

waterMAP GUIDE

How to build a waterMAP



Our Water
Our Future

A Victorian
Government
initiative



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Minister's foreword

Victoria's industrial and non-residential customers are making a significant contribution to helping secure the State's water supplies.

In Melbourne alone, these customers have reduced their water consumption by about 41 per cent compared to 1990s averages.

Through its Water Plan, the Victorian Government is working closely with large water users on a range of important programs that are saving billions of litres of water.

One of these programs is the water management action plan (or waterMAP) initiative, which helps businesses and non-residential organisations that use 10 million litres or more of water per year reduce their water consumption.

There are now approximately 1,750 customers with waterMAPs in place across Victoria.

Collectively, these customers have saved around 15 billion litres of water in just the first two years of the waterMAP program. Many of their water-savings were achieved by simple changes, such as installing dual-flush toilets or by running employee awareness campaigns.

Completing and implementing a waterMAP benefits your organisation in multiple ways. You'll gain a better understanding of your operations and once you start saving water you'll also enjoy lower operating costs.

Thank you for your commitment to better water management. I am confident that by working together we will continue to achieve Victoria's water-saving goals.

The Hon Tim Holding MP
Minister for Water

How to build a waterMAP

All Victorians are being asked to reduce the amount of drinking water we use for other purposes to help secure the state's precious water supplies.

Commercial, industrial and institutional organisations that use water from an urban water supply must show they are improving their water efficiency.

If your organisation uses more than 10 million litres (ML) at a site per year, by law, you must register your intent to prepare and submit an annual waterMAP to your water corporation.

- Your waterMAP sets out your plan to continually improve water efficiency.
- It identifies water-saving actions you will implement in the short, medium and long-term.

If your organisation operates multiple sites, you must submit a waterMAP for each site that consumes 10 ML or more of water per year.

If you do not submit an annual waterMAP you may be substantially fined and/or water supply may be restricted to your site.

You may be exempt from submitting a waterMAP if you already participate in the EPA's Environment and Resource Efficiency Plans (EREP) program. Following your authorisation, the water component of the EREP will be transferred to your water corporation to be used as your waterMAP.

The 7 waterMAP steps

Step 1

Calculate your current (baseline) water use

Step 2

Identify where and how you use water

Step 3

Set your water-saving target

Step 4

Identify and assess potential water-saving activities

Step 5

Complete your waterMAP

Step 6

Implement your waterMAP

Step 7

Report annually to your water corporation

waterMAP registration form

Organisation details			
Organisation name			
ABN			
Operating name <i>(if different)</i>			
Bill account number(s)			
Site address			
Postal address			
Industry and brief description of main business activity conducted on your site.			
Organisation contacts			
Senior Site Manager:	Name		
	Title		
	Phone		
	Email		
Other contact:	Name		
	Title		
	Phone		
	Email		
Site activities			
Water consumption (insert year)			(kl/year)
Wastewater volume (insert year)			(kl/year)
Office use only			
Registration accepted by (name)			
Registration number			
Registration accepted on (date)			

Step 1

Calculate your baseline water use

Your baseline water use is the amount of water currently consumed at your site.

To identify where you can save water you must know your baseline use.

You must also understand the locations and patterns of water use on your site and how much it costs.

Your water bills will provide the information needed to calculate your baseline water use, such as your average daily use. You will need water bills for the previous 12 to 24 months.

It is important the information you use represents normal operating conditions. For example, shutdowns or refurbishments may mean you used less water than normal for a while. Always describe any change in standard operations and how this affected water use in Template 1.

Separately identify or estimate water used for fire service testing when you can.

Key Business Activity Indicator

Template 1 asks you to identify the water used for your Key Business Activity Indicator.

The Key Business Activity Indicator describes the core business activities conducted on your site.

These activities often consume the most water. For example, if your business relies on public visitors, the more visitors you have, the more water you are likely to use. If you are a manufacturer and increase your output, your water use will likely increase.

It is important to consider how variations like this affect water use when identifying your water-saving targets.

Once you have determined your Key Business Activity Indicator you can set a measurable water-saving target (Step 3) regardless of variations in your business operations.

Table 1 provides an example of how to calculate your Key Business Activity Indicator. It is based on a business which attracts public visitors; so its business activity indicator (or performance indicator) is measured on how many visitors it attracts.

Table 1 - Calculate your Key Business Activity Indicator

	Example only	Your actual
Data collection start date	22/11/09	
Data collection end date	22/11/10	
A = Baseline drinking water used per year	20,000 kL	
Business efficiency indicator	Number of visitors	
B = Quantity of business efficiency indicator	10,000 visitors	
Is this representative of normal operating conditions?	No	
If not, give reasons for variation (such as shutdown, seasonal, refurbishment).	Refurbishment	
C = Impact of variation in water use (kL per year)	5,000	
D = A minus C Baseline water use corrected for variation (kL)	15,000	
E = D divided by B This is your Key Business Activity Indicator. You can now complete Template 1 below.	1.5kL/visitor	

Template 1 - Calculate your baseline water use

Month/Year	Total water used (kL)	Number of days	Average daily use (kL)	Water used (kL) for Key Business Activity Indicator	Cost	
					Total water used	Sewerage
Example: 01/2010	2,524	30	2,500 divided by 30 = 83.3			
Total per year						

Describe any deviation from normal activities that reduced or increased water use at this site:

Step 2

Identify where and how you use water

Once you know how much water is used at your site it is important to understand exactly where it is used.

Identify all the main places where water is used on your site. This might be your kitchen, bathrooms, laundry, cooling tower, outdoors, boiler or equipment cleaning bay.

Record information in Template 2.

Monitor meters for about four weeks

You can estimate water use for particular activities if they occur during particular times on your site.

For example, if equipment cleaning occurs between 3–5 pm each day you can estimate how much water this uses by monitoring your water meter.

If your business experiences seasonal variations you may need to monitor over a different timeframe. Your water corporation can advise on the best monitoring methods for your site.

Consider installing check-meters

These meters read the water used by particular pieces of equipment on your site.

Check-meters provide a more accurate picture of your water use. They also help identify any water use unaccounted for that may be caused by leaks or appliances operating while your facility is unattended.

When you have equipment that you estimate uses 15 per cent or more of your total water use it is recommended it is permanently check-metered.

Check with your water corporation to see if it can help with temporary or permanent check-meters or advice on how to read, record and apply the information check-meters provide.

Step 3

Set your water-saving target

Setting a high-level water-saving target is a good way to motivate your organisation into action.

Your high-level target should relate to the Key Business Activity Indicator calculated in Table 1. For example, if you are a business which attracts public visitors your target might be to use no more than 50 litres of water per visitor.

Best-practice water-efficiency benchmarks for your industry may be available. Check with your water corporation.

If benchmarks are not available, you should aim to reduce water use at your site by at least 10%. You should set a realistic timeframe to achieve this in.

After completing your waterMAP you may find your site is already operating at best-practice. If so, congratulations. You have still gained a better understanding of your water use from developing a waterMAP and identified ways to further improve water management.

Record your water-saving target in Template 3.

Template 3 - Water-saving target

Target		Time frame
<i>Example:</i>	<i>To operate at best-practice of 50 litres per visitor</i>	<i>1 year</i>
Your target:		

Step 5

Complete your waterMAP

Once potential water-saving actions are identified on your site, analyse each to assess their feasibility and likely benefits. This helps prioritise and plan your actions.

You may need further advice from a specialist. For example, you may identify your cooling towers as an opportunity for improvement, which calls for an expert technical review. You may aim to collect more rainwater and require advice about how to best do this.

Your water corporation can provide details of expert suppliers to help with these investigations.

Your water corporation can also advise if financial assistance is available to help with water-saving activities.

Some activities may require staff training. Your water corporation can also assist with this.

Template 5 completes your waterMAP

You should submit this document with all templates completed to your water corporation.

Once you have completed Template 5 you can start the final step – implementing your waterMAP.

Template 5 - waterMAP actions

Action	Cost	Estimated savings		Payback period	Completion date	Status
		Water (kL/day)	Other			
Short term: 3 – 6 months						
Example 1: Check and fix taps, showerheads, toilets and urinals.	\$1,500	0.2kL/day	Water and sewage costs saved \$210	7 yrs	End of JUN 2010	Have appointed a staff member and provided time to complete assessment and to appoint and manage contractor to fix.
Example 2: Post signs and stickers at key water-use locations highlighting water-efficiency actions that staff can or must take.	Provided free from water corporation.	Potential for up to 50L/day	Greater awareness of water-use and promotion of water-efficiency activities to staff, contractors and visitors.	0	FEB 2010	Contacted water authority and waiting for signs to be delivered

Action	Cost	Estimated savings		Payback period	Completion date	Status
		Water (kL/day)	Other			

Medium term actions: 6 months – 2 years

Example 3: External water audit	\$5,000	To be determined by audit	To be determined by audit	To be determined by audit	Jul 2010	Facility manager sourcing Consultants and scope of audit
Example 4: Replace four water cooled vacuum pumps with efficient air cooled vacuum pumps	\$86,300	21.9kL/day	Trade waste savings Energy and greenhouse gas emission savings	5.6 yrs	Mid 2010	Pumps ordered

Long term actions – more than 2 years

Example 5: Stormwater project	\$350,000	55kL/day	Water and sewage cost savings \$58,000	6yrs	End 2013	In planning

Action	Cost	Estimated savings		Payback period	Completion date	Status
		Water (kL/day)	Other			

Ongoing actions

Example 6: Include water conservation as a permanent agenda item at monthly managers meeting, and department meetings	\$0	0	Facilitates the sharing of information and ideas as well as provides for a coordinated approach to water conservation across the entire business	0	On-going	First week of every month

Step 6

Implement your waterMAP

Now you have completed your waterMAP it's time to put it into action.

- Appoint a responsible staff member to oversee water-saving measures on your site. Highlight this appointment across your organisation to reflect the importance of the role.
- Provide incentives for staff who have a direct influence on water use by linking water-saving measures to performance reviews.
- Update your service providers on your waterMAP. Advise them of any actions they must take. They might also have good water-saving ideas. Consider including water efficiency indicators in performance contracts.
- Schedule regular water-saving meetings with key people to review your progress. Include the status of water-saving actions in regular management documents and meetings to highlight its importance to senior staff.

Update your organisation's policies and procedures to incorporate any water-saving initiatives implemented.

Monitor your water use

Monitoring water use means you can measure and celebrate your success.

Monitoring also identifies which actions bring the most benefits, which need to be reviewed and any new actions required.

Regular monitoring also means you will be alerted to leaks or other issues that cause a spike in water use.

Use Template 6 to record your water use.

Communicate water-saving actions and success

Promote your water-saving targets and actions to staff, contractors and site visitors.

- Advise them what they must do to help save water.
- Include your water-saving targets and activities in staff induction kits.
- Recognise the water-saving ideas, involvement and achievements of employees.
- Promote water-saving achievements to customers and stakeholders on your website and in customer communications materials.

Your water corporation can provide ideas for staff communications as well as resources including posters for your site.

Step 7

Report annually to your water corporation

You must by law report your progress on implementing water-saving activities set out in your waterMAP to your water corporation each year.

Reporting requirements include:

- Water consumption levels over the year.
- Update on implementation of waterMAP actions.

Your water corporation can help you with annual reporting requirements.

It's a good idea to keep in touch with your water corporation or regularly visit its website. This will help ensure your organisation is kept updated about Victoria's water-saving projects and any new technologies available that can reduce your water use.

Your water corporation can also advise of financial assistance that may become available to help you manage water more efficiently.