CITY OF UNLEY

Keeping Unley Leafy for Future Generations

Tree Strategy

MAY 2020

"Investing in trees now will stop climate change and help our city feel cool. But also look great and we can enjoy walking and more green ways of transport."

~ Rhys Livingston, age 13,
Highgate Primary School ~

ACKNOWLEDGEMENT OF COUNTRY

The City of Unley is located on the Adelaide Plains, the traditional lands for the Kaurna people. We acknowledge this land is the traditional lands for the Kaurna people and that we respect their spiritual relationship with their country. We also acknowledge the Kaurna people as the custodians of the Adelaide region and that their cultural and heritage beliefs are still as important to the living Kaurna people today. We also pay respects to the cultural authority of Aboriginal people visiting from other areas of South Australia and Australia.

DISCLAIMER

All information given in this document is believed to be factually correct and provided through our experience and local knowledge of the City of Unley conditions, given in good faith without prejudice. As information is subject to change, the City of Unley shall accept no responsibility for any loss or damage resulting from the use of, or reliance on, the contents of this document.

SPECIAL THANKS

A special thanks to our community members who contributed and participated in the consultation and shaping of this document.

Contents

Foreword

The Council recognises the important contribution trees and vegetation make to the City and our community. These assets provide multiple benefits like supporting flora and fauna and reducing the impacts of climate change, while creating a liveable city that adds character to neighbourhoods and economic value to properties.

The Council commits significant resources to ensuring we have the best possible streetscape and park environments through the effective management of trees and understory planting, whilst encouraging our community to also play a role. The management of trees is an important function of Council, as urban infill, populations, the impacts of climate change and community expectations continually rise. Managing these important assets is becoming increasingly more challenging and complex.

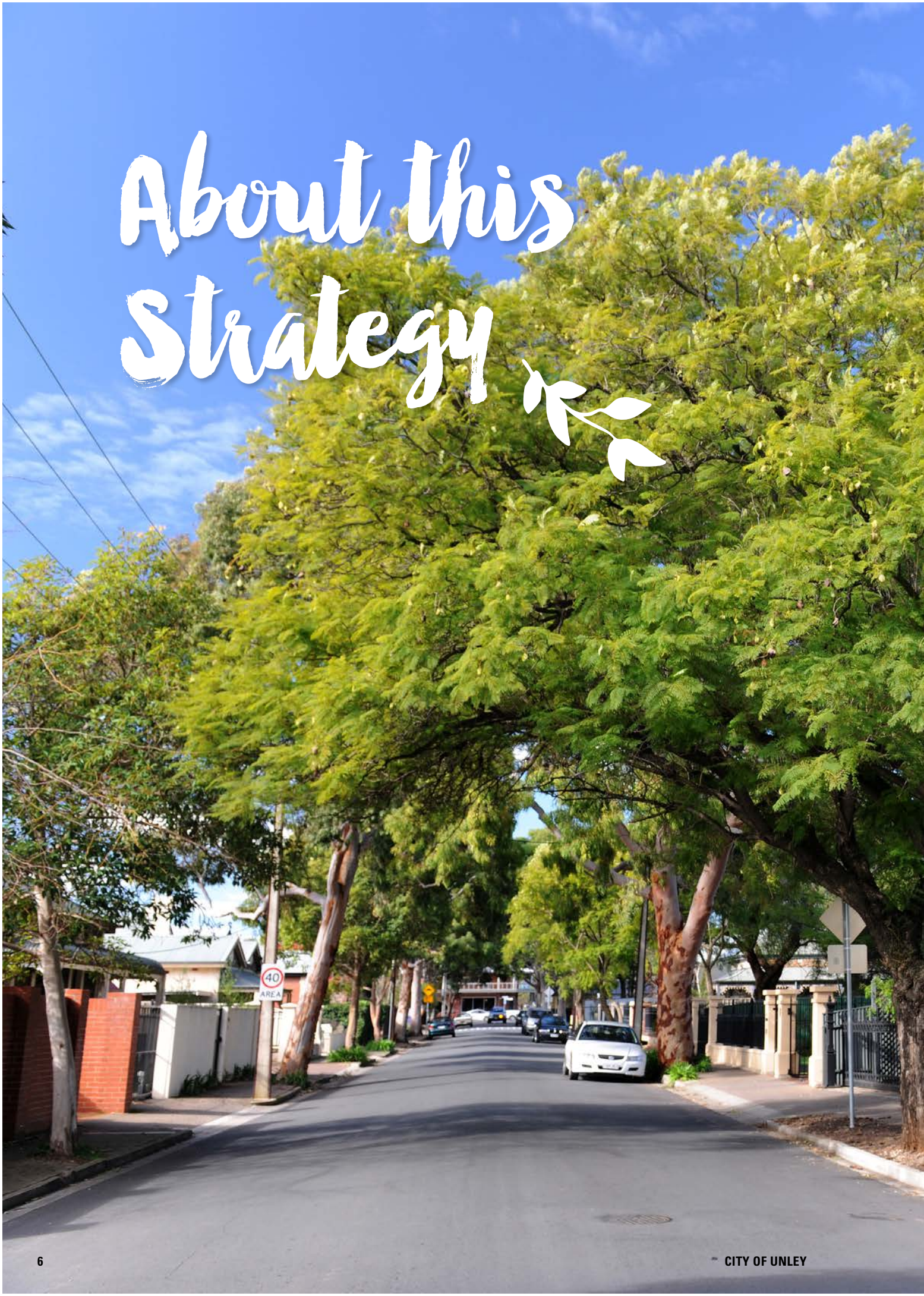
In 2020, The Food and Agriculture Organization of the United Nations (FAO) and the Arbor Day Foundation recognised the City of Unley with Tree Cities of the World designation for the care and planning of urban trees and forests.

This Tree Strategy sets out a vision of keeping Unley leafy for future generations. It provides a foundation for how the Council will continue to enrich our City through continual management of our most valuable assets, now and for future generations. It focuses on maintaining, managing and increasing trees on public land, and our role in educating, supporting and encouraging tree retention and expansion on private land.

Establishing a healthy, resilient urban forest requires sustained commitment. We recognise the past achievements of members of the community for their important contributions in establishing the diverse urban forest we enjoy today.

The City of Unley Tree Strategy has been developed in consultation with members of the community, staff and key stakeholders. It responds to the voice of our community and provides us with the guidance to effectively manage, protect and expand our leafy urban forest for generations to come.

About this Strategy



Purpose

The purpose of this Tree Strategy is to ensure the City of Unley remains leafy for future generations through the retention and expansion of our urban forest. The Strategy aligns with the objectives of the City of Unley Community Plan 2033, the Environmental Sustainability Strategy and our community's values and vision. It builds on the significant work already undertaken and currently underway within our boundaries that complement trees and support their role in our community.

It is important to recognise the previous City of Unley Tree Strategy (2016-2019) was successful in outlining the value of our urban forest and challenges it faces with age, life expectancy, species diversity, competing resources and community expectations. This current Strategy builds on its past successes to meet new and changing priorities.

The City of Unley currently has approximately 26,000 Council owned trees within an area of 14 square kilometers. These trees, (and those on private land), constitute an important element of the rich cultural heritage of Unley and are highly valued by the community on many levels. Trees complement our liveability and enhance our enjoyment of streets, open spaces and backyards by making our City more comfortable and pleasant for residents, businesses and visitors.

The Urban Forest

At times, trees can be identified as presenting potential risk to adjacent properties, causing nuisance, interfering with underground or above ground services or affecting personal safety (for example, by dropping nuts/berries/branches or lifting paved walking surfaces). Like other assets, trees require effective and coordinated management in their planning, planting, establishment and ongoing care to maximise their benefits and minimise risks.

This Strategy sets out a plan to manage trees in a strategic and balanced way to deliver on Council and community aspirations, and the future development of the City. It supports a clear, long-term vision towards the evolution of a sustainable urban forest, with an intention of being reviewed approximately every five years to meet changing priorities and incorporate new technologies and innovation. Through the Tree Strategy, the Council is committed to nurturing, preserving, managing and developing trees as important community assets.

Healthy, resilient, liveable cities feature vibrant urban forests. The term 'urban forest' is broadly defined as trees, shrubs and other vegetation in an urban setting. It focuses on the whole 'community' of vegetation, rather than the 'individuals', regardless of species origin (native or exotic), location (street, park, school or backyard), or ownership (private or public). It is a component of a complex built environment that includes roads, car parks, footpaths, underground services, buildings and other structures, and provides those living in urban areas with a connection to nature.

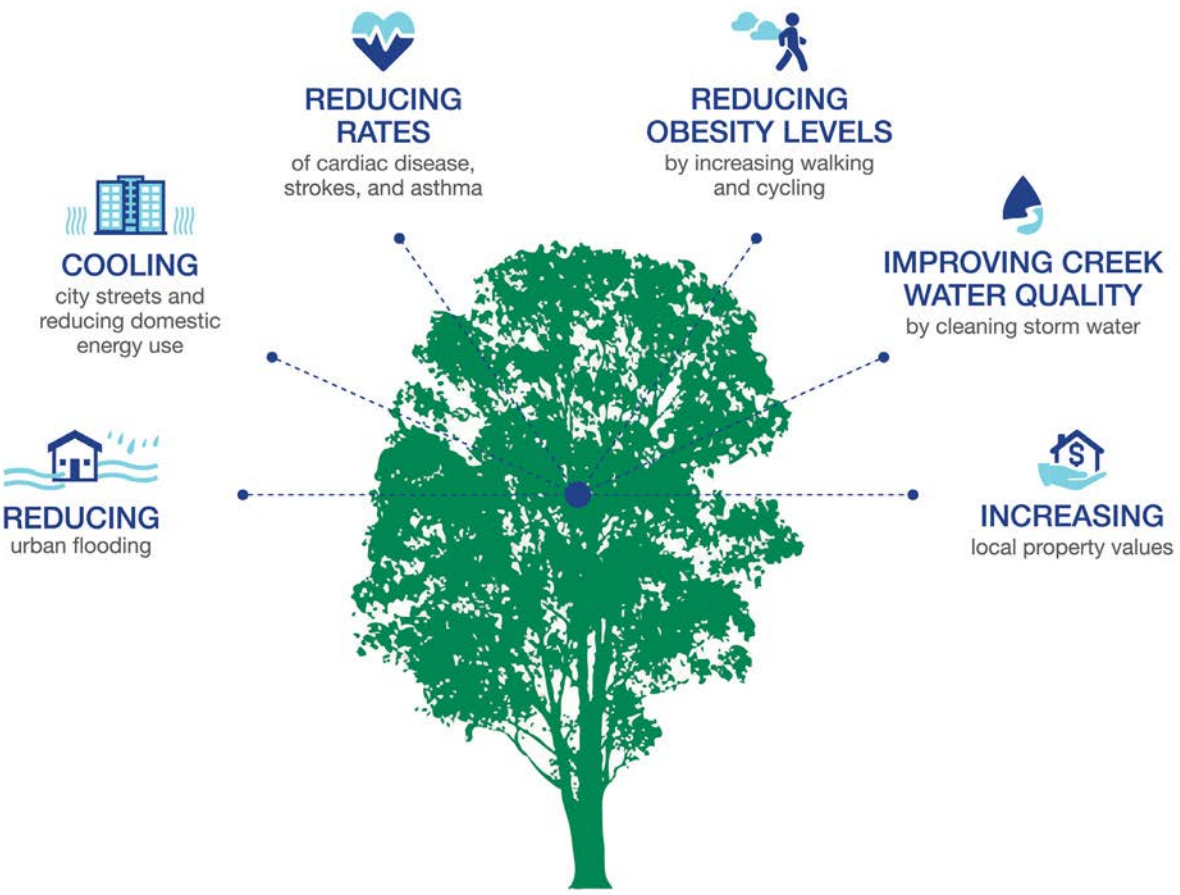
Looking holistically at the urban forest and its ecosystem allows for better consideration of broad issues, like climate change, urban heat island effects and population growth.

PUTTING TREES IN CONTEXT

The City of Unley recognises the multiple economic, environmental and social benefits trees provide, such as:

- Habitat for fauna and flora
- Production of food
- Shade
- Removal of carbon dioxide from the air
- Reduction in urban heat and energy use
- Improvements in air and water quality
- Stormwater management and flood reduction
- Connections to nature and place
- Improvements in mental and physical health
- Provision for social interaction and recreation
- Seasonal changes and visual amenity
- Increases in tourism, business and investment
- Increases in property values.

PROVEN BENEFITS OF URBAN TREES[1]



CREATING A RESILIENT URBAN FOREST

To maintain a resilient urban forest it is essential that planning considers a diverse mix of tree species to reduce the risk of widespread loss of one (or more) species to pests or disease and tolerance to anticipated changes in our climate (less water, higher temperatures). As a result, the traditional make up of our City may change as those species planted in the past may be less suitable for the future.

Additionally, it is important to ensure there are new generations of trees growing to take the place of older trees coming to the end of their life, or those that are removed for health or structural reasons. This ensures and maintains a continuous and 'full' urban forest, while providing better financial sustainability. Planting so there is diversity in ages allows the cost to be staged out over time as the most expensive stages of a tree's life are in early establishment, and at the end of life. A variety of different species and age classes can better resist the impacts of stresses through genetic diversity, individual vitality and differing defence mechanisms, as well as diversity of neighbourhood character.

While traditional avenue or street plantings commonly consist of one species, introducing a greater diversity of species is important for long-term resilience of these areas, especially in a changing climate.

[1] Adapted from The Nature Conservancy 'Benefits of Urban Trees', available at: https://www.nature.org/en-us/what-we-do/our-insights/perspectives/funding-trees-for-health/?src=r.v_trees4health.

Strategic Context

SOUTH AUSTRALIA

Adelaide is known to be one of the world's most liveable cities and is continually evolving. In 2010, the Government of South Australia developed a strategic plan to guide the long-term growth of Adelaide and its surroundings to ensure it remains liveable, competitive and sustainable over the next 30 years. This plan is called the 30-Year Plan for Greater Adelaide and was updated in 2017 to reflect progress and respond to new opportunities and challenges.

The 30-Year Plan has six high level targets that guide and measure progress towards Adelaide's growth:

1. Containing our urban footprint and protecting our resources
2. More ways to get around
3. Getting active
4. Walkable neighbourhoods
5. A green liveable city
6. Greater housing choice.

The 30-Year Plan acknowledges that urban development has fragmented and disrupted natural systems, resulting in significant loss of biodiversity, and that protection and re-establishment of healthy biodiversity is vital to maintaining functioning ecosystems and making our environment more resilient to climate change. The Plan describes how the roles of public open spaces are becoming increasingly important for social interaction, physical and mental health, access to nature and cooling landscapes as many people move towards apartments or houses with smaller backyards. Protection and better management of water resources is highlighted to ensure long-term water security, as well as creating greener, cooler urban environments to mitigate the effects of climate change and ensure greater liveability in warmer, drier climates.

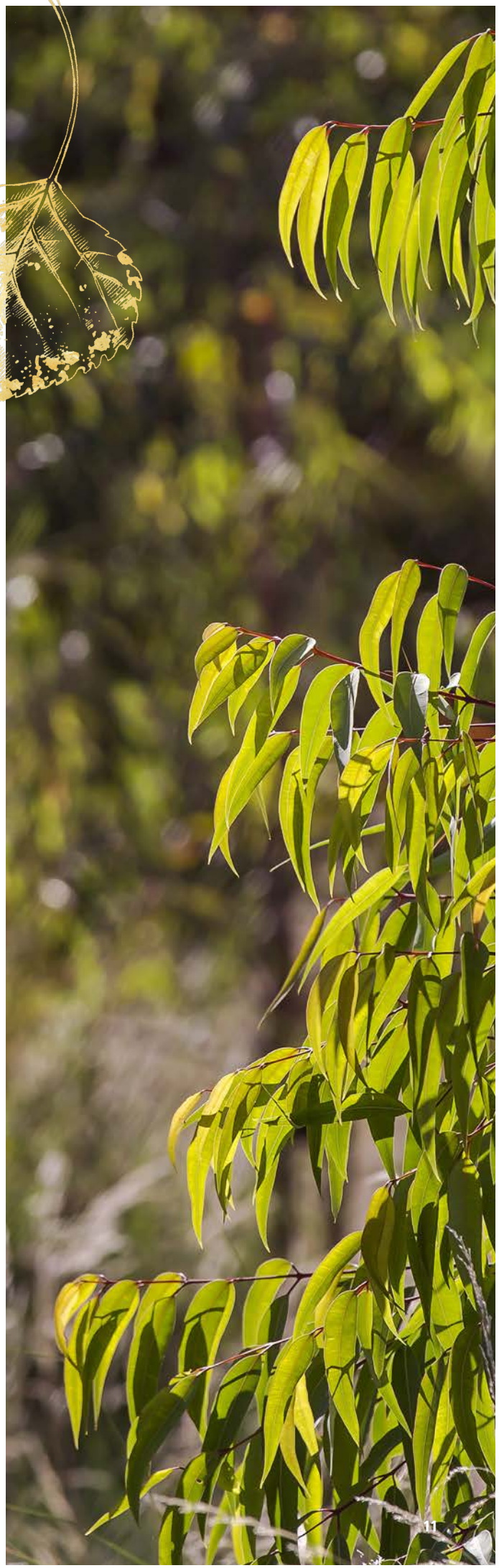
Target 5:
A green liveable city

Urban green cover is increased by 20% in metropolitan Adelaide by 2045

The 30-Year Plan's Target 5, 'A green liveable city', sets an ambitious target to increase urban green cover by 20% in metropolitan Adelaide by 2045. This target came after a National research on canopy in 2014 found that Adelaide has the least tree cover of any Australian capital city, almost half of that of the country's highest, Hobart.[2]

Under this National survey, the City of Unley was measured as having 26% of our whole area covered in trees as at the baseline year in 2013. Therefore to meet the target 20% increase, our goal is to reach 31% tree cover by 2045.

The Tree Strategy is the key document guiding the delivery of how trees are managed on Council land and how we can contribute to increasing canopy cover. The Strategy is supported by a number of related documents including the Tree Policy which sets out the rules, definitions an conditions as to how trees are managed across the city and the Tree Management Procedure which sets out the methods applied in delivering the Strategy.



[2] Benchmarking Australia's Urban Tree Canopy: An i-Tree assessment, Institute for Sustainable Futures, 2014.

Change Over Time

A dense area of bush known as the Black Forest once covered the Unley region of the Adelaide Plains as an open woodland with a mixture of grey-box, blue-gum, red gum, native pines and sheoak trees. Before European settlement, the Kaurna people would camp along the creeks lined with River Red Gums (known by the Kaurna as 'karra'), relying on the area for food, shelter and water.

We are fortunate to have many large trees which pre-date European settlement and were part of the landscape when the Kaurna people moved through the Unley area in autumn, travelling inland from the summer camps that were along the coast.[3] These remnant trees are further complemented by private land owner tree plantings, many of which date back to the early 1900s.

The City of Unley's European settlement dates from 1840 when the first subdivisions were made. At this time, land was used mainly for farming, orcharding, grazing and dairying. Expansion took place from the 1870s into the early 1900s, spurred by improved access to the City of Adelaide and the establishment of several villages. The population grew from about 11,000 in 1891 to approximately 22,000 in 1906. Significant development occurred during the early 1900s, with the area almost completely subdivided by the end of the 1920s. The City of Unley's population peaked at 47,000 in 1947, and then declined until the 1970s.

Many of our street's boulevards were established by environmental pioneers in the early 1900s. The majestic Plane Trees of Victoria Avenue and Northgate Street in Unley Park owe their existence to early arborists and city planners who delivered on a 'green vision' for the City. These early plantings were complemented by a Council decision in the late 1970s to plant every street, where possible, with street trees.

Individual trees from the original Black Forest still exist within the City of Unley but only one remaining patch of grey-box woodland can be found in Heywood Park at Northgate Street, Unley Park.

The City is fortunate that property sizes within much of Unley are large, enabling trees of a significant size and canopy to have been planted and managed within the private realm. Large trees have been shown to provide greater benefits compared to multiple small trees totalling the same canopy area.[4&5] These trees, along with those in Council ownership, contribute significantly to the aesthetic and 'feel' of a leafy City.

Since the 1980s the population has been relatively stable, with an increase in recent years, rising from under 35,000 in 2001 to over 39,000 in 2018. Recent population growth has been mostly a result of planning policies that have encouraged further sub-division of land and medium density housing at selected locations.

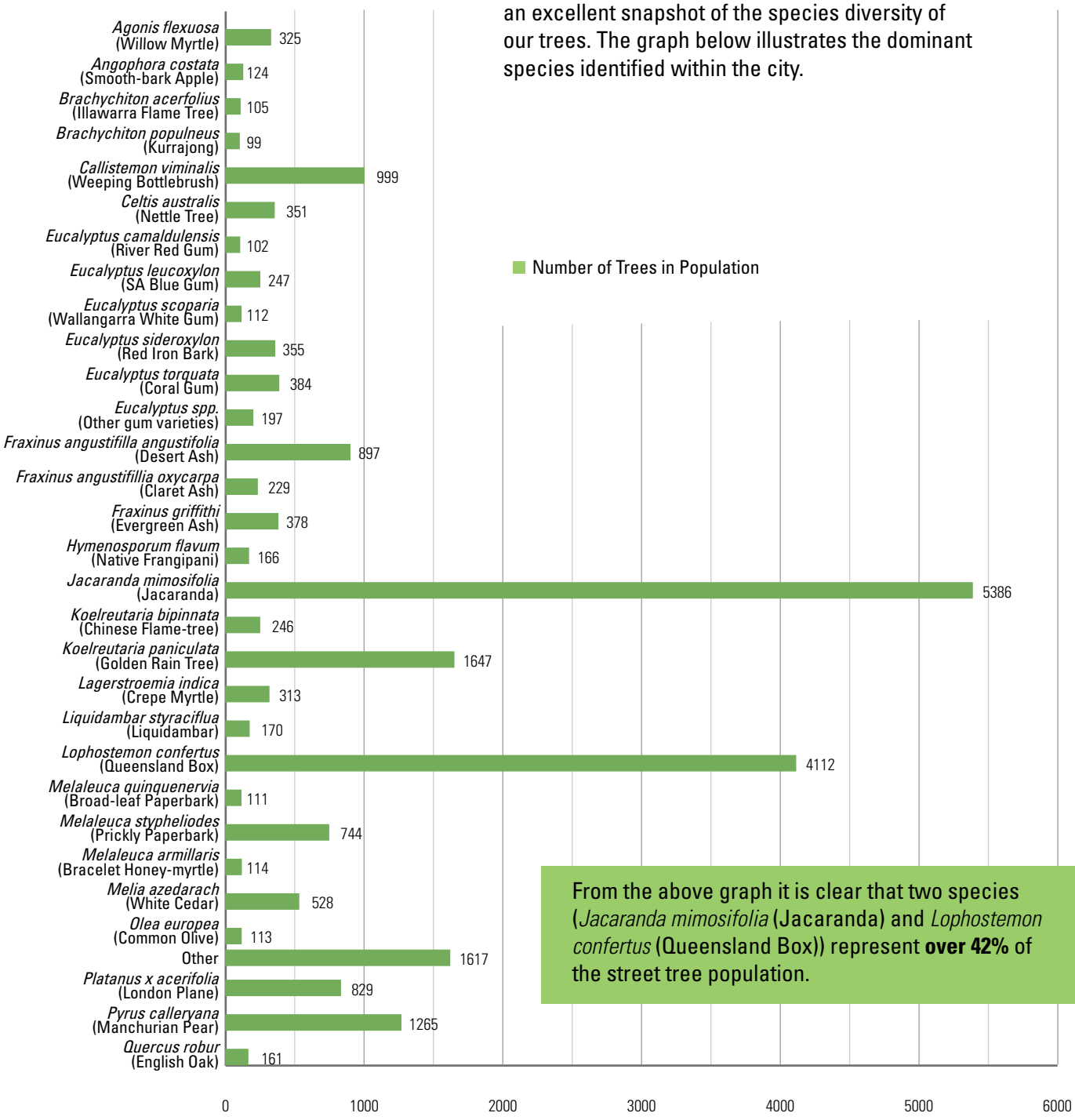
[3] Darrell Kraehenbuehl (1996) 'Pre-European Vegetation of Adelaide: A Survey from the Gawler River to Hallett Cove'.

[4] Jim Geiger. (2004) "The large tree argument: The case for large trees vs. small trees." Western Arborist: 14—15.

[5] Stephenson, N., Das, A., Condit, R. et al. (2014) Rate of tree carbon accumulation increases continuously with tree size. Nature 507, 90–93.

STREET TREE POPULATION

In 2015 a detailed audit of all street trees within the City of Unley was undertaken which was crucial to the Council's transition from reactive to proactive tree management. As part of an ongoing digital transformation, Unley is converting this information to an online mapping layer that can be updated in real time as trees are planted, pruned, audited and/or replaced. In the meantime, the 2015 audit still provides an excellent snapshot of the species diversity of our trees. The graph below illustrates the dominant species identified within the city.



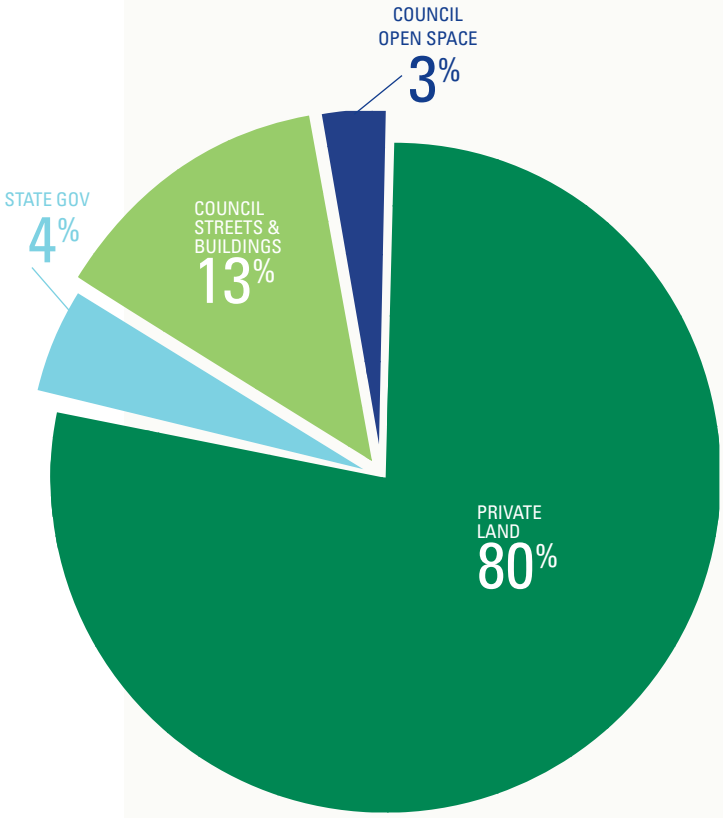
From the above graph it is clear that two species (*Jacaranda mimosifolia* (Jacaranda) and *Lophostemon confertus* (Queensland Box)) represent **over 42%** of the street tree population.

SHARED RESPONSIBILITY

With 80% of The City of Unley's land area privately owned, the Council cannot meet the State Government target to increase green cover by focusing on the public realm alone. It is essential that Council strengthens and increases programs and initiatives that help retain and increase canopy cover on private land.

Council wants to ensure trees continue to be a feature of the urban environment, while encouraging the community to take an active interest in their own land and support the work that Council and the Government of South Australia is undertaking.

LAND AREA IN THE CITY OF UNLEY[6]



[6] Adapted from Martinez & Bachar (2018) City of Unley Tree Canopy Cover Change 1979-2017, i-Tree Canopy Analysis.

WHAT DOES A 20% INCREASE LOOK LIKE FOR THE CITY OF UNLEY?

26% = 3.7km²
BASELINE CANOPY COVER IN 2013

UNLEY HAS A TOTAL AREA OF
14.29 km²

31% = 4.4km²
TARGET CANOPY COVER BY 2045

NET INCREASE
0.7 km²

RECENT TRENDS

In 2018, the Council undertook a detailed tree canopy assessment to understand trends over time and the current situation of the City. Results are summarised in the graph below.

Tree cover on public land gradually increased following Council tree planting initiatives of the late 1970s and early 1980s. It is worth noting that this program worked but took approximately 20 years to see the full impact of these tree planting efforts.

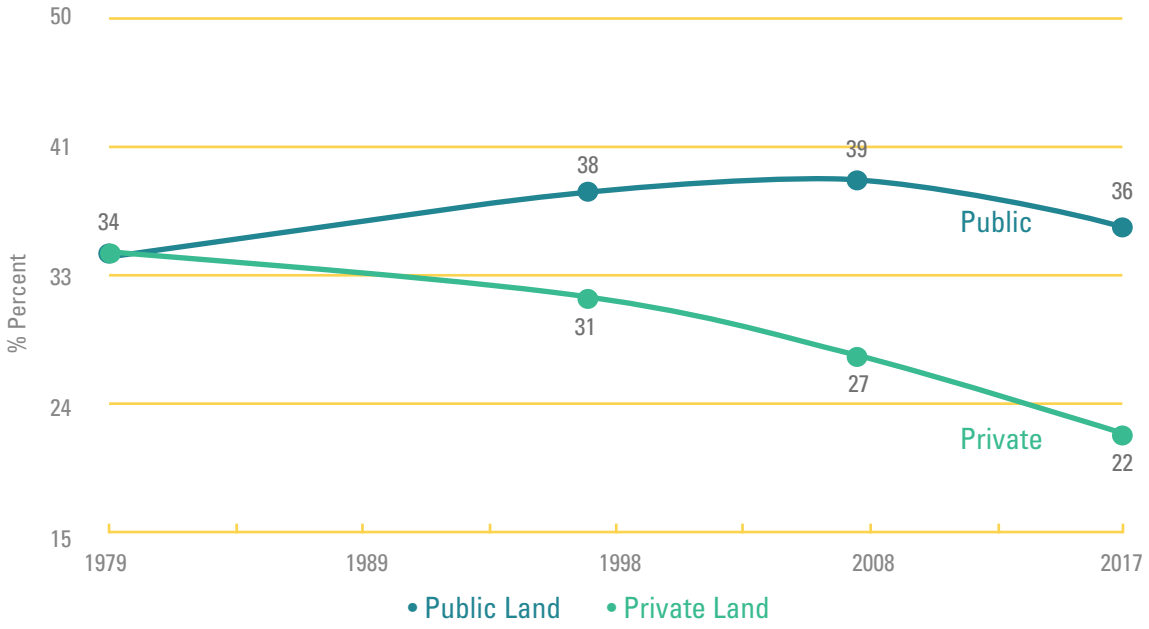
The most recent decade has recorded a decrease in tree cover on public land. This is likely due to a combination of the street tree replacement program (short-term canopy reduction from replacement planting with younger, and therefore smaller, tree canopy), and loss of street trees when additional crossovers (driveways) are installed to accommodate increased urban infill.

The City of Unley has been losing tree cover across private land at an increasing rate since 1997. Since private land represents 80% of the total area, this is of significant concern to future neighbourhood character and urban heat impact.

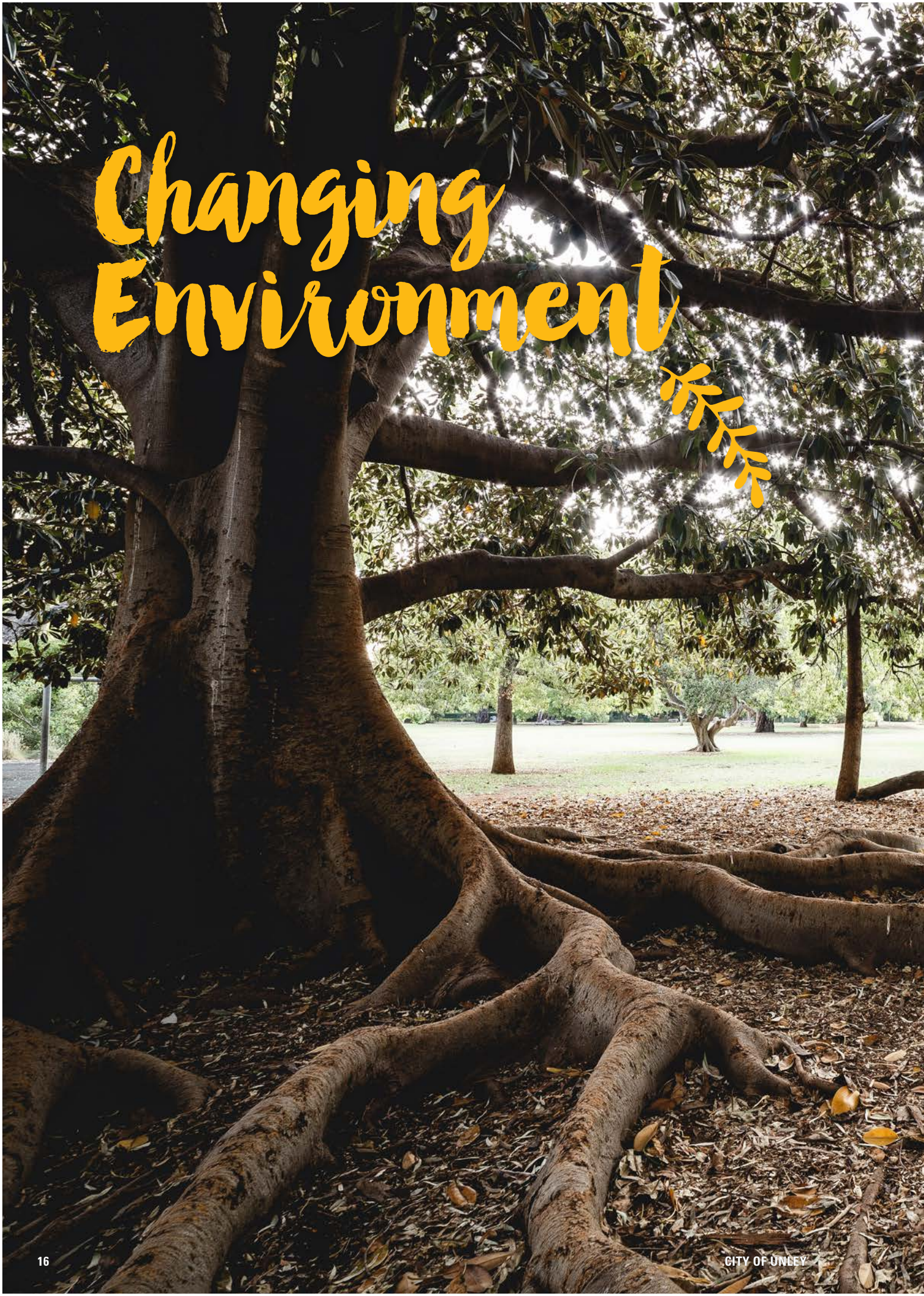
Overall tree canopy cover is declining, with the removal of trees on private land being a key driver of this trend. If this trend continues, there will be a reduced ability for the Council to build neighbourhood resilience to the effects of climate change, particularly with projected rates of ongoing urban infill.

CANOPY COVER CHANGE ACROSS LAND TENURE[7]

CITY OF UNLEY, 1979-2017



[7] Adapted from Martinez & Bachar (2018) City of Unley Tree Canopy Cover Change 1979-2017, i-Tree Canopy Analysis.


Changing
Environment

Climate Change

We are already experiencing the effects of climate change. The Intergovernmental Panel on Climate Change's (IPCC) Special Report (2018) details the impacts of global warming of 1.5°C above pre-industrial levels. It reports that impacts on natural and human systems from global warming have already been observed and many land and ocean ecosystems, and the services they provide, have already changed due to global warming. It states that under current policies, we are on track for a 3-4°C warming by 2100, however the Report recommends that attempts should be made to limit warming to 1.5°C if we are to avoid catastrophic changes. Increases in average air and ocean temperatures, increased bushfires, widespread melting of snow and rising average sea level are some examples of current changes the world has experienced.

While South Australia's climate has always been variable, a strong warming has been observed since the 1970's, and according to the Bureau of Meteorology, average temperatures across the state have warmed by almost 1°C during the past century, with overall rainfall declining.[8]

Trees directly help build our resilience and reduce the impacts of climate change in two ways:

1. Mitigating the causes of climate change by absorbing carbon dioxide from the air; and
2. Adapting to changes in the climate already locked in by helping to cool our city.

[8] Bureau of Meteorology as at Jan 2020.

Increasing Temperatures

Urban Heat Island (UHI) is a term used to describe a city or metropolitan area that is significantly warmer than its nearby suburban and regional areas, as a result of human activities and modification of land surfaces.

There are many factors that contribute to a cities UHI. For example:

- dark surfaces (like asphalt) that absorb solar radiation;
- hard surfaces (like buildings) that prevent water infiltration into the ground for cooling through evaporation and transpiration;
- densely constructed buildings that trap heat;
- people and their activities that generate heat (like driving, air conditioning etc); and
- low vegetation cover that prevents shading and natural cooling (transpiration).

The temperature difference of a UHI is usually larger at night because the heat remains trapped in the urban environment and is prevented from releasing into the cooler night, therefore there is limited opportunity to cool down. This phenomenon occurs all year round, but it is more severe during hot weather.

In periods of prolonged heat, the UHI effect increases pressure on the city and its liveability. It exacerbates heat stress, particularly for vulnerable people such as the elderly, the young, and those with pre-existing medical conditions. It also decreases air quality, increases energy use and costs needed to keep our buildings cool, and intensifies global warming. People living in high-density areas are at greater risk during heat events as a result of the UHI effect.

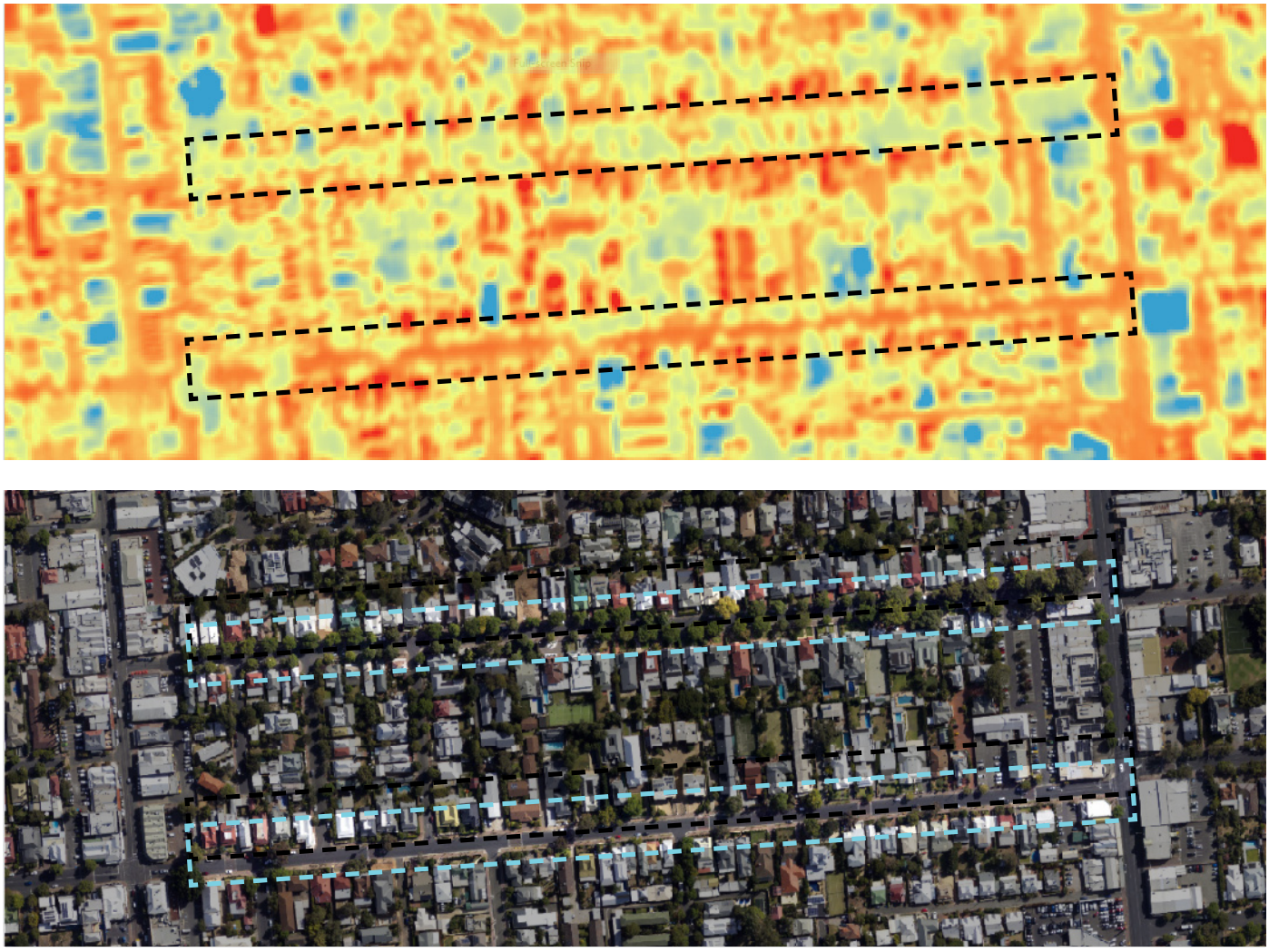
Additionally, as our climate changes, the number of days over 40°C in eastern Adelaide is projected to double by 2050, and the frequency and duration of heatwaves is projected to increase.[9] Heatwaves lead to many deaths in our cities and are known to kill more Australians than any other natural disaster.

Urban forests are one of the most effective methods for mitigating heat in urban areas and reducing the effects of climate change, though, it can take 20 years for a tree to grow to a size that will effectively assist in mitigating the UHI effect. The use of tree planting and greening in streets, parks and private gardens in the City of Unley will help to increase the resilience of our City to climate change.

Heat mapping highlights the cooling impact trees have. The Urban Cooling example of Hyde Park taken on a hot day in March 2018, illustrates that the surface temperatures in Opey Avenue, with a good canopy of tree cover, are 10 degrees cooler than nearby Park Street, with sparser tree growth. This cooling and shading effect not only benefits road users, but also cools adjacent houses (reducing energy cooling costs) and increases the life of assets (like roads, houses, footpaths and other infrastructure), as well as reducing maintenance costs (protecting from extreme heat).

URBAN COOLING EFFECTS OF STREET TREES[10]

Comparing two parallel streets in Hyde Park, Opey Avenue and Park Street.



[9] Resilient East – Regional Climate Change Adaptation Plan (2015), URPS for the Eastern Region in association with the government of South Australia and the Australian Government.

[10] Heat map from Eastern and Northern Adelaide Collaborative Heat Mapping Project, 2019.

Water

Trees need water to survive and urban trees are requiring more supplementary watering due to a number of reasons.

The amount of water a tree requires varies a great deal. Rainfall, supplementary watering and climate change influence water availability and the species, stage of development, drainage and local conditions impact on water demand.

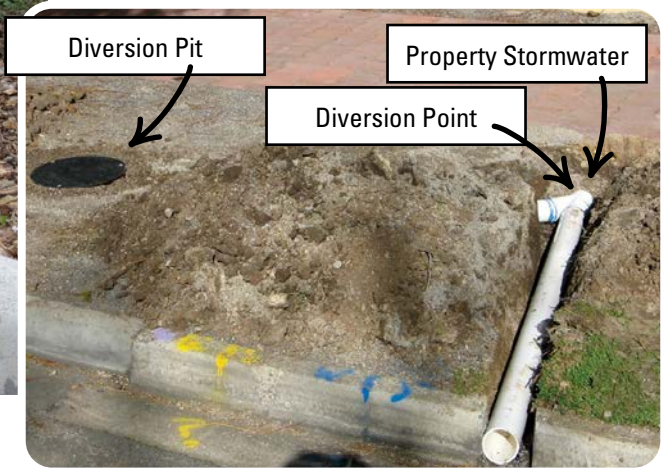
Less rain is predicted with climate change, with reductions of 7% to be experienced by 2050.[11] Extreme heat, particularly when combined with low soil moisture, causes the loss or decline of trees and vegetation. Better planning of our cities is needed to allow for increases in rainwater capture and use onsite (as opposed to hard surfaces that create runoff).

The capture and reuse of stormwater is an important way to decrease reliance on potable water, particularly given the quantity of stormwater flowing through creeks in the City. The Council is committed to becoming a water sensitive city which means using water to enhance sustainability, liveability and resilience. The implementation of Water Sensitive Urban Design (WSUD) techniques integrated into traditional Council assets is one such approach which will contribute to achieving this outcome.

Since 2009, recycled water options have been provided to most of the parks and reserves through the Glenelg to Adelaide Parklands Recycled Water Project (GAP and Managed Aquifer Recharge (MAR) schemes.

While larger scale WSUD opportunities may not always exist in a highly urbanised area like the City of Unley, there are smaller scale initiatives that support water retention within the City including stormwater inlets and waterwell installations.

TreeNet inlets capture stormwater from water runoff and utilise the water to support tree growth.



Stormwater diversion pits capture rain water from property overflow and store the water in a pit slowly dispersing into the nature strip supporting tree growth.

[11] Regional Climate Change Adaptation Plan (2015), URPS for the Eastern Region in association with the government of South Australia and the Australian Government.

Plants & Animals

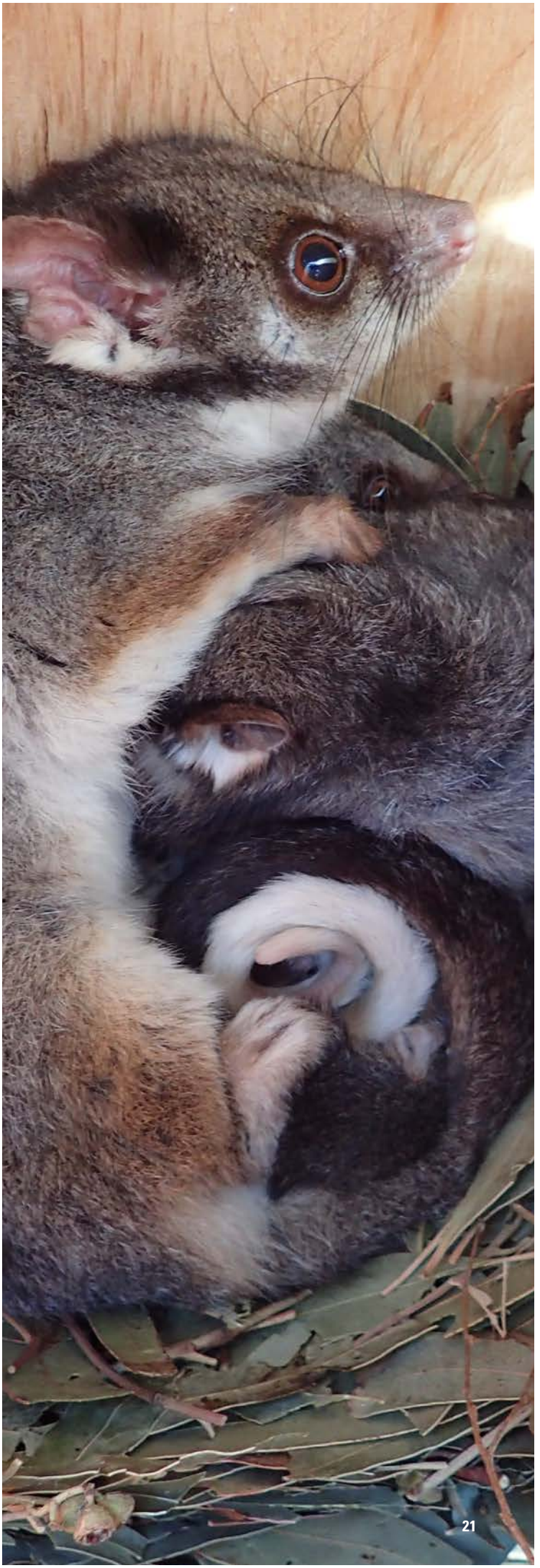
Trees provide habitat for many other plants and animals that live in the city. A good variety and abundance of plants and animals creates a healthy biodiversity and urban ecosystem. There are many mutually beneficial relationships between plants and animals that help make our environment balanced and healthy. For example different plants and fungi can cycle nutrients in the soil and certain birds help keep insect levels in check.

Many of our animals rely on hollows in large old trees to nest or den in, such as birds and possums. As the number of large trees with hollows decline, the native wildlife that depends on them for food and shelter are also in danger of disappearing. Aside from impacting the wildlife itself, loss of nature in cities has a detrimental effect on people and sense of place. This is of particular concern for younger generations with concepts such as the "nature deficit disorder" defined in 2005. [12]

The City of Unley has multiple native biodiversity corridors and plantings, such as Windsor Street Linear Reserve, to help preserve wildlife and rebuild important natural relationships.

To support the loss of natural tree hollows, the Council has an artificial wildlife box program with over 173 installed across the city. Boxes are different shapes and sizes to accommodate a variety of wildlife including parrots, possums, kookaburras, pardalotes (native wrens) and bats. Each year, the boxes are serviced and surveyed to record wildlife activity. The boxes are cleaned, if required, and new nesting material is added. The mechanisms that secure the boxes are safety checked and adjusted to allow tree growth.

[12] Richard Louv (2005) Last Child In The Woods - Saving Our Children From Nature-deficit Disorder. Chapel Hill.



Inset photo © fauNature

Changing Neighbourhoods

Urban Infill and Lifestyle

The State Government's commitment to managing growth within the existing urban footprint has seen a significant increase in the ratio of infill development compared to fringe development in Greater Adelaide. Currently, approximately 76% of Greater Adelaide's new housing growth is within established suburbs. The 30 Year Plan for Greater Adelaide suggests that 85% of all new housing in metropolitan Adelaide will be built in established urban areas by 2045.

The City of Unley is not insulated from this ever-increasing consolidation associated with urban development. The reality of the legislation and associated policy is that the number of family homes offering a large allotment with a modest dwelling, fruit tree, large patch of grass, vegetable garden and large native and/or exotic trees are declining.

As such, sub-division with multi dwelling allotments come with less open space, little room for a large tree, increased impermeable surfaces and excessive stormwater requirements.

Most new dwellings and allotments require additional vehicle driveways which removes large sections of Council nature verges within the road reserve. They usually also feature decreased set-backs from the road and allow less room for large shade trees. They require additional utilities above and below ground in the form of gas, electricity, communications, sewerage and stormwater. This impacts on both existing tree health and future planting space.

Other common activities resulting in tree loss include large extensions to the rear of existing properties, preference for low maintenance gardens and private business and commercial developments.

This private development increases the pressure on available street tree planting opportunities and subsequently canopy cover throughout the city. Examples of some of these typical changes to trees on private land can be seen below.

Tree loss examples in Fullarton from both development, partial extensions and landscaping changes.

Living with Trees

The City of Unley has a wide and varied population of residents, business owners, employees and visitors with different perspectives and interaction with trees. As such, the City encompasses many people with an extremely diverse range of interests and attitudes toward trees.

Trees are an important element of the rich cultural heritage of the City and a valued asset to the community. Conversely, the rate of canopy loss on private land clearly tells us there are changing perceptions towards the value of trees that are contributing to their loss.

Along with the many benefits of trees comes a range of concerns which are part and parcel of living with trees in our urban environment. These can include perceived safety concerns of trees, nuisance being created by leaf debris, sight obstructions, roots impacting on properties causing a financial or physical burden. There is also an emerging trend of tree removal by older residents that are finding it harder to keep up with maintenance requirements and costs.

"I love trees but not the one in front of my house" is a phrase heard often by Council staff.

While the Tree Strategy strives to support and maintain the existing urban forest and increase canopy cover over future years, it must be acknowledged that with this increase will come more concerns from the community around risk, nuisance and the balance of the benefits of trees versus the concerns they can present.

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

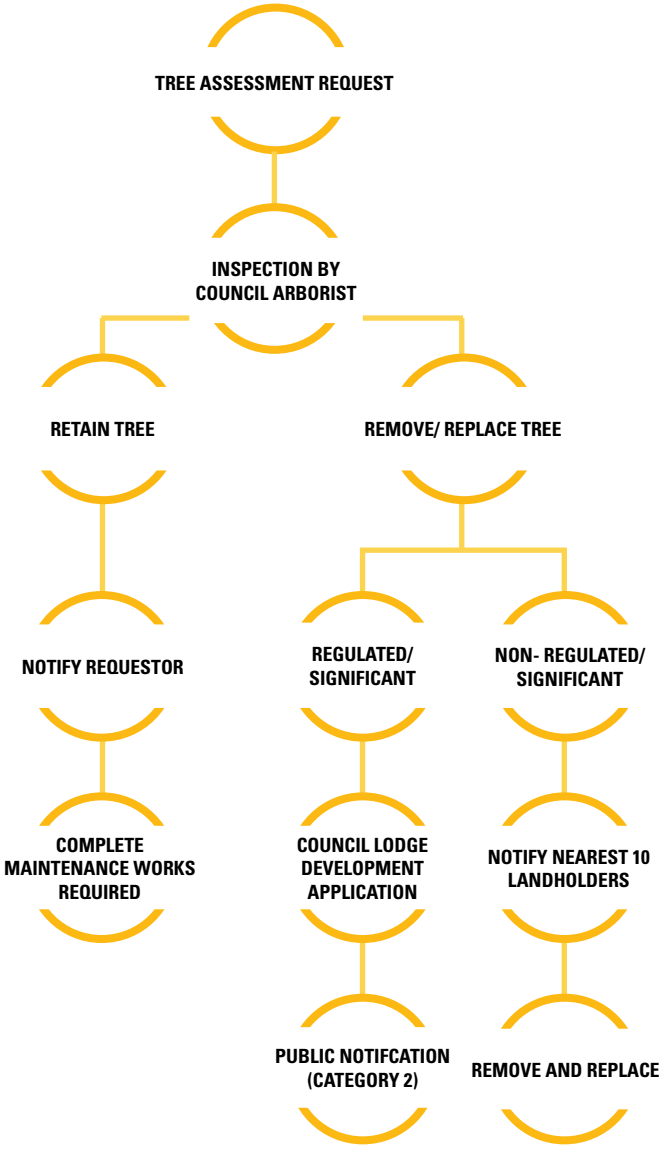
The Tree Strategy will act as an over arching support mechanism to advocate for the retention and increased planting of trees where they are not presenting a clearly defined unacceptable risk and/or a substantial nuisance of value.

Tree Assessment

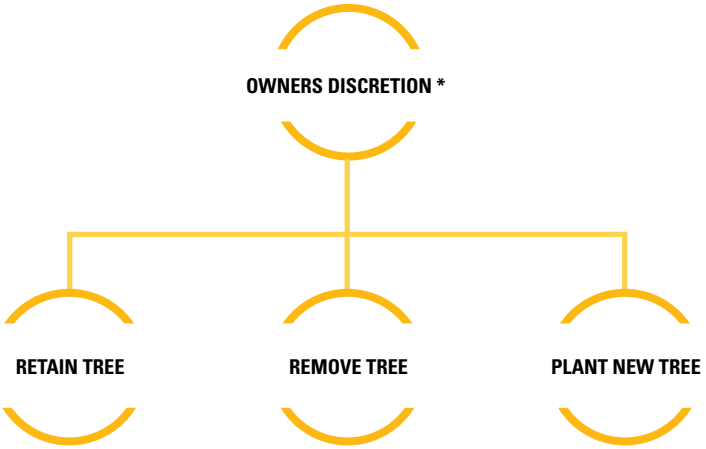
In delivering a Tree Strategy it is important to understand who has the decision making authority for trees, particularly for tree removal requests.

This varies depending on the landholder and if the tree is protected under legislation as a Regulated or Significant Tree. The following three flowcharts provide a summary of the most common tree assessment processes.

COUNCIL OWNED TREES



PRIVATELY OWNED TREES (NOT REGULATED / SIGNIFICANT)



*Exception is if the land owner has an approved Development Application which includes landscaping provisions which they are obligated to plant and maintain.

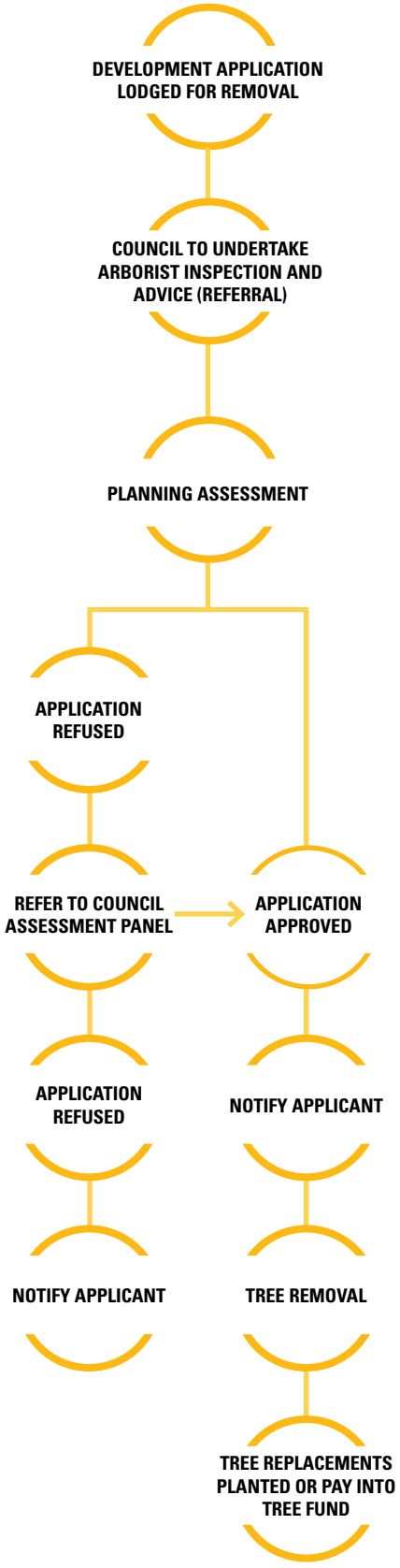
REGULATED / SIGNIFICANT TREES (ON PUBLIC OR PRIVATE LAND)

Trees that are Regulated or Significant have state legeslative protection and a Development Approval is required to undertake Tree Damaging Activity (pruning or removal of Regulated or Significant Trees).

A Regulated tree is any tree within the City of Unley with a trunk circumference of 2.0 metres or more (measured at a point 1.0 metre above natural ground level). In the case of trees with multiple trunks, Regulated trees are those with trunks having a total circumference of 2.0 metres or more and an average circumference of 625 millimetres or more (measured at a point 1.0 metre above natural ground level).

A Significant tree is a Regulated tree with a trunk circumference of 3.0 metres or more (measured at a point 1.0 metre above natural ground level). In the case of trees with multiple trunks, Significant trees are those with trunks having a total circumference of 3.0 metres or more and an average circumference of 625 millimetres or more (measured at a point 1.0 metre above natural ground level).

Some trees may be exempt from Regulated and Significant tree controls because of their location or their species.



People Friendly City

"Ageing is a cause for celebration in the City of Unley - our people are living longer and healthier. The City of Unley has a key role to play in helping our community to get the most out of their lives. We need to ensure that our City is accessible for everyone, promotes health and wellbeing and provides opportunities for connection, inclusion and contribution. We want our people to live fulfilled lives throughout their lifetime and never feel like they need to leave the City of Unley"

This summary quotation from the current City of Unley Active Ageing Strategy highlights the opportunity facing the future design of local streetscapes. The City promotes that within each neighbourhood, every street that can be planted with street trees has and will continue to be planted. Our community expects tree-lined streets with a height and canopy that provides shade and amenity to an otherwise harsh streetscape.

As an urbanised inner city council, many of the streets are narrow from property boundary to kerb. Trees require space to grow, mature and survive. Within limited space they often come into conflict with the street infrastructure. Large trees 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 to reach the Age Friendly goals with the community potentially being asked to accept a modified streetscape or more innovative solutions being explored such as narrowing roadways to provide more space for trees.

Example in Mary Street, Unley where footpath width narrows due to tree trunk. The challenge is to decide if the tree remains or the need for a legislative age friendly footpath takes priority.

Community Values

The City of Unley is known for its leafy streets which greatly add to the character of our streetscapes and local property values. There is an intangible quality about the connection between community and trees – a visual sense of place that is tree lined and leafy. Many of our local parks are identified by the scale and character of a number of large legacy trees. This leafy neighbourhood character isn't made up from one tree but the combined look and feel of the whole urban forest.

Before developing the Tree Strategy, three workshops were held to better understand community perceptions and values relating to trees in late 2019. To reflect our future generation, one of the workshops was with students from across six local primary and high schools.

Participants provided views on what they value now, would like to see in the future and ideas on actions to get there.

The students (aged 9-17), showed a solid understanding of the many benefits of trees, particularly how they make the city look and the connection to climate action. Similar to the students, the adults values were strong with aesthetics, cooling and habitat most prominent. These responses aligned with the findings from a National survey[13] on Green Spaces, with aesthetics also the number one value mentioned.

What do you value about trees in Unley now?

Adults Response Nov 2019

Student Response Oct 2019

[13] Greener Spaces Better Places (2019) Who's With Us? Bringing community along on the green space journey.

Keeping Unley Leafy

Due to the many years it takes for trees to mature, action taken today will set the future legacy. The Council has committed to the following vision and long term target.

VISION:
Create a resilient, healthy and diverse urban forest to keep Unley leafy for future generations.

TARGET:
20% increase in green cover by 2045 which is the equivalent of 14,000 new trees

The number of trees target is based on a representative tree with an 8m diameter canopy spread. This is an average sized tree found in the back yard of typical properties across the City to make it easier to visualise what a 20% increase in canopy means. In reality of course trees vary greatly and a variety of sizes should be planted to suit each location.

A tree target (rather than percentage), also enables a way to track progress annually in the intervening years between canopy assessments. Trees are a long term investment and it will take a sustained commitment over more than 20 years to see the full impact of actions taken today.

ACHIEVING OUR TREE CANOPY TARGET

14,214 NET INCREASE IN TREES BY 2045	= 546 PER YEAR ACROSS THE 26 YEARS TO 2045
18,918 RATEABLE PROPERTIES	IF 3 in 4 HOMES PLANTED A NEW TREE WE WILL ACHIEVE THE TARGET

Objectives

The Tree Strategy is guided by eight key objectives to ensure trees throughout the City are managed in a responsible and systematic manner to meet the needs of the community.

1. **ESSENTIAL**
   Value trees as essential community assets that contribute to the wellbeing of our community and environment.

2. **DIVERSITY**
   Ensure the City has a diversity of tree species and ages to maximise resilience against pest, diseases and climate extremes.

3. **GREEN COVER**
   Realise new opportunities within our City to enhance streets and increase green cover.

4. **LEGACY**
   Prioritise planting of legacy trees in parks and reserves that have the potential to become noteworthy and to span generations.

5. **INNOVATIVE**
   Improve urban tree management practices through adopting innovative technologies, new methods and adaptive approaches.

6. **SUPPORT**
   Support owners to retain existing trees and plant more trees on private land.

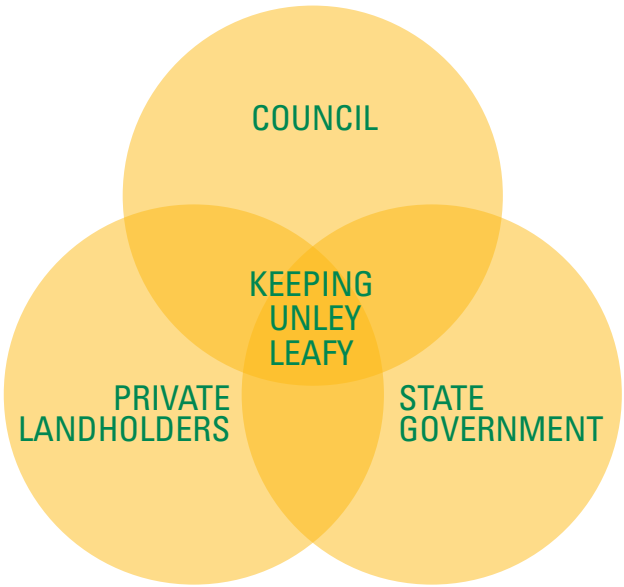
7. **PROMOTE**
   Promote the benefits and advocate for trees in our City.

8. **MAINTAIN**
   Proactively establish and maintain trees as a long term asset.

Working Together

Keeping the City of Unley leafy is achievable through the whole City's involvement.

A key factor in the considerations and role Council undertakes in tree management is based on location and land owner, particularly between trees located on our streets, within parks and reserves, on other government land and those on private land.



COUNCIL PARKS & OPEN SPACE TREES

As the urban population grows and private green space becomes less available, public open space increases in social and community value. The City of Unley has significantly less open space (<3%) than most local government authorities within metropolitan Adelaide.

OTHER GOVERNMENT LAND

Approximately 4% is managed by State Government Agencies including the Department for Education (public schools) and Department for Planning, Transport and Infrastructure (DPTI) (transit corridors and arterial roads). Much of this non-Council public land has existing canopy or the potential for additional plantings that could be achieved through existing partnerships with these agencies.

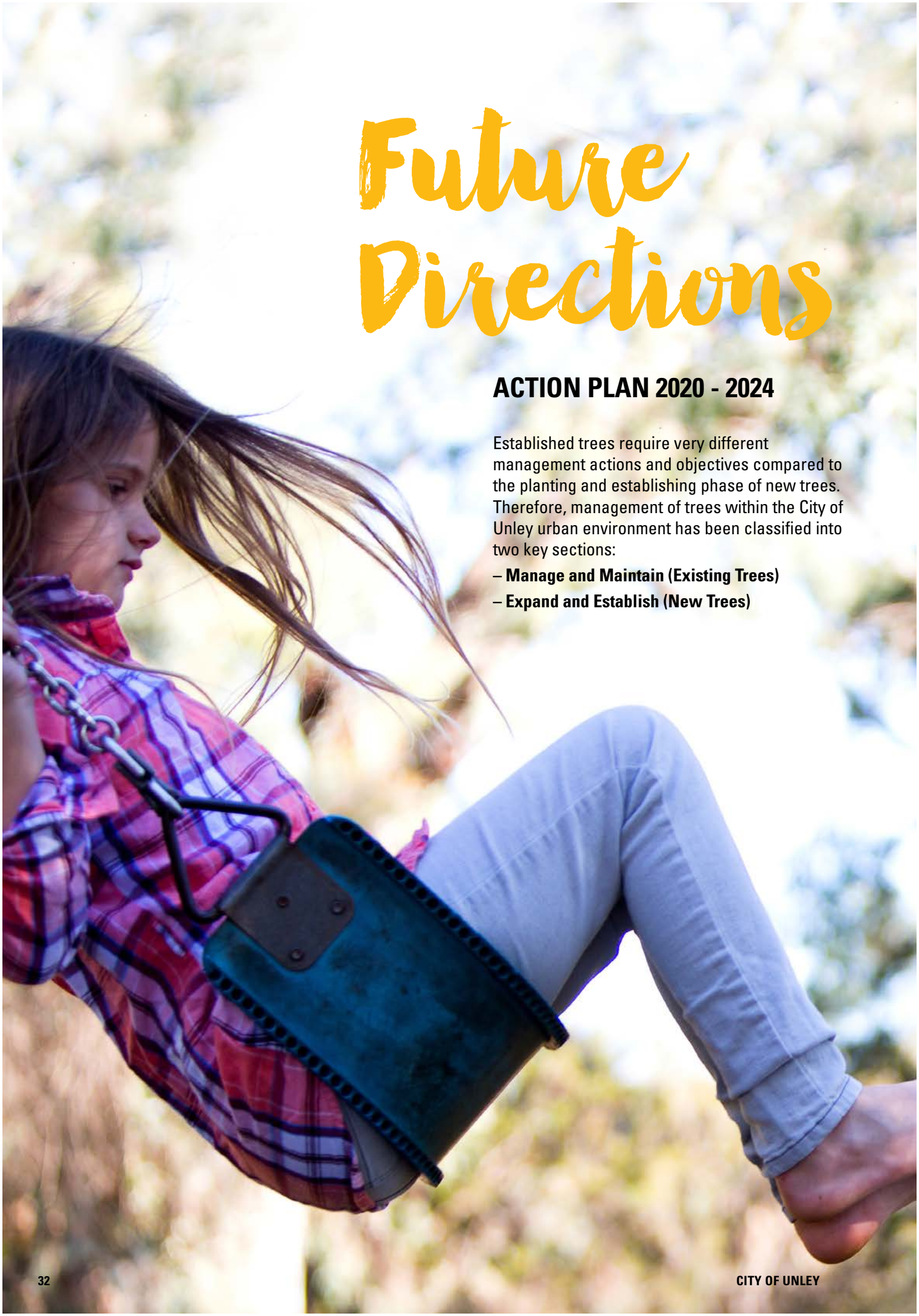
COUNCIL STREET TREES

Street trees in the City of Unley have an important function and role to improve the micro-climate and liveability of the City, and contribute to its diverse inner urban, heritage, environmental and social character. Due to limited open space, streets are the main opportunity to expand the urban forest on Council land.

PRIVATE LAND (RESIDENTIAL & BUSINESS)

With private land making up 80% of the whole City area, it is an essential component to meeting the target of 14,000 new trees by 2045. Backyards, front gardens and corporate landscaping make significant contributions to urban greenery and the broader community. Actions that aim to support retention of existing trees are just as crucial as any that encourage new planting.

Council is limited in its ability to directly influence private land owners. Legislative control resides with the State Government through the *Planning, Development and Infrastructure Act 2016*, which councils administer. However, the Council can play an important leadership role in advocacy, education and support to negotiate better outcomes for retaining and/or increasing canopy wherever possible.



Future Directions

ACTION PLAN 2020 - 2024

Established trees require very different management actions and objectives compared to the planting and establishing phase of new trees. Therefore, management of trees within the City of Unley urban environment has been classified into two key sections:

– **Manage and Maintain (Existing Trees)**

– **Expand and Establish (New Trees)**

Manage & Maintain

Trees take many years to mature and provide shade, canopy and amenity. As the City of Unley already has an established urban forest, the highest priority is to protect and maintain these existing assets.

INITIATIVES

The City of Unley will continue its proactive approach to tree management, following asset management principles, arboriculture standards, guidelines and procedures. The following is a list of key and new strategic initiatives to be implemented that will assist to collectively meet the 2045 objectives.

OPEN SPACE | STREETS | GOVERNMENT LAND | PRIVATE LAND

M1. DATA MANAGEMENT

M1.1 Review the Tree Strategy at least every five years to provide strategic planning, guidance and regular reporting on tree investment.

Regular review of the Strategy will act as an evaluation mechanism to assess Councils progress towards managing and maintaining its urban forest.

M1.2 Canopy cover trend analysis comparing public and private land tenure change will be undertaken in conjunction with the Strategy review as an evaluation mechanism.

Changes in canopy cover are gradual, so while annual numbers of trees planted vs removed can be tracked, actual canopy trends should only be assessed approximately every five years. A five year reporting cycle will reveal progress towards the whole of area target.

M1.3 Tree Condition Assessment Audits will be conducted on all street trees at least every five years and a dynamic mapping layer will be maintained.

City of Unley street trees will have a condition audit in a rolling five year program to assess their health and if any maintenance action needs to be scheduled. The aim is for 95% of all trees assessed to meet prescribed Level of Service requirements.

M2. MAINTENANCE - TREE MANAGEMENT

M2.1 Undertake a proactive approach to cyclic pruning.

A planned maintenance pruning schedule allows for preventative measures to be taken in managing the existing street and park trees to keep them healthy and ensure their form suits the individual locations, addressing potential nuisance issues before they arise.

M2.2 Use best practice techniques and methods in the maintenance of trees.

Skilled and experienced staff will be supported to manage and maintain the urban forest through the Policy, Tree Management Procedures and industry network such as TreeNet.

M3. MANAGEMENT OF TREES

M3.1 Replace trees as required based on condition audit results.

Council will continue to replace trees as they reach the end of their useful life expectancy to ensure current tree numbers on Council land are retained. The replacement species will be chosen to best suit local conditions and may not reinstate the original species.

M3.2 Remove individual trees when all other options to retain the tree are exhausted.

Staff will apply Council's Tree Policy when determining requests for tree assessment from the community noting the priority to retain and protect existing trees wherever possible.

M4. LIVING WITH TREES

M4.1 Offer a Conservation Grant to private residents to assist with the ongoing maintenance of Regulated and Significant Trees on private land.

The existing biannual Conservation Grant Scheme will be continued to offer assistance with costs associated for supporting tree health and maintenance for Significant and Regulated trees.

M4.2 Investigate a new Living with Trees pilot program which could include discounts towards gutter cleaning, additional green waste options, safety audits and/or pruning of trees on private land.

When reviewing the drivers for tree loss on private land, one area identified was the perceived safety concerns or increased maintenance time and costs. If these could be addressed, it is much more likely trees would be retained on private property. Investigate a trial project to test effectiveness of incentives and support for maintaining existing tree canopy on private land to reduce tree loss. The project will also promote existing schemes like the Commonwealth Home Support Program which includes heavily discounted gutter cleaning to eligible applicants.

M4.3 Promote existing information and support available from internal and external sources relating to tree maintenance.

This initiative involves the provision of information and advice on living with trees in urban areas including maintenance suggestions. It could explore some "myth busting" of common perceptions of trees. Information available from government and non-government sources will be considered based on its relevance to the City of Unley.

M5. DEVELOPMENT PROTECTION

M5.1 Update and apply clear procedural protocols for dealing with Development Applications involving the removal of Regulated and Significant trees.

In coordination with the introduction of the new Planning and Design Code, Council will adapt existing protocols and information to reflect any changes in dealing with Regulated and Significant trees in the development application process.

M5.2 Develop a proforma or checklist to assist and guide developers in addressing relevant Development Plan tree environmental criteria to enable Council administration to make informed assessment decisions.

In coordination with the introduction of the new Planning and Design Code, adapt existing information to reflect any changes and provide clearer information to support good outcomes for tree health and improved customer experience for development applicants.

M5.3 Audit developments to assess compliance with landscaping (during or post construction) and identify any damage to Council trees or Regulated or Significant trees on private property.

Under this initiative Council will focus effort on compliance with development approvals in accordance with legislative requirements that supports the retention of trees. This includes both during construction (eg site inspection of tree root protection zones) and post construction.

Expand & Establish

This Tree Strategy advocates for a greater focus on tree selection and planting design to increase opportunities for new trees across the City. The Strategy recognises the importance of increased tree care in early years to become established, healthy trees that suit their surrounds.

INITIATIVES

Meeting the 14,000 new trees by 2045 target will require a combination of planting by both Council and other land owners. The following is a list of key and new strategic initiatives to collectively meet the 2045 objectives.

 **OPEN SPACE**
 **STREETS**
 **GOVERNMENT LAND**
 **PRIVATE LAND**

E1. MAXIMISE PLANTING ON COUNCIL LAND

E1.1 Implement an accelerated tree planting program for additional trees on Council land using Precinct Plans to prioritise planting locations.

Council will take a leadership approach in improving canopy cover by maximising public planting, including within parks, streetscapes and other public places. Planting locations will be based on Precinct Plans that aim to increase shaded trails along streets to link residents and visitors with schools, shops, parks or public transport. Decisions on individual species selection will be made on a case by case basis to ensure the right tree in the right location approach is followed.

E1.2 All new capital or infrastructure renewal works will consider and appropriately budget for trees and greening where practical.

Combining Councils annual streetscape renewal works with greening initiatives can create multiple long-term benefits and build greater efficiencies. Opportunities for trees and increased landscaping will be identified at the start of a project to support more sustainable built outcomes.

E1.3 Trial, test and refine new planting methods, including reclaiming hard surfaces and tailored integrated streetscape designs.

Maximising tree planting on Council land will focus on filling vacant spots along streets, however it will also need to utilise newer methods that reclaim hard surface such as on-road planting. These techniques are still being refined and need to balance the competing needs for wide footpaths, bicycle lanes, on-street parking spaces and underground/overhead assets. Ongoing testing and trialling in collaboration with neighbouring councils and partner organisations, such as Tree Cities of the World and SA Power Networks will allow Council to be progressive in this space.

E1.4 Prioritise planting of legacy trees in appropriate locations within parks and reserves that have the potential to become significant long-term features.

Council will identify suitable locations within parks and reserves, and plant new specimen trees that have the potential to grow very large and become noteworthy landmarks in the future, contributing to the identity and amenity of local parks and the City's canopy aspiration.

E1.5 Target an urban forest composition of no more than 5% of one tree species, and 10% of one genus.

A reliance on dominant species leaves the City vulnerable to pests and disease and the potential loss of the tree asset. Council will move towards a healthy, environmentally sustainable and resilient tree population by increasing its diversity of species. This is a long-term process that will only be completed through the natural succession of existing trees.

E1.6 Maintain a toolkit that includes a palette of species suitable for street planting which considers varying infrastructure situations, service and footpath requirements, and considers climate change.

This initiative provides a range of species options for arboriculture staff, that can be used in line with site specific locations taking into account community use, neighbourhood character, transport functions, biodiveristy, native habitat provision, open space, available space, utilities and environmental considerations.

E2. ESTABLISHMENT (YOUNG TREE CARE)

E2.1 Advance guidelines and programs to support the early establishment of trees to maximise canopy potential.

Council will review and update young tree care practices in line with industry standards to ensure new trees are provided with the best development potential over the first three to five years.

E2.2 Ensure watering programs and schedules meet new tree requirements during establishment phase.

Review and update watering programs to support new trees including water retention initiatives, use of recycled stormwater and need for additional watering during extended periods of low rainfall.

E2.3 Resource and schedule a young tree care program for three to five years post planting.

New saplings need more care and support in the first few years after planting and it is crucial this is planned into operating budgets and work plans. Council aims for an annual survival and health achievement target of 90% or higher in the first 12 months of a tree's life.

E3. COLLABORATE

E3.1 Revitalise and monitor the "adopt a tree" program to encourage residents to provide supplementary watering to new street trees.

Build on the success of the original "adopt a tree" program aimed to care for stressed street trees during the drought, with a focus on adopting new street trees. Council will continue to provide water truck services to all new trees, however there is strong anecdotal evidence that suggests where residents take ownership and provide supplementary water to trees planted in front of their homes, the likelihood of the tree's success and rate of growth is greatly enhanced.

E3.2 Investigate partnerships with State Government agencies to collaborate on education, managing risk and new plantings.

Approximately 4% of land in the City of Unley is managed by State Government Agencies. This includes the Department for Education (public schools) and Department for Planning, Transport and Infrastructure (DPTI) (transit corridors and arterial roads). Much of this non-Council public land has existing canopy or the potential for additional plantings which we could partner with on delivery. For example any upcoming works with DPTI on arterial roads or transit corridors should include discussions for retention and/or addition of trees.

E3.3 Continue to advocate for legislative controls to improve outcomes for retaining and increasing trees wherever possible.

Support State Legislation that protects existing trees and provides design standards for space for new trees on private land. Ongoing technical input and advocacy in relation to new legislation, particularly in the implementation of the new Planning and Design Code.

E4. SUPPORT & PROMOTE TREES ON PRIVATE LAND

E4.1 Provide support and incentives for the community to become engaged in the planting and ownership of trees within private properties to adapt to the impacts of Urban infill and assist in preserving the urban forest.

Council will provide an advocacy role for new trees on private land through some new pilot initiatives including providing information on popular tree species in the City of Unley to assist private landholders in tree selection. Council will trial new tree incentives, such as a discount voucher, to encourage new residents to plant trees on private land. Council will also trial a "Landscape Design Service" to be available at Council approximately 2 days per month to provide independent advice to residents and businesses.

E4.2 Explore partnership opportunities with commercial developments to increase trees within public interface zones (eg private open carparks)

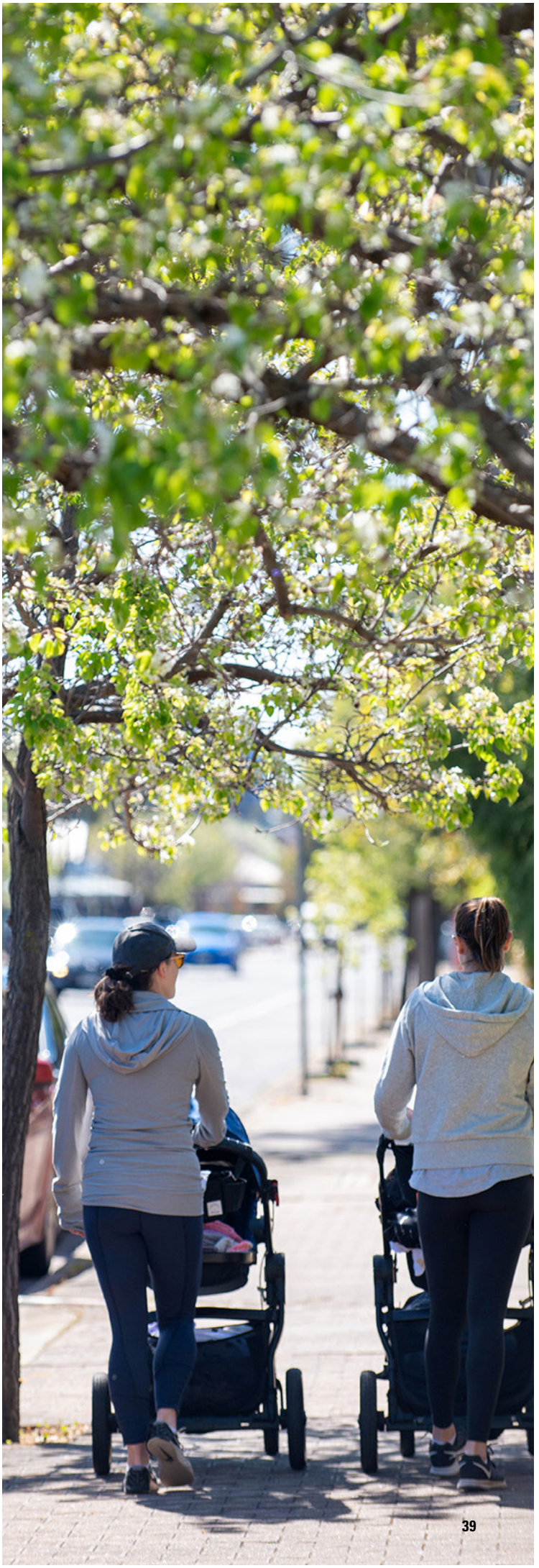
Investigate partnerships with owners of open car parks and other hardspaces for opportunities to increase greening through planning, design and/or management of commercial land. Collaborate to seek substantial co-contributions and improve canopy and amenity as opportunities allow, including more trees around buildings, within gardens, along rear boundaries and across carparks.

E4.3 Provide activities for the community to celebrate and value trees.

An expanded urban forest relies on our community valuing and supporting the role of trees. Education and awareness raising events will be held to increase understanding the benefits of trees in urban areas. Exact initiatives will vary year to year but may include tree planting with schools on National Tree Day, heritage tree tours, adopt a tree program, temporary "tree tag" installations, nature play school holiday activities and community presentations.

E4.4 Council will explore a range of financial measures and incentives to encourage the retention and expansion of tree canopy on private land.

Council will investigate policy options that consider minimum requirements for canopy cover on private land. These investigations may also consider financial or other incentives for existing properties to achieve a target canopy cover level and establishing partnerships with commercial property owners to increase tree canopy.



Implementation

INCREASED PLANTING & MAINTENANCE

Successfully growing and managing our urban forest will require support from the public sector, developers, businesses, wider community, the elected members and Council staff. To effectively increase and maintain a healthy functioning urban forest requires an increased resilience to nuisance and risk, support financially, administratively and legally with long term funding commitments and organisational change.

Ongoing implementation and improvement of Councils' Tree Strategy and any associated maintenance is managed in accordance with, and subject to, adoption of Councils Annual Business Plan and Budget. An increase in planting and projects relating to trees will require additional and ongoing maintenance funding, including administrative support.

The financial life of a tree is defined with two major events that bookend its existence. The costs of purchasing, planting and establishing and the cost of removing the tree at the end of its life. The long period between these events is where the tree provides so many benefits and asks for so little in return.

As such, an increased planting program to drive increased canopy cover will require a significant shift in resourcing. 'Young Tree Care' must become the prime focus as successful tree establishment drives decades of benefits at relatively low cost. Young Tree Care applies for the first 3-5 years after initial planting and typically includes formative pruning, annual inspections and more frequent watering. It is important that Young Tree Care keeps pace with planting rates to ensure they grow and thrive.

Further implications of an increased urban forest will be realised insofar as Council's operational costs with respect to tree removal, pest and disease control, tree watering, street sweeping, civil infrastructure repairs associated with root growth, as some examples.

It is worth noting that costs to plant new trees vary depending on species selection, size of tree planted and complexity of planting location (eg any realignment of kerb/reclaiming hard surface).

As our urban environment becomes more compact, finding space for trees and tree roots will become harder, and require greater investment (including supporting infrastructure) to create sustainable growing environments.

TRACKING 14,000 TREES TARGET

To meet Council's long-term canopy target, it is estimated that approximately 14,000 trees will need to be added into the City in the next 26 years (2019 to 2045), in addition to Council's removal and replacement program. This target equates to an average of 540 new trees planted per year. As outlined in this Strategy, it is recognised that with limited public space, a large number of these trees will need to be planted on private land.

To meet this long-term target, a sustained commitment is required from the Council to investment in the introduction and maintenance of new trees across the City. Opportunities to increase planting will vary annually, be influenced by Council's capital and renewal programs, grant funding and partnership opportunities, as well as public involvement with tree planting incentives. Based on the 2019/20 program of works, the following is a demonstration of how a variety of funded initiatives can work together to achieve at least 540 new trees per year.

NEW TREES PLANTED	**INDICATIVE TREES/YR**
New street trees in vacant spots between existing trees.	400
New trees planted as part of annual capital projects works.	20+
New large species trees in parks and reserves.	10
Trial or refine at least one tree planting approach each year (eg on road plantings or in collaboration with carparks and/or schools).	10+
Provide small discount voucher towards a new tree for residents.	100+
Total indicative new trees per year	**540**

INDICATIVE COSTINGS OF NEW TREE INITIATIVES						
NEW INITIATIVES (Additional Finance)	19/20	20/21	21/22	22/23	23/24	Total over 5 years
	$,000	$,000	$,000	$,000	$,000	$,000
Develop strategy, policy, toolkit, plans and procedures	70	0	0	0	0	70
Planting new trees Council land	90	160	160	160	160	730
Education and advocacy for trees on private land	25	25	25	25	25	125
Total New Initiatives	185	185	185	185	185	925
	Target Outcomes - Approximately 540 new trees per year					

Glossary

Arboriculture: The management and cultivation of trees.

Biodiversity: The variety of all life forms on earth: the different plants, animals and micro-organisms and the ecosystems in which they form a part of.

Capital Works Program: A program of works conducted by Council which renews, upgrades or creates new infrastructure to support the delivery of services to the community, including roads and footpaths.

Carbon sequestration: Amount of carbon dioxide removed from the atmosphere and stored by trees and other biological or chemical processes.

Ecological resilience: The amount of disturbance an ecosystem could withstand without permanently changing or damaging it.

Ecosystem: A community of organisms interacting with each other in their environment.

Genus: A scientific term for a group of related animals or plants, eg Eucalyptus (Gum Trees).

Green space: An area of grass, trees or other vegetation for aesthetic or environmental purposes within an urban environment.

Legacy tree: Trees which are significantly larger and older than the average trees on the landscape and typically have cultural and/or historic value.

Liveability: An assessment of what a place is like to live in, taking into account environmental quality, crime and safety, education and health provision, access to shops and services, recreational facilities and cultural activities.

Open space: An outdoor area of vegetation and/or hard surface(s) that is open to the public, used often for recreational and environmental purposes.

Remnant vegetation: The patches of native trees, shrubs and grasses that remain in the landscape relatively undisturbed or cleared by human activity (pre-European settlement).

Species: A scientific term for a specific type or closely related organisms (plant or animal), eg *Eucalyptus camaldulensis* (River Red Gum).

Stormwater interception: Stopping or reducing water flowing into the stormwater drainage system.

Urban density: The number of people living in a given urbanised area.

Urban forestry: Care and management of trees and woody shrubs in an urban environment recognising them as providing social, environmental, economic and aesthetic benefits.

Urban Heat Island Effect (UHI): When urban areas are warmer than surrounding rural areas due to heat retention in hard surfaces. This build-up of heat is re-radiated at night time, increasing air temperatures which can have serious human health consequences particularly during heatwaves. The UHI effect can be mitigated by a range of factors. The most cost effective and efficient mitigation tool is an increase in tree canopy cover.

> ***Unless someone like you cares a whole awful lot, nothing is going to get better. It's not.***
>
> *~ Dr Seuss, The Lorax, 1971 ~*

THE CITY of Unley

Civic Centre
181 Unley Road Unley
South Australia 5061

Postal PO Box 1
Unley, South Australia 5061

Telephone (08) 8372 5111
Facsimile (08) 8271 4886
Email pobox1@unley.sa.gov.au
unley.sa.gov.au