

Carina Loop Waterwise Demonstration Garden

Land use / development type	Scale
Public open space	Street

Efficient use of water	Scale
Waterwise Landscaping	Street

Site conditions	
Soils	Quindalup
Groundwater	Perth groundwater area / Whitfords Subarea
Local government	Location
City of Joondalup	Ocean Reef

Water efficiency is a key challenge faced by many Australian communities. Perth has a hot, dry climate with a limited water supply, so it is vital to adapt public open space and garden designs to suit climate conditions.

Grass is generally a feature of home gardens and public open spaces; however, some lawn varieties are not well suited to Perth's climate and require a lot of water. Landscaping with mulch and native plants that are suited to the local climate use less water, while also providing biodiversity, habitat and shade.

Waterwise gardens generally need watering during summer for the first two years and then little to no watering once established.

The City of Joondalup with co-funding from the Water Corporation's Waterwise Greening Scheme, has installed a waterwise demonstration garden in Carina Loop's road island in Ocean Reef.

This road island covers an area of 270m² and previously included lawn and 3 exotic trees that required regular irrigation using groundwater.

The City removed the exotic trees, lawn and irrigation and replaced them with WA native plants that were selected in consultation with the local residents. Over 1,000 native plants were planted in the road island area, including 4 new trees (Peppermint), and ground covers such as *Banksia* species, pigface and *Kennedia*. The City also mulched the garden using waterwise, pathogen-free mulch.

The Carina Loop Waterwise Demonstration Garden features signage to educate residents about the garden and encourages them to apply similar waterwise practices in their own gardens.

Using locally native plants significantly decreases water requirements because these species are adapted to the local soil conditions and climate.

The City selected the trees based on their water rating, root invasiveness, suitability for the area and ability to cool the streetscape. These trees also form part of the City's broader greening programs and initiatives like the Street Tree Program and Leafy City Program.

The waterwise garden encourages residents to green, beautify, and cool their verges and neighbourhood, while raising awareness of the importance of verges as green spaces.

To further encourage residents to use native plants in their gardens, the City has implemented a Waterwise Verge Rebate Program, which includes a waterwise native plant giveaway to encourage members of the community to create their own waterwise verge gardens at home. The City has also hosted several waterwise gardening workshops for the community, encouraging residents to plant waterwise and biodiverse gardens.

Key Project Features

- Waterwise landscaping promoted to residents and implemented within public open space.
- Water use reduced from 220,000 litres per year to minimal amount.
- Biodiversity increased through addition of 1,000 WA native plant species and 4 native trees.
- Removal of decommissioned irrigation bore, reducing groundwater usage.
- Improved aesthetics for local residents by transforming the area into a biodiverse, attractive and waterwise garden.
- Increased public interest in the City's Waterwise Verge Rebate Program.
- The City of Joondalup was awarded the 2022 Platinum Waterwise Council of the Year.



Department of Biodiversity, Conservation and Attractions
 Department of Planning, Lands and Heritage
 Department of Water and Environmental Regulation



Waterwise Garden Installation Costs¹

Decommissioning existing bore and reticulation	\$2,645
Clearing exotic trees and preparing garden	\$5,158
Plants and trees	\$5,573
Mulch	\$1,460
Limestone walls / seating	\$4,550
Concrete Parking Area	\$7,257
Labour	\$4,340
Signage	\$375
Traffic control	\$2,793

Total: approx. \$34K

¹All Costs are site specific, excluding GST and are an approximation given for guidance purposes only.

Issues

Before the garden transformation, the road island was used for informal parking and residents wanted to keep this functionality. As a result, the City consulted with local residents about the project and chose to include some informal parking areas in the final design. Plant selection presented challenges as plants had to be less than 600 mm high to meet road safety requirements, be attractive and waterwise. The Waterwise Plant Directory was used to assist in the selection of suitable species.

The steep gradient of the area had the potential to result in the displacement of mulch onto the surrounding roads which could then be washed into the drainage system. This risk was managed through the design, in particular the location of parking bays, kerbing and earthworks.

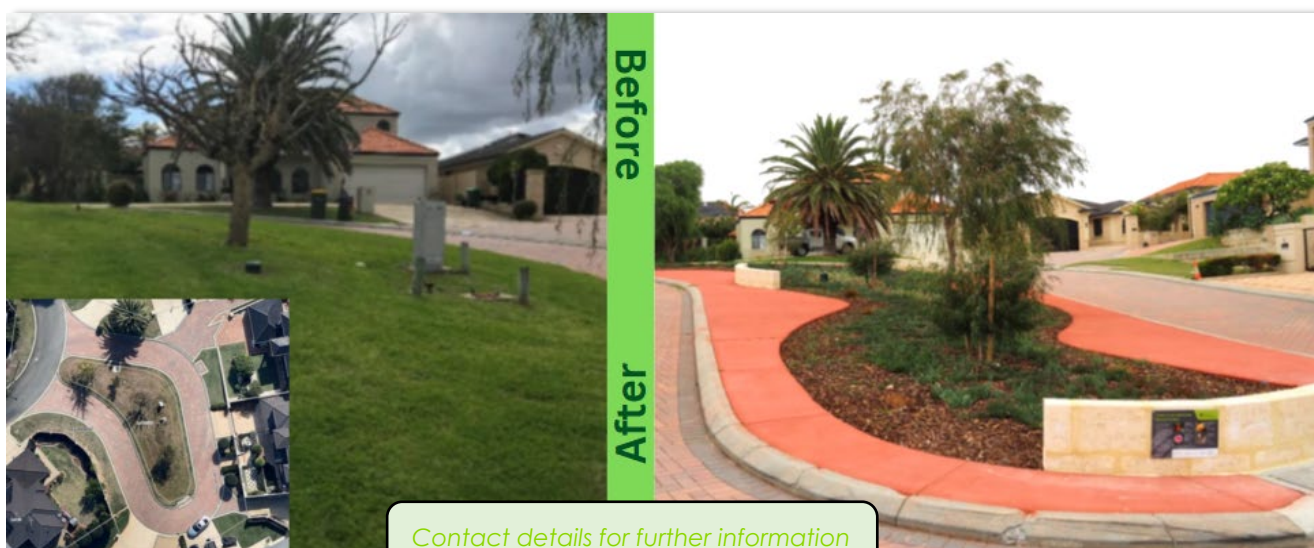
Outcomes

Waterwise gardens provide many positive outcomes to the environment and the local community. The design incorporated informal parking bays to meet resident's needs.

Tree planting is an effective way to reduce the urban heat island effect, which is common in highly populated areas with buildings or pavement that absorb, store and radiate heat and minimal green cover. Once matured, the trees in the Carina Loop Waterwise Demonstration Garden are expected to increase tree canopy cover. The garden creates a cooling effect for local residents and provides a habitat for local wildlife and pollinators.

Over 1,000 native waterwise plants and 4 native trees were planted, increasing biodiversity in the area, providing habitat for native fauna and improving aesthetics for the local community. The garden requires little maintenance, with minimal watering, weeding, pruning, or mulching.

The City was awarded the 2022 Platinum Waterwise Council of the Year and has a strong partnership with the Water Corporation. The transformation of the Carina Loop road island into a vibrant and waterwise garden was proudly co-funded by Water Corporation's [Waterwise Greening Scheme](#) and forms part of the City's ambition to be a leading waterwise community.



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