



Waterwise verge best practice guidelines

Guidance for Local Government

Review Process

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Purpose of these guidelines

These guidelines have been developed to assist councils in developing a best practice Waterwise Verge Policy (policy) or to amend an existing verge policy to guide new and refurbished verges. The aim

of these guidelines is to provide recommendations as a benchmark to ensure best practice waterwise verge gardens are achieved and maintained across local government municipalities in Western Australia.

Why should councils develop a Waterwise Verge Policy?

Verges form important green spaces within our community that are often undervalued and provide a number of ecological and cultural benefits. They are also shared spaces, necessary for access and services including utilities, crossovers, street trees and footpaths.

Lawn has been the preferred option on verges in WA for many years, although the environmental and cost saving benefits of establishing low water use plantings as an alternative treatment are significant.

If well designed and properly managed, a waterwise verge can:

- improve water efficiency and increase stormwater infiltration.
- create a cooling effect and mitigate 'urban heat' in summer.
- provide habitat for local wildlife and increase biodiversity.
- provide opportunities for local food production.
- improve streetscape amenity and potentially increase property prices.

What to include in a Waterwise Verge Policy

The following key aspects, as detailed within this document, should be addressed in a council's policy.

- approvals and controls
- design considerations
- preliminary works and soil preparation
- plant selection
- mulch
- irrigation and watering
- maintenance.

Approvals and controls

Councils should have a clear and accessible policy that addresses individual waterwise verge approval requirements upfront to help with resident understanding and minimise non-compliance issues.

Where a council has a verge incentive scheme in place for residents, they should clearly outline the application process and eligibility criteria.

It is recommended that the following items be requested from residents if pre-approval is required:

- A completed application form (if applicable).
- A detailed scaled plan of the proposed verge design (preferably at 1:100) which identifies any existing features (i.e. street tree and powerlines), plant species, plant density, any surface treatments, etc. Council may like to consider a downloadable scaled graph paper that residents can use to draw their verge on.
- A written confirmation from all strata owners/managers approving the verge works to be completed (if applicable).
- It is also recommended that representatives from a council's planning and landscape departments are involved in the development of the policy and any subsequent verge approval process.

External documents and controls

There are many worthwhile resources available that can assist councils in developing their policy, as well as aiding the approval and installation process for residents. Some of these resources are listed below and should be made known to residents via the policy.

Utility Providers Code of Practice

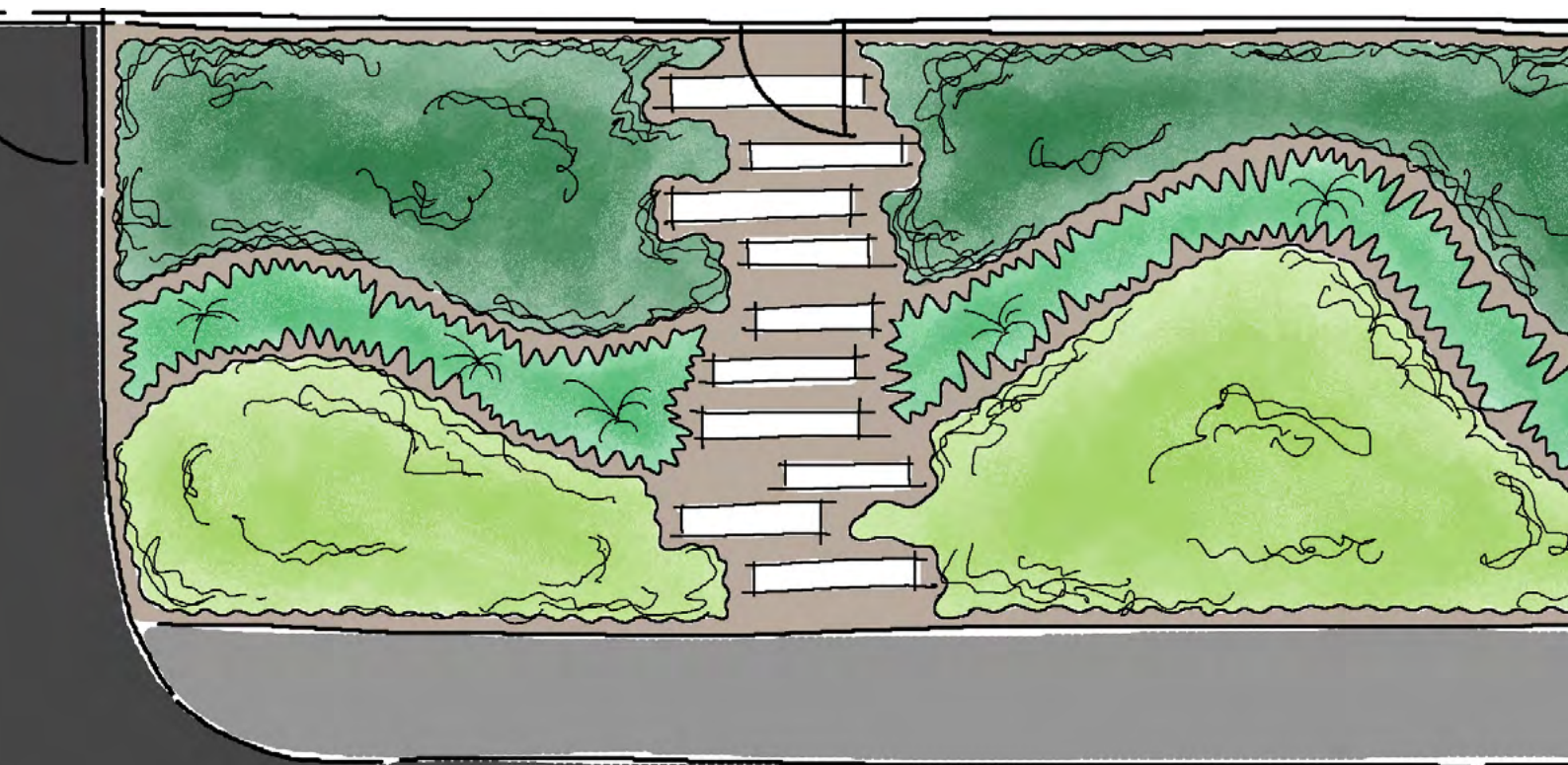
The State's utility providers maintain strict alignments for their underground services and overhead powerlines in the road verge. A handbook called the Utility Providers Code of Practice for WA (2019) is available free from the Dial Before You Dig website 1100.com.au

Dial Before You Dig

The identification and location of services buried within verges can be provided on the Dial Before You Dig website 1100.com.au.

Water Corporation

For details of Waterwise Specialists visit watercorporation.com.au/waterwise that can help residents with the development of their waterwise verge.



Design considerations

Within the policy, it is important for councils to highlight the safety, streetscape amenity, practicality and essential maintenance requirements associated with a waterwise verge.

Design and aesthetics

Photos or conceptual drawings of best practice waterwise verges should be included within the policy to inspire residents undertaking their verge transformations. Encourage residents to talk with their neighbours for verge garden continuity along the street.

Some council's also have demonstration verges available for the community to visit, with details available in the guidelines or via the council website.

Access routes

Pedestrian, vehicular, emergency and mail delivery access routes or crossovers should be detailed in the policy with the following design parameters incorporated as a minimum.

- Plants should be set back from kerbs or footpaths by a minimum of 0.5m to ensure they don't impede users when mature.
- For verges without a footpath, plants should be set back at least 1.5m from the road kerb to allow for pedestrian movement and access to and from vehicles that are parked on the road. This area may also be used for rubbish bins or bulk/green waste during collection periods.

Paving and parking spaces

Uncommon verge situations including popular pedestrian thoroughfares, parking requirements and/or bus stop gathering spots should be incorporated within the policy, with guidance from the council as to acceptable surface treatment alternatives.

Councils may wish to assess these situations on an individual basis.

Verge treatments and structures

Residents should be primarily encouraged to install soft landscape treatments, such as waterwise plants and mulch. The policy should clearly outline which hard landscaping treatments are and are not permitted within verges, e.g. generally loose gravel, rocks, ornamental elements, play equipment, and garden features are not permitted due to safety and liability issues, however, some forms of paving, raised garden beds and kerbing may be permitted.

Vehicular visibility

Maintaining clear pedestrian, cycle and vehicular sightlines at all times is important to detail in the verge policy. Further information regarding plant heights have been outlined in the plant selection section below.

Street trees

The policy is a good opportunity to inform residents that councils are responsible for the planting and maintaining of street trees within verges. It is worth adding details on whether residents can request a new street tree or have their street tree maintained, as well as the council procedures involved.

It is recommended that councils promote waterwise tree species to their residents which require watering within state restrictions (2-3 days per week) and root systems that have a lower probability of impacting essential services. Tree species are not recommended for verges if they have a known risk of limb failure, to cause allergic reactions, are a declared invasive species, are a safety hazard or have an invasive or fibrous root system that can impact utility services to the community. For a list of Waterwise trees, visit watercorporation.com.au

Maintaining utility and public infrastructure

Councils should provide guidance on acceptable treatments around existing public infrastructure such as street lights, water meters, power poles and/or street signage.

As a minimum, it is recommended the following be included:

- Consider tough, low growing, nonclimbing plant species under street trees and power lines as authorities often use cherry pickers to access infrastructure and prune street trees.
- Consider waterwise street tree species (if the resident is able to choose) that suits the purpose of the area, verge size distance to utility services and meets maintenance (e.g. deciduous trees may require more maintenance such as street sweeping to keep leaves out of stormwater drains), and safety requirements within the public space.
- Verges serve as a corridor for utilities with a number of water, electrical, gas and telecommunication alignments located underground within these areas. Utility providers have a right to dig up verges to gain access to their alignment for new services, and to upgrade or repair existing services. Whilst utilities and

their contractors will try to minimise disruption, rectification of verge treatments following any work can be the responsibility of the resident.

- It is recommended that the policy remind residents to consider the positioning of any utility assets e.g. water meters when planning the verge garden to ensure assets are unobstructed and safely accessible for reading and maintenance.

Bushfire prone areas

Councils with land located within a bushfire prone area as designated by the Fire and Emergency Services Authority, must ensure their advice to residents addresses bushfire risk in accordance with State Planning Policy 3.7. Key reference documents include:

- Planning in Bushfire Prone Areas: dplh.wa.gov.au
- Guidelines for Planning in Bushfire Prone Areas: dplh.wa.gov.au
- Bush Fire Prone Areas map: dfes.wa.gov.au



Preliminary works and soil preparation

The policy should include guidance on ground preparation and soil improvements as this will have a big impact on the success of plantings.

Removing an existing grassed verge

Removal of lawn/grasses is crucial to the success of a waterwise verge garden to prevent competition with new plantings. While some perennial grasses such as buffalo and kikuyu can be removed manually, couch grass typically needs treated with an appropriate herbicide that has glyphosate as the active ingredient to prevent future infestation. Important considerations to incorporate into the policy include:

- When using herbicides, residents should consider using a licensed contractor. Alternatively, if undertaking the task themselves, they should be advised to always apply as directed on the pack, including follow up treatments as required.
- Attempting to kill couch grass by methods such as smothering with mulch or temporarily covering it in plastic is unlikely to be successful and is not recommended.
- Once grasses have been dealt with, residents can begin soil preparation as part of the next stage of implementation.

Existing tree root systems

Within the policy, residents should be reminded to carefully avoid any damage to existing trees and their root systems during the development of a waterwise verge.

Current verge levels and verge stabilisation

Consideration of the verge ground levels must be acknowledged within the policy. The following information is worth including.

- If grass is to be removed, verge levels should be left at least 7.5cm below surrounding kerbs and paths to allow for the installation of mulch, which must finish only slightly below adjoining surfaces.

- Residents may be permitted to create small undulations in their verge, in order to reduce landfill contributions.
- Residents should design their verge to hold stormwater within the verge wherever possible, rather than impacting adjoining street stormwater drains.
- In rare instances, steep slopes may need additional support to prevent erosion where soils and mulches can wash into stormwater systems. Hard landscape treatments may be considered and approved by council on an individual basis.

Soil quality and preparation

The policy should promote verge gardens which incorporate local native species, without the need of irrigation once established. It is recommended that these gardens don't require the application of a soil conditioner as it dries out in summer and its effectiveness is greatly reduced. It is however important that residents apply a quality soil wetting agent during establishment, which will increase the soil's 'wettability', allowing water to penetrate deep into the root zone.

Alternatively, if residents are intending to use a broad range of exotic and native plants, or irrigate their verge, it is recommended that the policy describe the benefits of incorporating soil conditioners, like well composted organic matter and clay-based additives, within the top 30cm of soil. This will assist in maintaining microbial activity, as well as improving the soil's moisture and nutrient holding capacity.

The policy should recommend the use of Waterwise or Smart Approved WaterMark products when specifying bagged soil conditioners or wetting agents.



Plant selection

There are many different verge garden treatments that are suited to WA with some great examples of productive, ornamental and cottage gardens. We primarily encourage the establishment of waterwise unirrigated verges as the best approach to conserving water and this philosophy should also be strongly encouraged within the council's policy.

Waterwise plants for your local area

It is important that the policy consider local conditions. For instance, the soils and climate in Kalgoorlie are very different to Perth's Swan Coastal Plain.

Unirrigated dryland, native plants are the most appropriate for verge gardens as they can survive the hot dry summers with little to no supplementary watering once established. These are typically local native plant species which are drought tolerant and endemic to the local area. The best time to plant is late autumn/early winter to benefit from seasonal rain and low evaporation rates.

A number of councils provide free or subsidised native plants to local residents and details of this service should be provided within the policy, where applicable.

Consider plant heights

In order to maintain pedestrian, cycle and vehicular sightlines, low growing shrubs and groundcovers should be promoted within the verge policy. It is recommended the following be incorporated.

- A maximum maintained height of 70cm for all plants including flower heads.
- Height limits may be reduced for properties located on street corners or major intersections, where maintaining clear visibility is even more crucial.
- Shrubs and approved structures should be set back and clear of kerb and footpath by at least 50cm, with groundcovers an acceptable treatment in this area.

Plants to avoid

Plants and trees which are declared weeds, prickly, poisonous or are known to cause allergic reactions should be strongly discouraged within the policy and residents requested to remove as soon as identified within a verge garden.

Root invasiveness of waterwise plants should also be checked. To help select trees or shrubs that have suitable root systems for verges, visit watercorporation.com.au/selectingtherighttree

Lawn

Councils should encourage the reduction or removal of irrigated lawn within the verge policy and instead favour a more waterwise alternative.

If lawn is allowed, recommend that just a narrow strip of warm season grass, which is drought tolerant and suitable for WA's warm conditions, is kept along the kerb for bins, or to allow people to alight from cars.

The use of synthetic turf should not be encouraged as it still requires maintenance to present well and doesn't have the cooling effect of natural turf or plants.

Resources

Councils and residents can source further information and advice from our waterwise plants page as well as local Waterwise Garden Centres. Visit watercorporation.com.au/plants for more information.

Mulch

The use of waterwise mulch should be recommended as it helps to reduce plant stress, suppress weed growth and reduce evaporation losses from the soil and is therefore ideal to use in a low maintenance waterwise verge garden.

Councils should advise residents how to apply mulch once all plants have been installed. The following information should be included in the policy:

- A 5-10cm thick even layer of coarse mulch should be spread across the verge, ensuring that it is kept clear from the stem of plants.
- Finished mulch level must sit just below adjoining kerbs and footpaths, to prevent mulch from spreading beyond the garden bed, flowing into

stormwater systems and creating a hazard to pedestrians.

- Use Waterwise or Smart Approved WaterMark products when specifying bagged mulch. Landscape supply centres will have a selection of quality mulches, however coarse mulches are preferred.
- Residents should clean up after mulching to ensure it isn't dispersed across footpaths and roads, creating a safety hazard.
- Check mulch every few months and replenish as necessary to maintain a 5-10cm layer across planting areas.

Irrigation and watering

Waterwise verge gardens that don't require permanent irrigation are preferred as they use less water. If irrigation is to be installed, sub-strata (under mulch) drip irrigation is recommended as the most efficient irrigation type suited to the exposed conditions typical of verges.

Councils should recommend that a Waterwise Irrigation specialist be engaged to assist residents in the design and or installation of the irrigation system to maximise water efficiency.

Watering times

Councils should specify the allocated watering days within the policy. It is important that watering only occurs only once between 6pm and 9am on these days.

For allocated watering days, visit watercorporation.com.au/mydaysfaq

Watering exemption

The policy should inform residents that they might be eligible for a watering exemption when installing a new verge garden. For further information visit watercorporation.com.au/exemptions

Maintenance

The policy should clearly state that the ongoing maintenance of the verge (excluding any street trees) is the responsibility of the resident.

A waterwise non irrigated native verge requires little maintenance, with only the occasional weeding,

pruning, mulching (replenish to 5-10cm layer) and hand watering required.

Local community groups who may be able to assist elderly and disabled residents in maintaining their verges should be made known through the policy.

Further Information

For any further information in relation to these guidelines please email our water efficiency team at: wepartnerships@watercorporation



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