

Create Your Own WaterWise Garden



*Your contribution to
using water efficiently*

This brochure was developed by IPSWICH WATER
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IPSWICH CITY COUNCIL

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Message from the Mayor

Water is a precious resource which too many Australians take for granted. With an average rainfall of only 472mm per year nationally and 630mm in Queensland (compared to the world average of over 800mm per year) and a highly unpredictable climate, few of us understand how scarce water is in this country.

Unfortunately most of our drinking water goes to waste. About 33% of all domestic water is either flushed down the toilet or washed down the drain. A further 50 to 60% is used outdoors in the garden and pool. It is time to get wise about water conservation.

At Ipswich City Council, we believe gardens can be beautiful and "WaterWise" at the same time. By creating your own WaterWise garden or changing your existing garden into a WaterWise garden, you will be making a responsible choice to help conserve our precious water supplies.

I invite you to look through the WaterWise Gardening guide before you begin your next gardening project. You'll find lots of helpful tips and resources which we trust will be an inspiration to you to become conscious of the value of water and how to use it wisely.

Happy gardening!

Cr Paul Pisasale
Mayor of the City of Ipswich



Steps in Creating a WaterWise Garden



Design your WaterWise garden

- Know your site
- The function of your garden
- Zoning makes sense
- Planning for lawn areas
- Plan for a water efficient water feature
- Plan an efficient watering system



Do the groundwork

- Know your soil
- Improve your soil
- Composting and worm farming
- Choose your plants
- Recognising water efficient plants



Water Wisely

- Water at the right time
- Water deeply but less often



Maintain your WaterWise garden

- Checking your irrigation system
- Replenish your soil
- Pest control
- Pruning
- Mulching
- Free Tree Program



1 Design Your WaterWise Garden

Know your site

If you are planning a new garden, the more water wise you make it from the start, the easier and less expensive it will be to keep it beautiful. An established garden can also be made water wise with a little effort and thought.

Paying attention to your garden's unique characteristics will help you to select the right plants for the right place. So, find out the following information by looking around your garden:

- Where are the sunniest areas? How long does the sun shine there each day? Are some areas sunny in the morning but shaded in the afternoon? Make notes of areas that receive sun in the afternoon, as these areas tend to be hot. The western side of your home will be particularly hot in the afternoon.
- Where is the shadiest area? Is there dense shading all day, or is there some sunlight?
- Does your garden experience frost in winter? Your north facing side of your home will be warmer.
- Do you have any slopes? How steep? Can these slopes be used to channel water for water harvesting?
- Are there any spots where drainage is a problem? Is the soil damp or boggy?
- Is wind a problem? From which direction does it come?
- Are there any views you'd like to enhance or screen?

The function of your garden

Decide which areas of the garden to select for your different needs, such as:

- Entertaining
- Play or sports
- Vegetable gardening
- A swimming pool or water feature
- A space for quiet contemplation
- Wildlife habitat
- Erosion or climate control
- In addition, where are the most appropriate places for paths or walkways to the house?

It has been estimated that many gardeners use about twice as much water in their landscapes as is needed. In most gardens, the amount of water used can be reduced without creating serious plant problems. In a dry climate water-efficient landscaping does not mean using only desert plants. It means making an existing landscape or garden more water efficient or developing a new site with low water needs.

Zoning makes sense

A good idea is to concentrate on plants that are adaptable to the site, rather than change existing conditions in the garden to suit the plants. Local native plants are ideal, as well as plants from similar climates throughout the world.

The main principle of a water wise garden is to group plants with similar water requirements in the same beds. Place plants that need regular watering, such as roses, in an area with other high water users and group plants that need watering less frequently – for example, once a month – in a different area of the garden.

Group shade-loving plants together in a shady area of the garden and sun-loving plants where they will receive maximum sunlight.



HIGH Water-use zone	MODERATE Water-use zone	LOW Water-use zone	NO Water-use zone
Lawns Water loving plants	Plants needing a little more water than provided by the rainfall in our area	Plants that thrive mainly on the rainfall, and need little, if any, watering during the winter months	Hardscapes (patios, decks, walkways) and established plants that can survive on rainfall only
Container plants	May take advantage of runoff from gutters and paved areas	Established trees and shrubs.	

Consider alternatives to lawn such as stepping stones, pebbles, sleepers and water wise ground covers.

Planning for lawn areas

Lawns are great for play and entertaining but they also need a lot of water and maintenance. When planning your garden, think about how much lawn you actually need, and place it only where you really need it. Use instead, lawn alternatives such as decks, patios, containers, paving, attractive mulches or river stones. Many open areas may successfully be planted with attractive and hardy groundcovers, while stepping stones can be used in the foot traffic areas. Ground covers can also be colourful, often fragrant and even edible. Creeping rosemary, thyme, verbena and other herbs make highly attractive lawn alternatives.

A selection of varied groundcovers is available through Ipswich City Council Nursery. Contact your local nursery for the best water wise ground cover for your particular site, be it sunny or shady.

Plan for a water efficient water feature

In our hot summer climate the refreshing qualities of a tranquil pond, sparkling fountain or trickling waterfall can add to the beauty of the garden. If you take into account certain factors, it is possible to have a water efficient water feature.

Position:

- Site your water feature where you will enjoy it to the full. One water feature strategically placed in a focal area will be more effective in your garden design than several scattered around the garden – and will also be more water efficient.
- A water feature in a shady or partially shady spot will lose less water to evaporation.
- Position your water feature in an area of low wind movement, so less water will be lost to evaporation.

Type of water feature:

- If your water feature has moving water, that is, a waterfall or fountain of one type or another, extra water will be lost to evaporation.
- But if you choose a fountain that produces coarse droplets rather than sprayers or fountains with a fine spray, less water is lost to evaporation.
- In addition, avoid extravagant high-pressure movement in fountains and waterfalls as these have high evaporation rates.
- Switching off the pump when you don't actually need to see the fountain or waterfall is a water efficient approach – evaporation is greatest during the hot midday and afternoon hours.
- Ensure that there is no excessive splashing out of the water feature and that there are no leaks.
- A shallow pond will lose more water to evaporation than a deep pond. While it is not feasible to have deep micro-water features, if you intend to install a pond with a large surface area, try to make it between 50cm and 1m deep.

Many water plants need a planting depth of at least 45cm under the water surface to survive and fish need deep cool areas.

Did you know?

The leaves of water lilies on the surface area in water features can reduce evaporation.



Plan an efficient watering system

Design your watering system after planning all the zones, plants and hardscapes. An efficient irrigation system applies the right amount of water to the right place at the right time.

- Simple bed and lawn shapes will make installation of the system easier.
- Design your watering system to match your plan's water use zones.
- Use separate irrigation valves for each water use zone so individual scheduling is possible.
- Do make sure that the sprinklers do not apply water faster than the soil's ability to absorb it.
- When designing a watering system on a slope, install check valves before sprinklers at the lowest point of a row of sprinklers to reduce puddling, or buy sprinklers with built-in check valves.
- Sprinklers are best used for lawns and larger, high-water-use areas. They should apply water slowly and with uniform coverage, heads should be placed so that the water from one sprinkler reaches the adjacent heads, called head-to-head coverage.
- Drip systems apply water slowly and directly to the root zone and efficiently water trees, shrubs, ground covers and containers. Filters and pressure reduction valves are often required.

Need help with installing a system?

Consult nursery personnel, landscape designers, landscape contractors or a landscape architect. Ask for referrals from friends and neighbours. Ensure the person designing the system is an Irrigation Association of Australia (I.A.A.) member.

Cover up and conserve

- Outdoor living and family fun are greatly enhanced by having a swimming pool in the garden during our long, hot summers. Although it is a worthwhile investment, it does tend to be a heavy water-user. One of the most vital ways to conserve your swimming pool water is to place a cover over it to prevent water loss through evaporation.
- Another way to use water wisely is to fill your pool only when necessary and when you do, consider using a timer on your tap. A forgotten hose can waste about 1000 litres of water per hour.





Do the Groundwork

Know your soil

Before you decide to buy plants, get to know your soil first. The ideal soil type is a perfect loam, which will provide plenty of nourishment and which will retain moisture without becoming waterlogged. Sandy soil does not hold water well and provides little nourishment, while clay soil tends to become waterlogged, thus causing root rot in plants. Water runoff is also a common problem in clay soils, which are slow to absorb water.

You can also test the pH of the soil for acidity/alkalinity, which can be altered by working in organic materials.

SOIL TYPE	TEXTURE	IDENTIFICATION
Sand	Gritty	Forms a ball, crumbles easily
Loam	Smooth with grit	Forms a ball. Holds the shape (but has cracks when rolled)
Clay	Smooth. Compacted when dry, sticky when wet.	Forms a ball. Holds the shape very well (no cracks when rolled).

Improve your soil

If your soil is not ideal, improve it with organic materials. The more organic matter the soil contains, the quicker it will absorb water and longer it will retain water. Water crystals can also be used and are particularly useful in sandy soils.

Consider the following organic amendments:

COMPOST:

Recycle your garden waste to make your own compost or purchase compost from your local nurseries.

MANURE:

Available from farmyards and stable owners. Make sure they are well matured before adding to the soil.

MULCH:

Any organic material placed over the soil will eventually break down and be incorporated into the soil thus improving its texture. See page 28 – for more details on mulch).





Composting and Worm Farming

A compost bin or worm farm can turn organic waste, including kitchen scraps and garden waste, into excellent quality compost which acts as a natural fertiliser to give the garden a boost!

A compost bin confines the organic material and helps control conditions so that breakdown is accelerated and optimised. Micro-organisms, earthworms and other insects in the soil will also assist in breaking down the organic waste in the compost bin.

A worm farm uses compost worms to convert organic waste into nutrient-rich liquid and solid castings which can also be used as a natural fertiliser for the garden.

Suitable for composting:

- Fruit and veggie scraps
- Grass clippings, leaves, weeds and dead flowers
- Newspaper and cardboard (ripped up)
- Egg shells
- Bread
- Teabags
- Wood shavings
- Hair
- Vacuum cleaner dust

Avoid composting:

Meat or bones, seafood, oil or fat, dairy products, glossy magazines, too much citrus or onions and diseased plants.



Composting tips:

- Place a compost bin on top of the soil to encourage soil organisms to enter the compost and assist in the decomposition process.
- A compost bin will also benefit from being in a fairly sunny location.
- Make sure there is a range of organic waste (eg. garden waste and food scraps) going into the compost bin to keep it working at its optimum rate.
- Turn the compost heap over with a garden fork every couple of weeks to allow air to enter the compost aiding the decomposition process.
- Ensure the compost bin is kept damp to help the organic material to break down faster.

Worm farming tips:

- Compost worms like diversity and will breakdown and consume the organic waste a lot quicker if it is cut up small or even preferably shredded or food processed.
- It is good to start a worm farm with about 1000 compost worms and they will double their population in 2-3 months!
- Select a cool and shaded location for your worm farm and avoid placing the work farm in the direct sun.
- Keep the worm farm moist. Covering the working layer with old carpet or newspaper will keep the worm farm dark and moist.
- Dilute the liquid castings with about 50% water before adding them to your garden. Liquid castings are also good for potted plants.

Composting and worm farming is great news for the environment and is an easy and effective way to help minimise waste and save valuable space at landfill. Composting and worm farming also produces an excellent quality, nutrient-rich, natural and free fertiliser for the garden.

Compost bins and worm farms are available through Council. Compost worms are available from local hardware stores and some garden nurseries.

Choose your plants

Water wise gardens focus on plant varieties that thrive with little water. However, no plant is 'wrong' in a water wise garden – it just needs to be in the right zone to use water the most efficiently. You can select exotic as well as indigenous plants, so long as you plant them in the appropriate zone. Visit your local nursery to see which plants will be appropriate for the water use zones you have planned.

There are also many beautiful plants, which are naturally drought-resistant and require little watering once established.

Keep in mind your water-use zones and plants' individual water, sun and soil needs when selecting plants.

Here is a few examples of plants that will thrive within the different soil types:

Sandy Soils:

- Sticky Hop Bush *Dodonea viscosa*
- Water Bush *Myoporum montanum*
- Coastal Rosemary *Westringia Wynyabbie Gem*
- Matt Rush *Lomandra longifolia*
- Coastal Banksia *Banksia integrifolia*

Loam Soils:

- Bush Cherry *Syzygium paniculatum*
- Tuckeroo *Cupaniopsis anacardioides*
- Midgenberry *Austromyrtus dulcis*
- Tulipwood *Harpullia pendula*
- Twiggy Heath Myrtle *Baeckea virgata*

Clay Soils:

- Weeping Bottlebrush *Callistemon viminalis*
- She Oak *Casuarina cunninghamiana*
- Brisbane Wattle *Acacia fimbriata*
- Swamp Banksia *Banksia robur*
- Lemon Scented Tea Tree *Leptospermum citratum*



Recognising water efficient plants

Some plants have certain characteristics that make them extremely water efficient. By knowing these characteristics, you will be able to make well-informed choices as to whether a particular plant is suitable for the low water zone in your garden. Watch out for the following characteristics:

Small or needle-like leaves

This minimises the surface area from which water is lost by evaporation, as there is less area to heat up in the sun. They include forest sheoak *Allocasuarina torulosa*, river oak *Casuarina cunninghamiana*, Brisbane wattle *Acacia fimbriata*, twiggy heath myrtle *Baeckea virgata* and *Leptospermum* sp. 's.

Grey foliage

The light colour reflects the sun's rays away from the plant, thereby keeping the plant cooler, which in turn reduces water loss. They include Qld silver wattle *Acacia podalyriifolia*, curry plant *Helichrysum angustifolium* and emu bush *Eremophila glabra*.

Hairy leaves

Hairs slow down air movement past the stomata, thereby reducing water loss. They also shade the leaf. They include honey myrtle *Melaleuca incana*, silver leaf gazania *Gazania rigens*, blue eyes *Evolvulus pilosus* and coastal rosemary *Westringea fruticosa*.

Closing leaves

The leaves of some plants close when they are water-stressed. This reduces the amount of leaf exposed to sunlight, and reduces water loss. They include long matrush *Lomandra longifolia* and tall matrush *Lomandra hystrix*.

Succulent leaves

Water is stored in thick fleshy leaves to be available when necessary.

Waxy leaves

A waxy coating helps to prevent moisture loss. An example is brush cherry *Syzygium australe*, blue lilly pilly *Syzygium oleosum* and broad leaf myoporum *Myoporum ellipticum*.

Plants with lighter colours on the undersides of their leaves.

When stressed, they turn the lighter side upward to reflect the sun away. They include red ash, soap tree *Alphitonia excelsa*, native frangipani *Hymenosporum flavum* and brush box *Lephostemon confertus*.

Planting tips

- When planting, make the hole twice the width of the nursery pot/bag. Carefully remove the plant from the bag/pot and plant to the same depth as it was buried in the bag.
- Water plants frequently after the initial planting until the plants are well established. The frequency depends on the weather, but usually twice weekly and later once a week.
- Keep plants well mulched to retain moisture.

Fertiliser in the bottom of the planting hole is undesirable. It is best applied at the surface, where it can be dissolved by water and taken up easily by the roots as desired.

It is also good practice to wait until roots become established before fertilizing (not at planting time.)



3 Water Wisely

It pays to know when, how much and how often to water your plants. A flexible watering schedule can save water and money by adjusting to changing weather conditions. Your watering schedule can also help prevent runoff, encourage deep root growth, and better meet plants' changing needs.

Water at the right time

- Avoid watering on windy days, as evaporation rates are high.
- Water at a cool time of the day to reduce evaporation – evening or early morning. Watering in the morning decreases the chance of mildew.
- Automatic systems can be set to water before dawn, when evaporation is at its lowest.
- Water less often in cool weather and more frequently in hot weather.
- When good rains fall, stop watering for a few days – except where roof overhang has prevented plants from benefiting from the rain.



Current Water Restrictions

Current water restrictions are in place in Ipswich City. For further information on current water restrictions please contact Ipswich City Council on (07) 3810 6666 or visit our website at www.ipswich.qld.gov.au.



Water deeply but less often

Deep soakings encourage roots to utilize moisture deep in the ground and enable plants to thrive between waterings.

Allow water to reach the expected root depth – about 20cm deep for lawn and about 60cm – 90cm for trees and shrubs. A soil probe or moisture meter may be used to determine water penetration and soil moisture content. Record the total time required for water to reach this depth.

Before watering again, let the top few centimeters of soil dry out. Then water again for the same amount of time.

When watering your lawn make sure your lawn can absorb all the water it needs, divide your total watering time into 2 to 3 cycles. For example, if your lawn requires 15 minutes of watering, don't water once for 15 minutes, instead, water three times for five minutes each.

HOW MUCH WATER IS NEEDED WILL DEPEND ON YOUR SOIL TYPE:

SOIL TYPE WATERING CONSIDERATIONS

Sand	Apply water faster and more often
Loam	Apply water at a moderate rate but less often than for sandy soil.
Clay	Apply water slowly and infrequently. If you have heavy clay soil, consider adding compost to improve drainage and aeration.

Watering on a slope

It is vital to create basins around the plants for water catchment. If possible, terrace the slope to maximise water holding and reduce runoff.

- Use shorter watering times to avoid runoff, add another watering cycle if necessary.
- Consider planting a groundcover on the slope instead of lawn.
- Use drip or rotor spray sprinklers on slopes.





Maintain Your WaterWise Garden

A small amount of regular maintenance throughout the year is all your garden needs to look good.

Checking your irrigation system

- Be water wise and periodically check your irrigation system, as clogged, leaking or misdirected sprinkler heads waste a lot of water and money.
- Adjust your controller schedule at least two to three times a year; early spring, summer and autumn.
- Replace your controller battery every six months.

Lawn care in the heat

To look their best, lawns need constant upkeep, including regular mowing and aeration.

- Raise the cutting height of your mower by 25 to 50 percent as the temperature increases during summer. Longer grass encourages deeper roots and shades the soil better.
- Increased mowing frequency encourages deeper roots that are essential to your lawn's health when the summer gets hotter.

HINT: Avoid mechanical damage such as bumping tree trunks with mowers or damaging the bark with line trimmers. This may stunt future growth or cause the death of the plant.

Weeding Tips

- Pull weeds out when the shoots first appear and well before they set seed
- Pull out stubborn weeds when the soil is damp – it is easier.
- To keep weeds down, keep the soil well mulched at all times

Replenish your soil

Fertilizers, especially organically based ones, can be great for your garden. But too much fertilizer can damage plants and can impact on stream and Bay water quality through storm drain runoff. So fertilize only as needed, when new growth is less than normal or if colour appears pale – but be sure to follow directions.

- One of the best, easiest and cheapest forms of fertilizer is compost. You can start a backyard compost pile/bin easily with kitchen scraps (no meat), garden and lawn clippings, strips of newspaper and little soil.
- Consider using other organic fertilizers such as aged and dried manure and bone meal.
- If you do use synthetic fertilisers, preferably use slow-release ones, as they will have a less dramatic effect on the soil structure.

Did you know?

Earthworms are an indication of good healthy soil. They improve the soil by aerating it and by distributing organic matter from the surface into the deeper soil layers. In addition their castings are nutrient rich. To attract them to your garden, incorporate organic matter into the soil, keep the soil surface mulched and limit the use of chemical pesticides.

Pest Control

Snails and other insects – some beneficial and other harmful – are an integral part of any garden. As with other maintenance, pest control should be part of your gardening routine. Contact your local nursery for advice on the best pest control methods for your particular pest problem.

Pruning

Pruning can be a regular part of your gardening routine, rather than a demanding yearly ordeal. Prune portions of your plants that are dead, diseased or damaged. To direct growth, lightly prune during the winter months before spring growth begins.

Did you know?

- Healthy plants are more drought tolerant than weak or damaged plants.
- The presence of dragonflies near your pond is an indication of healthy water



Mulching

Mulch is one of the quickest, easiest and most cost-effective ways to save water in your garden.

Benefits

Mulch has many benefits for the garden as well as often providing an attractive surface. Mulch can:

- Conserve water by reducing evaporation
- Suppress weed growth
- Reduces wind and water erosion by allowing water to penetrate the soil
- Encourage better root growth by insulating soil from temperature fluctuations
- Improve the soil

Applying mulch

Depending on the type of mulch used, the depth will vary from approx. 50mm-100mm deep around the shrubs, trees and larger perennials. Do not mulch too deep, as this will encourage shallow rooting resulting in less drought resistance. A finer and less deep layer of mulch is best for small perennials and annuals. Keep mulch 1cm away from the base of trees and shrubs to avoid fungal diseases. For more detail on mulch depth and type contact your local nursery.



Which mulch to use?

Organic mulches

Come from plant and animal sources, and eventually break down into the soil, so they need to be replaced periodically. They improve and nourish the soil.



Types of mulch and depth	Benefits	Tips
Large bark chips 50-100mm	It looks good. Coarse texture lets in water, but does not hold it well as finer textured materials. Can be long lasting. Offers superior weed control.	Avoid using on slopes where they can be washed away.
Lawn clippings 50-100mm	Readily available. Allows some water in, holds some and slows down evaporation. Best used in small areas.	Dry clippings first before applying to prevent nitrogen deficiency. Avoid using clippings from weed-infested lawn.
Partially decomposed compost 50-100mm	Can be made from garden and kitchen waste. An excellent method of incorporating organic matter into the soil and improving water-holding capacity. Average at letting moisture through; excellent at holding it in the soil.	Make two compost bins to allow time for materials in each bin to partially break down before use. Sift out large pieces before spreading.
Fallen leaves 50-100mm	Allows some water in and keeps it in. Holds the soil. Should be partially decomposed when applied. Improves water-holding capacity of soil. Very good for trees, woody perennials and wild flowers.	Avoid packing too heavily around annuals and perennials. Loosen regularly to prevent leaves from forming a water impervious mat. Add nitrogen-rich fertiliser to keep soil in balance.
Straw/sugar cane 50-100mm	Looks good. Allows water in well. Although short-lived, straw is inexpensive and virtually free of weed seeds.	Use them in wind-free areas – they are light. Avoid using on slopes where it can be washed away.
Pine needles 50-100mm	Looks good. Increase water-holding capacity of the soil. Lets in lots of water. Adds humus to soil in decomposition process. Increases soil acidity.	Excellent mulch for acid loving plants. Loosen regularly to prevent the needles from forming a water impervious mat. Renew regularly.

Inorganic Mulches

Man-made or created from inorganic natural sources. They do not break down, and do not improve or nourish the soil, but are long lasting. The most commonly used are pebbles, gravel or rocks.

Types of mulch	Benefits	Tips
Pebbles, gravel or rocks	Available in varying sizes, shapes and colours and make a permeable and permanent mulch. They help to conserve water.	Because they store heat, they are best used in cooler or shaded parts of the garden.
Landscape plastic	It does not allow oxygen to enter the soil and can lead to souring of the soil.	Not recommended



Ipswich City Free Tree Program

Ipswich City Council offers Ipswich ratepayers the opportunity to receive free plants each financial year. Many of the plants on offer are excellent water wise alternatives while still providing an attractive plant for your home garden. Just ask our friendly staff for assistance.

Who is Eligible to have free plants?

Just present your current Rates Notice, Queensland Housing Commission Card or Defence Housing voucher, or a copy of your landlord's current rates notice at any Ipswich City Council Nursery and receive your allocation of free plants.

How many plants can I have?

Group	Quantity
Residents (property owners)	8
Schools	25
Sporting Clubs	25
Churches	25
Rural property owners (Properties over 4 ha)	25
River Blocks (Adjacent to river)	25
Primary Producers	100
An ABN number will need to be supplied. Plants are selected by nursery staff to suit the planting conditions and supplied in tube stock for ease of planting.	
Wildlife Carers*	30
Land for Wildlife*	50
Voluntary Conservation Agreements*	100

* Groups and individuals can apply directly through the Ipswich City Council Conservation, Parks and Sports Department.

Nursery Location

Queen's Park

Goleby Avenue, Ipswich

Open: Wednesday 7:30am to 12:00pm
12:30pm to 3:30pm
Thursday 7:30am to 12:00pm
12:30pm to 3:30pm
Saturday 8:00am to 12:00pm

Goodna

Stuart Street, Goodna

Open: Wednesday 8am to 12:00pm

For mobile nursery times and other information on the Program contact Ipswich City Council.

Ipswich City Council Nurseries are proud to be a participant in the Ipswich City Council Bushland Friendly Nursery Program.