



15. GLOSSARY OF TERMS

Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
COAG	Council of Australian Governments
DCILGP	Department of Communication, Information, Local Government & Planning (Qld)
DR	Departure of Rainfall data from normal
DRD	Departure of Rain Days from normal
DSS	Decision Support System
DT	Departure of Temperature from normal
Kl/a	Kilolitres per annum
L/conn/D	Litres per connection per day
L/d	Litres per day
L/p/d	Litres per person per day
ML/d	Megalitres per day
R ²	“Goodness of Fit” Factor
RF	Residential Flats
RH	Residential House
UFW	Unaccounted For Water
WMA	Weighted Moving Average

Definitions

Term	Definition
Annual Water Savings	<p>By projecting demands using the modified baseline method and implementing a water conservation program, the <i>annual water savings</i> can be calculated. The annual water savings are defined as the reduction in water usage from the original baseline to the highest impact water conservation program. To calculate the annual water savings, the total water usage at the end of the analysis period (i.e. 2029) is subtracted from the modified baseline, and averaged over the 30 year assumed life of the analysis.</p>
Base Demand	<p>The level of fixed demand throughout the year. In the model it is assumed to be the level of internal use plus unaccounted for water.</p>
Benefit / Cost Ratios	<p>The benefit/cost (or B/C) ratio is determined by dividing the benefits of implementing a program by the costs of the program. Benefits of implementing a program may include:</p> <ul style="list-style-type: none"> • Deferral of capital works projects • Downsizing of capital works projects • Reduction in the cost of treatment and transfer of water • Reduction in the cost of transferring sewage • Reduction in energy costs to heat water <p>Costs of implementing a Water Efficiency project include the measure design and management, promotion and the costs of rebates, giveaways and audits.</p> <p>Benefits and costs do not include environmental or social aspects of a Water Efficiency project, or for the offsetting of costs through developing a co-sponsoring opportunities with organisations, such as the electricity supply companies.</p> <p>A B/C of 1.0 means that the costs of reducing demand equal the benefits gained, and therefore is referred to as the <i>breakeven point</i>.</p>
Calibration	<p>End use fixture models are assessed and calibrated using known and estimated per capita usage figures for particular devices. These usage figures represent the mean number of uses by each person for each fixture in a day. The figures will vary from area to area, and are used to calibrate the assessment model so that the baseline consumption for the study area is not altered by the usage encountered in a particular end use.</p>



Term	Definition
Consumer Price Index (CPI)	The CPI is an index of the price of the typical basket of consumer goods and services. Quarterly CPI figures are produced for the national accounts of most countries.
Costs	The cost of each measure is calculated on the basis of how much the measure would cost to implement. The cost of materials and / or equipment, as well as staff salaries, are taken into consideration, and figured into the overall evaluation of each measure. Measure costs are assessed on a per account basis, plus setup fees if required. Further discussion of measure costs can be found in the sections below.
Distribution System	System used for conveying bulk water to a water authority.
End Use Savings	For each measure shortlisted for analysis, there needs to be assumed or known water savings associated with it. The saving for each end use is equated as the water consumption saving per account, and expressed as a percentage of each account's total consumption. Past experience and previous studies have enabled savings for each measure, and affected end-use, to be implemented in the analysis. Savings data is also collected from the manufacturers of water efficient devices to assist in the analysis process.
External Use	Water used externally in activities such as irrigation.
Fixture Model	<p>A fixture model takes into account:</p> <ul style="list-style-type: none"> • New Appliance Market Share <ul style="list-style-type: none"> - portion of community that purchases an appliance for the first time • Appliance Replacement Rates <ul style="list-style-type: none"> - portion of community that replaces an existing appliance • Appliance Code Influenced Rates <ul style="list-style-type: none"> - portion of community that must install an appliance to comply with a regulation <p>These can be used to forecast future implementation of a certain fixture, or as a means to assess the effectiveness of implementing a fixture as a conservation measure.</p>
Gutter Flooding	A term used in the United States to describe excessive garden irrigation / watering that leads to water being wasted when it flows into the street. In some areas of the US, this is policed, and may lead to fines imposed by council guidelines.



Term	Definition
Internal Use	Water used internally in buildings and would also encompass any other water consumption that is not influenced by climate. This demand is assumed to remain unchanged by seasonal effects during the year.
Least Cost Planning	Least Cost Planning or Integrated Resource Planning aims to identify an appropriate balance between system operation / capacity expansion costs and the savings associated with programs aimed at increasing the efficiency of water use.
Measure	Otherwise known as a Conservation Measure; this is an action that can be taken by a utility / authority or the community to reduce water. When assessed, factors such as cost and potential water savings are taken into account, to ascertain the effectiveness of the measure in terms of benefit-cost and possible water saving.
Measure Life	The life of a measure is assessed to gauge the impact of a measure that requires repetitious implementation to gain an effective water usage reduction. Measures that would have a "life" associated with them could include public education that has an immediate effect on a select group of people. After a few years, the measure will have to be re-executed to affect another group of people to help realise the same sort of savings.
Modified Baseline	The <i>modified baseline</i> is a demand projection taking into account the effects of natural conservation. The result will be a reduced projection compared to the <i>original baseline</i> calculations.
Natural Conservation	Aside from focussed efforts to achieve water efficiency, water conservation will also occur as a result of developing technology and higher performance standards for water fixtures. Existing devices or appliances such as showers, taps or toilets will be superseded or replaced in future by more water efficient designs. This will produce a reduction in the original baseline forecast, as the original baseline is based on maintaining the status quo, and does not take into account the effects of the water efficient devices that may be available in the future. The water savings created by the replacement of existing devices with water efficient devices without the intervention of the authority is known as <i>natural conservation</i> .
New Appliance Market Share	The proportion of accounts that will purchase a new device or fixture, expressed as an annual rate.



Term	Definition
Original Baseline	A baseline refers to the projection of demands over a 30-year period from the original start year. The <i>original baseline</i> is a demand projection based on existing per capita demand, which is multiplied by the projected population in an area for any given year. The per capita demand is determined through the demand analysis presented in Section 4. This baseline excludes the effects of <i>natural conservation</i> .
Participation Rates	The assumed percentage of the existing customer base that would participate in a measure on an annual basis. Possible measure participation rates were considered and accounted for depending on the type of measure being evaluated. Certain measures will have higher participation rates, especially where rebates on customer participation are involved. From previous experience, it has been shown that customer attitude towards a measure is generally influenced by the offer of a rebate.
Per Capita	Per head of resident population.
Price Elasticity	$\frac{\% \text{ Change in Quantity Consumed}}{\% \text{ Change in Price}}$
Replacement Rates	The rate at which devices or fixtures are replaced annually – usually as a result of the device or fixture failing. These rates are applied to Fixture Measures in the DSS.
Reticulation	System of conveying water from the distribution points to the customer's service lines.
Savings	Each end use that will be impacted by a particular measure is assumed to have a certain level of saving, expressed as percentage of the end water use.
Seasonality	Data variation caused by external weather effects, i.e. high rainfall season causing a reduction in water demand, hot / dry summer season causing an increase in water demand.
System Loss or Leakage	Water that escapes from the reticulation system.



Term	Definition
Total Community Benefit/Cost Ratio	<p>The community will incur cost for implementing a water efficiency measure. Such costs relate to the purchase of a new device or appliance that will contribute to water savings or to offset the costs experienced by the utility in activities such as audits.</p> <p>If a measure results in the reduction of hot water usage, such as those involving shower related conservation measures, there is a higher cost saving to the community than there would be to the utility. This is because the cost of heating each unit of water has been lowered, increasing the savings to the community. The savings that are achieved through the reduction of hot water usage are expressed as <i>energy savings</i>.</p> <p>In simple terms, the total community benefit is comprised water utility benefits plus hot water savings.</p>
Total Potential Savings	The <i>total potential savings</i> are defined as the total water saved through both a water conservation program and natural conservation.
Unaccounted for Water	The difference between metered water consumption and production. Strictly speaking a system with no metering of consumption would have 100% unaccounted for water.
Utility Benefit/Cost Ratio	To implement the measures discussed, the utility is usually required to provide a proportion of the required funds. Costs typically relate to staff or materials needed for the implementation of measures. High B/C ratios for the utility usually relate to a measure with only a small outlay and major benefits, such as the Irrigation Advisory Service.
Water Consumption	All water passing from reticulation mains into customer's service lines.
Water Efficiency Plan	<p>Also referred to as Water Efficiency Plan or Demand Management Program.</p> <p>This is a program that is formulated by an authority / utility to help the community conserve water. Each program is made up of a group of measures that would enable the community to reduce their water usage. The cost to implement these programs is borne either by the utility and / or the community. Costs can be shared through the use of rebates, where the community makes an initial outlay, which is later discounted by a payment from the utility.</p>
Water Production	Water passing through bulk meters and treatment facilities into the reticulation system.
Weighted Moving Average	Average calculated over a specific span of time, at each segment of time, i.e. calculated each month for the preceding twelve months.



Term	Definition
Yield	Amount of water stored by a rainwater tank for later use for irrigation or other purposes.