



# *Tree* **STRATEGY**

December 2017

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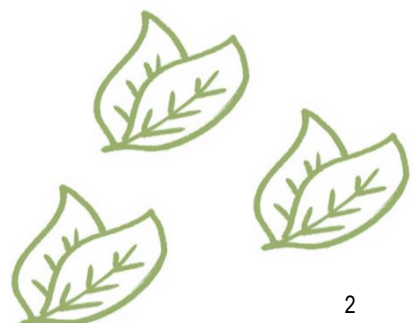
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# *ABOUT THE STRATEGY*

# Purpose

To provide a framework that will facilitate the regeneration and expansion of the urban forest (a collection of trees that grow within an urban environment) in the towns located within the Berri Barmera Council district.

Trees compliment the environment, enhance our enjoyment of streets and open spaces as they provide a wide range of benefits such as shade, cooling and habitat for wildlife.

Conversely, trees constitute a potential risk to the community and property. Interference with underground or above ground services presents a risk to property and personal safety through such events as limb drop or lifting of footpaths and paved surfaces.



As such trees require effective and coordinated management to maximise their benefits to the community and the environment and minimise risks, such as damage to property and personal injury.

Council is committed to nurturing, preserving and developing these important community resources.





# Principles

## 1. Equity Across the Community

A balanced approach is needed.

Council recognises that trees are an integral part of the environment, add aesthetic quality to life across our district and will be treated as an asset.

Street tree plantings or removals will be based on a holistic district wide approach promoting the orderly planning of each area.

## 2. Sustainable Assets

Council has a responsibility for the planning, establishment, maintenance and removal of all trees located within the town's street scapes and open space (parks, reserves, streets, medians and nature strips)

Trees are considered to be community assets that contribute to the wellbeing of the community and to the natural environment.

Council recognises and values the significance of trees within the urban setting in that they create functional and aesthetic street-scapes, provide natural habitat and natural shade.

Council will ensure a diversity of tree species and ages to maximise resilience against pest, diseases, weather extremes and natural attrition.



### 3. Risk Sensitive

Tree assessments are undertaken within a risk framework consistent with the industry standards and demonstrate reasonable care.

Council is committed to protecting and maintaining trees within its towns whilst meeting its obligation to provide a safe environment.

### 4. Strategic Consistency

The on-ground delivery of the Tree Strategy through programs and projects will be planned and maintained through annual business planning.

### 5. Compliant

All new street plantings are required to be compliant with relevant legislative requirements.

Accessibility and walkability are key functions of Age Friendly Town streetscapes and it is incumbent on Council to ensure that wherever possible a balance is reached whereby streets, parks and other public land is accessible to all.

Property Owners within the Council area have a responsibility to manage trees within the boundaries of their properties.

### 6. Innovation & Improvement Focussed

Council commits to promote the use of innovative techniques for water sensitive urban design to support tree growing solutions in streets and Council owned and managed open space.

Council will continue to support an urban forest that can tolerate and continue to thrive in climatic extremes.

Council will continue to identify opportunities to plant trees within our district/streets to enhance streetscapes within budgetary constraints.



# *ISSUES & CHALLENGES*





# *Ageing Tree Population*

Urban tree renewal is not just a matter of replacing dying trees - but is also one of identifying the most resilient replacement plan and engaging in a meaningful dialogue with a broad range of stakeholders including community members. Many of the suitable street tree species will decline prematurely due to environmental conditions and combined stresses on the tree. This will, in turn, lead to replacement before similar trees that are located within parkland settings.

Ageing trees require increasing resources to manage and sustain. Over time their environmental value diminishes and they become hazardous to people using the Council's open spaces. A high proportion of over-mature trees carries an element of public risk (and cost) and must be managed accordingly.

While community engagement is important in managing ageing or unsuitable trees, particularly in relation to tree removals, there are times when Council will be required to make decisions against the wishes of some of the local community. When a tree assessment identifies unacceptable risk concerns, the Council's decision to remove them can over-ride the community's wish for the trees to be retained. In these instances, the appropriate level of information will be provided to the local community.





# Water & Soil Moisture

Adequate available soil moisture is critical for a healthy tree.

Our trees that were in traditionally irrigated landscapes were affected by the Millennium Drought with a combination of low rainfall and decreased irrigation due to watering restrictions.

Changes to irrigation practices, mulching, water well installations, soil injection, water barriers and tanker watering will help to preserve the health of many trees. Tree health monitoring and measurement of soil moisture provide guidance to direct resources and will be vital in ensuring the health of the future urban forest.

Due to climate change with an expected long-term low water future and the desired move away from a reliance on potable water, alternative water sources are needed to ensure healthy vegetation growth. The capture and reuse of stormwater and recycled water is an important way to decrease reliance on potable water.

The implementation of Water Sensitive Urban design (WSUD) techniques integrated into traditional work programs will help to focus Council to deliver urban greening, enhanced streetscapes and mitigated urban heat load for future generations. Small scaled initiatives can be trialled and if found appropriate implemented, such as;

- The reduction in footpath widths to provide wider nature strips,
- tree stormwater inlet
- water well installations
- second tier greening of nature strips

These are just a few initiatives that can be trialled and pursued to support water retention within our district. Innovation in water retention and re-use need to be continually researched, explored and trialled to ensure water availability to support tree growth.

These initiatives enable the improved retention of soil moisture and ultimately facilitate a broader range of tree species which can be planted in the street tree network.



# Climate Change

Climate change effects, over coming decades, will include warmer average temperatures, heat waves, more extreme storm events and lower average rainfall.

The susceptibility of vegetation to increasing and emerging pests and diseases will challenge the urban forest's ability to withstand and recover from these outbreaks. Warmer summers can increase insects' development rate and reproductive potential, while warmer winters can increase their winter survival. Many pests may have extended geographical ranges as warmer temperatures affect flight behaviour and vector spread. Introduced pests may also find conditions more favourable for population growth. Trees not previously at risk could become vulnerable as pests and disease ranges change.

Heat extremes can lead to foliage and trunk scorch and canopy desiccation. Storms can shred foliage, break branches and uproot trees.

Lower rainfall may result in increasing frequency of tree death in many species and overall forest health decline in response to frequent and severe drought.

Inundation can lead to soil erosion, salinity, tree instability, tree mortality and damage to infrastructure. In Southern Australia, more frequent extremes of wet and dry periods may increase the root rot pathogen *Phytophthora Cinnamoni*. Trees weakened by this disease have a reduced capacity to survive drought.

It is increasingly important to research and develop appropriate tree species list, both native and exotic, for use in streets and parks that will adapt to climate changes in the future.





# Urban Heat Island & Extreme Heat

After a hot day, parts of our towns can be considerably hotter than surrounding rural areas. This heat contributes to the decline of certain tree species. Extreme heat, particularly, if combined with low soil moisture, causes the foliage and even the bark of some trees to scorch, which can lead to tree decline.

The Urban Heat Island and Extreme Effect effect has three main causes:

- Impervious hard surfaces - buildings, asphalt;
- Human activity - motorised transport, air conditioners; and,
- Minimal vegetation coverage.

Challenges in tackling the Urban Heat Island include:

- Predicted climate change;
- No natural shade in many areas of our towns;
- It takes 20 years for a tree to grow to a size that effectively assists in mitigating the urban heat island effect;
- Vegetation cover must be primarily composed of species that are able to survive and remain healthy under hotter conditions;
- Mitigating the urban heat island effect may require increased water use during dry periods to maintain tree health and maximise evapotranspiration.



# Urban Infill

Loss of individual trees, particularly along boundaries, can reduce the privacy of existing houses, and the amenity value and character of our towns.

Increased development densities in our two major towns often results in greater site coverage by buildings and pavements resulting in:

- Reductions in extent of vegetation on private land, especially large canopy trees
- Reductions in permeable ground surfaces that allow for rainwater infiltration
- Increased shadings by buildings with tree growth suffering due to lack of sunlight.
- Increased pressure on public spaces to accommodate more uses with resultant direct competitions for planting space.
- Competition for physical space (above and below ground) to grow mature trees is increasing.





# *Community Expectations & Resistance to Change*

Our towns encompass many people with an extremely diverse range of interests and attitudes towards trees. At the extreme there can be an irrational fear of trees.

Appropriate maintenance and pruning can often alleviate concerns, and appropriate repair and redesign of infrastructure can also be undertaken with little impact to the tree and the tree can continue its valuable contribution for many decades to come.

It is important that people recognise and are informed about the need for change. Trees are living organisms and as such will grow, mature and eventually die. In an urban environment an ageing tree cannot be usually left until it completely falls apart.

Tree removal can be traumatic and emotional but there will come a time when the benefit of keeping an individual tree is far outweighed by the hazard to life and property and the monetary cost of keeping it. When managing and establishing an urban forest the needs of the many may often have to outweigh the preference of the few.



# *Tree Succession Planning*

Tree succession planting is applied on a whole of street basis. By its nature, it includes the process of tree removal. It is in practice a difficult task to accurately judge the life expectancy of any individual tree when making a decision to remove it. The first principle must always be that if the tree cannot be maintained to an acceptable level of risk or amenity then it should be removed. Criteria for tree removal, as part of succession planning, must therefore be clear and consistent, so that all parties affected by the strategy are well informed. The information supporting priorities for succession renewal planting should also be based on sound arboricultural knowledge.





# *Creating a Better Community*

Our Council promotes that within our Towns, where practicable, every street that can be planted with street trees will continue to be planted. Our community expects tree lined streets with a height and canopy that provides shade and scope to an otherwise harsh streetscape.

Trees require space to grow, mature and survive. Within limited space they often come into conflict with the street hard infrastructure. They potentially impact on the accessible width of a footpath carriageway and regularly lift the pavement as they mature. This provides challenges as we strive to reach the goal of creating an environment that is pleasant, safe and accessible through Age Friendly Pathways.

A balanced approach will be required in reaching Age Friendly goals with the community potentially being asked to accept a modified streetscape with smaller less intrusive trees or more innovative solutions are explored such as narrowing roadways to provide more space for trees.

Street Trees that form a healthy Urban Forest can provide cleaner air, filter stormwater and lower township temperatures.

Trees create important habitat for mammals, birds, insects and reptiles and help to make beautiful town streets. Streets filled with trees and landscaping can also have psychological benefits in reducing stress and providing spaces for relaxation and contact with nature.





Encourage attractive, healthy and appropriate street trees for the benefit of the community which contribute to:

- Liveability and wellbeing for our towns,
- Environmentally and sustainability both now and in the future.

### 1. Selection & Location:

- 1.1 Develop a range of species suitable for street tree planting which considers varying infrastructure location situations, service requirements and takes into account the impact of pedestrian egress and climate change.
- 1.2 Proactively support Council resource sharing initiatives to develop and establish new street tree species, while actively supporting trial planting opportunities.

### 2. Planting & Establishment:

- 2.1 Develop and implement site establishment protocols and guidelines to ensure the long term viability of trees selected in streets.
- 2.2 Develop formative pruning guidelines and programs for early establishment of trees to maximise canopy potential.
- 2.3 Develop site preparation guidelines to ensure sustainable planting conditions for new trees ensuring maximum canopy potential, including below ground spaces and water infiltration. Complete a 'Dial Before You Dig' request to determine location of services. Examine the suitability of incorporating water well installations within placement planting programs.
- 2.4 Develop and maintain sustainable tree planting programs and schedules to ensure new sapling trees are provided with the best development potential.
- 2.5 Develop and ensure watering programs and schedules to meet

new tree requirements during establishment phase.

- 2.6 Research and consider contemporary trials to determine the value and impact of growth fertilisers, water retention initiatives and other environmental sustainable treatments.

### 3. Maintenance:

- 3.1 Council adopt a proactive approach to managing the risks in existing street trees.
- 3.2 Undertake tree maintenance to meet site specific expectations in line with Australian Standards.
- 3.3 Ensure Council maintenance staff and contractors are capable of delivering in line with competency and capacity standards.
- 3.4 Council will encourage the development of staff skills in arboriculture.

### 4. Removal of Trees:

- 4.1 Develop a second generation tree strategy which prioritises streets for tree renewal, is based on sound sustainability principles and is funded and aligned with Council's Annual Business Plan.
- 4.2 Remove individual trees ensuring approval processes are followed.
- 4.3 Ensure declared species are not planted and, where necessary, are removed from inappropriate locations.





## 5. Replacement:

- 5.1 Ensure that a diverse and sustainable range of species is used through street tree planting and replacement within our Towns. A reliance on a dominant species leaves our Towns vulnerable to pest and disease and potential loss of the street tree asset.
- 5.2 Develop and implement plant procurement specifications in line with a Street Tree Succession Plan and individual tree replanting requirements.
- 5.3 Develop and implement protocols for nursery stock selection in line with relevant Australian Standards.
- 5.4 Explore opportunities to develop supplier relationships and pre-order processes and standards in advance.

## 6. Community Consultation:

- 6.1 Council will consult and engage the community and affected landowners where large scale plantings, street tree renewals and tree removal works are to occur.
- 6.2 Council will appropriately inform and involve the community in tree management through community engagement by encouraging the community to be involved in adopting and supporting tree planting including follow up watering. Council will further work towards implementing community partnerships to work towards combining property landscapes and streetscapes through possible initiatives such as supply of trees or rebates (ie. adopt a tree scheme).
- 6.3 Establish clear protocols and guidelines in relation to the Local Government Act (Section 221) as they relate to trees.





# Legislative Environment

No current federal or state legislation mandates or promotes urban tree planting. Legislation does impact on Council's arboricultural works however, with several Acts and Regulations restricting or limiting Council's discretion regarding tree planting and streetscaping.

## Local Government Act 1999

- Council must consider potential impacts on the environment, aesthetics, public safety and nearby infrastructure prior to tree planting (Section 232(a)). This Act is silent on the potential impacts of tree removal on the environment, aesthetics, public safety and nearby infrastructure.
- Council must consult the public in cases where tree planting may significantly impact nearby land owners, business operators or advertisers (Section 232(b)). The Act is silent regarding tree removal which might significantly impact on residents, business operators or advertisers.

## Native Vegetation Act 1991 and Native Vegetation regulations 2017 as amended

To view click on the following link - [Native Vegetation Act 1991](#)

## Water Industry Act 2012 and Water Industry Regulations 2012 as amended

To view click on the following link - [Water Industry Regulations 2012](#)

92 species of shrubs and trees are listed that must not be planted within 2 metres of a sewerage pipe.

104 species are listed which must not be planted within 3.5 metres ... Planting of any species other than the 196 listed in the Regulations is prohibited on public land without the prior approval of any water industry entity that owns or operates sewerage infrastructure that may be affected.

Planting of any tree on any road is prohibited within 1 metre of water supply infrastructure.

Further information on plant selection can be found on the SA Water [Fact Sheet](#)

## SA Power Networks

For further information on suitable trees near power lines [click here](#)

## APA Group (GAS)

To find out 'what you can plant – or how far from underground gas and water mains' [click here](#)

## DPTI (Department Planning Transport and Infrastructure)

This Operational Instruction has been developed to provide direction to traffic engineering practitioners, landscape architects and planners when considering tree planting in raised medians and roadsides within DPTI road corridors.

To view click on the link below –

[Trees in Medians and Roadsides in the Urban Environment](#)

