

Think Green



THINK GREEN LIVING GUIDE





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INTRODUCTION

The City of Joondalup is committed to reducing its environmental impact by minimising its energy and water use, waste production and greenhouse gas emissions. The City is taking action to protect and enhance the City's natural areas, coastline and wetlands.

The City also encourages residents to Think Green and take steps to minimise the environmental impacts from their home. Think Green Living is about taking actions to reduce your environmental impact and provide other benefits such as saving money.

This Think Green Living Guide will provide you with information and steps you can take to reduce your energy and water use, waste production and greenhouse gas emissions. It will also provide you with tips on protecting your local natural environment.

WHY THINK GREEN

The global, national and local climate is changing. For the south-west of Western Australia this will mean hotter and drier conditions. The impacts from this changing climate are likely to include rising sea levels and increased storm inundation, increased numbers and intensity of bushfires, increased number of drought months and reduced water availability. These impacts will affect the City's natural areas, coastline and wetlands which are of significant value to the community and provide important habitat for flora and fauna.

The Inter-Government Panel on Climate Change (IPCC) has said that for the severity of climate change impacts to be reduced significant reductions in greenhouse gas emissions are needed. A significant reduction in greenhouse gas emissions will require action from all spheres of government as well as businesses, the community and individuals.

Action the City is taking to reduce its greenhouse gas emissions and adapt to future climate change is detailed in the City's Climate Change Strategy.

THINK GREEN ENERGY

HEATING AND COOLING

Heating and cooling accounts for about 18% of an average household's electricity bill. Try the below tips to reduce the cost of energy bills and stay comfortable in the hot and cool months.

Tips for staying cool in summer:

- Use fans rather than air conditioning.
- Set your air conditioner at 24 degrees or warmer – every degree cooler than this uses about 10% more energy.
- Don't add unnecessary heat to your home. Turn off all lights and electrical appliances when not in use and switch from using the oven to using the barbeque on hot days.
- Cool yourself instead of your home. Wear light clothing to try to stay cool. When you do switch on the air conditioning, cool in zones so you don't waste energy cooling areas you are not using.

Tips for staying warm in winter:

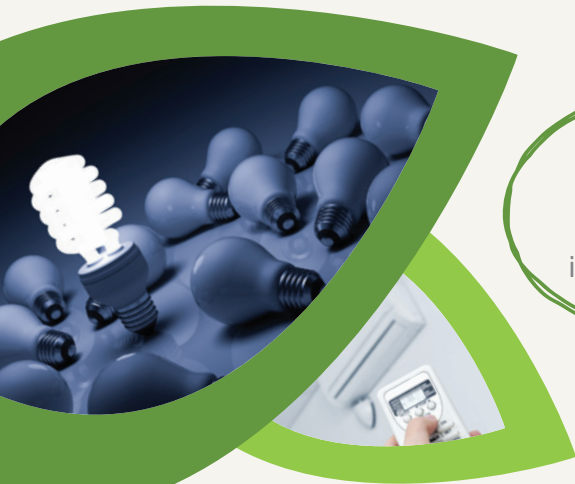
- Rug up. It is more efficient to warm yourself, rather than your whole home. Put on a jumper, have a warm drink and use a blanket while seated.
- Draught proof windows and doors and close ducted ceiling vents in winter. If ducted ceiling vents are left open the warm air will rise into your roof space and won't warm the room.
- Set your heater at 18 degrees or cooler. Every degree warmer than this will use 10% more energy.
- Open curtains during the day to let the sunlight warm your home and close them in the evening to trap the warmth in.



APPLIANCES AND LIGHTING

The types of appliances and lighting that you purchase and how you use them is important. The below tips may seem simple but simple changes can make a big difference.

- Purchase energy efficient products with high energy star ratings. While it may have a higher initial cost it is likely to save money in the long run.
- Set your fridge temperature between 3 and 5°C and your freezer temperature between -15 and -18°C.
- Use LED or compact fluorescent light bulbs.
- Turn off lights in rooms that are not in use and use natural light where possible.
- Wash clothes in cold water instead of hot water (this will also make your clothes last longer).
- Use dishwashers and washing machines only when they have full loads.
- Dry clothes on a line instead of in a dryer.
- Let hot food cool down before putting it in the fridge. Hot food will heat up the fridge, which will need to use more energy to stay cool.
- Set instantaneous hot water systems to 50°C and storage systems to 60°C.
- Turnoff appliances that are on standby or not in use, particularly audio-visual equipment which can account for up to 18% of a household's electricity use.
- Unplug your mobile phone charger when it isn't charging.



DID YOU KNOW ?

You can save up to \$220.00 a year by swapping 10 existing incandescent globes with compact fluorescent lamps.

SOLAR ENERGY

Generating your own renewable energy is one of the most effective ways to reduce your greenhouse gas emissions. Advances in technology and availability have made renewable energy options more affordable. Consider the below options:

- **Solar hot water systems** – solar hot water systems use solar collectors or panels to absorb energy from the sun. Water is heated by the sun as it passes through the collectors. It then flows into an insulated storage tank for later use. The storage tank is usually fitted with an electric or gas booster that heats the water when sunlight is insufficient.
- **Solar energy** – photovoltaic cells capture light energy that is converted to electricity by an inverter. Electricity used during daylight hours will be zero emissions. Excess energy generated can be fed into the main electricity network (also known as the grid) or stored in batteries.
- **Battery systems** – battery systems have recently entered the residential market and are a great way to make the most of your solar system and reduce your dependence on the grid. Excess energy generated during the day can be stored and used later.

If installing a solar energy system, ensure you use a retailer that is accredited by the Clean Energy Council.

If you cannot install your own renewable energy system consider purchasing renewable energy through Synergy.



SOLAR PASSIVE HOME

Passive solar design makes homes more comfortable all year round and reduces the need for artificial heating and cooling. Although passive solar design is easier when building a new home, the principles can be used to make existing homes more energy efficient.

- Orientate large windows on the northern side to let in the winter sun. Living areas are best located on the northern side of your home as it is the most comfortable all year round. Keep east and west facing windows small, to block the morning and afternoon sun in summer.
- Zone rooms with similar thermal requirements together to make heating and cooling your home more efficient.
- Insulation can reduce energy used for heating and cooling by 45 to 55% and will keep your home more comfortable. Insulation works by reducing heat transfer in and out of the home. R-values refer to thermal resistance of insulation products. The higher the R-value the more effective the insulation. In Perth, an R-value of at least 4.1 is recommended for roofs and 2.8 for walls.
- Shading east and west facing windows with external awnings or roller shutters will reduce the heat that can transfer through the windows during summer and the heat that can be lost in winter. Good quality blinds or curtains with a pelmet will also reduce heat transfer through windows. Open them up in the winter during the day to let the sunlight in and close overnight when it is cool. In summer keep them closed during the heat of the day.
For natural shading you can also plant deciduous shrubs and trees to shade your house. They will provide shade in summer and when they drop their leaves in winter it will allow the sun through.
- Use ventilation to cool your home naturally, capture cool seasonal cross breezes by opening your doors and windows when the sea breeze comes in. Ideally your doors and windows will be positioned to achieve cross ventilation in summer, with inlets smaller and lower than the outlets which should be higher and larger, and at the opposite sides of the house. As hot air rises, the cool air will push the hot air out.

THINK GREEN WATER

WATER SAVING TIPS

As the Perth climate becomes drier it is increasingly important to conserve water to ensure that future water demands can be met. Making simple changes can reduce your water use.

- Install a waterwise showerhead, flow restrictor taps, aerators and a dual flush toilet.
- Buy water efficient appliances. Make sure you check the WELS rating – the more stars the more water efficient. Four stars or more is best.
- Keep showers to four minutes or less.
- Fix visibly leaking taps or toilets as soon as possible.
- Check for hidden leaks by turning off all your water using systems overnight and reading your water meter in the evening and again the next morning. Unexplained water usage could mean a leak which needs further investigation. Check out the Water Corporation's leak detection tool.
- If you are waiting for the cold water to heat up, don't let it run down the drain, capture it and use it to water pot plants or fill up drink bottles.
- Turn the tap off while brushing your teeth.
- Don't rinse vegetables in running water, put the plug in the sink and rinse them in a shallow amount of water or use a bowl.
- Use a swimming pool cover to reduce water loss through evaporation and keep your pool warmer and cleaner.
- Wash your car on the lawn and only use a bucket. Do not use a hose to clean your driveway, use a broom or a blower instead.
- For more water saving tips, tools and offers visit the Water Corporation's website at watercorporation.com.au

DID YOU KNOW ?

A dripping tap can waste up to 10,000L of water in a year.



DID YOU KNOW ?

A small rainwater tank (up to 2,000L) can be plumbed into your toilet and washing machine, saving over 20,000L of water a year.

WATER SOURCES

Rainwater and greywater are two alternative water sources that you can collect and reuse in your home to help reduce your use of scheme water and lower the cost of your water bills.

RAINWATER TANKS

Rainwater that would normally run off your household roof into a soakwell can be captured from gutter downpipes and reused for household needs.

The Department of Health recommends using collected rainwater for non-drinking uses such as on your garden, flushing toilets, in washing machines or washing your car.

A rainwater system should have a mesh filter where the drainpipe enters the tank, to prevent leaves entering and to provide a 'first flush' mechanism. This diverts the first few minutes of rainfall to an overflow pipe instead of the collection tank and means the first flow of water, which washes dust and debris off the roof, will not be collected.

Rainwater harvesting may not be suitable if you have an older style house with an asbestos roof or roof with lead flashings as this can pollute the water you are collecting.

GREYWATER SYSTEMS

Greywater is wastewater from the shower, bath, sink or washing machine. This is water that is normally discarded into the sewer system but can be used (depending on the level of treatment) for non-drinking uses such as watering the garden, toilet flushing and clothes washing.

The installation of all greywater systems must comply with the Code of Practice for the Reuse of Greywater in Western Australia, for further information visit health.wa.gov.au. The installation of a greywater system also requires local government approval. To find out how to get approval visit joondalup.wa.gov.au.

The options available for greywater reuse are:

- Bucketing – where water is captured from the shower or laundry tub and is manually carried to be reused in the toilet cistern (for flushing), on the garden, pot plants or washing machine.
- Greywater diversion devices (GDD) – divert greywater to the garden without storage or treatment. The water is filtered to remove larger particles that would otherwise block your irrigation system. The greywater may only be reused legally in gardens via subsurface irrigation. The GDD will have a manual switch or tap so greywater can be sent into the sewer rather than the irrigation when desired, for instance in winter when the garden is watered by rainfall.
- Greywater treatment systems (GTS) – collect greywater and treat it to a higher level of quality than GDDs. If a GTS disinfects the greywater to a suitable standard the water may be used for surface irrigation (sprinklers), toilet flushing and for cold water washing machine use.





WATERWISE GARDENING

Over 40% of a household's water is used in the garden. By creating a waterwise garden you are not only helping save this important resource but will also save money with reduced water bills.

Tips for creating a waterwise garden:

- Mulch to keep the soil covered – this reduces water loss through evaporation, supports the soil microbiology and suppresses weeds. Five to 10cm of coarse mulch is best. You can also plant ground covers beneath fruit trees to protect the soil. Remove weeds from around plants as they will compete for water.
- Have an efficient watering system – drip irrigation below the mulch is the most water-efficient method. Using a timer can help ensure you don't over water.
- Water in the early morning or late evening – this allows the water to sink into the soil before the heat of the day.
- Build up your soil – add compost and manures, this allows the soil to retain the water when it rains. You can also add a soil improver with a wetting agent to increase the nutrient and water holding capacity of the soil.
- Water less often but more thoroughly. This way the water goes down deep into the soil, encouraging roots to go deep too.
- Plant local, native plants to reduce water use and increase biodiversity. Local native species are adapted to survive the dry conditions of our long summers and a variety of species are available to suit the needs of any garden. Visit joondalup.wa.gov.au for Growing Locals brochures for different soil types.

- Plant new plants in Autumn or Winter if possible, to give them the best chance to thrive.
- Reduce lawn cover or choose lawns that require less water. Replacing your lawn with waterwise plants will save you time watering, maintaining irrigation, fertilising and mowing. Lawns could be replaced with waterwise plants, ground covers and mulch.
- Zone plants with similar water requirements together to allow for more efficient watering.
- If you have a garden bore remember that normal sprinkler restrictions including the winter sprinkler ban still apply. For more information on groundwater visit the Be Groundwater Wise website at backgroundwaterwise.wa.gov.au



DID YOU KNOW ?

Waste from the red lid bin is taken to the Resource Recovery Facility (composting plant) in Neerabup where the waste is processed, and the organic waste portion is turned into compost.

THINK GREEN WASTE

REDUCING AND REUSING WASTE

Waste can be reduced by avoiding resource consumption, where possible, and by reusing waste items.

Tips for reducing waste:

- Take reusable bags or boxes when you go shopping.
- Choose products without packaging or minimal packaging.
- Buy in bulk where possible and take reusable containers to put your products in.
- Use a reusable coffee cup and drink bottle rather than disposables.
- Grow your own fruit, vegetables, and herbs at home.
- Incorporate salvaged and recycled materials into your next building or landscaping project.
- Limit excess printing of emails, documents and webpages. If you must print, use both sides of the paper.
- Buy recycled toilet paper - it is made from recycled paper products rather than from trees.
- Compost organic waste or start a worm farm.



- When buying new items such as clothing or toys, make sure they are durable and will last a long time.
- Place a 'no junk mail' sticker on your mailbox.
- Before making a purchase, consider if it is possible to re-use, repair or refurbish existing items.

Tips for reusing waste:

- Donate unwanted items such as clothes, books and homewares to charity shops for reuse by others or use an online community share site.
- Containers and packaging can be reused in many different ways – storing of small items, planting seedlings and craft activities.
- Give gifts in boxes or bags that can be reused. Use fabric ribbons to secure gifts rather than sticky tape and reuse old wrapping paper.
- Reuse any plastic bags you already have for shopping or as bin liners.

RECYCLING WASTE

Recycling your waste or unwanted items is easy to do and has several benefits for the community and the environment. Recycling conserves natural resources, reduces landfill and decreases pollution.

Recycling tips:

- Recycle relevant items including clean rigid plastics, clean paper and cardboards, clean aluminium and steel and clean glass using your yellow lid bin.
- Fluorescent globes, ink cartridges, mobile phones and batteries can all be recycled at City of Joondalup libraries.
- Tamala Park accept a lot of household items for recycling or for resale at the Reuse Shop.
- Make recycling easy by using separate bins or containers for recycling and rubbish in your home.



- Make sure recyclable items are empty. Items don't need to be spotless but you do need to remove any food from kitchen recyclables.
- Check for recycling in every room - many items in your kitchen, bathroom, laundry and study can be recycled too.
- Keep recycling out of plastic bags. Recycling in plastic bags won't be able to be sorted correctly and may end up in landfill.
- Refer to the City of Joondalup Waste Guide at joondalup.wa.gov.au for further details on how to recycle different types of materials.

COMPOSTING AND WORM FARMS

There are several options available for composting at home including compost bins, compost heaps or a Bokashi Bucket. Organic material generated around the house is a valuable resource and doesn't need to go to landfill. Composting is an easy way to process organic waste and provide benefits to your garden. Composting helps encourage plant growth, reduce dependence on fertiliser and returns nutrients to the soil, this encourages worms and helps the soil retain water.

Composting tips:

- Your compost bin or heap should be on soil, not concrete to allow for drainage and access by worms.
- Build your compost in thin layers of 3-10cm by adding kitchen waste (which is high in nitrogen) and garden waste (which is carbon rich).
- Add layers of newspaper and dried leaves to provide carbon, as well as pea straw and green garden clippings.
- Add oxygen to the mix by turning the compost with a garden fork to aerate it.
- For larger woody prunings, mulch first, then add to your compost or spread it straight onto the garden.
- Add water if the heap is too dry. It only needs to be moist, so do not saturate it.

- By getting an even ratio of 'green' (e.g. food scraps, grass clippings) and 'brown' (e.g. leaves, vacuum cleaner dust, twigs), you will have healthy compost.

Worm farming, like composting, is a cheap and simple way to cut down the amount of food scraps that you dispose of in your red lidded bin. Worms are surface feeders that eat fruit and vegetable scraps and turn them into a rich soil conditioner (called castings) and liquid that are good for the garden.

Worm farming tips:

- Ideal worm houses include wooden boxes, styrofoam boxes, stackable worm farms and stackable plastic worm factories. Worm farms can be homemade or purchased from a hardware store or nursery.
- Keep your worms shaded and cool.
- The best compost worms are Tiger Worms, Red Wigglers and Indian Blues. Normal worms from the garden do not work well in worm farms.
- Feed equal amounts of food and shredded paper (newspaper/cardboard).
- Vegetable scraps finely chopped or blended in a food processor (add a little water) are quickly consumed.
- Worms will also eat old worn out natural fibre clothing such as cotton t-shirts, woollen jumpers and denim jeans.



THINK GREEN TRANSPORT

BIKING AND WALKING

Did you know that on average three out of five car trips could be substituted by walking, riding your bike or using public transport? Using green transport has benefits such as reducing greenhouse gas emissions and air pollution, improving your physical and mental health and can save you money on petrol and car maintenance.

Walking or riding your bike is a great transport option, especially for short trips to work, the local train station, shops or cafés. Walking or riding to and from work may mean you might not need to make extra time for exercise.

Biking and walking tips:

- Check out the City's Map Your Move maps at joondalup.wa.gov.au to plan your route within the City or visit transport.wa.gov.au for metropolitan and regional maps.
- If you are planning to ride your bike a lot, select a quality bicycle. Second-hand bikes can be excellent value if they've been well cared for.
- Electric-assist bicycles are another option. They reduce the amount of effort required from the rider. Electric-assist bikes are much heavier than conventional bikes due to the battery, motor and other associated components. The battery may need to be recharged regularly depending on how much you use the motor and how far you ride.
- It's important to stay safe when riding on the road. Ride defensively, scan the road, show common sense and courtesy.
- Pedestrians and bike riders often need to share the path – follow these simple rules to reduce potential conflict.
 - Be considerate of other path users;
 - Be alert if using headphones;
 - Always keep to the left;
 - Move off the path if you have stopped;
 - Keep dogs on a lead;

- If you're riding a bike, ring your bell when passing; and
- Bike riders should give way to pedestrians and slow when passing.

DID YOU KNOW ?

The City of Joondalup has over 900km of pathways.

PUBLIC TRANSPORT

Public transport is a great option for reducing the carbon emissions of your day to day travel. A bus full of people takes up considerably less space on the road and produces far less emissions than the equivalent number of driver-only cars. Taking the bus or train helps ease traffic congestion as well as reduce carbon emissions.

Tips for using public transport:

- Plan your route and schedules ahead of time. You can use the Transperth Journey Planner at transperth.wa.gov.au or download the Transperth App to work out the best routes.
- Get a SmartRider card – it gives you 10% off your fare (20% if you choose to autoload) and allows easy, hassle free travel on Transperth services. If parking at the train station you can also link your car to your SmartRider and use it to pay for your parking.
- Walk or ride to your nearest train station. Walking or riding to and from public transport is a great way to incorporate extra physical activity into your routine and take the stress out of finding parking. Most train stations have bike storage and bikes can be taken on some Transperth services. Visit the Transperth website for everything you need to know.
 - Take the opportunity to read, nap or listen to music. Taking public transport offers valuable time to unwind and relax.
 - Start early or start later. If you find the commute during peak hour uncomfortable, speak to your manager about changing your working hours so you can start earlier or later to avoid the rush and enjoy your commute.
 - If public transport is not an option for you, carpool wherever possible.



THINK GREEN BIODIVERSITY

SUPPORT BIODIVERSITY IN YOUR HOME AND GARDEN

Protect and conserve biodiversity in your local, natural environment by implementing these simple actions.

Tips for supporting biodiversity in your garden:

- Grow local, native plants to reduce water use and increase biodiversity. The City's website has Growing Locals brochures for different soil types.
- Avoid planting species that are environmental weeds as they have the potential to escape into the local bushland. Visit joondalup.wa.gov.au for the City's weed brochures.
- Avoid using pesticides or chemicals that harm beneficial organisms or contaminate soil and water.
- When creating your garden use sustainable and, ideally, locally sourced or recycled materials. Source pasteurised mulch to the relevant Australian Standards (AS4454-2012) as it has been sterilised to remove plant diseases such as dieback.
- To attract birds plant a range of local native trees, shrubs and grasses in your garden to provide a variety of natural bird food such as seeds, pollen, nectar and insects.

Tips for supporting biodiversity in your home:

- Buy wood and wood products that come from a sustainable legal source. Reduce your paper consumption and use recycled paper.

- Be careful what goes down your kerbside drain, oils, detergents and chemicals will eventually end up in local waterways and will affect water quality and flora and fauna health.
- Purchase non-toxic cleaning products. They are kinder to the environment and better for your health. There are now many varieties to choose from on shop shelves, or you can consider making your own cleaning products.
- When travelling avoid buying souvenirs that are made from any part of an endangered animal. By avoiding certain wildlife products and carefully watching what you buy, you can prevent bringing many species closer to the edge of extinction.
- Buy sustainable seafood, avoid endangered species and buy seafood labelled with the Marine Stewardship Council logo.
- Research citizen science projects that you could get involved in.
- Don't release balloons into the environment as they can harm wildlife such as birds and turtles that may ingest fragments or become tangled in the strings attached to the balloon.

DID YOU KNOW ?

That south west Western Australia is one of only 36 global biodiversity hotspots. More than half of the 5,570 plants in this hotspot are found nowhere else in the world.



VISITING NATURAL AREAS

Visiting natural areas is great for your overall health and well-being, both physically and mentally. Visitors to Joondalup's natural areas can help protect these special places by acting responsibly and following the tips below.

- Join or start a Friends Group to care for your local bushland.
- Keep to paths and tracks when walking and riding in bushland. Staying on tracks minimises erosion and limits spreading of weeds and plant diseases such as dieback.
- Clean soil and plant material from your footwear before entering and leaving bushland to prevent spread of plant diseases. Use the boot cleaning station if there is one available.
- Avoid walking on wet soil where possible.
- Never feed wildlife, human food can make wildlife sick.
- Don't pick wildflowers or remove native plants from the area, all native species are protected by law.
- Dispose of litter in a bin or take litter with you when leaving parks or natural areas.
- Never dump garden waste in bushland areas, as it can introduce new weed species.
- Respect animals' homes by leaving plants, logs and even rocks where you find them.
- Report rubbish dumping or unsocial behaviour to the City of Joondalup on **1300 655 860**.
- Walk dogs on a lead and clean up after them. Dog droppings add nutrients to the ground and encourage weed growth.
- Keep cats contained, particularly at night.
- Observe any signs in the area. Signs are there to provide information and to assist in protecting you and the environment.



ENVIRONMENTALLY RESPONSIBLE PET OWNERSHIP

Reducing the impact that your domestic pets have on our native fauna and biodiversity is a crucial aspect of responsible pet ownership. Pets can have a significant impact on biodiversity, wildlife and the health of the environment.

Responsible pet ownership allows you to enjoy the presence of native birds and wildlife in your surroundings as well as your pet.

Tips for reducing the impact of your pet:

- Keep your cat at home, especially at night. This will not only prevent your cat from killing wildlife, it will also help to keep it safe.
- Put a bell or two on your cats' collar to alert birds. Roaming cats can kill native wildlife, even well-fed cats may hunt.
- Desex your pet. This will prevent unplanned kittens or puppies that may be difficult to find homes for.
- Pick up after your pet. Dog owners should pick up and dispose of their dog's droppings when in public places. Some dog droppings contain harmful bacteria, which are toxic to waterways and can contribute to excessive bacteria pollution on beaches. Always remember to carry bags with you.
- Don't release animals into the bush. Besides the impact they have on native wildlife and their habitat if they become feral, dumped animals may not survive and will suffer needlessly. Goldfish or other fish species released into local waterways can upset the natural balance and impact on native fish species.
- Ensure that dogs are kept under control. The City of Joondalup has many parks and reserves to exercise your dog, including Hillarys Dog Beach. However, there are also some areas where dogs are prohibited and others where dogs must always be on a lead. Visit **joondalup.wa.gov.au** for further information.





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This document is available in alternative formats upon request.