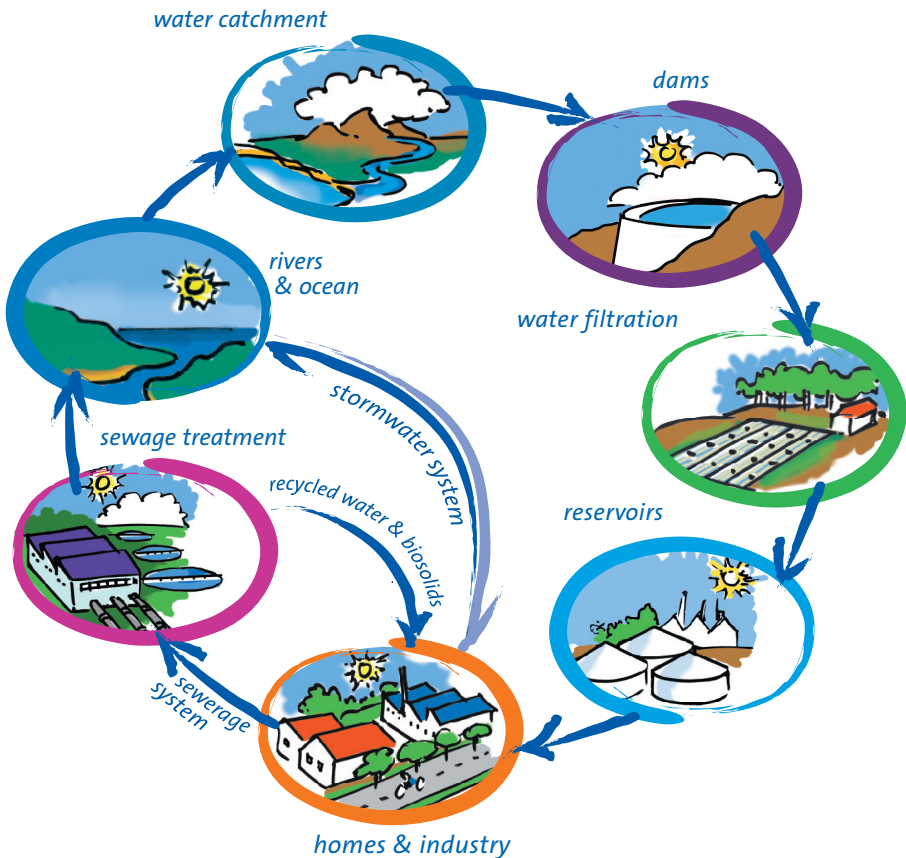


# managing the water cycle

getting water to & from the home



# Contents

Managing the water cycle	2	Catchment areas	5
Getting water to and from the home	4	Dams	6
		Water filtration plants	7

## Managing the water cycle

Sydney Water provides water, wastewater and some stormwater services to nearly four million people in the Sydney, Illawarra and Blue Mountain regions.

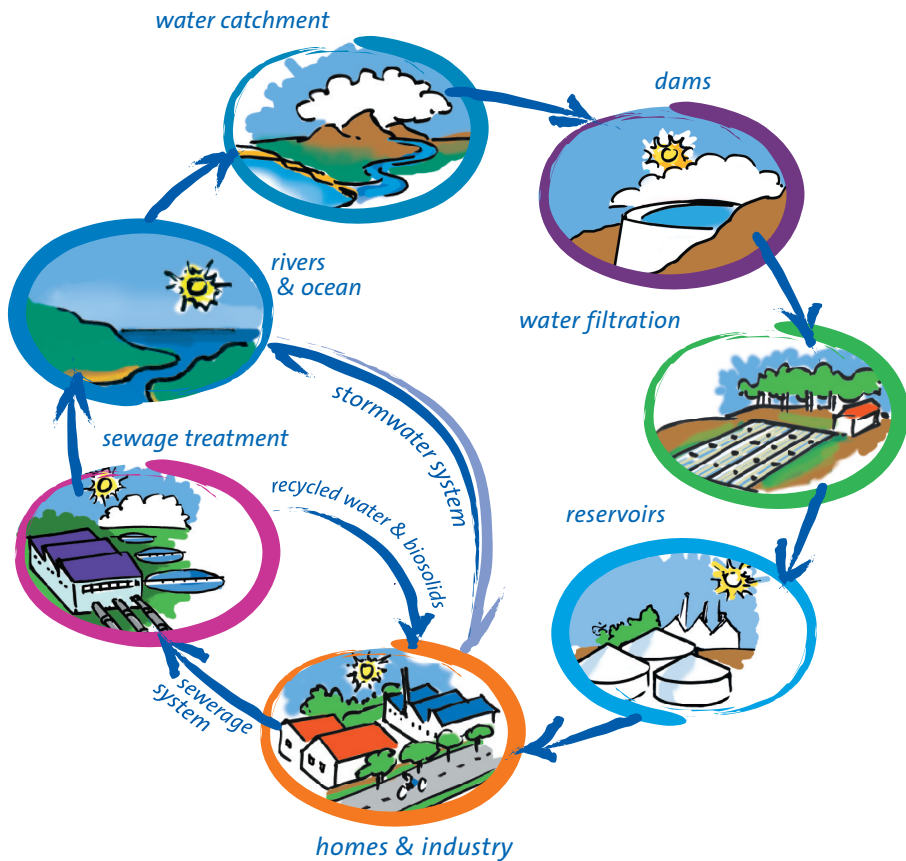
The water supply is managed using an approach that starts at looking after the catchments where water is collected, and finishes with recycling or discharging treated wastewater to a river or the ocean.

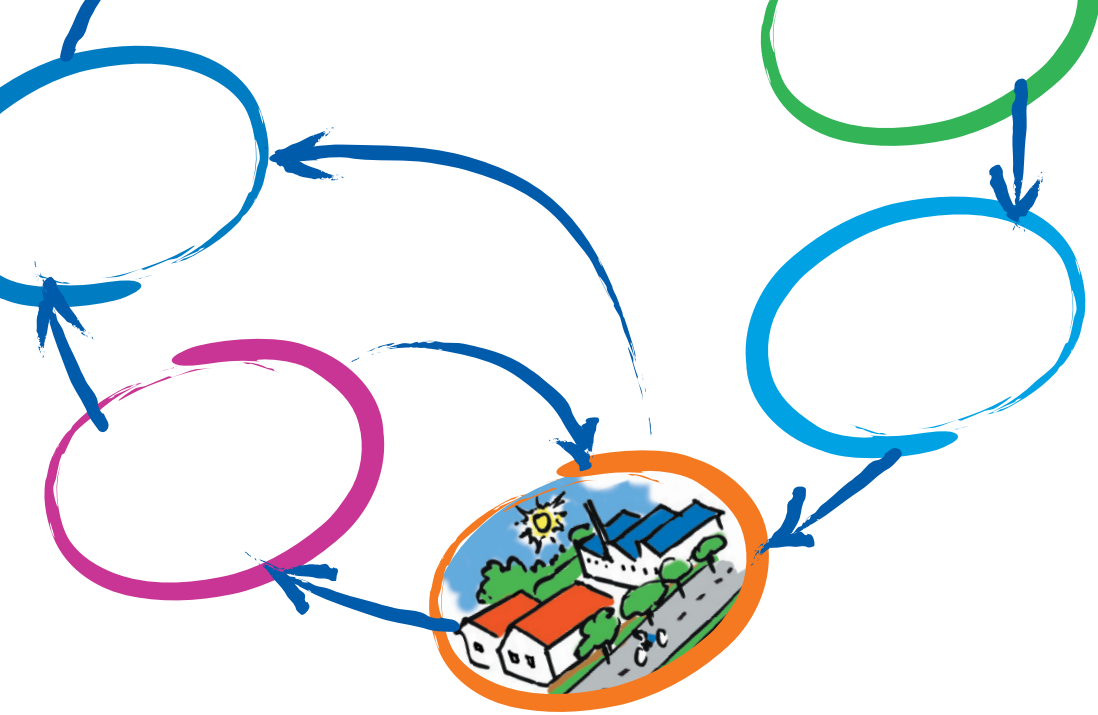
The Sydney Catchment Authority manages the catchments, waterways and dams where water is collected and stored and provided to Sydney Water.

Sydney Water manages the water filtration and sewage treatment plants and systems, which distributes filtered water to households and businesses and removes waste water for treatment.

Through this approach, customers receive filtered drinking water, efficient sewerage systems and a cleaner and healthier environment.

Reservoirs	8	Sewage treatment plants	11
Stormwater system	9	Recycling	12
Sewerage system	10	What you can do to help	13





# Getting water to and from the home

While most of the earth's surface, including clouds in the atmosphere is made up of water – it doesn't exist in a drinkable form. Only about three per cent of the water on earth is fresh and much of this is locked away in glaciers and polar ice caps, caught in the atmosphere and soil, or trapped far beneath the surface.

To ensure everyone's daily needs of water and wastewater services are met, the water cycle needs to be managed in a way which fosters sustainability and addresses environmental and health issues.

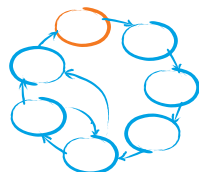


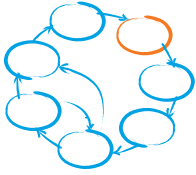
# Catchment areas

Some of the most spectacular natural areas of NSW surround Sydney, Wollongong and the townships of the Blue Mountains. It is from these catchment areas that the greater Sydney region gets almost all its drinking water.

When it rains, water falls into the catchment area, draining into a group of lakes formed behind dams. Because dams store drinking water, it is important to make sure the water running into the lakes is as clean as possible.

The Sydney Catchment Authority was established in 1999 to manage and protect the catchment, encourage sustainable development and promote safe clean drinking water. To ensure the areas around the dams remain free from pollution, public access is restricted and development activities are strictly regulated.





# Dams

Australia's uncertain climate – relative low rainfall and lengthy droughts – means we have to store more water per person than is necessary for any other similarly developed part of the world.

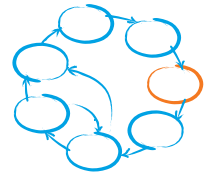
The Sydney Catchment Authority manages 21 dams and storage reservoirs which have an available storage capacity of about 2 400 000 million litres. This water is then supplied to Sydney Water.





## Water filtration plants

Water filtration plants are an important part of a multi-stage approach to improving drinking water quality. They are part of Sydney Water's delivery system, which ensures the water delivered to homes and businesses meets drinking water and health guidelines.



Water from dams enters the plants where it undergoes treatment and filtration. Organic matter, sediment and minerals such as iron and manganese are removed. These items are picked up when the water runs over vegetation, rocks and soils to the creeks and rivers that feed the dams. After filtration, small amounts of fluoride is added in accordance with health authority requirements for preventing tooth decay. Chlorine is added to disinfect the water and kill various organisms.



## Reservoirs

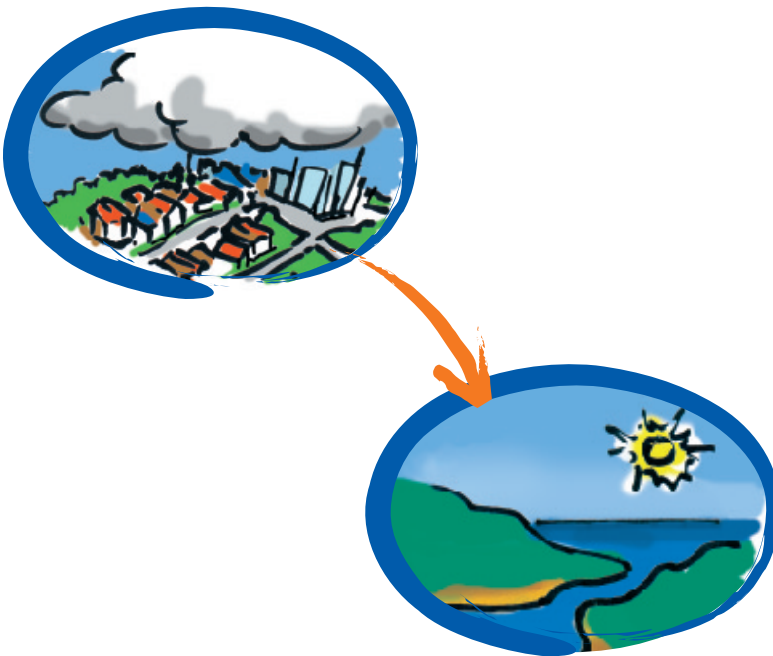
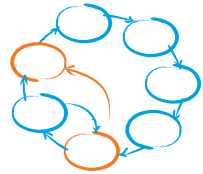
Filtered water from the filtration plants is transported through a system of pipes and mains extending more than 20 000 kilometres to reservoirs located in suburbs throughout Sydney, Illawarra and the Blue Mountains. If the water needs to be supplied to an elevated area, it passes through a pumping system.

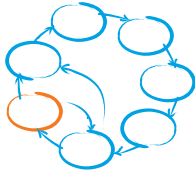
Water is temporarily stored in the reservoirs. These are usually located on hills so that water can flow to most houses and businesses by gravity.



# Stormwater system

Rain water which falls on hard surfaces (eg. roads) or doesn't soak into the ground, flows into gutters and drains located in and under streets. This water enters the stormwater system – a series of underground pipes which lead to rivers and the ocean. Stormwater systems are usually managed by local councils with Sydney Water maintaining some of the larger systems.





# Sewerage system

Water, some of which carries solids, that goes down sink drains and toilets is called wastewater (sewage). This enters the sewerage system which is made up of a series of pipes extending more than 20 000 kilometres.

Wastewater from commercial and industrial customers also enters the sewerage system. Through Trade Waste Agreements, Sydney Water has a program to restrict the amount of toxic and other potentially harmful substances discharged to the sewerage system.

If wastewater needs to travel uphill, it will pass through a pumping station to help keep it flowing. Sewerage systems lead to sewage treatment plants.

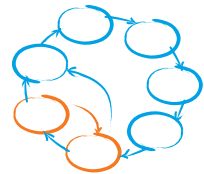
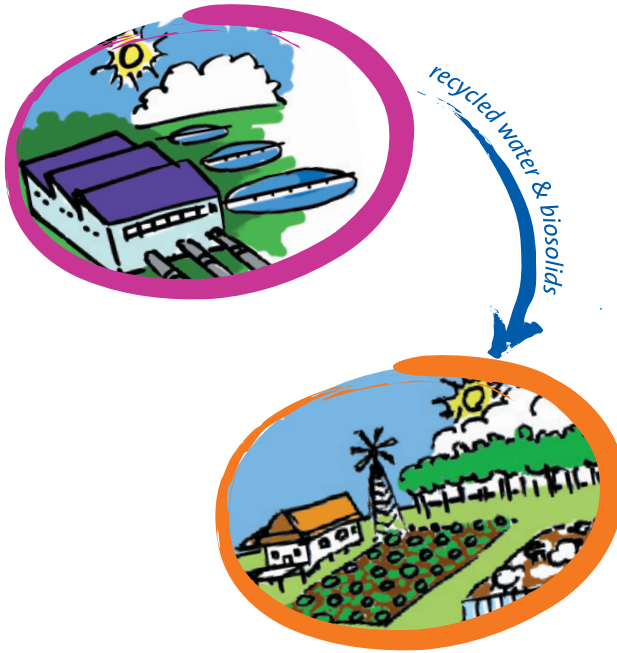


# Sewage treatment plants

Wastewater from the sewerage system flows to sewage treatment plants which are located near inland rivers or on the coast. Here the wastewater is treated before being recycled or discharged into rivers or the ocean.

The discharges from Sydney Water's treatment plants must comply with licenses issued by the Environment Protection Authority. These licences specify the quantity and quality of treated wastewater that can be released to rivers and the ocean. The effect of wastewater treatment discharges on water quality and aquatic life is monitored every week.

To minimise the impact of treated wastewater discharged to waterways, Sydney Water is upgrading treatment processes and investigating recycling opportunities.



# Recycling

After wastewater is treated, Sydney Water recycles the solids into a nutrient rich organic product called biosolids, which are then used in agriculture, forestry and land rehabilitation.

At many sewage treatment plants, water is also being recycled to wash screens, clean equipment and water gardens. Recycled water is also being used in industry and for irrigating farms, golf courses, university grounds and race tracks. In the Rouse Hill Development Area, a dual pipe system is supplying recycled water to houses for safe non-potable domestic uses such as flushing toilets and watering gardens.



## What you can do to help

While Sydney Water is responsible for getting water to and from the home, there are many things households and businesses can do to help make the process more efficient.



Taking shorter showers and turning the tap off when brushing teeth.



Installing water efficient appliances (eg. dual flush toilets, front load washing machines).



Planting Australian natives and drought tolerant lawn.



Watering gardens in the early morning or late evening with a trigger hose or watering can.



Sweeping paths and driveways instead of hosing them.

Washing cars on the lawn using a bucket rather than a hose.



Not using sinks, toilets or drains as garbage bins.



Using garden pesticides and flea rinses which don't contain diazinon or chlordane.



Safely disposing of unwanted chemicals and pesticides.



**Following these simple tips can play a major role in saving water, reducing pollution and improving the environment.**

