

Blue Mountains City Council
Draft Street Tree Masterplan

## CONTENTS

| SECTION 1 AbOUT TREES |  | SECTION 3 TOWN SPECIES MAPS |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 1.1 | Introduction | 3.1 | Summary Table | PHOTOGRAPHS: all photographs provided by BMCC with the exception of the cover aerial |
| 1.2 | About Trees | 3.2 | Glenbrook and Lapstone | (Airview Aerial Photography Pty. Ltd.) and the photo of Prime Minister Ben Chifley page 8 |
| 1.3 | Roles and Functions | 3.3 | Blaxland | (Blue Mountains City Library). |
| 1.4 | Species Selection Criteria | 3.4 | Warrimoo | GRAPHICS: by Greg Gaul Graphics, Lawson |
| 1.5 | Locating Trees and Planting Capability | 3.5 | Valley Heights |  |
| 1.6 | Stock Selection | 3.6 | Springwood |  |
| 1.7 | Residential Streets | 3.7 | North Springwood and Winmalee |  |
| 1.8 | Maintenance | 3.8 | Faulconbridge |  |
| 1.9 | How to Plant | 3.9 | Linden |  |
|  |  | 3.10 | Woodford |  |
| SECTION 2 TOWN Strategies |  | 3.11 | Hazelbrook |  |
| 2.1 | Glenbrook and Lapstone | 3.12 | Lawson |  |
| 2.2 | Blaxland | 3.13 | Bullaburra |  |
| 2.3 | Warrimoo | 3.14 | Wentworth Falls A \& B |  |
| 2.4 | Valley Heights | 3.15 | Leura |  |
| 2.5 | Springwood | 3.16 | Katoomba A \& B |  |
| 2.6 | North Springwood and Winmalee | 3.17 | Medlow Bath |  |
| 2.7 | Faulconbridge | 3.18 | Blackheath A \& B |  |
| 2.8 | Linden | 3.19 | Mount Victoria |  |
| 2.9 | Woodford | 3.20 | Mount Wilson |  |
| 2.10 | Hazelbrook |  |  |  |
| 2.11 | Lawson |  |  |  |
| 2.12 | Bullaburra |  |  |  |
| 2.13 | Wentworth Falls |  |  |  |
| 2.14 | Leura |  |  |  |
| 2.15 | Katoomba |  |  |  |
| 2.16 | Medlow Bath |  |  |  |
| 2.17 | Blackheath |  |  |  |
| 2.18 | Mount Victoria |  |  |  |
| 2.19 | Mount Wilson |  |  |  |

## SECTION 1.1

INTRODUCTION

Landscape Context
The string of towns and villages that is the City of the Blue Mountains occupies the two major ridges running approximately east-west connecting the Sydney Basin to the western slopes and plains of New South Wales. The individual settlements, limited in their spread by the steep side slopes of the ridges, have their own distinctive character and see themselves as separate communities each occupying their own position and elevation along the major route.

The major industry in the Mountains, especially in the parts at higher elevations, is tourism, and the physical context of the city, surrounded by World Heritage listed wilderness, is seen as critical to that industry. The journey along the Highway through the towns and villages establishes a unique pattern and sequence, and this progressive experience is becoming recognized as an important part of the visitor experience - the City within a World Heritage national Park.

Other areas include the Mounts (Wilson, Tomah, and lrvine), Bell etc, located across the Grose Valley and reached via Bell's Line of Road in a loop from Bilpin and Kurrajong. The Mounts have deep volcanic soils and display a very different ecology, capable of growing magnificent trees. They display a cultural heritage consistant with a "Hill Station" setting, which includes some large and significant private gardens. Meanwhile valleys such as Megalong, Hartley and Sun Valley, with different geology and soil profiles, have traditionally supported some agriculture and/or grazing.

Street tree planting is seen as a way of enhancing the character of individual towns and villages, and making the sequence or pattern of settlements along the highway more memorable and distinctive for those traveling through. The cultural plantings of the upper mountains are an important part of their history and are now integral to their character Planting, of course also addresses a number of other functions and roles discussed in later sections, but is of critical importance in improving our perception of the public domain

Recent trends in Arboriculture promote the concept of an urban forest, with an intangible value and amenity, but also demanding specific management. Management of urban trees can only be successful is sites are adequately assessed, species are well chosen, and
 basic early care and later protection are provided.

Scope of this Street Tree Masterplan

Strategic Objectives:
The broad strategic objectives of the Street Tree Masterplan are:

- Maintain \& improve the heritage and character of the towns in the Blue Mountains as expressed in their street trees
- Establish important references to the setting of the towns and villages within the World Establish important references to the setting of th
Heritage Area, particularly in land between towns
- Maintain biodiversity values, particularly between towns and outside town centres
- Demonstrate appropriate stewardship of the cultural \& natural tree assets of the city through a coordinated approach and a high standard in management expertise of the living assets that are trees in the city.
- Establish and maintain technical standards in planting methods

Encourage rigor in selection

- Establish and maintain a Management Plan
- Encourage and offer support for community "ownership" of trees in the public domain

How to use this Manual
Where a tree species or cultivar is recommended in the maps provided later in this Masterplan, planting should only take place where space and other constraints allow. Urban streets are not particularly "tree-friendly" and some effort should be invested in analysis of the street to identify suitable planting locations that allow adequate root runs and freedom from the impact of utilities.
The document also provides general guidance for planting on residential streets, where individuals or communities wish to plant their nature strips or verges.

A major strategic objective of this Masterplan is to limit the perceived extent of urban development outside the town and village centres on the Great Western Highway by development outside the town and village centres on the Great Western Highway by
consolidating and extending the indigenous bushland in between towns. The contrast that this provides with the avenue planting and partly exotic palette of the town trees intensifies the "Sense of Place" which is already an important part of the Mountains character.

- Demonstrate appropriate stewardship of he culural \& natural tree assets of the city
 east sixteen towns with distinct identities (even if there and extensive and towns) and a number of other villages - such as Linden - which lack a definitive centre but regard themselves as villages. For this reason, the scope of this document has been limited major roads, town centres and often used tourist routes. The physical scope is clearly defined in Sections 2 and 3.


The association of Blue Mountains Ash with Leura and Katoomba is evocative layer to the old upper mountains towns, and a reminder of the indigenous landscape. The contrast of the towns with their setting character.

Who should use this
Manual

Readers should also be aware of the LEP - particularly the Precinct Vision Statements which establish the character of the towns, plus the RTA's "Urban Design Framework" for the Great Western Highway

This manual has been designed and written particularly for internal use i.e. by staff of Blue Mountains City Council at both management and practical implementation levels, in the planning and installation of street trees

This manual is also intended for use by residents, landscape professionals and developers, to assist the selection of appropriate species, and provide guidance that will ead to better coordinated results and improved growth and health of street trees hroughout the Blue Mountains towns and villages.

It is hoped that our community heritage of street tree planting will be enlarged and mproved - after all, many trees have a lifecycle that encompasses many decades, and possibly centuries, and therefore represent a significant and long term investment in the future of the community and the cultural landscape of the city


The Mounts" - Wilson, Irvine and Tomah have deep volcanic soils that grow spectacular trees. The narrow winding roads deciduous exotics - and provide the distinctive scenery for which the towns are famous.


Crepe Myrtles have only relatively recently been selected for use as a major theme. They are a very good example of a "well-behaved" street ree. They have many attributes - flowers graceful, medium sized tree. Here they are planted in the main shopping centre of Springwood.

## SECTION 1.2

2.1 Natural
growing conditions:

Street trees are often thought of as static elements in the landscape - but they are living organisms with a clear lifecycle and are dependent for their wellbeing on a range of biological requirements being met.

Growing trees as a row of single specimens - the common pattern in urban streets - immediately sets these plants at a significant disadvantage because it is very different to the way they have evolved to grow in their natural habitats, whether they are a local indigenous Eucalypt, or a Northern hemisphere exotic.

Trees have evolved to grow in:

- Large stands or plant communities i.e. forests and woodlands. These not only include other trees of the same and different species, but also shrubs, perennials and ground covering plants.
- Particular soils to which they have adapted, which have characteristic moisture holding capacity, and support other organisms such as soil fungi, on which the trees depend for increased root functioning
- Very particular nutrient regimes involving the cycling \& recycling of organic matter and minerals in proportions that are highly characteristic of the place.
- Relationships with other plants and animals: These include pollinators and predators which may be critical to some stage of the trees lifecycle.
2.2 Common


## Competition with grasses for soil moisture and nutrients:

The root systems of trees and grasses occupy the same top 300 mm layer of soil - and compete for the same nutrients and water. Some vigorous exotic grasses are particularly successful in the competition for moisture and nutrients. It is better for the welfare of the tree if the root zone within the drip-line of the tree can be mulched, and/or planted with species which are compatible as companion planting Wounding around the trunk by mowers is a significant impact on the health of trees growing in mown grass - another reason to avoid grass within the drip-line!

## Soil compaction:

Soil compaction can disadvantage trees by reducing their ability to absorb moisture and nutrients. Well aerated soil can hold moisture and dissolved nutrients in its pores - compacted soils may hold very little. Also compacted soils limit the ability of delicate root tips to penetrate and allow the tree to compensate for root losses, or even to grow and increase in size. Trees growing in beds surrounded by carpark have the characteristics of a large pot plant. Their root system may be significantly contained by the extreme soil compaction, and the plant never achieves its potential size characteristics and vigor. Concentrated pedestrian activity also results in significant soil compaction

## ABOUT TREES



## SECTION 1.2

which can have serious impacts on mature trees

## Poor pruning practices:

Poor pruning allows potentially catastrophic pathogens or diseases into the stems of trees and can lead to the progressive dying back of branches that would otherwise be healthy. It is also true that older trees often develop hollows that shelter whole classes of animals in the Australian ecosystem animals such as parrots, bats and some marsupials. A tree can have hollows in branches and stems and still function as a healthy tree with little risk of falling - but assessment by a qualified and experienced arborist will identify the degree of risk.

Poor placement in regard to existing infrastructure:
Too often, the growth of trees is not factored in to predict their impact on overhead, underground or other infrastructure, and pruning or excavation techniques are applied retrospectively that have a profound and negative impact on the health and viability of the tree. In many cases services are installed after the tree but the trees are usually regarded as expendable. A coordinated and well considered approach by all parties is critical to maintaining a healthy and viable tree stock.

## ABOUT TREES

Removing a branch so that a stub is left often leads to significant decay into the branch or trunk of the tree.


## Inadequate tree pits (planting preparation)

Tree roots generally colonize the top $150-300 \mathrm{~mm}$ of soil where most of the biological activity and nutrient cycling takes place, and therefore generally spread out in a "plate" which may have a diameter up to three times the height of the tree (figure 2.1 below), but whose depth and direction may be hard to predict. Factors which affect the depth of the root system are fertility (low fertility soils tend to lead to shallow more spreading systems), depth of soil compared to bedrock, and

Generally the planting of street trees involves the excavation of a pit that is too small for the mature root system of the tree. In the case of the upper Blue Mountains where soils are extremely shallow, the tree pit may be excavated into sandstone. This does not result in a good outcome for the tree which will send roots in search of water and nutrients, often traveling horizontally through the sand bed under pavement, or under the road asphalt. Anecdotal evidence indicates a root run of at least $12 \mathrm{M}^{3}$ is desirable for newly planted trees. The success of street trees arguably depends more on the provision of adequate root conditions than other conditions.

When selecting planting locations in the street it is strongly recommended that a rigorous assessment is made to select sites that optimize root system development.


## SECTION 1.3

3.1 Provider of a sense of place: 3.2 Climate

Control:
3.3 Improve air
quality:
3.4 Extend \&
link habitat:

### 3.5 Provide

Beauty and Symbolism:

The particular type of trees growing on the Highway and main roads act as visual signposts indicating the viewer's location along the highway. When a particular tree species becomes strongly associated with a particular town, this 'signposting' becomes very powerful and intensifies the sense of place. The cooler climate of the upper mountains leads to enhanced autumn colour in deciduous trees and a heightened sense of the passing of seasons - a key characteristic of the higher elevations. 'Sense of place' and town character are important community identifiers and a significant part of the tourist resource, especially in the upper mountains.

Trees modify temperature and humidity and provide shade. The use of trees - and in particular, deciduous trees in the upper mountains - is important in providing amenity in outdoor carparks and on footpaths and in other public places. Carpark shading in summer is seen as particularly important given rising temperatures and the accentuated heat island effect of urban areas in general and carparks in particular. The temperature in car cabins can reach $30-40^{\circ} \mathrm{C}$ higher than the outside temperature, making a cabin temperature of $70^{\circ} \mathrm{C}$ relatively common (Child Accident Prevention Foundation of Australian - Factsheet: Hot Cars).

Trees catch and hold particulate air pollution and filter dust. Deciduous trees then drop this dust carrying foliage and renew their canopy each spring. Due to this annual renewal, many deciduous trees display a particular tolerance for situations with high levels of air pollution.

Trees, especially indigenous natives, but to a lesser extent exotics, provide food and shelter for native animals. By extending habitat, and linking it with existing stands of native plants, they help to support a range of native animals, and reduce disruptions to their populations and lifecycles. Some small and medium sized birds are particularly advantaged by urban trees.

Trees can represent many things - stature, endurance, adaptability, resilience, history and memory. They:

- The presence of European exotics such as deciduous trees and conifers symbolizes a relatively recent layer in our cultural history. The contrast between the indigenous species and the exotic s reminds us of our diverse background. The exotics of the upper mountains continue and extend the history of the early urban settlements in a rugged topography. The natives represent our indigenous heritage and our modern Australian identity


## ROLES AND FUNCTIONS



Street tree Masterplan

## SECTION 1.3

- Symbolize the presence of nature. When the trees are bigger than the urban elements, the symbolism is that of nature dominant - not the other way around as in the cities. Trees are also whole systems and habitats in themselves - a single tree supports hundreds or thousands of other organisms in a community that interacts in a variety of ways.
- Contribute to real estate and land values and can add a perception of quality and value to streets and urban settings
- Provide a link with our biological heritage by extending nature into our immediate vicinity, and representing stages in our evolutionary history
- Provide aesthetic stimulation and enjoyment through a variety of forms, colours and textures.
- Are sometimes memorials to people or events - officially or otherwise.
3.5 Frame views
\& provide scale
Trees are often used in the development industry to screen or soften the visual impacts of urban or large scale development. If well chosen and installed and maintained correctly, they can be extremely effective at this. They provide foliage backdrop to town areas, and separate adjacent towns, preventing the consolidation of urban areas - a key quality of the Mountains towns
They frame distant views, and soften the visual impact of the towns on the topography - helping to "knit" the urban settlements into the landscape


### 3.6 Stabilize

Soil:
Trees, through their roots and canopy, can help to hold soil and stabilize natural areas, especially slopes, which are particularly prone to erosion. The roots bind the soil and help to prevent it from washing or blowing away, and the canopy shelters it from the erosive power of rain, which is seasonally intense in parts of the mountains.

## ROLES AND FUNCTIONS



Ben Chifley
Porridor of Oaks
Faulconbridge, 6
Dec 1947."
mage courtesy Blu
Library

## SECTION 1.3

### 3.7 Provide

Windbreak:
As large scale masses in the landscape, and if selected carefully, trees have the potential to provide significant shelter from wind. Windbreaks can not only extend outdoor living opportunities, but provide shelter from ember attack during bushfires, if the particular trees are selected, located and maintained correctly.
3.1.9 Act as

Trees take in carbon dioxide, and through the processes of photosynthesis and respiration, split the compound molecule, store the carbon in their physical structure, and off-gas the oxygen. When this function is multiplied by millions of trees, they facilitate human life on the planet.

It is likely that at some time Carbon accounting will include the Carbon tied in trees and allow for the depreciation and appreciation of this resource.

(1)
PHOTOSVNTHESIS
Cribon dilowide (cO2) is taken
in through stomata (pores in
the lear's skin).
Reaktion with water and light
makes sugar, oxygen and water.
$6 \mathrm{CO}_{2}+12 \mathrm{H}_{2} \mathrm{O}+\mathrm{LIGHT}$
$=6 \mathrm{CO}_{2}+\mathrm{C}_{6} \mathrm{H}_{2} \mathrm{O}_{6}+6 \mathrm{H}_{2} \mathrm{O}$.


The function of photosynthesis facilitates human life on the planet by tying Carbon up in the cells of he plant.

## ROLES AND FUNCTIONS

This photo, from Landscape Australia after the Ash Wednesday fires of February 1983 demonstrates the effectiveness of a wel chosen and maintained windbreak From the Cover of Landscape Australia 2/1983 Atributed to Noel Ryan, Forest Commission of Victoria.


This windbreak is at Marysville and was impacted by the devastating fires of February 2009. While they survived, they are not likely to re-green
on the fire approach side, and may be sacrificial in the longer term.

## SECTION 1.4

SPECIES SELECTION

The following principles have been used to guide the selection of the recommended species in the Street Tree Masterplan. Where species are to be selected by others for street planting in town centres, it is important to use these guiding principles. They will help to achieve functional plantings that maintain unified themes and achieve the urban design standards to which the council aspires.

Unless required for screening, street trees generally need to display a traditional form of single trunk for at least 2.2 metres height above ground level and an elevated canopy. Keeping sightlines clear along streets is necessary to provide for pedestrian safety at road crossings, reduce crime and keep light levels high. While shrubs and small trees can be trained into this tree shape, the skill and regular maintenance required to achieve that outcome in the long term is considered too significant a burden for Council. Select species that will naturally achieve the form desired.

## SECTION 1.4

4.2 Longevity:

The life cycle of trees can vary considerably. Some are very long-lived, only achieving maturity after many decades; others can live and die within twenty years. Often longevity and growth rate are related - for example fast growing trees tend to be short lived while slower growing examples have long life cycles. It is important to know which is which. It is accepted within the industry that the difficult conditions experienced by street trees results in a very significant shortening of their life span, perhaps as much as half.
4.4 Existing theme:

In some cases, a number of specimens of a particular Genus and species are already present and have established a significant existing theme. Where these are tolerant of the growing conditions and meet all the other selection criteria, it is desirable to repeat them. It is preferable to build on existing traditional themes where they are workable and feasible. Examples of existing themes worthy of repetition are: the selection of Crepe Myrtle (Lagerstroemia indica cvs.) in Macquarie Road, Springwood, and Flowering Cherries (Prunus serrulata cvs.) in the centre median strip at Leura.

Note that planting themes provide strong location cues along the highway in particular, and also for some individual towns. An example of this is the avenue of elderly Pine trees at Medlow Bath. Succession planning in such locations needs to find alternatives that meet similar criteria (especially scale), but without the tendency to become weedy. Along the highway, the exotic tree plantings of the upper mountains towns are regarded as an important part of the towns' "hill station" character, provide historical continuity, help give the settlements a strong contrast with their native setting and provide a distinct sequence for travelers.
4.5 Unlikely to The location of Blue Mountains towns and villages on the ridge above the National parks and World become a weed: Heritage area imposes a greater than normal requirement for careful planting selection in order to avoid the introduction or escalation of weedy species. Some trees are more likely to self-propagate and these can be hard to predict. Note that research should not be restricted to consultation of the weed list. When species have become weedy, the management of their spread is a significant financial burden for Council and others. Consultation with Council's Area Manager, Urban Designer and Environmental Management section is strongly recommended.
4.6 Scale

Elements:
Trees are important factors that help to downscale buildings and roads - and a whole range of urban elements that would otherwise dominate our town and village streets. Trees provide a large natural theme that softens and modifies otherwise overpowering urban settings. While it may be tempting to select small trees, they often have a low-branching habit that is disruptive to street function e.g. Flowering Cherries (Prunus spp. and cvs.), or Japanese maples (Acer palmatum and cvs.).

## SPECIES SELECTION

Flowering Cherries in the mall at Leura. While low branching, trees in a wide centre median makes them acceptable in this location. In this setting, careful consideration needs to be given to further plantings of this
particular species - to locate in places where there is sufficient space to accommodate their wide, vase shaped low canopy.



## SECTION 1.4

These small trees should be restricted to locations where low branches will not impede sightlines or passing pedestrians. The required scale and the mature height of selected trees need to be carefully considered.

Reticulated services often have to share ground or air-space with street trees. Electricity, gas, water and sewer lines must function and be accessible. Hence their location needs to be clearly identified (dial before you dig) before planting - and consideration must be given to mature trees where they predate services installation. Consider the location of planting to reduce risks to infrastructure However, some species are notorious for being more problematic than others. Check first

Root systems should also be assessed for the structural stability, i.e. their tendency not to fall. Some trees are more known for their history of failure than others.
4.8 Branch drop Known as 'Widow makers', tree species that are prone to dropping live branches without warning are \& wind throw gen known, and their selection must be avoided. The preparation of the rootball and the planting hole to an appropriate standard can reduce the likelihood of tree failure. It is important that all appropriate standards of selection and preparation are upheld.

Other species may "sucker" (grow vigorous shoots from the root system) and are also unsuitable as street specimens.

### 4.9 Deciduous

versus
evergreen:
4.10 Pest and

Disease
Resistance:
4.11 Non-
grafted Cultivars

While there are a number of excellent grafted cultivars available, most grafted species will shoot from the understock if wounded, or merely experience hard growing conditions. Once a graft union has produced shoots from the understock, that tree requires constant maintenance to keep that growth removed from the plant. If not removed, it will take over, eventually suppressing growth from the grafted top. This scenario results in a significant maintenance burden. Non-grafted types are strongly preferred.

## SPECIES SELECTION

This Eucalyptus species has heaved the kerb in his street, and secondary problems
have worsened the disruption to the gutter. Either the tree is too large for the available space, or the appropria supplied when the tree pit was dug


This Claret Ash is grafte and is producing shoots from the understock due to hardship in its plantin conditions. It is now burden, as constant care will be required to remove the unwanted shoots, and prevent the understock from outgrowing the grafted top


## SECTION 1.5

Before planting trees, whether in paths or on grassed road verges, careful thought must be given to their location to ensure:

- Roots do not foul underground services such as sewer, water and power. The ability to access these must be maintained
- Tree branches and foliage do not interfere with overhead services such as power lines. Canopy can be cut back, but it is a maintenance burden for local authorities, and is often carried out in a way that either spoils the appearance of the tree, or compromises its health and vigour in the long term.
- Footpaths are kept clear for at least 2.200 metres above the pavement
- Tree trunks and branches are set back a minimum of 600 mm from the edge of kerbs so that car doors can be opened.
- They do not block traffic sightlines, i.e. next to pedestrian crossings or driveways to carparks.
- Set trees in footpaths at least 10 metres back from corners so they do not obstruct sightlines at intersections
- Maintain at least 2.500 metres clear line of travel for pedestrians along footpaths
- Maintain existing scenic views

This quality has been defined as "planting capability" in the Town plans.

## PLANTING LOCATION

## Set trees back from intersections by a minimum of 10 metres to keep sightlines open for traffic.



KEEP SIGHT LINES OPEN AROUND PEDESTRUN CROSSINAS

SECTION 1.6

Success or failure of street trees depends on a number of factors, but one of them is undoubtedly

## SELECTION OF QUALITY STOCK

For comprehensive and thorough stock selection criteria refer to Ross Clark's "Specifying Trees: A Guide to Assessment of Tree Quality" (Second edition 2003).

### 6.1 Above

Ground
Qualities
The most important things to look for include, but are not restricted to:
True to type:
Assuming that species have been carefully researched and selected, it is important to select specimens that are true to type - that do or will display the typical characteristics of the genus, species (and cultivar, where relevant). For example, some species - especially conifers - typically show apical dominance, or the presence of a leading stem. This MUST be apparent if it is typical of the plan specified.

The supplier must provide accurate labels which identify stock by botanical name.

Healthy and vigorous
Foliage must be consistant with a healthy type of the same species.

Self-supporting:
The tree must be upright and able to support itself, and this generally indicates good growing practices in the nursery. Trees generally should be planted without supporting stakes, but may benefit from tree guards in urban situations where they require some protection from accidental or deliberate damage.

## Full healthy canopy:

Not only must foliage be healthy, but the canopy should be largely symmetrical - variation between spheres must not exceed $20 \%$. This indirectly indicates growing conditions in the nursery of origin.

Stem Structure
Stem must taper from base to top, as this indicates nursery growing conditions and inherent trunk strength.


## SECTION 1.6

Included bark:
Found at the crotch of stem and branch, bark that has been forced inwards instead of being extruded outwards is termed "included bark". It is significant because it substantially weakens the union, and can cause the branch to split away from the stem, especially when it is large and heavy. Some species have a known tendency to included bark.

## Damage:

Tree trunks, stems and leaves must be free of wounding and bruising and the plant must show typical framework and habit.

Pests and Diseases:
The plants must be free from pests and disease, and also evidence of damage from pests and disease.

And some others:
Trunk position: the trunk should be at the approximate centre of the rootball;
Compatibility of graft unions: The diameter of the scion immediately above the graft should be approximately the same diameter as the understock (give or take 20\%); and there should be healthy tissue for the full circumference of the union.

Indication of north: Particularly important for very large stock. The tree should be planted with the same orientation as its last position in the nursery. Sometimes trees are susceptible to sunburn if not oriented correctly.

Fine fibrous roots should be evident around the perimeter of the rootball, through the entire soil volume, once the container has been removed for checking. Root pruning at each potting on is essential to the development of a well-developed root system that optimises the stability of the mature tree.

Rootball depth:
There should be evidence that the rootball has been planted at the same depth at every potting-on

Non-Suckering Rootstock
There should be NO shoots from the rootstock if the specimen is grafted.

STOCK SELECTION

This plant has not been root pruned at the last potting-on and should be rejected as the tree's root formation is permanently defective and its mature stability is not assured.


## SECTION 1.7

Planting out the Nature strips are an integral part of the urban environment. They are often "left-over" land in the road Nature Strip:
aure strips are an iegral part of urban envonen. They are oten lettover land in the road reserve - land that is not occupied by the road surface. They may or may not have a footpath. They are intended to provide a safe public walking area, and they are used to carry public infrastructure such as telephone, gas, sewer and water, either overhead or underground. Nature strips have traditionally been grassed, usually resulting in a weedy patch that may or may not be maintained by the adjacent home owner or the local government authority.

The nature strip or roadside verge is public, but it is accepted practice that residents maintain plants and landscape features (excluding trees) that were NOT installed by the council on their nature strip. In fact many residents treat their nature strips as an extension of their garden. This area does not need to be maintained as turf - it can be landscaped, and the adjacent householder can choose plants, provided that some basic guidelines are followed

Generally, the council requires that existing positive streetscape elements are continued in any landscaping works so that the new planting integrates with and enhances the existing streetscape character.

Considerations for streetscape consistency include existing trees species, landscape style, fence type and placement, street dimensions and scale, links with other space, views and architectural character

Landscaping components of the streetscape should soften the visual impact of buildings, and act as a screen to visual intrusions, without obstructing sightlines between driveways and the road, or making pedestrians feel they could be mugged.

## Native wildlife:

## Benefits of

 planted the nature strip:The continuation of native vegetation and some exotic planting attracts wildlife and can link separate areas of bushland. Extension of habitat which acts as a "corridor" can be important to whole populations of native animals, especially small birds.

## Microclimate:

- The reduction in full sun to the streets provides a micro-climate under the canopy of the trees providing a cooler atmosphere, especially in summer
- The street trees can act as a wind-break reducing the severity of winds especially from the West.
- With predominantly hard surface in the road reserve areas it is important to provide shade to reduce glare from the sun


## RESIDENTIAL STREETS



## SECTION 1.7

Catchment Control:
The verge or nature strip is becoming more important as a receptacle for stormwater - in a way that allows runoff to infiltrate the soil and recharge groundwater. The use of the road reserve for this purpose is likely to become more important in the foreseeable future

## Noise and air pollution:

Plantings alone have little impact on noise levels from roadway areas, but they do improve the perception of noise impact, and they will significantly filter dust particles from the air.

## Real Estate value:

A landscaped street, especially a well maintained one, can improve dollar values to houses in the street.

## Constraints

Species
selection:
There are many constraints to be considered in the use of planting in the nature strip. The following list is not exhaustive, but is intended as a guide.

Nature strips usually contain essential services such as sewerage, water pipes, telephone, power and gas. It is the presence of these services along the nature strip that initially dictates the type of trees or other plants that may be used in this area, but they are by no means the only criteria that must be used in order to select an appropriate species for use in the streetscape.

The life-span of any new tree plantings must be taken into account. Some trees, for example Acacias, are short lived and need to be replaced after only a few years.

Care must be taken that new plantings do not reduce the amenity of the area, or impact on the solar access to adjoining residents.

The width of the road reserve determines the amount of space that can be allocated to street tree planting. If there is a wide nature strip with power poles and lines it may be possible to still plant trees on that side of the road. It also creates a larger buffer between the pedestrians and the motor vehicles using the road. This in turn provides a safer, less stressful environment for pedestrians using the space to provide a positive experience for them.

Promote the safety of the community through the maximisation of natural surveillance and appropriate lighting

Clear illumination of pedestrian and bicycle pathways, dwelling entry points and kerbside areas


This street is typical of many. It has power and light infrastructure, no footpath or formed edges, but has been used at some time by the adjacent landholder to extend the garden planting. In this case it tends to obstruct the "desire line" for pedestrians and sightlines.

## SECTION 1.7

needs to be provided.

Design
Considerations:
Do not obscure lighting with your plantings. Plantings should not occur within 3 metres of any power or lighting pole so that access to the pole is not obstructed.

Maintain clear lines of vision at driveways, intersections and pathways. Views of both pedestrian and vehicle users must remain unobstructed by landscaping. Planting should not occur within 10 metres of a corner, or within 1.5 metres from the edge of a driveway.
Trees must be planted a minimum 6 metres apart. (Distances may be varied according to species characteristics).

Species selected should not be any that are known to cause allergic reactions or have any other antisocial characteristics such as spines, thorns or sharply pointed branches which may constitute a hazard to pedestrians.

Plants which produce soft fruit e.g. Plums, Apricots, Passion fruit, Tomatoes, etc are not appropriate for use. This fruit may attract and harbor fruit flies, which could in turn pose a threat to local fruit growers. Fallen soft fruit on pavements can be a slip hazard for those on foot.

Deciduous trees may create localized problems with regard to slip hazard during leaf fall. If these species are used, regular gathering of fallen material by the resident is essential. This material is excellent for composting.

Many evergreen trees, especially conifers and Eucalypts, shed a constant rain of leaves, twigs, nuts, cones etc. This also needs to be taken into account and factored into maintenance.

The location of utility services such as gas and electricity can significantly impact upon existing vegetation and locations of proposed vegetation. Before planting, you should seek information on the location of buried services. (Dial Before You Dig 1100)

It is important to consider the mature height and spread of the trees and shrubs beneath overhead services, and the size and nature of the root system and its tendency to damage underground services. Trees beneath overhead powerlines should not achieve a height greater than 3.5 metres. This severely limits the potential selection. Consider supporting your neighbours to plant in sections of the street where the services are less constraining.

Emphasise landscaping where the development site is visible from a main road. Landscaping should

RESIDENTIAL STREETS


ROAD NATURE STRP FESDENT'S GARDEN SECTION


This arrangement demonstrates how a good outcome can be achieved both the landowner and the Council through the sensible and efficient use of the road reserve. Notice how mowing of grass is now in one strip incorporated into the planting along the fenceline. This will maximise the root run for the tree. However every situation is different and attention must be paid to a number of site specific conditions - including location above ground and below ground infrastructure and orientation (where is

## SECTION 1.7

be used to soften the impact of buildings and serve as a visual screen between the street and the development. : (for development facing a highway, a major local road or public open space)

Existing uses - residential/retail/industrial will influence the planting style and requirements

Views - consideration should be given to the maintenance of scenic views where they form part of the characteristic streetscape. A dense row of low trees or tall shrubs is not acceptable where their placement would impede existing panoramic or smaller scale significant views.

Appropriate screening may be a requirement of the development consent, and some planting on the nature strip to achieve this outcome may be an option.

Sight lines must be maintained at intersections and driveways. New plantings should consider lines of sight for all roadway users, including pedestrians

Pathways must also be maintained and it is important to realize that you must ensure that your plantings do not create hazards for pedestrians. This includes ensuring that your plant selection does not include poisonous plants, those that have thorns or spines, those with large or fleshy fruit, or those that develop a large or buttressed root system

Before planting out your nature strip, pay particular attention to the structure of the soil. If the area has been used by vehicles for parking, or if services have been installed, the soil may need some remedial work prior to planting to overcome compaction. Compacted soils inhibit plant growth and should be deep ripped to a depth of 400 mm if possible.

Maintaining the plantings. Where trees are to be used, this must be undertaken in accordance with Councils Tree Preservation Order and Native Vegetation Management Order

Any fallen plant material or woody material must be removed from pedestrian areas.

Foliage which is on the nature strip, or growing on your lease and overhangs a footpath, must be pruned to maintain a minimum height of 2 metres clear above footpaths and pruned back in line with the edge of the footpath (including hedges and ground covers)

For safety purposes, pedestrians must have access to the entire width of the footpath. A strip of grass or stable surface must be maintained a minimum of 1.2 metres wide from the back of the kerb for pedestrian access directly off the roadway, even if a footpath exists near your lease boundary.

## RESIDENTIAL STREETS



This wide verge is an excellent candidate or street planting. These young trees have a good chance of succeeding here

## SECTION 1.7

Avoid hard paving surfaces which create an impermeable layer, preventing air and water from reaching tree roots. Stop paving at least 500 mm from the trunk of the tree and provide a gravel diffusion layer under the pavement; In areas of high pedestrian usage/access/thoroughfares, approved tree grates may be used.

Ensure that the ground level around nature strip trees is not altered and that materials are not to be built-up around the base of any trees.

Tan bark, compacted granite or similar ground treatment must be stable and properly contained. Road drains at your home empty into our streams, lakes and the Hawkesbury - Nepean River without treatment. Care must be taken to ensure that the road, drains and footpaths are protected from such matter for environmental and safety purposes.

Temporary protective fencing is permitted with approval, if constructed and maintained in a safe condition, in areas where newly seeded soil or turf is located. Permanent fencing is not permitted. (Insert diagram)

Watering systems may be installed, subject to tree protection requirements. The system must be regulated and maintained so that water does not fall on the footpath (where provided), roadway or adjacent driveway(s) under normal weather conditions.

It is to cause minimal inconvenience to pedestrians when operating and must be kept in good repair (.ie. no leaking sprinklers over footpaths and down gutters).

Any installed irrigation system must not present a trip hazard to pedestrian areas.

## Please beware that you must not:

- Prune or remove any street trees without council approval.
- Allow any foliage to obstruct pedestrian access to footpaths or the nature strip 1.2 metres from the back of the kerb.
- Use any plant species that are listed as noxious or environmental weeds
- For clearances and location of services, dial before you dig: 1100


## SECTION 1.8

If trees are well selected, located appropriately and planted with well-chosen infrastructure and support, after a period of maintenance, they should be largely self-supporting. It is considered worthwhile to invest in the planning, design and early maintenance stages in order to reduce the longer term maintenance requirements of tree stocks.
7.1 Definition of The following terms are relevant in tree management:
terms
DEFECTS LIABILITY PERIOD
This term is used in landscape contracts and is important because it refers to any flaws or defects that may become apparent in trees during a set time after planting (usually defined in the building contract). This is relevant to the condition of the tree on delivery from the grower and relate to the health of the tree and its form above and below ground. Items to look for are:

- Healthy leaves and stems without blemishes and wounds
- Formative pruning has produced a well-shaped tree with a balanced upward and outward growing branch structure
- The tree is held solidly in the pot without movement at the soil level and without the suppor of a stake
- Roots are well formed and fill the pot without being root bound
- Developed roots hold the soil together

A typical defects liability period may be six weeks. Contractors are usually required to replace flawed stock at no cost to the client.

ESTABLISHMENT MAINTENANCE
This term is used to describe the care a tree receives after any defects liability period, generally for the first year after planting.
7.2Typical

MONITORING AND INSPECTION:
Inspect trees on a regular basis to check for pest and disease infestation, signs of moisture stress, irregular growth patterns or similar problems. An inspection should be carried out at least twice during each season. A short report detailing any problems observed and any proposed corrective action should be supplied to the appropriate section within BMCC within a week of each site inspection Where necessary, corrective action should be carried out promptly to minimise damage to plant material and avoid death or loss of trees.

WATERING:
Water trees on a regular basis throughout the establishment maintenance period. Regular monitoring

## SECTION 1.8

MAINTENANCE
of soil moisture levels should be carried out to ensure optimum soil moisture levels are maintained throughout the Establishment Maintenance period.

MULCH REPLENISHMENT:
Organic mulches, such as composted materials and woodchip, are replenished as required to ensure a minimum depth of 50 mm and a maximum depth of 75 mm to the area surrounding the tree as originally specified.

FERTILIZING:
Prior to application of fertilizers, temporarily rake back the mulch to ex[pose the topsoil. Supply and apply a 6-8 month controlled release fertilizer in late winter/early spring. The fertilizer must be a balanced formulation containing all essential macro nutrients and trace elements for normal plant growth. The fertilizer must be applied evenly to the root zone at the manufacturers recommended rate Following fertilizer application, replace the mulch and replenish as required.

WEED CONTROL
Control weed growth within the root zone area on a regular basis to minimise weed competition. Weeds may be removed manually or by applying non-selective herbicides containing the active constituent Glyphosate, sprayed directly onto the weeds at the manufacture's recommended rate. Spraying must only be undertaken when the weather conditions are fine and calm, and there is no rain anticipated within the following 24 hours.

PEST AND DISEASE CONTROL
Control pests and diseases as necessary to ensure trees are maintained in a healthy and vigorous condition and growth rate is not compromised. Pest infestations may be controlled by hand removal of the insects or alternatively spraying an appropriate pesticide applied at the manufacturer's recommended rate

MOWING AND EDGING NEAR TREES
Use of line trimmers (e.g. whipper snippers) must not be carried out in proximity to the plant stem. Minimise potential for damage during mowing operations by maintaining the full extent of mulch cover around the tree as originally specified

ADJUSTMENT AND REPLACEMENT OF STAKES AND TIES
Check and adjust stakes and ties on a regular basis to ensure no damage or injury occurs to the plant stem, branches or foliage. Adjust ties as required to ensure sufficient movement of the plant stem to allow natural strengthening under normal weather conditions. Remove ties when sufficient anchorage
and increase in stem taper and calliper has developed for the tree to support itself. Maintain stakes where necessary to protect trees from damage during mowing operations.

PRUNING:
Remove dead branches greater than 10 mm in diameter as required
Selectively remove branches as required to rpomote proper form and branching habit, typical for the natural growth habit of the species. Ensure that no greater than $25 \%$ of the total foliage is removed at any one time.

Remove broken and defective branches as required

Remove crossing and rubbing branches to ensure proper form and branching habit as required

STREET TREE SHAPE REQUIREMENT:
Remove lower branches as required to ensure adequate vehicular and pedestrian clearance

Remove branches progressively as the tree matures to ensure that no greater than one-third of the total height is removed at any one time.

Use only clean, sharp pruning implements for all pruning work, ensuring that cuts are made without damage, tearing or bruising of vascular tissue.

Prior to pruning, ensure compliance with the relevant BMCC Tree Preservation Order

All pruning must be carried out in accordance with Australian Standard No. 4373-2007 Pruning of Amenity Trees and the NSW WorkCover Authority Code of Practice for the Amenity Tree Industry (1988) to ensure works are carried out to the acceptable safety standards in accordance with best practice. All pruning should be carried out by a qualified Arborist.

## REPLACEMENT;

Plants that die due to improper or inadequate maintenance during the establishment maintenance period should be replaced with the same species in accordance with the original planting specification.

## SECTION 1.9

## Genera

Principles

1. Make the hole at least twice as big as the root ball.
2. If the soil is clay, break up the sides and base of the hole
3. Apply slow release fertiliser to the bottom of the hole at the rate recommended by the manufacturer.
4. Incorporate $10 \%$ rotted organic matter into the backfill.
5. Make sure the root ball is moist prior to planting.
6. Remove the pot from the root ball
7. If necessary tease out some roots before placing in the hole
8. Always ensure the root ball of the plant is buried in the ground at the same height it was in he pot.
9. Backfill and compact soil carefully.
10. Dish soil around the plant (especially on slopes) to allow water to infiltrate into the root ball.
11. Water in immediately. It is not just the soil moisture that is important, but the also the facilitation of good contact between roots and soil.
12. If staking is required, make sure that stakes are not knocked in through the roots, and that the plant is tied so that a little movement is possible,
13. Mulch is recommended, but keep it clear of the stem

## HOW TO PLANT



## SECTION 1.9

HOW TO PLANT

Street Tree
Planting In Council sometimes plants trees in town centres, requiring a high level of coordination with Pavement
ocation
In streets with hard paved footpath zones where linking pits with a drainage line is not feasible.

Principles:
Species selection should adhere to recommendations of street Tree Masterplan Continue tree planting along entire street blocks and where applicable integrate with existing planting themes

Very large stock - 150-300 litres - is recommended due to its ability to withstand casual vandalism, and the development of its framework.

Mature existing trees should be subject to a program of replacement as required due to lifespan, to ensure tree canopy to street corridors is maintained

Maintenance establishment of 12 months is strongly recommended


Typical Plan - Kerbside Tree in Clay Brick Paving

## Typical Cross Section

## Kers Nts

## SECTION 1.9

## HOW TO PLANT

Street Tree
Planting In
Pavement option is particularly important where soils are shallow and the excavation for the tree pit may be into sandstone. It is also important to dig pits that allow a realistic root volume.

## ocation: Town centre streets.

Principles Provide structural soil treatment to new planting pits where feasible within paved foot path areas, to overcome limitations of organic mixes to support pavement above tree pit (paving traditionally limited to outside tree pit opening area)

Where services allow, connect street tree planting pits with a water permeable channel along the inside of the kerbline ( $1000 \times 500 \mathrm{~mm}$ ) backfilled with structural soil Where services allow deep rip subsoil to sides and bottom of tree pit prior to backfilling with structural soil mix.


## SECTION 2

TOWN STRATEGIES

## Town Strategies

## BROAD STRATEGIES

## BROAD

 STRATEGIC APPROACHThe broad scale strategy of this Masterplan aims to promote "legibility" of the Blue Mountains towns by containing the towns in bushland and uniting streets within towns through coherent tree planting themes. There are three categories:

1. Maintain and strengthen bushland between towns in order to:
a. Maintain and contribute to biodiversity;
b. Separate towns to retain and intensify their character as individual settlements and maintain the sequence of small towns and villages as a memorable part of the journey through the mountains - by both rail and road;
c. Retain the bushland dominant setting and character, especially for those passing through along the transport corridor.

The planting pattern in these areas should be random, similar to the diverse distributions of bushland plant communities
2. Set strong street tree themes within towns in order to:
a. Strengthen and increase character and identity of individual towns;
b. Maintain "nature dominant" within settlements;
c. Maximize amenity - such as winter sun and summer shade

The planting arrangement within towns should be in avenue format - linear arrangement with regular spacing between specimens.
3. Identify transitional or edge areas: urban and residential areas out of town and village centres require management that maintains or increases the Mountains bushland character rather than decreasing it. In these locations, use indigenous trees carefully selected for their suitability as street trees, and planted at regular intervals to achieve avenues.


## The remaining operational aims are:

- Improve technical standards required to grow healthy trees which achieve a typically mature healthy size and shape.
- Improve community understanding of importance of trees for a number of outcomes including:
(i) Character
(ii) Amenity
(iii) Biodiversity
(iv) Carbon capture
- Increase community ownership and participation in management of street trees through the setting of clear standards and themes.


## Town Strategies

GENERAL:

1. Management of the Great Western Highway road corridor must place a high priority on the maintenance of "land between Towns" as a bushland corridor. Land between Wascoe Street and the Great Western Highway, and Railway Street and the Highway are examples of narrow reserves that require considered management to this end.
2. Management of other Public Open Space adjoining the major highway corridor will support "Land Between Towns" by retaining bushland on highway edge.
3. Reinforce the presence of Glenbrook Village to through-travelers by extension of Pin Oaks at Glenbrook oval between Hare and Hill Streets
4. Consider Landmark planting at village entry point at Mann Street.

OUT OF $\quad$ Protect, restore and/or consolidate indigenous bushland character between Kidman and Hare VILLAGE Streets, and between Hill Street and the eastern local government boundary at Lapstone. Wascoe CENTRE Great Western and Railway Streets provide important backdrop canopy to the Highway and should be protected and managed accordingly.

Highway:
Hare Street:

Village Centre:
An important entry to the northern residential parts of the town. Consolidate Visually Significant Streetscape with further street planting where capability allows

Maintain village scale in tree selection. Keep open view lines for traffic, within the village, and to Glenbrook Park

Extend Pin Oaks as frontage to Glenbrook Oval between Hare and Hill Streets. Along with the open space of the park, they are an important landmark to the town from the Highway.

Repeat existing worthy themes such as Crepe Myrtle in Mann Street and Weeping Crimson Bottlebrush in Euroka Road.

### 2.1 GLENBROOK \& LAPSTONE



## Town Strategies

GENERAL:

Great Western
Highway:

Rusden Road
North of Dixon Street and Old Bathurst Road east of Blue Gum Crescent:

Wilson Way
Rusden Road
and Old
Bathurst Road

Layton Avenue
Improve character through regularly spaced avenue of Elaeocarpus.

### 2.2 BLAXLAND

Build on existing Eucalyptus canopy backdrop on approaches to both sides of town through avenue plantings of Eucalyptus punctata
2. Identify and plant wide verges where capacity allows
3. Use planting beds to carparks at rear of commercial area to improve visual quality to Hope Street


Town Strategies

## Town Strategies

GENERAL:

1. Strengthen perception of bushland between towns through additional tree planting
2. Heighten sense of arrival at RAIL STATION centre through close regular planting of a selected landmark species

## Great Western

Highway:

## Transitional

areas

- Maintain, manage and add to existing indigenous tree species
- Manage public recreation reserve between highway and rail line as an important part of the tree backdrop - to be consolidated where capability allows.
- Manage relevant sections of Waratah Road as important Highway tree backdrop.

Plant selected landmark tree species in close, regular formation to emphasize sense of arrival in village centre

Rehabilitate medians - use ground plane planting around new trees to improve character.

### 2.3 WARRIMOO



## Town Strategies

GENERAL:
Valley Heights and Sun Valley have little presence as villages on the Highway, apart from the heritage listed Rail Station, and the commercial/industrial premises at The Valley Road. The localities are largely residential or rural and spread along the ridge-top roads off the highway, or in the valley. The current mature (but struggling) landmark trees at the Rail Station frontage with the Highway, a row of Camphor Laurels, are not acceptable for current plantings, due to their tendency to weediness. These trees should be retained, but any new plantings in this context should be an alternative landmark tree

Great Western

- Continue Highway landscaping with indigenous trees in random patterns, aiming for significant

Highway: canopy backdrop, where possible (note capacity is limited).

Plant appropriate large scale indigenous tree at regular intervals as landmark to signify centre of town

### 2.4 VALLEY HEIGHTS



## Town Strategies

2.4 WINALEE

Hawkesbury Road is a regional road connecting the mid mountains with the north west of the Sydney basin. The road occupies a lateral ridge and is level for its entire length apart from the extreme north western end. A generally wide road reserve possesses a high capability for street tree planting for significant stretches.

Street character is similar from North Springwood to the beginning of the descent to the Nepean River at Hawkesbury Heights. It demonstrates a significant canopied backdrop and the strong presence of tall indigenous trees with subtle changes in species composition. A low scale residential setting is interrupted only by small commercial clusters. Parks and reserves are evident, and contribute to the dominant greenspace. While exotic trees are present in numbers, it is important to use the best from a locally indigenous palette to ensure a critical mass of indigenous landscape continues.

Some very fine indigenous specimens are proposed at specific stretches along its length:
Mountains Blue Gum (Eucalyptus deanii) at North Springwood
Turpentines and Angophora midway
Fine leaved Ironbark (E. crebra) between Great Western Highway and Linksview

Select locally indigenous species for performance as street trees

Landmark Liquidambar styraciflua - deciduous preferred for microclimate modification to carparks and seasonal variation in foliage. These trees are presently successful at various locations along the street.


Town Strategies

## Town Strategies

GENERAL:

Great Western
Highway:

In Town underpass

Maintain and reinforce existing exotic planting themes

Springwood is one of the larger towns of the Mountains. The commercial centre has little presence on the highway, but the entry from the transport corridor is possible at three places - these nodes are worthy of landmark planting. Both Jacarandah and Brushbox, common at Springwood, self sow and are considered local weeds, so are not recommended for new plantings. The relatively recent planting of Lagerstroemia indica - Crepe Myrtle - have been particularly successful. These could be planted in Moorcourt avenue to continue the successful plantings in Charles Street. Add Springwood avenue Churchill Street and Plateau Road as major local roads worthy of tree plantings.

- Locally indigenous species - selected for performance as street trees. Continue existing themes for the great western Highway. Extend and reinforce Eucalyptus deanii - Mountain Blue Gum planting for the Highway. Continue plantings from the Springwood Police station to Railway
2.6 SPRINGWOOD



## Town Strategies

GENERAL:
While tree planting capability is limited in this village, the suburban nature of the built environment makes town character improvement through street tree planting important and desirable. Sites with capability to grow trees must be identified in order to consolidate and extend the existing stands.

A particularly important genus to this village is Quercus - Oak - in various forms. Clearly a reference to the heritage listed Prime Minister's Corridor of Oaks in Sir Henry's Parade, this theme extends to the Great Western Highway in the form of Quercus palustris - Pin Oak and Quercus robur "Fastigiata" upright English Oak. Also present in numbers and in significant locations is Liquidambar styraciflua Sweet Gum. Jacaranda is also present in numbers - however this tree is not recommended for further planting due to its inclination to self-sow, making it weedy.

Great Western
Highway:
The importance of the western end of MacQuarie Road to a treed backdrop should not be underestimated. Any tree planting of large specimens between the road and the rail corridor will contribute significantly to the backdrop.

- Consolidate existing roadside native planting as necessary
- Consolidate and extend existing themes.


Town Strategies
2.7 FAULCONBRIDGE

## Town Strategies

2.8 LINDEN

GENERAL: This little village is exclusively a residential area confined to two ridgetops which extend laterally off the Great Western Highway. It has little presence on the Highway, and the major road is characterised by extensive views and a strong indigenous vegetation character

Great Western
Maintain existing indigenous character
Highway:
Establish individual landmark plants to "signpost" the turnoffs to the residential areas


Town Strategies
2.8 LINDEN

## Town Strategies

GENERAL:
The village of Woodford displays a number of small distinctive buildings on the Highway, but has little commercial presence and is comprised mainly of residential lots. The rail station perched above the Highway is an important character note. The town has an eastern entry signaled by the abrupt ending of the native planting on the Highway verges. The incidental tree planting is largely evergreen and mainly private plantings in street frontages.

Great Western Highway

In town
strategies

Use Landmark deciduous planting to achieve contrast with indigenous and evergreen plants to signa "in town" area.

### 2.9 WOODFORD



Town Strategies
2.9 WOODFORD

## Town Strategies

### 2.10 HAZELBROOK

GENERAL:

1. Town centre has low key presence on the Great Western Highway, and there is limited planting capability. Maximise amenity within Stuart Place with appropriately sized trees.
2. Balance need for indigenous tree planting out of town centre with opportunity for long distance views (e.g. near Mount View Avenue)
3. Focus on indigenous species in residential streets.

Great Western
Highway:

Village Centre: There is limited capability so proposed tree planting sites must be carefully assessed. Consider the use of the wider reserve in Railway Parade to establish background indigenous canopy out of town centres

Because there is limited capability, focus on providing summer shade and winter sun with appropriately sized deciduous trees


## Town Strategies

GENERAL:

Great Western
Highway:

Town Centre:

San Jose
Avenue

Honour
Avenue:

- The setback of the new shop frontages west of New Street and the capability designed into the separator median by the RTA allows the use of Pin Oaks (Quercus palustris) and the consolidation of this tree as a signature plant for Lawson - they are already present as a significant stand on the western boundary of the Primary School.
- Smaller exotic deciduous trees have been used in the Town Square and the small local roads behind the shopping centre.
- A native species (Tristania laurina) has been used in the residential streets close to the town centre.

1. Exotic street trees are centralised within the town, and bushland indigenous trees are consolidated on either side of the centre. Key landmark buildings have been used as cues for planting. The Catholic school site is marked with exotic deciduous trees with very strong autumn colour. Honour Avenue to Bass Street, which includes the landmark Mechanics Institute and Talia extends the proposed Pin Oak avenue - where capability allows.
2. Two avenues are significant and noteworthy and require thoughtful treatment - San Jose Avenue and Honour - see below.

- The Great Western Highway from Nelson Road the Station Street (part of which is a Heritage Conservation zone) is treated with the superbly coloured "Jeffers Red" Ash

This street has significant heritage values and the centre medial has been designed to allow for significant tree planting. Presently occupied by a mix of exotic and deciduous, it is seen as an opportunity to increase the impact of the selected signature tree for Lawson. The scale of this tree is appropriate to the horizontal scale of the street.

Already singular because of its history as a memorial, the presence of the ceremonial space at the northern end (to be accentuated with the proposed Douglass Square design) and the extensive and diverse plantings, Honour avenue requires a specific management plan which is appropriate to its important heritage values.

### 2.11 L A W S O N



## Town Strategies

GENERAL:

1. Bullaburra is distinguished by its bushland roadsides, small scale residences and a single landmark shop. The rail station is the only major public amenity, also on the highway. It is important that this character is continued after the highway upgrade. It is proposed that roadside planting be with "Bushland 2" group, with Angophora costata numerically dominant.
2. Landmark planting is proposed for the rail station at both north and south sides (highway and Railway parade), using a large species that is currently successful at the rail station and has high level of contrast with the bushland backdrop

### 2.12 BULLABURRA



## Town Strategies

GENERAL:

Great Western
Highway:
Blaxland Road

Falls Road

Sinclair
Crescent

Village Centre:

- There is limited capability for tree planting on the commercial side of Station Street. It is therefore important to manage, conserve and consolidate tree planting in other locations such as vacant land adjacent to the rail bridge, the border to the car parks and the frontage to the ac cess lane linking Plantation and Station Streets


### 2.13 WENTWORTH FALLS



## Town Strategies

GENERAL:
Great Western Highway:

The Mall -

1. Leura's town slogan is "The Garden Village" - supported by streets with a rich array of cool climate exotic trees and many streets with consistant garden frontages. In this context it is important to support the existing planting themes and provide visual containment to the town by consolidating bushland edges.
2. Leura currently has very strong separation from Wentworth Falls through substantial bushland frontage. There is minimal separation at the western junction with Katoomba. This has been signalled through recent use by the RTA of Blue Mountains Ash west of the mutual boundary near the local hospital. This planting is regarded as highly important and is strongly supported.
3. Consolidate indigenous tree planting at Digger Cooper Reserve and restoration road side indigenous vegetation from that Reserve to Acacia Avenue.

- Street planting south of Megalong Street is extremely diverse, with Liquidambars significant in numbers. Consolidate this theme as and where appropriate.
- The Mall north of the Highway roundabout is residential in character and displays a highly mixed planting with no dominant theme. Verges are often unformed and the topography is hilly. This informal character lends itself to a continuation of the mixed character - using some bushland trees with localised planting of appropriate exotics,
- Scott Avenue is an alternative entry to Leura, as indicated by signposting at highway end. Indigenous planting should carry through from the Highway entry to Margery Anderson Reserve, where the existing landmarks Golden Elms are visually significant. The extension of Plane trees is supported between this Reserve and the Mall, where capability allows.
- East: The existing mature Plane trees are of a size and condition that are highly valuable. They should be managed accordingly. They are considered too large for the remainder of this street which already has a significant presence of Flowering Cherries - recommended for extension.
- West: This alternative route between Katoomba and Leura is important enough to have a distinctive planting. The narrow cultivar of the Tulip tree references the existing venerable specimen in the gully. Blue Mountains Ash is recommended for the gully as a symbol of the transition between the two towns.
- This major scenic route connecting Katoomba and Leura is recommended for landmark planting of Golden Elms for a short distance west of the Mall intersection, and then a bushland treatment - heightening the sense of separation between the two towns.



## Town Strategies

### 2.15 K A TOOMBA

GENERAL:

Great Western
Highway

Lurline Stree

Katoomba
Street

Katoomba Falls
Road
Cliff Drive

1. Unlike most Mountains areas, Katoomba has other links with its neighbouring towns aside from the Great Western Highway. Lovell, Merriwa Streets and Cliff Drive are also busy routes which require a considered themed treatment. The change from formal street planting to bushland, and the use of exotics juxtaposed with indigenous species are key cues to all these roads.
2. As Katoomba and Leura are not merely adjacent, but very close, the use of street trees to signal transition from one town to another is an important strategy to the character of each.

- Simplified tree treatments are preferred, with long runs of uniform avenues such as the Yunnan Poplar presently occupying the long bend west of Yeaman's Bridge.
- The recently installed Mountains Ash groves at the Hospital are an important break to the exotic avenues developing on either side, as they reference bushland between Katoomba and Leura - helping to break what would otherwise be a continuous urban strip. Their ocation acts synergistically with the spectacular long distance view into the Jamison Valley opposite
- The use of Golden Ash should be maximised between Camp Street and Goldsmith Place
- Blue Mountains Ash will recommence at the point where Bathurst Road rejoins the highway near Shell corner. The currently vacant land at this point should be used for more intense plantings of this indigenous tree to signal the town exit point on the western side.

Much of the northern end has little capability for tree planting, but the Glen's Form Pear is considered the most suitable selection north of Waratah due to its narrow canopy. Plane rees are recommended south of Waratah as they connect the venerable remnant trees in the north with the more recent plantings at Echo Point. They also compliment the exotic garden frontages that are fundamental to the character of this major tourist route.

A continuation of the Hornbeam is recommended for the commercial precinct - for their narrow upright habit. The establishment of Golden Ash is recommended South of Waratah where there is currently no significant theme.

- A bushland theme is recommended as this Road lead to significant lookouts and to Cliff Drive
- An indigenous planting theme should be maintained and consolidated for Cliff Drive, varying only in the vicinity of Echo Point precinct - from Foster Road to Katoomba Street, where a sense of arrival is fostered through the presence of a distinctly different tree i.e. Planes.


Town Strategies

## Town Strategies

GENERAL

Great Western
Highway

Railway
Parade village its character for passers through frontage. coordinated with the choice of species for the Highway

A small village with no commercial centre, Medlow bath is characterised by the locally heritage listed Hydro Majestic Hotel, and the State Heritage listed Rail station. The hotel buildings are of comparatively grand scale, dwarfed only by the one hundred year old Pines planted within the Hotel grounds and along the Highway edge opposite. The towering scale of these trees along with the character of the two heritage sites give this

- A succession strategy will be devised for the highway plantings. Species will be determined after community consultation has taken place.
- Recommendations for the Hotel frontage are likely to be consistent with the rail
- Recommendations for avenue planting on the eastern side of the rail line will be


### 2.16 MEDLOW BATH



## Town Strategies

general:
Great Western Highway:

Govetts leap
Road

Wentworth Street

Shipley Road
Evans Lookout
Road

Hat Hill Road side. attractions. accordingly.

- Maintain an indigenous theme Glen Road.

1. The configuration of the great Western Highway, in particular the linear Neate Park allows a major avenue to develop to its full potential. This avenue of trees is a key quality on the southern end of the town, particularly as there is little capability on the eastern, commercial
2. Oaks are a particularly important species to Blackheath - especially for the Highway. They have been noted as a significant streetscape in the review of the Significant Tree register.
3. A number of long straight side streets - Hat Hill Road, Govetts Leap Road, Evans Lookout Road, and the more difficult Shipley Road are busy routes and lead to significant tourist

- An extension of the main street at its western end. It is constrained in its capability to support large trees. It relies on architectural character and front gardens of the residential sections. Some effort has been made by the residents to plant some sections with small flowering trees. The tall narrow Tulip Tree is recommended for this section - where capability allows.
- The existing stand of Liquidambars are a significant streetscape. They should be managed
- Presently a very mixed planting. Consolidate indigenous stretches particularly past Forest
- While the Flowering Cherries in this street present some practical difficulties due to the soil conditions and their low branching habit - they represent a large investment, now around fifty years old and should be maintained and consolidated


### 2.17 BLACKHEATH



## Town Strategies

general:

Great Western

## Darling

Causeway

Harley Avenue trees incrementally on Community land Frontages where there is capability. obvious residential area.

Mount Victoria is a small but important village. It is the western most town of the Highway corridor, heralding the fairly rapid descent to the Hartley Valley, and the western boundary of the Local Government Area. It is also at the junction of the great Western Highway and another road of regional importance, the Darling Causeway. Its scale is generally small with a couple of larger developments - a large historic hotel occupying a landmark site at the regional road intersection, and the historically important rail station on the Darling Causeway. Currently the dominant trees are Pines. As these age, succession management will come increasingly into focus. Landmark planting appropriate to the strategic importance of the village will emphasize the important qualities of this small settlement.

- On the eastern side, indigenous trees should give way to exotics soon after the highway crosses the rail line. Currently dominated by large, and some very old pines, the succession strategy for this section will required significant coordination, as it is not generally feasible to replace these
- The significant intersection with the Darling Causeway is marked with Copper Beech, especially
- Use fastigiate (narrow and upright) Tulip Trees as landmark avenue planting to the end of the
- This road functions as an alternative route between the Highway and the Causeway and therefore functions as a feeder road. Continue Copper Beeches where there may be capability on the south western side. Consolidate the existing Crab Apples on the north western side as they are present in numbers and the capability is limited for large trees.
2.18 MOUNT VICTORIA



## Town Strategies

### 2.19 Mounts Wilson \& Irvine

GENERAL:

1. The current sudden transition from indigenous rainforest to large exotic avenue trees at the junction of the Avenue and Queens Road combine with the levelling out of the road is a fitting introduction to the village. Maintain contrast at this point with indigenous vegetation west of the road junction, and large exotics to the east.
2. Only large street trees are recommended. The basalt derived soils of this sub-region grow very large trees to advantage and there is a distinct scale relationship between buildings and vegetation that must be continued

There are currently relatively short stretches of a number of exotic tree species in this road, interspersed with some very fine indigenous trees such as Brown Barrel (Eucalyptus fastigata) and Ribbon Gum (E. viminalis). This is a key road for Mount Wilson. The overriding character is a narrow road with informal edges dominated in scale by very large and beautiful trees. In many locations the road is completely covered by tree canopy.

- The scale should be maintained. Only very large trees are recommended for planting
- The emphasis in this stretch should be on exotic species

The elderly Elms will soon require replacement. A succession strategy should be prepared resolving staging and species choice

Waterfall Road displays a mixed character - it is well balanced with indigenous and exotic species. The indigenous are large specimens with significant canopies. The boundaries are often marked with extensive mature plantings of Rhododendron cultivars

- Scale of trees should remain very large
- Balance of exotic and native should remain

Avoid any plantings of exotics on the eastern end - maintaining the dense native plant community as the entry into the Village


## Town Strategies

BROAD
STRATEGIC
APPROACH
The broad scale strategy can be divided into three categories:

1. Maintain and strengthen bushland between towns in order to:
a. maintain and contribute to biodiversity;
b. separate towns to retain and intensify their character as individual settlements;
c. maintain the sequence of small towns and villages as a memorable part of the journey through the mountains - by both rail and road;
d. retain the bushland dominant setting and character, especially for those passing through along the transport corridor.
e. Consolidate and improve landscape "legibility" - whereby towns are signaled by a more ordered landscape tending to the use of exotic species and the bushland phases between them are clear.
2. Set strong street tree themes within towns in order to:
a. strengthen and increase character and identity of individual towns;
b. maintain "nature dominant" within settlements;
c. maximize amenity - such as winter sun and summer shade
3. Identify transitional or edge areas: urban and residential areas out of town and village centres require management that maintains or increases the Mountains bushland character rather than decreasing it. In these locations, use indigenous trees carefully selected for their suitability as street trees, and planted at regular intervals to achieve avenues.

The remaining operational aims are:

- Improve technical standards required to grow healthy trees which achieve a typically mature healthy size and shape.
- Improve community understanding of importance of trees for a number of outcomes including:
(i) Character
(ii) Amenity
(iii) Biodiversity
(iv) Carbon capture
- Increase community ownership and participation in management of street trees.


## 3. SPECIES MAPS



This concept is fundamental to Landscape Management in the context of the Blue Mountains. Maintaining a "Land between Towns" concept will help prevent continual urbanization of the major transport corridor and maintain a Mountains type scale

|  | STREET TREE SUMMARY MATRIX |  |  |  |  |  |  | $\begin{aligned} & \hline \frac{5}{5} \\ & 0 \\ & \vdots \\ & 3 \\ & \frac{0}{0} \\ & \vdots \\ & \hline \end{aligned}$ |  | $\begin{gathered} \tilde{y} \\ \underline{\omega} \\ \hline \end{gathered}$ |  |  | $\begin{array}{\|l\|} \hline \\ 0 \\ \sum_{n} \\ \hline \end{array}$ |  | $\begin{aligned} & \text { 흔 } \\ & \frac{0}{\mathbf{0}} \\ & 0 \\ & 0 \\ & 3 \end{aligned}$ | $\begin{aligned} & \frac{\mathfrak{c}}{\mathbf{0}} \\ & \underline{\underline{\partial}} \\ & \hline \end{aligned}$ |  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \stackrel{0}{0} \\ & 0 \end{aligned}$ | $\begin{aligned} & \frac{\otimes}{\pi} \\ & \frac{E}{5} \\ & \vdots \\ & \hline \end{aligned}$ |  | $\begin{aligned} & \text { O} \\ & \text { O } \\ & \text { E } \\ & \text { bin } \\ & 3 \\ & \hline \end{aligned}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 01 | Acer platanoides 'Globosum' |  | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 02 | Acer x freemanni 'Jeffers Red' |  | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 03 | Acmena smithii | Lilly Pilly | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 04 | Angophora costata | Smooth Barked Apple | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B1 | Allocasuarina torulsoa Angophora costata Eucalyptus punctata E. sclerophylla Syncarpia glomulifera | Bushland 1: NOTE: Plantings should occur in random patterns. Selection may be wider than listed here - consult BMCC data base | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B2 | Angophora costata Callitris muelleri Eucalyptus piperita <br> E. gummifera <br> E. sclerophylla <br> E. stricta | Bushland 2: see note for Bushland 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B3 | Acacia elata Allocasuarina littoralis Eucalyptus oreades E. sclerophylla E. sieberi | Bushland 3: see Note for Bushland 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B4 | Acacia elata <br> Eucalyptus deanii <br> E. fastigata <br> E. piperita <br> E. viminalis | Bushland 4: see Note for Bushland 1 | , |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 05 | Callistemon viminalis | Weeping Bottlebrush |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 06 | Carpinus betulus | Hornbeam | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55 | Castinea sativa | Common Chestnut | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 07 | Casuarina littoralis | She Oak | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 08 | Cedrus atlantica "Glauca" | Atlas Cedar | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 09 | Cedrus deodara | Deodar Cedar | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Corymbia gummifera | Red Bloodwood | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | Cupressus torulosa | Bhutan Cypress | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | Elaeocarpus reticulatus | Blueberry Ash | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | Eucalyptus crebra | Iron Bark | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | E. deanii | Dean's Mountain Ash | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | E. mannifera "Gullicki" | Gullick's scribbly bark | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | E. moorei | narrow Leaf Sallee | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | E. piperita | Peppermint Gum |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | E. punctata | Grey Gum |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | E. radiata | Narrow Leaved Peppermint | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | E. rupicola |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | E. sclerophylla | Scribbly Bark | , |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | E. oreades | Blue Mountains Ash | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | E. sieberi | Silver Top Ash | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 56 | Fagus sylvatica | Beech |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | Fagus sylvatica "Purpurea" | Purple Beech | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| 25 | Fraxinus excelsior "Aurea" | Golden Ash | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 26 | Fraxinus oxycarpa "Raywood" | Claret Ash | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 | Fraxinus pennsylvanica 'Cinnzam Cinnaram' |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 | Hymenosporum flavum | Native Hibiscus | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 | Lagerstroemia indica "Biloxi" | Crepe Myrtle | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 | L. indica "Natchez" | Crepe Myrtle | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31 | L. indica "Sioux" | Crepe Myrtle | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 | L. indica "Zuni" | Crepe Myrtle | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 33 | Liquidambar styraciflua | Sweet Gum | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 | Liriodendron tulipifera | Tulip Tree | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 35 | Liriodendron tulipifera 'Fastigiata' | Narrow Tulip Tree | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 | Magnolia grandiflora | Southern magnolia | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 37 | Magnolia grandiflora 'Kay Paris' | Southern Magnolia | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 | Malus ioensis 'Plena' | Flowering Crabapple | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 39 | Melaleuca quinquinervia | Stiff leaved Paperbark | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 | Nyssa sylvatica | Tupelo | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 41 | Phoenix canariensis | Canary Island Date Palm | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 | Platanus digitata | Plane Tree | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 57 | Platanus x hybrida | Plane Tree | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 43 | Populus yunnanensis | Yunnan Poplar | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 | Prunus serrulata cvs. | Flowering Cherry | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 45 | Pyrus calleryana "Glen's Form" | Callery's Pear | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 | P. ussuriensis | Manchurian Pear | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 47 | Quercus palustris | Pin Oak | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 | Q. rubra | Scarlet Oak | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 49 | Q. robur "Fastigiata" | Narrow English Oak | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 | Q. virginiana | Live Oak | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 58 | Tilia x europaea | Linden |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 51 | Tristaniopsis laurina | Water Gum | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 52 | Syncarpia glomulifera | Turpentine | , |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 53 | Ulmus glabra "Lutescens" | Golden Elm | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 59 | Ulmus procera | Common Elm |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 54 | Waterhousia floribunda | Weeping Lilly Pilly | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## GLENBROOK / LAPSTONE STREET TREES



## Public owned land

## Street Tree List

Tree Code No / Tree Description

- 05 Callistemon viminalis - Weeping Bottlebrush - 12 Elaeocarpus reticulatus - Blueberry Ash 18 Eucalyptus punctata - Grey Gum
-21 Eucalyptus sclerophylla - Scribbly Gum
- 31 Lagerstroemia indica 'Sioux' - Crepe Myrtle
- 39 Melaleuca quinquinervia - Broad-leaved Paperbark

B1 Native species 1 - Bushland 1

## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as powe lines and sewer. Each individual planting site must be assessed. It is not reasonable to place trees where a subsequent need prune will compromise the health and appearance of these significant assets.


April 2010

## BLAXLAND STREET TREES



WARRIMOO STREET TREES


## VALLEY HEIGHTS STREET TREES



## SPRINGWOOD STREET TREES



Draft Street tree Masterplan

## WINMALEE STREET TREES



## FAULCONBRIDGE STREET TREES



LINDEN STREET TREES


Public owned land

## Street Tree List

Tree Code № / Tree Description

- 35 Liriodendron tulipifera 'Fastigiatum' - Narrow Tulip Tree
- B1 Native species 1 - Bushland 1
- B2 Native species 2 - Bushland 2


## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary eve within the street and block. Special attention must be paid to placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as powe anes and sewer. Each individual planting site must be assessed. It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these significant assets.

WOODFORD STREET TREES


HAZELBROOK STREET TREES


## Street Tree List

Tree Code No / Tree Description
——02 Acer x freemanni 'Jeffers Red' - Autumn Blaze Maple 03 Acmena smithii - Lilly Pilly

- 26 Fraxinus oxycarpa 'Raywood' - Claret Ash
—— 45 Pyrus calleryana Glen's Form - Glen's Form Pear
- B2 Native species 2 - Bushland 2


## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power and wil not tou overhead or underground utitites such as power
lines and sewer. Each individual planting site must be assessed It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these significant assets.


April 2010

LAWSON STREET TREES


## Public owned land

## Street Tree List

Tree Code No / Tree Description

- 02 Acer x freemanni 'Jeffers Red' - Autumn Blaze Maple 04 Angophora costata - Smooyh-barked Apple
29 Lagerstroemia indica 'Biloxi' - Crepe Myrtle
- 45 Pyrus calleryana Glen's Form - Glen's Form Pear

47 Quercus palustris - Pin Oak
_ 51 Tristaniopsis laurina - Water Gum
B2 Native species 2 - Bushland 2
ST Species Group - Significant Tree Group

## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to
placing trees so they have access to sigificant areas of root placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power and wil an tew overhead or underground uitites such as power
lines and sewer It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these prune wil comprom
significant assets.

BULLABURRASTREET TREES


## Public owned land

## Street Tree List

Tree Code No / Tree Description
04 Angophora costala - Smooyh-barked Apple
53 Ulmus glabra 'Lutescens' - Golden Wych Elm
B2 Native species $2-$ Bushland 2
B3 Native species $3-$ Bushland 3

## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary eve
within the street and within the street and block. Special attention must be paid to
placing trees so they have access to significant areas of root placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power lines and sewer. Each individual planting site must be assessed. It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these significant assets.


WENTWORTH FALLS STREET TREES


## Street Tree List

- 02 Acer x freemanni 'Jeffers Red' - Autumn Blaze Maple
-_ 09 Cedrus deodara - Himalayan Cedar
- 26 Fraxinus oxycarpa 'Raywood' - Claret Ash
- 42 Platanus digitata - Oriental Plane
- 53 Prunus serrulata cvs. - Flowering Cherry
——B Native species 3 - Bushland 3


## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to
placing trees so they have access to significant areas of root run, placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power lines and sewer. Each individual planting site must be assessed. It it not reasonable to place treess where a subsequent need to prune will compromise the heath and appearance of these significant assets.

Draft Street tree Masterplan Map 13 A

WENTWORTH FALLS STREET TREES


Draft Street tree Masterplan Map 13 B

## LEURA STREET TREES



## Public owned land

## Street Tree List

Tree Code No / Tree Description

- 06 Carpinus betulus - Common Hornbeam
22 Eucalyptus oreades - Blue Mountain Ash

22 Eucalyptus oreades - Blue Mountain Ash
24 Fagus sylvatica 'Purpurea' - Copper Beech
33 Liquidambar styraciflua - Sweet Gum 35 Liriodendron tulipifera 'Fastigiatum' - Narrow Tulip Tree 42 Platanus digitata - Oriental Plane 44 Prunus serrulata cvs. - Flowering Cherry 45 Pyrus calleryana Glen's Form - Glen's Form Pear 53 Ulimus glabra 'Lutescens' - Golden Wych Elm
——B Native species 3 - Bushland 3

## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to
placing trees so they have access to sigificant areas of root placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power lines and sewer. Each individual planting site must be assessed. It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these significant assets.


Draft Street tree Masterplan Map 14

## KATOOMBA STREET TREES



Draft Street tree Masterplan Map 15 A

## KATOOMBA STREET TREES



MEDLOW BATH STREET TREES

$\square$ Public owned land

## Street Tree List

Tree Code No / Tree Description

- B3 Native species 3 - Bushland 3
- TB Species - To be advised


## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power and will nof foul overhead or underground utilites such as powe
lines and sewer. Each individual planting site must be assessed. lines and sewer. Each individual planting site must be assessed
It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these significant assets.


## BLACKHEATH STREET TREES



## Public owned land

## Street Tree List

_ 02 Acer x freemanni 'Jeffers Red' - Autumn Blaze Maple 15 Eucalyptus mannifera 'Gullicki' - Mountain Spotted Gum 33 Liquidambar styraciflua - Sweet Gum
— 35 Liriodendron tulipifera 'Fastigiatum' - Narrow Tulip Tree
— 38 Malus ioensis 'Plena' - Bechtel Crabapple

- 42 Platanus digitata - Oriental Plane
- 44 Prunus serrulata cvs. - Flowering Cherry 47 Quercus palustris - Pin Oak
5 Quecus raba Scareloak
53 Ulmus glabra 'Lutescens' - Golden Wych Elm
- B3 Native species $3-$ Bushland 3


## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to placing trees so they have access to significant areas of root run
and will not foul overhead or underground utilities such as powe lines and sewer. Each individual planting site must be assesse It is not reasonable to place trees where a subsequent need prune will comprom
significant assets.


Draft Street tree Masterplan Map 17 A

BLACKHEATH STREET TREES


## Street Tree List

Tree Code No / Tree Description
— 02 Acer x freemanni 'Jeffers Red' - Autumn Blaze Maple 15 Eucalyptus mannifera 'Gullicki' - Mountain Spotted Gum 33 Liquidambar styraciflua - Sweet Gum

- 35 Liriodendron tulipifera 'Fastigiatum' - Narrow Tulip Tree 38 Malus ioensis 'Plena' - Bechtel Crabapple
- 42 Platanus digitata - Oriental Plane 44 Prunus serrulata cvs. - Flowering Cherry 47 Quercus palustris - Pin Oak
- 48 Quercus rubra - Scarlet Oak
_ 53 Ulmus glabra 'Lutescens' - Golden Wych Elm
——B3 Native species 3-Bushland 3

MOUNT VICTORIA STREET TREES


## Public owned land

## Street Tree List

- 02 Acer x freemanni 'Jeffers Red' - Autumn Blaze Maple 24 Fagus sylvatica 'Purpurea' - Copper Beech
- 35 Liriodendron tulipifera 'Fastigiatum' - Narrow Tulip Tree 38 Malus ioensis 'Plena' - Bechtel Crabapple
42 Platanus digitata - Oriental Plane
B3 Native species 3 - Bushland 3


## NOTE: Capability

The physical space to accommodate trees, both canopy and root system, has to be carefully assessed as it may vary even within the street and block. Special attention must be paid to
placing trees so they have access to sigificant areas of root placing trees so they have access to significant areas of root run,
and will not foul overhead or underground utilities such as power and will not foul overhead or underground tutitites such as power
lines and sewer. Each individual planting site must be assessed It is not reasonable to place trees where a subsequent need to prune will compromise the health and appearance of these significant assets.


## MOUNT WILSON STREET TREES



Public owned land

## Street Tree List

Tree Code No / Tree Description

- 24 Fagus sylvatica 'Purpurea' - Copper Beec
- 34 Liriodendron tulipifera - Tulip Tree
- 53 UImus glabra 'Lutescens' - Golden Wych Elm
- 55 Castinea sativa - Common Chestnut

57 Platanus x hybrida - Plane Tree
58 Tilia x europaea - Linden
——B4 Native species 4 - Bushland 4


