

Water Efficiency Management Plan (WEMP)

Guidelines for business

Waterwise Business Program

Participation in the Waterwise Business Program aims to improve the water management processes of the Water Corporation's major commercial and industrial customers. In addition to business customers, all government agencies state-wide must participate in the Waterwise Business Program (WBP).

Businesses that use more than 20,000kL of scheme water per reading year and government agencies are required to complete and submit a water efficiency management plan (WEMP) to the Water Corporation.

The WEMP will include:

- A profile and description of the business submitting the plan and the site operations.
- Site water use balance table and usage history.
- Water savings opportunities (including and estimate of the likely savings).
- Water savings action plan (including timeframes).

Once the WEMP is submitted, it will last 5 years. However, if the business changes ownership or the water use increases significantly, a revised WEMP may be required.

All businesses participating in the WBP will be required to:

- Develop a Water Efficiency Management Plan (WEMP).
- Submit an annual report detailing the progress against the water-saving action plan & benchmark results.

Penalties for non-compliance

Under the Water Agencies (Water Use) By-laws 2010 financial penalties apply to customers that do not meet the mandatory requirements. Customers who do not supply information in a timely fashion will be ineligible for the Waterwise Business Recognition Program.

Benefits

Participation in the WBP will result in businesses:

- Gaining a greater understanding of the water and wastewater management processes on site.
- Focusing management on the continuous improvement of water management processes.
- Understanding water and wastewater costs and associated energy costs.
- Demonstrating and promoting commitment to improving environmental outcomes.
- Establishing and achieving targets to reduce scheme water use.
- Improve public perception.



Further information

Additional information can be found on the [Waterwise Business](#) section of our website.

Water saving information and checklists are also available on the website to help you understand your water use and set water saving targets.

You might also like to contact one of our accredited [Waterwise Water Auditors](#), who can investigate where your water is going and give you advice on how to become more water efficient.

We can also provide information on your site's historical water use.

Confidentiality

We will ensure that all information provided by participants of the Waterwise Business Program remains confidential.

Acknowledgements

This guideline draws together the best available published water efficiency information relevant to commercial and institutional businesses. This guideline and WEMP template are based on material developed by City West Water and Yarra Valley Water.

We wish to thank the following organisations for their assistance in preparing this material:

- City West Water
- Sydney Water
- Yarra Valley Water
- Master Plumbers and Mechanical Services Association of Australia
- Australian Institute of Refrigeration Air Conditioning and Heating
- Plumbing Industry Commission of Victoria.



Completing your WEMP

1. Introduction

The introduction includes a brief description of the current water situation in Western Australia, and reasons why a WEMP is beneficial to businesses.

WEMP objectives and methodology are outlined. Businesses have the opportunity to add any additional objectives.

2. Company information

2.1 Company Details

Businesses are required to provide information about their site, business activities and water. Table 1 (mandatory) in the WEMP template will assist you in providing the required information.

Businesses will be required to list their organisation contacts and any peak body associations they may be part of e.g. Caravan Park Association, Hotel or Hospital Engineers etc. There is also provision to include information on existing water conservation activities. For example; is there a current water campaign in the work place with staff or customers and if so, what?

2.2 Water Management Team

To ensure your WEMP is successfully implemented it is highly recommended that a Water Management Team is established. Decide who your appropriate management contact(s) are and involve key staff members who may influence or have an understanding of how water is used at your site. This will enable you to readily identify and implement water-saving measures. You may wish to involve staff from groups such as:

- Senior management
- Operations / Facilities managers
- On-site maintenance staff
- Finance/accounting, who can provide financial information to support initiatives
- General staff
- OH&S and environment staff

Please list your Water Management Team members in **Table 2** (mandatory) of the WEMP template.

Table 2 - Water Management Team Details

Name	Position



3. Water use

To identify what savings can be achieved at your site, it is essential to understand where and how water is used and how much it costs. The Water Corporation’s primary focus is scheme water, but to make a WEMP more meaningful, a holistic view has been taken in developing the WEMP template. Businesses have the option to include all sources of water (e.g. bore water, recycled, reclaimed water etc) in the analysis.

3.1 Baseline Water Use

Calculating Baseline Water Use

Your baseline water use is the amount of water you currently use on site. This information helps to determine what potential savings can be achieved in the timeframe identified. It also helps you to measure your performance. Savings can be easily identified by comparing your water use each year with your baseline water use.

To determine your baseline scheme water use, you will need your site’s water bills for the previous 12 to 36 months. For assistance with this information, please contact your Water Corporation Key Customer Relationship Manager, WEMP Program Administrator or email water.efficiency@watercorporation.com.au.

When reviewing your site’s water use history, ensure the data represents normal operating conditions, i.e. there were no shutdowns or refurbishments during the period. If there has been a variation from normal conditions during the period, please include a description or reason for this and the estimated impact on water use.

If you have undertaken water efficiency projects in the past 12 to 36 months that have significantly impacted your water use, please include a description of those projects. Businesses that are currently at best practice within their industry are encouraged to demonstrate this in their WEMP.

Complete **Tables 4a** (mandatory) and **4b** (optional) using information on your water bills to calculate your baseline water use.

In addition to the data in **Tables 4a and 4b**, businesses may also wish to include their baseline data in visual forms. *The following graphs are useful aids for setting your water-saving targets.*

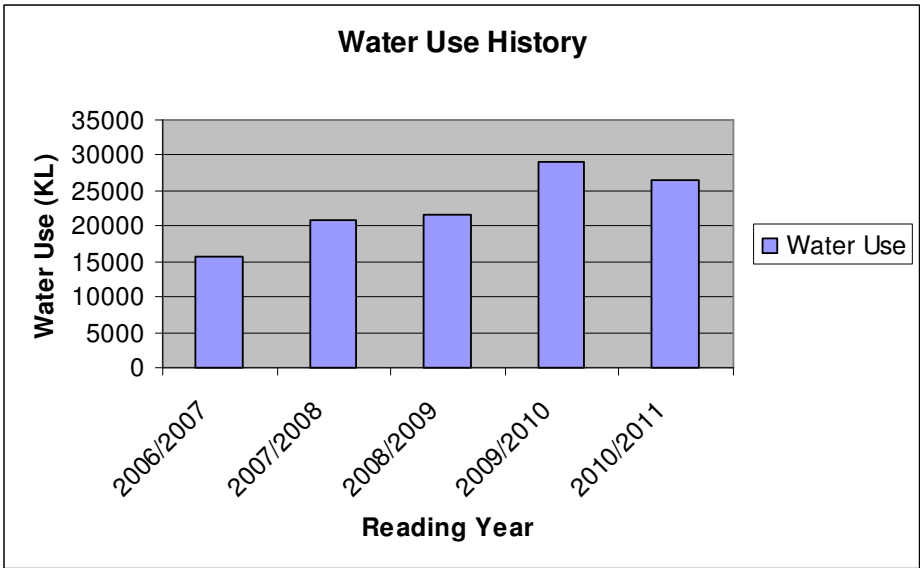
- Annual Scheme Water Use (financial year)

Table 4a (mandatory)

Year	Water Use (kL)	Average Daily Water Use (kL/day)
e.g. 2009-2010	29,000 kL	79.45



Table 4b (optional)




Business Comment: *Water savings implemented in 2010 – water efficient showerheads, pool blankets and waterless urinals. We hope to see an even bigger decrease in total scheme water usage for the 2011-2012 year.*

3.2 Water Balance

Section 3.1 determined how much water your business uses. A site water balance is now necessary to determine how much water is actually used in each area of your business. A site water audit or sub-metering will be useful in accurately determining the water use in each area. You can use your site knowledge to make an estimate. **Table 5 below (mandatory)** has the required fields for completing this section.

Table 5 Water Use Areas

Major Water Using Facility	Water Used (kL)	Water Source (Scheme, recycled or ground)	Percentage of Total Water Use (%)
Kitchen / Food preparation areas			
Toilets			
Hand basins / showers			
Cleaning			
Backwash			
Cooling tower/air conditioner			
Process Use			
Irrigation			
Other 1			
Other 2			
TOTAL			100%
Compared with [Previous Financial Year]	[Previous Financial Year] Use]		



To ascertain whether water use on site is understood, please list factors that influence your site's use. This could include:

- Days of operation and opening hours
- Number of staff/contractors on site
- Number of customers
- Production rates (number of units produced)
- Refurbishment / closure of areas
- Seasonal factors such as rainfall

Monitoring of actual water use

Once water using areas have been identified, the actual water used can be measured through sub-metering. Sub-metering high water demanding areas (such as cooling towers, production process, irrigation, showers etc) will help you gain a better understanding of each area and identify savings opportunities. This can be done manually (involve staff members to read the main meter at night and first thing in the morning, to check for leaks) or automatically via data loggers to record water use information in real time.

Please visit the Water Corporation [Waterwise Business](#) website for information and templates to assist you in reading your meter (and sub-meters) and recording this information. Also located on our website is a list of [water meter suppliers](#).

3.3 Predicted future water use

Once a WEMP has been submitted and approved, it is valid for 5 years. Hence, if there are plans for expansion (construction), change in water use (new product line) or planned water conservation initiatives please provide a description of these in section 3.3.

This will assist you in explaining any increases in water use when submitting your annual review.

4. Indicators and targets

4.1 Benchmarking

Water use is directly related to business activities. A Core Business Indicator (or water use indicator) is a measure of activity that takes into account core business operations specific to the site – for example how much water is used per tonne of product manufactured on site.

It is important to consider how variables such as production rates, number of staff/contractors or the number of customers affect water use when determining water-saving targets.

Determining a Core Business Indicator allows measurable targets for water reduction on the site to be set, regardless of these variables, and enables comparison of water use across years. To be eligible for the WEMP recognition program you must use the benchmark indicators approved by the Water Corporation shown in Table 6a. Please refer to the table below for industry specific benchmark indicators.

Approved Water Corporation Core Business Indicators are listed in the table below.

Table 6A - Water Corporation Core Business Indicators

Business/Industry Type	Core Business Indicator	Benchmark Indicator
Shopping Centre	Number of customers	kL/patron AND kL/m ² GLA
Hotel / Motel	Occupancy numbers	kL/occupied room
Caravan Park	Occupancy or site numbers	kL/occupant
Wharf / Port	Vessel numbers or amount of tonne shipped	kL/vessel or kL/tonne shipped
Hospital	Patient bed days	kL/patient bed day
Mining	Mining production figures	kL/tonne of ore produced or kL/tonne LPG produced
Prison	Number of prisoners & employees	kL/prisoner & employee
TAFE / University	Number of full time equivalent students & staff	kL/student & staff
Aquatic Centre	Patron numbers	kL/patron
Manufacturing	Animal or food processed , Litres produced	kL/pig processed or kL/bottle of wine

Other indicators are possible .Please contact the [Water Efficiency Team](#) to discuss other indicators that have been omitted and are relevant to your business.

Again, graphing this information is a useful way of viewing the changes in water-use efficiency over time. You can represent this annually by using the total volume of water used each year and dividing it by your business efficiency indicator (e.g. total number of customers).

Complete Table 6B (mandatory) to show changes in the key business activity indicator over time and provide a comment on the increase/decrease in efficiency (Interpretation of results).

Table 6B Benchmarking

Period (year)	Water used (kL)	Your Benchmark Indicator (e.g. tonne or m ² GLA)	Benchmark (eg kL/tonne or kL/m ² GLA)
<i>e.g. 2009-2010</i>	<i>10,000</i>	<i>100,000 (tonnes)</i>	<i>10 kL/tonne (10,000kL/100,000 tonnes)</i>



4.2 Water efficiency target

Setting water reduction targets will help drive the implementation of water conservation actions in your business. Targets need to include a realistic timeframe and the base year from which improvements will be measured.

It is possible that your site is already operating at best practice. If so, congratulations! You will still benefit from developing a WEMP to gain a full understanding of water use to maintain or improve current efficiencies.

Setting an overall target now provides good motivation for your team to begin the program, even though you may be optimising water use already. The WEMP allows for both short-term and long-term targets to be set. Based on results observed to date, we recommend that your short term water efficiency targets should be at least a 3 - 5% reduction and long term targets at least a 10% reduction from your benchmark.

4.2.1 First year water efficiency target(s) – short term

The short-term target should indicate what percentage reduction in water use can be achieved at your business site within the next year.

For example “The site will reduce its water use per customer by 5% from the 2009/10 levels of 1.5kL/customer to 1.42kL/customer by 2011/12”.

4.2.2 Three year water efficiency target(s) – long term

State your water efficiency targets as a percentage reduction in terms of your total water use **or** in terms of your business indicator (benchmark).

For example “The business aims to reduce water use per customer by 15% from 2009/10 levels of 1.5kL/customer to 1.2kL/customer by 2012/13” **or** “Our target is to reduce the total water use on site by more than 15% over a five year period”.



5. Opportunities to save water

Now that you understand the site's water use and have set targets to reduce it, the next step is to identify opportunities within your business towards saving water.

5.1 Operational efficiency and conservation

Increasing the operational efficiency of plant and equipment on site is one of the easiest ways to ensure water is used as efficiently as possible. Describe the efficiency measures that you will be undertaking at your site; a list of actions and descriptions of how this will reduce your water use is required.

For example:

- Regular water meter readings in an effort to create consumption trends and allow analysis of data that could lead to the identification of any leaks.
- Investigate the feasibility of sub-metering the major water using tenants or areas e.g. (food court retailers, other food retailers, major retailers).
- Installation of water efficient taps and showerheads.
- Install automatic controls and cut off valves on cleaning hoses to cut off water use where feasible.

5.2 Education and awareness

Improved staff awareness can lead to significant reductions in water use. List any cultural/educational opportunities at your site to increase staff and community awareness regarding water efficiency.

For example:

- Staff Education – Water Efficiency addressed at staff meetings, Water efficiency to be a part of the induction training for new employees.
- Community Education – Stickers and/or posters in all amenities areas promoting Water Efficiency, Awareness competition with customers.

5.3 Water re-use and wastewater management

Water re-use opportunities relate to the capture and re-use of stormwater and wastewater. Improved wastewater management will enable the targets set in Section 4 to be achieved.

For example:

- Review rain water harvesting opportunities and potential use in cooling towers, toilets, reticulation and on site water treatment.
- Investigate into Grey Water Re-Use.

How have other businesses achieved their water reduction targets?

We have some great case studies and videos that demonstrate the great initiatives that businesses are doing to reduce their water use. You can find these examples on our [website](#).

Action plan



6. Action plan

Once you have identified your list of Water Saving Opportunities the next step of the WEMP process requires you to produce an action plan identifying what, how and when these will be implemented. The completion date of these actions may be influenced by their payback period, or other issues associated with implementation (include these issues in **Table 7**)

Table 7

Areas of Actions <ul style="list-style-type: none"> • Operational Efficiency and Conservation • Water Re-use and Wastewater Management • Education and Awareness 	Estimates Savings - kL/year (Only if Applicable)	Proposed Completion Date	Status of Action Items (Completed or ongoing)
Short-term actions (up to 12 months)			
<i>E.g. Community Education – Stickers and/or posters in all amenities areas promoting Water Efficiency, Awareness competition with staff/ customers.</i>		<i>Feb 2012</i>	<i>Ordered posters & stickers from Water Corp</i>
Long-term actions (greater than 12 months)			
<i>E.g. Investigate the feasibility of sub-metering major water using areas</i>		<i>May 2013</i>	
Ongoing actions			
<i>E.g. Staff Education – Water Efficiency addressed at staff meetings, Water efficiency to be a part of the induction training for new employees</i>		<i>Commenced Mar 2012</i>	<i>Ongoing since commencement</i>

7. Management commitment and Water Corporation acceptance

Section 7 (mandatory) confirms commitment from the business to implement the water-saving actions identified in the WEMP. Once the WEMP has been reviewed and accepted by the Water Corporation, section 7 will be signed by the business completing the plan and the Water Corporation. The Water Corporation will notify the business that the WEMP has been accepted.

Customer Commitment to WEMP			
[Business Name] at [site location]:			
a)	Will implement the water saving measures stated in the WEMP and ensure its employees and contractors assist in implementing these actions		
b)	Acknowledges that the Water Corporation may comment on the WEMP and/or request additional information relating to the WEMP		
c)	Acknowledges that the Water Corporation will monitor the WEMP		
d)	Will submit an annual report, in accordance with Section 6 (Table 7- Action Plan), detailing progress made on the WEMP		
e)	Acknowledges that the WEMP will expire five years from the date of approval as shown below, unless in the opinion of the Water Corporation the water use on site changes significantly enough to warrant a new WEMP		
Name			
Position	Most senior staff member (refer to Table 1)		
Signature		Date	
Water Corporation Acceptance of WEMP			
The Water Corporation has reviewed and accepted the WEMP. Through acceptance of this WEMP, the Water Corporation acknowledges that the business has complied with the requirement to submit a WEMP. The Water Corporation will also recognise businesses that achieve considerable water savings.			
Name			
Position			
Signature		Date	
Document Number			