

## **EXECUTIVE SUMMARY**

The Company has developed a number of domestic consumption databases which are used to measure peak and average demands in representative samples of households charged on both the Company's Unmeasured and Measured tariffs. The data is used to confirm annual water balance calculations but, more importantly, it is used to predict future changes in water demands from households.

### **Unmeasured Property Databases**

For households charged on unmeasured tariffs a database of over 500 properties is maintained which is representative of the proportions of different Property Types within the overall Company customer database. It is also representative of the Company's three Water Resource Zones (geographical areas). The properties are surveyed by questionnaires from time to time in order to collect occupancy data. Meters have been installed at these properties purely to enable consumption data to be collected. A representative sample of around 50 properties has been selected and 'loggers' installed on their meters to enable peak demand data to be recorded.

### **Measured Databases**

Domestic customers now have the right to change to a measured tariff without paying the cost of meter installation. Prior to 1999 the customer was required to bear the costs involved. As a result 3,047 properties converted to a measured tariff property during 2003/04 and these have been added to the 'Full Measured Property Database' for which annual consumption information is available.

In an attempt to measure the climatic effects upon household consumption, the Company has set up a 'Fixed Measured Property Database' of 1,500 properties from whom occupation data has been collected.

As with the unmeasured database, a representative sample of around 50 properties has been selected and 'loggers' installed on their meters to enable peak demand data to be collated.

### **Peak Consumption Samples**

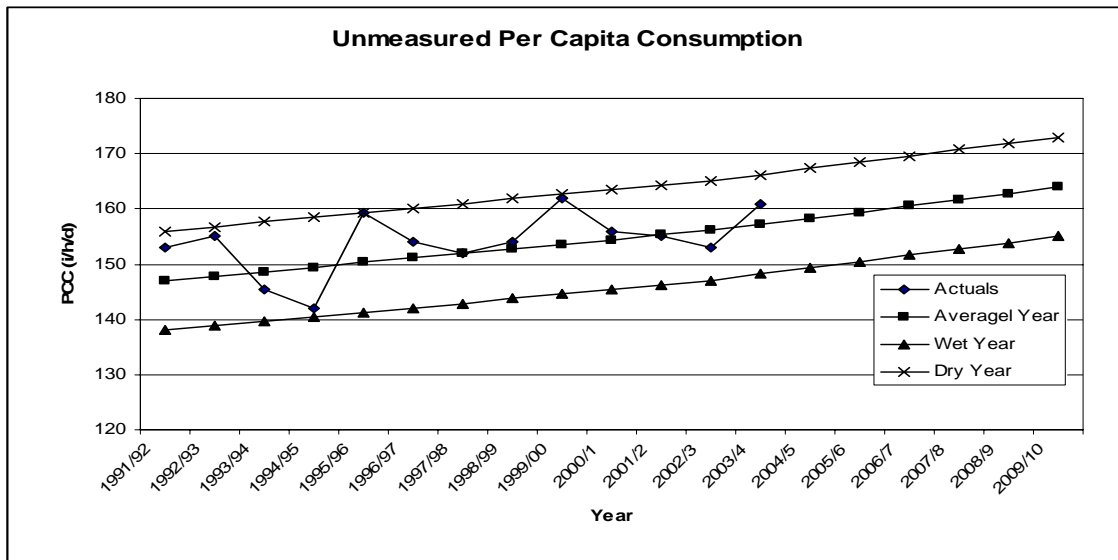
Since the Company has no long-term storage its critical period for balancing supplies with demand is during summer peaks; it therefore needs to be able to forecast peak demands in order to ensure it has sufficient resources for the future.

In each of the databases the Company operates a sample of 50 properties which are representative by property type and Water Resource Zone (geographical area) although the number in each category is very small. Each property is fitted with a datalogger which enables peak consumption data to be recorded and compared with the overall annual average consumption.

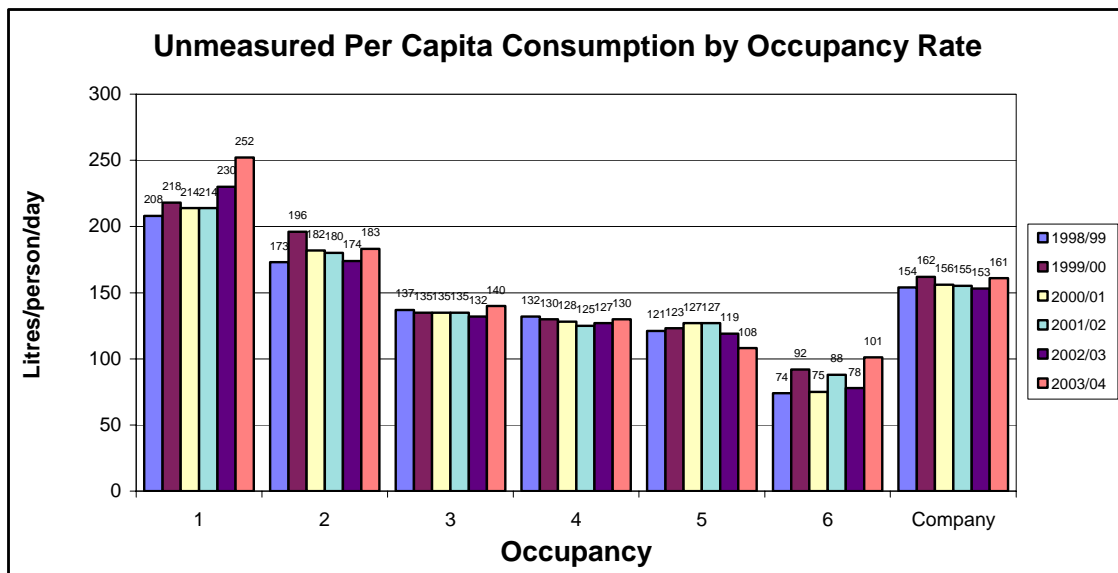
### **Results from the Annual Average Consumption Databases**

#### ***Unmeasured Database***

Consumption in the Unmeasured Average Consumption Database increased from 153 l/h/d in 2002/03 to 161 l/h/d in 2003/04. This is above the average forecast line and is consistent with the warm summer conditions experienced during July, August and September of 2003.



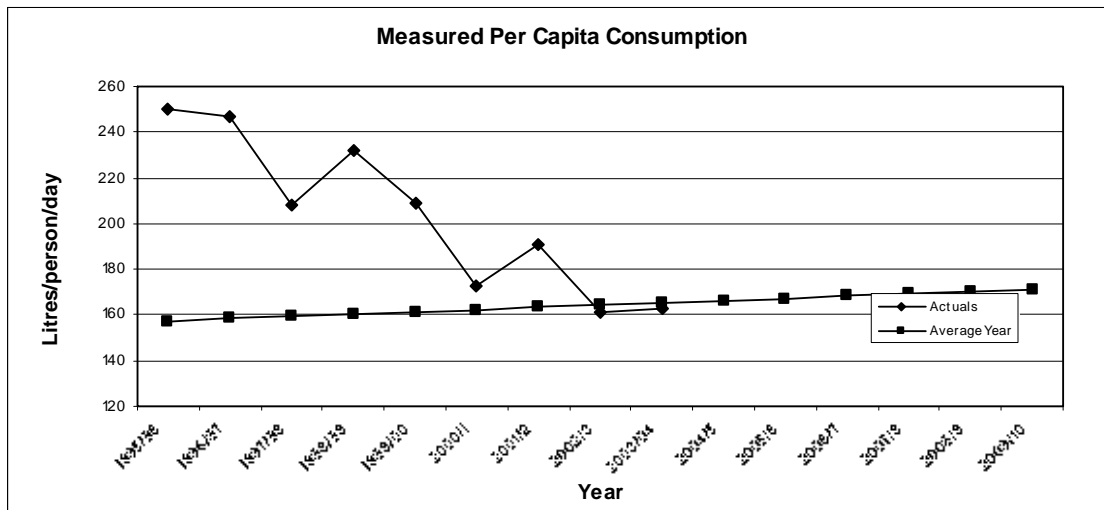
The overall trend is upward, which is believed to be due to reducing occupancy which automatically results in higher per capita consumption. Single person households use 70% more water per person than those in four person households.



Following the construction of several zonal interconnections, the number of Resource Zones was reduced from seven to three in 2002/03. Average consumption increased in all zones in 2003/04.

### Measured Property Databases

A review of data provided by meter optants in the Fixed Measured Property Database has revealed a low level of occupancy in those households transferring from the unmeasured to the measured tariff. As a result, an occupancy level of 1.68 persons per household has been applied to consumption figures for the Full Measured Property Database of over 11,000 properties which continues to grow by approximately 2,500 properties per year. Per capita consumption data from all of the Company's measured domestic households is shown below.



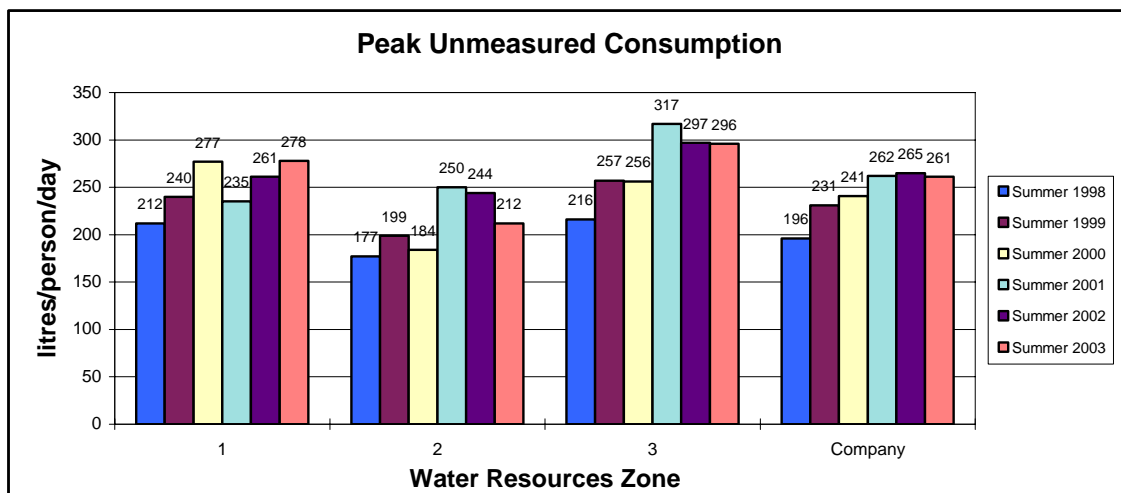
Measured per capita consumption has fallen from the very high levels recorded in the mid-1990s when the database was heavily influenced by sprinkler users who were required to transfer to the measured tariff. Per capita consumption in measured properties is now 163 l/h/d which is still above the average unmeasured per capita consumption of 161 l/h/d. The results from the database suggest that per capita consumption is significantly influenced by the occupancy levels of properties which opt for a meter.

**Peak Week Consumption**

Results for 2003/04 from both samples have to be treated with considerable caution as this year results were unfortunately only collected from less than 30 properties and so the results are susceptible to influence by a very small number of inconsistent readings.

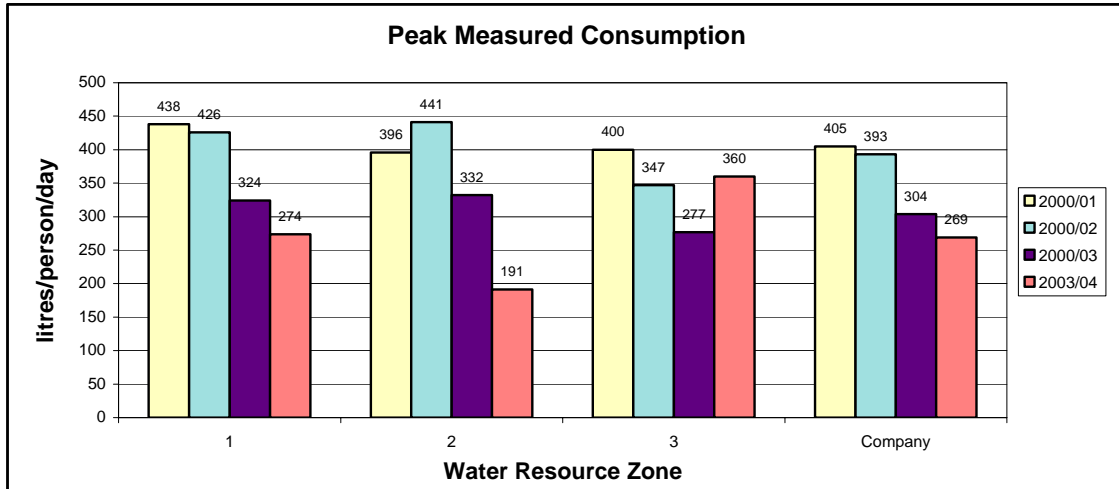
**Unmeasured Database Sample**

Consumption in the unmeasured database sample was slightly lower in the peak week of 2003/04 than the previous year. Over the six years there has been a clear upward trend, which is not mirrored in the annual average database.



**Measured Database Sample**

Consumption in the measured database was slightly lower in the peak week of 2003/04 than the previous year but still significantly higher than the overall results from the unmeasured sample and in Zone 5. Consumption in Zone 3, Chichester & Bognor Regis, increased and this was probably due to garden watering in the hot, dry summer.



**Conclusions and Proposals**

**Conclusions**

3,047 properties have opted to transfer from the unmeasured to the measured tariff, many of whom are believed to be low occupancy and/or high rateable value properties with little financial incentive to reduce consumption. The consumption data from these properties has been collected within the 'Full Measured Property Database'.

A 'Fixed' database of measured properties has been set up consisting of 1,500 representative properties which will enable the influence of climate conditions to be examined for measured properties. Occupancy data from these properties suggests that measured households have an occupancy rate of 1.68 persons per household, much lower than the unmeasured average of 2.5.

Annual Average Consumption in the unmeasured database was above average at 161 l/h/d as a result of a warm summer. The measured database recorded a per capita consumption of 163 l/h/d, compared to 161 l/h/d in 2002/03.

The peak consumption samples reveal that peak week consumption in measured properties remains higher than unmeasured. However there is a falling trend for the measured sample whilst the unmeasured sample has levelled off. There were, however, problems with collecting the data from both samples and as a result, results from less than 30 properties in each database was used. The results should therefore be treated with caution.

**Proposals**

The Unmeasured Databases for both average and peak demand will continue to collect data in order to support the end of year water balance calculations as well as help the Company to refine its future demand forecasts.

Both the 'Full' and 'Fixed' Measured Databases will continue to collect data and provide zonal and property type summary information. The full database will grow with time but the fixed database will be used to examine the impact of weather conditions on measured consumption. The Peak Measured Database will continue to provide an estimate of peaking factors and peak per capita consumption. Logger locations will be reviewed and additional properties will be monitored if necessary.