Town of Victoria Park

Urban Forest Strategy

TOWN OF VICTORIA PARK

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A huge thank you also goes to our editors and proof readers

With thanks to...

Mayor Trevor Vaughan and Town of Victoria Park Councillors, CEO Anthony Vuleta and Town staff for their contributions and assistance, and for being open to trying a new approach.

All our volunteers and their families: from the Vic Park Collective, Vic Park Trees and the wider community.

Our partners who assisted with the community engagement workshops: Australian Urban Design Research Centre (AUDRC), Millennium Kids Inc, Preserving4thefuture, Red Eclectic and the Town of Victoria Park.

And to everyone who assisted, answered questions, supplied information, met with us and were so generous with their time including; Dion Johnson and Glen Williams from the City of Canning, Rowena Skinner, Senator Sue Lines - Senator for Western Australia, Mr Steve Irons MP - Member for Swan, Hon. Ben Wyatt MLA - Member for Victoria Park, Ryan Quin, Engeco, Perth NRM, SERCUL, WALGA, Water Corporation, Western Power, City of Melbourne, RMIT, City of Stirling, Urban Food Street, Sabrina Hahn, The Brand Agency, Stirling Urban Tree Network, Bayswater Urban Tree Network, West Tree Canopy, Urban Canopy, The Battye Library, City of South Perth, Victoria Park Community Gardens, St. James Community Gardens, Rutland Corner Urban Food Tree Project, The Green Swing, Claire Bisset, Edwina Jones, Anditi, Paperbark Technologies, Landgate, the Department of Biodiversity, Conservation and Attractions, the Kwongan Foundation, Comitato Vittorio Participata, Malubillai Wildlife Carers Network Inc., Urban Revolution, Eclectic Squirrels, Balmoral Hotel, Empire Bar, Kym and Shane from Acton Victoria Park, Swansea Street Markets, Antz Inya Pantz Coffee Company, Circus 23, Keith Lightbody, ArtXPress Printing, Teksoft Printing and many many more. Thank you.

Publishing Details: Urban Forest Strategy Working Group, Town of Victoria Park, Western Australia, August 2018. Online version available at: www.victoriapark.wa.gov.au

Dedicated to the Vic Park Community

Cover Photo: K. Wray / Back Cover Photo: A. Kwan

Redtail black cockatoo. Photo K. Lightbody.

Nuytsia floribunda ('Christmas Tree') in Kensington Bushland.

> *Long before the arrival of the British, who came in 1829... the Swan River was known only as Debarl Yerrigan. This was a body of water protected, according to dreaming stories, by the great snake-like creature Wagyl ... [and] provided the focal point for the intricate and complex network of landmarks, spiritual sites, meeting places, tracks and food sources which have sustained Aboriginal people for countless generations.* [1]

The Urban Forest Strategy Working Group acknowledges and pays respect to the traditional custodians of this land, the Whadjuk people of the Noongar nation, and their continuing culture and contribution to the life of our Town. Connection to and respect for the land are an intrinsic part of Indigenous culture. These words by Aboriginal advocate Pat Dodson exemplify this notion:

> *For the Aboriginal people land is a dynamic notion; it is something that is creative ... Land is the generation point of existence; it's the spirit from which Aboriginal existence comes. It's a place, a living thing made up of sky, of clouds, of rivers, of trees, of the wind, of the sand, and of the spirit that has created all those things; the Spirit that has planted my own spirit there, my own country ... It belongs to me; I belong to the land; I rest in it; I come from it.* [2]

The Noongar people's knowledge of plant life, their relationship to the seasons and cycles of life is profound. Communicating the importance of individual species as well as specific sites to the broader community of the Town of Victoria Park will promote both the aims of the Urban Forest Strategy and Noongar culture and practices.

Vic Park Summer Street Party 2015. Photo K.Wray.

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1. Executive Summary

In 2016, the Town of Victoria Park had a canopy cover of 10%[3] of land area[4], one of the lowest in Perth and significantly less than is required for a healthy urban environment.

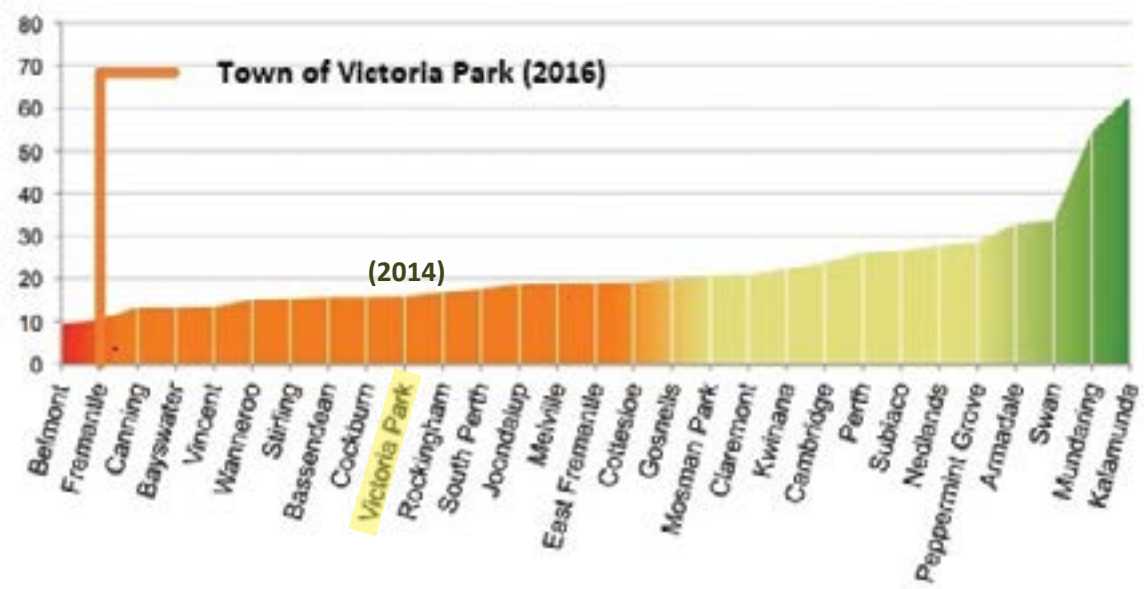


Figure 1: Town of Victoria Park (2016) imposed onto Benchmarking Australia's Urban Tree Canopy (2014), Institute for Sustainable Studies, University of Technology Sydney

Canopy trees are a minimum of 5 metres tall and create at least 7m² of shade. To increase our tree canopy from the current level of 10% to the Council's target of 20% will require an additional **1.8 million m²** of canopy coverage, or at least 256,000 more trees than at present. While this Urban Forest Strategy (UFS) recognises tree canopy cannot be doubled by 2020, the strategy concludes it is possible to protect and plant enough trees by that date to reach the target in the future.

Across both public and private land, pressures on our urban forest are increasingly apparent. Almost half of new residential growth in the Perth metropolitan area is forecast to be achieved through urban infill to reduce urban sprawl.

Community concerns about this trend became the catalyst for the Town's first UFS. The Strategy has been developed using a process known as Asset-Based Community Development (ABCD*), involving collaboration between the Town and its principal stakeholders (citizens – local residents and ratepayers) within a volunteer-driven framework.

The resulting UFS consists of this strategic document and a Tree Matrix** to guide the required mass planting programme. The UFS proposes a comprehensive approach designed to improve the health of the entire urban forest in the Town and increase its tree canopy. Investing in a healthy urban forest will improve the liveability and sustainability of the Town and create a major economic asset valued in the multi-millions of dollars.

The main challenges to the success of the UFS will be the Town's ability to vary existing models of urban density development, and resource a mass tree planting programme based on a genuine ABCD approach to urban forestry (defined in Appendix 7). The state government's forthcoming DesignWA[5] planning and development reforms have the potential to provide a landscape for success which can be harnessed by the Town to achieve the UFS's goals.

* See Appendix 7

** Tree Planting Matrix and User Guide available on ToVP website.

The UFS is based on the following principles:

- Community-focused and collaborative (ABCD);
- Innovative, experimental and validated; and
- Efficient and value for money.

Following are the strategic outcomes (1 to 6) of the UFS:

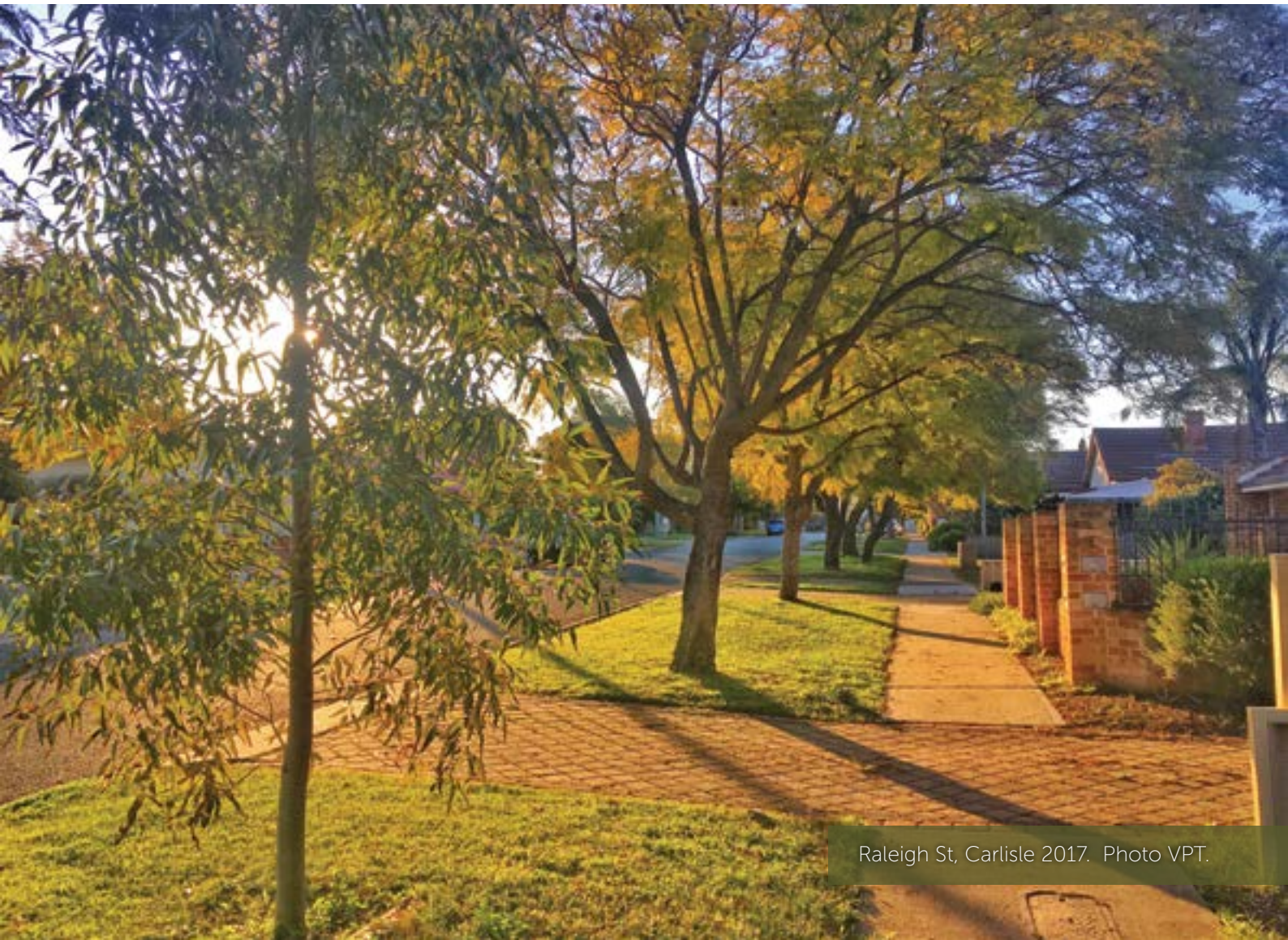
- Plant and protect sufficient trees by 2020 to achieve the 20% tree canopy target as supported by Council;
- Maximise community involvement and collaboration in its implementation;
- Increase tree diversity, whilst favouring local endemic and West Australian species that also support wildlife;
- Maintain high standards of vegetation health;
- Improve soil and water quality; and
- Improve urban ecosystems.

In section 8, priority actions are allocated against each of the strategic outcomes on both public and private land within the Town. Local and international case studies are included to demonstrate and highlight successful implementations and to serve as a guide to future action.

The Implementation Framework (described in section 11) outlines a cost-effective partnership model for delivering the UFS that will reap benefits for the Town, its principal stakeholders and the community as a whole.

The Town's role in the UFS is threefold;

- To contribute guidance, resources, support and incentives for the community and all stakeholders to collaborate in implementing the UFS across the Town;
- To educate and promote the UFS to the community; and
- To actively plan, budget for and collaboratively manage the UFS on public and private land.



Raleigh St, Carlisle 2017. Photo VPT.

2. Key Themes

Introduction

This section introduces **why** we need an Urban Forest strategy.

What is an Urban Forest?

This section defines **what** an urban forest is and **how** it can benefit us.

Challenges to the Urban Forest

This section outlines **how** the efficacy of the Urban Forest Strategy can be undermined.

Mapping the Urban Forest

This section discusses **how** the urban forest is measured and its characteristics.

Developing the Urban Forest Strategy

This section discusses **which** factors and methods have influenced the creation of this Urban Forest Strategy.

Principles and Strategic Outcomes

This section outlines **how** the Urban Forest Strategy will work, the ethos behind the strategy and the outcomes of the Urban Forest Strategy.

Implementing the Urban Forest Strategy

This section discusses **when** and **how** the strategies will be facilitated through an Asset-Based Community Development model.

Urban Forest Strategy Kids Only Workshop with AUDRC models. Photo K. Wray.

3. Introduction

What is tree canopy and why do we need a UFS?

Urban tree canopy is a measure of the coverage of the leafy part of a tree, which delivers the most benefits. The rate of urban deforestation across Perth has been rapid and the loss of urban tree canopy is having both a direct and indirect impact upon the quality of health and amenity enjoyed by residents.

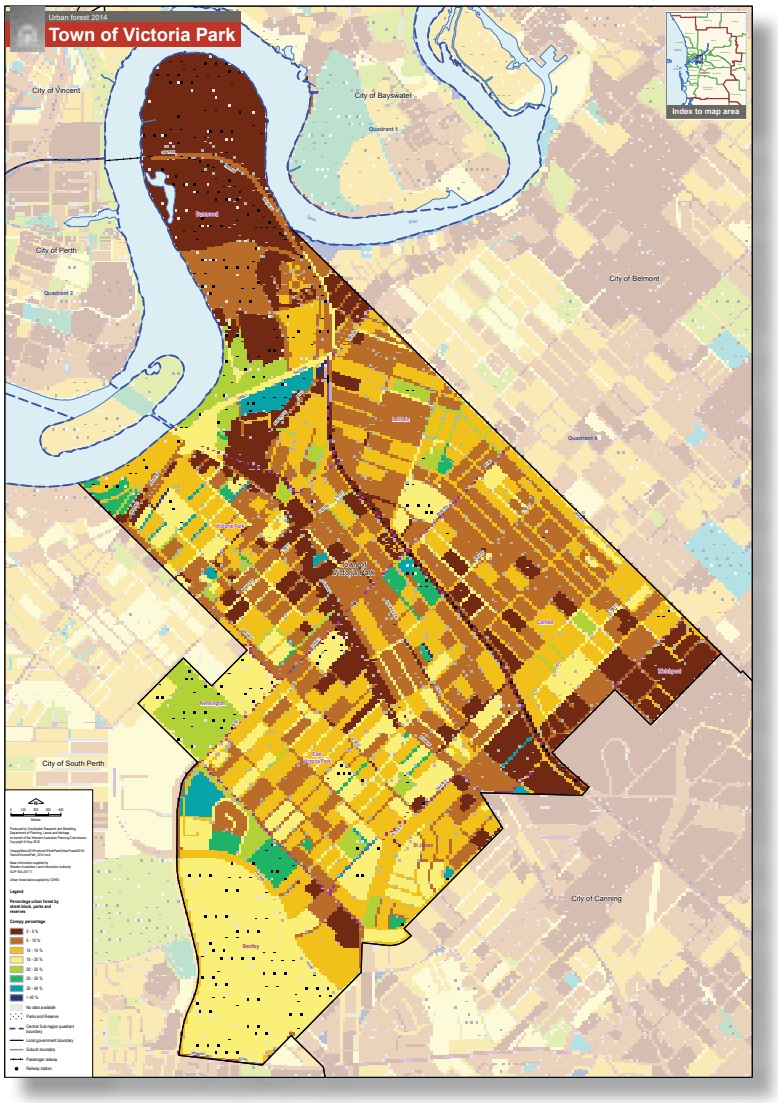


Figure 2: Western Australian Planning Commission, Town of Victoria Park Urban Forest Canopy Percentage Map 2016

The latest canopy mapping and analysis undertaken for the Town shows that, despite growth in established trees, in 2016 our total canopy cover was **10%.** However, this percentage does not take into consideration significant losses due to development within the Town since data were captured in 2016. The continuing loss of large canopy trees on private land is particularly serious.

The health and well-being of the Town of Victoria Park community is directly dependent on the health and wellbeing of its trees and natural environment. As climate changes and the frequency of heat waves increase, how will we cope without shady gardens to retreat to? How will our house prices and electricity consumption be affected without the cooling benefits of trees? How will residents cope when they must escape inside their homes because smoke has settled on the Town from nearby bushfires and the air is no longer breathable and filtered through an abundance of tree leaves? How will they feel when the look and feel of the Town is more like a desert than a park?

With these concerns in mind, and with some seed funding from the Town, 40 volunteers over 14 months have contributed their time, skills and resources to develop this Urban Forest Strategy.

How much does a tree cost?

In response to community concerns, the Council has committed to increase our tree canopy to a target of **20%.** This target was based on information available at the time and is in line with other local governments. To achieve this target we need to protect and save existing trees, and embark upon a mass tree planting programme. This UFS maps a realistic pathway to a healthy urban forest, and outlines an implementation framework for a model community-based structure, including an Implementation Action Plan that will deliver a substantial return on investment.

The Implementation Action Plan will consider issues such as where to put new trees, who owns and controls the land, what types of trees are desirable and available, the location of underground power,

water availability, soil conditions, diseases, pollution and vandalism. All these considerations affect the cost of planting a single tree.

It currently costs the Town an average of $1,500 to plant and establish a single tree. The bulk of this cost is watering. In contrast, a well-resourced Asset-Based Community Development (ABCD) partnership using volunteers can reduce the cost considerably and can also provide a range of benefits.

Where will all the trees go?

There are 6 kilometres of river foreshore within the Town's boundaries, 2.5km^2 of public parks and reserves, stormwater sumps and other Town assets, all of which could be suitable focus areas for a mass tree planting program. Only 22 hectares (220,000m^2) of native bushland remain[6] within the Town, most notably the 9-hectare Kensington Bushland Reserve (a Bush Forever[7] site). The UFS will complement the Town's existing land management programs, including the Kensington Bushland Management Plan, other Town plans for parks, and the forthcoming Public Open Space Strategy.

The Town covers an area of 17.9km^2 (17,900,000m^2), just south of the Perth central business district and bounded by the Swan River to the north. Most of the Town is located within the Bassendean Dune System of the Swan Coastal Plain which supports native vegetation ranging from eucalyptus and casuarina, banksia and melaleuca woodlands, to sedge wetlands.

In addition, the Town is home to many large public and commercial landowners and tenants, which occupy and manage vast areas of land that are not directly under Town management, including:

- Education providers such as Curtin University, TAFE colleges and 12 schools;
- Religious bodies and non-government organisations;
- Technology Park and the Carlisle/ Welshpool industrial precinct;
- Entertainment and sports clubs and venues, such as Crown Perth and Burswood Park, Tennis West, Perth Stadium, West Coast Eagles Football Club, Perth Football Club and Belmont Park Racecourse;
- Several large retail shopping centres; and
- Numerous land-holding government agencies including Main Roads and the Public Transport Authority.

The success of the UFS will depend to a large extent on our ability to build partnerships with these important stakeholders to ensure a coordinated effort across the entire Town.

The remaining land within the Town is held in private hands, most of it residential. The UFS encourages private landowners and developers to increase their tree canopy.

The UFS also calls for a review of local planning regulations governing sub-divisions and development on private and public land, and cooperation with all landowners and developers to support retention and expansion of the urban forest.

Rutland Corner: Community Food Tree Project. Photo H. Johnstone.

Established trees and verge garden, Carnarvon Street East Victoria Park. Photo P. Melrosa.

4. What is an Urban Forest?

Definition

An 'urban forest' is the total vegetation within a defined urban area, comprising trees, plants, grasses and the environment in which they grow. It includes street verges, private gardens, waterways, parks, bushland, community gardens, sumps and other vegetated areas on both public and private land.

In forest ecology, 'canopy' is the upper layer or crown of mature trees and refers to the extent of shade coverage provided by an individual tree or group of trees. In the UFS, canopy trees are defined as 5m or more in height and giving shade coverage of at least 7m^2. Large mature canopy trees are the most effective at providing ecosystem services such as shade, shelter and cooling, oxygen production, pollution control and drainage solutions, and wildlife habitat especially for threatened black cockatoos (food and nesting).

The larger the tree the greater the number of ecosystem services it provides and the greater the impact on the surrounding environment, including wildlife.

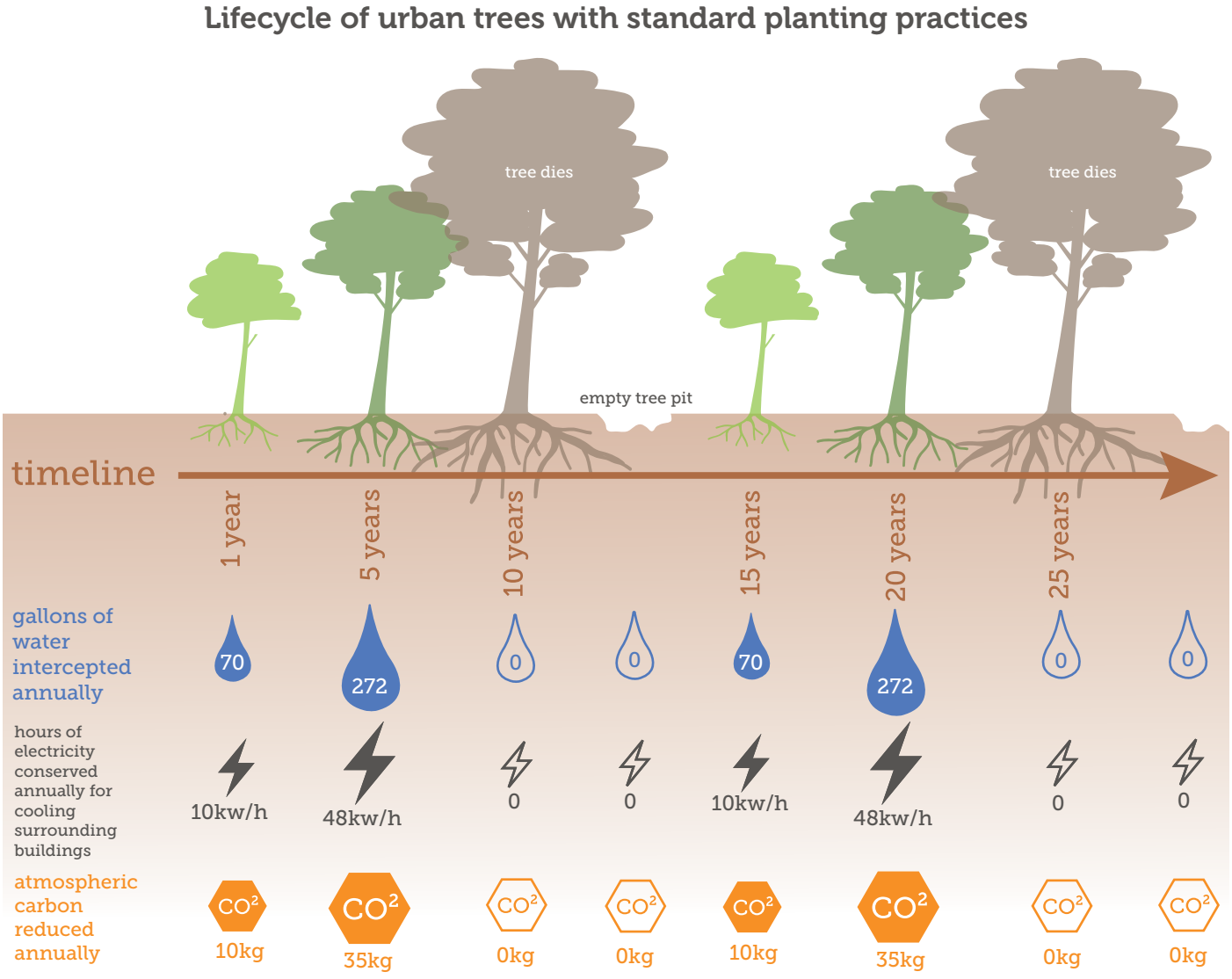


Figure 3: Benefits of trees and size. Original information from David Fowler, Arizona State University, Achieving the Goal of 25% Canopy Coverage in Phoenix by 2030.

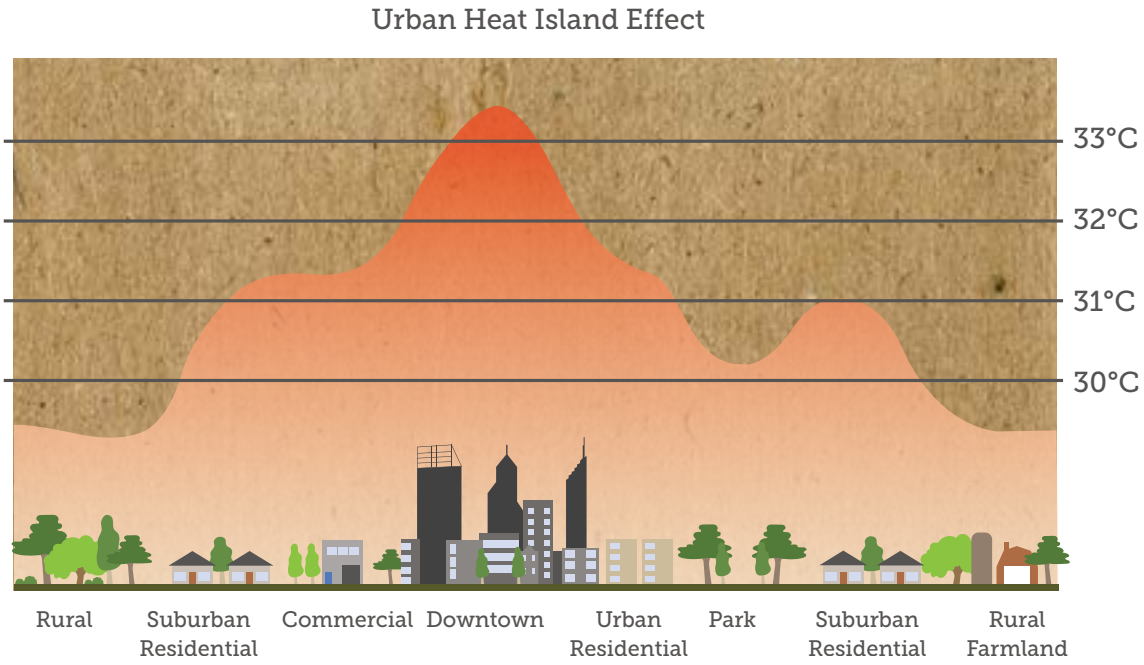


Figure 4: Late afternoon temperatures in different environments (Pearlmutter et. al. 2017)

Ecosystem Services

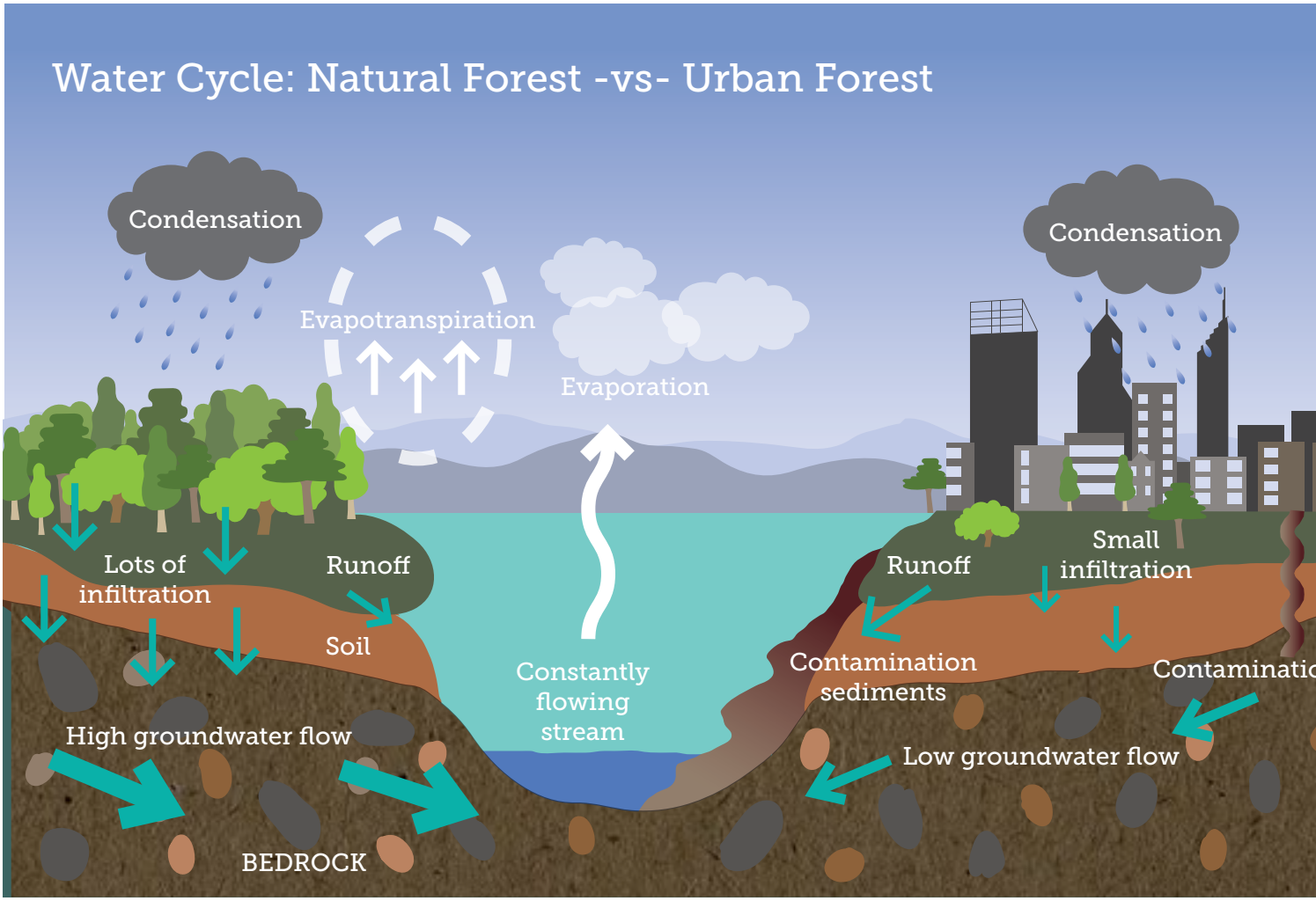
Urban forests are important for providing critical ecosystem services such as air and water filtration, native fauna habitat, oxygen, carbon sequestration, stormwater drainage, and by mitigating flood and wind damage. Trees and vegetation also absorb traffic noise and provide essential shade and cooling to combat the 'Urban Heat Island' effect created by stored heat in hard surfaces such as footpaths, roads, driveways and paving.

Native flora and fauna and many vulnerable residents suffer under these hotter conditions. In addition to heat retention, hard surfaces also place a greater load on the stormwater drainage system than natural forests (see Figure 5).

Where hard surfaces were once scarce they now dominate the urban landscape including over 55% of the land area in the Town[8]. Reducing the urban heat island effect is the main objective behind the federal government's plan[9] to set tree canopy targets for Australian cities. As seen in Figure 4, a dip in temperature occurs around large areas of vegetation.

This is known as a 'Park Cool Island' and describes how vegetation can protect residents from the Urban Heat Island effect and reduce energy costs. In fact, a 10% increase of tree cover has been shown to reduce temperatures by up to 4°C[10].

Kensington Bushland. Photo K.Wray for Town of Victoria Park.



Health and Wellbeing

As well as cooling the landscape, a healthy urban forest and plenty of shady spaces in a neighbourhood provides physical benefits and encourages walking and more active lifestyles. This has positive multiple flow-on health outcomes, including reduced obesity and disease, and improved mental wellbeing. Research by beyondblue identifies a range of psychological benefits for people living in greener environments[11], and Australian government research[12] demonstrates the purely physical benefits of trees. It has been demonstrated that green spaces also have a positive influence on the social behaviour of a community and can reduce crime and other antisocial activities.[13]

Economic Value

Ecosystem services provided by the urban forest have economic as well as environmental and social benefits. Several systems have been developed to measure these financial benefits. For example, using the i-Tree system New York City[14] has calculated that its trees remove 42,000 tons of carbon each year and store 1.35 million tons of carbon valued at US$25 million per year. The trees also intercept almost 3,400 million litres of storm water annually, with a total value of over US$35 million.

A high canopy cover near buildings can bring measurable savings in energy costs. For example, the annual energy conservation resulting from California's greening programme was estimated to save around US$500 million in wholesale electricity costs.[15]

Trees can also have a positive impact on property values. Research by AECOM[16] across three Sydney suburbs concluded that a 10% increase in street tree leaf canopy could improve a property's value by an average of $49,000. The City of Melbourne calculates that homes in tree-lined streets are valued at 30% higher than those in streets without trees.[17]

The Helliwell evaluation system[18] developed in the United Kingdom places a monetary value on the visual amenity of a tree or bushland. The Town of Victoria Park uses the Helliwell method to assess the value of street trees as a capital

Figure 5: Natural vs Urban Forest Water Cycle. (Adapted from Pearlmutter et. al. 2017)

asset and to calculate loss from vandalism and other causes. Paperbark Technologies undertook a survey of 271 trees in Lathlain Park prior to removal in 2016. The value of individual trees ranged from $1,280 to over $20,000. The report calculated the total monetary value of these trees at around $2.6 million, giving an average of $9,600 per tree. In another report[19], Paperbark estimated the asset value of more than 16,000 street trees in the Town was almost $150 million, or an average of $9,305 per tree.

Based on the lower value of $9,305 applied to the 256,000[20] 5m canopy trees required to reach a 20% target, the increase in capital asset value to the Town will be $2.4 billion.

There is future potential for the Town's urban forest to become a source of income through carbon offset farming and other initiatives (see Appendix 5). There is also the potential education and tourism benefit of showcasing what can be done in one of the most biodiverse metropolitan areas in the world.

Photo K.Wray.

Benefits of Trees

Figure 6: Benefits of Trees

5. Benefits of Trees

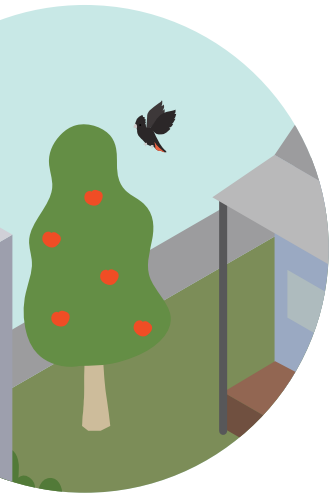
Benefits of an urban forest extend to environmental, economic, community and health outcomes. These benefits are also called ecosystem services. Trees, being the largest structures within an urban forest provide the greatest ecosystem services.

ENVIRONMENTAL

Providing shade and cooling the Town

One of the most prominent environmental features of urbanization is the tendency of temperatures in cities to gradually rise in comparison to their surroundings, in a localized climatic phenomenon known as the Urban Heat Island (UHI) effect. This effect can be debilitating on the health and activity of the urban population, particularly during periods of heat stress. "Urban green infrastructure in general, and urban trees and forests in particular, hold an unmatched potential as a means for mitigating the UHI effect and enhancing the thermal comfort of people in cities" (Pearlmutter et al). A combination of small green spaces in a densely distributed network covering many streets and squares, in combination with larger green areas in parks and gardens, is probably the most effective approach to lowering UHI intensity"

Pearlmutter et al (2017)



Reducing air pollution and airborne particulates

One of the most studied services of urban forests and trees is their positive effect on air quality. Choosing the right tree, in the right place and for the right reasons becomes more important in an urban environment because the establishment costs are greater in urban settings where tree stress is more extreme and the rapid and frequent movement of vehicles, people, flora and fauna can upset the ecosystems in a short period of time.

Tree crown traits such as foliage and geometry can accelerate or decelerate the air around trees and this determines the amount of time air pollution remains in contact with trees. One such gaseous pollutant is ground level ozone which is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapours, and chemical solvents are some of the major sources of NOx and VOC. Breathing ozone can trigger a variety of health problems, particularly in children, the elderly, and people of all ages who have lung diseases such as asthma. The greater length of time pollutants remain in contact with trees the greater opportunity for chemical reactions to take place between gaseous pollutants and Biogenic Volatile Organic Compounds, which favour destruction of the highly reactive ozone molecule. Species that have continuous canopy and a high surface area will remove the most gaseous pollutants.

Reducing stormwater and nutrient loads

Increasing urban trees, forested areas and utilising Water-Sensitive Urban Design (WSUD) best practice and have a great potential for reducing stormwater damage, by enhancing evapotranspiration and water infiltration into the soil as well as regulating the amount of through fall reaching the ground and mitigating erosion processes.

The Town of Victoria Park has seen an increase in hard surfaces such as rooftops, driveways, carparks and roads, which since 2011 has increased from 51% to 55.1%. These hard surfaces increase storm water runoff and have resulted in failure of drainage, such as localised flooding. One such method to cope with these changes is Water-Sensitive Urban Design (WSUD) a blend of grey or engineered infrastructure, green infrastructure (which comprises vegetation and trees) and blue infrastructure (which deals with the water component in WSUD). In relation to the aims of the Urban Forest Strategy to increase canopy, WSUD represents one approach which has multiple benefits for the environment (such as reduced nutrients entering the river and therefore healthier ecosystems), for the community (increased vegetation which has a variety of mental and physical benefits) and economically (in that the load on the drainage system is reduced and can prolong the life of the infrastructure).

Storing and sequestering carbon

Carbon dioxide (CO_2) is the most prominent component of anthropogenic greenhouse gas emissions, resulting mainly from fuel combustion in the built environment for activities such as heating of buildings, urban mobility and cooking. Plants have the capacity to sequester CO_2 through photosynthesis and can therefore store carbon in plant biomass and in the soil. Storing and sequestering CO_2 is an important tool to minimise the impacts from climate change.

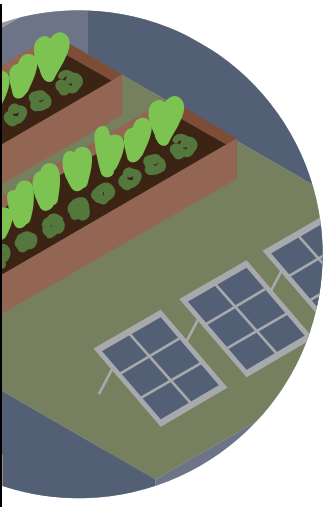
Climate change

Urban populations experience higher temperatures than people in undeveloped urban or rural areas due to increased heat production and retention by urban surfaces and structures. This effect is called the urban heat island effect. This makes urban populations more susceptible to an increase in heat events due to climate change; this can lead to increased rates of mortality and morbidity. By contrast areas with vegetation and bodies of water within urban areas experience an effect called Park Cool Island (PCI). One of the most promising measures for mitigating heat stress in urban areas is the deliberate planting of vegetated green spaces.

Biodiversity

Measuring the state of biodiversity is a way in which to assess the impacts of human activity. Biodiversity in urban forests underlies many ecosystem services that are essential to human wellbeing. Interactions with biodiversity in urban green spaces can promote a sense of belonging and place with direct implications for stress alleviation and mental wellbeing. Within urban environments utilising a biodiversity friendly approach can increase the delivery of ecosystem services. Good quality biodiversity also delivers improved ecosystem services for flora and fauna.

Benefits of Trees (continued)



ECONOMIC

Reducing energy costs

Utilising trees and vegetation is often more cost effective than technological solutions as trees can shade and protect buildings from wind and storms, reducing the need to run air conditioning and heating.

Increasing property values

AECOM's brilliant cities report looked at how trees affect land and property values in Sydney. They found that there was between a $33,000 and $61,000 increase in property values resulting from a 10% increase in tree canopy.

Swinborne and Rosenwax (2017)

Trees boost business

"Nature can boost the viability of businesses by drawing shoppers into business districts and encouraging them to spend more. US research found that customers prefer shopping in well-tended streets with large trees. The study also found that they would pay 9-12% more for goods sold in central business districts with high quality tree canopy, and would travel further to, visit more often, pay more for parking and stay longer in a shopping district with plenty of trees."

Australian Institute of Health and Welfare (2011)

COMMUNITY

Providing a sense of place

The Town of Victoria Park sits within the Swan coastal plain which forms part of an international biodiversity hotspot. As much as 44% of all vascular plants and 35% of vertebrate animals worldwide are within these biodiversity hotspots. These hotspots amount to only 1.4% of land surface of the earth. Even within the Town which has been highly developed there are still pockets of remnant vegetation. The Kensington bushland site, part of the Jirdarup Bush Precinct is an important regional park and bush forever site. This along with other areas of remnant vegetation and the Swan River provide a strong sense of identity.

Food security

As the population grows and impacts from climate change become more pronounced ensuring that our current food production systems remain viable for future generations will take on greater importance. One such way to facilitate this shared responsibility of food production is through consideration of food producing trees and vegetation as part of the urban forest.

PUBLIC HEALTH

Encouraging outdoor activity

Urban forests and parks are among the most favoured places for citizens to practice recreational and physical activity. The term 'green prescription' has come into use over the last decade, especially in reference to physical practices implemented in the outdoor environment to counter non-infectious diseases (e.g., cardiovascular, obesity). The relationship between health and GI have been empirically verified by a number of studies. One such study from Toronto goes further to state that greenspace amplifies the effects of exercise compared with other settings. So not only do we like to spend time in green spaces but the time we do spend is more beneficial than running on a treadmill in a room.

Reconnecting children with nature

Open green space and access to nature is important for children. The quality of their environment is inextricably linked to their wellbeing. Key findings from several studies indicate that time in green outdoor spaces improves concentration and boosts motor development, mood and physical activity. Childhood visits to natural places are linked to positive adult views of the outdoors and hands-on gardening activities improve nutritional attitudes and knowledge.

Reducing exposure to the sun

Australia has one of the highest levels of UV exposure and highest rates of skin cancer in the world. Trees improve walkability by not just cooling the air underneath through evapo-transpiration and shade, but they also reduce our exposure to harmful UV rays.

Increased health outcomes

"Exposure to greenspaces can be psychologically and physiologically restorative by promoting mental health, reducing non-accidental mortality, reducing physician-assessed morbidity, reducing income-related health inequality's effect of mortality, reducing blood pressure and stress levels, reducing sedentary leisure time, as well as promoting physical activity. In addition, greenspace may enhance psychological and cardiovascular benefits of physical activity compared with other settings."

Australian Institute of of Health and Welfare (2011)

Providing Physical Barriers

Did you know that one of the original purposes of urban trees was to provide a barrier between pedestrians and carriages? Trees also provide protection from the wind and acoustic noise.

A view of Berwick Street through to Great Eastern Highway, the Swan River and Perth City. Photo Crib Creative.

6. Challenges to the Urban Forest

Density and competition for space

When we think of deforestation, the Amazon Rainforest may spring to mind. But deforestation is not just occurring 'over there', it is also happening in our own cities. In fact, the accelerating pace of global urban deforestation now exceeds the rate of lost canopy caused by agriculture, fire, conflict, salinity and rising sea levels. In our own part of the world:

> ***"One in every six big trees has been cut down in some Perth suburbs in the past five years, sparking a warning about 'alarming' tree canopy loss across the metropolitan area. [For example] More than one million square metres of shade — 55 times the size of the WACA Ground — has been lost in five years across the City of Stirling, and two-thirds of it has happened on private residential land."***[21]

In the Town of Victoria Park, increased housing density represents a significant challenge to the urban forest. Whereas once houses in the Town had a sizeable back and front yard with room for trees, modern urban infill development leaves little space for any vegetation at all. The stark contrast is clearly evident between historical images of the Town, with an abundance of trees, and recent photographs lacking in vegetation.

In addition, urban development in the Town is causing significant habitat fragmentation and loss of precious flora and fauna:

> ***"Fragmentation of ecosystems is regarded as one of the most important factors affecting species and species assemblages worldwide."***[22]

The drive to increase housing density in the Town arises from the state government's projected population increase of almost 70% to reach 3.5 million in the Perth and Peel regions by 2050, including more than doubling the number of residents in Victoria Park.[23]

The negative effects of this intense growth on our unique natural environment are addressed in the companion government policy Green Growth Plan.[24] In spite of the plans set out in this latter document, Perth has experienced continuing degradation of the urban forest.

Our larger challenge will be to grow more trees, even as our population grows. Based on the latest data (2016), the Town has a resident population of 36,755 and 1,791,896m^2 of tree canopy. This is equivalent to 49m^2 of tree canopy per person. The planned population goal of 75,000 residents by 2050 will require a doubling of our housing density and associated infrastructure.

Figure 7: 1985 vs 2016 Comparison of housing density (Source: Town of Victoria Park Intramaps)

At the direction of the WAPC, a large portion of our increased population will reside in high-density residential and multi-use buildings located in areas such as Burswood Peninsula and surrounding Curtin University. Large-scale developments as currently proposed will result in a large increase in density and loading on the environment, resources and services in those areas of the Town, but offer little in the way of compensating tree canopy, open green space and the ecosystem services that we derive from them.

At the local level, adoption of the UFS will prompt a comprehensive review of the Town's local planning framework to support the retention and planting of canopy trees on private property, as well as public land. Supportive amendments to the Town's local planning policy framework may be less effective so long as applicants can utilise current Joint Development Assessment Panels and the State Administrative Tribunal to overturn local government planning decisions.

Climate change

"Beginning with the industrial revolution in the 18th century, human activities have substantially raised the concentrations of greenhouse gases (particularly carbon dioxide, methane and nitrous oxide) in the atmosphere, leading to greater heat entrapment and rising air and water temperatures."[25]

As a result of these changes, the Bureau of Meteorology predicts that: "Australian temperatures are projected to continue increasing with more extremely hot days and fewer extremely cool days, [and] extreme rainfall events [including tropical cyclones] are likely to increase in intensity … across most of Australia … Past and ongoing emissions commit us to further sea-level rise around Australia in coming decades."[26]

The adverse health impacts of climate change will be greatest amongst people who are more susceptible to heat stress including the elderly, the infirm and people on lower incomes. Other challenges may include increased flooding around the river foreshore, and increased risk to the natural environment from variable climate, pests and diseases.

The Town's Climate Change Mitigation and Adaptation Plan aims to reduce the most harmful impacts on the Town's residents and its flora and fauna[27]. Increasing vegetation within the Town will be an important tool in the provision of ecosystem services including carbon sequestration.

Water

One of the biggest challenges for the urban forest is the availability of water for plant establishment. With low and variable rainfall patterns[28], the Town relies on bores and scheme water to maintain its healthy green assets. The Town's Water Efficiency Action Plan sets out strategies to embed sustainable water practices in projects such as the use of Water-Sensitive Urban Design (WSUD) in infrastructure and drainage management.

A further efficiency measure that will support the success of the UFS will be the introduction of on-site portable watering tanks, currently being trialled at the former Carlisle Bowling Club site.

Community water station trial, former Carlisle/ Lathlain Bowling Club site. Photo H. Johnstone.

Pests and diseases

Pests and diseases are a component of any forest and need to be controlled. Many pathogens occur seasonally however can be fatal for already-stressed trees. The UFS Implementation Plan will outline prompt and effective response mechanisms and ongoing management of pests and disease to ensure a healthy urban forest.

Costs

To establish a healthy urban forest and achieve a 20% canopy target will require a mass tree planting programme, along with ongoing maintenance and replacement. The minimum number of trees to be planted to reach this target is estimated at 256,000 trees.[29]

As described in the Introduction, it currently costs the Town an estimated $1,500 to plant a young tree and maintain it for three years (watering, mulching, staking, pruning). Using this method, it will cost $384 million to plant 256,000 trees plus additional ongoing costs to reach canopy height.

The UFS proposes a more efficient ABCD approach to establish a volunteer urban foresters' network that can be mobilised for a mass planting and stewardship programme, using smaller trees and onsite portable watering tanks (see Strategic Outcome 5).

This method will increase community involvement and commitment and can significantly reduce costs.

Social attitudes and culture change

There needs to be a change in culture. For instance, there is a perception by some residents that trees can be a dangerous nuisance. Leaf litter, bird activity, falling limbs, obstruction of views and damage to pavements and walls may cause irritation. In reality, these perceived risks and issues can be positively addressed through good planting design and management practices (as recommended in the Town's Tree Planting Matrix and User Guide). To combat negative reactions of this kind the launch and implementation of the UFS should include targeted public awareness and education campaigns that clearly promote the benefits of an urban forest.

Trees suffering from brown lerp and sawfly at East Victoria Park Primary School, 2018. Photo J. Mellor.

7. Mapping the Urban Forest

In a major 2014 report, the Institute of Sustainable Futures[30] used satellite images to analyse the amount of vegetation covering local government areas across Australia. Whilst acknowledging the measurement limitations, the report showed that many of Perth's suburbs had some of the lowest canopy coverage at 10-15%.

Using another approach, Anditi Pty Ltd was commissioned by the Town of Victoria Park to interpret relevant data from the CSIRO Urban Monitor reports for the periods between 2009 and 2016. In this way, the 2016 tree canopy (defined as trees at a height of 5m and above) was calculated at 10%.[31] It should be noted that this figure does not include recent mature canopy loss resulting from significant development within the Town such as Lathlain Park and Main Roads alterations adjoining Burswood Park.[32]

How urban forests are measured

The first step when measuring an urban forest is to clearly define the area in question, in this case the Town of Victoria Park. High-resolution imagery is then captured through cameras embedded in satellites, planes or drones. Next, computer software is used to undertake the complex task of identifying trees, their height, location and other relevant information.

A variety of methods can be used to analyse the imagery. The data sets used to calculate this information are extremely large and require specialised interpretation and analysis. For this UFS, two tree canopy measurement methods have been used to confirm results.

Urban forests can also be measured through on-ground audits. The Town has commissioned Paperbark Technologies to complete arborist assessments on Town-owned street trees and park trees. This level of information is highly detailed and time consuming to collect, and not practical for use on private property. In many parts of the world, citizen scientists conduct these on-ground audits.

Snapshot of Victoria Park's Urban Forest

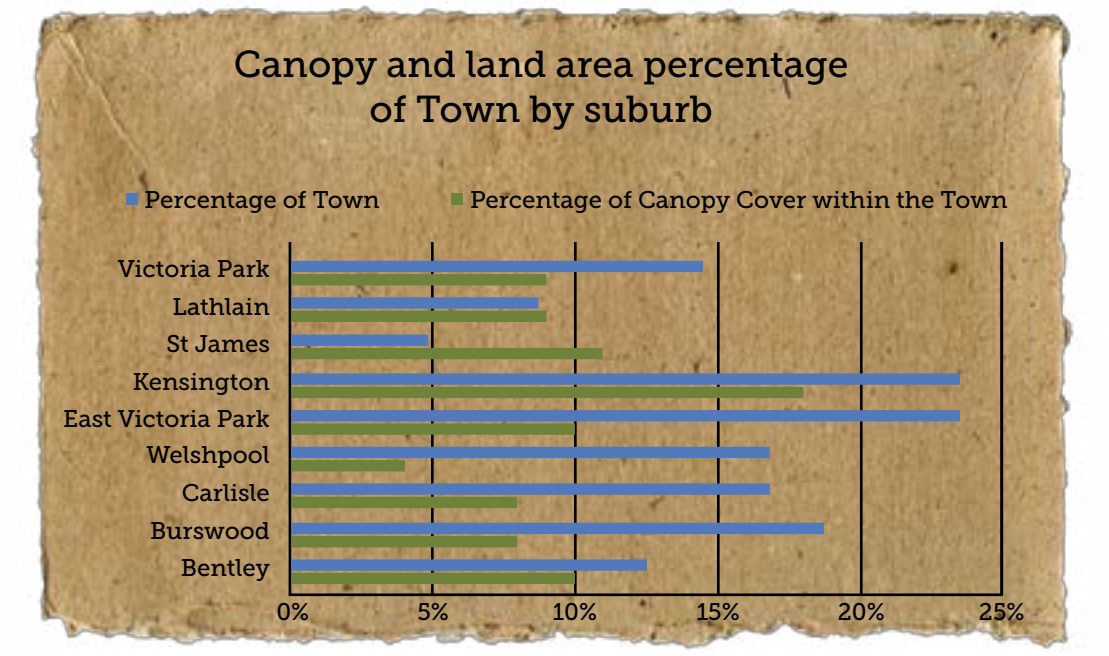


Figure 8: Canopy and land area percentage of Town by suburb

This graph shows the difference in canopy cover across suburbs. Lathlain and St James have the greatest area of canopy relative to size.

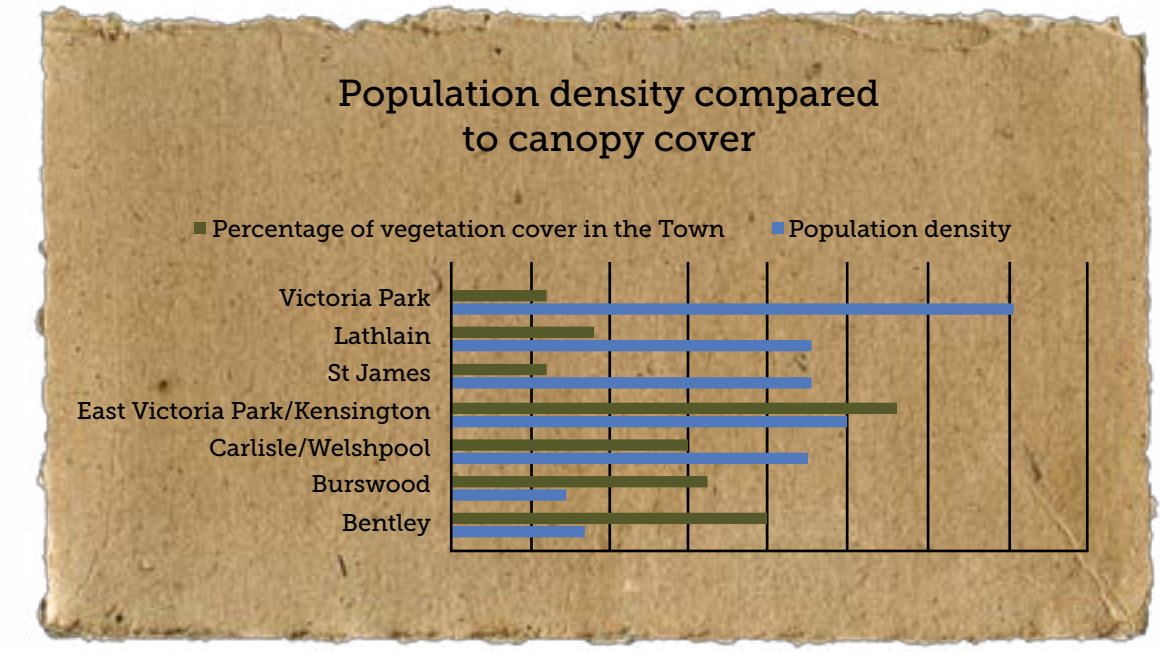


Figure 9: Population density compared to canopy cover

Figure 9 compares the proportion of vegetation to population in each suburb. The suburbs with the highest vegetation levels are Bentley, Kensington and East Victoria Park. The suburbs with the lowest vegetation per resident are Victoria Park, St James and Lathlain. Kensington data are skewed due to the inclusion of Kensington Bushland (which decreases density and only impacts a small portion of the suburb) and Carlisle is skewed due to inclusion of the Welshpool industrial zone in population density calculations (which decreases density by increasing land area that is not habitable).

Temple Street, Victoria Park. Photo A. Kwan.

Vegetation Report for the Town of Victoria Park

Area	Canopy Cover % of Total Area 2016
Town of Victoria Park	10%
Bentley	17%
Burswood	8%
Carlisle	8%
East Victoria Park	10%
Kensington (including Kensington Bushland)	18%
Lathlain	9%
St James	11%
Victoria Park	9%
Welshpool	4%
Parks	**12%**
Road	**11%**

Figure 10: Vegetation Report for the Town of Victoria Park, March 2018, Anditi

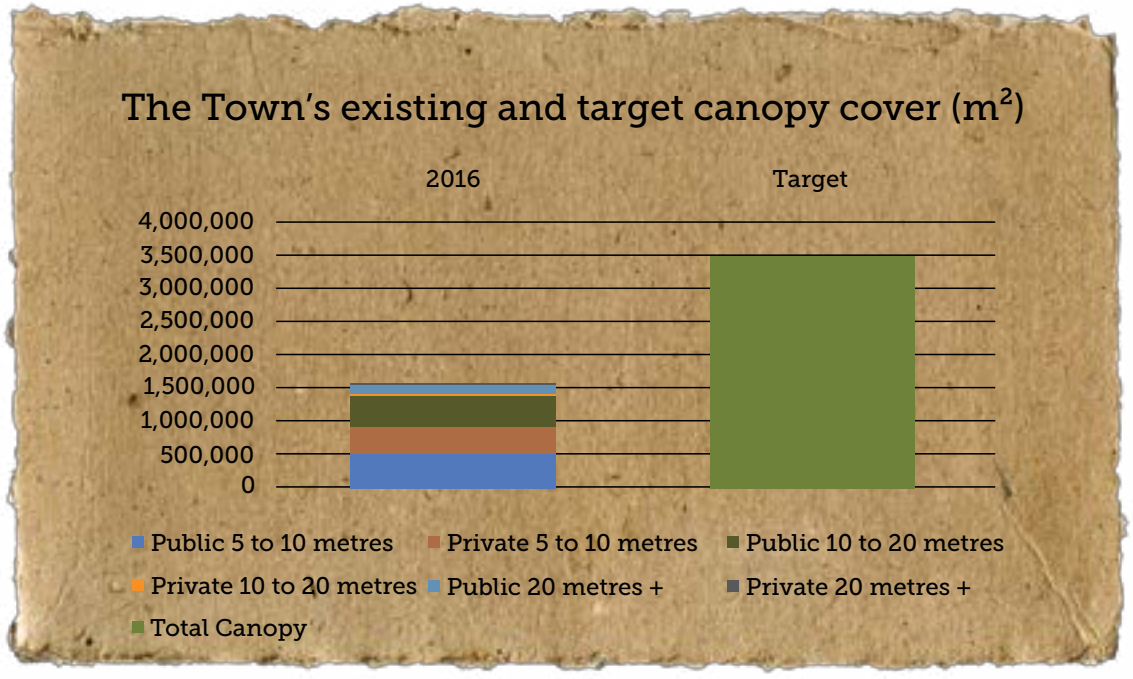


Figure 11: The Town's existing and target canopy cover

This graph compares actual 2016 canopy to the target canopy level.

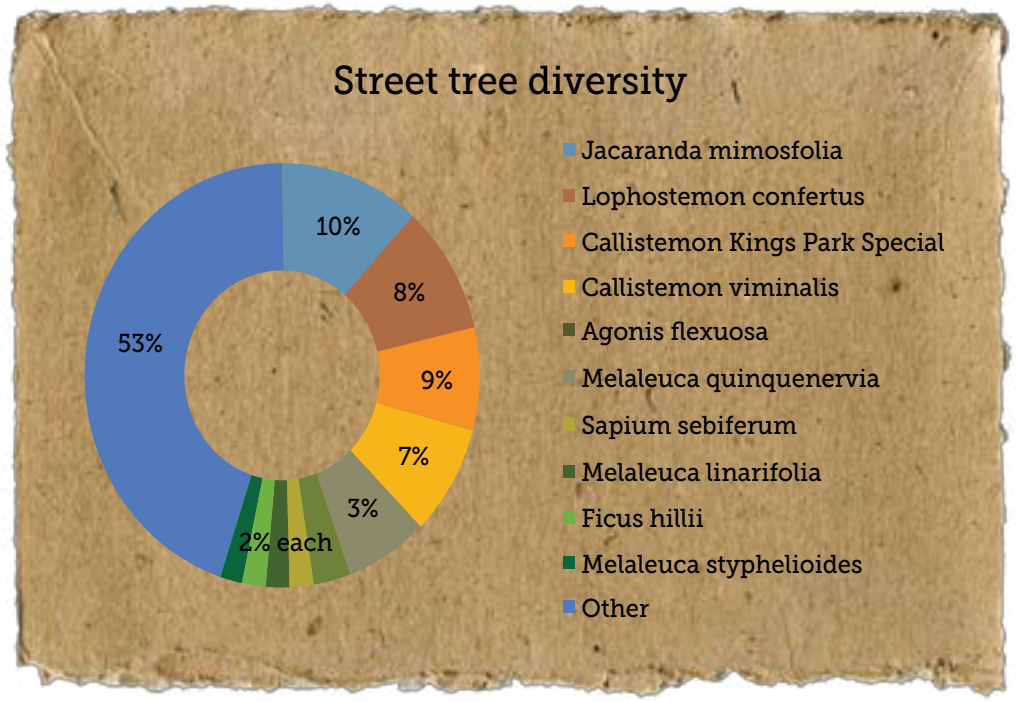


Figure 12: Street tree diversity

Just under half the Town's street trees belong to just 10 species. Ensuring there is a diverse range of species within the urban forest may provide additional protection against loss of canopy from pathogens. A single species such as Dutch Elm can be completely eliminated by a pathogen attack. This is especially important for street trees given that they are subject to the harshest of urban conditions.

East Victoria Park. Photo A. Kwan.

8. Developing the Urban Forest Strategy

Catalysts for change

Concerns about tree removal within the Town are changing social attitudes and leading to cultural change.

Two recent examples relate to conflict between environmental conservation and change in land use.

The first was in August 2016, when 98 mature trees[33] and 7,000m^2 of canopy valued at close to $1 million were removed from Lathlain Park to make way for expanded football grounds. This event marked a sudden and irrevocable loss of local biodiversity and habitat and was the catalyst for community mobilisation that motivated residents to seek greater environmental protections within the Town and to instigate an Urban Forest Strategy.

At about the same time, significant mature trees were removed by Main Roads to accommodate the new Causeway to Great Eastern Highway on-ramp adjoining Burswood Park.

These concerns have triggered a growing awareness of the importance of our trees and canopy. In response, several community groups have formed and been active participants during review of proposed changes to our parks and reserves. These issues have also featured in recent local Town elections, and canopy impacts have featured during Council discussions of proposed multiple dwelling and commercial developments.

Tree removal Lathlain Park, August 2016. Photos P. Melrosa.

Causeway to Great Eastern Highway on-ramp July 2016

Following tree removal for new on-ramp December 2016

Methodology

Our local community has been a driving force in the development of the UFS, motivated by continuing apparent loss of trees on public and private land. These concerns triggered unanimous community support for the following motion tabled at the Special Meeting of Electors on 13 July 2016:

> ***"That Council, as a matter of priority, undertake an urban forest strategy in partnership with Curtin University, residents, community groups and any relevant stakeholders that wish to participate, and that this strategy proceed or be undertaken in conjunction with any discussion relating to future Town Planning Scheme amendments, to achieve an increase in tree canopy coverage up to 20% by 2020."***[34]

As a result, in March 2017, Council called for expressions of interest to draft an urban forest strategy. The successful applicants were the Vic Park Collective Inc. and Victoria Park Urban Tree Network, proposing an ABCD approach aimed at wide consultation and collaboration with the local community to identify issues and solutions.

The project was co-ordinated by an Urban Forest Strategy Working Group comprising Town officers and volunteers from the two community groups, assisted by other local groups and residents, researchers and urban forestry specialists. Using a Town contribution of $20,000[35] to cover non-labour costs, project volunteers contributed in excess of 3,000 hours, delivering $315,124 of value to the community.[36] The Town allocated an additional $20,000 for aerial mapping consultants.

The UFS mandate from the Town[37] was to deliver:

- An urban forest strategic document that establishes our pathway to increase the Town's urban tree canopy to 20%.
- Community consultation, with a target to engage with 5% of the Town's population.
- A tree matrix (planting guide).

As described in the community engagement plan, the purpose of the process was to:

- Increase the effectiveness and efficiency of planting programmes by listening to community aspirations and adopting a range of approaches.
- Create partnering opportunities with the Town and other stakeholders for delivery of the UFS.
- Validate research.
- Obtain feedback on proposed activity, particularly changes to private property and increasing parks budget.
- Be transparent and genuinely work in collaboration with the community.

The objectives of the engagement were:

- Community has input into the initiation phases of the long-term management and activation of the Town's urban forest.
- The community has both an active role and/or participatory role in the decision-making process.
- Stakeholders will have a good understanding of the factors influencing the project.
- An urban forest strategy endorsed by Council that has been directly influenced by the stakeholders (community of all shapes and sizes).
- A trusting community that feels supported by the Urban Forest Strategy Working Group.
- A better working relationship between our Town and relevant community groups and community stakeholders.

Volunteer Contributions

35 Volunteers from the community that helped on the project

Contributions ranged from one to 800 hours!

In total over 3700+ hours of time was contributed

We hand delivered 4050 flyers and posters around the Town

Volunteers ranged from Millennials to the baby boomers.

We wrote over 1500 emails

Volunteers took 1000's of photos

We ran 5 community workshops

We read and searched for 100's of books, reports, policies, historical photographs, journal articles and presentations about: Victoria Park, volunteering, botany, biology, health, policy, legislation, community engagement, climate change, food security, GIS, hydrology, risk, marketing and the media, plus many more.

We attended over 100 hours of face to face meetings with the town and often provided many home baked treats to fuel our brains

60% of funds were spent at local businesses
35% spent at Perth based businesses & organisations, and
5% spent elsewhere

Volunteers transcribed ALL the audio from our workshops

We drank 1500 cups of coffee and 2000 cups of tea

Specialists from Italy, Singapore, United States, United Kingdom and all around Australia provided advice and insight to develop this strategy

Figure 13: Volunteer Contributions

Throughout, the Urban Forest Strategy Working Group has placed prime importance on community collaboration to build consensus, and capacity building to support implementation of its ambitious goals. This UFS proposes to continue the ABCD partnership between the Town and its principal stakeholders – local residents and ratepayers. We acknowledge this bold new model will need to be nurtured and resourced. As a result, the model is expected to deliver economic, environmental and social benefits well in excess of any financial commitment.

Source material used to draft this UFS included:

- Community engagement: interviews, surveys, workshops and public forums.
- Review of other urban forest strategies, in Australia and elsewhere.
- Research data, including CSIRO Urban Monitor reports (analysed by Anditi) and arborist surveys (from Paperbark Technologies).
- Review of state and local government and agency policies and regulations relevant to the UFS.
- Literature review of urban forestry, ABCD partnerships and related matters.

UFS Development Timeline

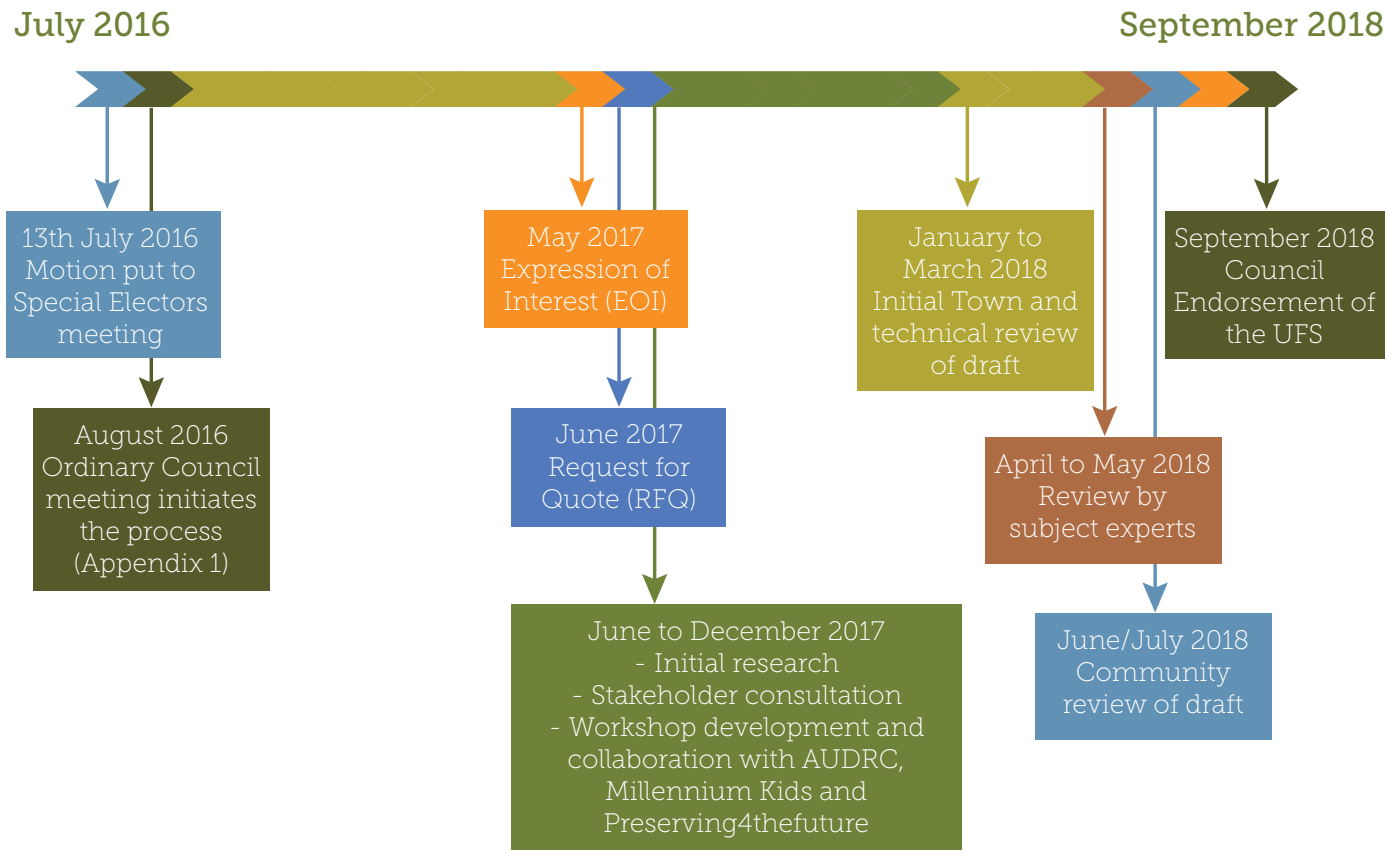


Figure 14: Urban Forest Strategy Timeline

Town of Victoria Park Snapshot (2017)

GROWING POPULATION

In 2011, the population was 34,218. In 2017 it is estimated that the Town's population was 36,755 and is expected to double by 2050.

LIKELY TO WORK AS EITHER A PROFESSIONAL, IN ADMINISTRATIVE WORK OR AS A TECHNICIAN

57% of Town residents work in one of these three jobs.

YOUNG(ISH) POPULATION

The largest age cohort in the Town is the 25 to 34 demographic. The second largest age grouping in the Town is the 35 to 49 demographic.

HOMOGENEOUSLY SOCIO-ECONOMIC

Wage categories are equally distributed across the population i.e. no one category dominates.

ONE OR TWO PEOPLE HOUSEHOLDS DOMINATE

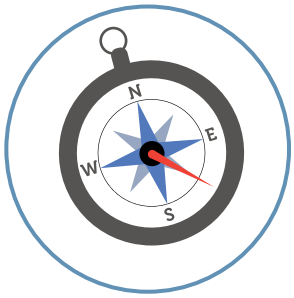
Almost 55% of people living in the Town live in a one or two person household.

LIKELY TO WORK OUTSIDE OF THE TOWN AND DRIVE TO PLACE OF EMPLOYMENT

73% of the Town of Victoria Park's working residents travel outside of the Town to work.

LIVE RELATIVELY CLOSE TOGETHER

In the Town of Victoria Park, 47.8% of the dwellings were medium or high density, compared to 25% in Greater Perth.



LOTS OF WORKERS FROM THE SOUTH-EASTERN CORRIDOR

88% of people who work in the Town come from outside of the Town.

WELL EDUCATED

Compared to the rest of Greater Perth there is a higher proportion of people in the Town holding formal qualifications (Bachelor or higher degree, Advanced Diploma or Diploma, or vocational qualifications), and a lower proportion of people with no formal qualifications.

INCREASINGLY MULTICULTURAL

The Town is becoming more and more multicultural. 27% of people speak a language other than English at home. Mandarin, Italian and Cantonese are the top three of these languages.

Figure 15: Demographics, Town of Victoria Park (Source: Strategic Community Plan 2017 - 2032)

Community Engagement

The success of the UFS will rely on the people that live, work and visit the Town. So what do we look like?

The Town of Victoria Park has a resident population of around 36,755[38], which is predominantly well-educated and relatively young (25-49 years old), and increasingly multicultural (27% are from a non-English speaking background). Over half of all residents work in professional, administrative or technical occupations. The Town aims to become ***"Perth's most empowered and engaged community."***[39]

In this context, a key focus of the UFS development was to consult and engage community stakeholders, and particularly the Town's residential population. This was achieved using the following methods:

- Interviews with 16 local land caretakers; individuals and community groups representing over 3,000 members.
- Information exchanges with experts in the field.
- Media coverage and social media posts, comments, likes and shares (with a reach of over 50,000 people).
- School visits.
- Vic Park Farmers' Market stall and discussions with 120 Town residents.
- Online surveys through 'Your Thoughts' portal, attracting submissions from 50 residents and 18 Town officers.
- Five well-attended community workshops.
- Town officers and peer workshops and engagement.

This community input helped to shape the UFS strategies and actions, identified planting priorities, and provided a guide for ongoing community education and engagement. The consultation process revealed a high level of community awareness and a strong desire for action to protect and grow the urban forest.

Detailed coverage of this community engagement strategy is included in Appendix 3.

Community members using AUDRC models during workshops. Photo K.Wray.

Summary of Community Ideas

Emerging from the community consultation process, brain-storming ideas for improving the Town's urban forest were collated into five themes in the table below. These ideas and themes informed the development of the UFS.

Suggestions on Public Tree Planting

- Trees on every verge.
- Coordinate the planned Town underground power programme with a subsidised verge planting support scheme.
- Replace redundant crossovers with trees.
- Increase penalties for damage to verge trees.
- More flexibility for raised beds, vegetables, and tree selection.
- More large shade trees on median strips.
- Storm-water sumps vegetation programme.
- Mass tree planting along the railway reserve and stations, Swan River foreshore, public parks and bushland to create green corridors, as well as commercial and public car parks and the Kent Street Sand Pit.
- Include understorey planting to create habitat for native fauna and healthy ecosystems.

Suggestions on Tree Species and Canopy

- Shady natives, especially banksias, which encourage birds, were a strong preference.
- Queensland Box and Jacarandas were overwhelmingly disliked.
- Preference for Liquidambar or similar deciduous trees along major roads and shopping precincts.
- Ficus were valued for their contribution to tree canopy. However, whilst existing Ficus should be retained, future plantings should be more strategic.
- Provide for green walls and rooftop gardens.
- Include grapevine trellises as tree canopy for shade and fruit.
- Deciduous trees, such as London Plane trees, were desirable for shopping precincts such as Albany Highway, along with parklets, planter boxes and permanent garden beds to improve the general ambience of public areas.
- New tree plantings should be mindful of existing solar access for solar panels.

Suggestions on Regulation and Design Decisions

- Underground or undercroft carparks for high rise buildings, to free up space for trees and gardens.
- Strengthen and enforce statutory requirements for trees in non-residential car parks.
- Strengthen and align the Town's significant tree registers.
- Ensure trees are integral to EVERY planning decision.
- Introduce incentives to encourage tree retention/planting and green structures on private property – for example, rates reduction for properties with significant canopy.
- Amend local laws for new building developments to reduce hardscaping and encourage 'shared/common' areas and space for trees and gardens.

Suggestions on Road Design

- More creative road design, such as cul-de-sacs or single laneways to reclaim road space for planting.
- Use street trees for traffic calming (where appropriate), rather than engineered approaches, as recommended by WALGA.
- Wider footpaths with more permeable surfaces.
- Reclaim parking bays for tree planting.
- Close off the Albany Highway IGA laneway for tree planting.
- Use of trees as traffic calming devices on roundabouts and verges.

Suggestions on Management and Coordination

- Strong support for community-based greening projects and a belief in the collective health and wellbeing benefits of these activities.
- Praise for existing Town supported schemes, such as Request a Street Tree and the $500 Adopt a Verge rebate.
- The need for more coordination within the Town's administration to prioritise the urban forest, particularly in planning and development decisions: *"Currently there are contradicting projects, as well as inconsistent communication, plans and projects [and] It seems that green/ public spaces are often only assessed based on their commercial or real-estate dollar value."* (Interview quote)
- There should be more cooperation with surrounding Councils on green corridors: *"Birds have no idea about the concept of Council boundaries. Councils should think like birds when it comes to the planning and management of green spaces."* (Interview quote)
- Support for the creation of an umbrella urban foresters group, to unite and coordinate existing community groups with a focus on urban forest issues within the Town.

9. Working Together: Asset-Based Community Development

For the first time, the Town used an 'Asset-Based Community Development' (ABCD) approach to develop a strategy. ABCD recognises and harnesses the skills and passions of individuals and groups within the community. (See Appendix 7)

As a concept, ABCD is fundamentally about three critical aspects:

It represents a shift from a focus on deficiencies and limitations to assets and capacities, and from community residents being treated as 'customers' to being supported as active 'citizens, co-owners and co-producers' of community actions.

It highlights the importance of mapping, connecting and celebrating the diverse range of community assets, and harnessing these assets for community action.

It emphasises that community building is fundamentally about relationship building and community connection.

An ABCD approach multiplies benefits to the Town and its community partners. Contributors working on the project, in either a paid or volunteer capacity, gain new skills, knowledge and networks. The reduced labour cost is a direct financial saving for the Town and the infusion of local talent provides community ownership of the outcome.

ABCD benefits also extend beyond the life of the project and contribute to both strategic and operational outputs.

Given the magnitude of the urban forest challenge, reliance on an implementation approach that exclusively uses Town staff and contractors will place significant pressure on budgets and potentially impact upon rates. In contrast, worldwide best practice outcomes are the result of effective partnerships between governments, community volunteers, business, researchers and not-for-profit organisations.[40]

This first ABCD strategy-development partnership between the Town and the local community has been a learning process that has highlighted the strengths and challenges of the approach, and the areas where resources should be targeted to achieve the best value.

ABCD partnerships often rely heavily on volunteers and provide a direct benefit to the community and the volunteer. Whilst volunteers are not paid, their contributions should be recognised and valued. There are some provisos. Volunteering should only occur in designated non-core roles, and there should be no coercion; the notion of freedom of choice is essential to the volunteering ethos. Volunteers also should not be left out of pocket or be used to substitute for paid employees.

Local volunteers supported by Town grant construct bird boxes to mitigate habitat loss 2016. Photo S. Coltrona.

Whilst there is a financial cost to managing and supporting volunteers, research shows that for every $1 invested in volunteers at least $4.50 is returned to the community.[41] On this basis, the Town's $20,000 investment to cover non-labour costs yields $90,000 in value. From another perspective, using the Volunteering WA benefits calculator, volunteers have contributed the equivalent of over $300,000 of time and resources during the life of this project.

Continued investment in volunteering will build community interest and capacity and further increase ABCD partnership opportunities within the Town, resulting in greater savings.

ABCD approaches in urban forestry are the norm in North America and Europe, but are less common in Australia. Roles such as citizen science monitoring, tree planting and stewardship are well-suited to volunteering. The scale of the task ahead will render such partnerships essential.

Such a model has the potential to create effective synergies that combine resources and ideas and improve efficiency and productivity. Developing a strong network of volunteer urban foresters and facilitating ABCD partnerships between the local community and the Town will yield mutual benefits.

Analysis of Current Policy

UFS-driven changes to our Town's planning policies that can arrest the loss and expand canopy, particularly on private land, present our most formidable urban forest challenge. Our analysis of the state and local planning policy framework is contained in Appendix 2 and summarised below.

State planning policy framework

The Western Australian government's strategic documents and policies form the cornerstone of planning for local governments around the state. They are strategic and high level in nature and cover a wide range of development issues that impact socially, environmentally and economically at the local level.

State level planning policies are the framework for the Victoria Park Town Planning Scheme and local planning policies that shape the future growth and development of the Town. An analysis of state and local policies and plans identified those most relevant to the UFS and highlighted existing attempts by the Town to consider green infrastructure through planning policy mechanisms. It also revealed where gaps or contradictions exist between current policy and the UFS, which will require future harmonising.

Local government policies

The Town's local planning policies guide local development, precinct growth and design matters, and have a direct impact on the urban forest. Landscaping, planting and plant management guidelines influence the look and amenity of streetscapes and public open space of all kinds. A brief review of these policies can be found in Appendix 2.

In addition to the planning policy framework, our Town's existing plans, procedures, projects, user and lease agreements may need to undergo review and potential modification to align with the UFS. Key documents include the Land Assets Optimisation Strategy 2013, as well as various natural resource management plans.

Of particular relevance is this key section in the Strategic Community Plan 2017-2032, which states:

> ***"Strategic Outcome EN7: Increased vegetation and tree canopy. This outcome acknowledges the importance placed by the community on increasing the tree canopy and vegetation around the Town. The principle behind this outcome is that the more trees and vegetation the better. It means that the Town will need to plant more trees and vegetation and look after them so that people can enjoy the benefits."***

10. Principles and Strategic Outcomes

The Town's urban forest will be strong, healthy and accessible to all. It will contribute to the health and wellbeing of our community and a sustainable liveable city. The UFS has been created by the community for the community, and the Town in partnership will manage and facilitate its implementation with support from residents, ratepayers and the broader community.

Opportunities and Challenges for the Urban Forest Strategy

Opportunities

The primary opportunity for the success of the Town's UFS is the high level of current community interest, support and activity towards improving the Town's natural environment. This positive sentiment should be harnessed by the Town to achieve the strategic outcomes of the UFS.

The Town's role in implementing the UFS is;

- To contribute resources, support and incentives for the community to collaborate in implementing the UFS across the Town;
- To educate and promote the UFS to the community; and
- To actively plan, budget for and collaboratively manage the UFS on public and private land.

A second opportunity is presented by the policy changes now under consideration at local and state government level. The current state government review of Residential Design Codes (R-Codes) aims to create cities, towns and neighbourhoods where people want to live, work and socialise. Among other matters, planned policy revisions deal with urban forest issues such as retention of existing trees, provision of deep soil areas, landscaping and biophilic design. In line with contemporary urban design principles, the revised guidelines are likely to strengthen the approach to protecting tree canopy and flora in Western Australia's urban areas.[42]

At the local government level, WALGA has resolved to work with the state government and member councils to prevent further loss of urban tree canopy, and to develop market-based and regulatory instruments that promote the increase in tree canopy on private property. Similarly, many local councils across Australia have developed urban forest strategies that contain a variety of actions aimed at improving urban ecology and reversing the decline in tree canopy. This groundswell of local government activity reflects public and scientific opinion at national and global levels and is likely to strengthen into the future.

Challenges

There are many challenges that will threaten the success of the UFS. Emerging as the most critical are the increasing policy pressures of inner city urban infill, the ability to sustain constructive community engagement and resourcing of the strategy.

Scale model from the UFS Community Workshops 2017. Photo K. Wray.

The Circus, Burswood 2017. Photo A. Kwan.

Urban infill: Preparing for an estimated 40,000 new residents by 2050 and an increase of 19,300 dwellings[43] presents an unprecedented social and environmental challenge for the Town. The pressures of urban infill and other development has led to ongoing deforestation, particularly on private land, which has not been offset by plantings in public areas. Bold action is required by the Town and other stakeholders to reverse the ongoing decline in green space and tree canopy. Resistance from developers and private property owners, and the constraints of existing local and state planning regulations as well as Australian National Standards, will present significant challenges.

Community engagement: Whilst there are many passionate Town residents and ratepayers who are supportive of the UFS, there is a lack of general knowledge about land management policies, poor coordination between local environmental groups, and limited buy-in from the local business community. There are also some who perceive trees as a nuisance or a danger, rather than a valuable community asset. To counter these challenges, a coordinated public education campaign and a concerted investment in ABCD partnerships are necessary.

Resourcing: The success of the UFS will depend on the allocation of sufficient resources for implementation. Amongst other priorities, funding should be carefully targeted towards viable community projects and programmes, intensive tree planting, and sufficient Town staffing to facilitate change across all business units.

Principles of the Urban Forest Strategy

Community-focused and collaborative

We will:

- Use communication and engagement strategies that maximise community participation in the UFS projects and management.
- Collaborate with major land managers and stakeholder organisations (government, community and commercial).
- Be transparent.

Innovative, experimental and validated

We will:

- Explore and adopt new urban forestry technologies.
- Implement robust monitoring, evaluation and reporting.
- Celebrate best practice and learn from failures.
- Promote urban design that prioritises people and quality of life.
- Accommodate all users of the urban forest, including wildlife.

Efficient and value for money

We will:

- Embrace a partnership model using ABCD principles.
- Collaborate with volunteer urban forester networks to support the Town's mass planting programme.
- Allocate a budget sufficient to cover Town staffing, implementation costs and to support community partners.

Strategic Outcomes of the Urban Forest Strategy

The UFS aims to create a better environment for everyone. These strategic outcomes are how this will be achieved:

1. Plant and protect sufficient trees by 2020 to achieve the 20% tree canopy target as supported by Council;
2. Maximise community involvement and collaboration in its implementation;
3. Increase tree diversity, whilst favouring local endemic and West Australian species that also support wildlife;
4. Maintain vegetation health;
5. Improve soil and water quality;
6. Improve urban ecology.

Each of these strategic outcomes have priority actions to achieve specific targets on both public and private land within the Town, and an indication of the timeframe for implementation.

The implementation timeframe is shown at the end of each action as:

S – short term up to 5 years

M – medium term from 5-10 years

L – long term beyond 10 years

The selection of local and best practice case studies at the end of each strategic outcome is intended to highlight successful projects that may serve as a guide for future action during implementation planning.

Rutland Avenue, Carlisle. Photo P. Melrosa.

STRATEGIC OUTCOME 1:

Plant and protect sufficient trees by 2020 to achieve the 20% tree canopy target as supported by Council.

Tree canopy targets are central to the UFS because of the benefits that trees, especially large mature trees, provide the inhabitants of an area. These urban forest benefits are explored in detail in section 4 and 5.

The Town of Victoria Park Council received and supported the community motion to achieve a tree canopy of 20% of the total land area by 2020.[44] This is a visionary policy that will require robust action and strong resolve to achieve.

Using aerial imagery data from the CSIRO's Urban Monitor 2016 report and analysed by Anditi Pty Ltd, the tree canopy in the Town (defined as trees at a height of 5m and above) was calculated at 10%.[45]

To increase the tree canopy from the current level to the target of 20%*** requires an additional 1.8 million square metres of canopy coverage, an area the size of 90 WACAs, or at least 256,000 trees.

Realistically, our canopy target cannot be achieved by 2020. However, we can plant enough trees by the deadline to reach our 20% goal and maintain this canopy cover over the longer term.

Priority sites for increasing new tree planting in the Town include public spaces such as the Jirdarup Bushland Precinct and surrounding areas, Swan River foreshore, railway and road reserves, verges and public parks, and over 90 Town-owned storm water sumps and many others in the Town that are managed by state government agencies – subject to suitability. Opportunities for tree planting also exist on the large land parcels managed by caretakers such as Curtin University, Technology Park, Belmont Racecourse and the Burswood Park Board, and some industrial sites in the Lathlain/Carlisle precincts.

*** See Appendix 1

Notwithstanding these opportunities, the biggest challenge facing the Town's urban forest is the continuing loss of canopy and population growth through private residential subdivisions and large developments. There is an urgent need for changes to local and state planning and development regulations to protect and extend tree canopy on private land.

TARGET: Protect existing trees on public and private land and plant enough trees by 2020 to allow 20% canopy when the trees have matured.

A staged implementation plan will be developed using the Town's Tree Planting Matrix and User Guide and may include separate targets and actions for different land use zones and densities. As an example, a higher tree canopy target in parks and other open spaces would help to offset low canopy cover in more built up areas.

SUGGESTED ACTIONS:

Public land

- Develop and resource an effective mass tree planting implementation plan, over the continuous life of the UFS, using ABCD methods. (S)
- Establish policies to protect existing trees on public land and help new trees to reach maturity; for example, effective street tree bonds and tree impact assessments, and appropriate penalties for removal or vandalism. (SML)
- Incorporate tree protection and maximise planting in all projects on public land, especially Town-owned parks, verges and open spaces. At the onset of any proposal for significant public works, conduct and publish a benchmarked Tree Impact Assessment of proposed design, engineering plans or changes. (S)
- Prioritise trees and vegetation in streetscape planning, traffic management (as appropriate) and urban design. (SML)
- Develop a Town street tree strategy (SML)
- Implement an 'opt-out' verge tree planting policy. (S)
- Develop and implement a sumps vegetation project and collaborate with local community groups, State government agencies, SERCUL, and other stakeholders. (SM)

Private land

- Promote relevant changes to local and state development and planning rules to require open space, setbacks, deep soil zones and canopy trees on private property, particularly for 'battle-axed' blocks and new residential and multi-use development sites. (SML) This could include:
    - Variations to the R-Codes to allow for such things as deep root zones and variations to setbacks to allow space for trees on developed land.
    - Density/heights bonuses based on performance criteria that protect existing trees and enable new trees to be planted.
    - Design guidelines that support protecting and enhancing canopy cover on private land.
    - Exploration of more experimental land use mechanisms such as developer contributions, levies and hypothecated revenue streams.
- Encourage voluntary compliance with a benchmarked Tree Impact Assessment scheme for new developments. Reward good practice. (S)
- Establish a trial incentives programme to retain trees on private land, such as differential Council rates based on land use, green infrastructure and tree canopy, and funding to assist land owners to maintain significant trees. (SML)
- Explore and develop effective penalties to deter illegal tree removal and clearing of development sites. (SM)
- Strengthen and enforce local planning policy to require best practice tree planting and landscaping in non-residential car parks. (S)

Other suggested actions

- Collaborate with other major land caretakers in the Town and neighbouring LGAs to increase tree planting and to establish a green corridors plan (see Strategic Outcome 6: Improve urban ecology). (ML)
- Update and expand the Town's significant and remnant tree register with amendments to increase penalties and incentives to protect significant trees. (M)
- Review Town policies on solar panels to harmonise with UFS aims, including street tree policy. (M)
- Foster community-based solutions, such as tree giveaways, Adopt-A-Verge, community planting days and community gardens. (SML)
- Maintain a Town register of net gains and losses, to be published in conjunction with annual mapping data. (S)
- Design and trial a new planning policy to assign a minimum tree canopy loading per resident for all new developments in the Town, whether large or small, on public or private land. The current benchmark of 49m^2 of tree canopy per resident[46] is proposed as the minimum standard. This canopy could be supplied on the development itself, through retention of mature trees or new plantings onsite or in other locations within the Town. (SM)

New trees at Miller's Crossing. Photo H. Johnstone.

Best Practice Case Study: New York's Million Trees Project

Many cities in the United States are implementing tree planting initiatives as part of larger climate change mitigation plans and to improve the quality of life for urban residents. One notable initiative is New York City's **MillionTreesNYC** project, managed by the NYC Parks department in partnership with the not-for-profit New York Restoration Project and drawing on contributions from businesses, community groups, government agencies, and researchers. Starting in 2005 with a comprehensive tree census, mapping and feasibility studies were conducted to inform the strategy, combined with a coordinated implementation plan and ongoing action research.

MillionTreesNYC had a dual objective: to plant and care for a million trees across the five boroughs, with a focus on community outreach and engagement. Funds were contributed by the City, government and philanthropy sources, and celebrity ambassadors Bette Midler and former Mayor Michael Bloomberg helped to raise and sustain public enthusiasm.

The project achieved its tree-planting objective by 2015, planting wherever possible on both public and private land. Final planting estimates were 220,000 street trees, 480,000 in parks and public open space, and 300,000 on privately held land.

The tending and maintenance of the urban forest by a Stewardship Team of over 12,000 volunteers is a continuing endeavour.

Reference:

https://www.centreforpublicimpact.org/case-study/milliontreesnyc/

http://www.milliontreesnyc.org

Million Trees NYC.

Best Practice Case Study: Melbourne, Greening the West

Urban greening projects in Melbourne's west are contributing to making the region cooler, more pleasant and healthier to live in. The key to this success is the **Greening the West** initiative managed by City West Water since 2011. The project has brought together 23 organisations, including local councils, community groups, water utilities, state government agencies and a variety of other parties.

Tree canopy in Melbourne's western suburbs is only 5% to 10%, compared to between 10% and 30% in the rest of the city's suburbs. However, with funding of $5 million from the federal government's **20 Million Trees Program**, by the end of 2018 the project participants will have collectively planted more than 1 million trees in parks, waterway corridors, drainage reserves and peri-urban land.

An additional Greening the West success is the way it has shifted priorities and cultures, with local government and other stakeholders increasingly acknowledging the benefits of greening and shows the power of a collaborative model for solving complex urban problems.

Reference:

How Melbourne's west was greened, 16 October 2017.

https://theconversation.com/how-melbournes-west-was-greened-84700

Greening the West, in Melbourne.

Local case study: Town of Victoria Park, 100 Trees Giveaway

During 2017, Vic Park Trees collaborated with the Town to distribute 100 West Australian trees of various species to residents. An event was held in May at the Lathlain Scout Hall where 79 trees were given away on the day. The remainder were distributed to residents during the following week. It is predicted that these 100 trees will eventually contribute to canopy on private property, where the Town has limited control. At a small cost of $880 to the Town, these trees are expected to contribute up to 700m^2 of canopy in the next 5 years, with tree management costs largely borne by residents. For a small input cost, this outcome represents a substantial return on investment for the Town.

VPT volunteer sorting trees for giveaway, May 2017. Photo H. Johnstone.

Photo H.Johnstone.

STRATEGIC OUTCOME 2:

Maximise community involvement and collaboration

Strategic Outcome 2 is the heart of the Town's UFS and is part of a greater cultural shift emerging from the 2015/16 Evolve consultation process and the growth of local grassroots groups that have a focus on liveability and sustainability. The concepts of inclusion, consultation and participation are embedded in the Town's most recent policy documents, including the 2017 Strategic Community Plan, the Disability Action and Inclusion Plan, and the Healthy Vic Park Plan.

The Town already recognises and supports community volunteer groups that are working to improve the natural environment, such as:

- Friends of Kensington Bushland
- Victoria Park Community Garden Inc.
- Rutland Corner Food Tree Project
- Carlisle Bowling Club Urban Forest Group
- Malubillai Wildlife Carers Network Inc.
- Victoria Park Transition Network
- Vic Park Collective Inc.
- Victoria Park Urban Tree Network (now Vic Park Trees

Community engagement was a central focus in the development of the UFS and will remain a core principle during the ongoing implementation. Moreover, Aboriginal traditional owners, prominent businesses, civic leaders and employers, particularly those controlling areas of land in the Town, will be invited to collaborate with the Town to deliver the UFS.

TARGET: The local community will be engaged with the UFS and will be more closely involved in greening activities within the Town.

SUGGESTED ACTIONS:

- Consult and collaborate with community groups, private landowners, businesses and other stakeholders (local, national and global) to deliver innovative urban forest solutions (for example, public land tree planting licenses and stewardship). (SML)
- Partner with key community stakeholders to create and build the capacity of local urban foresters to plan, plant, maintain and record implementation of the strategy. (SML)
- Work with Whadjuk Noongar traditional owners to develop community programmes that increase knowledge about the cultural significance of landscapes, flora and fauna in the Town. (SML)
- Join with other LGAs and government agencies to deliver programmes and strategies that support the UFS. (ML)
- Through WALGA lobby the Department of Planning Lands and Heritage to fully fund the ongoing (annual) capture and processing of the CSIRO Urban Monitor program. (M)
- Conduct a strong public information campaign to promote the UFS and encourage community participation. (S)
- Develop and deliver a local schools education programme focused on the UFS goals and actions. (SM)
- Investigate establishing an Environmental Resource Centre[47] within the Jirdarup Bushland Prescint as a public information and action hub for urban ecology. (L)

Community Workshops. Photo K.Wray.

Best practice case study: Vittorio Square Participatory Committee, Rome, Italy

Local initiatives, partnerships between NGOs and other voluntary agreements are proliferating all over Europe. One such project is the Comitato Piazza Vittorio Partecipata (Vittorio Square Participatory Committee) established in Rome in 2006.

"This committee continues to lead the effort to restore and redevelop one of the most degraded historical green spaces in Central Rome. Piazza Vittorio is the largest square in Rome, and its Nicola Calipari central garden has been hosting, since 1888, a collection of trees including Magnolia Cedrus, Chamaerops and Platanus. After many decades of abandonment, this 19th century garden is today the vibrant heart of a multicultural, ethnically diverse neighbourhood whose citizens, associations and committees work together for its protection and management.

"The participatory management plan of Piazza Vittorio was the product of many months of work by residents, landscape architects and related practitioners. A key step towards more informed management of the GI (Green Infrastructure) is a tree inventory of the entire neighbourhood, including the many individual trees populating its streets, together with an estimation of the economic value of the ecosystem services they provide using the 'benefit transfer method'".[48]

Piazza Vittoria, Comitato Piazza Vittorio Partecipata, Rome Italy.

Local case study: Community tree planting in the City of Stirling

The City of Stirling Community Tree Planting Programme encourages local residents, community groups, schools and businesses to work with the City to plant and care for street trees.

Through community participation, coordinated by a dedicated Community Tree Officer, the programme aims to:

- Create cooler and more attractive streetscapes.
- Help foster a sense of community pride and ownership of streetscapes and trees.
- Spread the word about the many benefits of street trees to our wellbeing.

Street Tree Planting Events are held every Saturday morning between May and August and are followed by a sausage sizzle for participants. As part of the fun, a team of Volunteer Tree Captains is appointed to supervise tree planting volunteers, ensure appropriate communication, and promote the Community Tree Planting Programme to residents and the wider community. Special Planting Events are also held, to provide opportunities for schools, scouts and other community groups to get involved.

The City of Stirling is committed to planting one million trees to combat the decreasing canopy cover. Over the last five years, tree canopy in the City has fallen by nearly 1 million square metres, and two-thirds of the loss has occurred on residential land, mainly as a result of development. Although the City plants 10,000 new trees each year, this is not enough to replace the canopy being lost. The City is now developing a draft urban forest strategy that will address these and other issues.

Reference:

City of Stirling website.

Local case study: Rutland Corner Food Trees project

The Rutland Corner: Food Tree Project in the local suburb of Lathlain is coordinated by a group of ardent gardening volunteers, whose vision was to provide a space for collaboration and learning, where residents can have access to locally grown fruit and to create a sheltered resting spot close to a train station. In addition, the project aims to increase tree canopy and greenery, improve the streetscape, increase biodiversity and provide habitat for birds.

With the Town's permission and support, an unused corner of two suburban streets has been transformed. Over a series of three weekends, the volunteer team planted a variety of fruit trees and created pathways to allow public access. Nitrogen-fixing acacias and ground covers are planted between the trees and native species are planned for the border. Water is supplied by a bore on a neighbouring property.

The initial purchase of 7 citrus and 6 olive trees was funded by the project founders. Additional purchases were supported by the community. Just as importantly, people came to help weed, dig, compost, plant trees, install reticulation and spread mulch. There are plans to establish a community composting bank on-site to supply the neighbourhood.[49]

The project has been a resounding success and is intended to encourage further community-based greening projects to transform neglected public sites for the benefit of all.

Rutland Corner: A Food Tree Project in Lathlain. Trees planted 2017. Photo permission by L. Miles.

STRATEGIC OUTCOME 3:

Increase tree diversity, whilst favouring local endemic and West Australian species that also support wildlife

Our local urban forest faces a number of threats from pathogens, pests and the drying effects of climate change. Diversifying the urban forest lowers the risk of significant loss in any individual species, genus or family. What we choose to plant now must also have the resilience to tolerate hotter, drier conditions and more frequent and extreme weather events. The Tree Planting Matrix developed as part of the UFS includes guidelines for diversity and details of the common pests, pathogens and challenges facing our trees.

Data is not yet available on the diversity of the entire urban forest in the Town. However, we know the species composition of the Town's street trees, which consist of 25% West Australian, 35% other Australian natives and 35% exotic species. Priority should be given to native species that provide habitat and food for native wildlife, especially for threatened black cockatoos.

In developing the UFS, a major theme emerging from the community consultation was a preference for increasing the use and variety of native plants, with a focus on endemic and West Australian species. In addition, there was a high level of interest in the preservation of the Kensington Bushland, Hillview Bushland, Kent Street Sand Pit and other remnant native vegetation locations. However, it is acknowledged that a community preference for native species will need to be balanced by planting a proportion of non-natives to protect the health and diversity of the urban forest.

Data on the diversity of the Town's entire urban forest will be gathered and included in future mapping and monitoring exercises (see Strategic Outcome 4). Once these data are available, a tree species diversity policy should be adopted, similar to that used by other local governments. For example, the City of Sydney policy specifies no more than 5-10% of any one tree species, 20-30% of any one genus and 30-40% of any one

family. The Town policy should comprise broad guidelines and allow flexibility in selecting the most appropriate species for any particular site.

TARGET: There shall be a tree diversity policy for the Town's public urban forest and guidelines for private land, based on data from regular tree audits (see Strategic Outcomes 1 and 4). A staged planting programme will be implemented to adjust the mix of trees to achieve these diversity targets over the long term.

SUGGESTED ACTIONS:

- Implement use of a Town tree matrix to achieve agreed tree diversity guidelines, including annual review and update. (SM)
- Secure a reliable supply of high quality local endemic and West Australian plant stock. (S)
- Revise verge and street tree planting guidelines to enhance diversity. (S)
- Establish protocols for increasing understorey and ground cover planting in public parks and other planted areas to encourage healthy ecosystems promoting wildlife. (S)

Henry Hughes, (right) director of education at the Birmingham Botanical Gardens and Trudy Evans, a member of the Little Garden Club, stand among trees seedlings outside the Botanical Gardens greenhouses that Hughes grew from acorns.

Best practice case study: Park renewal in Birmingham, Alabama

Urban foresters recognise that a healthy ecosystem needs a variety of plant species to protect against pests and disease, a regeneration strategy of mature trees, and a 'layering' of the forest to avoid soil erosion and promote a healthy ecosystem. Urban parks are particularly at risk where they have only a limited number of tree species in an area that is surrounded by lawn and cleared of understorey shrubs.

The City of Birmingham, Alabama in the United States, took on the challenge of increasing plant diversity and forest health in George Ward Park. Assisted by an army of volunteers, acorns from the native oak species were collected and propagated for regrowth planting and many other species of trees, herbaceous plants and ground cover were cultivated. The park management schedule was altered to reduce mowing frequency, and leaf and understorey removal. In a matter of years, these combined efforts transformed George Ward Park into a healthy living forest, capable of regeneration, and with less erosion and more animal and bird species.

An academic study of the project concluded that:

> *"Over the last five years a large variety and quantity of herbaceous species and volunteer trees have been able to colonize the area. What was once bare land, aside from mature trees, is now heavily covered in some areas and has some growth in virtually all parts untouched by maintenance... Although the reforested area does not require much maintenance, it is vital to ensure that the area continues to be left alone by the city crew... [T]his project will have a major effect on preserving the tree canopy in George Ward Park, and hopefully encourage the restoration of Birmingham's urban tree canopy as a whole.*[50]

Local case study: City of Melbourne

Melbourne's vast tree population is a defining feature of the city, and its parks, gardens, green spaces and tree-lined streets contribute enormously to the liveability of the city. The 70,000 council-owned trees alone are worth around $650 million. However, the City of Melbourne is aware of the dangers of a monoculture tree population and the need to diversify. The City's urban forest strategy developed aims for an urban forest population comprising no more than 5% of one tree species, no more than 10% of one genus and no more than 20% of any one family. As well as expanding the range of exotics (to mitigate against the dangers of Dutch Elm Disease and other fatal infestations), the city is attempting to diversify the native species beyond the dominant Myrtaceae family. Tree precinct plans, including diverse plant varieties, are developed through a collaborative and consultative process with the community.

Reference:

City of Melbourne Urban Forest Strategy, 2012-2032

City of Melbourne.

STRATEGIC OUTCOME 4:

Maintain high standard of vegetation health

During 2017 the Town of Victoria Park undertook an extensive audit of the Town's trees using an on-ground arborist survey[51] and CSIRO aerial mapping data[52] from 2009, 2012 and 2016. Whilst the audit confirmed that around 92% of street trees are in good health[53] this should not be taken for granted and ongoing monitoring is essential. Over time, improvements in Geographic Information System (GIS) mapping techniques will allow for more accurate audits. However, due to the lag time between data acquisition and analysis, on-ground inspection will continue to play a role in the monitoring process.

In addition, falling ground water levels are threatening bushlands and other ecosystems. Strategic management of groundwater levels is vital to our urban forest.

TARGET: Maintaining the Town's urban forest in good health.

SUGGESTED ACTIONS:

Improve tree health

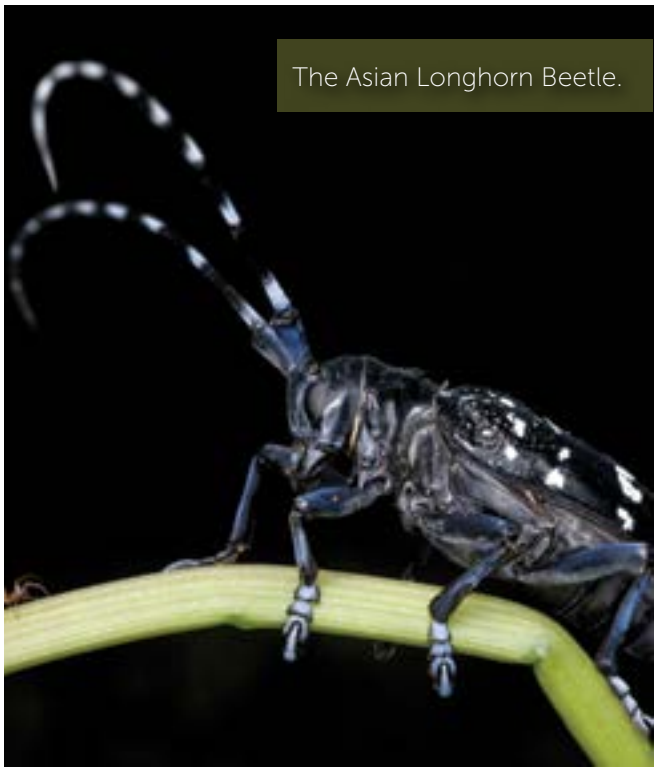
- Ensure that trees are planted and cultivated in the best conditions possible. (SML)
- Select good stock and species that are resilient to the effects of climate change, pests and diseases. (SML)
- Continue with dieback treatment trials. (SM)
- Provide advice and support to private land owners and caretakers. (S)

Monitoring

- Conduct yearly GIS mapping and analysis of the urban forest. (SML)
- Conduct targeted arborist checks; annually in problem areas as identified by GIS mapping, and Town-wide checks every three years. (SML)
- Establish a citizen science programme to assist the Town with on-ground data collection and provide training in detecting common pathogens and to prevent the spread of Asian woolly hackberry aphid and white cedar moth. (ML)

Best practice case study: Pest control in New York

The first appearance of the Asian longhorn beetle (ALB) on US soil was in 1996 in the Greenpoint/Williamsburg community of Brooklyn, NY. It was discovered not by an urban forester, but by a local resident. The subsequent community participation in addressing the infestation was critical to the outcome. Through community-professional-government partnership, an inventory of all remaining trees was conducted and a citizen training protocol was developed in which participants were trained in basic tree identification by federal urban foresters. Joint teams of citizens and tree experts determined what spaces could be replanted with non-host-government provided trees. This action brought together and empowered a traumatized community, forged a bond between all participants and helped residents of Greenpoint to continue to actively assist with the informed management of their Urban Forest."[54]



The Asian Longhorn Beetle.

Local case study : Jarrahs, declining health and alkaline bore water at Nedlands Golf Course.

The Nedlands Golf Course, flanked by sweeping views of Matilda Bay[55] is home to over 1800 trees and shrubs from approximately 55 species[56]. 108 trees are currently adversely affected by alkaline bore water.

Four years ago after attending Kings Park and learning of the impact of alkaline water on trees course Director R. Parkin and a former Agriculture Department employee investigated declining health of an initial 40 trees. Among these were many Jarrah (Eucalyptus marginata) displaying chlorotic (yellow) leaves. UWA and Murdoch Universities concluded that the alkaline bore water[57] used to irrigate the golf club caused declining health due to poor nutrient uptake. Treatment of trees using Iron sulphate has improved vegetation health dramatically, however approximately 50 of the 108 trees affected are unable to be saved. The situation is continually monitored and treatment applied as needed. Additionally 15 sprinklers have either been turned off or converted (at a cost of $150 per sprinkler) to reduce the spray onto vegetation with poor tolerance to the bore water. A further 15 sprinkler conversions are scheduled. The cost of the treatment has been approximately $2000 over the 43 acre site.

The below photo was taken at the Nedlands Golf Club, where several ancient jarrah trees were lost. It is one of the worst affected jarrah trees just beyond where three jarrahs had died previously.

Trees at Nedlands Golf Course.

STRATEGIC OUTCOME 5:

Improve soil and water quality

Water resource management is one of the greatest challenges of the present century. As populations climb, per-capita water use increases and current water supplies shrink, placing global water resources under threat. Most urban areas face difficult choices and potentially expensive solutions to meet existing and future demand.

As Perth's climate becomes more variable, there is increasing pressure on water supply and a need to rigorously monitor and adjust watering practices. In this context, the Town has developed a Water Efficiency Action Plan 2016-2021[58] to reduce water usage and waste. The Town has also adopted Water-Sensitive Urban Design (WSUD) concepts to improve drainage water quality and reduce the quantity entering the drainage system.

Attention to soil moisture and health is also important for vegetation growth. Innovative solutions include replacing hard ground surfaces with porous materials to reduce heat retention, encourage soil moisture, mitigate flooding and improve tree health.

A further contribution to water quality could be made by planting native sedges in Town sumps, as well as trees to increase canopy. Sedges can stabilise the sump bowl and use biofiltration to reduce nutrients and pollutants from entering the drainage system.

TARGET: Develop and employ benchmarks that ensure soil moisture is maintained at levels that support healthy vegetation, water quality and effective flood and water resource management.

SUGGESTED ACTIONS:

Employ and encourage best practice soil and water management and monitoring across the Town, including an improved hydrozoning protocol for passive and active land uses and ecozone planting on Town land. (SML)

- Continue WSUD approach in managing the Town's storm water runoff water and establish WSUD as the minimum design standard for Town-managed projects. (SML)

- Review storm water infrastructure capability to benchmark and maintain/improve soil and water quality. (SM)
- Explore options for planting native sedges in Town sumps. (SM)
- Install alternative or temporary watering systems (for example, portable water tanks) in suitable locations. (SM)
- Minimise spread of dieback through the soil, in line with the Town's Dieback Management Procedures and Protocols. (SML)

Fiona Stanley Hopsital Rooftop Garden. Photo P. Bennett.

Best Practice Case Study: City of Greater Geelong, Stormwater Harvesting

Like many local governments, the City of Geelong was hit hard by the 2001-2009 drought in south-eastern Australia. The City's water authority restricted all use of potable water on sports turf and as a result 56 sporting fields were closed for safety reasons. Grinter Reserve, as one of Geelong's biggest water users, was identified as a potential site for a large-scale WSUD project to save valuable drinking water and to secure a reliable alternative water source to irrigate and drought proof the Kardinia Park playing fields.

The Grinter Reserve project involved several government partners and the Geelong Football Club. Through a sophisticated engineering system, runoff water is diverted from stadium roofs, playing fields and a stormwater pipe from a nearby suburban area. The water is filtered through a Gross Pollutant Trap and is then stored in a 1.7 ML underground tank built beneath the car park. Before being used for irrigation, the water is further filtered and disinfected using UV light.

The project's outcome has exceeded expectations in providing recycled water yield for irrigation, weed reduction, a clean biodiverse habitat for flora and fauna, and aesthetic and educational appeal for visitors. As well as the Geelong Football Club, many other local community groups can now benefit from improved access to the reserve, which includes walking paths and interpretative signage.

The total project cost was $1.1 million and took a mere three years to complete, from its 2008 inception to handover in April 2011.

Reference:

Geelong Harvesting Projects, March 2012 (Review Date: February 2014) www.clearwater.asn.au

Geelong Stormwater Harvesting.

Local case study: City of Melville, Brentwood Living Stream Project (Kaalitj-ngort Koondaam, Dragonfly dreaming)

The Brentwood Living Stream project 14km south of Perth, is a partnership between Department of Biodiversity, Conservation and Attractions (DBCA), the Water Corporation, Main Roads, City of Melville and South East Regional Centre for Urban Landcare (SERCUL), with funding through a National Landcare grant from the Federal Government.

In 2006, the Swan Canning river catchment system was identified as a coastal pollution 'hotspot'. With funding from the federal government, DBCA assessed thirty sub-catchments to identify the major sources of nitrogen and phosphorus inputs into the river system. Through this process the Bull Creek catchment, which includes the Brentwood main drain, was identified as one of the priority catchments for restoration.

The aim was to transform a degraded closed stormwater drain system into an open, living stream. The Brentwood Living Stream Project aimed to improve the quality of water flowing into the Canning River through planting sedges and rushes to trap sediment, and a series of basins and rock riffles to remove pollutants from the water and increase oxygen conditions. Construction works began in winter 2015 and revegetation took place in winter 2016.

The Brentwood Living Stream Project is a fine example of collaboration between all levels of government, community groups, volunteers, and the local Whadjuk Noongar people to achieve multiple benefits. As well as the predicted improvement in water quality, the restoration work has brought other benefits, including weed reduction, increased biodiversity and habitat, improved aesthetics and public access to the entire reserve.

Reference:

Memorandum of Understanding, Brentwood Living Stream at Bateman Park, SERCUL and Melville City Council

Brentwood Living Stream. Photo H.Johnstone.

Strategic Outcome 6:

Improve urban ecosystems

Urban ecology is the scientific study of urban ecosystems, which examine the relationships between living organisms and their surroundings in an urban environment. A healthy urban ecosystem[59] provides many services to humans that directly and indirectly affect our survival and quality of life.

In our Town the loss of habitat and fragmentation of the urban forest is one of the main threats to our urban ecosystems. Deforestation on both private and public property has placed a number of native flora and fauna species under stress, including the Carnaby's black cockatoo population, which is declining due to diminishing food sources and roosting sites. Connecting existing green corridors along the river, railway and main roads with remnant bush and open space (such as parks and sumps) is one part of the solution. Planting trees that are good food sources, for example, *Corymbia calophylla* (marri), *Hakea laurina* and *Hakea petiolaris*, and *Eucalyptus caesia* (silver princess) is also part of a solution. Bushland and park vegetation will require midstorey and understorey species to be incorporated.

The UFS will address this challenge in partnership with stakeholders, particularly tenants on public parks and reserves, and major land caretakers such as Curtin University, Burswood Park Board, Technology Park, major shopping centres, government agencies and others.

In a similar way, attention to the location and connectivity of key UFS projects will ensure that all residents in the Town have equal access to its natural resources, and to the resulting social and health benefits. By thoughtful development of green corridors, green infrastructure, and urban forest diversity, the Town can ensure that plants, fauna and people are able to live in harmony.

TARGET: Protect and enhance biodiversity, green infrastructure and green corridors that contribute to a healthy urban ecosystem.

SUGGESTED ACTIONS:

- In collaboration with relevant research agencies and local stakeholders, review the Town's Environment Plan and incorporate an Urban Ecology and Biodiversity Plan in which trees and vegetation are used to address environmental problems. (M)
- Develop a Town street tree strategy. (S)
- Update the Town's Remnant Vegetation Management Plan. (S)
- As a matter of urgency develop a rehabilitation and revegetation plan for all areas to be planted. (S)
- Investigate the feasibility of establishing an Environmental Resource Centre within the Jirdarup Bushland Precinct as a public information and action hub for urban ecology. (SML)
- Using a collaborative approach with other landowners and caretakers and adjacent LGAs, recreate green corridors throughout the Town to connect fragmented parcels of land that assist native fauna access and freedom of movement.[60] (L)
- Develop and update a Town Tree Planting Matrix and User Guide, to guide tree management. (S)
- Expand bird nesting box trial and set up new habitat support trials for microbat boxes and insect hotels. (SM)
- Develop a biophilic building design guide and implement trials, for example, roof top gardens, green walls, planter boxes and parklets, to inform and promote best practice in the Town. (M)

Redtail Black Cockatoos. Photo K. Lightbody.

Best practice case study: Bosco Verticale, biophilic design

Inaugurated in October 2014, Bosco Verticale [Vertical Forest] is a pair of residential towers in the historic Porta Nuova district of Milan, Italy. The twin towers have a height of 111 metres and 76 metres and host more than 900 trees (from 3 to 6 metres in height) and thousands of shrubs, perennials and ground cover, planted on terraces built into the structure.

"The Bosco Verticale in Milan supports one of the most intensive living green facades ever realized. The combination of its sophisticated plant selection, the deployment of greenery on all orientations, the structural design to accommodate the plants, and the maintenance, safety and irrigation systems, represents one of the most innovative tall building projects in recent memory."[61]

Bosco Verticale was designed by Boeri Studio in collaboration with horticulturalists and botanists, and won the International Highrise Award 2014, and the Best Tall Building Worldwide 2015.

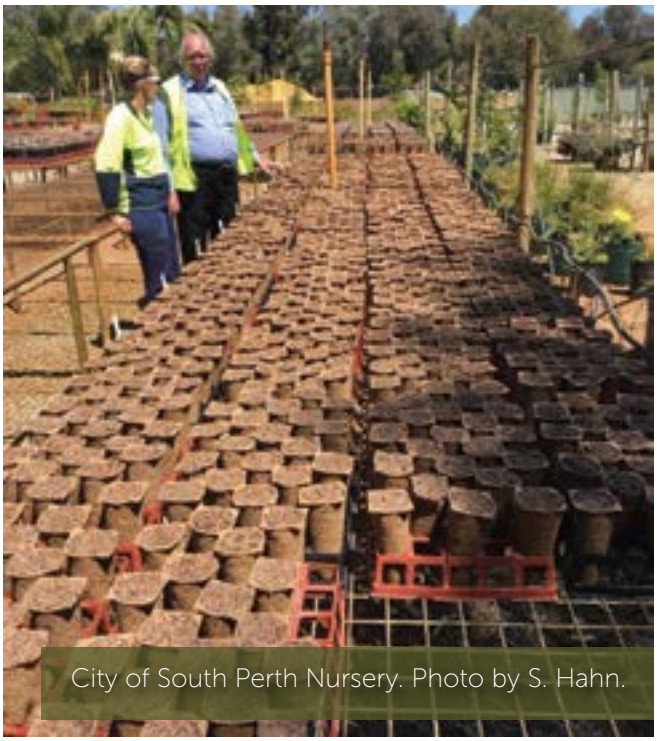
Bosco Verticale in Milan, Italy.

Local case study: Kensington Bushland

Kensington Bushland Reserve and a section of the adjoining Kent Street Sand Pit (which form part of the Jirdarup bushland precinct) have been recognised as regionally significant and designated as a Bush Forever site.[62] The area is the only sizeable remnant bushland area remaining in the Town of Victoria Park and management by the Town is assisted by the Friends of Kensington Bushland. The reserve lies within the Perth region of the Swan bioregion and comprises Banksia-Jarrah-Marri woodland on sandy soils.

"***The reserve is classified in the municipal heritage inventory within management category A, which is 'worth the highest level of protection'. These areas are recommended for entry into the state register of heritage places which gives legal protection; development requires consultation with the Heritage Council of WA and the local government; and provide maximum encouragement to the owner under the Town of Victoria Park Planning Scheme to conserve the significance of the place***."[63]

The Friends of Kensington Bushland conduct weeding and educational events throughout the year, and the City of South Perth nursery (see below) grows seedlings with seeds gathered from the Kensington Bushland.



City of South Perth Nursery. Photo by S. Hahn.

Local case study: Bird nesting boxes

"About 20 bird nesting boxes were placed in trees at Rayment (Lathlain) and Tom Wright (Carlisle) Parks on the 21st March 2017 after community workshops were held in November (2016) to assemble nesting habitats. The box components were made at the Manning Men's Shed with help from a $2,000 grant from the Town of Victoria Park.

[T]he concept arose from the passion of local residents concerned by the Town's ongoing loss of tree canopy, including the loss of significant local habitat when almost 100 mature trees were removed at Lathlain Park to make way for the West Coast Eagles. About 50 to 60 people attended the workshop, including [former] Town of Victoria Park Councillor Keith Hayes, who supported the trial project." [64]

The nesting boxes are concealed high above the ground amongst the canopy, and the entrances are tailored for a few large and small bird species. Locals have kept a close eye on the boxes and galahs seem to be the most visible users. The trial has provided an ideal opportunity for community volunteers to maintain 'ownership' of the boxes. Their observations will lead to improvements in the design, durability and use of the next generation of bird nesting boxes in the Town.

Tom Wright Park Bird Box Installation 2016. Photo J. Mellor.

Kensington Bushland in Spring. Photo K. Wray for Town of Victoria Park.

Carnarvon Street, East Victoria Park. Photo P.Melrosa.

11. Implementing the Urban Forest Strategy

Arresting and reversing our loss of canopy will require a significant change of culture across our Town, its administration, operations and constituent community. Success requires an unbroken commitment from all of us to embrace the strategy for the long term, if we and future generations are to reap the benefits.

The UFS is overarching in its reach and will have an impact across all our Town's existing frameworks, policies, procedures and projects. Implementation of the UFS must therefore be measured and well-considered in the planning, execution, monitoring and review. Employing the same ABCD approach that has created this UFS will multiply the return on our human, social and financial investment. During the formulation and activation of the UFS implementation framework, the Town will adopt a continuing commitment to building local community capacity to partner in the UFS's implementation.

Town Management Framework

Recommendation:

Delivery of the UFS, and coordination of the Transition to Implementation Working Group and UFS Implementation Working Group, will be the direct responsibility of a senior Town officer to ensure coordinated input and implementation across the Town's business units and organisational structure. Specific aspects of the UFS may be located in separate business units – such as Parks, Planning, Community Development/Engagement, and Communications calling for a whole-of-organisation approach.

Transition Process

Council's adoption of the UFS will be but a starting point. While some actions, such as fortifying existing Town programmes like Request a Street Tree and Adopt a Verge, can be undertaken immediately, the creation of a successful and sustainable Implementation Action Plan must be carefully considered and widely supported to ensure success.

Transition to Implementation Working Group

Recommendation:

In the interim, the existing UFS Working Group will continue in a transitional role, operating as the core Transition to Implementation Working Group (TIWG). TIWG will provide continuity, maintain momentum, and function as a practical bridge between the adoption of the Strategy and development of the Implementation Action Plan. Using an ABCD approach, the TIWG will also seek opportunities to mobilise participation and support across the Town community, particularly its residents and ratepayers.

Composition:

TIWG will comprise the core contributors to date, that is the Town staff and community members who helped formulate the UFS.

Resources:

As a task-driven body that delivers outcomes, the TIWG should be allocated a coordinator and adequately resourced to enable ongoing two-way interaction with the broader Town community.

Duration:

The TIWG will meet on a regular basis to achieve the following outcomes

- the formulation and scheduled rollout of an UFS Implementation Action Plan, utilising an ABCD approach,
- establishment of an ongoing UFS Implementation Working Group to monitor implementation of the UFS, including annual analysis of canopy mapping data, and recommend opportunities for refinement and improvement,
- adoption and promotion of interim measures prior to full implementation of the UFS in order to guard against unintended adverse consequences.

Terms of Reference: The first priority of the TIWG will be to affirm its composition and Terms of Reference, which may include, but not be limited to:

- recruitment of additional specialist members and contributors, while mindful of the need to maintain balance in numbers of Town and local community representation,
- audit, review and recommend alignment of existing local planning policy framework, and existing Town strategies, policies, procedures, projects, user and lease agreements,
- detailed assignment of short-, medium- and long-term priorities and time frames for implementation of the UFS,
- budgetary impacts as required to implement UFS strategies and actions in the short, medium and long term, including prospects for external funding support,
- the implications of prioritised UFS strategies and actions on Town staffing and organisational and portfolio responsibilities,
- recommended model(s) to provide the community capacity-building and support required to partner in the ongoing implementation of the UFS based upon ABCD best practice,
- pursuit of strategic partnerships to share and maximise resources, particularly with other LGAs,
- considering inclusion of Town KPIs that demonstrate commitment to community capacity building in support of ABCD partnerships,
- informing, engaging and seeking collaborative partnerships with institutional land users including public and private education providers, Water Corporation, Main Roads, Transperth and the Public Transportation Authority, Western Power and related entities, state and federal government departments, Burswood Park Board, religious organisations, non-government and community organisations and lessees and users by agreement of public parks, reserves and bushlands,
- exploring opportunities for accessing, acquiring, growing and maintaining an inventory of preferred tree stock as well as resource-sharing with other entities,
- promotion of the UFS, its importance and its benefits utilising a convergent public information, education and media plan, and
- recommend terms of reference for an ongoing UFS Implementation Working Group.

Interim Measures

It is essential that the Town proactively adopt interim measures to prevent possible adverse consequences in the period between the adoption and full implementation of the UFS. This is particularly important given that any amendments to the local planning policy framework to incorporate UFS goals are likely to be complex and time-consuming and will require broad community support in order to succeed.

Some landowners and developers, fearing the UFS may have a negative impact on their property decisions, may choose to pre-emptively remove trees from their land before the local laws are revised. Trees with the potential to be placed on a significant tree register could be removed prior to full activation of the Implementation Action Plan. In these instances, landowners may well miss out on the proposed incentives and rewards for tree retention and expansion of tree canopy on private land.

Interim measures for consideration, particularly in areas subject to high levels of subdivision and development, may include:

- grants to assist with retention, planting and maintenance of canopy trees on private land,
- interim rates relief,
- a points accumulation system towards future rates relief,
- access to a short-term incentive fund, and

- some form of sponsorship of trial UFS best practice properties or developments.

The rollout of interim measures should be accompanied by a proactive public information campaign that promotes the positive benefits of the UFS, while defusing any concerns about possible negative impacts.

Finally, so that the Town is seen to be leading by example, the adoption of interim measures for private property owners would ideally run in conjunction with the launch of mass planting and maintenance programmes on public land.

Implementation Action Plan

The UFS Implementation Action Plan will be formulated through the combined efforts of the Transition to Implementation Working Group and other Town staff, in consultation with local residents, ratepayers, external stakeholders and professional experts.

The Plan will translate the high-level principles, strategies and actions of the UFS into a practical and comprehensive roadmap that will include specific operational tasks, staffing and resources, gap analyses and cost benefit assessments, implementation and reporting responsibilities, risk management, monitoring and evaluation plans and key performance indicators, within a critical path timeline.

As a guide, an extract from an urban forest strategy action plan produced by the Brimbank City Council in Victoria is included in Appendix 4.

UFS Implementation Working Group

Once adopted, progress of the Implementation Action Plan will be monitored on an ongoing basis by a UFS Implementation Working Group. This Implementation Working Group will conduct an annual review, which should include canopy mapping and analysis, prior to the Town's annual budget process each year.

Recommendation:

The UFS Implementation Working Group will be independent of existing Council committees and will have broad representation including from our local Noongar and Whadjuk community. Building upon our asset-based community development approach to maintain momentum and continuity, the UFS Implementation Working Group will work in partnership with the Town, to collaboratively and transparently seek consensus among constituent groups, share ownership and foster urban forest stewardship across the Town.

As a task-driven body that delivers outcomes, the UFS Implementation Working Group should be allocated a coordinator and adequately resourced to enable ongoing two-way interaction with the broader Town community.

The UFS Implementation Working Group will be a robust and proactive body that ensures the UFS is effective, sustainable, affordable, and flexible enough to adapt to changing circumstances. Indicative UFS Implementation Working Group responsibilities will be to:

- **monitor** the execution of specific tasks and adherence to timelines set forth within the Implementation Action Plan,
- **evaluate** outcomes to consider the reasons for the relative success or shortcomings of any tasks, trials and initiatives,
- consider and **recommend modifications** to improve the viability of UFS plans and actions,
- **monitor progress** towards attaining the UFS's goal of 20% canopy coverage through analysis of annual mapping data to measure the success of our efforts to retain existing and grow new canopy trees,
- develop a draft a sustainable Town of Victoria Urban Forest Management Plan, and
- **report to Council** through appropriate channels and committees.

12. Glossary

Asset-Based Community Development (ABCD) is a methodology for the sustainable development of communities based on their strengths and potentials. ABCD involves assessing the resources, skills, and experience available in a community, organising members around issues, and then determining and taking appropriate action. This method uses the community's own assets and resources as the basis for development; it empowers the people of the community by encouraging them to utilise the strengths they already possess.

Biodiversity is the number and variety of organisms within one region, including species and ecosystem variability (terrestrial, marine and aquatic), and is a measure of the health of an ecosystem.

Biofiltration is a pollution control technique using a bioreactor containing living material to capture and biologically degrade pollutants. Common uses include processing waste water, capturing harmful chemicals or silt from surface runoff, and microbial oxidation of contaminants in air.

Biophilic design uses natural elements and draws inspiration from the natural world in urban design to contribute to human health and productivity.

Botanical family is a taxonomic group composed of one or more genera. The names of most botanical families end in '-aceae' (for example, Myrtaceae), with some exceptions.

Botanical genus (plural – genera) is a taxonomic group consisting of related species that resemble each other more closely than they resemble other groups. Genus is subordinate to family and ranked above species. The genus name forms the first part of a scientific name (for example, ***Eucalyptus leucoxylon***) and is written in Latin with the first letter capitalised. Collections of similar genera are grouped into families.

Botanical species is a taxonomic group that unites like individuals within the same genus that breed among themselves, produce fertile offspring and are distinguishable from other groups. Species is the basic unit of classification. The scientific name is formed by the genus name followed by the species name (for example, ***Eucalyptus leucoxylon***) and is always written in lower case. Collections of similar species are grouped into genera.

Climate change refers to a change in global or regional climate patterns, attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels since the 19th century. While adaptation tackles the effects of climate change, mitigation tackles its causes.

(Climate change) adaptation refers to the ability of natural or human systems to adjust to weather variability and extremes due to climate change, by moderating potential damage, reducing harm or risk, and coping with the consequences.

(Climate change) mitigation refers to human intervention to reduce or eliminate the long-term social, economic and environmental hazards of climate change. Most often, climate change mitigation involves reducing greenhouse gas emissions or expanding absorption 'sinks'.

Council refers to the elected members who govern the Town of Victoria Park.

Crown Projection method refers to a method to calculate the canopy of a tree, developed by the Urban Horticulture Institute based at Cornell University in the United States. To calculate canopy, measure the distance from the main trunk to the dripline to ascertain the radius. To determine the radius(r), assume that the tree will reach 75% of maximum canopy. Calculate the canopy area using the equation $3.1416 \times r^2$

Ecosystem services are defined as the direct and indirect contributions of ecosystems to human well-being, survival and quality of life. Ecosystem services are natural or enhanced ecological processes, for example, that clean our air and water, pollinate plants, filter and recycle nutrients, modify climate, control floods and improve soil fertility.

Ecozoning is the conversion of existing turfed areas into native garden areas. This allows for minimal water to support an area that once sustained turf, saving large volumes of water.

Green infrastructure describes the network of natural landscape assets in cities and town, that is the green spaces, water systems and built landscapes from residential gardens to local parks and housing estates, streetscapes and verges, transport corridors and waterways.

Helliwell System is one of several methods of placing a monetary value on the amenity provided by trees. The basic approach is to allocate point scores under a number of different factors such as tree size, life expectancy, suitability to setting etc. These scores are combined to give an overall comparative score for a tree or bushland. A monetary conversion factor is used to attach an economic value to this point score.

Hydrozoning is the practice of clustering together plants with similar water requirements in an effort to conserve water.

i-Tree is a peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry analysis and benefits assessment tools. i-Tree can help strengthen forest management and advocacy efforts by quantifying forest structure and the environmental and economic benefits of trees.

Lerps are crystallized structures produced by larvae of psyllid bugs (lerp insects) as a protective cover.

Natural capital is an extension of the traditional economic notion of capital. It represents natural assets such as non-renewable resources (for example; fossil fuels and mineral deposits), and renewable resources (for example; fertile soils, pollination, vegetation or pure air and water).

PCI (Park Cool Island) refers to the cooling effect of vegetation within an urban environment.

Resilience is the capacity to deal with change and to continue to develop. Ecological resilience refers to the capacity of an ecosystem or natural population to resist or recover from major environmental changes.

Sequestration of carbon describes the removal of carbon dioxide, which is a greenhouse gas, from the atmosphere, and absorption and long-term storage of carbon dioxide or other forms of carbon, usually by biomass such as trees, soil and crops, or technological measures over a period of time.

Sustainability refers to the effective use of environmental, social and economic resources in order to meet current and future community needs.

The Town refers to the Town of Victoria Park, a local government area in Western Australia.

Tree a woody perennial plant, typically having a single stem or trunk growing to a considerable height and bearing lateral branches at some distance from the ground. The international standard for a canopy tree is one that is a minimum of 5 metres in height and creates an average shade canopy of $7m^2$.

Tree (arboricultural) impact assessment is a document that identifies the impact of a proposed activity on any trees on a specific site or any tree on adjacent land.

Tree matrix is a list of trees and their characteristics that is used to determine the most appropriate species for different location types.

Urban ecology describes how ecological models from natural environments are applied to urban areas, including the interactions between organisms and environments, energy and food services.

Urban Heat Island effect refers to one of the most prominent features of urbanization, the tendency for temperatures in cities to gradually rise in comparison to their rural surroundings.

Urban forestry is the art, science and technology of managing trees and forest resources in and around cities and towns.

Urban sprawl is a phenomenon that plagues cities in both developing and industrial countries. It is an uncontrolled or unplanned extension of urban areas into the countryside that tends to result in an inefficient and wasteful use of land and its associated natural resources.

Water-sensitive urban design (WSUD) is a land-planning and engineering design approach, which integrates the urban water cycle, including storm water, groundwater and wastewater management and water supply, into urban design to minimise environmental degradation and improve aesthetic and recreational appeal.

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15. Appendices

1. Town of Victoria Park Memorandum
2. Policy review
3. Community Engagement
4. Brimbank City Council Urban Forest Strategy Action Plan (Sample Page)
5. Overview of Carbon Farming Opportunities
6. Budget - UFSWG Development Project
7. Asset-Based Community Development
8. Content Reviewers

AUDRC Models. Photo K. Wray.

Appendix 1: Town of Victoria Park Memorandum

Town of VICTORIA PARK

19 October 2017

RE: Urban Forest Strategy background

Motion raised and carried 6-5 at the Special Meeting of Electors in July 2015

"That Council as a matter of priority, undertake an urban forest strategy in partnership with Curtin University residents, community groups and any relevant stakeholders that wish to participate, and that this strategy proceed or be undertaken in conjunction with any discussion relating to future Town Planning Scheme amendments, to achieve an increase in tree canopy coverage up to 20% by 2020. The motion was put and carried 6-5."

This motion was then taken to the August 2015 Ordinary Council Meeting. The Council resolved

Requests the Chief Executive Officer to prepare a report to the council's Future Planning Committee November 2016 meeting on the urban forest strategy as contained within Motion 3

The Future Planning Committee then resolved at their November 2016 meeting:

1. Endorses the development of the Town's Urban Forest Strategy via an Expression of Interest (EOI) process open to incorporated, community-based organisations.

2. Supports the project methodology as contained in this report and,

3. Project team to report to Future Planning Committee quarterly and present to Elected Members Workshop internally on progress and to seek feedback.

The Town decided to use an asset-based community development approach to develop and deliver this strategy. Asset-based community development recognises that the role of institutions, including local government, is to work in partnership with the community through capacity-building initiatives, and facilitating partnerships within and between local communities. The aim is to create resilient and vibrant communities underpinned by social justice principles, and to drive sustainable change from within.

A request for Expressions of Interest to deliver the Urban Forest Strategy was advertised in March 2017. The Victoria Park Collective and Victoria Park Urban Tree Network submitted their expression and were successful. They are now working with the Town to deliver the strategy.

Quotes attributed to Mayor Trevor Vaughan

"Council acknowledges the importance placed by the community on increasing the tree canopy and vegetation around the Town."

"We recognised that we have community groups in the Town that are active and want to help so we decided to take a different approach to enable them to be involved."

"We are looking forward to seeing what comes out of this process and having the Urban Forest Strategy in place."

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Appendix 2: Policy Review

Elements of our state and local planning policy framework that will require audit, review and potential (local) modification in order to align with our Urban Forest Strategy are listed below:

State Government Policy

Draft State Planning Policy 1 (State Planning Framework)	The policy's purpose is to provide general principles for land use planning and development through high level statements that are intended to filter down to the creation of plans, policies and frameworks at both state and local levels.

Relativity

There is an expectation that planning include "high standards of urban design and a sense of neighbourhood and community identity". Trees play a key role in urban design and sense of place.

Planning also must "promote the conservation of ecological systems and the biodiversity they support including ecosystems, habitats, species and genetic diversity". Trees play a key role in these aspects.

Comment: *An Urban Forest Strategy that informs and manages these aspects will be integral in achieving key principles of the State Planning Policy.*

State Planning Policy 3.1 Residential Design Codes	The purpose of the R-Codes is to provide a comprehensive basis for the control of residential development throughout Western Australia.

Relativity

In relation to the provision and accommodation of trees, residential developments are required to demonstrate compliance to the following Design Principles:

Site Area:

- Facilitate protection of environmental feature or significant feature that adds to existing streetscape

Street Setback:

- Accommodate landscaping

Streetscape:

- Landscape to provide adequate shade

Landscaping:

- Provide for microclimate
- Retain existing trees to maintain local sense of place
- Contribute to streetscape

Parking:

- Landscaping between each six consecutive external car parking spaces to include shade trees.
- Trees that are greater than 3m in height shall be retained, in communal open space areas which are provided for the Development.

Comment: *Despite these principles, significant tree canopy losses are occurring. Some provisions of the R-Codes can be amended via local planning policies to achieve improved outcomes.*

Note: The DesignWA draft design codes are currently awaiting government approval.

Draft Central Sub-Regional Planning Framework	An extension of Perth and Peel @3.5 Million that provides further strategic details on the Central region including Victoria Park.

Relativity

Green Network strategies and policies should:

- Preserve and enhance the existing environmental and landscape values
- Manage the availability and use of natural resources
- Safeguard existing green network components from fragmentation;
- Create and enhance existing green networks and identify ecological linkages
- Encourage or require new development to be designed to deliver on clear connections to the green network
- Provide an acceptable number of street trees to enhance the public realm in urbanised locations

Comment: *Our UFS supports or promotes these aspects.*

State Planning Policy 4.2 Activity Centres for Perth and Peel	4.2 Activity Centres main objective is to ensure that employment areas, services and general amenities are spread equitably across the metropolitan area. It also promotes the integration of land use with transport and does so within the framework of Directions 2031. Parts of Victoria Park are defined as Activity Centres.

Relativity

In implementing future activity centres:

- Trees and other plants should be easy to care for and add to the local biodiversity. Vegetation should be retained where possible. New planting should preferably use species native to the area and be compatible with the existing vegetation. Maximise climate control opportunities.

Comment: *Our UFS seeks to guide or manage these issues.*

Local Planning Policy 16 – Albany Highway Residential/ Commercial Design Guidelines	Landscaping guidelines for Albany Highway streetscape between Oats St and Dane St.

Relativity

The policy seeks setbacks of 3 metres which may be landscaped. Landscaping should be used to buffer and screen the residential component, provide shade and shelter and visually enhance the streetscape. Most of the landscaping should be substantially related to the residential component.

Comment: *An Urban Forest Strategy that informs and manages these aspects will be integral in achieving key principles of the State Planning Policy.*

Local Planning Policy 17 – Street Frontage Design Guidelines for District Centres and Commercial Areas Along Albany Highway	Landscaping guidelines for Albany Highway Streetscape

Relativity

Provisions state a large shade tree planting should be provided for any customer car parking to the rear of the property; one shade tree to every 4 car bays; and shade trees chosen for rear car parks should be species appropriate for the purpose.

Comment: *Given the importance of green infrastructure to the amenity of the pedestrian environment, an expanded policy could provide further guidance on what is possible in the streetscape environment, including opportunities within alfresco dining environments.*

Local Planning Policy 20 – Design Guidelines for Developments with Buildings Above 3 Storeys	Design elements and performance criteria for development that are outcomes based.

Relativity

The policy is rigorous in its attempt to develop a framework for development applications to adhere to when investigating particular design elements. Includes thorough performance criteria across all design elements, particularly those dealing with green infrastructure aspects (Site Planning, Streetscape, Private Open Space, Communal Open Space and Publicly Accessible Space).

Comments: If these aspects are considered thoughtfully and passionately in the design process of development applications, good planning outcomes will be achieved.

Comment: *If these aspects are considered thoughtfully and passionately in the design process of development applications, good planning outcomes will be achieved.*

Local Planning Policy 23 – Parking Policy	Provision of parking for residential and non-residential uses in the town.

Relativity

The following points are taken from the policy:

- All non-residential parking areas should contain shade trees (species to be approved by the Council) generally at a rate of one tree for every four bays.
- In residential areas any continuous row of parking or length of driveway shall be provided with planting areas, including shade trees, at the rate of one per eight bays or otherwise required by the Council.
- The perimeter of all parking areas should be landscaped by a planting strip of at least 1.5 metres in width. In some circumstances a greater area of landscaping may be required, particularly where a parking area adjoins a residential use.

Comment: *While the objectives are reasonable, enforcing compliance with landscaping requirements remains a challenge.*

Town Planning Scheme No. 1 Precinct Plans	The Town Planning Scheme describes planning intentions and guidelines for development in the different areas of the Town.

Relativity

Key wording from the 'Statement of Intent' that involves tree retention, preservation or inclusion in development design.

Victoria Park – The precinct should remain a visually attractive area and the preservation of trees and the generous landscape planting of properties upon redevelopment will be required.

Curtin - Landscaped grounds and character to be retained and enhanced. Emphasis will also be placed upon improving the streetscape. Front setback areas will be landscaped with planting and car park will be screened from the street. Quality landscaping of a permanent nature must be provided on all sites.

Raphael - The retention of structurally sound original houses and healthy mature trees will be a priority in order to maintain the existing residential character and streetscapes.

Lathlain – Infill development and the redevelopment of corner lots is encouraged, although not to the detriment of the existing character of the area (character being defined to include landscape similar to Raphael).

Comment: *The inconsistency of precinct planning and elevation of tree importance in some precincts and not others is concerning. Despite these statements, tree loss is occurring in all precincts. It does not appear that the basic intent of the Town Planning Schemes is being consistently applied to developments as they occur.*

Raphael Park, Victoria Park. Photo P. Melrosa.

Other relevant planning-related policies that intersect with the UFS include:

- Perth and Peel@3.5million
- Perth and Peel Green Growth Plan for 3.5 million (draft)
- WAPC – Development Control Policy DC2.3 – Public Open Space in Residential Areas
- WAPC – Liveable Neighbourhoods Community Design Codes
- WAPC – SPP 2.8 Bushland Policy for the Perth Metropolitan Region
- Metropolitan Region Scheme
- Burswood Peninsula District Structure Plan & Burswood Lakes Structure Plan
- Belmont Park Racecourse Structure Plan
- Greater Curtin Masterplan
- Future Town Planning schemes

In addition to our planning policy framework, our Town's existing plans, procedures, projects, user and lease agreements need to undergo review during UFS transition and implementation stages and may require potential modification to align with the UFS, including but not limited to:

Photo A.Kwan.

Community plans:

- Strategic Community Plan 2017-2032: The key section is *"Strategic Outcome EN7: Increased vegetation and tree canopy. This outcome acknowledges the importance placed by the community on increasing the tree canopy and vegetation around the Town. The principle behind this outcome is that the more trees and vegetation the better. It means that the Town will need to plant more trees and vegetation and look after them so that people can enjoy the benefits."*
- Healthy Vic Park Plan (26 September 2017)
- Safer Neighbourhoods Plan 2017-2022
- Events and Place Activation Strategy 2017-2022
- Disability Access and Inclusion Plan 2017-2022

Planning and development plans:

- Land Assets Optimisation Strategy 2013
- Sport & Recreation Facilities Strategy
- Foreshore Access & Management Plan
- Proposed development of the adjacent land of the former Department of Agriculture and Food.

Environmental plans:

- Environmental Plan 2013 – 2018
- Climate Change Adaptation Plan 2016-2030
- Water Efficiency Action Plan (August 2016)
- Dieback Management Procedures and Protocols
- Remnant Vegetation Management Plan
- George St Reserve Revegetation Project
- Tree Planting Program
- Park Asset Management Plan
- Kensington Bushland Management Plan
- Street Tree Management Plan
- Significant Tree Register
- Street Trees Policy and Procedures
- Planting of Street Trees
- Street Tree Removal
- The future Public Open Space document
- Street Tree Renewal - PKS 2 Street Tree Policy and Procedures

Appendix 3: Community Engagement

The core component in developing the Urban Forest Strategy was the approach to community engagement. The input helped to shape the UFS, identified planting priorities, and provided a guide for ongoing community education and engagement. The consultation process revealed a high level of community awareness and a strong desire for action to protect the urban forest. The ideas and themes emerging from the consultation have informed the development of the Urban Forest Strategy. This section is a summary of the methods and findings from the community consultation.

The Urban Forest Strategy Working Group employed a range of methods to involve the community and seek their views and priorities for the Urban Forest Strategy, including:

- Interviews
- Emails with media and experts in the field
- Social media
- Vic Park Farmers' Markets
- Online engagement using 'Your Thoughts' portal
- Community workshops
- Millennium Kids workshop
- Town staff and peers workshops and engagement
- Subject expert content reviewers, see Appendix 8.

Interviews

Interviews were conducted with eight individual volunteers and eight interested community groups based in the Town of Victoria Park or caretaking particular parcels of land around the Town, namely: Friends of GO Edwards Park, Friends of Kensington Bushland, Victoria Park Community Garden Inc, Carlisle Bowling Club Urban Forest Group, Malubillai Wildlife Carers Network, Victoria Park Transition Network, Vic Park Collective Inc. and Victoria Park Urban Tree Network (now Vic Park Trees). These community groups, representing around 3,200 members, rely mainly on volunteers for labour and financial support, supplemented by small grants, sponsorship and Town support. Their activities include a range of greening projects, including verge gardens and 'guerrilla planting' in sumps and unused spaces.

Social Media

Over 20,000 email and social media contacts (comments, likes and shares) were made in developing the Urban Forest Strategy:

VPT Facebook page	5,621
Friends of Harold Rossiter	221
ToVP Facebook	7,000
Vic Park Local Facebook	622
Vic. Park Collective Facebook	4,090
Carlisle Community Facebook	472
Neighbourhood Watch South Facebook	533
Urban Forest Strategy email	400

Vic Park Farmers' Markets

Over two weekends in October 2017, volunteers organised a marquee at the local Farmers' Markets to promote the Urban Forest Strategy to the local community. The volunteers were kept busy interacting with over 120 Town residents and others keen to contribute. A 'Tree Ideas' chalkboard was another popular activity, especially with children, who provided many comments and drawings to illustrate their ideas.

'Your Thoughts' survey

The Town's 'Your Thoughts' online portal was used to gather further community comments during the 8-week consultation period (October - November 2017). A quick poll on tree protection policies on private property received 31 responses, mainly from residents of Victoria Park and East Victoria Park, with the majority (51.6%) voting for the strongest tree protection measure: a tree register and no significant tree removal unless the tree is deemed unsafe by a qualified arborist. In addition, there were 19 public submissions offering suggestions, which were largely consistent with other feedback.

A separate 'Your Thoughts' survey for Town staff received 18 submissions from across all business units. Staff responses identified some key challenges in implementing the Urban Forest Strategy, including:

- operational, resourcing and staffing issues,
- changes to planning regulations relating to trees and vegetation on private land, and
- the need for a strong implementation plan involving robust community education and engagement.

Community Workshops

Five community workshops were held between 29 October and 20 November 2017, attended by a total of 89 residents, business owners, Councillors, children and others who either live or work within the Town. The kids-only workshop was facilitated by Millennium Kids Inc. using a unique child-centred approach, and the Australian Urban Design Research Centre (AUDRC) assisted at all workshops.

Workshop participants discussed their views on green space, public planting, and tree species. Using the AUDRC model streetscapes and split into teams, participants were invited to find creative solutions to reach the 20% canopy target across three different land use areas of the Town. Notably, the children's designs all achieved 30%-40% tree cover. During the exercise, a number of ideas emerged that supported or amplified feedback from the wider consultation.

The young participants at the Millennium Kids workshop showed a keen interest in nature and conservation and the associated social and wellbeing benefits. The group decided to

Photos K.Wray.

embark on a lobbying campaign to influence local government policy makers, and to share their ideas with other young people through school-based education programmes and other forums. Encouraged by these results, the Urban Forest Strategy Working Group approved a $500 grant for a youth team, coordinated by Millennium Kids Inc., to further develop their ideas for future action.

Public planting priorities

In a final mapping exercise, workshop participants were invited to nominate their most valued places within the Town, and those that should warrant special attention under the Urban Forest Strategy. The exercise revealed a mixture of nature-based locations (parks) and built-form areas (Curtin University and two shopping precincts) were the most popular social and community spaces.

The most valued environmental spaces were all bushland or parks, including McCallum Park/ Swan River foreshore and the Kent Street Sand Pit site. These areas also appeared in the top five locations identified for priority tree planting, as well as The Park Centre car park, Oats Street Station and the railway reserve generally.

Combined mapping exercise from the adult workshops

Appendix 4: Brimbank City Council Urban Forest Strategy Action Plan

Urban Forest Strategy 2016-2046 (Action Plan extract, p.51, with permission)

Strategic Direction	Action	Who (Potential Partners)	When
Develop a diverse urban forest and increase canopy cover to 30% by 2046.	Plant 700,000 trees on public and private land to ensure we are able to achieve 30% canopy cover	Urban Design, Parks Services, Environment, City Planning	2016-2046
	Increase species diversity through planting no more than 50% of the same family and introduce more families into the Urban Forest	Urban Design, Parks Services	2016-2021
	Develop species list of appropriate trees that will adapt to the Brimbank environment and minimise maintenance requirements	Urban Design, Parks Services	2016-17
	Make available free trees for residents to plant on their own properties and provide information on best practice maintenance techniques at park events	Urban Design	Ongoing
	Achieve average 50% canopy cover on all parks and open spaces where appropriate	Urban Design, Parks Services	Ongoing
	Increase shrub layer to 5% throughout the municipality	Urban Design, Parks Services	2016-2046
	Develop Boulevard Master Plans for all major routes within Brimbank in line with the MPA Boulevard Strategy	Urban Design	2017-18
	Support community led food growing opportunities	Urban Design, City Strategy, Community Planning and Engagement	Ongoing
	Update Landscape Guidelines for small residential subdivided land to provide guidance to developers of basic landscape requirements that contribute aesthetically and environmentally to the municipality	Urban Design, City Strategy	2016-17
	Develop tree planting master plans for all areas of Brimbank to achieve maximum canopy cover on all streets and provide neighbourhood character through trees and vegetation	Urban Design, Parks Services	2016-18
	Continue to investigate further opportunities to expand on the street tree program including developing centre medians for planting, street narrowing and kerb out stands.	Urban Design, Engineering Services	2016-2020
	Develop tree pit and pavement design guide for areas where new trees have the potential to conflict with other publicly owned and private assets	Urban Design, Engineering Services	2016-17
	Create asset management plan for replacement of shrubs throughout the municipality	Urban Design, Parks Services, Asset Services	2017-18
	Increase areas of unmown areas to decrease carbon emissions and improve biodiversity	Urban Design, Parks Services	2016-2021
	Ensure Planning outcomes adhere Amendment C158	Urban Design, City Strategy	Ongoing
	Revise Nature strip guidelines and develop baseline to measure improvement of naturestrips	Urban Design	2016-17
	Integrate residential and grassland areas more effectively through tree and vegetation planting	Urban Design, Environment, Parks Services	2016-2021

Appendix 5: Overview of Carbon Farming Opportunities

The Federal Government's Carbon Farming Initiative (CFI) legislation allows for the creation of Australian Carbon Credit Units (ACCUs) for a number of emissions reduction activities. In general, the activities that reduce emissions must have an approved methodology under the CFI scheme. The full list of approved methodologies is available at the following link - **https://www.legislation.gov.au/Search/carbon%20farming%20initiative.**

A number of the approved methodologies are specifically targeting land sector activities such as reforestation, however the methodologies are restricted to activities such as managed plantations or reforestation of former farm land. There is no methodology that can be applied to tree planting in urban locations at this stage. In addition, the monitoring and assessment of carbon uptake under these methodologies is a reasonably rigorous process, involving significant verification, which adds to the costs of the project.

If a methodology were to be created by the Department of Environment and Energy that could be applied to reforestation activities in urban areas, then ACCUs could potentially be created. If this were to happen, the biggest market for sale of ACCUs is to the Federal Government under the Emissions Reduction Fund. To supply ACCUs under the Emissions Reduction Fund, projects must bid into a reverse auction process where the Government buys a number of ACCUs in individual contracts for supply for 7 or 10 years. The current average auction price for ACCUs is approximately $12 (AUD) per ACCU. In future however, as industrial facilities are required to purchase ACCUs to offset emissions above their emissions baselines, there may be a liquid secondary market open up. In this instance, bi-lateral contracts to supply ACCUs to liable entities could be drawn up, with a price negotiated for delivery of those. Again, the potential of selling credits to industrial facilities that require them is dependent on the ability to generate the ACCUs in the first place - which requires a methodology.

Courtesy of Marc Allen, Engeco – Emission and Energy Strategy Advisors, Singapore

www.engeco.com.au

Appendix 6: Budget - UFSWG Development Project

Budget Item	Amount
Graphic design, UFS publication and reference materials.	$8,000.00
Printing	$600
Volunteer out-of-pocket expense reimbursements	$1,800.00
Workshops/pop up events	$6,380.00
Project review of assessment, ABCD content	$400.00
Telecommunications/IT	$800.00
Volunteering WA subscription	$55.00
UFS capacity building	$965.00
Contingency	$1,000.00
Total Budget	**$20,000.00**

Volunteers at the community workshops. Photo K.Wray.

Appendix 7: Asset-Based Community Development

ABCD- What is it all About?

Asset Based Community Development (ABCD) is a global philosophy and practice related to asset focused, place based and community driven initiatives. While practised intuitively by many community builders for a long period, it was the work of John McKnight and Jody Kretzmann over a 40-year period and their creation of the ABCD Institute of Northwestern University, Chicago, USA in 1995 that gave it its name and prominence. Today, a wide diversity of impressive ABCD initiatives can be found across the world.

ABCD is not a recipe, but a place-based framework that incorporates such principles as:

- Meaningful and lasting community change always originates from within. The wisdom of the community always exceeds the knowledge of the community.
- Building and nourishing relationships is the fundamental action in community building.
- Communities have never been built by dwelling on their deficiencies, needs and problems. Communities respond creatively when the focus is on resources, capacities, strengths, aspirations and opportunities.
- The critical developmental process involves highlighting, mapping, connecting and celebrating the diverse range of community assets; and harnessing these connected assets for action that creates and strengthens caring and inclusive communities.
- The strength of the community is directly proportional to the level that the diversity of its residents' desire, and are able to contribute their abilities and assets to the wellbeing of their community. Every single person has capacities, abilities, gifts, and ideas, and living a good life dpends on whether those capacities can be used, abilities expressed, gifts given and ideas shared.
- In every community, something works. Instead of asking "what's wrong, and how to fix it", ask "what's worked and how do we get more of it?" ABCD generates energy and creativity.
- Community residents must be valued as co-producers and citizens, rather than being viewed as clients, consumers and customers. They act responsibly when they care about and support what they create.
- Creating positive change begins simply with the act of conversation.
- Having fun must be a high priority in all community-building efforts.
- The central factor to sustainable change is local leadership and its continuous development and renewal.
- The starting point for change is always mindset and a positive attitude.

'Go to the people. Live among them. Learn from them. Love them. Start with what they know. Build on what they have. But of the best leaders when their task is done, the people will remark – "We have done it ourselves."'

Lao Tzu, 530 BC, China

Reference: www.bankofideas.com.au

Appendix 8: Content Reviewers

Emeritus Professor Hans Lambers

Hans Lambers was Professor of Plant Biology at The University of Western Australia. From 2002–2012 he was Head of the School of Plant Biology at The University of Western Australia. In 2006, he started the Kwongan Foundation for the Conservation of Australian Native Biodiversity.

"*I have read your document, and wish to congratulate you with what you have achieved. It is a document you can be proud of. I do hope that other Towns and Cities in Perth will follow your example.*" E/Prof Hans Lambers

Peter Kenyon

Peter Kenyon is the founder and current director of Bank of I.D.E.A.S., an agency that specialises in the facilitation of community building and consultation initiatives based upon the principles of Asset Based Community Development (ABCD). Over the last four decades he has worked with more than 2000 communities throughout Australia and overseas seeking to facilitate fresh and creative ways that stimulate community and local economic renewal. He is motivated by the desire to create healthy, caring, inclusive, connected, sustainable and enterprising communities and local economies.

"*The Bank of Ideas applauds the selection and articulation of an ABCD framework, which increasingly is being acknowledged and utilised by local governments and community development agencies, nationally and globally as a relevant tool for effective community engagement and ownership.*" Peter Kenyon

Dr Courtney Babb

Dr Courtney Babb has academic interests with a focus on the social sustainability of cities, urban mobility and accessibility, and issues of governance in urban planning. He is a lecturer in the Department of Planning and Geography at Curtin University and teaches units in transport and land use integration, planning for sustainability, participatory planning, and planning research design and methodologies.

He has previously been employed as a research associate with the Planning and Transport Research Centre (PATREC) looking at issues relating to the integration of land use and transport planning in urban environments.

"*The background sections are well researched and effectively frame the problems of urban tree canopy loss. There are some great initiatives included in the strategic actions. I particularly liked the strong focus on collaboration and participation, and the inclusion of a range of actions to support broader urban ecosystem function, reflected in the tree diversity, focus on soil health and water quality strategic outcomes. The inclusion of ongoing monitoring of urban canopy will allow for policy learning and adaptation to ensure the right mix of mechanisms is put in place for the long term protection and enhancement of urban tree canopy in the TOVP.*"
Dr. Courtney Babb

16. About Us

The Urban Forest Strategy Working Group

The Urban Forest Strategy Working Group is made up of Town officers and volunteers of the Vic Park Collective and Vic Park Trees, assisted by other local groups and residents.

urbanforeststrategy@vicpark.wa.gov.au

The Vic Park Collective Inc.

The Vic Park Collective is an enthusiastic, like-minded bunch of locals who live, work and play around Victoria Park and share a love of our vibrant inner-city suburb. Driven by genuine passion to make significant and positive changes, the group is a collective voice of the neighbourhood and works to encourage collaborations between businesses, residents and the Town of Victoria Park to make the area "uniquely awesome".

The Collective acknowledges Victoria Park's rich cultural history, diverse social make-up and the aspirations of local people to build a dynamic and prosperous community. We hope to inspire and excite in a way that makes people want to get involved in their own community. The Vic Park Collective was the brainchild of two Victoria Park locals, who live and work in the area. In 2013 they started the Collective, inviting others to join conversations and projects to make the area more fun, interesting and sustainable.

www.vicparkcollective.com

Vic Park Trees

Vic Park Trees (VPT), previously known as The Victoria Park Urban Tree Network, is part of a growing collective of likeminded independent groups in Perth, evolving in response to development pressures impacting on tree canopy cover. Our Victoria Park branch, established in 2016 is comprised of a dedicated team of locals from various backgrounds and professions. The group is pro-development, pro-environment and pro-community. We have no ties to any political ideology and instead choose an inclusive and positive method of facilitating change in the community through positive action.

Much of the work at the VPT revolves around advocacy for improving the tree canopy and vegetation within the Town of Victoria Park. We keep a close watch on development applications made through the Town and make submissions to council to ensure that trees and green space are not adversely affected. We also facilitate some guerrilla gardening projects around the Town and assists with community planting, education and capacity building.

www.vicparktrees.com

Town of Victoria Park

Urban Forest Strategy

TOWN OF VICTORIA PARK