certified)	0	2		0	
		39 Category 1 Environmental Incidents - Minor (per 1000 properties)	1.5	3		1.5	
		40 Category 2 Environmental Incidents - Limited Effects (per 1000 properties)	1.5	3		1	
41 Category 3 Environmental Incidents - Major (per 1000 properties)	0	1		0			
42 Capital Expenditure on Improving Environmental Performance (\$/Property)	450	1		20			
ECONOMIC	Financial	43 Revenue from Access Charges (% of total)	65		5	75	
		44 Revenue from Trade Waste Charges (% of total)	0.0		2	0.4	
		45 Revenue from Other (% of total)	35		1	25	
		46 Economic Real Rate of Return (%)	8.6	1	1	2.6	
		47 Debt to Equity (%)	10	2	2	9	
		48 Interest Cover (%)	570		2	530	
	Efficiency	49 Operating Cost (OMA) per 100 km of Main (\$'000)	980	4	5	900	
		50 Operating Cost (OMA) per property (\$/property)	259	5	4	225	
		51 Operating Cost (OMA) per kL (c/kL)	147	5	5	82	
		52 Management Cost (\$/property)	100	5	5	75	
		53 Treatment Cost (\$/property)	56	3	2	60	
		54 Pumping Cost (\$/property)	48	4	5	35	
		55 Energy Cost (\$/property)	7	2	4	8	
		56 Sewer Main Cost (\$/property)	34	2	4	27	

Notes: 1 Ranking for each performance indicator is based on dividing the results for councils in the >10,000 connected properties group into 5 equal divisions of 20%, ie: a ranking of 1 indicates the Council is in the top 20% of Councils; a ranking of 5 indicates the Council is in the bottom 20% of Councils.  
 2 Ranking (1 to 5) for all councils.  
 3 The Statewide Median is on a percentage of connected properties basis as indicated in Tables 2 and 3 of the 2000/01 NSW Performance Comparisons Report.  
 4 Annual review of the key projections and actions in Council's Business Plan are required, together with annual updating of Council's Financial Plan. The Business Plan should be updated after 3 years.  
 5 Non-residential: Uniform Access Charge (\$510); usage charge of 85 c/kL. Council has trade waste charges for large dischargers.  
 6 Trade waste and non-residential rates and charges provided 12% of the revenue from annual rates and charges, including usage and trade waste charges.  
 7 The operating cost (OMA)/property was \$259. The components of operating cost/property were: management (\$100), operation (\$109), maintenance (\$36), energy (\$7) and chemical (\$3).

# Shoalhaven City Council - Sewerage Performance - 2000/01

(Results shown for 7 years together with 2000/01 Statewide Median and Top 20%)



Note: Costs are in Jan 2001\$.

## LEGEND

2000/01 State Median ————  
 2000/01 Top 20% - - - - -



## 2000/01 Water Supply Performance Percentiles on a % of Councils Basis

	20%	40%	Median (50%)	60%	80%
<b>UTILITY CHARACTERISTICS</b>					
Residential Assessments (% of total)	86	89	90	90	92
New Residential Dwellings Connected to Water Supply (%)	1.6	0.8	0.7	0.6	0.3
Properties Served per km of Main	34	29	25	23	17
Rainfall (% of average annual rainfall)	118	111	104	102	92
Annual Total Consumption (at Master Meters - ML)	4,700	2,300	1,500	1,000	500
Peak Week to Average Consumption (%)	130	150	175	180	225
Renewals Expenditure (% of current replacement cost of s	0	0	0	0	0
Employees (per 1000 properties)	1.1	1.4	1.8	2.0	2.9
Employees Undergoing 2 or more Days of Training (per 1000 properties)					
<b>SOCIAL</b>					
<b>CHARGES/BILLS</b>					
Description of Residential Tariff Structure 2001/02					
Residential Water Usage Charge (c/kL)	90	70	65	60	45
Annual Water Allowance (kL/assessment)	0	0	0	250	370
Residential Access Charge (\$/assessment)	180	220	245	285	370
Typical Residential Bill (\$/assessment)	270	330	350	370	450
Typical Developer Charge(\$/equivalent tenement)	3,000	2,200	1,900	1,400	800
Average Residential Bill (\$/per connected property)	310	360	390	410	480
Bill for Residential Customer using 200 kL/a (\$/assessment)	250	300	320	330	385
Real increase over previous year's Bill for Residential Cust using 200 kL/a (%)	-3	-3	-3	-3	0
<b>HEALTH</b>					
Urban Properties without Reticulated Public Water Suppl	0	2	4	6	10
Physical and Chemical Water Quality Compliance (%)	100	100	100	100	95
Microbiological Water Quality Compliance (%)	100	100	100	99	95
Category 1 Public Health Incidents - Minor (per 1000 properties)					
Category 2 Public Health Incidents - Limited Effects (per 1000 properties)					
Category 3 Public Health Incidents - Major (per 1000 properties)					
Capital Expenditure on Improving Public Health Performance (\$/property)					
<b>LEVELS OF SERVICE</b>					
Water Quality Complaints (per 1000 properties)	2	3	4	6	14
Service Complaints (per 1000 properties)	3	6	8	15	30
Customer Interruption Frequency (per 1000 properties)	4	10	15	20	45
Average Customer Outage Time (min)	0.3	1.3	2.1	2.6	6.0
Number of Main Breaks (per 100 km of main)	7	16	20	25	40
Drought Water Restrictions (% of time)	0	0	0	0	0
Total Days Lost (%)	0.2	1.7	2.1	2.3	4
<b>ENVIRONMENTAL</b>					
Average Annual Residential Consumption (kL/property)	200	240	260	290	390
Unaccounted for Water (including leakage %)	19	19	19	19	20
Energy Consumption (kWh/ML)	30	350	400	500	650
Energy Consumption (kWh/property)	10	150	190	200	300
Renewable Energy Consumption (\$/property)					
% Progress Towards ISO 14001 Certification (100% is certified)					
Category 1 Environmental Incidents - Minor (per 1000 properties)					
Category 2 Environmental Incidents - Limited Effects (per 1000 properties)					
Category 3 Environmental Incidents - Major (per 1000 properties)					
Capital Expenditure on Improving Environmental Performance (\$/property)					
<b>ECONOMIC</b>					
<b>FINANCIAL</b>					
Revenue from Usage Charges (% of total)	40	30	25	22	10
Revenue from Access Charges (% of total)	30	45	55	60	70
Revenue from Other (% of total)	9	13	15	19	25
Economic Real Rate of Return (%)	3.9	2.3	1.7	1.0	-0.4
Debt to Equity (%)	11	5	4	2	0
Interest Cover (%)	>1000	700	480	300	50
<b>EFFICIENCY</b>					
Operating Cost (OMA) per 100 km of Main (\$'000)	390	540	600	640	880
Operating Cost (OMA) (\$/property)	180	230	2600	275	340
Operating Cost (OMA) (c/kL)	38	54	60	65	83
Management Cost (\$/property)	45	60	70	80	105
Treatment Cost (\$/property)	15	50	70	80	100
Pumping Cost (\$/property)	10	25	30	40	60
Energy Cost (\$/property)	10	15	20	25	35
Water Main Cost (\$/property)	25	40	45	50	75

1. 20% *top 20% of councils*  
 Median (50%) *median of councils*  
 80% *bottom 20% of councils*

2. The above performance indicators are on a *percentage of councils* basis which is relevant for *comparing* the performance of *one council with other councils* (refer also to Notes 1 to 3 on page xxix).

## 2000/01 Sewerage Performance Percentiles on a % of Councils Basis

	20%	40%	Median (50%)	60%	80%
<b>UTILITY CHARACTERISTICS</b>					
Residential Assessments (% of total)	87	89	90	91	92
New Residential Dwellings Connected to Sewerage (%)	1.8	0.8	0.7	0.5	0.2
Properties Served per km of Main	43	36	35	33	27
Volume of Sewage Collected (ML)	1,900	750	500	330	190
Renewals Expenditure (% of current cost of system assets)	0.0	0.0	0.0	0.0	0.0
Employees (per 1000 properties)	1.1	1.4	1.6	1.7	2.7
Employees Undergoing 2 or more Days of Training (number of employees)					
<b>SOCIAL</b>					
<b>CHARGES/BILLS</b>					
Description of Residential Tariff Structure					
Residential Access Charge 2001/02 (\$/assessment)	220	275	300	325	400
Typical Residential Bill 2001/02 (\$/assessment)	230	280	310	335	410
Typical Developer Charge 2001/02 (\$/equivalent tenement)	2,900	1,800	1,600	1,300	700
Average Residential Bill (\$/connected property)	245	310	340	360	415
Real Increase over Previous Year's Average Residential Bill (%)	-9	-3	-1	0	7
<b>HEALTH</b>					
Urban Properties without Reticulated Sewerage (%)	2	7	8	11	18
Category 1 Public Health Incidents - Minor (per 1000 properties)					
Category 2 Public Health Incidents - Limited Effects (per 1000 properties)					
Category 3 Public Health Incidents - Major (per 1000 properties)					
Capital Expenditure on Improving Public Health Performance (\$/property)					
<b>LEVEL OF SERVICE</b>					
Odour Complaints (per 1000 properties)	0	0	0	1	3
Service Complaints (per 1000 properties)	7	12	17	25	50
Customer Interruption Frequency (per 1000 properties)	0	0	0	3	16
Average Customer Outage Time (hr)	0	1	1	2	5
Total Days Lost (%)	0.0	1.2	2.2	2.6	4.0
<b>ENVIRONMENTAL</b>					
Volume of Sewage Treated per property (kL/a)	175	230	260	275	330
Recycled Water (% of effluent recycled)	50	17	3	1	0
Biosolids Reuse (%)	100	0	0	0	0
Treated Sewage (% of sewage collected)					
Energy Consumption (kWh/ML)	230	370	490	510	840
Energy Consumption (kWh/property)	40	90	110	125	175
Renewable Energy Consumption (kWh/property)					
<b>90 Percentile Licence Limits for Effluent Discharge</b>					
Compliance with BOD in Licence (%)	100	100	100	99	92
Compliance with SS in Licence (%)	100	100	96	92	83
Confirmed Sewer Chokes (per 100 km of main)	5	25	35	50	100
Sewer Overflows to the Environment (per 100 km of main)	0	0	3	6	13
% Progress Towards ISO 14001 Certification (100% is certified)					
Category 1 Environmental Incidents - Minor (per 1000 properties)					
Category 2 Environmental Incidents - Limited Effects (per 1000 properties)					
Category 3 Environmental Incidents - Major (per 1000 properties)					
Capital Expenditure on Improving Environmental Performance (\$/property)					
<b>ECONOMIC</b>					
<b>FINANCIAL</b>					
Revenue from Access Charges (% of total)	87	80	78	75	66
Revenue from Trade Waste Charges (% of total)	1	0	0	0	0
Revenue from Other (% of total)	32	25	21	19	13
Economic Real Rate of Return (%)	4.0	1.7	1.2	0.6	-1.3
Debt to Equity (%)	14	8	4	3	0
Interest Cover (%)	1000	480	370	510	840
<b>EFFICIENCY</b>					
Operating Cost (OMA) per 100 km of Main (\$'000)	420	590	690	770	950
Operating Cost (OMA) (\$/property)	140	200	210	220	260
Operating Cost (OMA) (c/kL)	48	71	80	93	108
Management Cost (\$/property)	27	50	60	75	95
Treatment Cost (\$/property)	35	60	70	80	100
Pumping Cost (\$/property)	15	25	35	40	45
Energy Cost (\$/property)	2	4	6	8	12
Sewer Main Cost (\$/property)	10	17	22	25	35

### Notes:

- |              |                            |
|--------------|----------------------------|
| 20%          | <i>top 20% of councils</i> |
| Median (50%) | median of councils         |
| 80%          | bottom 20% of councils     |
- The above performance indicators are on a *percentage of councils* basis which is relevant for *comparing* the performance of *one council with other councils* (refer also to Notes 1 to 3 on page xxix).

## **APPENDIX D**

**2000/01 WATER TREATMENT  
PERFORMANCE REPORTS**

**2000/01 SEWAGE TREATMENT  
PERFORMANCE REPORTS**

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# Appendix D1 - 2000/01 Water Treatment Data

**Notes:** 1. Where a water utility has more than one treatment works, the reported compliance values have been pro-rated on the basis of the number of samples tested at each treatment works and are shown in bold in the final line for that water utility.

Totals are shown for capacity (37b), treated volume (38B), and number of samples (eg. 42B). The days of chlorination system failure (44), and days of major malfunction of treatment processes (45) shown are the weighted average based on treatment works capacity.

2. For "Type of Treatment Works"; C = Conventional Water Treatment, L = Lagoon Sedimentation, DAF = Dissolved Air Flotation, D = Direct Filtration, M = Microfiltration, CH = Chlorination Only, OZ = Ozonation, A = Aerated and Disinfected, UV = Ultra-Violet Disinfection

Water Utility	Comment	Water Treatment Works	Treatment Works No.	Year built or Augmented	Capacity ML/d 37b	Type of Treatment Works 38a	Volume Treated ML 38b	Colour Units				Turbidity Units				Percentage Test Compliance With 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines												Chlorination System Failure days 44	Major Malfunction of Treatment Processes days 45				
								Raw Water		Treated Water		Raw Water		Treated Water		Physical		Chemical		Turbidity		pH		Colour		Faecal Coliforms				Total Coliforms			
								Max 39a	Avg 39b	Max 39c	Avg 39d	Max 40a	Avg 40b	Max 40c	Avg 40d	% 42a	Samples 42b	% 42c	Samples 42d	% 42e	Samples 42f	% 42g	Samples 42h	% 42i	Samples 42j	% 42k	Samples 42l			% 42m	Samples 42n		
100 Riverina (Groundwater)		Waterworks	1	1961	44	C	4,990	250	30	11.0	3.0	100	35	3.0	1.0	100	11	100	138	100	13	100	78	100	13	100	100	100	0	0			
		North Wagga Wagga Aerator	2		25	A	2,730	0	0	20.0	3.0	0	0	5.0	<1	100	11	99	93	100	13	100	50	92	13	100	68	100	68	0	0		
		West Wagga Aerator	3		25	A	5,570	0	0	10.0	3.0	0	0	2.0	<1	100	11	99	108	100	13	100	65	100	13	100	82	100	82	0	0		
		Oura Aerator	4		9	A	37	0	0	23.0	8.0	0	0	3.0	1.0	100	11	100	48	100	13	88	8	77	13	100	22	100	22	0	0		
		Ralvona Aerator	5		4	A	283	0	0	5.0	3.0	0	0	3.0	2.0	100	10	100	61	100	17	94	17	100	17	100	25	100	25	0	0		
		Bulgary Aerator	6		3.0	A	481	0	0	16.0	6.0	0	0	3.0	2.0	100	10	99	110	100	17	96	50	94	17	96	93	88	93	0	0		
		Gardiners Crossing Aerator	7		1.5	A	150	0	0	7.0	2.0	0	0	2.0	<1	100	4	100	31	100	6	95	21	100	6	100	17	88	17	0	0		
		Urana	8		1.1	C	79	0	0	4.0	2.0	0	0	1.0	<1	100	3	100	23	100	5	100	5	100	5	100	8	88	8	0	0		
		Tarcutta	9		0.8	C	57	0	0	20.0	4.0	0	0	2.0	1.0	80	10	100	36	100	18	100	12	94	18	96	24	75	24	0	0		
		Collingulle Aerator	10		0.6	A	63	0	0	31.0	10.0	0	0	5.0	3.0	100	10	98	61	100	17	100	12	88	17	96	24	92	24	0	0		
		Humula Chlorinator	11		0.2	CH	15	0	0	21.0	8.0	0	0	4.0	3.0	100	10	100	61	100	17	92	12	76	17	100	23	91	23	0	0		
		Morundah	12		0.2	C	10	0	0	6.0	4.0	0	0	3.0	1.0	100	10	95	79	100	17	88	16	100	17	100	25	100	25	0	0		
		Rand	13		0.2	C	24	0	0	9.0	6.0	0	0	1.0	1.0	60	10	100	54	100	17	93	15	100	17	100	25	100	25	0	0		
		Walbundrie	14		0.2	C	9	0	0	17.0	2.0	0	0	3.0	6.0	60	10	96	54	100	17	100	15	94	17	87	30	97	30	0	0		
		Woomargama Chlorinator	15		0.2	CH	15	0	0	27.0	13.0	0	0	5.0	3.0	100	10	92	61	88	17	90	17	82	17	100	25	88	25	0	0		
<b>Total/Weighted Average</b>					<b>115</b>		<b>14,500</b>	<b>86</b>	<b>10</b>	<b>12</b>	<b>3</b>	<b>34</b>	<b>12</b>	<b>3</b>	<b>1</b>	<b>93</b>	<b>141</b>	<b>98</b>	<b>1,018</b>	<b>99</b>	<b>217</b>	<b>98</b>	<b>393</b>	<b>92</b>	<b>217</b>	<b>100</b>	<b>591</b>	<b>100</b>	<b>591</b>	<b>0</b>	<b>0</b>		
101	Rous (Bulk Supplier)	Nightcap	1	1991	70	DAF	12,880	77			2.0	3			0.2	100	52	100	52	100	52	100	52	100	52	100	52	100	52	0	0		
102	Rylstone	Rylstone	1	1971	4	C	404	10	5	5.0	2.0	15	10	0.3	0.1	100	2	100	2	100	52	100	52			100	62	96	62	0	0		
103	Scone (Unfiltered)	<b>Scone Chlorinator</b>	1		12	CH	1,490					11				95	12	100	12	92	12	100	12			100	203	98	198	3	0		
104	Severn	Deepwater Chlorinator	1		2	CH	30			41.0	31.0			8.5	6.0	0	12	0	12	33	12	100	12	0	12	92	12	92	12	0	0		
105 Shoalhaven		Bamarang	1	1999	75	C	8,240	50	34	5.0	2.7	2	1	2.4	0.4	91	90	99	90	99	90	92	90	100	90	98	237	92	237	0	0		
		Flatrock	2	1998	28	C	3,700	50	34	5.0	2.6	2	1	0.9	0.4	100	18	94	18	100	18	100	18	100	18	100	49	96	49	0	0		
		Milton	3	1998	11	D	1,910	70	38	7.5	3.0	5	2	2.0	0.4	97	37	87	37	100	37	97	37	100	37	100	62	95	62	1	2		
		Kangaroo Valley	4	1993	1.3	M	78	60	39	20.0	4.0	5	3	0.4	0.1	100	11	100	11	100	11	100	11	100	11	100	11	89	35	0	0		
<b>Total/Weighted Average</b>					<b>115</b>		<b>13,900</b>	<b>53</b>	<b>35</b>	<b>5</b>	<b>2.7</b>	<b>2</b>	<b>1</b>	<b>1.9</b>	<b>0.4</b>	<b>94</b>	<b>156</b>	<b>96</b>	<b>156</b>	<b>99</b>	<b>156</b>	<b>95</b>	<b>156</b>	<b>100</b>	<b>156</b>	<b>98</b>	<b>359</b>	<b>93</b>	<b>383</b>	<b>0</b>	<b>0</b>		
106	Singleton	Obanvale	1	1993	30	D	2,740	10	<5.08	<5	<5	8	2	1.7	0.3	100	600	100	600	100	600	100	600	100	600	100	158	100	158	0	0		
107 Snowy River (Unfiltered)		Berridale Chlorinator	1		>8.64	CH	114			11.5					4.0	100	1	100	1									100	10	0	0		
		East Jindabyne Chlorinator	2		8.64	CH	50			11.0					3.6	100	1	100	1										100	10	0	0	
		Jindabyne Chlorinator	3		8	CH	8			12.0	11.5				4.3	4.0	100	1	100	1									100	10	0	0	
		Adaminaby Chlorinator	4		1.1	CH	41		27	27.0			12		12.0															100	0	0	
		Dalgety Chlorinator	5		0.7	CH	24			107.0					38.0																100	0	0
		Kalkite Chlorinator	6			CH	14			7.9					2.4	100	1	100	1											100	10	0	0
<b>Total/Weighted Average</b>					<b>27</b>		<b>252</b>			<b>27</b>	<b>12.0</b>	<b>22.8</b>		<b>12</b>	<b>4.3</b>	<b>8.4</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>4</b>									<b>100</b>	<b>40</b>	<b>0</b>	<b>0</b>	
108	Sydney Water	Metropolitan																															
109	Tallaganda	Braidwood Chlorinator	1		10	CH	173	12	7						100	2	100	2	100	2	100	365	100	2	92	12	92	12	0	0			
110	Tamworth	Calala Lane	1	1991	80	C	9,580	343	40	29.0	2.6									100	361	99	363	99	365	100	52			0			
111	Temora	NO WS																															
112	Tenterfield	Tenterfield	1	1986	7	C	416	480	297	78.0	11.4	38	6	1.9	0.3	94	16	90	16	100	366	100	16	86	366	86	36	97	36	3			
		Urbenville Chlorinator	2		2	CH	108	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	85	28	85	28	2	0	
<b>Total/Weighted Average</b>					<b>8</b>		<b>524</b>	<b>381</b>	<b>235</b>	<b>61.9</b>	<b>9.1</b>	<b>30</b>	<b>5</b>	<b>1.5</b>	<b>0.2</b>	<b>94</b>	<b>16</b>	<b>90</b>	<b>16</b>	<b>100</b>	<b>366</b>	<b>100</b>	<b>16</b>	<b>86</b>	<b>366</b>	<b>86</b>	<b>64</b>	<b>92</b>	<b>64</b>	<b>1</b>	<b>3</b>		
113	Tumbarumba	Tumbarumba Chlorinator	1		1	CH	4									100	52	100	52	100	52	100	52	100	52	100	52	40	52	0	0		
		Khanoban Chlorinator	2		1	CH											100	26	100	26	100	26	100	26	100	26	100	26	100	26	0	0	
		<b>Total/Weighted Average</b>					<b>2</b>		<b>4</b>								<b>100</b>	<b>78</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>78</b>	<b>60</b>	<b>78</b>	<b>0</b>
114	Tumut	Tumut	1	1987	16	C	1,180	300	15	15.0	6.0	56	4	3.0	1.0	100	2	100	2	100	2	100	2	100	2	100	12	100	12	0	0		
		Adelong	2	1996	2.7	L	160	250	60	5.0	5.0	110	15	3.9	0.8	100	2	100	2	100	2	100	2	100	2	100	12	100					



# Appendix D2 - 2000/01 Sewage Treatment Data

Notes: 1. Where a water utility has more than one treatment works, the reported Licence Compliance values have been pro-rated on the basis of the number of sampling days at each treatment works and are shown in bold in the final line for that utility.

Totals are shown for capacity (37B), volume treated (38A), and sampling days (52). The days of major malfunction of treatment processes (53) shown are the weighted average based on treatment works capacity.

2. 90 Percentile Licence Limits have been reported for questions 50a, 50b, 50c, 50d, 50e, 50f and 50g.

3. For each licence limit, the value shown in the final line for each water utility is that required to be met for at least 50% of the utility's total licenced treatment works capacity.

4. For "Type of Treatment Works": C = Conventional Activated Sludge, CE = Continuous Extended Aeration (Activated Sludge), IEA = Intermittent Extended Aeration (Activated Sludge), TF = Tricking Filter, A = Oxidation Pond, AN = Anaerobic Pond, AL = Aerated Lagoons, BNR = Biological Nutrient Removal

5. For "Effluent Discharge": L = Land, O = Ocean, R = River.

Water Utility	Comment	Sewage Treatment Works <small>Name</small> <small>37a</small>	Treatment Works No. <small>Licensed</small>	Year built or Augmented	Capacity <small>EP 37b</small>	Type of Treatment Works <small>38a</small>	Nitrogen Removal ? <small>38b</small>	Phosphorus Removal ? <small>38c</small>	Effluent Discharge <small>41</small>	Volume of Sewage Receiving Treatment <small>ML 41</small>	90 Percentile Licence Limits and EPA Licence Compliance																Sampling Days <small>days 52</small>	Major Malfunction of Treatment Processes <small>days 53</small>	
											BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms						
											<small>mg/L 50a</small>	<small>% Samples 51a</small>	<small>mg/L 50b</small>	<small>% Samples 51b</small>	<small>mg/L 50c</small>	<small>% Samples 51c</small>	<small>mg/L 50d</small>	<small>% Samples 51d</small>	<small>mg/L 50e</small>	<small>% Samples 51e</small>	<small>mg/L 50f</small>	<small>% Samples 51f</small>	<small>cfu/100mL 50g</small>	<small>% Samples 51g</small>					
1 Albury		Kremur Street	1	1975	40,000	CEA/BNR	Y	Y	L	2,636	35	100	40	96	25	100	20	100			5	100		100	53	0			
		Waterview	2	1999	26,500	CEA/BNR	Y	Y	L	2,324	35	100	40	100	25	100	20	100			5	83		100	53	0			
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>66,500</b>				<b>4,960</b>	<b>35</b>	<b>100</b>	<b>40</b>	<b>98</b>	<b>25</b>	<b>100</b>	<b>20</b>	<b>100</b>			<b>100</b>	<b>5</b>	<b>91</b>		<b>100</b>	<b>106</b>	<b>0</b>		
2 Armidale Dumaresq	100% Limits	Armidale	1	1989		TF			R/L	1,590	No Limit	100	30	100											53	0			
		Lennox	1	1982	18,000	IEA	Y		O		20	100	30	100												26	0		
		Ballina	4	1975	12,000	TF/IEA	Y	Y	R		20	92	30	58													26	0	
3 Ballina	100% Limits	Alstonville	2	1986	8,000	IEA	Y		R		20	100	30	100							1	100				26	0		
		Wardell	3		1,750	IEA	Partial		R		15	100	20	92										200	77	26	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>39,750</b>					<b>20</b>	<b>98</b>	<b>30</b>	<b>88</b>			<b>10</b>	<b>99</b>	<b>1</b>	<b>100</b>	<b>200</b>	<b>77</b>	<b>104</b>		<b>0</b>				
4 Balranald	No Discharge Licence	Balranald Effluent Pond	1		3,600	A			L																	0	0		
		Euston Effluent Pond	2		1,000	A			L																		0	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>3,600</b>																					<b>0</b>	<b>0</b>	
5 Barraba	100% Limits	Barraba	1	1956	1,500	TF			L	174	20	100	30	100				ND								14	0		
		Bathurst	1		55,000	IEA/BNR	Y	Y	R	3,414	20	100	25	100	15	100			10	100	1	5	200	95	52	0			
		Bega Valley	1	1992	19,300	IEA			L/O	0	20	100	30	92													16	0	
7 Bega Valley	100% Limits	Eden	2	1988	8,000	IEA			L/O	0	20	100	30	92													16	0	
		Bega	3		6,000	TF			R/L	0	20	100	30	92													16	0	
		Tura Beach	4		3,000	IEA			L	0	20	100	30	92														16	0
		Bermagui	5		2,000	IEA			L/O	0		100		92														16	0
		Tathra	6		2,000	IEA			R/L	0																		16	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>40,300</b>					<b>0</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>92</b>													<b>96</b>	<b>0</b>
8 Bellingen		Urunga	1		5,000	IEA	Y	Y	R	312	10	100	15	90	10	100	2	81	2	100	0	81	200	85	28	0			
		Bellingen	2		4,000	IEA	Y	Y	R	300	10	96	15	94	10	100	2	96	2	100	0	81	200	94	28	0			
		Dorrigo	3		1,550	TF	Y			70																	15	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>10,550</b>					<b>682</b>	<b>10</b>	<b>98</b>	<b>15</b>	<b>92</b>	<b>10</b>	<b>100</b>	<b>2</b>	<b>89</b>	<b>2</b>	<b>100</b>	<b>0</b>	<b>81</b>	<b>200</b>	<b>90</b>	<b>71</b>	<b>0</b>		
9 Berrigan	No Licence Limits	Berrigan	1		1,500	TF			L	90	20	100	30	100												5	0		
		Barooga	2	1992	3,000	TF			L	65		100		100													5	0	
		Tocumwal	3		4,000	A			L	165	20	100	30	100													5	0	
		Finley	4		3,200	TF			L	230	20	100	30	100													5	0	
<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>11,700</b>					<b>550</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>100</b>												<b>20</b>	<b>0</b>			
10 Bingara		Bandalong St	1	1970	300	TF	Y	Y	R		20	100	30		30	100			10	100							4		
		West Wyalong	1	1986	4,000	TF/IEA			R	306	20	100	30	100													21	0	
		Ungarie	2	1961	600	IEA			R	41	20	100	30	100													3	0	
11 Bland		Barmedman	3	1940	400	TF			R	21	20	100	30	100													3	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>5,000</b>					<b>368</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>100</b>											<b>27</b>	<b>0</b>		
		Blayney	1	1991	4,000	IEA	Y	Y	R	264	30	100	30	100	15	100			10	100	1	100					49	0	
13 Bogan	No Discharge Licence	Bogan	1		3,735	IEA			L																		4	0	
		Bombala	1		3,000	TF			R	149	20	100	30	100					10	100							6	40	
		Delegate	2		680	IEA		Y	L	30																	0	0	
<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>3,680</b>					<b>179</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>100</b>			<b>10</b>	<b>100</b>								<b>6</b>	<b>32</b>			
15 Boorowa	No Discharge Licence	Boorowa	1		2,400	TF			L	102		100															13	0	
		Bourke	1		5,000	A			L																		0	0	
		Brewarrina	1	1971	1,600	TF			R	180	20	100	30	0					10	100							6	0	
17 Brewarrina	No Discharge Licence	Goodooga	2			A			L	180																	0	0	
		Barwon Four	3		400	A			L	30																	0	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>2,000</b>					<b>390</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>0</b>			<b>10</b>	<b>100</b>							<b>6</b>	<b>0</b>		
18 AIEW		Wills Street	1			TF			L	1,383	40	100	45	96													26	0	
		South Broken Hill	2				TF			L	286	30	100	30	96												26	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>									<b>1,670</b>	<b>40</b>	<b>100</b>	<b>45</b>	<b>96</b>			<b>10</b>	<b>100</b>			<b>200</b>	<b>100</b>		<b>52</b>	<b>0</b>			
19 Byron		West Byron	1	1990	11,000	IEA	Y	Y	L	868	20	100	25	100	15	100	5	100	10	100	1	100					28	0	
		Ocean Shores	2	1980	8,000	IEA	Y	Y	R	510	15	100	20	100	15	100	5	100	10	100	1	100	200	13	28	0			
		South Byron	3	1973	4,700	TF	Y	Y	R	633	15	100	20	100	30	100	10	85	10	100	1	76	200	100	28	0			
		Mullumbimby	4	1976	3,200	TF	Y	Y	R	528	30	100	30	100					10	100			200	100	27	0			
		Brunswick Heads	5	1971	1,600	TF	Y	Y	R	269	30	100	30	100					10	100			200	100	27	0			
		Bangalow	6	1977	1,400	IEA	Y	Y	R	105	30	100	30	100					10	100							28	0	
<b>Total/Weighted Average</b> <sup>1,3</sup>				<b>29,900</b>					<b>2,910</b>	<b>20</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>15</b>	<b>100</b>	<b>5</b>	<b>95</b>	<b>10</b>	<b>100</b>	<b>1</b>	<b>9</b>								



### Appendix D2 - 2000/01 Sewage Treatment Data

Notes: 1. Where a water utility has more than one treatment works, the reported Licence Compliance values have been pro-rated on the basis of the number of sampling days at each treatment works and are shown in bold in the final line for that utility.

2. Totals are shown for capacity (37B), volume treated (38A), and sampling days (52). The days of major malfunction of treatment processes (53) shown are the weighted average based on treatment works capacity.

3. 90 Percentile Licence Limits have been reported for questions 50a, 50b, 50c, 50d, 50e, 50f and 50g.

4. For each licence limit, the value shown in the final line for each water utility is that required to be met for at least 50% of the utility's total licenced treatment works capacity.

5. For "Type of Treatment Works": C = Conventional Activated Sludge, CE = Continuous Extended Aeration (Activated Sludge), IEA = Intermittent Extended Aeration (Activated Sludge), TF = Trickling Filter, A= Oxidation Pond, AN = Anaerobic Pond, AL = Aerated Lagoons, BNR = Biological Nutrient Removal

6. For "Effluent Discharge": L = Land, O = Ocean, R = River.

Water Utility	Comment	Sewage Treatment Works Name 37a	Treatment Works No. Licenced	Year built or Augmented	Capacity EP 37b	Type of Treatment Works 38a	Nitrogen Removal ? 38b	Phosphorus Removal ? 38c	Effluent Discharge Volume of Sewage Receiving Treatment ML 41	90 Percentile Licence Limits and EPA Licence Compliance														Sampling Days days 52	Major Malfunction of Treatment Processes days 53	
										BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms				
										mg/L 50a	% Samples 51a	mg/L 50b	% Samples 51b	mg/L 50c	% Samples 51c	mg/L 50d	% Samples 51d	mg/L 50e	% Samples 51e	mg/L 50f	% Samples 51f	cfu/100mL 50g	% Samples 51g			
49 Gosford		Kincumber	1		180,000	C	Y		O	11,300	No Limit													365	0	
		Woy Woy	2	1989	50,000	CEA	Y		O	4,040														365	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>230,000</b>					<b>15,300</b>	<b>No Limit</b>													<b>730</b>	<b>0</b>	
50 Goulburn		Goulburn	1		31,500	TF			L/R	2,390	21	75	32	50	19									13	0	
51 Grafton		North Grafton	1	1989	14,700	TF			R	1,402	20	100	30	95										26	0	
		South Grafton	2	1989	6,400	TF			R	261	20	100	30	91										26	0	
		Clarenza	3	1988	5,000	IEA			R	466	20	95	30	82										26	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>26,100</b>					<b>2,130</b>	<b>20</b>	<b>98</b>	<b>30</b>	<b>89</b>										<b>78</b>	<b>0</b>	
52 Griffith		Griffith, Yenda, Bilbul	1		77,150																			13	0	
53 Gundagai		Gundagai	1	1972	3,500	TF			R	105	20	96	30	96										10	0	
54 Gunnedah		Gunnedah	1	1969	11,000	TF			R	840	20	100	30	90										14	0	
		No Discharge Licence	2		1,650	A			L	0														2	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>12,650</b>						<b>840</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>90</b>									<b>16</b>	<b>0</b>	
55 Gunning		Bilala Street	1		1,000	IEA			R		20		30											4	0	
56 Guyra		Guyra	1	1968	2,200	TF			R	350	20	100	30	100										15	0	
57 Harden		Harden	1		4,000	TF			L/R	186	20	0	30	83										12	0	
58 Hastings		Port Macquarie	1	1993	52,000	IEA/BNR	Y	Y	R	10	98	15	98	20	100	2	100	1	88	200	100			57	0	
		Camden Haven	2		9,000	TF			O		20	78	30	96										54	0	
		Wauchope	3	1991	8,000	IEA	Y		R		30	100	30	95										54	0	
		Lake Cathie/Bonny Hills	4	1989	6,000	IEA	Y		L		20	82	30	98										51	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>75,000</b>					<b>10</b>	<b>90</b>	<b>15</b>	<b>97</b>	<b>20</b>	<b>100</b>	<b>5</b>	<b>100</b>	<b>2</b>	<b>100</b>	<b>1</b>	<b>88</b>	<b>200</b>	<b>100</b>	<b>216</b>	<b>0</b>	
59 Hay		Hay	1		3,000	TF			L	421	20	100	30	100												
60 Holbrook		Holbrook	1	1984		TF			R																	
61 Hume		Howlong	1		2,500	A			L															14	0	
		Jindera	2	1986	1,000	A			L															14	0	
		Lake Hume	3	1980	500	IEA			R															32	0	
		No Discharge Licence	4	1990	100	A			L															32	0	
		Burrumbuttock	5		100	A			L															14	0	
		Lara Lakes	5		100	A			L															14	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>4,200</b>																			<b>106</b>	<b>0</b>	
62 Hunter Water		METROPOLITAN																								
63 Inverell		Inverell	1	1986	12,000	IEA			R	670	20	100	30	100											30	0
		Ashford	2	1970	1,000	IEA			R	35	20	90	30	70											15	0
		No Licence Limits	3		500	A			L	30															10	0
		Delungra	4		500	IEA			R		20	90	30	70											15	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>14,000</b>					<b>735</b>	<b>20</b>	<b>95</b>	<b>30</b>	<b>85</b>										<b>70</b>	<b>0</b>	
64 Jerilderie		Jerilderie	1		2,000	TF			L		20	100	30											300	0	
65 Junee		Junee	1	1992		TF/IEA			R		20	100	20	100										14	0	
66 Kempsey		South West Rocks	1		6,000	IEA			L		20	100	30	100											13	0
		South Kempsey	2	1991	5,400	TF/IEA		Y	R		20	100	30	100											26	0
		Crescent Head	3		2,000	IEA	Y		O	0	15	100	20	100	15	100	5	100		1	100	200	100		13	0
		Smithtown/Gladstone	4		2,000	IEA		Y	R		20	100	30	100											13	0
		North Street	5	1991	1,200	TF	Y		R	0	15	100	20	100	15	100	5	100		1	100				26	10
		Frederickton	6		1,000	IEA		Y	R		20	100	30	100											13	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>17,600</b>					<b>20</b>	<b>100</b>	<b>30</b>	<b>100</b>	<b>15</b>	<b>100</b>	<b>5</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>1</b>	<b>100</b>	<b>200</b>	<b>100</b>	<b>104</b>	<b>1</b>	
67 Kyogle		Kyogle	1	1952	3,500	TF		Y	R	202	20	100	30	77											16	0
		Woodenbong	2	1969	300	IEA	Y		L	34	20	85	30	8											15	0
		Bonalbo	3	1969	300	IEA	Y		L	16	20	100	30	0											15	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>4,100</b>						<b>252</b>	<b>20</b>	<b>95</b>	<b>30</b>	<b>29</b>										<b>46</b>	<b>0</b>
68 Lachlan		Condobolin	1	1982	4,000	TF/IEA			L	410	20	100	30									1500	90	40	2	
		No Discharge Licence	2	1979	2,000	IEA			L	265															50	0
		No Discharge Licence	3	1981	2,000	IEA			L	80															50	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>8,000</b>					<b>755</b>	<b>20</b>	<b>100</b>	<b>30</b>									<b>1500</b>	<b>90</b>	<b>140</b>	<b>1</b>	
69 Leeton		Leeton	1	1987	27,000	TF/IEA	Y		L	1,107	50	100	50	100											27	0
		Yanco	2	1980	1,000	IEA	Y		R	127	20	100	30	100											14	0
		Whitton	3		500	A			R	8															0	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>28,500</b>						<b>1,240</b>	<b>50</b>	<b>100</b>	<b>50</b>	<b>100</b>										<b>41</b>	<b>0</b>
70 Lismore		East Lismore	1	1978	30,500	BNR	Y	Y	R	1,790	15	100	20	84	15	100	5	100	10	98	1	37		52	0	
		South Lismore	2	1977	22,500	TF	Y	Y	R	1,150	15	100	20	100	15	100	5	100	10	100	1	49		52	0	
		Nimbin	3	1993	600	IEA	Y	Y	R	28	20	100	30	100	15	100	5	100	10	100	1	100		16	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>53,600</b>						<b>2,960</b>	<b>15</b>	<b>100</b>	<b>20</b>	<b>93</b>	<b>15</b>	<b>100</b>	<b>5</b>	<b>1</b>							



## Appendix D2 - 2000/01 Sewage Treatment Data

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 2. Totals are shown for capacity (37B), volume treated (38A), and sampling days (52). The days of major malfunction of treatment processes (53) shown are the weighted average based on treatment works capacity.  
 3. 90 Percentile Licence Limits have been reported for questions 50a, 50b, 50c, 50d, 50e, 50f and 50g.  
 4. For each licence limit, the value shown in the final line for each water utility is that required to be met for at least 50% of the utility's total licenced treatment works capacity.  
 5. For "Type of Treatment Works": C = Conventional Activated Sludge, CEA = Continuous Extended Aeration (Activated Sludge), IEA = Intermittent Extended Aeration (Activated Sludge), TF = Trickling Filter, A= Oxidation Pond, AN = Anaerobic Pond, AL = Aerated Lagoons, BNR = Biological Nutrient Removal  
 6. For "Effluent Discharge": L = Land, O = Ocean, R = River.

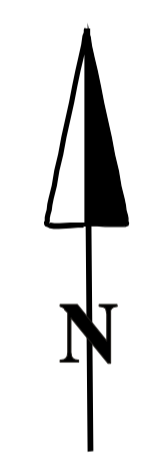
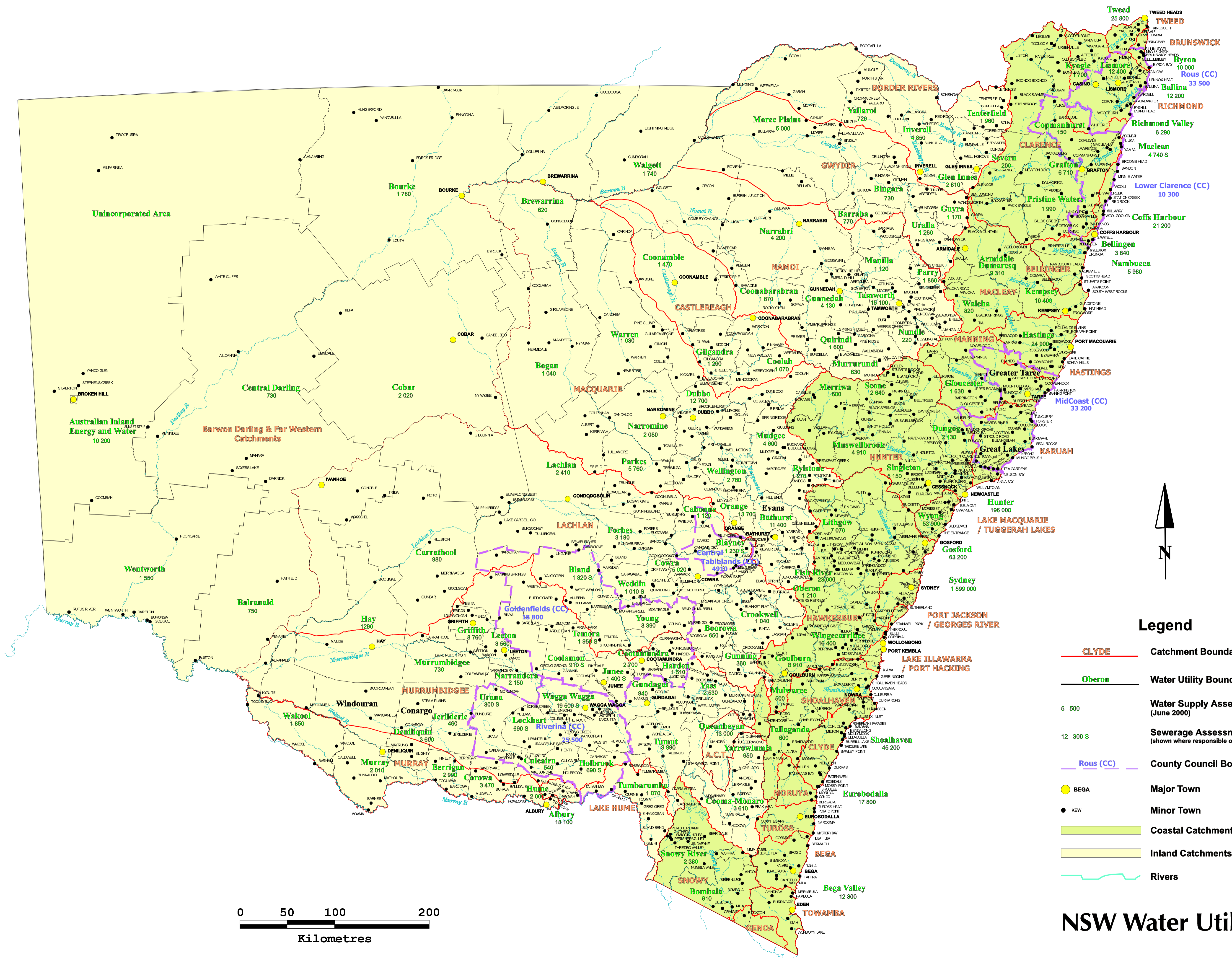
Water Utility	Comment	Sewage Treatment Works  Name 37a	Treatment Works No.  Licenced	Year built or Augmented	Capacity  EP 37b	Type of Treatment Works  38a	Nitrogen Removal ?  38b	Phosphorus Removal ?  38c	Effluent Discharge  Volume of Sewage Receiving Treatment	90 Percentile Licence Limits and EPA Licence Compliance																Sampling Days  days 52	Major Malfunction of Treatment Processes  days 53		
										BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms							
										mg/L 50a	% Samples 51a	mg/L 50b	% Samples 51b	mg/L 50c	% Samples 51c	mg/L 50d	% Samples 51d	mg/L 50e	% Samples 51e	mg/L 50f	% Samples 51f	cfu/100mL 50g	% Samples 51g						
91	Nundie	NO SGE																											
92	Oberon	Oberon	1	1989	7,334	TF		Y	L	350	20	100	25	100	15											52	0		
93	Orange	Orange	1	1988	60,000	TF/CEA	Y	Y	L	5,400	15	95	30	95	15	95					1					95	39	0	
		Spring Hill	2	1990	1,000	CEA			R	47	20	100	30	100														12	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>61,000</b>					<b>5,450</b>	<b>15</b>	<b>96</b>	<b>30</b>	<b>96</b>	<b>15</b>	<b>95</b>					<b>10</b>	<b>100</b>	<b>1</b>	<b>90</b>	<b>400</b>	<b>95</b>	<b>51</b>	<b>0</b>	
94	Parkes	Parkes	1	1966	12,500	TF			R	740	20	50	25	33	15	66					10	92	1	0			15	0	
		No Discharge Licence	2	1969	2,000	TF			R	115																		0	0
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>14,500</b>					<b>855</b>	<b>20</b>	<b>50</b>	<b>25</b>	<b>33</b>	<b>15</b>	<b>66</b>					<b>10</b>	<b>92</b>	<b>1</b>	<b>0</b>			<b>15</b>	<b>0</b>	
95	Parry	Werris Creek	1		3,200	TF			L/R	162	20	100	30	40							10	100					12	0	
		No Licence Limits	2	1993	2,000	A			L	90																	4	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>5,200</b>					<b>252</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>40</b>							<b>10</b>	<b>100</b>					<b>16</b>	<b>0</b>	
96	Pristine Waters	Coutts Crossing	1			IEA			R	43	20	100	30	93							10	100					14	0	
97	Queanbeyan	Queanbeyan	1	1986	31,000	TF/CEA	Y	Y	R	4,070	10	100	20	98	35	100					0	100	1000	100			365	0	
98	Quirindi	Quirindi	1	1984	7,000	TF/IEA			R	280	20	93	30	61							10	100					28	0	
99	Richmond Valley	Casino	1		13,300	TF/IEA	Y		R	1,200	20	100	30	64							10	100					25	0	
		Evans Head	2		3,700	TF			L	560	45	100	40	100							10	100					14	0	
		Coraki	3		1,200	TF				286	20	100	30	33							10	100					13	2	
		Rileys Hill	4		200	C	Y	Y		4	15	100	20	100	15	86					10	100	1	93			14	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>17,000</b>					<b>2,050</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>73</b>							<b>10</b>	<b>100</b>					<b>66</b>	<b>0</b>	
100	Riverina	NO SGE																											
101	Rous	NO SGE																											
102	Rylstone	Kandos	1		2,500	TF			R		20	100	25	100	15	100					10	100	6	100			12	0	
		Rylstone	2	1972	1,250	TF			R		10	100	25	100	15	100					10	100	6	100			12	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>3,750</b>					<b>20</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>15</b>	<b>100</b>						<b>10</b>	<b>100</b>	<b>6</b>	<b>100</b>			<b>24</b>	<b>0</b>	
103	Scone	Scone	1	1988	6,000	TF/IEA			R		20	100	30	100							10	100					11	0	
		Aberdeen	2		4,000	IEA		Y	R	206	20	100	30	100							10	100					11	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>10,000</b>					<b>206</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>100</b>							<b>10</b>	<b>100</b>					<b>22</b>	<b>0</b>	
104	Severn	Deepwater	1	1987	500	A			L	13	40		45														16	0	
105	Shoalhaven	Nowra	1	1989	21,000	TF/CEA	Y		R	1,770	20	75	30	75							10	100					15	0	
		St Georges Basin	2	1992	16,000	IEA	Y	Y	O	794																	15	0	
		Bomaderry	3	1990	12,500	TF/IEA	Y		R	633	15	100	30	83							10	100					15	0	
		Ulladulla	4	1981	12,500	TF/IEA	Y		O	1,057	50	100	80	100							10	100					15	0	
		Culburra	5	1982	8,000	IEA	Y		O	527	20	100	20	67							10	92					15	0	
		Sussex Inlet	6	1990	8,000	IEA	Y		O	350	20	100	40	100							10	100					15	0	
		Vincetia	7	1992	8,000	IEA	Y	Y	O	562	20	100	40	100							10	100					15	0	
		Shoalhaven Heads	8	1983	4,000	IEA	Y		L	234	20	83	20	75							10	92					15	3	
		Berry	9	1978	2,000	IEA	Y		R	155	15	100	20	92							10	100					15	0	
		Discharge to Culburra	10	2000	6,000	IEA	Y	Y		156																	15	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>98,000</b>					<b>6,240</b>	<b>20</b>	<b>95</b>	<b>30</b>	<b>85</b>							<b>10</b>	<b>98</b>					<b>150</b>	<b>0</b>	
106	Singleton	Singleton	1	1988	20,000	IEA	Y		R	1,190	30	100	30	100	15 - 80%TIL	100					10 - 100%TIL	88	10 - 80%TIL	100			17	0	
107	Snowy River	Jindabyne	1		12,000	IEA	Y	Y	R	300	10	100	15	95	10	100	2	100			2	100	0	100	200	100	20	0	
		Adaminaby	2		1,000	TF			R	20	20	100	30	85													15	0	
		No Licence Limits	3		1,000	IEA	Y		L	15																	0	0	
		Berridale	4		750	IEA	Y		R	80	20	68	30	54													13	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>14,750</b>					<b>415</b>	<b>10</b>	<b>92</b>	<b>15</b>	<b>81</b>	<b>10</b>	<b>100</b>	<b>2</b>	<b>100</b>	<b>2</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>200</b>	<b>100</b>			<b>48</b>	<b>0</b>	
108	Sydney Water	METROPOLITAN																											
109	Tallaganda	Braidwood	1		3,000	TF			R	77	20	92	30	83							10	100					16	0	
110	Tanworth	Westdale	1	1983	33,000	TF/IEA	Y		R	2,750	30	74	25	94													54	5	
		No Licence Limits	2	1968	15,000	TF			L	1,290																	0	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>48,000</b>					<b>4,040</b>	<b>30</b>	<b>74</b>	<b>25</b>	<b>94</b>													<b>54</b>	<b>3</b>	
111	Temora	Temora	1	1931		TF	Y		L	500	20	100	30	80									600	100	200	200	2		
112	Tenterfield	Tenterfield	1	1983	2,250	TF			L/R	264	40	100	45	75													15	0	
		Urbenville	2	1981	500	IEA			L/R	24	20	100	30	100							10	100					15	1	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>2,750</b>					<b>287</b>	<b>40</b>	<b>100</b>	<b>45</b>	<b>88</b>							<b>10</b>	<b>100</b>					<b>30</b>	<b>0</b>	
113	Tumbarumba	Tumbarumba	1																										

# Appendix D2 - 2000/01 Sewage Treatment Data

- Notes: 1. Where a water utility has more than one treatment works, the reported Licence Compliance values have been pro-rated on the basis of the number of sampling days at each treatment works and are shown in bold in the final line for that utility.  
 Totals are shown for capacity (37B), volume treated (38A), and sampling days (52). The days of major malfunction of treatment processes (53) shown are the weighted average based on treatment works capacity.  
 2. 90 Percentile Licence Limits have been reported for questions 50a, 50b, 50c, 50d, 50e, 50f and 50g.  
 3. For each licence limit, the value shown in the final line for each water utility is that required to be met for at least 50% of the utility's total licenced treatment works capacity.  
 4. For "Type of Treatment Works": C = Conventional Activated Sludge, CEA = Continuous Extended Aeration (Activated Sludge), IEA = Intermittent Extended Aeration (Activated Sludge), TF = Trickling Filter, A= Oxidation Pond, AN = Anaerobic Pond, AL = Aerated Lagoons, BNR = Biological Nutrient Removal  
 5. For "Effluent Discharge": L = Land, O = Ocean, R = River.

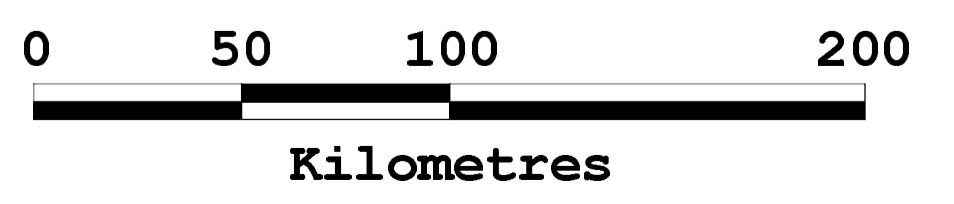
Water Utility	Comment	Sewage Treatment Works  Name 37a	Treatment Works No.  Licenced	Year built or Augmented	Capacity  EP 37b	Type of Treatment Works  38a	Nitrogen Removal ?  38b	Phosphorus Removal ?  38c	Effluent Discharge  Volume of Sewage Receiving Treatment  ML 41	90 Percentile Licence Limits and EPA Licence Compliance																Sampling Days  days 52	Major Malfunction of Treatment Processes  days 53
										BOD		SS		Total N		NH <sub>3</sub> N		Oil & Grease		Total P		Faecal Coliforms					
										mg/L 50a	% Samples 51a	mg/L 50b	% Samples 51b	mg/L 50c	% Samples 51c	mg/L 50d	% Samples 51d	mg/L 50e	% Samples 51e	mg/L 50f	% Samples 51f	cfu/100mL 50g	% Samples 51g				
114	Tumut	Tumut	1		7,500	TF		Y	R	825	40	100	45	100					10	100	2	100			16	0	
		Batlow	2	1968	1,400	TF			R	110	40	100	45	100					10	100					16	0	
		Talbingo	3		1,100	CEA/BNR	Y	Y	R	75	25	100	35	100	25	100	10	100	10	100	2	100			16	0	
		Adelong	4		1,000	IEA	Y		R	84	40	100	45	100					10	100					16	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>11,000</b>					<b>1,090</b>	<b>40</b>	<b>100</b>	<b>45</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>2</b>	<b>100</b>			<b>64</b>	<b>0</b>	
115	Tweed	Banora Point	1	1994	50,000	CEA/BNR	Y	Y	R	4,247	15	100	20	96					10	96			1000	98	56	0	
		Murwillumbah	4	2000	16,000	IEA/TF	Y		R	1,084	10	100	15	85	10	77	2	100	10	100	1	40	200	92	30	0	
		Tweed Heads	2	1991	12,000	TF	Y		R	909	25	100	25	77					10	96					30	0	
		Kingscliff	3	1988	8,000	IEA/TF	Y		R	833	25	100	25	100					10	100					30	0	
		Hastings Point	5	1985	8,000	IEA	Y		R	649	25	100	25	100					10	100					30	0	
		Tumbulgum	6		700	IEA	Y	Y	R	30	15	100	20	100	15	100	5	100	10	100	1	77	200	100	30	0	
		Tyalgum	7	1990	500	IEA	Y		R	25	25	92	50	81					10	96					30	0	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>95,200</b>					<b>7,800</b>	<b>15</b>	<b>99</b>	<b>20</b>	<b>92</b>	<b>10</b>	<b>89</b>	<b>2</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>1</b>	<b>59</b>	<b>200</b>	<b>97</b>	<b>236</b>	<b>0</b>	
116	Uralla	Uralla	1	1995	3,960	IEA	Y	Y	R	15	100	20	100	10	100	1	100	10	100	1	100	200	20	14	0		
116A	Urana	Urana	1		754	A			L	54		160		28						13				28	0		
		Oaklands	2			A			L	4		19		102						13				28	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>754</b>					<b>54</b>		<b>160</b>		<b>28</b>						<b>13</b>				<b>56</b>	<b>0</b>		
117	Wagga Wagga	Narrung Street	1	1992	69,000	TF/CEA		Y	L/R	4,049	20	100	30	95				10	100					21	0		
		Koorling Water Reclamation Plant	2	1992	20,000	TF/CEA			L/R	1,192	20	100	30	88				10	90					16	0		
		Forest Hill	3	1974	3,500	AL/IEA			L	249	20	87	30	80				10	93					15	0		
		No Discharge Licence	4		1,000	A			L	88																	
		No Discharge Licence	5		500	A			L	52																	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>94,000</b>					<b>5,630</b>	<b>20</b>	<b>96</b>	<b>30</b>	<b>89</b>				<b>10</b>	<b>95</b>					<b>52</b>	<b>0</b>		
118	Wakool	No Discharge Licence	1		1,000	IEA			L															8	0		
		No Discharge Licence	2		500	A			L																		
		No Discharge Licence	3		750	A			L																6	-1	
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>2,250</b>																			<b>14</b>	<b>0</b>		
119	Walcha	Walcha	1	1971	2,200	TF			R	218	20	75	30	50				10	100					12	0		
120	Walgett	Walgett	1		3,100	TF			L															4			
121	Warren	No Discharge Licence	1	1958	2,180	TF			L	227	No Limit	100	No Limit	100									100	3	0		
122	Weddin	Grenfell	1	1943		TF			R	166		100		100										4	1		
123	Wellington	Wellington	1	1984	8,000	TF			R	562	20	100	30	90	15	50		10	100	1	0	600	100	14	0		
124	Wentworth	Buronga/Gol-Gol	1		5,000	A			L															7	0		
		Wentworth	2	1991	2,500	TF				190														7	0		
		Dareton	3		2,000	TF				70														7	0		
		Namatjira	4		1,200	A																		7	0		
		East Wentworth	5		600	A																		7	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>11,300</b>					<b>260</b>														<b>35</b>	<b>0</b>		
125	Wingecarribee	Mittagong	1	1974	14,000	TF	Y		R	530	20	100	30	100										28	0		
		Bowral	2	1994	10,500	TF/IEA	Y	Y	R	1,080	20	100	30	100					2	100				28	0		
		Moss Vale	3	1995	9,000	IEA	Y	Y	R	801	20	100	30	100	15	100	2	100		1	100	200	100	27	0		
		Bundanoon	4	1982	2,000	IEA	Y	Y	R	220	20	100	30	100	15	100	2	100		2	100			14	0		
		Berrima	5	1990	2,000	IEA	Y	Y	R	118	20	100	15	100	2	100				1	100			14	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>37,500</b>					<b>2,750</b>	<b>20</b>	<b>100</b>	<b>30</b>	<b>100</b>	<b>15</b>	<b>100</b>	<b>2</b>	<b>100</b>	<b>2</b>	<b>100</b>	<b>200</b>	<b>100</b>	<b>111</b>	<b>0</b>			
126	Wyong	Bateau Bay	1		58,000	TF/IEA			O	2,720	No Limit		50	100				10	100					62	0		
		Discharge to Toukley	4		40,000	IEA			O	5,310														52	0		
		Toukley	3		40,000	TF			O	3,780			50	100				10	100					62	0		
		Discharge to Toukley	2		40,000	IEA			O	2,470														52	0		
		Discharge to Toukley	6		12,000	IEA			O	810														52	0		
		Discharge to Toukley	5		12,000	IEA			O	362														52	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>202,000</b>					<b>15,400</b>	<b>No Limit</b>		<b>50</b>	<b>100</b>				<b>10</b>	<b>100</b>					<b>332</b>	<b>0</b>		
127	Yallaroo	Warialda SWT	1	1969	1,500	TF			R		20	98	30	99				10	100					6	1		
128	Yarrowlumla	Bungendore	1		2,000	IEA	Y		R	10	10	100	15	100				10	100					4	0		
		Captains Flat	2		500	IEA	Y		R	0	20	85	30	100				10	100					6	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>2,500</b>					<b>10</b>	<b>10</b>	<b>91</b>	<b>15</b>	<b>100</b>				<b>10</b>	<b>100</b>					<b>10</b>	<b>0</b>		
129	Yass	Yass Pasveer	1		4,000	IEA			L/R	339	20	100	20	100										16	0		
		Yass Trickling Filter	2		3,500	TF			L/R	169	20	100	20	100										16	0		
		<b>Total/Weighted Average</b> <sup>1,3</sup>			<b>7,500</b>					<b>508</b>	<b>20</b>	<b>100</b>	<b>20</b>	<b>100</b>										<b>32</b>	<b>0</b>		
130	Young	YOUNG	1		7,000	TF			L/R	800	30	100	30	91				10	73					12	0		





**Legend**

- **CLYDE** Catchment Boundary
- **OBERON** Water Utility Boundary
- 5 600 Water Supply Assessments (June 2000)
- 12 300 S Sewerage Assessments (June 2000) (shown where responsible only for sewerage)
- **ROUS (CC)** County Council Boundary
- **BEGA** Major Town
- **KEW** Minor Town
- Coastal Catchments
- Inland Catchments
- Rivers



**NSW Water Utilities**





