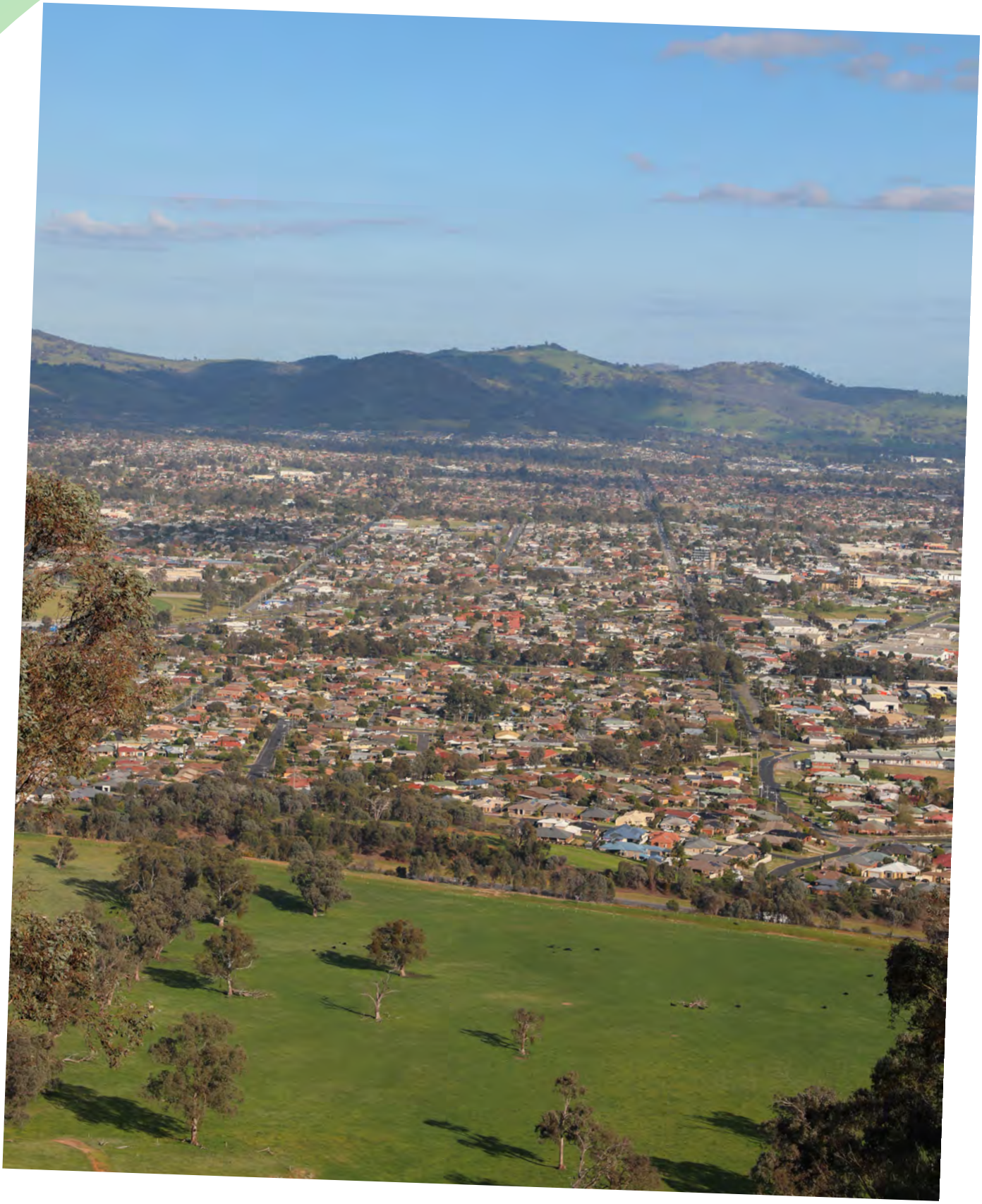
CITY OF WODONGA VIC

APPENDIX A



Wodonga Open Space Strategy Background Report



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1 Introduction

1.1 Regional context

Wodonga is located in North East Victoria about 300km north-east of Melbourne, 350km south-west of Canberra and 560km south-west of Sydney. It is one of 10 regional cities in Victoria and plays an important role in the broader regional catchment as a retail, employment, education, community services and recreation hub, servicing more than 175,000 people.[1]

Its neighbouring city Albury is located north of the Murray River in NSW. Together they form a strategic hub situated between Australia's two largest cities, Melbourne and Sydney, along the Hume Freeway and the Melbourne to Sydney rail line. Albury-Wodonga services a regional community of more than 90,000 people and generates a combined gross regional product in 2016 of $5.895 billion[2]. In late 2017, Albury and Wodonga signed a cross-border agreement Two Cities One Community and pledged to work together to plan, develop and grow the region.[3]

1.2 History

TRADITIONAL OWNERS

The region has a rich Aboriginal heritage shared by the Wiradjuri (north of Murray River) and Dhudhuroa (to the south) and is located on what was an important seasonal travel route and gathering location for various tribes.[4] Areas of Aboriginal cultural heritage sensitivity (mapped by the Office of Aboriginal Victoria) are typically located along local rivers and on the hills.[5] Significant cultural sites and artefact scatters are located within various areas of the municipality and are protected under the national *Environmental Protection and Biodiversity Conservation Act 1999, Aboriginal Heritage Act 2006,* and *Aboriginal Heritage Regulations 2018.*

The council's vision in the *Wodonga Aboriginal Reconciliation Action Plan 2016* is "to be a leading regional city where collectively through community leadership, mutual respect and relationships, our people experience and have opportunity to enhance social, cultural, economic and environmental prosperity". The present-day involvement of the local Aboriginal community and their continuing culture and connection to Country is vital for the region's public open spaces.

CONTEMPORARY HISTORY

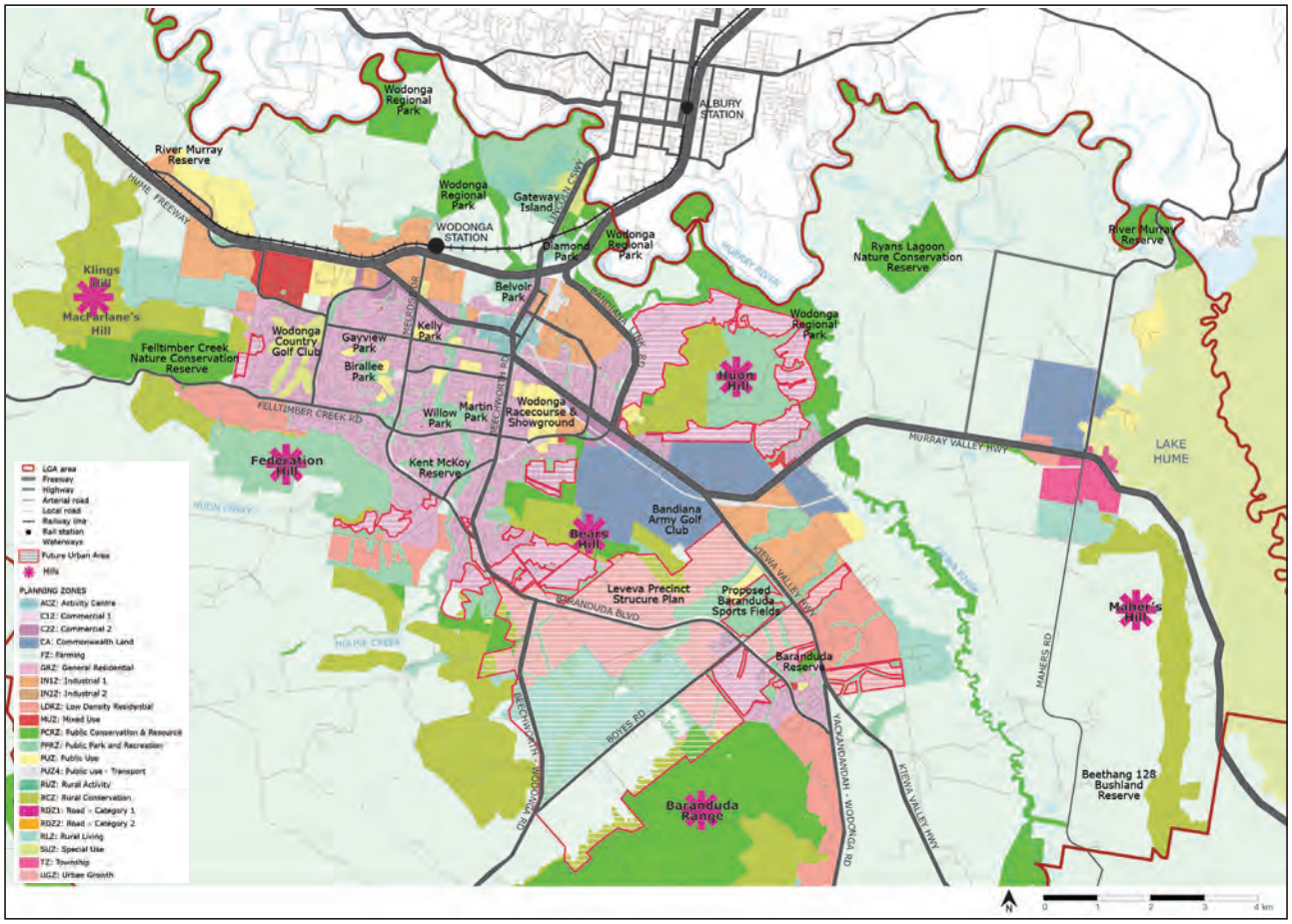
The Murray River, or Millew to the Aboriginal community, is a significant feature for the region. In 1824, European explorers discovered what they called the Hume River, which became an important transport and trading route. Albury and Wodonga became important customs posts, in particular after the first bridge across the Murray River was built in 1860, which supported increased commerce between Sydney, Melbourne and Adelaide.

In 1972, the Whitlam Federal Labor Government identified Albury-Wodonga as a suitable location to implement a decentralisation policy, in expectation of population growth across Australia at the end of the 20th century.[6] The Albury Wodonga Corporation (AWC) was appointed to oversee development and was critical in establishing Wodonga as a key regional city and co-ordinated land supply and housing from 1973 to 2000s.[7]

1.3 Local context

Wodonga is characterised by its beautiful natural setting surrounding hillsides, defined urban centre and mix of residential and rural living areas (refer Figure 14). The AWC left a legacy via their holistic city planning and protection of large open spaces, native vegetation, mature trees and surrounding hillsides, which provide distinctive landmarks and vantage points that influence the form and character of the city.

The municipality is located within Australia's largest river catchment, the Murray Darling Basin, which is of National Trust significance. The city is bordered by a series of hills and valley to the west and south, Lake Hume on the east and the Murray River to the north. The Murray River, Kiewa River and Yackandandah Creek floodplains provide fertile, high value agricultural land, and are protected from development and fragmentation. All of these natural features combine to create a unique attraction for locals and visitors alike, and provide important visual, recreational and tourism benefits for the city.[8]



▲ Figure 14: Local context and planning zones map (refer Appendix F for larger map)

1.4 Demographics

Wodonga is one of Victoria's fastest-growing regional cities. As of 2017, Wodonga's estimated population was 40,819, and is forecast to grow by 37.56 per cent to more than 57,000 by 2036.[9] This equates to about 330 new dwellings annually expected to be built between 2016 and 2036 (refer Figure 15).

The percentage of older people (over 60) and younger people (under 24) are both anticipated to double by 2036. The city has a young demographic (average age of 37) and the largest forecast increase in persons between 2016 and 2026 is estimated for ages 10 to 14, which is expected to increase by 827 persons. In addition, in 2016 5.8 per cent of the population reported a disability and need for assistance in their day-to-day lives, with a majority being over the age of 75.[10] Therefore, public open space and municipal facilities must simultaneously meet the needs of an aging population, an increased number of youth, and younger families moving into future subdivisions.[11]

In terms of diversity, about 9.5 per cent of the population is born overseas, 4.7 per cent speak a language other than English at home, and about 2 per cent assess themselves as being Aboriginal and Torres Straight Islanders.[12]

The strategy aims to manage the public open space needs of Wodonga's growing and changing population, including providing opportunities for people of all ages, cultures and abilities to have access to nature and outdoor recreation for improved community health and wellbeing. This also means increased demand and impact on existing public open spaces for both formal and informal recreation, and therefore requires provision of quality, quantity and diversity of public open space types.

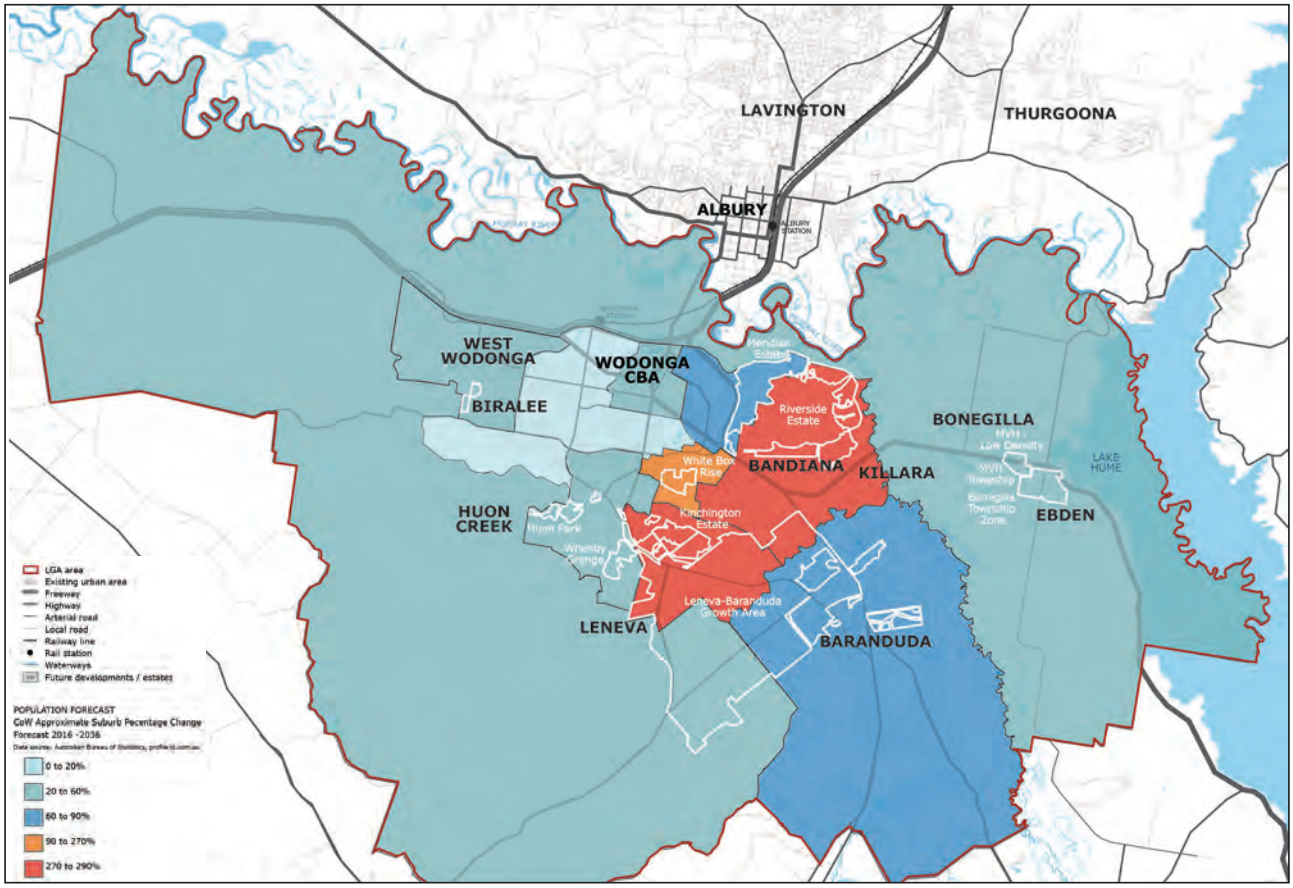
1.5 Growth areas and future development

The urban areas within Wodonga include a mix of residential, industrial, and commercial uses, with recent improvements to the central business area (CBA), such as the relocation of the railway line outside of central Wodonga. Low Density Residential and Rural Living areas are in West Wodonga, east of Huon Hill, Bonegilla, Baranduda and Leneva, retaining a rural landscape character. Recent and future growth in Wodonga is primarily on greenfield sites, east and southeast of the CBA, including the estates of White Box Rise, Riverside Estate and Whenby Grange, and future developments in the Leneva-Baranduda Growth Area.

Based on 2016 to 2036 population forecasts for Wodonga by the Australian Bureau of Statistics (see Figure 2) the largest growth areas will be central Wodonga, Bandiana and northern Leneva.

The Leneva-Baranduda growth area will accommodate a large portion of Wodonga's future growth. The area comprises 1062 ha of land which will accommodate 6153 new dwellings for 15,700 residents. The precinct will include a town centre, jobs, education, retail and entertainment facilities, two future government schools, a network of local parks, a cycling and pedestrian network, and the regionally significant Baranduda Fields sport and recreation precinct. The strategy incorporates public open space requirements of the PSP, including the public open space contributions rate, conservation areas and recreation facility requirements.

As population growth continues in the region, it is important to accommodate different types and sizes of development which is supported by sufficient infrastructure, services and amenity. Therefore, the strategy provides an assessment of public open space needs and preferred public open space forms in new growth areas, and makes recommendations regarding appropriate public open space contribution levels and mechanisms.



▲ Figure 15: Forecast population and developments map[13] (refer Appendix F for larger map)

1.6 Policy and strategy context

The strategy is guided by and interfaces with numerous federal, state and local policies, strategies and acts. The Planning Policy Framework (PPF) and the Local Planning Policy Framework (LPPF) in the *Wodonga Planning Scheme* provide high level objectives with regard to the importance of public open space. It also provides statutory planning controls including zone and overlay controls, Development Plan Overlay (DPO) requirements, and Clause 53.01 *Public open space contribution and subdivision requirements*.

The strategy acts as an overarching planning document for all council strategies and documents related to public open space. It also complements other aligned council plans and strategies that support community, environmental and economic wellbeing.

However, for key public open space definitions and requirements, the strategy supersedes information outlined in other council documents.

- Public open space (public open space) - land in public ownership and/or under public management that is freely accessible and provides recreation, nature conservation and leisure benefits. This includes public parks, gardens, reserves, waterways, linear corridors for walking and cycling, publicly owned forecourts and squares, and any publicly owned sporting venues. These spaces are typically reserved in the planning scheme as Public Park and Recreation Zone (PPRZ). It does not include encumbered open space.
- Encumbered open space – land that is constrained for development purposes (for example,. easements for power/transmission

lines, sewer, gas, underground services; retarding basins/wetlands; waterways/ drainage; landfill; conservation, and protected vegetation or heritage areas). This land can be used for a range of activities (e.g. walking and cycling trails) but is not credited as public open space for public open space contributions. For further explanation on why encumbered space is not accepted, refer to the strategy's Public Open Space Standards.

- Public open space catchment - A 400-metre walking catchment from an existing public open space is used to assess gaps in Wodonga's public open space provision, as 400 metres is widely accepted as a five minute walking distance.[14]
- Public open space minimum size - New public open space shall be a minimum area of 0.5 hectares (5000m2) and minimum dimension of 20 metres in width (similar to other states and national requirements for example,.
- NSW Greener Places Design Guide and the Heart Foundation Blueprint for an Active Australia).[15] This ensures sufficient public open space area to accommodate demand, functional use, adaptability and long-term maintenance efficiency.
- Public open space gradients and flooding - land accepted as new public open space contribution must be less than 1 in 20 (5 per cent) gradient[16] and must be above the 1 in 20-year flood level.



2 Planning Context Summary

2.1 Policy and Strategy Context

The strategy is guided by and interfaces with numerous federal, state and local policies and strategies and acts. The relationship to these documents is illustrated in Table 6 and is incorporated in relevant sections of the strategy.

▼ Table 11: Policy and Strategy Context

Federal Government Legislation and Policies	State Government Legislation and Policies
Aboriginal and Torres Strait Island Heritage Protection Act 1984 *Archaeological and Aboriginal Relics Preservation Act 1972* *Australian Heritage Commission Act 1975 Environmental Protection and Biodiversity Conservation Act 1999* *Disability Discrimination Act 1992Australian Heritage Commission Act 1975* *Environmental Protection and Biodiversity Conservation Act 1999 Disability Discrimination Act 1992*	*Aboriginal Heritage Act 2006* *Catchment and Land Protection Act 1994* *Climate Change Act 2017* *Conservation, Forests and Land Act 1987* *Flora and Fauna Guarantee Act 1988* *Local Government Act 2020* *Planning and Environment Act 1987 Crown Land (Reserves) Act 1978* *Planning Practice Note 70* *Precinct Structure Plan Guidelines* *State Planning Policy Framework* *Subdivision Act 1988* *Victorian Climate Change Framework & Adaptation Plan 2017-2020*
Local Government Policies and Strategies	
Age Friendly City Strategy *Asset Management Policy* *Child Friendly City Framework 2012-2016* *Youth Strategy 2019-2023* *Community Engagement Policy* *Environmentally Sustainable Design for Subdivision in Regional Victoria 2018* *Infrastructure Design Manual (IDM) and Sustainable Infrastructure Guidelines* *Municipal Public Health and Wellbeing Plan* *Open Space Audit (draft) 2018* *Open space uses leases and licensing agreements* *Physical Activity Strategy 2015-2020* *Sport and Recreation Plan 2014-2040* *Play Environments in Wodonga 2014 Playground Strategy* *Planning for Wodonga Hills Strategy* *Regional Natural Environment Strategy*	*Safety, Inclusion and Equity Strategy* *Gender Equity Strategy* *Street Tree Policy & Nature Strips Policy* *Sustainable Wodonga Strategy 2014-2020* *Walk Wodonga Booklet and Wodonga Pathways Booklet* *Wodonga Environmental Lands Bushfire Management Strategy 2015* *Wodonga Climate Change Adaptation Action Plan 2017-2021* *Wodonga Council Plan 2017-2021* *Wodonga Future Climate Projection* *Wodonga Growth Strategy 2016* *Wodonga Housing Strategy 2018* *Wodonga Integrated Transport Strategy (WITS)* *Wodonga Planning Scheme & Amendment C123 LPPF Rewrite + Clause 21.03-4 Public Open Space* *Wodonga Public Art Strategy*

Local Site-based Plans	
Leneva Baranduda Precinct Structure Plan *Leneva Baranduda Native Vegetation Precinct Plan* *Leneva – Baranduda Whole of Water Cycle Management Plan* *Planning for Wodonga Hills Strategy and associated master plan* *Wodonga Retained Environment Network Strategy (WREN)*	Master plans for major parks and playing fields: • Baranduda Reserve MP • Baranduda Fields MP • Belvoir Park MP • Birallee Park MP • Gateway Island MP • Gayview Park MP • Kelly Park MP • Martin Park MP • Wodonga Sports and Leisure Centre MP • Wodonga Racecourse MP • Willow Park MP

2.2 Planning Framework – Wodonga Planning Scheme

Within the *Wodonga Planning Scheme*, the following policies are relate to POS provision and planning.

Planning Policy Framework (PPF)

The PPF seeks to ensure that the objectives of planning in Victoria (as set out in Section 4 of the *Planning and Environment Act 1987*) are fostered through appropriate land use and development planning policies. Relevant policies contained within the PPF that are relevant to public open space planning in Wodonga are outlined following.

Clause 11.02-3S – Sequencing of development

The objective of Clause 11.02-3S is "to manage the sequence of development in areas of growth so that services are available from early in the life of new communities". A key strategy of this clause is to require new development to make financial contributions to the provision of community infrastructure.

Clause 12.01-1S – Protection of biodiversity

The objective of Clause 12.01-1S is "*to assist the protection and conservation of Victoria's biodiversity*", thorough strategically planning for the protection of important areas of biodiversity, and establishing and protecting networks of green spaces and native vegetation corridor projects.

Clause 15.02-1S – Energy and resource efficiency

The objective of Clause 15.02-1S is "to encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions".

Strategies to achieve this aim include supporting travel by walking and cycling, greening built and open spaces with vegetation, and encouraging the retention of existing vegetation and the planting of new vegetation as part of development and subdivision proposals.

Clause 15.01-3S Subdivision design

The objective of this policy is to ensure the design of subdivisions achieves attractive, safe, accessible, diverse and sustainable neighbourhoods. A key strategy of the policy relates to creating landscaped streets and a network of open spaces to meet a variety of needs with links to regional parks where possible.

Clause 15.01-4S Healthy neighbourhoods

The objective of this policy is to foster healthy and active living and community wellbeing. Key strategies include:

- Connected, safe, pleasant and attractive walking and cycling networks that enable and promote walking and cycling as a part of daily life;
- Conveniently located public spaces for active recreation and leisure; and,
- Amenities and protection to support physical activity in all weather conditions.

Clause 18.02-1S – Sustainable personal transport

Clause 18.02-1S aims to "promote the use of sustainable personal transport", by ensuring new and existing development areas provide opportunities for walking and cycling areas that are safe and attractive to users.

Clause 19.02-6S Open space

This is the key policy guiding provision of open space in the state, with the objective of establishing, managing and improving a diverse and integrated network of public open space that meets the needs of the community. Strategies relate to the form, location, accessibility and quality of open space. The Wodonga Open Space Strategy has been prepared to align with the policy objective and supporting strategies.

Clause 19.03-1S – Development and infrastructure contributions plans

The objective of Clause 19.03-1 is to encourage the use of development and infrastructure contribution plans, facilitated under the *Planning and Environment Act 1987*, which collect development contributions to assist in the timely provision of planned infrastructure to communities. The policy is supported by a series of documents including the *Development Contributions Guidelines* (DSE 2003) and *Ministerial Direction on the Preparation and Content of Development Contribution Plans and Reporting Requirements for Development Contribution Plans*.

Local Planning Policy Framework (LPPF)

The LPPF expands upon the provisions of the PPF and applies local context. A key objective of the LPPF is to ensure a growing Wodonga is supported by and has access to a range of high quality, diverse and interconnected open spaces which meet the needs of the community. Relevant policies contained within the LPPF are outlined following.

Clause 21.03-4 – Public open space

Clause 21.03-4 described Wodonga's open space network as a defining characteristic of the city, while recognising that recent development lacks high quality and well-connected system of open space. In particular, the policy identifies the ad hoc nature and limited usability of new open space provision.

This clause identifies that development of an Open Space Strategy is required to "assist the implementation and delivery of sustainable neighbourhoods', through 'an assessment of open space needs, preferred forms at a city-wide, district and neighbourhood level, and recommendations regarding appropriate open space contributions".

This clause identifies a number of strategies which are relevant to producing an Open Space Strategy, including the following.

- Encourage an equitable distribution of active open space which is suitably sized and located to accommodate active recreation.
- Require public open space embellishments including landscaping and infrastructure to be provided prior to transferring it to the council.
- Avoid the contribution of land for passive open space, which is not suitable for an open space function including as a result of poor usability or higher maintenance costs.
- Maximise linkages with local and regional linear open spaces, through reserves and along waterways for walking and cycling trails, provided it does not compromise environmental values.
- Require development abutting open space to be designed to front rather than backing onto open space and to use roads to abut reserves to provide an appropriate buffer.

- Require subdivisions to facilitate the continued expansion and improvement of the cycle path network.

Clause 21.04-1 - Environment

Clause 21.04-1 discusses the picturesque natural environment of the city of Wodonga, including the former AWC's Forward Tree Planting Program, WREN Strategy, and the Leneva Valley and Baranduda Native Vegetation Precinct Plan.

Relevant strategies aim to preserve, improve and grow the remnant native vegetation in WREN areas in the context of further growth and rezoning in the city of Wodonga.

Clause 21.04-2 - Significant landscapes - hillsides

Clause 21.04-2 identifies the importance of Wodonga's hillsides to the community, with the objective of the clause being "to safeguard the visual and natural values of hillside landscapes".

The clause seeks to protect and maintain the system of ridgelines and hillsides and to "discourage residential development above nominated contour levels which are based on the keyline - major break in slope - between the hillface and valley".

Clause 21.11-2 - Physical and community infrastructure

Clause 21.11-2 describes the historically ad-hoc method of collecting contributions from developers for infrastructure services and community facilities. Strategies listed to combat this issue include the following.

- Prepare a development contribution plan (or equivalent) for the Leneva and Baranduda growth area to obtain contributions for physical and community infrastructure.
- Ensure that rezoning of land from non-urban to urban, includes a development contributions plan (or equivalent).
- Collect, manage and expend development contributions on a timely and equitable basis.

Statutory planning controls

The following section outlines key elements of the planning scheme that exercise statutory controls over Wodonga's existing public open space.

Planning Zone Controls

Planning zone controls are administered through the Wodonga Planning Scheme and broadly control the desired land uses across the city. Refer to Figure 1 for a map of the planning zones currently applied in Wodonga.

The zones that are generally applied to large open space areas is the Public Conservation and Resource Zone (PCRZ) and Public Park and Recreation Zone (PPRZ).

- The PPRZ is applied to areas primarily used for public recreation and activities and is currently applied to several hills and recreation areas in the Wodonga township.
- The PCRZ is often used for areas of conservation that are held in public ownership (ie. Crown Land), and is applies to a number of hills and areas of open space in Wodonga.

Both zones allow for recreational and sporting uses, and restrict commercial, residential and industrial land uses.

Planning Overlay Controls

Planning overlay controls are also applied through the planning scheme, and control specific aspects of land, such as vegetation, heritage, or flood risk. A number of overlays are applicable to open space areas in Wodonga, such as the Environmental Significance Overlay (ESO), Land Subject to Inundation Overlay (LSIO), Vegetation Protection Overlay (VPO) and Significant Landscape Overlay (SLO).

Clause 43.04 - Development Plan Overlay (DPO)

The purpose of the DPO is "to identify areas which require the form and conditions of future use and development to be shown on a development plan before a permit can be granted to use or develop the land' and 'to exempt an application from notice and review if a development plan has been prepared to the satisfaction of the responsible authority".

The DPO is used across several greenfield subdivisions in Wodonga, including the following examples.

- Schedule 1 (DPO1) – 95 Kinchington Rd. Part of the general residential development area on the Kinchington Rd and Streets Rd development corridor located to the south-west of central Wodonga. This overlay does not specify public open space requirements, however, a S173 agreement on the land enabled the inclusion of "open space to council's satisfaction of no less than 1200sqm" in a revised and approved Development Plan.
- Schedule 2 (DPO2) – Huon Park. A major Low Density Residential Zone development situated along Huon Creek Rd, south-west of Wodonga. Lack of clarity in the planning scheme resulted in encumbered land being included in the public open space provision incorporated into the approved Development Plan.
- Schedule 11 (DPO11) – White Box Rise Estate. Located at the eastern extent of the existing Wodonga urban area, the DPO11 specifies that the approved Development Plan must provide an overall scheme of landscaping and preservation/regeneration of existing native vegetation.

Clause 53.01 – Public open space contribution and subdivision

Clause 53.01 states that: "A person who proposes to subdivide land must make a contribution to the council for public open space in an amount specified in the schedule to this clause (being a percentage of the land intended to be used for residential, industrial or commercial purposes, or a percentage of the site value of such land, or a combination of both)."

The schedule to Clause 53.01 stipulates that the amount of contribution for public open space for subdivisions within all residential zones is 5 per cent. This 5 per cent is generally land area, but can be substituted with payments equivalent to land value. Also worth noting, the 5 per cent public open space contribution requirement does not cover industrial zoned land.

Type or location of subdivision	Amount of contribution for public open space
All residential zones	5 per cent

Notably, the Wodonga Planning Scheme does not define public open space which can lead to varying interpretations of what should be considered under this definition. (For instance,. whether encumbered land, which can be unsuitable for use as public open space, is considered to contribute to this 5 per cent). Other councils have rectified this issue through a number of methods.

Including provision in respective Local Planning Policy Frameworks for minimum public open space requirements. For example, Moonee Valley City Council have included a "public open space contribution' clause at Clause 22.02 of the Moonee Valley Planning Scheme. This clause outlines the policy basis for seeking public open space contributions at Clause 53.01, as well as setting out minimum dimensions and characteristics of land to be contributed, including that this land should not be "unduly restricted by services or easements".

- Including their Open Space Strategy or Development Contributions Plan as an Incorporated Document at the schedule to Clause 72.04, or as a reference document within the Local Planning Policy Framework, and specifying the land that may be considered public open space within these documents.

3 Existing public open space

3.1 Existing public open space recreation and uses

The municipality has a variety of public open spaces, recreation facilities, play spaces and environmental lands. It is helpful to understand how Wodonga's public open space is currently used, in order to plan for future provision of public open space and balance the diverse needs of the community (for example, formal versus informal recreational offerings). This section outlines the existing types of recreational uses, which have informed the public open space "Function" categories (refer Section 5.0 and Appendix B regarding the strategy's Public Open Space Classification Framework).

Council documents such as the *Sport and Recreation Plan, Physical Activity Strategy* and *Wodonga Playground Strategy*, outline various types of public open spaces, playgrounds and recreational facilities, programs and services provided in the municipality and recommended actions for improvements. There are also various public open spaces that are bookable for gatherings, events and functions (for instance,. Junction Square, Gateway Lakes, the amphitheatre at Gateway Village).

The strategy aligns with these relevant strategies. For example, in the *Sport and Recreation Plan*, recreational facilities are broken into either organised or non-organised categories.[17] For the strategy, these public open spaces uses are defined as formal recreation and informal recreation as outlined below.

Public Open Space for Formal Recreation (organised) sport and active recreation facilities, programs and services which might require membership and/or fees to use. Examples include:

- Stadiums and turf sport grounds (Australian Rules football, soccer, rugby and cricket);
- Aquatic centres;
- Sport facilities (motorcycles, racecourses);
- Outdoor sports courts (tennis, hockey and netball);
- Active recreation spaces (e.g. event/group cycling, running or fitness groups);
- Equestrian activities and centres; and,
- Neighbourhood centre recreation programs.

This term covers these uses defined in the *Wodonga Planning Scheme* - Major Sports and Recreation Facility and Outdoor Recreation Facility.

Public Open Space for Informal Recreation (non-organised) recreational offers and/or facilities that do not require fees or memberships (and are not covered by the *Sport and Recreation Plan*). Examples include:

- Informal recreation spaces (kicking a ball, frisby);
- Playgrounds, skate parks and recreational cycling facilities;
- Leisure or relaxation (picnics, open grass areas);
- Public open space adjoining waterways, including boating and fishing;
- Community gardens (two existing); and,
- Paths and tracks (cycling, walking, dog walking, trail running, mountain biking, rail trails).

This term covers these uses defined in the *Wodonga Planning Scheme* - Informal Outdoor Recreation and Open Sports Ground.

Wodonga has 17 council-owned and/or managed recreation public open space clusters, as outlined in the table below:

Athletic Complex	La Trobe soccer facility
Baranduda Fields	Martin Park
Baranduda Reserve	Melrose Oval
Belvoir Park / Sumsion Gardens	St Monica's oval
Birallee Park	Willow Park
Diamond Park	Wodonga Aquatics Venue and Exercise Space (WAVES)
Gayview Park	Wodonga Racecourse and Recreation Reserve
Gateway Island (Gateway Lakes)	Wodonga Sports and Leisure Centre
Kelly Park	

3.2 Environmental land

Historically in Wodonga, a strategic approach has been applied to the protection of areas of environmental value. As a result there is a large estate of environmental land in the municipality managed by the council and Crown land managed by Parklands Albury Wodonga. This includes the hills, the Wodonga Retained Environmental Network (WREN) land and other conservation areas (such as river frontages and native vegetation offset sites).

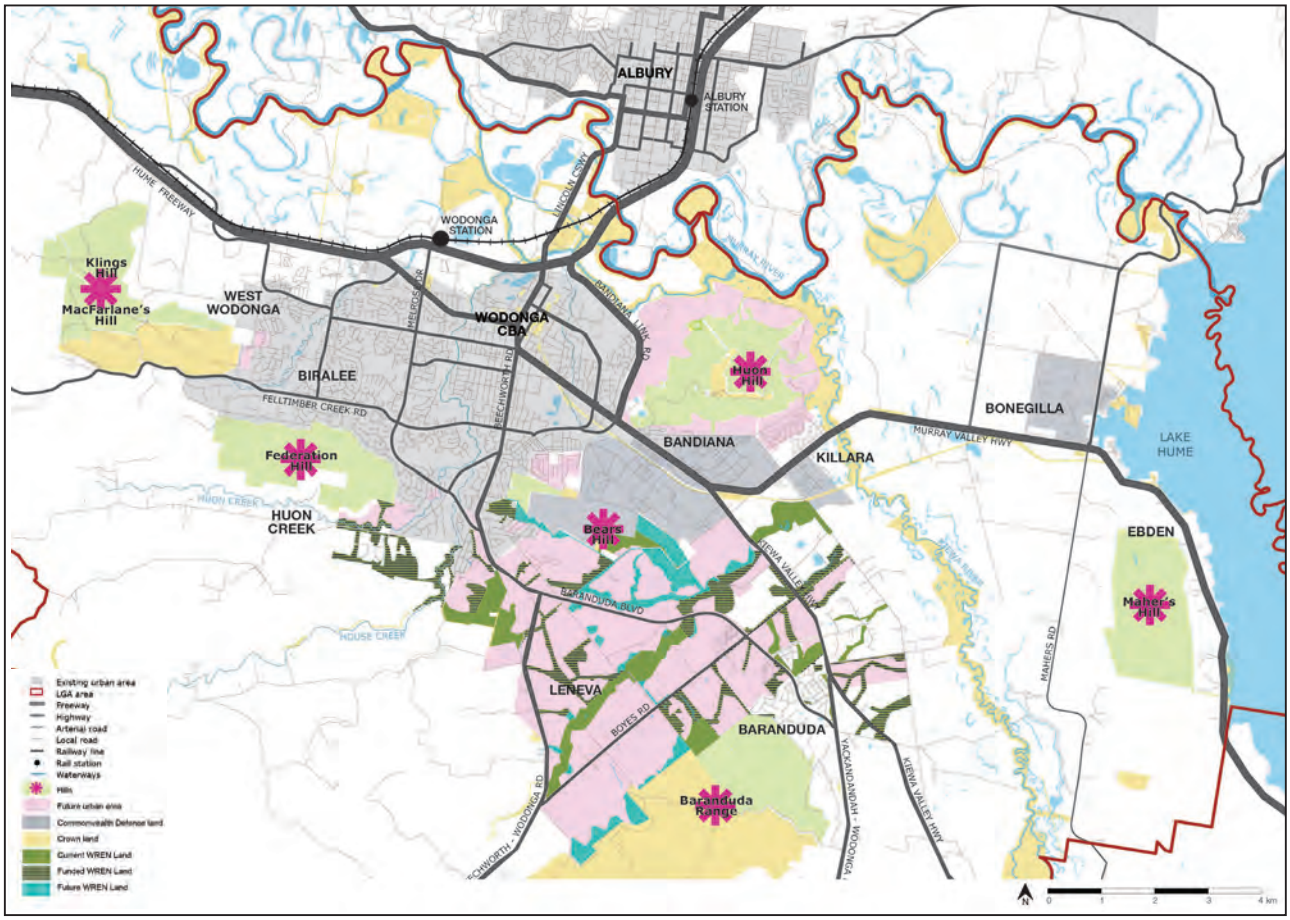
In total there is 3232 ha of environmental land across the municipality of which council is responsible for management of 1569 ha (refer to Table 1).

These lands are summarised as follows (refer Section 7.5 for more detail).

- The hills - Six hills surround Wodonga - Federation Hill, Huon Hill, Bears Hill, Mahers Hill, Baranduda Range and Hunchback Hill Complex (includes Klings Hill Swainsonia Reserve and McFarlanes Hill). Their significance is recognised in the *Wodonga Planning Scheme* - Environmental Significance Overlay (ESO2) and the *Municipal Strategic Statement*.
- WREN – The AWC, in partnership with the state government and the council, prepared the *WREN Strategy* in 2006 and 2007, as a threatened species and habitat conservation strategy, for the planned loss of native vegetation as development occurs throughout the Leneva Valley and Baranduda growth area. The WREN land is given legal protection and incorporated into the *Wodonga Planning Scheme* as Schedule 1 to Clause 52.16 *Native Vegetation Precinct Plan*.

The Regional Natural Environment Strategy (RNES) will focus on planning for Wodonga's environmental lands and provide a framework for the council and the community to enhance, protect and promote the region's natural assets and biodiversity.

The strategies are complementary documents in regards to public open space values and objectives. However, while environmental lands contribute to public open space, their primary role for ensuring conservation are distinct from those expected of urban public open spaces. For example, environmental lands can be remote or inaccessible and minimally serviced or maintained and therefore unable to provide adequate public open space requirements or functions. Therefore, for the purposes of the strategy they have not been calculated in the total figures as public open space.



▲ Figure 16: Environmental Land - Hills and WREN (refer Appendix F for larger map)

▼ Table 9: Environmental land categories

Category	Area (ha)	Note
Hills*	2524	Council-managed hills [Federation, Huon, Mahers, Bears, Baranduda Range, and Klings Hill (part of the Hunchback Hill Complex)] = 1569 ha Crown/Commonwealth/PV managed hills Huon, McFarlanes (part of the Hunchback Hill Complex), Bears Hill and Baranduda Range = 955 ha
WREN	708 current + 203 future	708 ha in current reserves (600 council-managed, 108 Crown managed) Current WREN land was transferred to the council and Crown with funding to be managed as offsets from development in Baranduda and Leneva Valley. Future WREN land is proposed to transfer from private to public ownership as development occurs, however, currently no funding mechanism exists for these lands.

Category	Area (ha)	Note
Offset sites	434	Land parcels secured for conservation purposes that are owned by, or will be transferred to the council, typically with land management agreements. These sites occur within other reserves –Hills, WREN, White Box Rise reserves and some stand-alone reserves.
Environmental Land Total	3232	Excludes future WREN land and offset sites (which are calculated as public open space within other environmental reserves)

*Source: Planning for the Wodonga Hills 2017

3.3 Public Open Space provision

At the time of preparation of this strategy, the total land identified as public open space in Wodonga was 429ha, which is 1.0 per cent of Wodonga's total municipal area (43,400 ha). This includes public open space owned managed by the council but excludes non-Council managed Crown Land and environmental land (3232 ha of Hills and WREN).

Rather than focus on a percentage of land, public open space strategies typically refer to provision of public open space per capita (hectares per 1000 people). The standard of 2.4 to 2.8 hectares of public open space per capita is commonly used in Australia. With the current rate of 10.5ha per 1000 people, Wodonga is above the average rate but similar to other regional Victorian municipalities, as shown in Table 10.

Given Wodonga's population is predicted to increase to 57,000 by 2036, public open space provision would decrease by 3.0ha per capita (down from 10.5ha to 7.5ha per capita) assuming no additional public open space is provided in that time.(Note: This figure does not take into account future public open space to be provided by the Leneva-Baranduda PSP). This rate reduction will be particularly relevant for growth areas of the municipality located south-east of central Wodonga and the CBA, which will require a greater focus on future provision of public open space in new development areas.

Given the above analysis, it is recommended the council focus on improving the quality and appeal of existing public open space reserves, in balance with provision of new public open spaces in developing areas, to service the existing and forecast population.

▼ Table 10: Public open space provision ratios – comparison of regional VIC municipalities

LGA	Hectares per 1,000 people	Proportion of public open space relative to total municipal area
Wodonga*	10.5	1.0 per cent
Mitchell Shire	54.8	0.7 per cent
Warrnambool Shire	32.5	8.8 per cent
Baw Baw Shire	8.5	0.1 per cent
Wangaratta	11.1	0.3 per cent

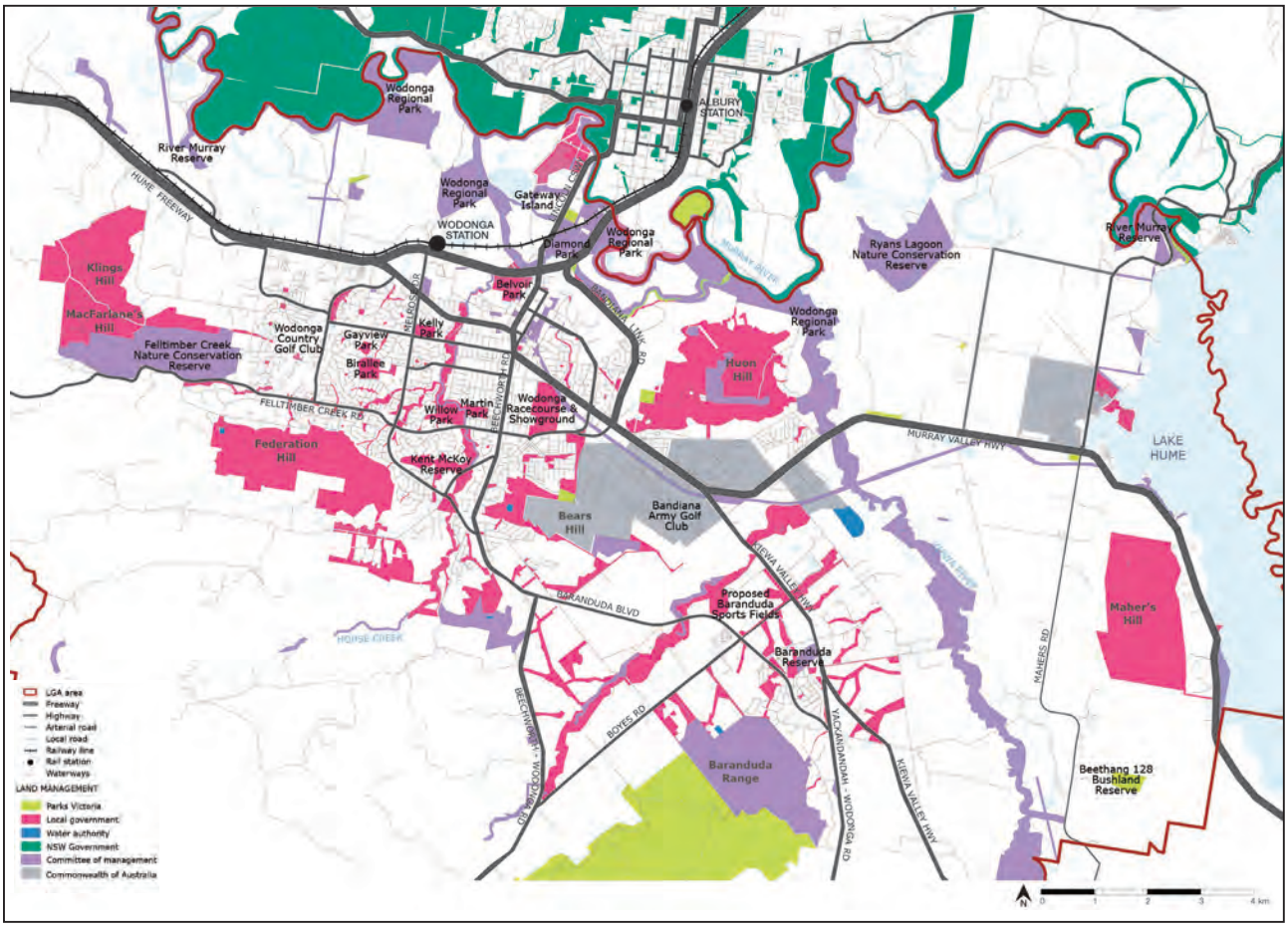
*Wodonga public open space provision calculations are based on the 2017 population estimate of 40,819 people and 43,400 ha Wodonga total municipal area and a total of 429ha of useable public open space (which excludes non-council-managed Crown Land and 3232ha of environmental lands).

3.4 Tenure and management

Tenure and management of existing public open space in Wodonga is varied including via council, DELWP, Parks Victoria, Parklands Albury Wodonga (PAW), and Department of Defence (Commonwealth land). User groups have entered into a variety of MOUs, leases or licenses and land use agreements to formalise access to and use of public open space.

A high portion of public open space is Crown land, including land along the Murray and Kiewa rivers, and hilltop reserves which are under various management arrangements.

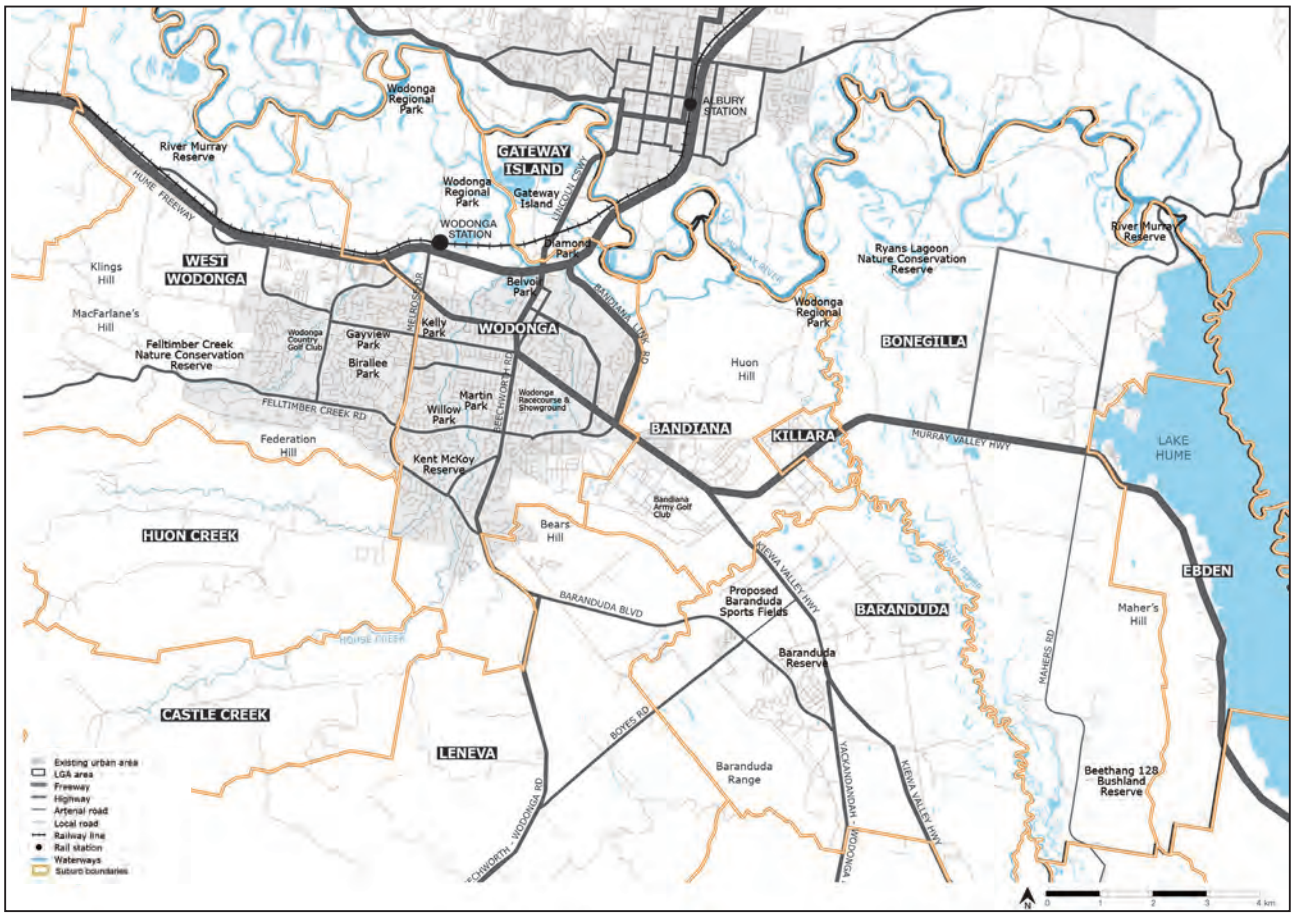
Large tracts of land at Bandiana in the south-east are owned by the Department of Defence and are used as the Albury Wodonga Military Area (AWMA). As Commonwealth land, this land is exempt from the requirements of the *Wodonga Planning Scheme* and its interface with adjacent public open space and future development areas may present a challenge in terms of co-ordination between Commonwealth and local government strategies.



▲ Figure 17: Land management map (refer Appendix F for larger map)

4 Gaps in public open space distribution

The following section identifies gaps in distribution of public open space across the municipality and contains recommendations to address these gaps. The analysis focuses on the higher density and future urban precincts (West Wodonga, Wodonga, Gateway Island, Bandiana, Killara, Baranduda, and Leneva), due to the challenge for the council to allocate resources and maintain public open space in lower density precincts. Refer Figure 6 for precinct boundaries, which are based on ABS data boundaries for the suburbs of Wodonga, noting that some residential estates can cross over two suburbs.



▲ Figure 18: Public open space gap analysis – suburb boundaries

4.1 Gap analysis methodology

The gap analysis used GIS mapping to assess existing public open space distribution and provide recommendations based on future need (forecast population Figure 15) in regards to public open space hierarchy and function (refer Appendix B – Public Open Space Classification Framework).

The gaps in public open space distribution were identified via GIS modelling which revealed areas that are not within a 400-metre walking catchment from an existing public open space (see Figure 6). The 400-metre catchment was used as it is widely accepted as a five minute walking distance.[18]

The modelling highlighted existing footpaths and trails that are within 400 metres from an existing public open space boundary. Walking distances from a public open space were not shown if no known footpath or trail exists.

The modelling excludes the following aspects.

- Routes with access to public open spaces blocked by significant barriers (eg. major roads, waterbodies or steep topographic grades).
- Rural, low density, and agricultural zoned land (eg. Bonegilla, Staghorn Flat, Ebden, Castel Creek).
- Public open spaces with an area less than 0.2 ha (Pocket Parks).
- Public open space classified as WREN land and vegetation offset sites. These lands do contain trails and will contribute to pedestrian connectivity in some circumstances. However, as they contain native vegetation that must be retained and play a key role in Wodonga's wider conservation strategy, they cannot be relied upon to contribute the public open space network.

In new development or growth areas (such as Leneva-Baranduda PSP) a different methodology was used to identify potential gaps in public open space provision, given there are no existing footpaths or trails. Public open spaces proposed in these areas are identified on the map and a 400-metre radius catchment distance is shown from the centre of each public open space (see Figure 6). This high-level analysis identifies potential gaps in future provision of public open space for these growth areas.

4.2 Gap analysis findings and recommendations

The analysis reveals opportunities to increase and improve the provision of public open space by providing additional public open space, or by improving pedestrian amenity and accessibility to existing public open spaces. In the case of the latter, additional public open space might not be required but improving accessibility (for instance,. installing paths or removing barriers) might address the gap in provision by increasing the permeability of the footpath and trail network.

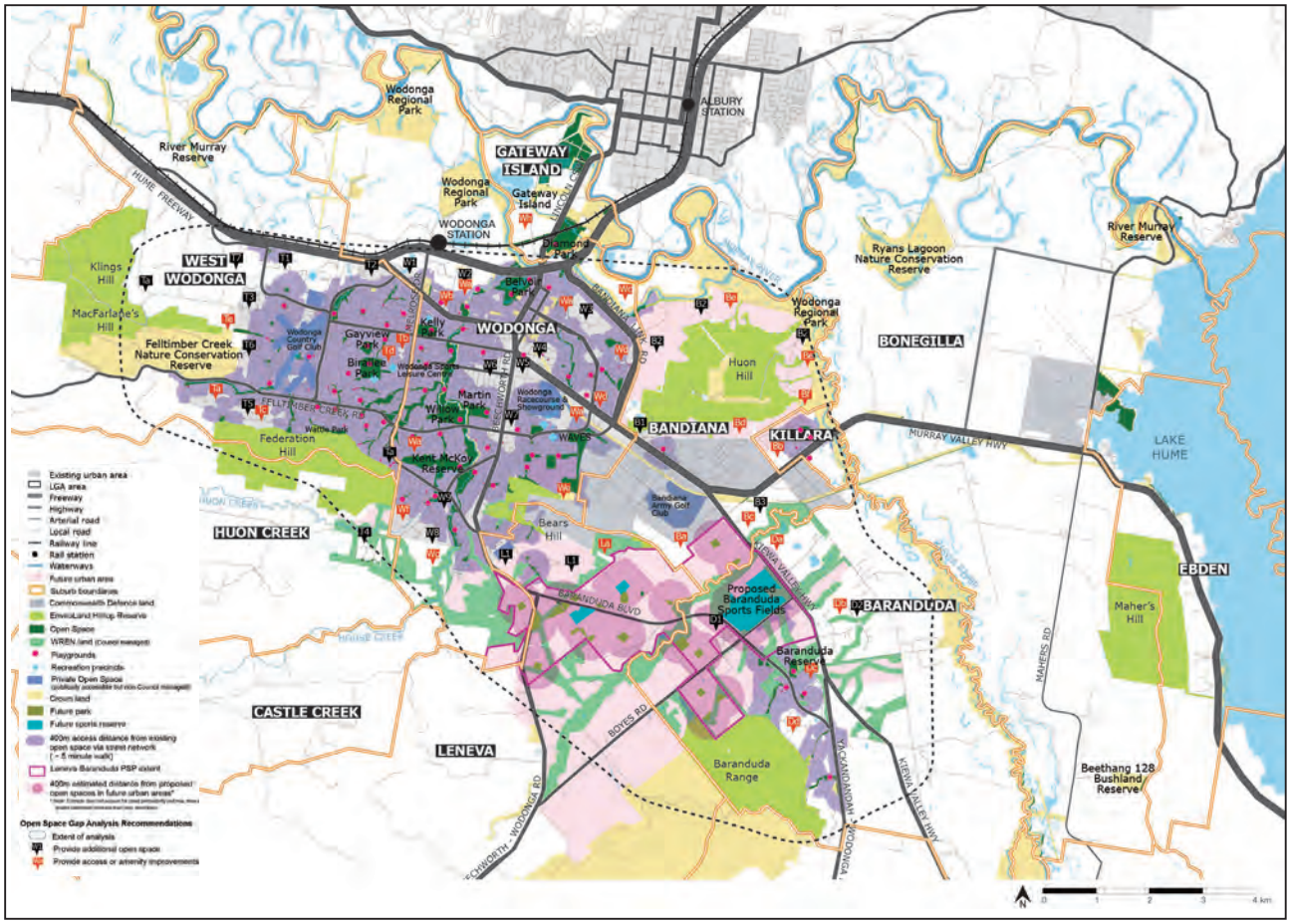
Recommendations for these gaps are numbered on the maps and described in the relevant precinct tables. These are categorised as either a recommendation for Additional Open Space Provision (shown in black) or as Amenity or Accessibility Improvements (shown in blue).

Note: Some adjoining small and large suburbs are combined under the same precinct.

The recommendations consider:

- Distribution based on public open space hierarchy and function categories;
- Estimated population growth and anticipated future recreation or public open space demands for each area of the municipality;
- Existing master plans for various public open spaces;

When addressing these gaps, the following recommendations will require further analysis and planning considering the criteria for creating high quality public open space, as outlined in the Public Open Space Standards for Planning, Design and Provision (Appendix D).



▲ Figure 19: Public open space gap analysis (municipal wide) (refer Appendix F for larger map)

5 Classifcation of Public Open Space

Within the strategy's Public Open Space Classification Framework each public open space in Wodonga is defined under a system based on the following categories and current public open space quantities.

- Hierarchy (size and catchment) – Local (16 per cent), District (59 per cent) and Regional (25 per cent)
- Function (the role of the space) – Environmental-Smaller (27 per cent), Semi-natural (46 per cent), Sport and Organised Recreation (19 per cent), Parks and Gardens (8 per cent), and other categories.
- Landscape Character (what the public open space looks like) – for example natural vegetation, waterway/wetland, open grassy, planted trees and/or gardens, and sports surface.

Based on the Public Open Space Classifications Framework, the strategy includes a public open space gap analysis for Wodonga's main residential precincts, with key findings as follows.

- There is a future need for more public open space categorised as Local hierarchy (only 16 per cent of public open space) and Sport and Organised Recreation and Parks and Gardens functions (makes up 19 per cent and 8 per cent respectively).
- There is a significant amount of environmental land (including the hills, WREN land and non-council managed Crown Land) and although these are excluded for the purposes of the strategy, it is important to ensure sufficient resource allocation for management of this substantial environmental land estate.
- Although WREN land and vegetation offset sites are excluded from the gap analysis, they can provide trails and key network connections to adjoining public open space. It is also important to achieve improved outcomes at interfaces with these lands as outlined in the strategy's Interface Guidelines (Appendix E).
- Several identified gaps are located within residential developments that are either in-progress or planned for implementation in the near future. These estates generally have approved development plans and public open space provision requirements. However, opportunities are identified where accessibility and quality of these public open spaces can be enhanced, as outlined in the strategy's Public Open Space Standards (Appendix D).
- East Wodonga (Bandiana and Killara) has no formal sporting facilities and future residential growth in this precinct will increase demand and access requirements.
- South Wodonga (Leneva and Baranduda) has limited sporting facilities and increased demand could occur in existing development at Whenby Grange Estate and Kinchington Rd estates as the Leneva-Baranduda growth area develops.
- The Baranduda Fields sporting precinct will mainly function as a regional sporting facility. Additional local level facilities are required, as identified in the Leneva-Baranduda PSP, to service the future new developments in the precinct.

To support these findings and recommendations, the strategy includes further detail and requirements in the following appendices.

- Appendix D –Standards for Public Open Space Planning, Design and Provision – which outline acceptable public open space contributions and required levels of service and facilities.
- Appendix E –Interface Guidelines – which provide recommendations and criteria for various public open space interfaces with urban development and environmental land.

ENDNOTES

1 Wodonga Growth Strategy 2016
2 Two Cities One Community – Community Strategic Plan 2017-2021
3 Two Cities One Community 2017-2021
4 Planning for the Wodonga Hills Strategy 2017
5 Wodonga Aboriginal Reconciliation Action Plan 2016
6 The growth and development of Albury-Wodonga, Stein 2012
7 Draft Wodonga Housing Strategy 2018
8 Planning for the Wodonga Hills Strategy 2017
9 Australian Bureau of Statistics, 2017 profile.id.com.au
10 Australian Bureau of Statistics, 2017 profile.id.com.au
11 Draft Wodonga Housing Strategy 2018
12 Wodonga Social Profile – Preliminary version - October 2013
13 Forecast.id.com.au/Wodonga
14 Active Healthy Communities PedShed Analysis and Greener Places Design Guide NSW Draft 2020 – Issue no. 04
15 Greener Places Design Guide NSW Draft 2020 – Issue no. 04 and Heart Foundation Blueprint for an Active Australia (Action Area 1 Built Environments)
16 Brisbane Planning Code gradient requirements
17 Sport and Recreation Plan 2014-2040
18 Active Healthy Communities PedShed Analysis and Greener Places Design Guide NSW Draft 2020 – Issue no. 04





APPENDIX B

Wodonga Public Open Space Classification Framework

OVERVIEW

It is important to provide a sufficient amount of public open space to cater for existing and future populations and also to ensure provision of quality and diverse types of public open space. Diversity of public open space allows people the opportunity to enjoy different experiences, and helps define the character of the city.

The Public Open Space Classification Framework provides an analysis of existing public open space distribution, to identify future community needs and clarify appropriate infrastructure and maintenance requirements. Within this framework, each public open space in Wodonga is defined under a system based on the following categories:

- Hierarchy (who will use it)
  Includes three levels (Local, District and Regional) based on public open space size, catchment distance, level of use and significance.
- Function (the role of the space)
  Includes seven function types and in context of hierarchy, will guide asset and service provision.
- Landscape Character (what it looks like)
  Specific characteristics that defines amenity and character of the space.

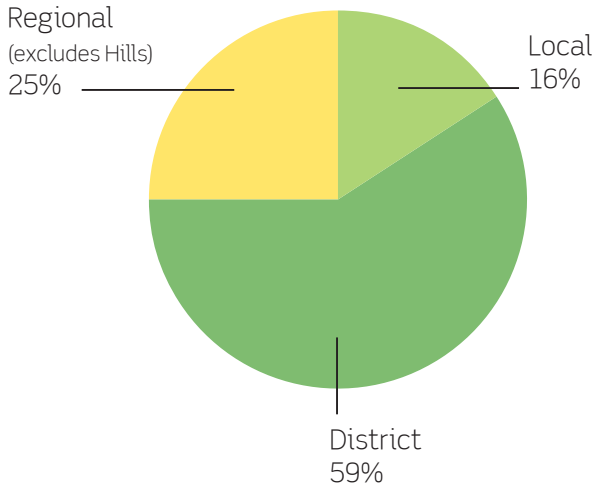
Some public open spaces will have more than one function and/or landscape character depending on location, size and demand. However, all sites should have at least one primary function and landscape character assigned.

The classification framework helps establish required infrastructure associated with different public open space functions and in regards to population catchment and density. Typically, higher density areas with increased public open space demand will require higher levels of service.

This Public Open Space Classifications Framework aligns with the standards for acceptable public open space contributions and required levels of service and facilities for public open space, as outlined in Appendix D – Standards for Public Open Space Planning, Design and Provision.

HIERARCHY

The public open space hierarchy is based on public open space size, catchment by walking distance, level of use, and significance. The strategy's hierarchy includes publically accessible land managed by council but excludes non-council managed Crown land and environmental land (the hills and WREN). It also excludes restricted or private open space such as streetscapes, golf courses, or built recreation centres.



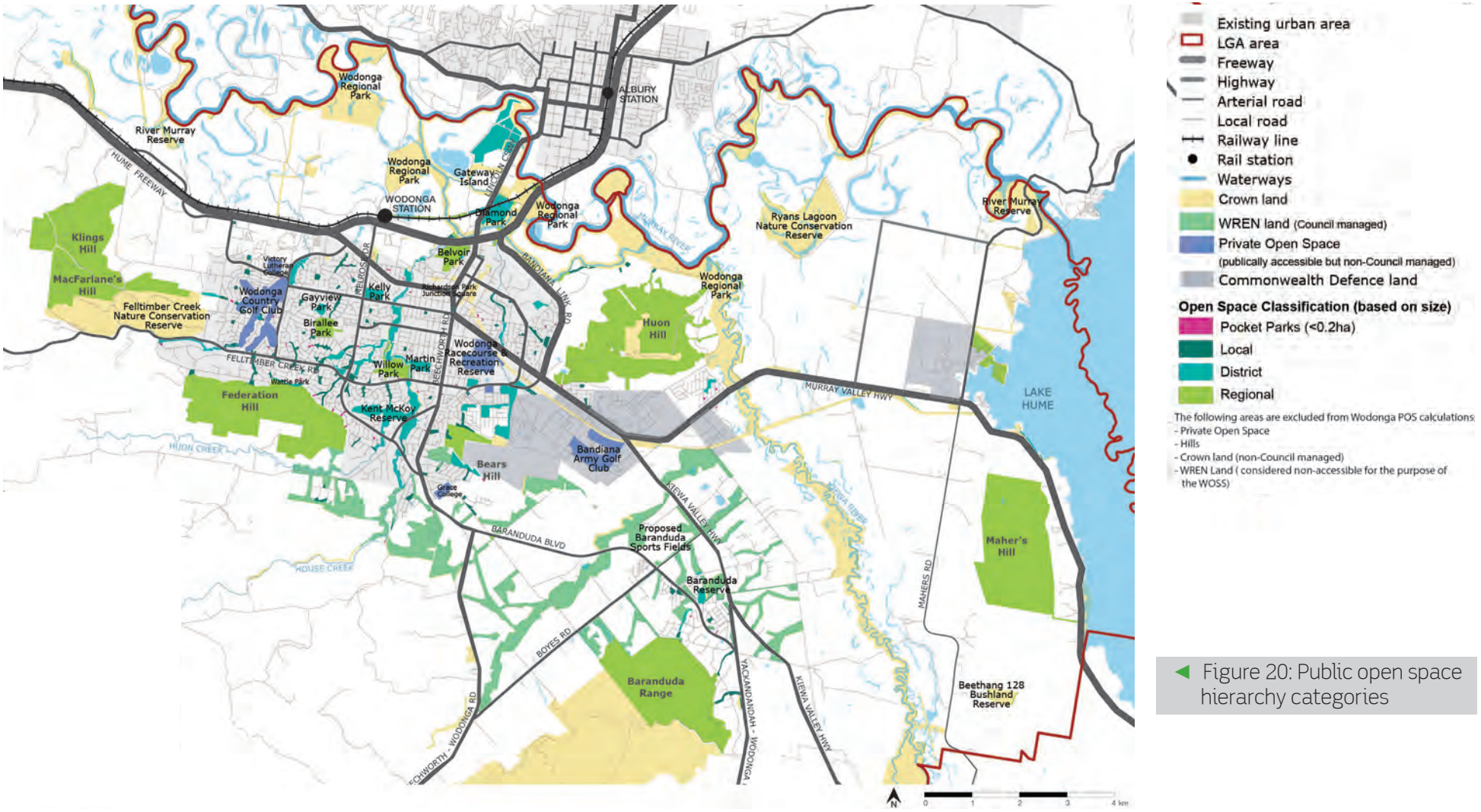


Figure 20: Public open space hierarchy categories

▼ Table 12: Hierarchy categories

NOTE: Categories only exclude non-council managed Crown land, the hills and WREN land.

Hierarchy	Size	Catchment	Description	Amount
Pocket Park	Less than 0.2ha	n/a	Open spaces less than 0.2 ha are not classified in the strategy. The total area of these spaces is 6.1 ha (0.1 per cent of total public open space).	n/a
Local	0.2-2 ha (minimum 0.5ha and 20m width^)	<400 m	Provides space for residents to enjoy passive or informal recreation activities. Generally quiet, intimate, conveniently located and contributes to local identity. May contain facilities or features of local natural or cultural significance. At least enough space for two activities or groups to use the public open space simultaneously (ie. an open grassed area with seating and playground).	67 ha (16 per cent)
District* (Neighbourhood)	2-15 ha	1 km	Provides various, medium-scale formal and informal recreation and facilities and features that appeal to the district population. Can accommodate various activities and uses to occur simultaneously without social conflict. For example, a half basketball court, barbecues, picnic tables, grassed area and playground. Might contain facilities or features of district natural or cultural significance**.	256 ha (59 per cent)
Regional	>15 ha	>15 km	Generally large areas with high recreational, social, environmental or tourism value. Primarily caters to the broader regional population or protection and enhancement of biodiversity values in a regional context. Provides a range of facilities and features and can accommodate several activities and uses to occur simultaneously without social conflict. Might contain facilities or features of regional natural or cultural significance.	106 ha 25 per cent {excludes the hills}
State and/or National Park	Varies	State or National	Open spaces managed by government agencies (Parks Victoria or Department of Defence) which might have sections managed in partnership with the council.	n/a
			TOTAL public open space	429 ha

* District open space aligns with the category Neighbourhood in *Wodonga Playground Strategy 2016-2020.*

^ New public open space shall be minimum area of 0.5 hectares (5000m2) and minimum dimension of 20 metres in width.

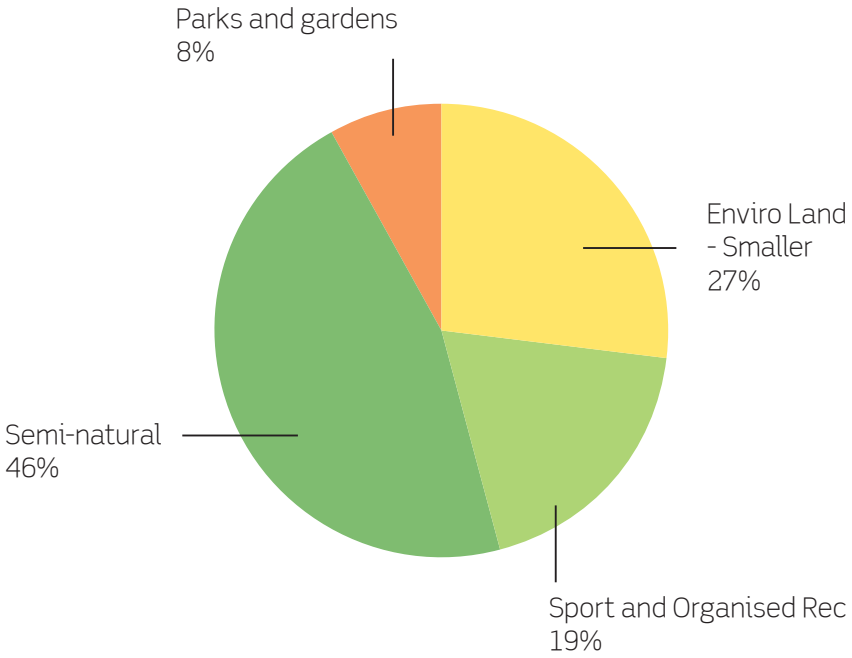
** Council funded embellishment of reserves will be subject to budget approval with funding prioritised based on an assessment of community need and demand, including anticipated population growth and density.

FUNCTION

Function defines the role and purpose of each public open space, and provides guidance on infrastructure and facilities required within them. Each type can provide functionality at various levels in the hierarchy. Sub-categories are then based on landscape character or secondary functions.

A large proportion of the municipal public open space is categorised as Semi-natural (46 per cent) and Environmental Land – Smaller (27 per cent). There is also a significant amount of other environmental land (including the hills, WREN land and Crown land managed by others), however, these open spaces are excluded from council's public open space calculations.

The next largest category of public open space is Sport and Organised Recreation (19 per cent) and only a small amount is categorised as Parks and Gardens (8 per cent).



▼ Table 13: Function Categories

Function	Description	Amount (per cent of total public open space*)
Crown land	Land under Crown tenure and ownership, which is typically publically accessible. A majority of spaces are within Wodonga Regional Park and along the Murray and Kiewa rivers with environmental value and function. Some areas may be under council or Committee of Management, however, is not council owned and therefore not under direct council control or influence. Note: Crown land not managed by council is excluded from public open space calculations.	4829 ha {excluded}
Environmental land - hilltop reserve	Land set aside primarily for conservation and protection of the hills' significant biodiversity, landscape character, community benefit and scenic features. Each hill has varied tenure and management (Crown land, Parks Victoria, Commonwealth or Department of Defence, Parklands Albury Wodonga, utilities or the council). The reserves can be used for some informal outdoor recreation and low impact activities in accordance with planning controls and relevant land management agreements/plans. Note: Hilltop lands are excluded from public open space calculations.	2524 ha {excluded}
Environmental land – Smaller Reserve (includes WREN and some vegetation offsets)	Includes WREN land, vegetation offset sites, and some remnant native vegetation areas. These areas protect native vegetation and biodiversity, as well the offset loss of native vegetation in newly developed areas. They might have limited public access as their protection provides for and encourages enjoyment by the community in a manner that is sustainable in order to protect and enhance their ecological values. Note: WREN land is excluded from public open space calculations.	114 ha (27 per cent) {WREN land is excluded}
Semi-natural	Semi-natural areas ranging from remnant native vegetation through to revegetated and semi-landscaped areas. Can include land managed for natural or heritage conservation not included in Victoria's protected system. Can include long, relatively narrow, interconnected areas which might provide visual buffers or movement corridors (people and/or flora and fauna). Recreational uses vary depending on compatibility with natural values. In some areas (district parks) informal recreation could be the primary use.	196 ha (46 per cent)

Function	Description	Amount (per cent of total public open space*)
Parks and gardens	Modified landscaped areas (formal/informal design) that provide informal recreation and activities. Could have natural values but not as the primary function. Can include children's play spaces, social gathering activities (barbecue/picnic areas), water-based recreation (boating/swimming), leisure, recreation, cycling/MTB, and community gardens/horticulture.	36 ha (8 per cent)
Sport and organised recreation	Areas primarily used for playing organised sport in an outdoor setting. Can include public golf courses and public racecourses. Can also accommodate formal/informal recreation activities (eg. picnic areas, playgrounds, walking tracks). Sport areas defined as either: Sport Premier / Sport Standard	83 ha (19 per cent)
Special purpose	Unique or single purpose spaces that contribute to local character and provide a space for community use or events. Urban spaces – such as town plazas, squares, landfill sites, historical and cultural sites, or memorial parks. Corridors / links - trails/paths used for walking and/or cycling that link areas of public open space or streets and provide connections between and within neighbourhoods and districts. Also includes links that serve as biodiversity and wildlife corridors. Can include fire buffers and land adjoining creeks and rivers.	n/a

* Total Wodonga public open space area is 429 ha.

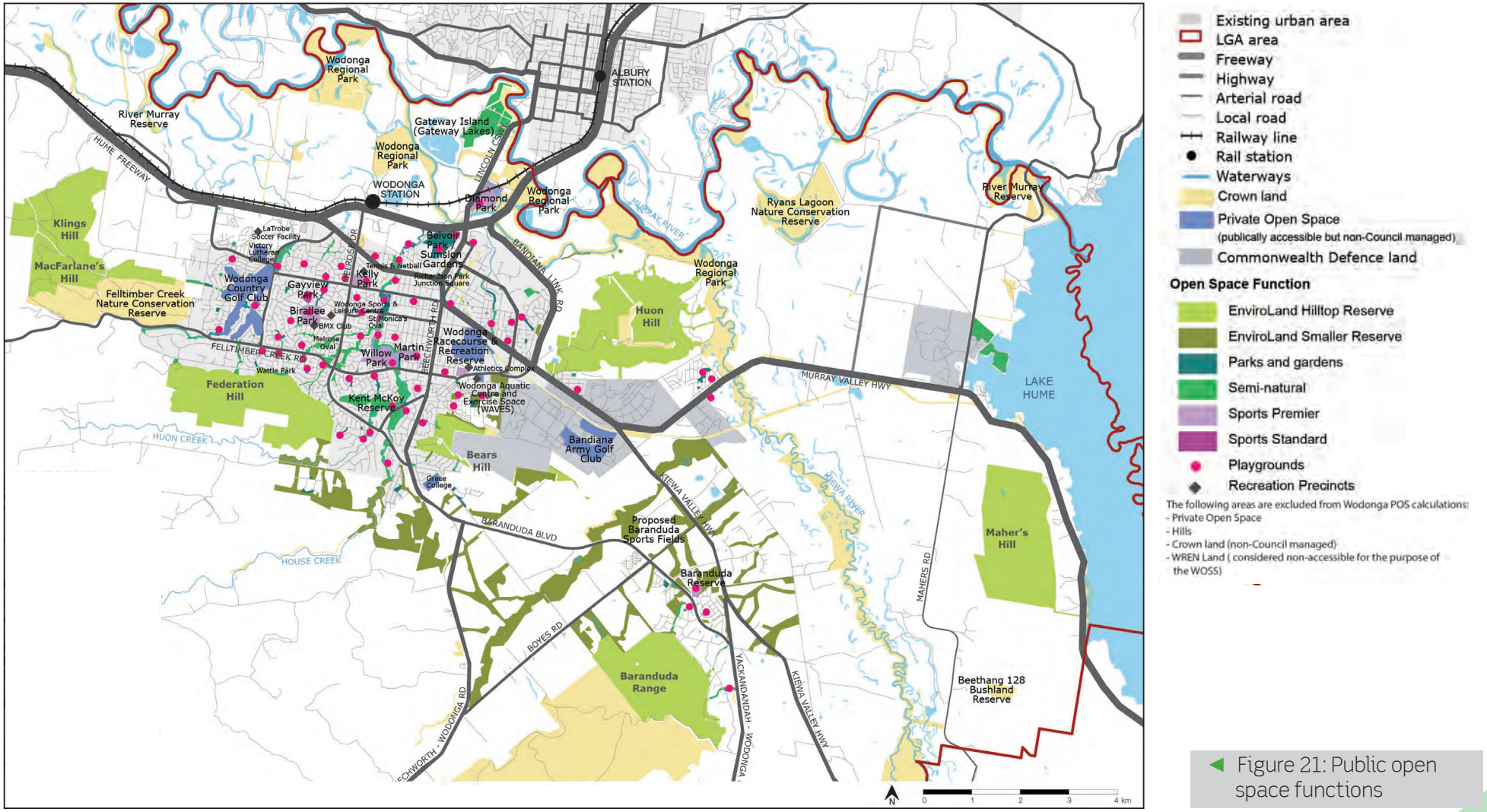


Figure 21: Public open space functions

LANDSCAPE CHARACTER

Landscape character is based on the landscape type, existing vegetation and the natural or amenity values associated with the public open space. It can be applied as a sub-category or further description in addition to the public open space hierarchy and function.

▼ Table 14: Landscape Character Categories

Character	Description
Natural vegetation (bushland and/or revegetation)	An area of native vegetation identified as bushland and/or as having high ecological value. Can include remnant vegetation and/or native vegetation restoration areas.
Waterway / wetland	Wetland - area dominated by native species which is at least seasonally inundated with water, provides biodiversity values and is not for water-based recreation. Lake - area dominated by a sizeable water body suitable for water based recreational use and/or is considered an environmental and tourism asset. River/creek corridor - a linear corridor along a defined creek or river and its associated riparian zone
Open grassy	An open grassy area of predominantly exotic species mown occasionally (4 to 6-week period).
Planted trees and/ or gardens	Typical park setting with grassy ground cover and scattered trees, border plantings or garden beds. Formal gardens with manicured gardens or floral displays and specimen trees.
Specialised sports surface	Enclosed managed, or synthetic playing fields for specific sports such as tennis, athletics, netball, hockey and lawn bowls.
Urban or service	Urban plaza or public open space within the CBA and/or service reserve (ie. along a rail or road reserve).





APPENDIX C

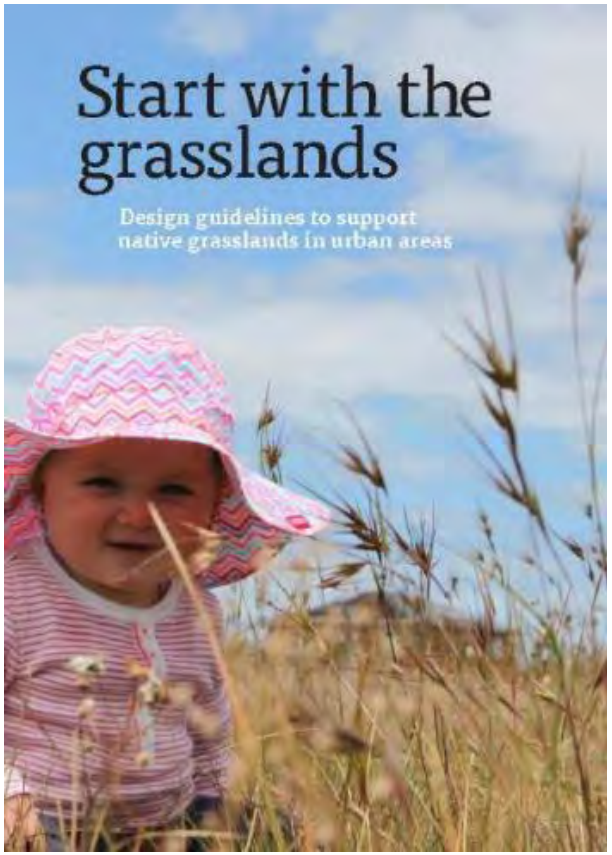
Case Studies

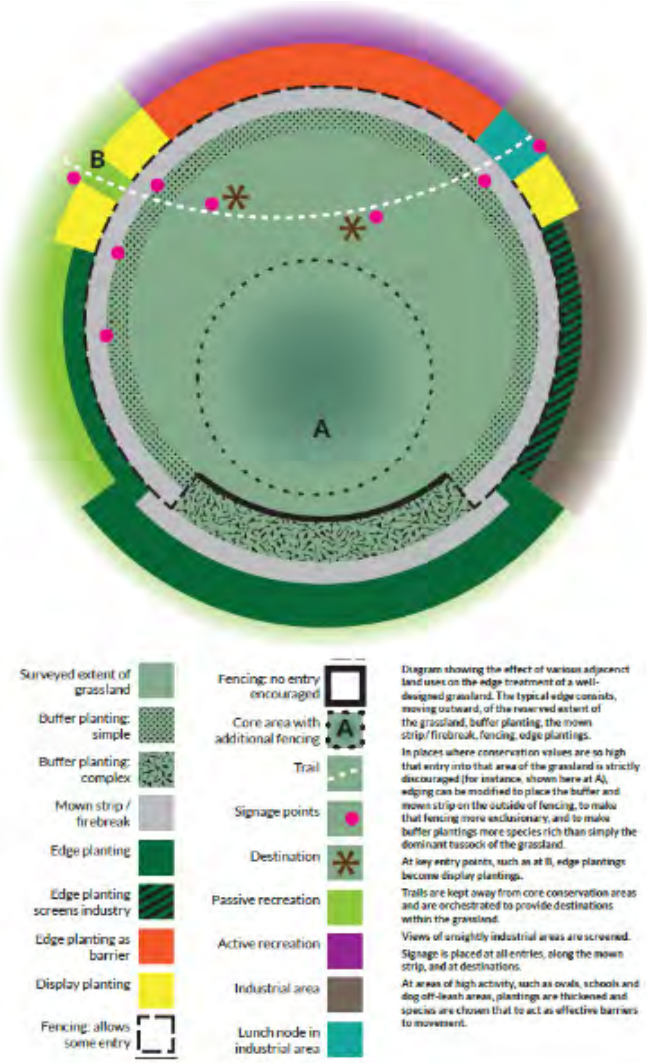
The following case studies demonstrate desirable public open space and landscape outcomes, including the community, environmental and economic benefits of public open space, enhanced biodiversity and increased tree canopy cover.

CASE STUDY – ENHANCED BIODIVERSITY IN URBAN LANDSCAPE

Start with the Grasslands: Design guidelines to support native grasslands in urban areas. Victorian National Parks Association 2013

Start with the Grasslands focusses on the importance, benefits and methods for conserving native grasslands where there is increasing urban development pressure. These guidelines discuss how conserving grasslands can support enhanced biodiversity within urban growth areas and how urban development must be designed for ecological sensitivity if endangered vegetation and populations of threatened species are to survive.





Start with the Grasslands describes how good design and land management can be used to create a network of smaller conservation areas, allowing

for endangered vegetation communities and populations of threatened species to remain in this changing condition. The success of grasslands within urban areas is reliant upon its consideration from the beginning of the design process to ensure the grasslands are co-located and integrated with supporting uses such as bike paths and walking tracks and designed to reduce maintenance costs.

Key benefits for valuing remnant grasslands

- Using buffer treatments can minimise disturbance from weed invasion and thus minimise management outcomes.
- Well-considered landscape design can also discourage the dumping of rubbish in urban areas.
- Grasslands positively impact health and wellbeing of urban populations by providing ecosystem service provision including plant pollination, insect population maintenance, air cleaning and water purification.
- Grasslands not only provide a healthy habitat for grassland species, but also provide habitat for species living beyond the grasslands through migration routes and resourcing pollinator species.

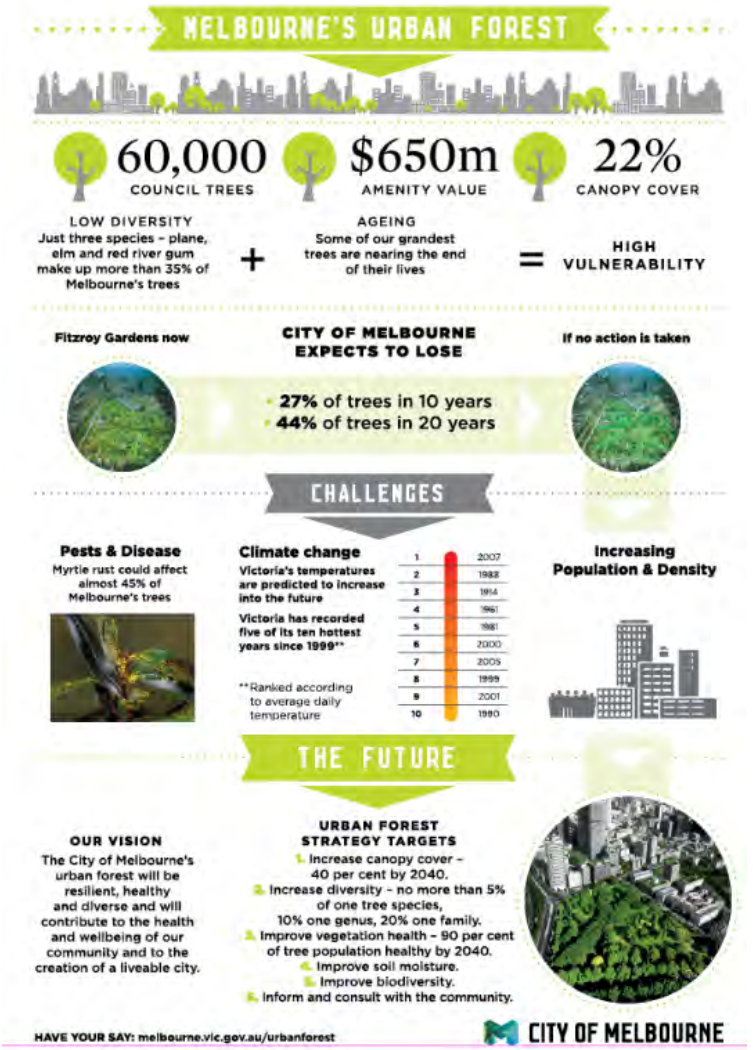
Start with the Grasslands also highlights the value in establishing relationships with the land's Traditional Owners. Genuine communication with the Traditional Owners could create opportunities to establish partnerships and knowledge sharing to understand the cultural significance and land management practices of remnant grassland areas.

CITY OF MELBOURNE URBAN FOREST STRATEGY 2012 – 2032

The City of Melbourne Urban Forest Strategy identifies the economic benefits of greening occur across a wide range of industries and disciplines including health, engineering, planting, sustainability, geology and real estate.

This strategy pinpoints a range of economic benefits which occur from increasing tree canopy coverage and increasing open space areas.

- Reducing air-conditioning costs through the shading of buildings using trees.
- Increasing property values through enhancing visual amenity of the streetscape.
- Improving the lifespan of council assets, such as footpath surfaces by sheltering them from harmful UV rays.
- Reducing stormwater flows and thus reducing damage caused by harmful flood levels.
- Decreasing health costs by discouraging sedentary behaviour by providing cooler walking and cycling paths and diverse public open spaces.
- Health costs could also be reduced by allowing for hospital patients to have a view of green spaces, reducing the recovery time for some patients.
- Boosting the local economy by defining the culture and image of a city, adding to its tourism and marketing strategy. Green open spaces also create the places for various events and tourism opportunities.
- Storing of carbon dioxide in the atmosphere.



CASE STUDY: INCREASED TREE CANOPY COVER

Moreland City Council Urban Forest Strategy 2017 - 2027

The *Moreland Urban Forest Strategy* responds to growing community pressure for more greening across the municipality and aims to deliver practical measures to guide sustainable planning, planting, management, resourcing and protection of vegetation within the public and private realms.

Increasing tree canopy coverage creates a wide range of physical and mental benefits to a community including reducing urban heat island effect and pollution, creating shady and walkable streets and public spaces and encouraging a strong community connection to nature.

This strategy identifies that the municipality is under pressure from a growing population, urban densification and a changing climate. Therefore, the landscape has faced significant pressure resulting in a decline in tree canopy coverage on private land.



Figure 2: The environmental services provided by a large urban tree

Key findings of the strategy

- Overall canopy cover across the municipality has declined by 1.4 per cent between 2005 and 2016.
- Urban consolidation is the main driver for canopy reduction resulting in a decline in tree canopy cover on private land from 12 per cent to 9 per cent between 2005 and 2016.
- Despite this, canopy coverage from street trees and park trees has increased from 26 per cent to 63 per cent.
- Community groups and the council continue to invest significant and often volunteer resources into planting and maintaining trees and vegetation.
- Relying on small, short-lived street trees limits the canopy coverage and therefore the benefits of the urban forest.
- Consideration of maintenance and resourcing requirements of new street trees is imperative to a healthy urban forest.
- Opportunities for tree planting can be found the private realm where site conditions limit planting options such as planting in private front gardens away from low hanging power lines.
- Both standard and innovative planting opportunities need to be considered to increase tree canopy coverage.

Key targets of the strategy include doubling the vegetation canopy within the municipality by 2050.

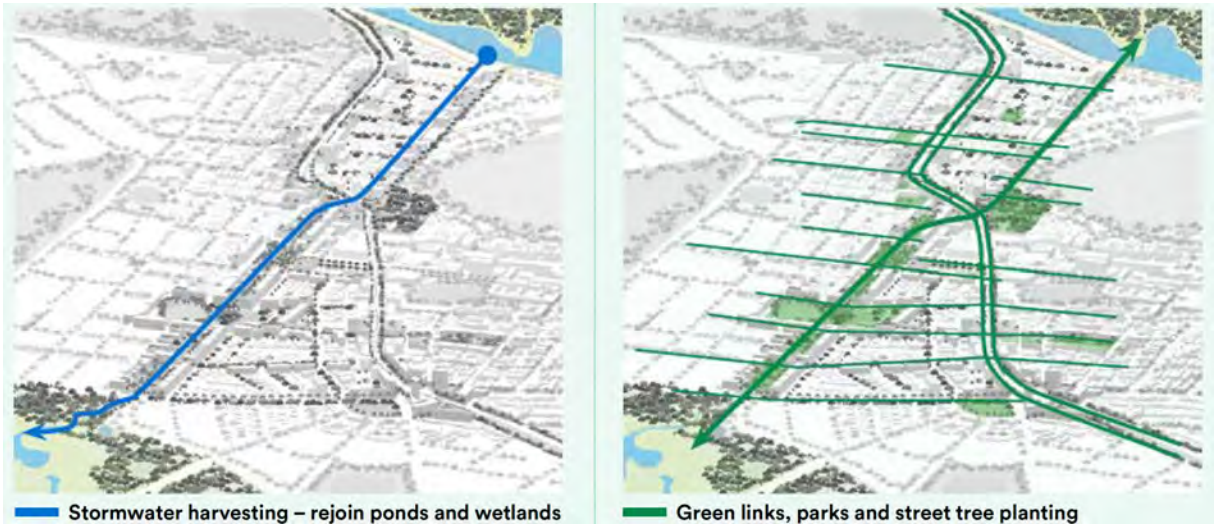
CASE STUDY - DESIRABLE PUBLIC OPEN SPACE AND LANDSCAPE OUTCOMES

Greener Places Design Guide (Draft 2020) - Government Architect New South Wales

The Greener Places Design Guide[1] focusses its efforts on multifunctional design where each green infrastructure space or route provides a range of benefits for a diversity of users. It aims to achieve this through four main principles.

1. Integration – Combine Green Infrastructure with urban development and grey infrastructure
2. Connectivity – Create an interconnected network of open space
3. Multi-functionality – Deliver multiple ecosystem services simultaneously
4. Participation – Involve stakeholders in development and implementation

It presents a holistic view of Green Infrastructure which includes residential gardens, local parks, housing estates, streetscapes, highway verges, service and communication corridors, waterways and recreation areas. It also encourages existing assets to work harder while also creating new assets to meet public spaces demands on an increasing urban population.



Key outcomes

- Conservation of the natural environment and natural resources, as well as promoting social, cultural, recreational and educational opportunities within city landscapes.
- Increased access to public open space by improving connections, continued investment, allocation within new developments and infrastructure projects, aiming for an equitable distribution of public open space and provision of a diverse range of public open space types.
- Improved connectivity to promote active living by improving the public realm to promote active modes of transport, protecting and creating green connections that create a network of walking trails, cycle paths and public open spaces.
- Increase urban greening to ameliorate climate extremes including creating resilient built environments which have co-ordinated green infrastructure planning and design, increasing green cover to keep our cities cool and promoting underutilised open space corridors and areas for community uses.

CASE STUDY – COMMUNITY, HEALTH AND SOCIAL BENEFITS

The GreenWay, NSW

The GreenWay is a 5.8 kilometre active transport corridor in Sydney's Inner West and contains a networks of walking and cycling paths, parks and playgrounds, cafes and community facilitates. As Sydney's population continues to densify, The GreenWay aims to increase safe off-road active transport opportunities to achieve a more liveable, environmentally and socially sustainable corridor.

The GreenWay provides residents with accessible and free options to exercise, play and participate in community events and activities. It also connects to Sydney's existing cycle network which allows residents to utilise sustainable, healthy, safe and cost effective transport opportunities.

The diversity of spaces provided by The GreenWay allows for a diversity of users and uses. The parks and playgrounds are regularly used for informal gatherings and community events as well as recreation spaces and public art exhibitions.

Research from the *GreenWay Active Transport Strategy and Action Plan 2012* outlines the following community, health and social outcomes.

- High community stewardship and togetherness from the large range of community events and activities operating in the corridor.
- Local residents expressed a willingness to walk or ride more often within The GreenWay catchment.
- GreenWay users aspire for public open space to allow for a diversity of activities and user groups.

Nearby schools which encouraged active transport initiatives experience high levels of active travel (57 per cent).



ENDNOTES

1 Greener Places Design Guide NSW Draft 2020 – Issue no. 04





APPENDIX D

Wodonga Open Space Strategy
Standards for POS Planning, Design and Provision

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1. Introduction

1.1 Purpose

The Standards for Public Open Space Planning, Design and Provision support the Wodonga Open Space Strategy (WOSS) and aim to achieve a high standard of public open space (POS) across the municipality.

The purpose of these standards is to provide clear planning and design objectives for developers and Council, to ensure diverse, quality and sustainable public open spaces within Wodonga. They provide an integrated approach to the provision, planning, design, construction, and maintenance of public open space, and ensure that minimum standards are achieved.

1.2 Overview

Sections of the standards include:

- **Acceptable POS Contribution Standards** - minimum standards for land acceptable for public open space contribution and provision.
- **Why encumbered space**
- **Facility and Infrastructure Provision Standards** – expectations for the quality and quantity of facilities and infrastructure required in public open spaces.
- **Submission Requirement**s - standards regarding public open space for developers to adhere to when initiating a planning proposal.
- **Performance and Maintenance Standards** – to guide both developers and Council in the management, performance and handover of public open spaces.
- **Preferred Plant Species** – for trees and other vegetation types planted within public open spaces.
- **References** – for further information and resources.

2. Acceptable POS Contribution Standards

This section outlines best practice and minimum standards for land acceptable for POS contribution.

When identifying or proposing new public open space, the following three aspects should be worked through (in order):

- Use the WOSS Classification Framework to provide adequate POS in suitable locations
- Provide high quality land suitable for POS use; and
- Design the POS for maximum benefit to community and environment.

2.1 Use the WOSS Classification Framework

Refer to the WOSS Public Open Space Classification Framework (Classification Framework) to identify POS needs in the municipality and provide adequate public open space in suitable locations. The Classification Framework outlines the planning and design considerations for new public open space provision, particularly for new subdivisions. It is comprised of a three-tier structure to guide POS provision considerations.

The Classification Framework structure includes:

- **Hierarchy** (who will use it)

Includes 3 levels (Local, District and Regional) based on public open space size, catchment distance, level of use and significance.

- **Function** (the role of the space)

Includes 8 function types and in context of hierarchy, will guide asset and service provision.

- **Landscape Character** (what it looks like)

Specific characteristics that defines amenity and character of the space.

The classification framework helps establish infrastructure and management requirements associated with different public open space functions, as outlined in these Standards.

2.2 Provide High Quality Land

The second aspect of the POS provision and planning process is to provide high quality land that is suitable for public use.
This section outlines land that is preferred or unsuitable for POS contributions.

2.2.1 Land required for POS use

Well-located and quality land is required for POS contributions. The land must be suitable and safe for public use and provide a range of landscape opportunities and settings. These requirements cover developable land across Wodonga, including industrial land and land in Precinct Structure Plans.

To be considered as suitable POS contributions, the land must offer:

- Variety - add to the existing public open space offer and types across the network, in line with the WOSS and Classification Framework. Provide a range of public open spaces uses and recreational offers for all seasons.
- Suitable size and dimensions - refer to the WOSS Hierarchy categories for appropriate size and dimensions of public open spaces required based on catchment. New POS shall be a minimum area of 0.5 hectares (5000m2) and minimum dimension of 20 metres in width.
- Access and connections - new and existing public open spaces should be connected to each other, nearby residential areas, and other community services or facilities - via linear reserves, footpaths and shared pathways - to provide safe access for pedestrians and cyclists.
- Protection of significant values – including environmental, social and cultural.
- Suitable gradients – land must be less than 1 in 20 (5%) gradient.

2.2.2 Land unsuitable for POS use

Land that meets one or more of the following criteria is not suitable for POS contributions:

- Land that is encumbered and constrained for development and/or public use (e.g. easements, services, drainage areas). Refer Section 3.0 for detail.
- Land with cultural heritage encumbrances that prevent development, use or maintenance of the site.
- Land steeper than 1 in 20 (5%) gradient, including erosion prone or degraded slopes. Avoid creation of extensive, unusable slopes and embankments. Use retaining structures where appropriate.
- Land subject to frequent flooding (below the 1 in 20 year flood level).

- Where there is no demonstrated need for additional public open space.
- Land considered unsafe or contains unacceptable risks, such as poor passive surveillance or visibility.
- Not easily accessible to the community.
- Land not considered fit-for-purpose and/or land that provides limited community POS benefit.
- Does not comply with planning permit conditions.
- Contaminated land that is unsuitable for POS uses or requires remediation in the future.
- Land that is difficult or expensive to develop and maintain.
- Land that is too small in area which will be costly to maintain long-term (i.e. smaller parks increase perimeter interfaces and require higher levels of maintenance). Refer Section 2.2.1 for minimum dimensions.

2.2.3 Land with constraints that may be integrated with POS, but not considered POS contribution

Constrained land may be located adjacent to and integrated with POS, but only when the constrained land is complementary to the primary use of the POS, and is not considered to be in lieu of the POS provision. Where located in the public realm, ensure the integrated constrained land is accessible and addresses any public safety concerns.

Constrained land that may be integrated with POS includes areas protected or set aside for:

- Significant native vegetation or habitat and conservation land buffers.
- Native vegetation offsets.
- Water management systems, wetlands, waterway buffers, and other water bodies.
- Land steeper than 1 in 20 (5%) gradient. Use retaining structures where appropriate.
- Flood prone lands and land subject to inundation (above the 1 in 20 year flood level).
- Land with cultural heritage values, so long as it can be successfully and respectfully integrated (i.e. culturally appropriate) into POS without detracting from conservation values, or the primary purpose of the POS. Where a cultural heritage asset is integrated into POS, ensure appropriate legislative requirements are applied.

2.3 Design the POS for maximum benefit

The final aspect of the POS provision and planning process is to design the POS to provide maximum community and environmental benefit.

As outlined in the WOSS, the following principles shall apply to all aspects of planning, design, delivery and management of public open spaces.

2.3.1 WOSS Principles

- **Accessible and Connected**
  Public open spaces are easily reached for the Wodonga community including all ages, abilities, gender and cultural backgrounds. Connectivity includes habitat corridors, commuter and recreation routes, legibility and wayfinding, and links between open spaces, community services and public transport.
- **Healthy and Safe**
  Healthy environments are available for current and future generations, to promote active lifestyles and provide numerous health and well-being benefits. Public open spaces shall be safe for all users, and designed and managed according to best practice standards, CPTED safety principles and fire management requirements.
- **Equitable and Diverse**
  The public open space hierarchy provides a variety of sizes and functions, complementary mixed uses, a balance of structured and unstructured recreation, and equal distribution and funding. It also ensures POS uses and programs are adaptable, flexible and appeal to all users, including consideration of changing and emerging recreational trends and technological advancements.
- **Social and Cultural**
  Public open spaces support shared use, multi-purpose opportunities, social connectivity and interaction. Local character, natural features, and historic and cultural values and assets (both indigenous and non-indigenous) are protected and celebrated. Community engagement, involvement and strong partnerships are encouraged in the planning, use and management of public open space.
- **Sustainable and Conserved**
  The public open space network conserves and contributes positively to biodiversity and ecological outcomes. Sustainability, water management and resource efficiency is considered in all aspects of open space planning, design, construction, management and use. Open spaces help mitigate climate impacts and build community resilience through ecological services, increased greening, shade and urban cooling.
- **Maintained and Quality**
  Public open spaces are aesthetic, clean, welcoming, efficiently and sustainably managed, and provide appropriate amenity, services and facilities. Consistent, ongoing, and well-planned investment in public open space ensures suitable maintenance, conservation and continuous improvement.

2.3.2 Capital Works Criteria

The following capital works criteria assists in determining priorities for upgrading of existing public open space facilities through Council's POS investment program. Each criteria item has equal weighting. Projects that address the greatest number of these criteria will be considered for priority implementation.

The following criteria assists in determining capital works proposals:

- Adds diverse uses or functions to an public open space
- Adds a function which is deficient in the area
- Improves equitable distribution of facilities
- Achieves the infrastructure core service standards
- Enhances the landscape character and/or amenity
- Contributes to the environmental sustainability of the space and/or surrounding area through protection or enhancement of environmental values
- Provides diverse facilities for different segments of the community (e.g. children, youth, elderly)
- Has Council endorsement for the design, concept and/or management plan.

3. Encumbered land is not POS

3.1 Why encumbered land is not accepted as POS

Encumbered open space is land that is constrained for development purposes, but may be integrated into the public open space network and used for a range of activities (i.e. walking and cycling trails).

However, encumbered land is not credited as POS contributions, as Council only accepts unencumbered land for active public open space development and use.

Encumbered land, such as utilities infrastructure within or beneath public open space, often presents challenges for future use, management and maintenance. Attempting to place community or recreational infrastructure within encumbered spaces may generate issues – for example buildings, fences, net or playgrounds may impede the flow of stormwater or flood zones. They can also reduce the amenity and functionality of the areas for community use.

Encumbered land not accepted as POS contributions include:

- Drainage reserves or water bodies up to the 100 year floodline
- Road reserves
- Land required for utilities or services (e.g. easements, landfill areas, flight paths, sewer/gas pipelines, pylons, substations, mobile towers, underground services, and overhead power/transmission lines)
- Land with water management functions (e.g. drainage, stormwater, flood protection and mitigation, wetland protection, retarding basins)
- Land with an Environment Significance overlay and/or having any conservation or environmental significance delineation (i.e. significant vegetation/trees)
- Land with cultural heritage conservation, protection or restricted uses, and
- Land steeper than 1 in 20 (5%) gradient and erosion prone or degraded slopes.

3.2 If encumbered land is provided in development

Although not accepted as a credit toward POS contributions, it is acknowledged that encumbered land may be provided as part of new development areas. Given this, it is important that all encumbered spaces provided within developments is well-planned, designed and integrated with the surrounding context, to ensure that the enjoyment, function and future community use of these public open spaces is not compromised.

Council requires that encumbered land provided within a development meet the following criteria:

- Plans or drawings clearly highlight the nature and purpose of the encumbered land (e.g. drainage, flood risk, passive stormwater storage, bushfire risk).
- The encumbered land is identified as a reserve, but not as public open space.
- The development design response demonstrates adherence to WOSS principles and standards.
- The design demonstrates how the encumbered space considers surrounding context and relationship to other existing or proposed public open spaces.
- The design and planning for the encumbered spaces allows safe community access and use, if appropriate.

4. Facility and Infrastructure Provision Standards

This section establishes minimum contribution standards for the provision of quantity and quality facilities and infrastructure within POS. Across Wodonga, the current provision of facilities within the public open space network is varied, in particular between established urban precincts and new growth areas. These standards aim to provide equity in the provision of infrastructure and facilities. They outline the basic standard or level of service and/or facility expected for each type of public open space. Council acknowledge that limited resourcing could constrain achievement of proposed facilities in the short term and should be considered in future public open space planning and forecast funding.

Basic level provision

The basic level of facility/infrastructure provision for all public open spaces:

- Site preparation – i.e. weed control, earthworks, levelling
- Maintenance vehicle access
- Paths
- Seating
- Rubbish bins
- Shade
- Landscaping
- Top soil and seeding

Where appropriate / required by Council:

- Lighting and CPTED measures
- Perimeter fencing/bollards
- Water for irrigation

Sports Fields

The basic level of facility and infrastructure provision for sports fields:

- Playing field
- Irrigation
- Fencing
- Goal posts / nets
- Pitch
- Additional seats
- Additional signage
- Lights
- Shelter / pavilion

Specific provisions

Facility and infrastructure provision for public open space types are outlined in **Table 1**, which are based on the WOSS Classification Framework's categories of Hierarchy (Local, District, Regional) and Function (Crown Land, Environmental Land- Hilltop Reserve, Environmental Land-Smaller Reserve, Reserve, Parks and Garden, Sport and Organised Recreation (Premier or Standard), and Special Purpose).
NOTE: Specific provisions shown in Table 1 or Crown Land are recommendations only and subject to the managing authority or committee of management.

Table 1 Specific Provisions



5. Submission Requirements

5.1 Submission staging and requirements

This section outlines Council's submission requirements for various stages of POS planning, design, construction, maintenance and handover processes (refer Table 2). Applicants shall seek advice from external professionals (e.g. Land Use and Recreation Planners, Landscape Architects, Urban Designers and Civil Engineers) when POS is proposed. All POS designs must comply with relevant Australian Standards.

Table 2 Submission Requirements

Stage	*Type of Plan or Information Required*	*Quantity, Format & Size**	*Details Required*
Pre-Application Planning Process	Site Analysis and Context Assessment Plan, and written response to these Standards	1 x PDF copy 1 x DWG File (If appropriate)	Analysis of existing conditions and relationship to surrounding context (e.g. access, connections, environmental factors, nearby existing public open spaces, facilities, constraints) North Arrow, Title, Legend, Scale bar, Total Site Area
Request for Planning Approval	Open Space Implementation Plan, and written response to these Standards and the Design intent	1 x PDF copy 1 x DWG File (If appropriate)	All relevant information for planning approvals. North Arrow, Title, Legend, Scale bar, Total Site Area, POS contribution in hectares
Request for Planning Approval	Rezoning, Development Plans and Planning Permit Plans, and written response to these Standards.	1 x PDF copy 1 x DWG File (If appropriate)	Location and surrounds, Stage Location inset in overall development map. Open Space areas clearly defined including drainage reserves, utility easements, and POS. Retention plan of existing vegetation within open spaces, including application of Australian Standard 4970 - Tree protection on development sites.
Landscape Plan Approval	Landscape Plans including Street Trees, Parks, Entrances, etc. and written document outlining design intent, response to these Standards and, Design Details for specific elements. If adjoining environmental land, include interface treatment (per WOSS Appendix E)	1 x PDF copy Digital format required at hand over	North Arrow, Title, Legend, Scale bar, Total Site Area, Open Space Classification Description. Proposed facilities, hard and soft landscape treatments including setout and grading, planting plans, irrigation, drainage and service locations, surfaces and finishes, sections and details of all structures and hard landscape elements.
Pre-Construction and Detailed Design	Construction Drawings, Plans and Specifications	1 x PDF copy	Detailed construction drawings, specifications and technical notes
Permit Applications	Plans for all structures requiring Building Permits and explanation of how structure meets standards	Structural drawings as appropriate	Drawings/plans. Architectural. Structural. Engineering and Soil Report.
Maintenance Period and Handover	As-Built/ as constructed Landscape Plans at hand over to Council	1 x PDF copy 1 x DWG File	North Arrow, Title, Legend, Scale bar, Total Site Area, Facilities & Landscape treatments

*Provide all drawings at a known scale that acknowledges the size of the site and relationship to surrounding context.

6. Performance and Maintenance Standards

This section provides best practice standards for management of public open spaces prior to and during handover of new public open spaces to Council.

Following completion of the public open space construction and delivery, the developer is required to maintain the public open space to a suitable standard.

6.1 Statement of Compliance

A Statement of Compliance will be issued when the developer demonstrates to Council that they have met all subdivision or development requirements (i.e. Planning Permit conditions) relating to Public Open Space and Streetscape Development provision. A Statement of Compliance is required prior to the release of lots by the Titles Office.

6.2 Maintenance Period and Handover

Requirements for the developer's maintenance period and handover of the public open space to Council is as follows:

- Developers must maintain comprehensive maintenance logs during the POS maintenance period.
- Council will conduct regular site inspections during the maintenance period, to ensure the asset is appropriately managed.
- The developer must notify Council in writing 3 months prior to the end of the maintenance period, and schedule a final site inspection.
- Council will record any defects identified during the final inspection and forward to the developer for rectification.
- Should Council determine that more than 50% of the public open space assets and/or landscape requires rectification at the end of the maintenance period, the developer is required to maintain the public open space for one additional year.
- Council will issue written confirmation when the public open space has been maintained to Council satisfaction and is suitable for handover.
- At final handover, the developer shall provide Council with the following:
    - Maintenance logs recorded throughout maintenance period.
    - Copies of 'as-built / 'as-constructed' plans in digital format.
    - Copies of 'as-built / 'as-constructed' irrigation system plans in digital format.
    - Copies of all playground inspections and records of any replacements and/or repairs.

7. Preferred Tree and Plant Species

Refer **Appendix A** for a list of preferred tree and plant species for public open spaces within Wodonga.

8. References

The following references relate to this document:

- **WOSS Appendix E – WOSS Interface Guidelines**
- **Draft WOSS 2019** – including the Public Open Space Classifications (Hierarchy, Function and Character categories)
- **Infrastructure Design Manual (IDM) 2018** - ensures minimum engineering design and maintenance criteria are met about design and construction of municipal infrastructure (either by Council or a developer). Clause 24 outlines standards for landscaping, street trees, and public open space including sizes, elements, design and maintenance. Appendix C - Checklists assist Council approval at various planning stages.
- **Sustainable Infrastructure Guidelines (part of version 5.10 of the IDM)** - address healthy and productive land and water systems, biodiversity, less waste, resource/energy efficiency, integrated water management, materials saving, liveability, and efficient transport systems. Clause 8 Landscaping and Open Space - outlines requirements for sustainable outcomes. Appendix B Sustainability Checklist assists Councils to assess development.
- **ESD for Subdivision in Regional VIC 2018** – establishes principles and guidelines for POS and biodiversity for sustainable residential subdivisions.
- **Environmental Lands Bushfire Management Strategy 2015** - considerations for where open space adjoins buildings/built up areas, such as planting design, species, arrangement and canopy cover.
- **Leneva-Baranduda Precinct Structure Plan** - outlines requirements, guidelines and maps for specific outcomes, including open space, sports grounds, facilities, neighbourhood and WREN interface requirements.
- **Physical Activity Strategy 2015-2020** - ensure physical activity guidelines are integrated into planning scheme, development plans and subdivisions.
- **Sport and Recreation Plan 2014-2040 -** provides a 5-year framework with principles and guidelines for recreation facilities, service, program demands and priorities. Includes asset / infrastructure requirements for current provision and projected demand with recommendations for increases for each type of activity/sport.
- **Wodonga Playground Strategy 2016-2020** - guides the provision, development, resourcing and management of the approximately 72 outdoor play spaces across the municipality.

ATTACHMENT A
- PREFERRED TREE AND PLANT SPECIES LIST

Wodonga Tree Species Lists

URBAN OPEN SPACE TREES		
Botanical name	Common name	Native (N) Indigenous (I) Exotic (E)
EVERGREEN SPECIES		
Acacia implexa	Lightwood	I
Acacia mearnsii	Black Wattle	N
Acacia melanoxylon	Blackwood	I
Allocasuarina verticillata	Drooping Sheoak	I
Angophora Costata	Sydney red gum	N
Banksia Integrifolia	Coastal banksia	N
Brachychiton populneus	Kurrajong	I
Callistemon 'Kings Park Special'	Hybrid Bottlebrush	N
Callitris columellaris	Murray pine	N
Cedrus Deodora	Himalayan cedar	E
Ceratonia siliqua	Carob tree	E
Cinnamomum Camphora	Camphor laurel	E
Corymbia Citriodora	Lemon scented gum	N
Corymbia Eximia 'nana'	Yellow bloodwood	N
Corymbia Ficifolia 'dwarf red'	Red flowering gum	N
Cupaniopsis anacardioides	Tuckeroo	N
Eucalyptus leucoxylon 'Rosea'	Red Flowering Yellow Gum	N
Eucalyptus maculata	Spotted gum	N
Eucalyptus scoparia	Wallangarra White Gum	N
Geijera parvifolia	Wilga tree	N
Grevillea robusta	Silky oak	N
Hymenosporum flavum	Native Frangipani	N
Lophostemon confertus	Brush Box	N
Magnolia grandiflora	Bull bayu magnolia	E
Magnolia grandiflora 'little gem'	Dwarf magnolia	E
Melaleuca bracteata	Revolution green	N
Melaleuca linariifolia	Snow in summer	N
Melia azedarach	White cedar	N
Olea europa 'swan hill'	Fruitless olive	E
Prumnopitys ladei	Black pine	N
Tristaniopsis laurina	Water gum	N

URBAN OPEN SPACE TREES		
Botanical name	Common name	Native (N) Indigenous (I) Exotic (E)
DECIDUOUS SPECIES		
Acer truncatum x A.platanoides	Pacific Sunset	E
Brachychiton acerifolius	Illawarra Flame tree	N
Carpinus betulus 'Fastigiata'	Hornbeam	E
Dalbergia sissoo	Sissoo tree	E
Fraxinus americana	American ash	E
Fraxinus excelsior 'aurea'	Golden ash	E
Fraxinus pennslyvanica 'urbanite'	Urban ash	E
Ginko biloba	Maidenhair tree	E
Gleditsia tricanthos 'elegatissima'	Gold Honey Locust	E
Jacaranda Mimosifolia	Jacaranda	E
Koelreuteria bipinatta	Chinese flame tree	E
Koelreuteria paniculata	Golden rain tree	E
Lagerstroemia indica	Crepe Myrtle	E
Meli azaderach 'Elite'	White Cedar	N
Pistachio chinensis	Chinese pistachio	E
Pyrus calleryana	Chanticleer	E
Pyrus fauriei 'westwood'	Asian pear/Korean sun	E
Prunus ussureinsis	Manchurian pear	E
Quercus cerris	Turkey oak	E
Quercus coccinea	Scarlet oak	E
Quercus palustris	Pin oak	E
Sophora japanica	Scholar tree	E
Ulmus parvifolia 'todd'	Chinese elm	E
Zelkova serrata	Japanaese Zelkova	E

* Council will accept variations to the preferred species list with approval from the parks and gardens team.

City of Wodonga - Species list

Large Tree
15 m plus



Uses
Trees greater than 15 m in height shall be planted in planting strips >2.5 m wide and should be >1.5 m from pavement. These trees should not be planted under power lines.

Medium Tree
8-15m



Trees 8-15 m in height should be planted in planting strips 1.3 to 2.5 m wide and should be >1.2 m from pavement. The majority of these trees could be planted under power lines incorporating clearance pruning.

Small Tree
5-7m



Trees 5-7 m in height should be planted in planting strips 1.0 to 1.3 m wide and should be >0.6 m from pavement. These trees could be planted under power lines.

List of deciduous species

*Species is indigenous to certain vegetation communities in the municipality
(T) species/cultivar currently not utilised for street tree planting but has potential (not to be used in prominent streets)
[f] Frost sensitive while young

Autumn Blaze Freeman Maple (*Acer* x *freemanii* 'Jeffersred' Autumn Blaze)	Elsrijk Maple (*Acer campestre* 'Elsrijk')	Trident Maple (*Acer buergerianum*)
Lacebark (*Brachychiton discolour*)	Queen Elizabeth Maple (*Acer campestre* 'Evelyn')	Montpelier Maple (*Acer monspessulanum*) (T)
American White Ash (*Fraxinus americana*)	'Sensation Box Elder Maple (*Acer negundo* 'Sensation')	Crimson Sentry Norway Maple (*Acer* platanoides 'Crimson Sentry') (T)
Cimmaron Green Ash (*Fraxinus pennsylvanica* 'Cimmaron')	Queensland Bottle Tree (*Brachychiton rupestris*)	Globe Norway Maple (*Acer platanoides* 'Globosum')
Urbanite Green Ash (*Fraxinus pennsylvanica* 'Urbanite')	European Nettle Tree (*Celtis australis*)	'Jerilderie Red' Brachychiton (*Brachychiton populneus* x *acerifolius* 'Jerilderie Red')
London Plane Tree (*Platanus* x *acerifolia*)	Golden Ash (*Fraxinus excelsior* 'Aurea')	Compact Honey Locust (*Gleditsia triacanthos* var.*inermis* 'Elegantissima')
Turkey Oak (*Quercus cerris*) (T)	Aerial Green Ash (*Fraxinus pennsylvanica* 'Aerial') (T)	Fantasy Crepe Myrtle (*Lagerstroemia fauriei* 'Fantasy') (T)
Scarlet Oak (*Quercus coccinea*)	Jacaranda (*Jacaranda mimosifolia*) [f]	Sioux Crepe Myrtle (*Lagerstroemia indica* x *L. fauriei* 'Sioux')
Willow Oak (*Quercus phellos*) (T)	Chinese Flame Tree (*Koelreuteria bipinnata*) (T)	Tuscarora Crepe Myrtle (*Lagerstroemia indica* x *L. fauriei* 'Tuscarora')
Fastigiate Oak (*Quercus robur* 'Fastigiata')	Golden Rain Tree (*Koelreuteria paniculata*)	Bechtel's Crabapple (*Malus ioensis* 'Plena') Use only high-graft stock
Green Vase Japanese Zelkova (*Zelkova serrata* 'Green Vase') (T)	White Cedar (*Melia azedarach* 'Elite')	Southworth Dancer Pear (*Pyrus betulaefolia* 'Southworth' Dancer)
	Chinese Pistachio (*Pistacia chinensis*)	Korean Sun Pear (*Pyrus fauriei* 'Westwood')
	Aristocrat Callery Pear (*Pyrus calleryana* 'Aristocrat')	

Capital Callery Pear (*Pyrus calleryana* 'Capital')

Chanticleer Callery Pear (*Pyrus calleryana* 'Chanticleer')

Chinese Elm varieties (*Ulmus parvifolia* var.)

List of evergreen species

*Species is indigenous to certain vegetation communities in the municipality
(T) species/cultivar currently not utilised for street tree planting but has potential (not to be used in prominent streets)
[f] Frost sensitive while young

Smooth-barked Apple (*Angophora costata*) [f]	Drooping She-oak (*Allocasuarina verticillata*)	Lightwood (*Acacia implexa*) *
Rough-barked Apple (*Angophora floribunda*) [f]	Kurrajong (*Brachychiton populneus*) *	Black She-oak (*Allocasuarina littoralis*)
River Sheoak (*Casuarina cunninghamiana*)	White cypress-pine (*Callitris glaucophylla* formerly *C. columellaris*)	Dwarf Apple (*Angophora hispida*)
Deodar or Himalayan Cedar (*Cedrus deodara*)	Yellow Bloodwood (*Corymbia eximia*)	Harkness Bottlebrush (*Callistemon* 'Harkness')
Lemon-scented Gum (*Corymbia citriodora*) [f]	Argyle Apple (*Eucalyptus cinerea*)	Kings Park Special Bottlebrush (*Callistemon* 'Kings Park Special')
Spotted Gum (*Corymbia maculata*)	Carob (*Ceratonia siliqua*)	Weeping Bottlebrush (*Callistemon viminalis*)
Blakely's Red Gum (*Eucalyptus blakelyi*) *	Lowanna Spotted Gum (*Corymbia maculata* 'ST1' Lowanna)	Scentuous Lemon-scented Gum (*Corymbia citriodora* 'Scentuous')
River Red Gum (*Eucalyptus camaldulensis*) *	Red-spotted Gum (*Eucalyptus mannifera*)	Red-flowering Gum cultivars (*Corymbia ficifolia* 'Wild Sunset', 'Wildfire' & 'Dwarf Red')
Yellow Box (*Eucalyptus melliodora*) *	Wilga, Australian Willow (*Geijera parviflora*)	Cap-fruited Mallee (*Eucalyptus dielsii*) (T)
Grey Box (*Eucalyptus microcarpa*) *	Queensland Brush Box (*Lophostemon confertus*)	Euky Dwarf Yellow Gum (*Eucalyptus leucoxylon* 'Euky Dwarf')
Red Box (*Eucalyptus polyanthemos*) *	Snow-in-summer (*Melaleuca linariifolia*)	Round-leaf Moort (*Eucalyptus platypus*) (T)
Narrow-leaved Peppermint (*Eucalyptus radiata*) *	European Olive varieties (*Olea europea* 'Swan Hill')	Green Mallee (*Eucalyptus viridis*) (T)
Red Ironbark (*Eucalyptus sideroxylon*)	Kanooka, Water Gum (*Tristaniopsis laurina* 'Luscious') [f]	Tucker Time Honey Pots (*Eucalyptus wimmerensis* 'Honey Pots') (T)
Algerian Oak (*Quercus canariensis*) (Semi E/G) (T)		Hill's Fig (*Ficus macrocarpa* var. *hillii*) (Pruned as a standard/topiary)
Holly Oak (*Quercus ilex*) (T)		Little Gem Bull Bay Magnolia (*Magnolia grandiflora* 'Little Gem')
Weeping Lilly Pilly (*Syzygium floribundum*) [f] syn. *Waterhousea floribunda*		

The potential for direct mechanical damage and upheaval is one factor in street tree planting. It is also necessary to consider soil type and the proximity and design of structures.

The list of tree species is not definitive.

The species listed should be considered the dominant species that will contribute to the pervading landscape character of the City's streets. Council arborists will review and investigate new tree species and cultivars in line with aesthetic, functional and climatic/environmental requirements.

Bushland Interface Trees

Botanical name	Common name	Native (N), Indigenous (I), Exotic (E)
Evergreen species		
Acacia dealbata	Silver Wattle	I
Acacia implexa	Hickory or Lightwood	I
Acacia melanoxylan	Australian Blackwood	N
Acacia paradoxa	Hedge Wattle	I
Acacia rubida	Red-stem Wattle	I
Acacia verniciflua	Varnished Wattle	I
Allocasuarina luehmannii	Buloke	I
Allocasuarina verticillata	Drooping She-oak	N
Angophora Costata	Sydney red gum	N
Brachychiton populneus	Kurrajong	I
Callistemon 'kings park special'	Kings park special	N
Callistemon Viminallis hanna ray	Weeping red bottlebrush	N
Callitris endlicheri	Black Cypress-pine	N
Callitris glaucophylla	White Cypress-pine	N
Corymbia Citriodora	Lemon scented gum	N
Corymbia Citriodora 'marion'	Salmon gum	N
Corymbia Ficifolia 'dwarf red'	Red flowering gum	N
Eucalyptus albens	White Box	I
Eucalyptus blakelyi	Blakely's Red Gum, Hill Gum	N
Eucalyptus bridgesiana	Apple Box or But-But	I
Eucalyptus caesia	Silver Princess	N
Eucalyptus camaldulensis	River Red Gum	I
Eucalyptus dealbata	Tumbledown Red Gum	N
Eucalyptus Exemia 'nana'	Yellow bloodwood	N
Eucalyptus goniocalyx	Long Leaved Box	I
Eucalyptus leucoxylon rosea	Red flowering yellow gum	N
Eucalyptus macrorhyncha	Red Stringybark	I
Eucalyptus maculata	Spotted gum	N
Eucalyptus mannifera ' little spotty'	Little spotty'	N
Eucalyptus melliodora	Yellow Box	I
Eucalyptus microcarpa	Grey Box	I
Eucalyptus platypus var heterophyla	Platapus gum	N
Eucalyptus polyanthemos	Red Box	I
Exocarpos cupressiformis	Cherry Ballart or Wild Cherry	I
Geijera parvifolia	Wilga tree	N
Melaleuca linariifolia	Snow in summer	N
Tristaniopsis laurina	Water gum	N
Deciduous species		
Brachychiton acerfolius	Illawarra Flame tree	N

Wodonga Plant Species Lists

Species suitable for interface plantings

Botanical name	Common name
Shrubs	
Acacia acinacea	Gold Dust Wattle
Acacia ulicifolia	Juniper Wattle
Bursaria Lasiophylla	Hairy Bursaria
Daviesia leptophylla	Narrow-leaf Bitter pea
Dillwynia cinerascens	Grey Parrot-pea
Dillwynia sericeia	Showy Parrot-pea
Dodonaea viscosa	Slender Hop-bush
Eutaxia microphylla	Common Eutaxia
Grevillea alpine	Cat's Claw Grevilla
Indigofera australis	Austral Indigo
Grasses and groundcovers	
Austrodanthonia Spp.	Wallaby Grass spp.
Austrostipa scraba	Rough spear Grass
Carex appressa	Tall sedge
Chrysocephalum apiculatum	Common Everlasting
Chrysocephalum semipapposum	Clustered Everlasting
Dianella revoluta	Black-anther Flax-lily
Hardenbergia violacea	Purple Coral-pea
Microlaena stipoides	Weeping Grass
Poa Sieberiana	Grey Tussock Grass
Themeda triandra	Kangaroo Grass
Xerochrysum viscosum	Sticky / Shiny everlasting

Additional native species options

Botanical Name	Common Name
Trees	
Acacia dealbata	Silver Wattle
Acacia implexa	Hickory or Lightwood
Allocasuarina verticillata	Drooping She-oak
Brachychiton populneus	Kurrajong
Callitris endlicheri	Black Cypress Pine
Callitris glaucophylla	White Cypress Pine
Eucalyptus albens	White Box
Eucalyptus blakelyi	Blakely's Red Gum, Hill Gum
Eucalyptus bridgesiana	Apple Box
Eucalyptus dealbata	Tumbledown Red Gum
Eucalyptus goniocalyx	Long-leaf Box
Eucalyptus macrorhyncha	Red Stringybark
Eucalyptus polyanthemos	Red Box
Exocarpos cupressiformis	Cherry Ballart or Wild Cherry

Shrubs	
Acacia paradoxa	Hedge Wattle
Acacia verniciflua	Varnish Wattle
Grevillea alpina ('Albury form')	Cat's claws
Dodonaea viscosa ssp angustissima and s	Hop bush
Bursaria spinosa	Sweet Bursaria
Brachyloma daphnoides	Daphne Heath
Melichrus urceolatus	Urn Heath
Hibbertia obtusifolia	Grey Guinea Flower
Hibbertia riparia	Erect Guinea Flower
Pimelea linifolia ssp. linefolia	Slender Rice-Flower

Pea Flowers	
Pultenaea foliolosa	Small-leaf Bush Pea
Platylobium formosum	Handsome Flat-pea
Daviesia latifolia	Hop Bitter pea
Dillwynia phylicoides A.Cunn.	Small-leaf Parrot-pea
Hardenbergia violacea	Purple Coral-pea
Hovea heterophylla ACunn ex Hook.f.	Hovea
Glycine clandestine	Twining Glycine
Indigofera australis	Austral Indigo

Groundcovers	
Chrysocephalum semipapposum	Clustered Everlasting
Xerochrysum viscosum	Sticky Everlasting
Leucochrysum albicans	Hoary Sunray

Orchids	
Thelymitra nuda	Plain Sun Orchid
Diuris sulphurea	Tiger Orchid
Calochilus robertsonii	Purple Beard Orchid
Xerochrysum viscosum	Sticky Everlasting
Thelymitra rubra	Pink Sun Orchid
Glossodia major	Wax Lip Orchid

Lilies	
Burchardia umbellate	Milkmaids
Bulbine bulbosa	Yellow Bulbine-lily
Dianella revolute	Black-anther Flax Lily
Dichopogon strictus	Chocolate Lily
Wurmbea dioica	Early Nancy
Tricoryne elatior	Yellow Rush-lily
Thysanotus tuberosus	Common Fringe Lily

Other herbs	
Lomandra multiflora	Many-flowered Mat-rush
Microseris lanceolata	Yam Daisy
Stackhousia monogyna	Creamy Candles

Stylidium graminifolium	Grass Trigger Plant
Drosera peltata	Pale sundew
Brunonia australis	Blue Pincushion
Wahlenbergia stricta	Bluebell
Cheilanthes austrotenuifolia	Green Rock Fern

Grasses	
Austrodanthonia spp.	Wallaby grasses
Austrostippa spp.	Speargrass
Themeda australis	Kangaroo Grass

Environmental Weeds	
Includes some environmental weeds of the Albury- Wodonga region.	
Blackberry *Rubus fruticosus*	
Bridal Creeper *Myrsiphyllum asparagoides*	
Broadleaf Privet *Ligustrum lucidum*	
Broome *Cytisus scoparius*	
Cootamundra Wattle *Acacia baileyana*	
Cotoneaster *Cotoneaster spp.*	
Crocosmia *Crocosmia x crocosmiifolia*	
False acacia *Robinia pseudoacacia*	
Genista *Genista monspessulana*	
Hawthorn *Crataegus spp.*	
Italian Lavender *Lavandula stoechus*	
Pyracantha *Pyracantha angustifolia*	
Small-leaf Privet *Ligustrum sinense*	
St John's Wort *Hypericum perforatum*	
Tagasaste *Cytisus palmensis*	
Annual Veldtgrass *Ehrharta longiflora*	
Blowfly Grass *Briza maxima*	
Couch *Cynodon dactylon*	
Kikuyu *Pennisetum clandestinum*	
Paspalum *Paspalum dilatatum*	
Pigeon Grass *Setaria sp*	
Wild Oats *Avena fatua*	

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