



WOLLONDILLY URBAN TREE CANOPY PLAN AND LANDSCAPE STRATEGY

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1.0 Introduction

1.1. Background and Context

This Urban Tree Canopy Plan and Landscape Strategy (henceforth, Urban Canopy Plan) for Wollondilly Local Government Area (LGA) has been prepared in response to the State government's recent planning reforms that are to be reflected in Wollondilly Council's (henceforth Council) Local Strategic Planning Statement, Local Environmental Plan, Development Control Plan and associated strategies and plans. For the first time in NSW planning history, the State Government is calling on metropolitan councils to respond to the need to protect and enhance urban canopy to protect and improve biodiversity, water quality and liveability as well as improve resilience to climate change and urban heat.

The Urban Canopy Plan applies to both public and private land in Wollondilly's urban areas, town and villages and the numerous urban release areas including the state government lead growth areas of Wilton and Greater Macarthur. Given the vast expanse of National Park present in Wollondilly LGA, the project extent has been limited to the 81,000 ha of land predominantly characterised by rural and peri-urban land-uses with approximately 14 towns and villages and some smaller communities dotted throughout (see Figure 1, opposite). This area is referred to as the study area throughout this document.

This document is one of a suite of other strategic documents being prepared by Council in parallel, which will guide the formal review of the Wollondilly LEP 2011 and deliver on Council's commitment to state government.

The Urban Canopy Plan has been prepared based on analysis and assessment of existing Council and NSW state government data for planning, environment and infrastructure features, and relevant guidelines, policies and strategies available at the time when this document was prepared.

As part of this study, an analysis of existing tree canopy has also been undertaken to support the strategic direction of the Plan. The analysis was undertaken using freely available LIDAR imagery from the Intergovernmental Committee on Surveying and Mapping (2019 imagery).

This Urban Canopy Plan should be read in conjunction with the Wollondilly Urban Tree Canopy Plan Background and Analysis Report attached as Appendix B of this document.

1.2. Urban Canopy Plan Aims

The aim of this Plan is to understand the existing canopy cover and provide high level strategic direction to assist Council to implement policies and programs and operations to protect, maintain and enhance a healthy and diverse urban canopy within the Wollondilly Shire, now and into the future.

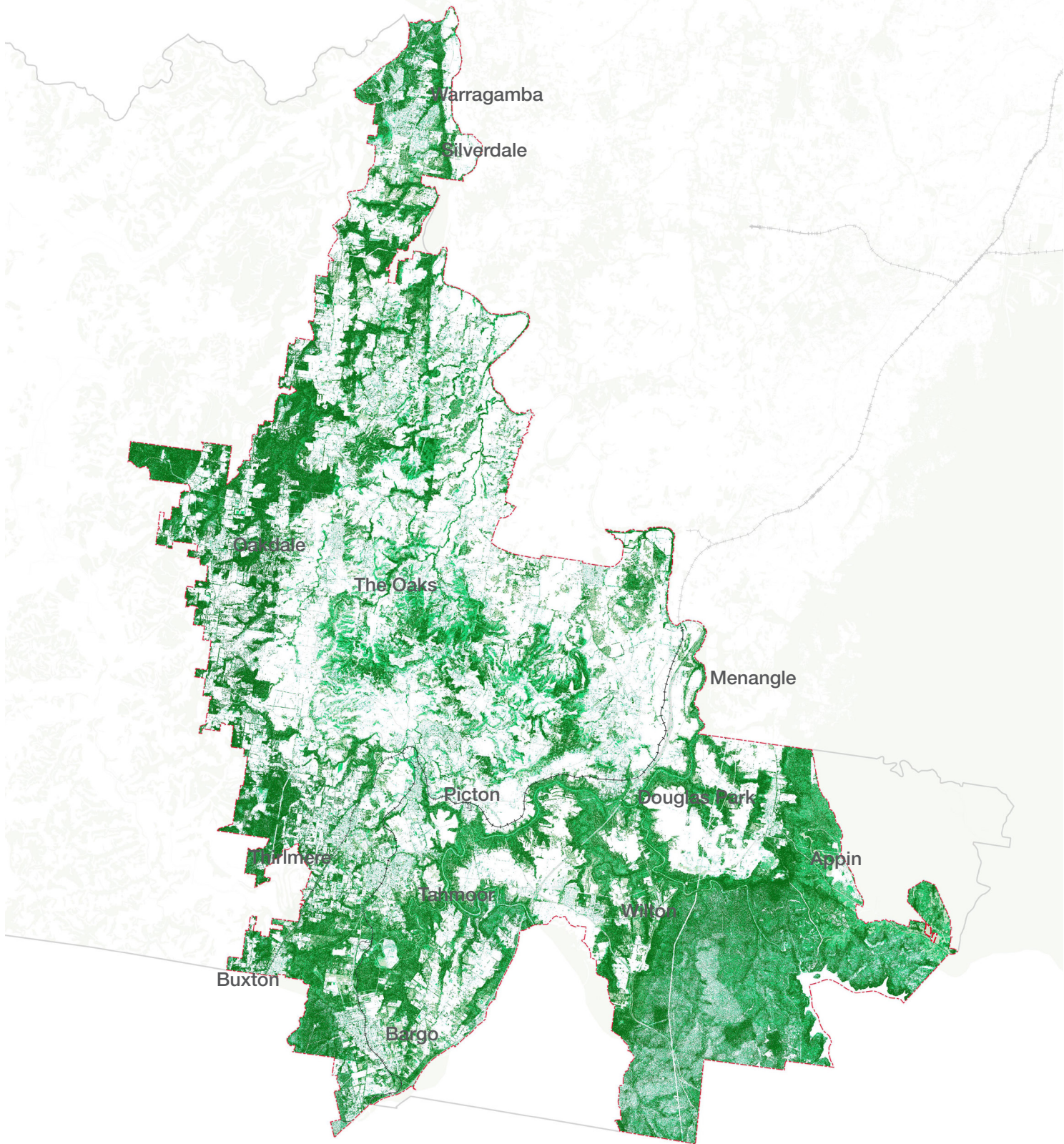
This document will be used by Council to:

- inform amendments to the Local Environmental Plan, Development Control Plan and associated strategies and plans
- identify priority areas for urban canopy protection and creation of new canopy
- direct sound decision making to plan, fund, deliver and negotiate for urban canopy and
- assist with a coordinated approach to implementation of an increased tree canopy, to meet the needs of Wollondilly's growing population.

1.3. Urban Canopy Plan Objectives

Council's main objectives for this plan are to:

- map Wollondilly's existing urban canopy
- understand trends and distribution of Wollondilly's current urban tree canopy coverage to facilitate reporting in line with state government requirements
- understand the opportunities and challenges that exist within the planning framework that can influence Wollondilly's urban tree canopy for both existing and future urban development areas
- establish urban tree canopy targets for Wollondilly's existing and future urban development areas
- identify opportunities to strengthen local planning policies and/or other instruments to positively affect Wollondilly urban canopy coverage
- develop a landscape strategy to support increasing and maintaining canopy coverage and the retention and enhancement of the existing historic, and rural character of Wollondilly
- identify important considerations and suitable tree species for the different functions of urban canopy
- identify and evaluate options for Council to begin development of a tree register that allows urban trees to be managed and monitored as assets (note: included in a separate memo to Council).



Legend

- Urban Study Area
- Classified Trees Height
- > 8 meters
- > 3 < 8 meters

Figure 1. Tree canopy cover over the Wollondilly study area (excludes National Parks) derived from LIDAR data analysis.

1.4. What is Urban Canopy

Urban canopy refers to “all trees on public and private land within urban areas. This comprises a variety of tree types such as exotics, natives, deciduous trees, and evergreens occupying a range of environments from busy city centres to regional main streets and suburbs” (NSW Government Architects, 2020). It is measured as canopy cover percentage of a total area, not by the number of trees (LGA NSW 2003).

Urban canopy is an important part of the urban environment and is considered essential in Sydney’s Metropolitan and District Plans to providing liveable, sustainable, resilient and biodiverse urban environments. It is a valuable urban and community asset and natural resource, regardless of ownership boundaries.

Urban canopy forms an important component of the Greater Sydney Green Grid, which is the regional network of high quality green spaces and tree-lined streets that supports cool green links for walking, cycling and community access to open spaces (GSC, 2019).

It also forms green infrastructure, which is the network of green spaces, natural systems and semi-natural systems including parks, rivers, bushland and private gardens that are strategically planned, designed and managed to support a good quality of life in an urban environment (NSW Government Architects, 2017).

1.5. Why is Urban Canopy Important

The urban canopy provides a wide suite of benefits and urban functions and can be a powerful element of urban infrastructure to address many issues facing urban environments and their communities.

Some of the key economic, environmental and social benefits that urban tree canopy can provide are listed below :

Economic benefits:

- reducing energy costs
- increasing property values through better aesthetics
- avoiding costs of infrastructure damage and renewal
- decreasing health costs
- boosting the viability of businesses by drawing shoppers into pleasant environments

“A street tree in the front verge of a property can increase the median property price by A\$16,800”

(NSW Government Architects, 2020)

“In just 12 months, one mature tree can absorb 3,400 litres of stormwater, filter 27kg of pollutants from the air and provide a cooling effect equivalent to running 10 air-conditioners continuously”

(City of Melbourne, 2012)

Environmental benefits:

- providing shade and cooling (shade lowers temperatures by 3-5 degrees Celsius)
- reducing stormwater flows and nutrient loads
- reducing air pollution and airborne particulates
- storing and sequestering carbon
- providing crucial habitat and connectivity for the long-term survival of our native plants and animals.

Social Benefits

- providing sense of place, aesthetic beauty and reflect local history
- improving community cohesion
- encouraging outdoor activity and connection with nature
- reducing exposure to sun, improving mental and physical health and reducing heat-related illness

While there are many overarching benefits that can be derived from healthy urban tree canopy, what really matters is being able to clearly link these benefits with Wollondilly’s specific context including the existing values and challenges faced. Understanding these context specific issues can help to identify strategic directions for where to focus efforts and resources and what trees may be more suitable to plant.

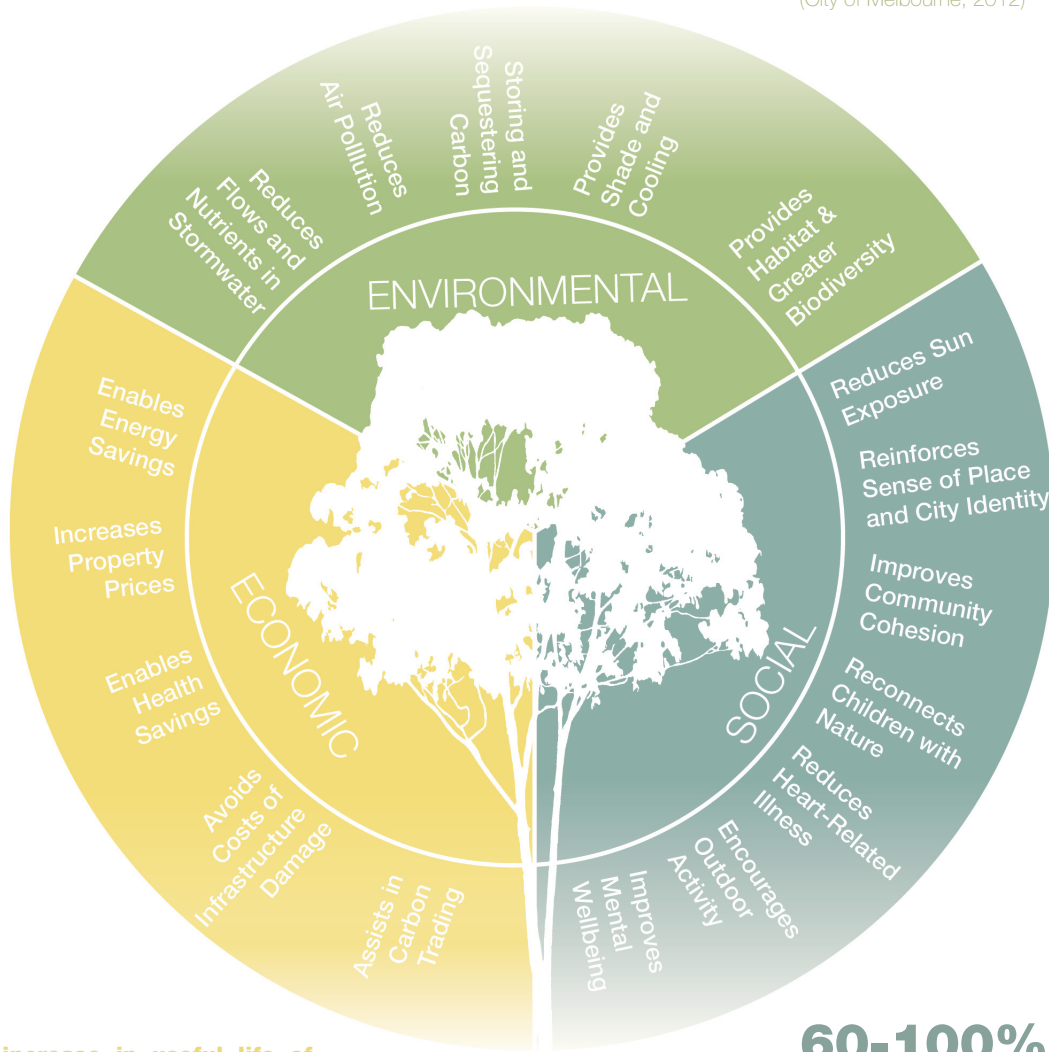
Some of the issues faced by Wollondilly identified in the Draft Local Strategic Planning Statement that improved urban tree canopy cover would assist in addressing include:

- urban heat island effect and urban heat vulnerability
- high levels of obesity, lung cancer, diabetes and asthma
- high rates of car ownership
- low active transport mobility
- limited access to diverse and quality public open spaces.

Benefits of Trees in the Urban Environment

27kg/yr of pollutants filtered from the air by one mature tree

(City of Melbourne, 2012)



30% increase in useful life of asphalt paving infrastructure when shaded by tree canopy.

(Moore, 2009)

60-100% reduction in excess mortality due to extreme heat could be achieved through increasing vegetation coverage.

(CSIRO, 2013)

Figure 2. Graphic depicting the multiple benefits of urban canopy.

1.6. The Past & Present of Wollondilly's Canopy

The Past

The earliest known inhabitants of the Wollondilly area were the Gundangurra people who gave the area its name. The Wollondilly area is also home to the Darawal and Darug people. Pre-European settlement, the land would have been covered with Cumberland Plain vegetation communities of which we see remnant patches today. European settlement of the Wollondilly area began in the early 1800s which resulted in heavy clearing of bushland for agriculture.

As the towns that we know today were established, new canopy was established through park, private and street tree planting of non-native species that play a significant role in creation of the European historic character that is still evident today.

The Present

Today, Wollondilly's urban canopy is a mix of remnant native bushland generally located in National Park, council reserves, or private rural properties in areas unsuitable for agriculture or protected by policy and legislation (e.g. riparian corridors or steep embankments). Within historic towns, tree canopy cover is, in some places, greater than it would have been in early periods of European settlement due to the maturation of trees planted in those periods. The make up of tree canopy species in Wollondilly's urban areas is unknown. Visual inspection of Google Street View however indicates that the species mix is dominated by non-native trees. A detailed analysis of canopy coverage across the study area is documented in Chapters 3 and 4 of this Plan.

As Wollondilly faces a period of significant urban growth, there is the threat of further tree loss (especially native trees in stands of remnant bushland). However, given the large areas of already cleared land in Wollondilly, Council actually has the opportunity to significantly increase its future canopy through new urban tree planting on cleared land. This opportunity is particularly achievable in this time of unprecedented regional and state government support for urban trees and consequently the gradual shift of community attitudes towards the important benefits that urban trees provide.

The trees we plant today will become the canopy for decades to come. It is important to acknowledge the many existing and potential threats to urban canopy to plan for a healthy and resilient future urban canopy. Some of the key threats to Wollondilly's urban canopy include:

Changing climatic trends

- more hot days and changing rainfall patterns
- more frequent extreme weather events (drought, bushfire, flood, winds)
- changing habitat ranges for vegetation species
- changing habitat ranges for pests and pathogens

Urban development

- planning policies allowing tree removals for development
- competing space above and below ground (from powerlines, underground services etc.)
- general residential development trend of smaller lots and larger houses (leaving less space for private trees)
- biocertification of urban release area
- offsets made outside of the LGA

Land Clearing

- increased clearance of native vegetation that has occurred under the revised land management framework introduced July 2017
- shortcomings in awareness of legislative requirements and/or biodiversity values by landholders
- high incidents of clearance occurring prior to lodgement of development applications and associated legislative requirements.

Community

- community attitude towards trees e.g. vandalism, complaints etc.

Image Source: wiltonnewtown.com.au



1.7. Planning Framework Review Summary

Wollondilly Shire has a complex range of planning instruments to navigate in order to implement controls to protect and enhance urban canopy. These instruments exist at the Commonwealth, State and local level.

The need to protect the Shires significant biodiversity and heritage adds to this complexity with more layers of legislation for consideration including the Koala Plan of Management, currently in preparation. Furthermore, the widespread bushfire prone areas trigger the need for careful consideration as to where urban canopy embellishment is appropriate.

While some State Government planning instruments protect the environment and people from impacts due to development or hazards, others are designed to streamline the planning process and assist with housing affordability and provision, which in some cases can contribute to the loss of urban canopy. Council's challenge is to negotiate around these pieces of legislation to achieve its canopy targets.

Implementation of a precinct-based approach to planning for canopy in the Shire will be the best way to achieve desired urban design and canopy outcomes that are responsive to the environment, community desires, the planning framework and statutory requirements.

1.8. Existing Canopy Analysis Summary

- While the whole Wollondilly study area (non-National Park areas) has an existing canopy cover of 40%, the majority of this canopy is accounted for in bushland and rural landuse areas and does not represent urban canopy cover.
- Urban landuses account for 9% of the study area and have a canopy coverage of 32%.
- Within urban areas, the highest canopy cover can be found in open spaces (51%) followed by road reserves (35%).
- The majority of existing towns have an existing canopy cover of between 20-40%.
- 61% of canopy cover in all towns is on private land and 39% is on public lands (RE1 public open spaces and road reserves).

“The majority of canopy cover occurs in bushland and rural landuse areas...

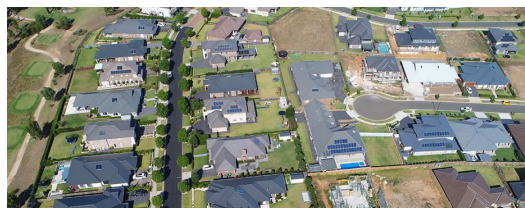
Urban landuses account for 9% of the study area and have a canopy coverage of 32%.”

1.9. Strategic Canopy Focus Areas

To meet Council's overall canopy target, the following high level priority areas have been identified where efforts to increase canopy coverage would be most beneficial:

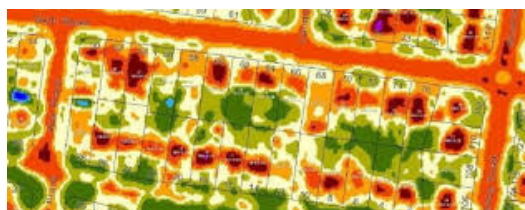
New urban release areas

Wollondilly Shire will accommodate more urban areas in the future, buildings, roads and other impervious surfaces will increase that trap and emit heat from the sun.



Urban heat vulnerability hot spots

Urban heat vulnerability maps indicate which existing towns or villages are more vulnerable to urban heat due to illness, age or socio-economic and environmental factors. Urban heat in these hot spot areas exposes community to unacceptable levels of risk (Bendigo, 2020). Note that there is a correlation between urban heat and vulnerability hot spots and towns with low existing canopy cover.



Strategic pedestrian, cycleway and recreation activity areas

Outdoor physical activity during hot weather is a risk factor for heat-related illness. People are also less likely to participate in outdoor activity, walk or cycle when the weather is uncomfortably hot, which impacts uptake of sustainable modes of transport and a healthy active lifestyle. A targeted and effective tree canopy along cycleways, footpaths and in recreation areas will provide shade to reduce urban heat and skin damage from sun exposure.



Towns and villages

Respond to community values and needs that relate to urban canopy recorded in the Draft LSPS. Urban tree canopy around town centres can also help to boost the thermal comfort and therefore economic success of local businesses.



Biodiversity areas

Supporting the safe and functional connection of biodiversity corridors through urban precincts and koala movement corridors



1.10. Wollondilly Urban Canopy Targets

Wollondilly's urban canopy coverage (32% coverage of its total urban area) is significantly greater than the overall Greater Sydney Region existing cover of 21% for which the 40% canopy target has been adopted.

Wollondilly's existing and proposed urban developments are low density. Its climate is comparable to many other Sydney LGAs. These are two of the primary factors influencing the theoretical viability of increasing urban canopy.

It is considered that 40% is an appropriate urban canopy cover target for Wollondilly to adopt for the total area of existing towns and villages by 2056 and 40% mature canopy cover for each new development.

Refraining from setting a 40% canopy target for each existing town and village allows for some flexibility around issues that affect different towns to different extents such as extent of bushfire prone land (which mandates <30% cover) and limited resources for management and maintenance of urban trees.

Further to urban canopy cover targets, it is recommended that Council adopt the following species diversity and survival targets:

- **No more than 10% planting of the same species in a single development**
- **95% survival rate of planted trees 12 months from planting**

40% canopy cover target for existing urban areas by 2056

40% mature canopy cover target in new developments

<10% target for same species planting in a single development

95% target for tree survival rate 12 months from planting



2.0 URBAN CANOPY POLICY AND PLANNING DIRECTIONS

2.1. Introduction

The following strategic policy and planning directions have been prepared to indicate the steps that Council could undertake to protect, maintain and enhance a healthy and diverse urban tree canopy within Wollondilly's urban areas, now and into the future.

The recommended actions are consistent with the State Government's Sydney Green Grid and Urban Canopy Policy Framework as well as targets outlined in the Metropolitan Plan, Western City District Plan, Premier's Priorities and draft Greener Places Policy and Design Guide. It is also consistent with the framework outlined in Council's draft Local Strategic Planning Statement for an Urban Canopy Strategy that included objectives, targets and strategic focus areas.

The actions have been prepared following:

- analysis of the existing canopy coverage of Wollondilly and its interconnectivity with biodiversity sensitive land
- investigation of the opportunities and constraints from legal, strategic planning, environmental, economic and social perspectives
- a review of best practice urban and regional approaches to urban canopy strategies in New South Wales and Victoria
- determination of canopy coverage targets and priority areas
- consultation with Council officers who are responsible for the implementation of the strategy at the planning and management levels.

Each of the actions on the following pages set out recommended measures that can be used to implement the focus areas (right) and reflect the many issues that must be covered. In most cases, the actions identify areas for further investigation involving additional community and stakeholder engagement and will require Council support before implementation.

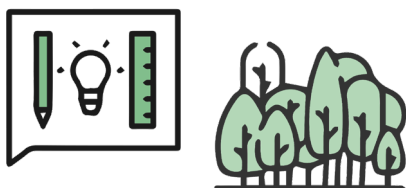
Many of the actions propose amendments to Council's planning instruments, land use management plans, associated strategies and operations for Council to consider in its endeavour to protect and enhance urban canopy in Wollondilly Shire.

Four strategic focus areas have been derived from consideration of other best practice canopy plans (including those from City of Sydney, City of Wollongong, City of Bendigo and City of Melbourne) and the tree canopy objectives and considerations that are specific to Wollondilly's context. These focus areas have been used to structure the recommended actions and are summarised on the following page.

4 Strategic Focus Areas

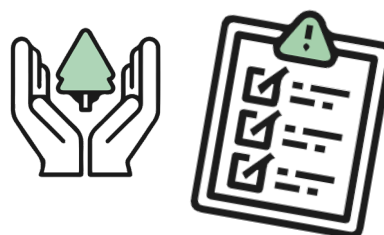
Create

Strategic planting of more trees to meet Wollondilly's urban canopy targets.



Manage

Protect and Maintain a diverse, healthy, connected and resilient urban canopy.



Bushfire Management

Plan and manage canopy in bushfire prone areas to not increase bushfire risk.



Community

Collaborate with and educate our community



Create



Strategic Focus 1: Create – Strategically Plant Trees To Meet Canopy Targets

Action

Strategic Planning

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
<p>1.1 Review and revise relevant provisions in the LEP / DCP and other local planning instruments to support canopy targets by:</p> <ol style="list-style-type: none"> Identifying priority areas in this strategy for targeted canopy improvement, based on a range of considerations including growth areas, open space, green grid, biodiversity connectivity, heritage, existing hot spots and heat vulnerable areas Including urban canopy and mitigation of urban heat island effect in aims, objectives and local provisions to ensure tree canopy is considered during the development planning and assessment process, Mapping of areas of strategic biodiversity value based on Wollondilly biodiversity related strategies. Mapping of urban canopy cover, urban heat, green grid, biodiversity (koala habitat) and tree planting offset site opportunities with associated planning provisions in the DCP to: <ul style="list-style-type: none"> Guide where canopy enhancement is required, Guide application of canopy targets, Guide application of controls for landscaping, deep soil area and setbacks, Guide application of incentive, funding and education programs to plant trees. Considering desired urban canopy on a precinct basis in structure plans, planning proposals, neighbourhood plans, local character areas, place base plans and heritage conservation area statements with associated design guidelines that respond to town and precinct needs, environment and community preferences, Reviewing WSUD development controls in the DCP to retain water in the landscape to support new trees, Including design excellence and sustainability excellence provisions and guidelines that enhance urban canopy, Developing guidelines for planning proposals and planning agreements to deliver greater canopy outcomes to enhance liveability, biodiversity and reduce urban heat. 	Ongoing	All	✓	✓	✓

Action

Strategic Planning

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
<p>1.2 Where appropriate, align urban canopy planning controls in Wollondilly DCP and when precinct planning with:</p> <ul style="list-style-type: none"> – Wilton DCP 2040 canopy controls and Wilton Green Plan planning and design guide, – Koala Plan of Management, – Wollondilly strategies on biodiversity, green grid, active transport, greener places, heritage and landscape, – Best practice guidelines including Western Sydney Street Design Guidelines 2020 and Government Architect Draft Greener Places Design Guide 2020, – Wollondilly Biodiversity Offsets Policy, – NSW RFS Planning for Bushfire Protection 2019, – Relevant Australian Standards. 	1-2 Years	All		✓	

Operations

<p>1.3 Ensure the public tree planting program applied to capital works, active transport, street tree and public open space projects reflects the Wollondilly Landscape Strategy and:</p> <ul style="list-style-type: none"> – Results in the selection of the largest and longest-lived species of tree possible for the available growing conditions and site constraints, – Provides species diversity (native / non-invasive in terms of family, genus and species), – Maximises use of available vacant planting spaces, – Provides for different tree age classes by replacing dead or diseased trees and trees with limited benefits, – Responds to and enhances ‘place’ in terms of heritage, local character and biodiversity (including food trees and seasonal food availability), – Responds to a changing climate by using the latest data and tools e.g “Which Plant Where”, – Monitors, assesses and treats emerging threats from pests and diseases, – Integrates Koala tree species listed in the Koala Plan of Management into the planting program and ensures feed trees are not located next to busy roads. – Continue to revise and implement street tree planting program 	Ongoing	Public			✓
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Action

Operations

1.4 Establish a list of preferred tree supply and planting contractors to help deliver the number of trees required to meet the canopy targets.

IMPLEMENT	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
1-2 Years, 3-5 Years, 5+ Ongoing				
1-2 Years	Public			✓

Policy and Programs

1.5 Develop and implement tree replacement principles for private development and utilities working on Council land e.g. security bonds.

1.6 Investigate incentive programs to retrofit existing developments to accommodate more trees e.g. car parks

1.7 Implement the Wollondilly Biodiversity Offset Policy principles that require removal of canopy and other vegetation to be offset on the development site.

1.8 Encourage developers to incentivise the establishment of canopy trees by home owners in privately owned landscape areas (eg trees need to be planted as identified within approved plans prior to the issuance of an occupancy certificate).

1.9 Collaborate with internal and external stakeholders when planning and implementing public domain projects to ensure well informed decision making, encourage a united approach to increasing urban tree canopy and reduce conflict for example during:

- Preparation of Wilton Green Plan,
- Sequencing and infrastructure planning for tree canopy,
- Shared trenching and consolidation of utilities to reduce conflicts between trees and service infrastructure,

1.10 Investigate adopting a Green Factor Tool (like the City of Melbourne's) in the Development Application process to help design and construct new buildings that include green infrastructure to improve environmental performance.

1.11 Develop tree management plans and master plans for key parks and streetscapes and ensure new park master plans include a mature canopy diagram to demonstrate canopy targets are being met.

IMPLEMENT	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
1-2 Years	Public		✓	✓
3-5 Years	All		✓	✓
1-2 Years	All			✓
Ongoing	Private			✓
Ongoing	Public			✓
1-2 Years				✓
3-5 Years	Public			✓

Action

Advocacy

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
1.12 Work with DPIE, other relevant agencies and developers to create an effective and connected urban canopy in the Wilton Growth Area and other release areas.	Ongoing	All		✓	✓
1.13 Advocate for the protection and enhancement of tree canopy in NSW Government projects and along active transport routes.	Ongoing	All			✓
1.14 Actively engage with utilities / infrastructure providers to protect, retain and restore tree canopy when undertaking works.	Ongoing	Public			✓

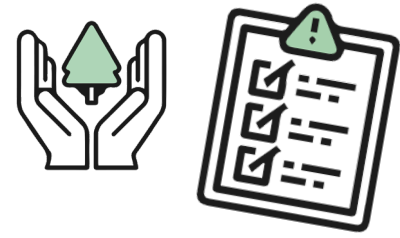
Funding

1.15 Investigate establishment and funding of a dedicated Council tree planting and maintenance team including a qualified arborist in addition to the annual public trees program.	3-5 Years	Public			✓
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Measure of Success

- Achieve the canopy targets of:
 - 40% or more across all Wollondilly urban development areas by 2056
- Adoption of statutory controls that enhance urban canopy on public and private owned land and in existing and future urban areas,
- Implementation of a planting program that optimises tree canopy suitable for each street or public place location, and contributes to character and sense of place,
- Number of parks and public spaces with provision of natural shade,
- Number of kilometres of bike and pedestrian paths with natural shade,
- Number of trees planted as a result of the development process equals or out weights the number removed,
- Urban heat is reduced,
- Biodiversity corridors and urban ecology are enhanced,
- All trees removed in the public domain have been replaced,
- Council staff are committed to implementing the Strategy,
- Planning and resourcing of urban tree canopy initiatives are embedded into Council's strategic planning, implementation and reporting frameworks, including community strategic planning processes, the associated integrated planning and reporting framework under the Local Government Act 1993, strategic asset management planning and total asset management planning processes and reporting.

Manage



Strategic Focus 2: Manage – Protect And Maintain A Diverse, Healthy, Connected And Resilient Urban Canopy

Action

Strategic Planning

2.1 Review and revise relevant provisions in the LEP / DCP and other local planning instruments to protect urban canopy. Considerations include:

1. Identifying priority areas in this strategy for targeted canopy protection e.g.,
 - New urban release areas,
 - Hot spots and heat vulnerable areas,
 - Pedestrian, cycleway and recreation activity areas (Green Grid),
 - Biodiversity connectivity areas and habitat,
 - Heritage landscapes.
2. Including urban canopy and mitigation of urban heat island effect in aims, objectives and local provisions to ensure the benefits of existing tree canopy are considered during the development planning and assessment process,
3. Mapping 'environmentally sensitive areas' in the LEP to protect and enhance urban canopy for koala habitat, significant biodiversity corridors, areas of scenic value, geological value or steep gradient etc.,
4. Mapping existing urban canopy cover, areas that are exposed to urban heat, green grid corridors, significant biodiversity, koala habitat and tree planting offset site opportunities with associated planning provisions in the LEP and/ or DCP to:
 - Protect enhance and connect canopy and identified areas of strategic biodiversity value
 - Guide application of incentive, funding and education programs to protect trees.
5. Considering existing and desired urban canopy on a precinct basis in structure plans, planning proposals, neighbourhood plans, local character areas, place plans and heritage conservation area statements,
6. Reviewing WSUD, and water recycling development controls in the DCP to retain water in the landscape to support trees,
7. Considering split zones, amendments to the minimum lot size map and community title development when place based planning, to facilitate enhanced development opportunities on non-sensitive land e.g. cluster housing, in return for the dedication or protection of environmentally sensitive land / vegetation.
8. Ensure funding for long-term tree maintenance in Voluntary Planning Agreements

IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
3-5 Years	All	✓	✓	✓

Action

Strategic Planning

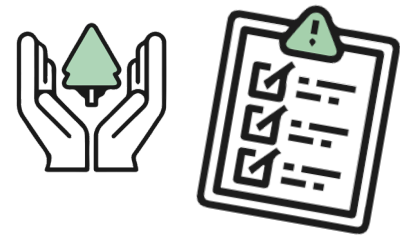
	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
9. Review the Wollondilly land dedication policy in relation to tree protection					

Advocacy

2.2 Advocate to DPIE:					
1. The need to review existing planning laws, policies and strategies that have the potential to effect the extent of existing urban canopy in urban/peri urban areas,					
2. The need to investigate and implement supportive mechanisms and incentives to retain urban trees e.g. entitlements and transferable development rights for private property to protect existing trees.	Ongoing	All			✓
3. The need to review existing and develop planning policies and strategies applying outside and within the Growth Areas that provide positive outcomes for tree canopy at a localised scale.					

Policy and Programs

2.3 .Develop, update and consolidate operational, technical, policy and planning documents, programs and systems to manage public trees, to improve:					
1. Ease of use and cost effectiveness of data collection and evaluation tools,					
2. Asset management and ability to manage urban canopy as a green infrastructure asset class,	Ongoing	Public			✓
3. Consistency in implementation based on targets, priority areas, land use, desired landscape character and best practice,					
4. Ability to embrace new technologies and methods as they emerge.					
2.4 Prioritise retention of tree species with long lifespans and healthy large trees that provide or will grow to provide effective shade, amenity and habitat (except environmental weeds).	Ongoing	All		✓	✓
2.5 Investigate opportunities to relocate powerlines underground and bundle cables at a local or precinct scale, especially in areas undergoing urban development to provide space for urban canopy.	Ongoing	All			✓
2.6 Examine the feasibility of incorporating natural assets into Council's existing Asset Management Strategy and Asset Management Plan	3-5 Years	Public			✓



Action

Policy and Programs

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
2.7 Investigate benefits of a significant tree register, especially for heritage conservation areas including protection and management guidelines and community nomination process.	3-5 Years	All			✓
2.8 Ensure Council capital works, active transport and public open space projects protect existing trees and replace trees that are removed through mandatory offsetting (either onsite or elsewhere).	1-2 Years	Public			

Operations

2.9 Investigate and secure the supply of reliable, healthy tree stock to Council's nursery to increase tree diversity and health in the public domain and ensure local provenance requirements for planting within and adjoining bushland.	Ongoing	Public			✓
2.10 Investigate maintaining new trees in the public domain for an additional year to increase the rate of success.	1-2 Years	Public			✓
2.11 Adopt innovative WSUD, and water recycling technologies to passively irrigate trees.	Ongoing	All			✓
2.12 Investigate the establishment of a Wollondilly Tree Register for asset management on Council managed land (apart from bushland) e.g. maintenance, tree removal, planting programs, and to manage tree requests. Over time it may be embellished to include data on species, age, tree significance, tree hollows, habitat boxes, food trees based on season, and site constraints.	3-5 Years Set up Use Ongoing	Public			✓
2.13 Maximise opportunities to supplement fauna habitat through retention of hollows, standing dead trees, installation of nest-boxes and carving of hollows.	Ongoing	All		✓	✓

Monitoring and Evaluation

2.14 Establish regular and transparent canopy monitoring, auditing, evaluation and reporting processes that can:	3-5 Years Set up Use Ongoing	All			✓
1. Feed into local / state government datasets e.g. Greater Sydney Commission Pulse of Greater Sydney,					
2. Inform effectiveness of the Urban Canopy Plan and targets,					
3. Inform the effectiveness of other related strategies and plans e.g. the Koala Plan of Management and Biodiversity Strategy,					
4. Inform Council's Delivery Program and Operational Plan.					

Action

Monitoring and Evaluation

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
2.15 Set up a public register of all tree removals authorised under the Vegetation SEPP for monitoring, evaluation and transparency.	Ongoing	All			✓
2.16 Explore suitable mechanisms to ensure compliance with consent conditions during and post development for the planting of new and replacement trees and the protection and retention existing trees	3-5 Years	Private			✓

Funding

2.17 Consider existing and potential funding mechanisms to protect, plant and maintain trees e.g grants, bond programs, market-based mechanisms, state infrastructure contributions, developer contributions / offsets and funding partnerships	Ongoing	All			✓
2.18 Consider a budget allocation for the implementation and operation of the tree register, monitoring program, regulatory compliance, education, community participation and staff resourcing for planting and maintenance.	Ongoing	All			✓

Measure of Success

- Achieve the canopy targets of:
 - 40% or more in suburban areas,
 - 25% or more in high to medium density areas.
- Achieve a canopy diversity target of indigenous and on-indigenous trees, of not more than
 - 40% for any family (unless required in Koala corridors),
 - 30% for any genus,
 - 10% for any species.
- Achieve the health target of 95% planted trees survive 12 month establishment period,
- Adoption of statutory controls that protect urban canopy on public and private owned land and in existing and future urban areas,
- Reduction in tree related insurance claims,
- Canopy monitoring, auditing, evaluation and reporting processes adequately inform whether the Strategy and other associated Council policies and plans are effective in protecting and enhancing urban canopy by tracking key actions and performance indicators,
- Council has a good understanding of their tree assets to inform the delivery program and operations plans,
- A united approach is adopted with internal and external stakeholders when planning and implementing public domain projects, to ensure well informed decision making, encourage a united approach to increasing urban tree canopy and reduce conflict,
- Council allocates sufficient budget and resources to effectively implement the Strategy and maintain and manage a healthy urban tree canopy,
- New funding mechanisms are made available to implement the strategy.
- More WSUD and recycled water system projects to passively irrigate trees.

Bushfire Management



Strategic Focus 3: Bushfire Management
- Plan And Manage Canopy In Bushfire Prone Areas To Not Increase Bushfire Risk

Action

Risk Management

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
3.1 Undertake a bush fire risk assessment for precincts in or adjoining bushfire prone areas before planning to embellish public spaces with trees.	Ongoing	Public			✓
3.2 Do not increase vegetation connectivity or canopy on or near bush fire prone areas beyond Planning for Bushfire Protection Guidelines 2019 and implement best practice urban canopy planning and management.	Ongoing	Public		✓	✓
3.3 Consult with the NSW RFS and emergency management professionals in the planning process for canopy embellishment in and adjoining fire prone areas and ensure the Bushfire Risk Management Plan, when reviewed, considers the intent of the Urban Canopy Strategy to ensure compatible outcomes.	Ongoing	All	✓	✓	✓
3.4 Develop a list of suitable fire-retardant plants and landscaping guidelines (verified by an ecologist and fire expert) that are place specific for development control, education and greening programs and include reference to them in the DCP, Landscape Strategy, Tree Management Policy, Koala Plan of Management, Biodiversity Strategy and other relevant plans and projects.	Ongoing	All		✓	✓
3.5 Ensure council education and community tree programs do not encourage unsuitable plantings in asset protection zones.	Ongoing	All			✓

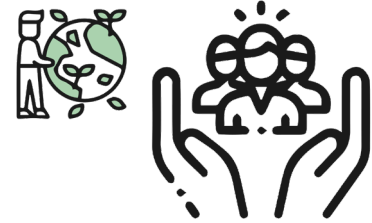
Advocacy

3.6 Advocate to the RFS the need to protect existing canopy values and achieve canopy targets with appropriate risk management by incorporating green infrastructure and green grid principles from the metro and district plans into:					
1. Planning for Bushfire Protection,	Ongoing	All		✓	✓
2. The 10/50 Vegetation Clearing Code of Practice as well as					
3. Creating exemptions for threatened species and EECs from the 10/50 code.					

Measure of Success

- Tree planting programs that do not increase risk of bushfire to life and property,
- Tree planting programs that comply with Planning for Bushfire Protection Guidelines 2019 and implement best practice urban canopy planning and management,
- Development of a list of suitable fire-retardant plants and landscaping guidelines for new and existing development and public place tree embellishment programs.

Community

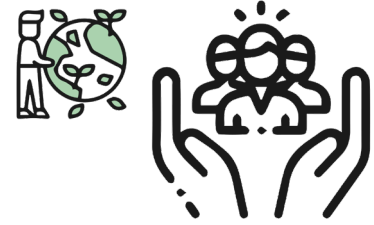


Strategic Focus 4: Community
 – Collaborate With And
 Educate Our Community

Action

Programs and Operations

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
4.1 Investigate opportunities for Council’s Community Environmental Education Program to enable and support the community to actively participate in planning and managing our urban canopy to encourage increased tree canopy on private and public land.	Ongoing	All			✓
4.2 Engage and collaborate with indigenous stakeholders to identify trees of heritage significance to ensure protection, and to connect to country through public space urban tree management.	Ongoing	All			✓
4.3 Continue to investigate expansion of Councils existing tree giveaway program to include schools, community groups and residents.	1-2 Years	All			✓
4.4 Continue to support National Tree Day, Bushcare and other community programs including Council’s community planting days that encourage tree planting and stewardship and investigate others such as “Adopt a tree” by the Australia Koala Foundation.	Ongoing	All			✓
4.5 Support the community with timely response to queries and complaints and consult with and keep the community informed about tree planting, maintenance and removal programs.	Ongoing	All			✓
4.6 Develop a webpage for street tree requests and maintenance requirements and provide advice for the community on appropriate tree selection based on site criteria and precinct.	1-2 Years	Street			✓
4.7 Investigate a recognition program to acknowledge private land owners who contribute to the urban tree canopy e.g. funds for restoration works, promotion / publicity, and environmental awards.	Ongoing	Private			✓
4.8 Investigate the feasibility of introducing a tree dedication program (e.g. celebrating births/ deaths or tree naming) to encourage stewardship of trees planted in public spaces including street trees.	3-5 Years	Public			✓



Action

Programs and Operations

	IMPLEMENT 1-2 Years, 3-5 Years, 5+ Ongoing	Land Use	LEP	DCP	Other plans/ Strategies, Programs, Tools
4.9 Encourage public land managers e.g operators of educational institutions and cemeteries to plant trees.	Ongoing	All			✓
4.10 Provide guidance for private landowners, builders and developers on retaining and protecting existing trees, including for complying developments and when designing site access to protect street trees.	1-2 Years	Private		✓	✓
4.11 Adopt an appropriate tree value assessment tool to deter removal, enhance community education and drive responsive design outcomes.	3-5 Years	All			✓

Measure of Success

- Increased community awareness of the need for and benefits of urban canopy,
- Increased participation in education programs, tree giveaway, community planting days and award programs,
- Increased stewardship of public places by community groups based on number of groups and participants,
- Increased requests for street trees,
- Increased rate of retention of trees and planting of new trees on private property,
- Prompt responses to community queries, complaints and requests,
- Increased engagement and collaboration with indigenous stakeholders in the management of the urban canopy.



Jahloor
Garden
Centre

**Australian
NATIVE
PLANTS
+
Bird
attracting
plants**

3.0 LANDSCAPE STRATEGY AND PLANTING MATRIX

3.1. Introduction

This landscape strategy provides a guide to where tree planting should be prioritised to meet the canopy plan aims, objectives and targets. The strategy is based on assessment of Wollondilly canopy, physical characteristics and existing canopy condition assessment provided in Appendix B.

This strategy first identifies general strategic focus areas for enhancing canopy e.g. active transport routes, derived from an understanding of Council's canopy vision and objectives set out in the Draft LSPS. To demonstrate how identification of a strategic focus area may manifest as an opportunity for tree planting programs within an existing town, a case study analysis and high level canopy masterplan has been proposed for Picton.

A framework for selecting appropriate tree species has also been developed to assist Council or developers in choosing which trees would be suitable to support Council's canopy objectives.

Identification and discussion of important considerations for tree planting programs have also been included to assist in achieving healthy, diverse and resilient urban canopy.

It is intended that the framework put forward in this landscape strategy could be applied to all of Wollondilly's urban areas using the canopy GIS data created in this project.

While this framework assists Council in developing canopy master plans for existing and new urban areas, it is noted that there further detailed on-ground studies are required to refine or identify new opportunity sites for planting such as:

- local resident acceptance of new street trees
- nature strip widths and other engineering considerations
- bushfire safety
- presence of above and below ground services
- capital works programs for street or road upgrades (that should allow for tree planting).

3.2. Landscape Strategy Case Study - Picton

5.3.1 Picton character and strategic direction

Some of the key defining characteristics of Picton as identified from the Draft LSPS are:

- the community, cultural and civic hub of Wollondilly,
- high heritage value with a heritage town centre and large areas of town zoned as general cultural area,
- community value of enhanced public and open spaces to create a stronger sense of pride in Picton,
- community value of improved walking and cycling paths and access to the natural environment that make people feel happier and healthier,
- the new Stonequarry Commercial development will strengthen Picton Town Centre,
- a number of new urban development areas are proposed adjacent existing developed areas.

5.3.2 Strategic Focus Areas

As previously identified in the Wollondilly Urban Tree Canopy Plan, strategic focus areas for enhancing canopy include:

- new urban release areas
- urban heat vulnerability hot spots (e.g. where existing canopy cover is low)
- strategic pedestrian, cycleway and recreation activity areas
- town centre
- biodiversity areas

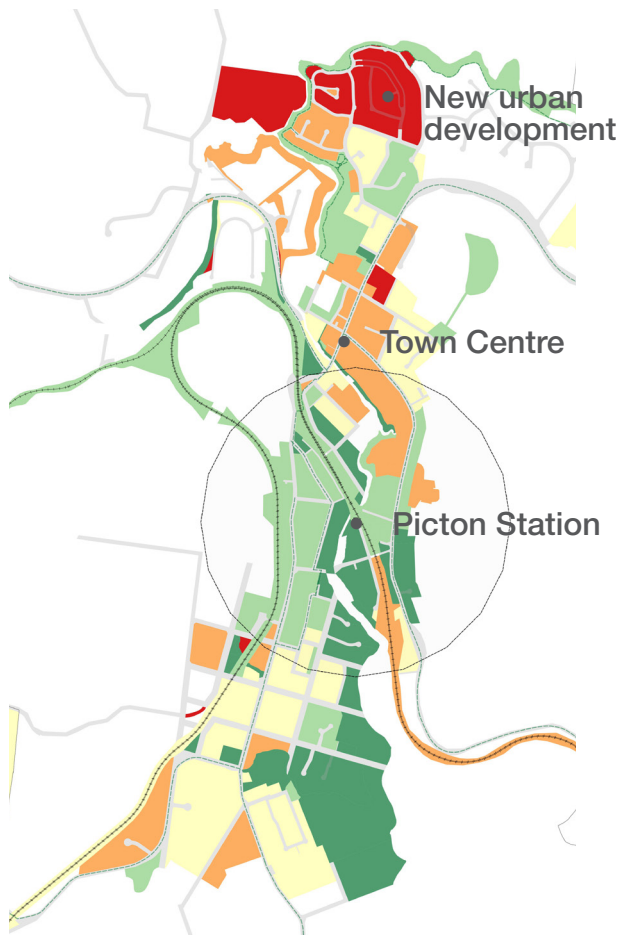
The following spread analyses existing canopy cover in Picton in relation to landuse, active transport networks and environmental value demonstrating the above strategic focus areas within an existing town.



5.3.2 Canopy Cover by Landuse Zone

Key Points

- New residential area shown to be particularly vulnerable. Trees planted in this area are juvenile and do not provide adequate canopy. This highlights the importance of retaining existing mature trees for canopy and including a mix of fast growing trees for new urban areas.
- Sportsground and small pockets of residential land have very poor canopy cover <10%
- Town centre canopy cover poor-moderate 10-20% but presents an important area for canopy to increase walkability, commercial opportunities etc.



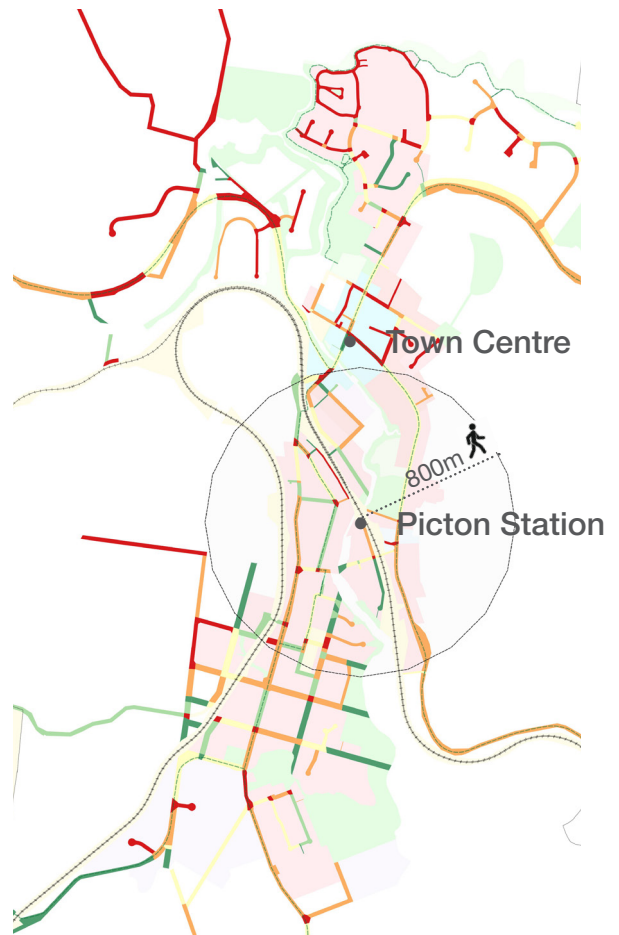
Legend (All Maps)

- Suburb Boundary
- 800m Walking Radius
- 🚉 Station
- NSW Bicycle (RMS, 2013)

5.3.3 Canopy Cover on Streets and Road Reserves

Key Points

- Town centre streets have generally very poor canopy cover (<10%) but present an important area for canopy
- Streets within 800m walking distance of the train station have mixed canopy coverage. Strategic linkages to the town centre and residential areas (e.g. that have footpaths or that are cycleways) with good canopy coverage would increase incentive for active transport.
- Roads/streets surrounded by rural/non urban land uses are at risk of low canopy coverage but are generally opportunities for tree lined streets due to wide shoulder/no kerbs (pending road and traffic safety considerations).



- ++ Railway Corridors
- ▬ Road Corridor
- Canopy Coverage
- < 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- > 40%

5.3.4 Canopy Cover on Public Open Space

Key Points

- Public open spaces generally good to very good canopy coverage 30%-40%.
- Picton Sports Ground and public open space adjacent Stone Quarry Creek have very low to low coverage and present potential 'easy win' opportunities to increase Picton's overall canopy coverage.

28% Canopy Coverage

15% Private

13% Public



LEP Land Zoning

 B1 Neighbourhood Centre	 IN3 Heavy Industrial	 RE2 Private Recreation
 B2 Local Centre	 R2 Low Density Residential	 SP2 Infrastructure
 IN1 General Industrial	 R3 Medium Density Residential	 Wollondilly LEP Urban Zoning
 IN2 Light Industrial	 RE1 Public Recreation	

5.3.5 Canopy Strategy for Picton

Based on the town canopy cover analysis and understanding of the town character and community values and needs, the following strategies to protect, enhance and create new canopy are proposed.

While strategies for protection and creation of new canopy in proposed development areas remain key to the overall Picton canopy strategy, this landscape strategy focusses on developing a framework to Enhance the town's canopy.

The map (right) shows specific locations within Picton that should be prioritised for further investigation to determine suitability for tree planting. These areas have been identified with consideration of the criteria noted under "Enhance Canopy", below.

Protect Existing Canopy:

- All trees > 8m on private and public lands
- All trees in biodiversity corridors (mapped as CEEC, Koala Corridor, Terrestrial Biodiversity)

Enhance Canopy:

First Priority Areas

- Cycle network streets with <10% canopy cover,
- Public open spaces with <20% canopy cover,

Second Priority Areas









- Cycle network streets with <20% canopy cover,
- streets within walking distance (800m radius) of the train station with <10% canopy cover
- Public open spaces with >20<40% canopy cover

Create New Canopy:

- Planning proposal development areas to achieve a 40% mature canopy cover target,
- New canopy to achieve >25% mature canopy cover target in town centre redevelopment/expansion of Picton

*Note all tree planting must recognise and consider the potential impact on bushfire hazard in particular in and around Bushfire Prone Land and conform with canopy restrictions in Bushfire Prone Land as documented in the NSW Rural Fire Service Planning for Bushfire Protection 2019.

Legend

-  Canopy Enhancement Priority Area 1
-  Canopy Enhancement Priority Area 2
-  800m Radius from station
-  Railroad
-  Development Zones
-  Streets
-  Bicycle Network (RMS, 2013)
-  Biodiversity Corridors

5.3.6 Priority Areas for Tree Planting in Picton



3.3. Tree Species Selection

Tree species selection will play an important role in meeting Wollondilly's urban canopy objectives. Choosing the right tree for specific urban context can significantly reduce the amount of resources required to maintain the tree over its lifetime, reduce likelihood of community complaints and improve the chances of the tree's survival. As such, tree species matrices have been developed for Wollondilly's urban areas guided by the existing Draft Wilton DCP recommended species list and professional experience. The full matrices are attached as Appendix A. This proposed species are not intended to provide an exhaustive list of possible tree species to be planted in Wollondilly but rather to be used as a guide to appropriate tree planting.

The tree species information included in the matrices addresses the following three overarching considerations.

- Context - where will the tree go and will it enhance the desired landscape character?
- Tree Form - what is the tree's shape and size?
- Tree Function - what are the key performance strengths of the tree?

The following sections explain the rationale and application of these considerations.

Context (Landuse)

Understanding the local context of where a tree will be planted assists in achieving the greatest landscape outcome from the tree selection.

The tree species matrices have been organised by the five major urban landscape typologies described in the table below. Most urban centres within our study area have some or all of these typologies, yet frequently these may have a range of intersecting characteristics, and therefore the plant matrices should be a guide for these areas.

Context (Indigenous and European Heritage)

Wollondilly Shire has an incredibly rich and diverse Indigenous and European history. Reflecting and continuing the story of the landscape's character can be achieved through tree species selection. To reinforce these stories, several tree species that connect culturally and aesthetically to these histories have been identified within the planting matrices.

These should be considered to denote heritage items, historically significant buildings or historic/cultural areas or key indigenous sites.

It should be noted that not all trees have been allocated a context; with the ambition of providing more general species for non-culturally specific areas.

Tree Form

Throughout this report we have outlined the importance of canopy cover for a range of environmental, social and economic benefits for the community.

The form of tree species, including size, spread, shape and colour, should be considered when selecting tree species for Wollondilly. Within our planting matrices, we have attributed an illustrative description of each species,

Areas

Species Criteria

Streets	local, neighbourhood and inter-urban streets	broad canopy, able to thrive with lower soil volumes
Parks/Open Space	parks, sporting fields, memorials and gardens	broad canopy trees that thrive in deep soil
Plazas/Town Centres	retail hubs, civic services, plazas	celebratory aesthetic and of civic nature
Residential Development	new residential development areas	fast growing, broad canopy to minimise urban heat impact
Employment lands/ industrial	areas of retail, industrial or commercial activity	robust and low maintenance requirements

with some other descriptive notations to help user prescribe trees with appropriate form for their intended outcome.

This may be useful when requiring trees to, for example:

- Minimise maintenance (ellipse-shaped canopy to avoid powerlines),
- Address important health and liveability criteria, such as creating cool, shaded streets to mitigate urban heat or promote active transport (broad canopies)
- Connect to scale of surrounding elements (broader canopy for wider road reserve) or fulfil a design requirement (colour/season of flowers produced).

Tree Function

Trees within urban areas provide a range of vital functions; from mitigating flood to providing shadier and cooler environments, trees are vital for the benefit of the urban conditions we experience within Wollondilly Shire. This report also acknowledges the risk and importance of bushfires and other risks associated with a changing climate.

As a result of this, we have tailored the planting matrices to identify some key functions that will help the user to specify the right tree in the right location. Five key functions that we believe will be important to selection in Wollondilly urban areas have been identified within our matrices and include:

- Pollinators,
- Koala food trees,
- Canopy cover,
- Resilience,
- Bushfire appropriateness.



WSUD infrastructure are an increasingly prevalent element of urban areas and include swales, bioretention basins, streetscape raingardens and passive irrigation trees. That provide a good opportunity to co-locate urban trees. Generally trees that are suitable to be co-located with WSUD systems can tolerate periods of wetting and longer dry periods (these can be quite severe in contrast to natural soils of Wollondilly given the free-draining nature of WSUD systems). These trees generally have shallow root systems that have low risk of extending far and damaging infrastructure and generally should not be deciduous.

Considerations

- Shrubs and trees are not a functional requirement of WSUD stormwater treatment basins but can add character and shade value to water quality treatment infrastructure (e.g. bioretention)
- Passive irrigation of trees from hardstand runoff (e.g. roads or pavements) should be considered wherever possible providing some water quality and quantity benefit and assisting the health of trees
- Any trees proposed to be planted in high flood areas or detention basins where significant inundation could occur should be confirmed with an arborist and geotechnical conditions considered.



POLLINATORS

Wollondilly Shire is situated on the periphery of 'The Greater Blue Mountains World Heritage Area'; partly valued for its 'ninety-one eucalypt taxa'. Australian native bees, birds and flying foxes are vital to pollinate many members of the plant family Myrtaceae; that includes eucalypts, angophoras and tea trees.

Therefore, we have identified several trees for their ability to support native insects (bees and butterflies) as a vital symbiotic relationship between plant reproduction and biodiversity. These trees typically have a longer (6 months +) or even perennial flowering period; and can be either native, endemic or exotic.

Considerations:

- Pollinators can be endemic, native and exotic; yet all play a role in supporting a native bee population,
- Consideration of biodiversity links should include other factors; such as bushfire and koala habitat.



KOALA HABITAT TREES

These are trees that have been classified as important for providing habitat for Koalas.

Considerations:

- Planting of new koala food and habitat trees should consider location relative to significant urban threats to koalas such as roads, and domestic animals (ie. dogs) so as not to increase threats to koalas.
- Planting of koala food and habitat trees is considered most appropriate at the fringes of urban areas and/or in strategic koala habitat corridors or as otherwise determined in Council's Koala Plan of Management

- Koala food and habitat trees are typically higher bushfire hazard species. Particular care and consideration of the potential increase in bushfire risk should occur before planting of such trees.
- Shale-type nutrient-rich soils and clay soils are important for koala food and habitat trees to create high quality habitat for koalas. Therefore soil type should be considered when attempting to create habitat for koalas in urban canopy planting strategies.



SHADE/CANOPY COVER

These trees have been identified for their ability to provide shade, urban cooling and mitigate heat island effect to relieve pressures of an increasingly hotter urban environment. Key consideration factors in identifying these includes; tree height and spread, canopy density and growth speed.

Considerations:

- Canopy Cover will depend largely on tree establishment and soil condition.
- To ensure maximum potential of tree canopy cover; the use of deep soil or strata cell systems, that ensure aeration to roots and better-growing conditions should be investigated.
- Planting of large trees within or near infrastructure and urban centres must consider the impacts of root impact and potential uplifting. Geotechnical reports should investigate the structure of soil conditions for planting large specimen trees in urban areas



RESILIENT

These trees have been identified for their ability to be robust and hardy. They require less establishment time and ongoing maintenance. These should be considered for areas that are either hard to get to (embankments or medium strips) or are prone to severe conditions (industrial carparks).

Considerations:

- Although requiring less ongoing maintenance, these trees will still require an establishment period of at least 6 months.

- The growth of trees is dependent on multiple factors, not just tree species, and will require adequate and appropriate growing conditions.
- Where relevant; the use of deep soil or strata cell systems, that ensure aeration to roots and better-growing conditions should be investigated.
- Resilience of the urban tree canopy heavily influenced by diversity of planting. No single tree species should be utilised to make up >10% of tree species within a development.



BUSHFIRE APPROPRIATENESS

Urban areas of Wollondilly are affected by bushfire prone land. In response to this, careful planning around species selection for urban trees, especially in buffer areas has been identified through this function.

Generally, plants that have high oil contents and thin hard leaves, such as the plants found in the Myrtaceae Family (Eucalyptus, Callistemon and Melaleuca) are more flammable than plants that have waxy leaves and higher water contents (such as Ficus and Elaeocarpus).

Considerations:

- Under the right conditions, any tree species will burn, and therefore other measures such as reducing fuel loads, adhering to planning regulations and other measures outlined by the RFS should be implemented. Building and landscape considerations from the RFS can be found here:

www.rfs.nsw.gov.au/plan-and-prepare/building-in-a-bush-fire-area and on Planning for Bushfire Protection 2019.

This landscape strategy and associated planting matrices is a guide for Wollondilly Shire Council and should be read in conjunction with any statutory documentation. In the context of Wollondilly, with a particularly high percentage of bushfire prone land area, it is critical that any new tree planting on public lands (or encouragement of tree planting on private lands) is carefully considered for its impact on bushfire hazard. All new trees have the potential to increase bushfire hazard, however some more than others.

While the matrices suggests some trees that are more or less 'flammable', all new planting should be undertaken in consultation with a bushfire hazard specialist to avoiding increasing bush fire risk.

5.3.6 Tree Species Palette for Picton

This map illustrates the recommended tree species palettes for each of the priority areas for canopy enhancement and new development areas for canopy creation as identified in Section 5.3.6. The species matrices are included in Appendix A.

Indicative areas of residential housing development have been shown on the map below for the purpose of demonstrating the application of the Landscape Strategy.



Legend

-  Railroad
-  Bicycle Networks (RMS, 2013)
-  Parks and Open Space
-  Plaza and Town Centre
-  Residential Development*
-  Employment Lands/ Industrial
-  Street
-  Biodiversity Corridors
-  Existing Residential Areas

*Note: residential development locations are indicative only to demonstrate application of landscape strategy.

TREE SPECIES MATRIX

APPENDIX A

WOLLONDILLY URBAN TREE CANOPY PLAN
BACKGROUND AND ANALYSIS
APPENDIX B