Water Efficiency Management Plan

Watercare

Introduction

Watercare is committed to working together with businesses to find practical and effective opportunities to optimise water use.

Water Efficiency Management Plans (WEMPs) are a key mechanism for tracking water use performance over time and a useful framework for progressing towards best practice management of water use.

More tools to assist customers are available on the Watercare website

Preparing and implementing a WEMP involves:

- Documenting and considering recent water use patterns
- Developing an understanding of where and how water is being used
- Identifying, quantifying, and planning water savings opportunities
- Planning to continually improve monitoring and tracking

The benefits of WEMPs include:

- Improved management of water consumption resulting in reduced water-related costs
- Support of broad community efforts in achieving the goals set out in the Auckland Water Efficiency Plan
- Streamlined water use reporting
- Improved awareness of upgrade opportunities and feasibility
- Contributes to your company sustainability goals

Customer details

Table 1:

Organisation name	
Account number on Water Bill	–
Site address	
Industry Category	
Brief Description of Site	

	Name	Position	Phone/email
Organisation contacts			

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Historical water use

Use water use records from water bills to show the trend over the past five years.

Baseline water use represents the level of water use expected to continue into the future. Average consumption over the past 5 years is a good starting point, then adjust for any changes.

Table 2:

Year	Water use (kL/yr)	Water use trend (increase/decrease)	Explanation e.g. nothing changed, days of operation, production rate, plant shutdown
Baseline	**kL/year**	**kL/day (W)**	**Use kL/day (W) for water use breakdown and bench-marking in the next sections**

Benchmarking

Benchmarking water use helps to track changes in water efficiency even with fluctuations and changes in business activity on site. It is recommended to select at least one 'business activity measure' that is generally representative of what would drive water use at the site and easily tracked.

Table 3:

Water use (kL/day) (W)	**Business activity measure** *(e.g. Patrons/day, kg/day produced)*	**Business activity quantity** (Q)	**Benchmark** 1. (B = W/Q)	**Target benchmark** See below (T)	**Water use if target reached** (WU = T x Q)

Industry benchmarks (As available at 2021)

Table 4:

Industry Sector	Business Activity Measure	Best Practice Benchmark (T)	Notes
Office building/admin centre	kL/m²/year	Less than 0.5	Based on Net Lettable Area With cooling towers can increase to 0.7kL/m²/year
Apartment building	L/bedroom/day	Less than 200	
Shopping centre	kL/m²/year	1.35	
Hotel/motel	L/bedroom occupied/day	Less than 200	
School	L/student/day	9	Can be higher with irrigated playing fields. Separate fields use if possible
Food and beverage factory	L/Litre produced		Depends on the site, requires detailed analysis
Abattoir	kL/tonnek L/carcass	Less than 1 Less than 0.1	
Chicken processing facility	L/bird	Less than 15L	
Playing field	kL/m²/year	0.2	Can be higher in non-coastal or low rainfall areas
Golf course	kL/m²/year	0.5	Greens and Tees only
Laundry	L/kg linen washed	Less than 15	

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Water meters

Locate and identify any water meters across the site. There will be main meters that are used for billing, and there may be additional submeters installed. Photos will help identify the type of meter and potential for monitoring.

Table 5:

Meter ID	Location	Area(s) supplied	How often is the meter monitored or read?	Is this a sub/ check meter	Photo

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Water use breakdown

Understanding where and how much water is used across a site is critical to identifying and prioritising water savings opportunities effectively.

This can be challenging to determine for some sites but can be done through use of sub-meters and/or a detailed water audit to accurately quantify volumes. The level of confidence in the data can be noted in the table below.

A water use breakdown aims to show the water users using 10% or more of the site's total. Any smaller users can be grouped into an 'other' category.

Please add and rename rows to reflect your business operations.

Table 6:

Water using area/ type	**Volume** *(kL/day)*	**Percentage of total baseline**	**Water source** *(Mains, rainwater, recycled water etc.)*	**Confidence** (*Metered, audited or educated estimate)*
e.g. leakage				
e.g. toilets				
e.g. irrigation				
e.g. cooling towers				
e.g. clean in place				

Previous water efficiency improvements

Please list any changes or improvements already done that would have improved water efficiency and/or water use intelligence in recent years. It is okay to leave this table blank if nothing relevant.

Table 6:

Improvement	**Details**
e.g. Bathroom Retrofit	
e.g. Maintenance change to address leakage	
e.g. Staff education	
e.g. Installation of sub meter	

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Action plan

Use the below table to map water efficiency initiatives using expected times, costs and savings.

Table 7:

Description of Water Efficiency Measure	Type of measure eg: Operational efficiency and conservation; Water re-use and wastewater management; Education and awareness; Improved intelligence and tracking; Management commitment/policy	Water savings (kL/day)	Other savings (eg. energy, trade waste charges)	Cost to implement actions	Ongoing costs	Pay-back period (yrs)	Person/ department responsible for implemen-tation	Time-frame	Challeng-es/risks
TOTAL									

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Management activities

Finalisation and implementation of WEMP

This WEMP recommends actions that may achieve water savings. These actions need to be agreed to by the business management and implementation may require some funding.

The savings identified may be used as the basis for a business case to secure funds and ensure financial feasibility of the actions.

Monitoring and evaluation

The most reliable method of tracking water use and the savings achieved from implementing water savings actions is real time monitoring of water meters. The main meters can be monitored by attaching dataloggers with remote communications to a monitoring website. Sub meters throughout the site will help narrow down the main water using areas and increase knowledge of the potential issues and savings. These can also be connected to remote dataloggers, or to the sites BMS if available.

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