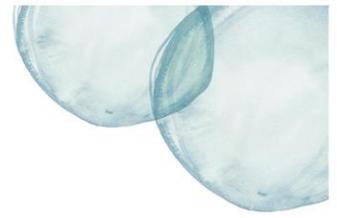


Waterwise verge

best practice guidelines



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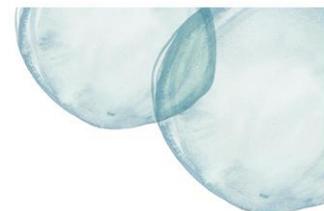


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Purpose of these guidelines

These guidelines have been developed to assist councils in developing a best practice Waterwise Verge Policy (policy). It also intends to assist councils in further developing or amending existing verge policies for new and refurbished verges.

The aim of these guidelines is to essentially become a benchmark tool to ensure best practice is achieved and maintained across all local government municipalities in the Perth Metropolitan area.

Why should councils develop a Waterwise Verge Policy?

Verges form important green spaces within our community; assisting with urban cooling whilst creating ecological corridors through our streetscapes.

If well designed, a waterwise verge can:

- assist in maximising water efficiency.
- ensure our verges are safe environments for the greater community.
- contribute to the visual aesthetic of our streets and assist in increasing property prices.
- create a cooling effect and counteracts 'heat island' effects in summer.
- increase the thermal performance of houses.
- provide ecological benefits, such as providing habitat for local wildlife and promoting biodiversity.

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.

1.1 Approvals and Controls

- 1.2 Design Considerations
- 1.3 Preliminary Works and Soil Preparation
- 1.4 Plant Selection
- 1.5 Mulch
- 1.6 Irrigation and Watering
- 1.7 Maintenance

1.1 Approvals and controls

Within the policy it is recommended that councils address their individual approval requirements, e.g. what is required to obtain approval prior to installation of a waterwise verge garden.

Having a clear and easily accessible policy will help residents to understand and address the requirements of the council from the start and minimise non-compliance issues.

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

Where pre-approval is required, it is recommended that the following items be requested from residents in order to gain council approval.

- A completed application form (if applicable).
- A detailed, scale 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 the council's planning and landscape departments are involved in the



development of the policy and any subsequent verge approval process.

1.1.1 External documents and controls

There are many worthwhile resources available that can assist councils in developing their policy, as well as aiding the approval process for residents. It is advisable that councils make these resources known to residents, for ease during the approval process. Some of these resources are listed below.

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 is available free from the [Main Roads website](#).

Dial Before You Dig

- The identification and location of services buried within verges can be provided on the [Dial Before You Dig website](#).

Water Corporation

- Visit watercorporation.com.au/waterwise for details of Waterwise Service Providers that can help residents with the development of their waterwise verge.

1.2 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.

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

1.2.1 Design and aesthetics

Photos or conceptual drawings of waterwise verges should be included within the policy to inspire residents undertaking their verge transformations.

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

1.2.2 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.

1.2.3 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.

1.2.4 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 and kerbing may be permitted.

1.2.5 Vehicular visibility

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

1.2.6 Street trees

Not all residents are aware that councils are responsible for the planting and maintaining of street trees within verges. It is worth documenting within the policy that residents can request a new street tree or have their street tree maintained, as well as the council procedures involved.

1.2.7 Maintaining utility and public infrastructure

Council 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, non-climbing plant species under street trees and power lines as authorities often use squirrels or cherry pickers to access infrastructure and prune street trees.
- Verges serve as a utilities corridor 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. Rectification of verge treatments

following this work can be the responsibility of the resident.

- 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. This can be achieved by:
 - not planting new plants and shrubs directly next to utility assets.
 - keeping surrounding plants trimmed.
 - clearing excess sand and mulch.

Note. The water meter should be clear 30cm around every side, and have at least 120cm of open air above. Visit watercorporation.com.au/clearmeters for further information.

1.2.8 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 in relation to verge treatments addresses bushfire risk in accordance with State Planning Policy 3.7 Planning in Bushfire Prone Areas (http://www.planning.wa.gov.au/dop_publications/SPP_3.7_Planning_in_Bushfire_Prone_Areas.pdf), and the accompanying Guidelines for Planning in Bushfire Prone Areas (http://www.planning.wa.gov.au/dop_publications/Bushfire_GuidelinesText.pdf).

A map of designated Bush Fire Prone Areas can be found at: <http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx>

1.3 Preliminary works and soil preparation

The policy should include clear and comprehensive guidance on ground preparation and soil improvements as they can have a big impact to the success of any verge.



1.3.1 Removing an existing grassed verge

The following recommended approach should be incorporated.

Removal of lawn grasses is crucial to the success of a waterwise verge garden to prevent competition with new plantings. Whilst some perennial grasses such as buffalo and kikuyu can be removed manually, couch grass typically needs to be killed by spraying with an appropriate herbicide such as glyphosate (commonly known as Roundup) to prevent reinfestation in the future. Important considerations 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.
- It should be noted that 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 look toward the next stage of implementation being soil preparation and irrigation as required.

1.3.2 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.

1.3.3 Current verge levels and verge stabilisation

Consideration of the verge's 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.
- It is important to note that wherever possible, stormwater should be held within the verge, 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.

1.3.4 Soil quality

The policy should promote verge gardens which incorporate local native species, without the need of irrigation. 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, such as Bentonite, 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.

Waterwise Verge Best Practice Guidelines



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



1.4 Plant selection

There are many different verge garden treatments that are suited to Perth (and South West WA) with some great examples from productive to 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.

1.4.1 Waterwise plants for your local area

It is important that the policy be considered in light of local conditions. For instance remnant vegetation and clay soils found in the Perth Hills will require a very different approach to the sandy soils of the 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. These are typically local native plant species which are drought tolerant and endemic to the local area.

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

1.4.2 Consider plant heights

In order to maintain pedestrian, cycle and vehicular sightlines, low growing shrubs and groundcovers should be promoted within the verge policy. We recommend 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.

1.4.3 Plants to avoid

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

The roots of some trees and shrubs can damage wastewater and drainage pipes and other underground services. Trees and shrubs rely on their roots to find moisture and nutrients. These pipes are an attractive moisture source. A small hairline fracture in a pipe is all a root needs to get in. Then it quickly grows inside the pipe, causing a reduction in flow and eventually a complete blockage. Often complete sections of pipe need to be replaced and this is costly. This can affect both utility pipes and internal plumbing.

Visit watercorporation.com.au/findyourtree for information about trees and shrubs that have suitable root systems for verges.

1.4.4 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.

1.4.5 Resources

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



1.5 Mulch

Waterwise mulch 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 recommend the use of mulch provided it is carefully placed within the verge and does not create a hazard to residents.

1.5.1 Mulch application

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.

The policy should recommend 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.

1.6 Irrigation and watering

We encourage the installation of a waterwise verge garden that conserves water by eliminating the need for any permanent irrigation. If irrigation is to be installed, sub surface drip irrigation is recommended as the most efficient irrigation type suited to the exposed conditions typical within verges.

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

1.6.1 Watering times

Councils should specify within their verge policy the allocated watering days. It is important that watering only occurs once between 6pm and 9am on these days. Visit watercorporation.com.au/mydaysfaq for allocated watering days.

1.6.2 Watering exemption

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

1.7 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 and hand watering required.

1.7.1 Mulch

It should be recommended that mulch is checked every few months and replenished as necessary to maintain a 5-10cm even layer across all planting areas.

Residents must carefully clean up after re-mulching so mulch isn't dispersed across adjacent footpaths and roads creating a safety hazard.



1.7.2 Maintenance assistance

If local community groups exist who may be able to assist elderly and disabled residents in maintaining their verges, council's should make these resources known through the policy.

1.8 Further Information

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