



Wyndham Landscape Guidelines

August 2018

1.0 Introduction

This Manual has been prepared to provide guidance to planning permit applicants about the recommended size and species of trees to be included in landscape plans to meet the landscape requirements of the schedules to the Residential Zones. The information contained in this Manual is based on the *Wyndham Landscape Context Guidelines* (adopted 25 March 2013) and the *Landscape Guidelines for New Residential Unit Developments and Medium Density Residential Developments Re-development Proposals on Existing Sites* (February 2014).

Wyndham's schedules to the residential zones require the planting of suitable trees in certain locations, including:

- Front setbacks
- Side and rear setbacks
- Secluded private open space

Depending on the specific schedule, tree planting will be required in at least one of the above locations. The requirements of the relevant schedule should be referred to for confirmation of the extent of tree planting to be confirmed on landscape plans. Landscape plans are required to be submitted with permit applications.

2.0 Matching Tree Size to Available Space

The space available for tree planting will differ depending on the size of building setbacks from property boundaries and the size of secluded private open space.

The matrix in figure 1 below should be used to guide whether a large, medium or small tree should be selected. Once size of tree is determined, the tree species selection can be made (refer section 3.0 and the recommended species lists in Appendix 1).

The Tree Planting Space Matrix defines the space available to grow a tree and fits the most appropriate sized tree into the space based on the fundamental design parameter of using the largest acceptable tree in each planting situation.

The Tree Planting Space Matrix combines the width and depth of the space available for the tree to provide sufficient space for the trunk and main structural roots and for tree canopy growth. It assumes the same amount of space is available at ground level and canopy level.

A minimum planting bay of 600mm is required.

Figure 1. Tree planting space matrix

		Width of available space		
		> 4 metres	3-4 metres	1.8-3 metres
Depth of available space (eg. front setback distance)	> 4 metres	L	L or M	VS
	3-4 metres	S or M	S or M	VS
	1.8-3 metres	VS	VS	VS

Note. Where there is less than 1.8m dimension, there is insufficient room for tree planting.

2.1 Tree Size

Four basic tree size categories were developed based on the actual dimensions of available or commonly used trees and the space typically available. The four size categories are:

1. Very small: 6 or less metres tall by 6 or less metres wide
2. Small: 6 to 8 metres tall by 5 to 10 metres wide
3. Medium: 8 to 15 metres tall by 8 to 18 metres wide
4. Large: 15 or more metres tall by 15 or more metres wide

Tree sizes at maturity have been estimated. Tree growth varies from one individual to another and between populations and different provenances, so wherever possible sources of trees have been identified to reduce the likelihood of trees growing much larger than anticipated.

3.0 Recommended Tree Species

The tree size matrix in section 2.0 above should be used to determine what sized tree is suitable for the available space. Once the right size is determined, the species can be selected. The recommended species lists in Appendix 1 are grouped into different sized trees.

The recommended species include a combination of indigenous, Australian native and exotic tree species that have shown to perform well in Wyndham. It provides a basis for selection but is not intended to be exhaustive.

Selection of appropriate species should also consider site orientation and whether deciduous or evergreen species are more suitable to allow for summer sun and winter shading to north and west facing windows and open space.

Trees considered to be environmental weeds must not be planted. Species with weed potential or a tendency to sucker should not be planted within creek buffer zones or other environmentally sensitive areas. This applies to the following species in Appendix 1:

- *Celtis australis* and *C. occidentalis*

- *Robinia pseudoacacia*
- *Gleditsia triacanthos*
- *Olea europaea*
- *Casuarina cunninghamiana*
- *Ulmus procera*
- *Platanus xacerifolia*

Trees must be able to survive with natural rainfall. Reliance on irrigation systems is not supported.

4.0 Tree Planting and Establishment Methods

4.1 Tree Planting Details

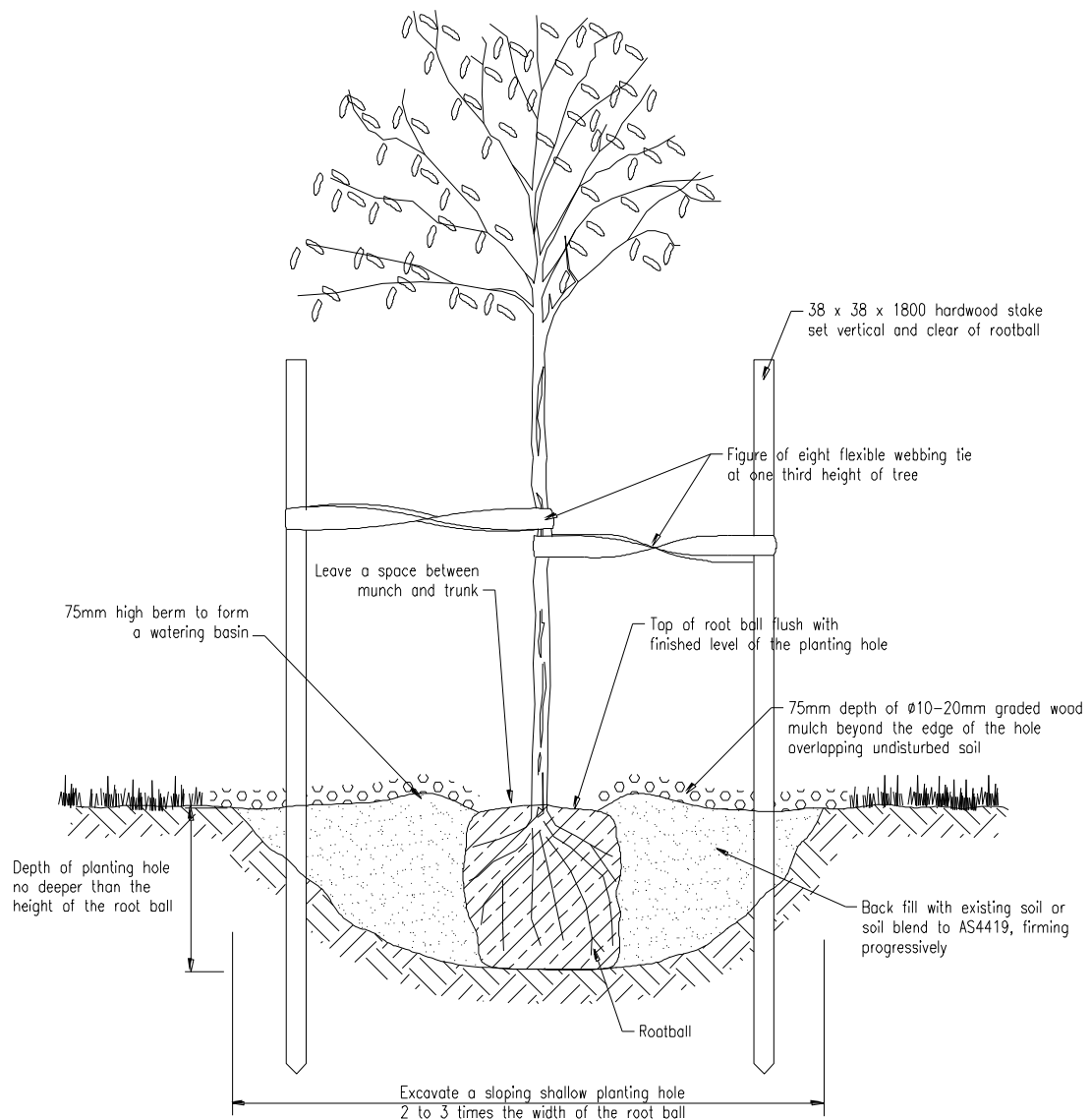
Trees at planting should be at least:

- Height – 2 metres
- Caliper width – 30mm
- Rootball - must provide enough ballast to support the tree
- A minimum planting bay of 600mm is required
- Tree should be staked on both sides for support

Refer to diagram on following page.

Other notes to consider include:

- Opportunities for passive watering (e.g. can it be connected to nearby house drain downpipes?)
- Planting configuration and context (how do proposed trees integrate with overall landscape plan onsite and in nearby public realm?)
- Consideration of underground and overhead services.



NOTES:

1. Locate services (Call Dial Before You Dig) prior to setting out and excavation
2. All excavation to be undertaken by hand
3. Advanced trees to be approximately 2000mm high (40-50 litres container min.)
4. Apply 150 litres of water immediately after planting
5. Apply 25 grams NPK (20:4:8) at planting per square metre of root zone.

4.2 Tree Maintenance

Landscape Plans should include an establishment maintenance plan. An example of a two year establishment maintenance plan is shown in the table below.

Activity	Year 1 – Number of visits	Year 2 – Number of visits
Watering	30	20
Weed control	2	1
Mulch top up	2	1
Formative pruning	-	1
Stake removal	-	1
Water well removal	-	1
Tree tie removal	-	1

The major limitations to root spread will be soil compaction from development works.

The planting hole can be dug with a number of different pieces of equipment. Recently the use of chain trenchers has become common. These devices will dig a hole of this type readily, in most soils, and will leave the excavated soil in a good tilth condition for backfilling after planting. In the sandy and loam soils in Wyndham holes can be dug at most times of the year. In the basalt clay soils holes are best pre-dug during summer while the soil is dry.

Unamended site soil is recommended as backfill in all planting situations. Organic and other amendments are generally of no value and may make the planting environment worse. If organic amelioration of site soil was desired, shallow incorporation of composted organic matter (surface 100 mm only) is recommended. Surface application of organic mulches is a preferred option.

If site soil cannot be used for backfilling the planting hole, a low organic matter sandy soil is recommended. The drainage rate of this soil should be no less than 5 mm /h.

Drainage will not be required in most planting holes unless the tree is not suited to the drainage characteristics of the site or is of a very large size requiring excavation into underlying clay subsoil. Drainage will be required where trees are being planted into rain garden planters for water quality treatment of runoff water.

Improving soil conditions for trees growing in paved areas

One simple way of improving tree soil conditions is the use of raised planters that provide an improved soil volume in the root flare area and zone of rapid taper. This approach also reduces soil compaction around the base of the tree by reducing pedestrian access. If such an approach is used it is essential that the soil in the raised planter is connected to a larger soil volume below the paving.

Structural soil cells (e.g. like 'stratacell') should also be considered. They provide volume beneath paving and avoid clutter caused by raised pavers.

Appendix 1. Recommended Species List

Very small trees maturing to <6m

SPECIES DETAIL

Acacia pendula
Weeping Myall

Native
Evergreen

CHARACTERISTIC FORM

Rounded, small, evergreen tree to 6m, with pendulous branches and attractive silver foliage. The tree is drought tolerant.

Agonis flexuosa 'Burgundy'
Burgundy Willow Myrtle

Native
Evergreen

Broad spreading semi pendulous small tree with strong burgundy new growth. Attractive small, white flowers cluster along stems from spring to summer.

Agonis flexuosa 'Jervis Bay After Dark'
After Dark Willow Myrtle

Native
Evergreen

Broad spreading semi pendulous small tree with burgundy to purple coloured foliage all year round. Attractive small, white flowers cluster along stems from spring to summer.

Callistemon viminalis
Weeping Bottlebrush

Native
Evergreen

Rounded small tree to 5m, with crimson bottlebrush flowers and pendulous foliage.

Hakea petiolaris
Sea Urchin Hakea

Native
Evergreen

Shrub or small dense tree to 4-5m tall. Foliage is grey-blue, elliptical to almost round. Flowers are showy, pink and white balls that resemble 'sea urchins'.

Lagerstroemia Hybrids
Crepe Myrtle

Exotic
Deciduous

Multi stemmed wide-spreading tree 6-8m tall. The flowers are very showy in summer and the autumn colour is quite striking. Cultivars include, 'Lipan', 'Natchez', 'Siouz', 'Tuscarora', 'Yuma' and 'Zuni'.

Malus ioensis 'Plena'
Ornamental Apple

Exotic
Deciduous

Small oval to rounded tree to 4-5m tall. The double flowers are showy in spring and the foliage displays striking autumn colour.

Prunus x blireana
Double Flowering Plum

Exotic
Deciduous

Small tree to 4-6m tall. The double pink flowers in spring give way to bronzy-purple foliage.

Robinia pseudoacacia 'Inermis'
Mop Top Robinia

Exotic
Deciduous

Top-grafted small tree to 3-5m, producing a straight clean trunk and a large 'ball' of foliage 2-3m. Can be striking when planted as an avenue.

Eucalyptus macrandra
River Yate

Native
Evergreen

Small tree or mallee to 3-6m with silvery green glossy foliage. The yellow flowers are in dense clusters from summer to autumn and the smooth grey bark peels to reveal coppery patches.

Small trees maturing to 6-8m

SPECIES DETAIL

Agonis flexuosa
Willow Myrtle

Native
Evergreen

Allocasuarina verticillata
Drooping She-Oak

Indigenous
Evergreen

Callistemon Cultivars
Bottlebrush

Native
Evergreen

Callistemon sieberi
River Bottlebrush

Indigenous
Evergreen

Eucalyptus forrestiana
Fuchsia Gum

Native
Evergreen

Eucalyptus platypus
Moort

Native
Evergreen

Eucalyptus risdonii
Risdon Peppermint

Native
Evergreen

Eucalyptus torquata
Coral Gum

Native
Evergreen

Fraxinus ornus
Manna ash

Exotic
Deciduous

Gleditsia triacanthos
'Sunburst'
Sunburst Honey Locust

Exotic
Deciduous

Olea europaea
Olive

Exotic
Evergreen

CHARACTERISTIC FORM

Broad spreading, multi-stemmed, semi pendulous small tree to 8m. Attractive small, white flowers cluster along stems from spring to summer.

Small rounded spreading tree to 6-8m with an open canopy and needle-like, dark green foliage.

Large shrubs to small rounded trees to 4-8m. There are many cultivars with varying flower colours, foliage and habits. Cultivars include: 'Dawson River Weeper', 'Endeavour', 'Hannah Ray', 'Harkness', 'Kings Park Special', 'Mauve Mist' and 'Rose Opal'.

Open to dense semi weeping shrub or small tree to 4-7m. Flowers are spikes of cream to pink, borne from late spring to late autumn.

Small mallet or mallee eucalypt less than 8m tall. The canopy is open and rounded with showy, pendulous orange-red flowers. The fruits are persistent on the tree and remain an orange-red colour.

Small, dense and rounded tree to 6-10m. The leaves are small, round and glossy green and the trunk is glossy green to copper in colour.

Small, short-trunked irregular tree reaching a height of 6-8m with grey-green adult foliage higher in the canopy.

Small open tree to 6-8m tall. The foliage is olive green and the flowers are a pinkish orange in colour throughout spring and summer.

Small, rounded tree to 7-9m tall. Foliage is a lush green without showy autumn colour. The white flowers are showy and borne in dense clusters.

Upright spreading small tree to 8m with light yellow-green fine leaflets.

Small upright tree to 6-7m tall. The foliage is a silvery green and the trunk forms a twisted gnarled look with age. Two selections are almost fruitless, 'Swan Hill' or 'Tolley's Upright'.

SPECIES DETAIL

Acacia implexa
Lightwood

Indigenous
Evergreen

Allocasuarina littoralis
Black She-Oak

Indigenous
Evergreen

Banksia integrifolia
Coastal Banksia

Native
Evergreen

Brachychiton acerifolius
Flame Tree

Native
Semi-deciduous

CHARACTERISTIC FORM

Small to medium erect evergreen tree to 8m tall. With dense bright green foliage and creamy acacia flowers from summer to autumn.

Upright conical small tree to 8-10m with needle-like, dark green foliage and a trunk developing hard furrowed bark.

Erect small to medium tree to 6-10m. Foliage is green on the top and white underneath. Flowers are yellow spikes borne throughout the year.

Erect oval to conical medium sized tree to 8-12m. The tree can be deciduous from late winter to summer. The leaves are large with 3-7 lobes and the flowers are bright scarlet in terminal panicles from late spring to early summer.

Medium-sized trees maturing to 8-15m

SPECIES DETAIL

Brachychiton discolor
Queensland Lacebark Tree

Native
Semi-deciduous

Brachychiton populneus
Kurrajong

Native
Evergreen

Callistemon salignus
Willow Bottlebrush

Native
Evergreen

Celtis australis
Nettle Tree

Exotic
Deciduous

Celtis occidentalis
Hackberry

Exotic
Deciduous

Corymbia eximia
Yellow Bloodwood

Native
Evergreen

Corymbia ficifolia
Red Flowering Gum

Native
Evergreen

Eucalyptus leucoxylon connata
Yellow Gum

Indigenous
Evergreen

Eucalyptus polyanthemos vestita
Red Box

Indigenous
Evergreen

Eucalyptus pulchella
White Peppermint

Native
Evergreen

Fraxinus excelsior 'Aurea'
Golden Ash

Exotic
Deciduous

Fraxinus pennsylvanica Urbdell Urbanite
Urbanite Ash

Exotic
Deciduous

CHARACTERISTIC FORM

Dense conical tree to 14m tall with large, mostly palmate leaves that are green on the top side and hairy and white on the underside. Flowers are small 3-4cm long and orange-red to pink over summer.

A medium-sized upright to oval canopied tree with a large trunk to 10-12m tall. The leaves are mostly small and bright green, flowers are inconspicuous.

Upright rounded large shrub to small tree to 9m. The foliage is a bright green with new foliage pink. Flowers are small, yellow bottlebrushes and the bark is papery and peeling.

Broad-crowned tree to 10-12m tall. The bark is smooth and grey, foliage is green and rough with serrated margins.

Broad-crowned tree to 10-15m tall. The bark is grey and furrowed with age, foliage is green and glossy with serrated margins.

Rounded tree to 10-12m tall with pendulous, blue-green, sickle-shaped foliage. Masses of creamy flowers are borne on the outside of the canopy in spring.

Dense rounded tree to 8-10m. Masses of pink, red or orange flowers are borne on the outside of the canopy over summer.

Medium upright to oval tree to 12m with an open canopy and creamy yellow flowers from winter to spring. The bark is more or less smooth with some rough basal peeling bark, white to grey in colour.

Round-headed to upright eucalypt to a height of 10-12m. Adult leaves are a slate grey colour and bark is rough 'box'.

Medium sized, oval to rounded tree to 10-15m with an open canopy. The trunk is mostly smooth and white, and the leaves are narrow and pendulous creating a weeping effect.

Small to medium, slow growing tree 8-10m tall. New stems are yellowish in colour with almost black winter buds. Foliage is bright green turning golden in autumn.

Medium sized tree 10-12m with large, pinnate, bright green leaves. Autumn colour is variable from yellow to deep burgundy.

SPECIES DETAIL

Gleditsia triacanthos
'Shademaster'
Shademaster Honey Locust

Exotic
Deciduous

Hymenosporum flavum
Native Frangipani

Native
Evergreen

Jacaranda mimosifolia
Jacaranda

Exotic
Deciduous

Melia azedarach
White Cedar

Native
Deciduous

Pyrus calleryana
'Aristocrat'
Aristocrat Callery Pear

Exotic
Deciduous

Pyrus calleryana 'Capital'
Capital Callery Pear

Exotic
Deciduous

Pyrus calleryana
Chanticleer
Chanticleer Callery Pear

Exotic
Deciduous

Ulmus parvifolia
Chinese Elm

Exotic
Semi-deciduous

Zelkova serrata
Japanese Elm

Exotic
Deciduous

Quercus robur 'Fastigiata'
Upright English Oak

Exotic
Deciduous

CHARACTERISTIC FORM

Vigorous growing, open spreading tree to 10-12m tall. Foliage is divided into small leaflets that provide yellow autumn colour.

Small to medium-sized tree 6-10m tall. Glossy, dark green foliage and small, fragrant, yellow flowers in spring.

Small to medium-sized spreading tree to 8-12m with an open canopy. The foliage is divided into many fine leaflets. The lilac-blue flowers are very showy and are borne on the outside of the canopy in late spring to summer.

Small to medium umbrella shaped tree to 9-14m tall that performs well in urban conditions. The leaves are large and finely divided into small leaflets. The tree has mauve flowers in spring and fruit mature over summer and hang on the tree.

Oval to pyramidal small to medium tree 10-12m tall. White flowers amass the stems in spring followed by bright green foliage. The autumn colour varies from yellow to red.

Narrow, upright small tree to 10m. White flowers amass the stems in spring followed by bright green foliage. The autumn colour varies from yellow to purplish-red.

Upright oval small to medium tree to 12m. White flowers amass the stems in spring followed by bright green foliage. The autumn colour varies from yellow to purplish-red.

Pyramidal to oval small to medium tree to 12m. The foliage is fine and is usually held on the tree over winter. If not managed the form can become very wide and spreading.

Semi-upright oval to vase shaped tree to 10-14m tall with small serrated leaves that turn yellow and red in autumn. Ornamental trunk is grey peeling to reveal reddish underneath.

Narrow, upright tree, 10-15m tall with small lobed leaves. Autumn foliage colour is not exceptional.

Large trees maturing to >15m

SPECIES DETAIL

Lophostemon confertus
Queensland Brush Box

Native
Evergreen

Eucalyptus scoparia
Wallangarra Gum

Native
Evergreen

Angophora costata
Smooth-barked Apple
Myrtle

Native
Evergreen

Casuarina cunninghamiana
River She-Oak

Native
Evergreen

Corymbia citriodora
Lemon-scented Gum

Native
Evergreen

Corymbia maculata
Spotted Gum

Native
Evergreen

Eucalyptus mannifera
Brittle Gum

Native
Evergreen

Eucalyptus melliodora
Yellow Box

Indigenous
Evergreen

Eucalyptus sideroxylon
Red Ironbark

Native
Evergreen

Maclura pomifera 'Wichita'
Wichita Osage Orange

Exotic
Deciduous

Platanus orientalis
Oriental Plane

Exotic
Deciduous

Platanus x acerifolia
London Plane

Exotic
Deciduous

CHARACTERISTIC FORM

Rounded, sometimes multi-stemmed, dense tree 12-16m. The foliage is a glossy, dark green and the bark peels to reveal an orange-pink trunk.

Medium to tall open tree 12-18m tall. The trunk is a powdery white and the foliage is semi-pendulous and green in colour.

Medium to large rounded tree with twisting branches, 12-25m in height. Showy cream flowers are borne on the outside of the canopy and the bark peels to reveal an orange pink trunk.

Tall, upright, somewhat pine-like tree, 12-18m in height with needle-like, dark green foliage. The overall appearance of mature specimens is often pendulous.

Narrow open medium to large, graceful tree, 20-25m in height. The trunk is smooth grey to white and the foliage smells strongly of lemon when crushed.

Medium sized to very tall upright tree to 25m with smooth mottled grey and dark grey trunk. The canopy is dense with large dark green eucalypt type leaves.

Medium to tall open tree, 12-18m tall. The trunk is powdery white and the foliage is semi-pendulous and blue-green in colour.

Medium to tall open tree, 20-25m tall. The bark is rough and tightly held to the trunk and the foliage is semi-pendulous.

Medium to tall forest tree to 12m-25m tall. Mature trunks have deeply furrowed firmly attached reddish black bark. The foliage is a blue-green with red to cream flowers produced from winter to spring.

Medium to tall, broad-crowned tree, 10-16m tall. The foliage is large and lush, bright green over summer and turns better yellow through autumn. The selection is fruitless and thornless.

Pyramidal to rounded medium to large tree, 15-25m tall with deeply lobed foliage. The bark forms a patchy mosaic of creams, greens and greys.

Rounded medium to large tree, 15-25m tall with maple like foliage. The bark forms a patchy mosaic of creams, greens and greys.

SPECIES DETAIL

Quercus ilex
Holm Oak

Exotic
Evergreen

Quercus palustris
Pin Oak

Exotic
Deciduous

Ulmus procera
English Elm

Exotic
Deciduous

CHARACTERISTIC FORM

Slow growing medium to large tree developing a rounded canopy to 14-16m tall. Small leaves are a dark, glossy green with a lighter underside.

Broadly pyramidal medium to tall tree, 18-20m tall. Leaves are heavily lobed and provide a good autumn display.

Dense, rounded tree to 15-20m tall. Rounded, dark green, serrate leaves of varying size turn yellow in autumn.