



ActewAGL



School Water Audit

Think water, act water

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On behalf of:

ACT Office of Sustainability
Chief Minister's Department
ACT Government





Walkthrough Water Audit

A walkthrough water audit is when you physically walk around the school inspecting all areas where water is used.

What you are auditing?

From the walkthrough you will be able to create an inventory of all the items that use water in the school.

Why are you auditing it?

Australia is the world's driest inhabited continent. To ensure that we have fresh water supplies in the future we need to be much smarter about how we use our water resources. Conducting a water walkthrough audit of your school will identify potential water saving actions that could be implemented after the audit.

How do you do it?

Before you begin a walkthrough audit you will need to plan ahead and consider the following:

- Who will conduct the audit?
- When will you conduct the audit? (So you don't disrupt classes.)
- Basic safety and hygiene:
Remember basic safety and hygiene practices, such as not running in wet areas, washing hands after visiting toilet areas, etc. Special care should be taken when inspecting hot water fixtures.
- You will need to obtain copies of your school's water bills. Identify and record the schools consumption over the last couple of years. Graph the results.
- You will need to locate your schools water meter(s). Read the water meter in the morning and afternoon (at the same times) each day for a week or two. Record the meter numbers and readings. Graph the results.

- You will need to carefully read the ‘**School water audit guide notes**’ and the supplied **worksheets**. They will help you identify what you are auditing and how to check and record the condition of the schools water fixtures. Water using items you should look out for include:
 - ❑ Sinks/hand basins
 - ❑ Cisterns/toilets
 - ❑ Urinals
 - ❑ Showers
 - ❑ Dishwashers
 - ❑ Urns
 - ❑ Standalone taps
 - ❑ Bubblers
 - ❑ Hoses/sprinkler systems
 - ❑ Pools/water features
- How will you know that every area of the school has been inspected? We suggest you draw or obtain a map of the school showing the buildings and main features of the grounds. Mark on the map the location of taps, toilets, showers, sinks, basins, sprinklers, etc. Ensure all areas of the school are audited.

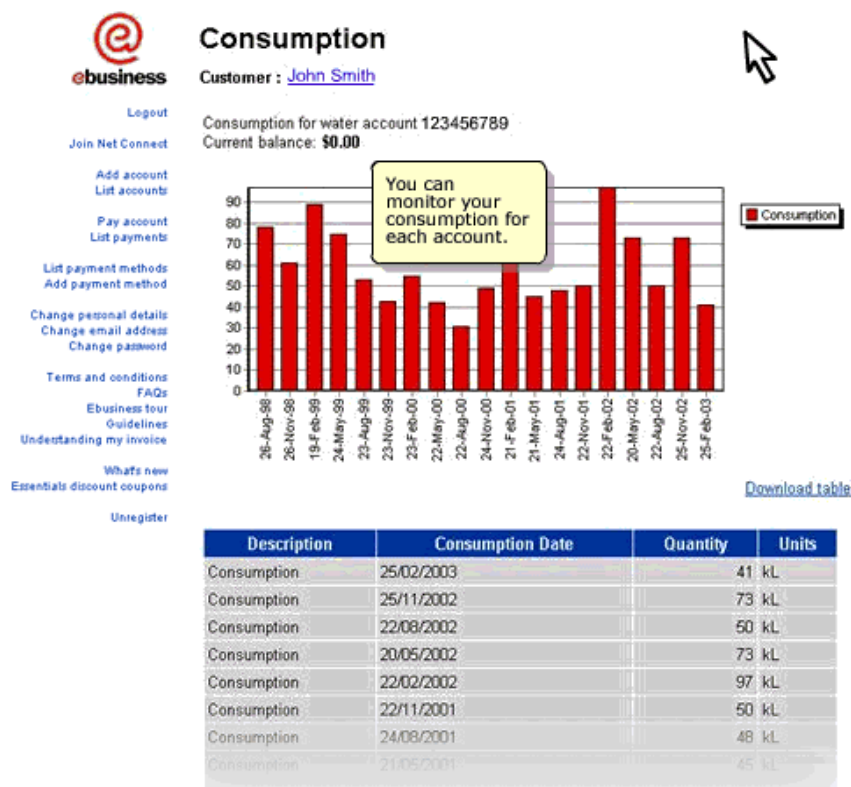


Once you have developed a plan, conduct your audit using the supplied worksheets. Copy additional worksheets if more are needed.

Please note:

Schools can register their energy accounts on the ActewAGL ebusiness website. ActewAGL's ebusiness site offers:

1. Email notification and online views of your electricity, natural gas, water and sewerage, ISP and TransACT accounts
2. The option to pay multiple accounts or schedule credit card payments
3. Access to previous invoice details and payments history
4. **The ability to check consumption data in chart or downloadable form**
5. The subscription to email notification of news, special offers and discounts.



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School water audit guide notes

How to read your water meter

The first thing you will need to do is locate your school water meter(s). Your school may have more than one meter. If you are unsure of the number of meters your school has your ActewAGL Water & Sewerage account will have the meter numbers and their readings listed on the back of the account.



Meters are usually located in meter pits on the boundary of the property. Caution should be exercised around meter pits, as they are a favourite place for redback spiders to take up residence.

A water meter measures the volume of water you use. ActewAGL reads the water meter every 3 months and calculates the amount of water that has been used since the last reading.

To read your meter, record the numbers from left to right. The black numbers register kilolitres (a kilolitre is a thousand litres). The red numbers register hundreds of litres, tens of litres, litres and tenths of litres. Only the black numbers are used to calculate your water account.

Meters do not all look the same. Here are a couple of examples of the types of dials found on water meters.



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Toilets

There are two types of toilets to look out for during your walkthrough audit, dual flush and single flush. Dual flush cisterns can potentially use less water than single flush cisterns as they give people the option to use half the quantity of water when flushing the toilet.

The cistern is a water storage tank, most often located at the back of the toilet. A dual flush cistern will have two buttons and a single flush cistern will have one button to push.

A leaking toilet can waste many litres of water every day. Some leaks are silent, some produce a running water sound and others may be visible as a small trickle running from the rim to the water in the bowl.

To detect silent leaks, remove the toilet cistern lid. Flush the toilet to empty the cistern and add a few drops of food colouring to the cistern as it refills. If the tank is leaking, colour will appear in the bowl within 15 to 30 minutes.



If your toilets are not of the standard cistern and pan variety, (cavity mounted cisterns for example) then please do not attempt to investigate any leaks.

Urinals

Urinals are found in the male toilets. Unlike toilets, urinals can look quite different. Below are pictures of the most common types of urinals.

The different types of urinal cisterns are as follows:

- **Pull chain** –flushes a single cistern manually, these are usually the most water efficient
- **Motion sensor** – flushes automatically when someone uses them and
- **Continuous flush and fill** – runs day and night filling the cisterns and flushing water.

When doing your walkthrough audit count the number of cisterns used to flush the urinal trough(s) - not the individual water outlets.



Wall hung urinals with pull chain cisterns



Trough style urinal

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Showers

Inefficient showerheads can use up to 24 litres of water per minute. Water-efficient showerheads should use 9 litres per minute or less.

You can check the efficiency of your showerheads. To do this you will need a bucket, a one-litre measuring container (such as a one-litre milk carton) and a watch that shows seconds.



- ❑ Fully turn on the cold-water tap of your shower.
- ❑ Hold the bucket under the shower for 20 seconds.
- ❑ Remove the bucket and turn the water off.
- ❑ Measure the amount of water in the bucket by emptying a litre at a time into the measuring container.
- ❑ Calculate the flow rate (in litres per minute) by multiplying the number of litres by three. For example, if you collected 8 litres over the 20 seconds, the flow rate is $8 \times 3 = 24$ litres per minute.

Tap Aerators and Flow Regulators

Tap aerators break up the solid flow of water, effectively adding air to the water flow and hence less water is passed out of the tap each second.



Flow regulators restrict the diameter of the water flow path, so that less water can come out through the tap each second.

Aerators and flow regulators are circular screened disks, usually made of metal, that are screwed onto the end of the tap spouts. You can check for these as you do your walk through audit.

Gardens and Outdoor irrigation

What is a Native plant?

A Native plant is any flora that is unique to Australia, and typically occurs naturally in a particular region. These could be trees, flowers, grasses or any other plant.

What is an Exotic plant?

An Exotic plant is one that is not native to Australia or indigenous to a locality. These may include introduced plants, which are species not native to Australia, but have been brought in by accident or design.

Not all native plants are water efficient and not all exotic plants require a lot of water. Local native plants are recommended, as they are accustomed to local conditions. When establishing new gardens investigate the water needs of the plants and always ensure that all garden beds are well mulched.

What is mulch?

Mulch is an essential tool in creating a low maintenance garden as it provides a protective covering for the soil. Used correctly, mulch helps to conserve water, keeps weeds at bay, cools the soil in summer, slows run-off and reduces erosion.

Organic mulches like shredded or chipped bark, compost, straw and shredded leaves, will also improve the soil quality. Whatever mulch you choose, it needs to be applied soon after planting and before new weeds sprout. Spread the mulch evenly across the soil surface to a depth of 75mm. Clear the mulch from around the plant stems to avoid collar rot.



Different types of mulch

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What types of sprinklers do we have?

There are many types of sprinklers. As part of your walkthrough audit we have asked you to identify the types your school currently uses in the garden beds and lawn areas. We have included some pictures of the more common types currently used to help you identify them.



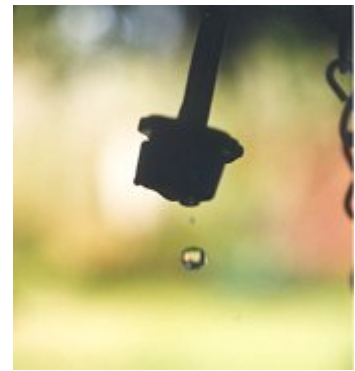
Pop-up sprinklers, most commonly used for lawns.



Microspray, used in garden beds.



Jetspray, used in garden beds.



Drippers, used in garden beds.



Soaker hose, found in garden beds usually just under the mulch.

Meter reading – Weekly school water use

Meter Number: _____

Date	Time (am)	Reading (am)	Time (pm)	Reading (pm)	Total daily use

Meter reading – Weekend water use

Meter Number: _____

Friday (pm)	Monday (am)	Total weekend use

Total weekly school water use = _____

Boys' Toilet Block/Change Room



Location (Description ie infants, building A, etc)			
Count the number and type of toilets.	Single flush	Dual flush	
Count the number of leaking/running toilets.			
Count the number and type of urinals. *	Pull chain	Motion sensor	Continuous flush and fill
Count the number of leaking/running urinals.			
Count the number of hand basins.			
Do the spouts of the taps have aerators fitted? Yes/No			
Count the number of leaking/dripping taps.			
Count the number and type of showers. (If applicable)	Full flow	Restricted flow	
Count the number of leaking/dripping showers.			
Other (Description of any other water fixtures in the toilet block)			

* When counting urinals count per cistern not per water outlet.

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Girls' Toilet Block/Change Room



Location (Description ie infants, building A, etc)		
Count the number and type of toilets.	Single flush	Dual flush
Count the number of leaking/running toilets.		
Count the number of hand basins.		
Do the spouts of the taps have aerators fitted? Yes/No		
Count the number of leaking/dripping taps.		
Count the number and type of showers. (If applicable)	Full flow	Restricted flow
Count the number of leaking/dripping showers.		
Other (Description of any other water fixtures in the toilet block)		

Disabled Toilets



Location (Description ie infants, building A, etc)		
Count the number and type of toilets.	Single flush	Dual flush
Count the number of leaking/running toilets.		
Count the number of hand basins.		
Do the spouts of the taps have aerators fitted? Yes/No		
Count the number of leaking/dripping taps.		
Count the number and type of showers. (If applicable)	Full flow	Restricted flow
Count the number of leaking/dripping showers.		
Other (Description of any other water fixtures in the toilet block)		

Staff Toilets

(Male and Female)



Location (Description ie infants, building A, etc)			
Count the number and type of toilets.	Single flush	Dual flush	
Count the number of leaking/running toilets.			
Count the number and type of urinals.	Pull chain	Motion sensor	Continuous flush and fill
Count the number of leaking/running urinals.			
Count the number of hand basins.			
Do the spouts of the taps have aerators fitted? Yes/No			
Count the number of leaking/dripping taps.			
Count the number and type of showers. (If applicable)	Full flow	Restricted flow	
Other (Description of any other water fixtures in the staffroom)			



Staffroom

Location (Description ie infants, building A, etc)		
Count the number of hand basins/kitchen sinks.	Basins	Sinks
Do the spouts of the taps have aerators fitted? Yes/No		
Count the number of leaking/dripping taps.		
Does this staffroom have a dishwasher?		
Is the dishwasher only turned on when full? Yes or No		
Does this staffroom have a hot water unit/urn? (ie Billi or Zip heater)		
Other (Description of any other water fixtures in the staffroom)		

Classroom/Science Lab/Art room etc.



Location

(Description ie infants, room number, building A, etc)

Count the number of hand basins/sinks.

Basins

Sinks

Do the spouts of the taps have aerators fitted? Yes/No

Count the number of leaking/dripping taps.

Other

(Description of any other water fixtures in the classroom)

Classroom/Labs/Art room etc.



Location

(Description ie infants, room number, building A, etc)

Count the number of hand basins/sinks.

Basins

Sinks

Do the spouts of the taps have aerators fitted? Yes/No

Count the number of leaking/dripping taps.

Other

(Description of any other water fixtures in the classroom)



Canteen

	Basins	Sinks
Count the number of hand basins/kitchen sinks.		
Do the spouts of the taps have aerators fitted? Yes/No		
Count the number of leaking/dripping taps.		
Does the canteen have a dishwasher? Yes or No		
Is the dishwasher only turned on when full? Yes or No		
Does the canteen have a hot water unit/urn? (ie Billi or Zip heater)		
Other (Description of any other water fixtures in the canteen)		

Bubblers and Outdoor Taps



	Spring loaded	Push button	Other
Count the number/type of bubblers.			
Count the number of leaking/dripping bubblers.			
Are any bubblers vandalised or damaged? Yes or No			
Count the number of outdoor taps.			
Count the number of leaking/dripping taps.			
Are any taps vandalised or damaged? Yes or No			
Do any of the taps have hoses attached? Yes or No			
Do the hoses have trigger nozzles attached to the end of them? Yes or No			
Other (Description of any other water fixtures located outside not including irrigation)			



Outdoor Gardens and Irrigation

Count the number of ovals, landscaped gardens and lawn areas.	Ovals	Landscaped gardens	Lawn areas	
What type of plants/trees does the school have? (Please tick)	Native	Exotic/Non-native	Both	
Are the garden beds mulched? Yes/No				
How often are the gardens/lawns watered? (Days/week and number of hours)	Garden beds	Lawns		
How are the garden beds/lawns watered? (You can tick more than one)	Pop-up sprinklers	Drip/micro system	Other sprinklers	Hose
Is the sprinkler system for the gardens/lawns automated? Yes/No				
How often is the oval watered? (Days/week and number of hours)				
Is the sprinkler system for the oval automated? Yes/No				