



Technical and positioning guidance

Technical street tree planting guidance is outside of the scope of this document. The *Sunshine Coast Open Space Landscape Infrastructure Manual* contains detail around desired standards of service for landscape plantings including technical guidelines and relevant specifications. Street tree setbacks, centres and layouts (acceptable outcomes depending on the type of planting) are however briefly discussed below.

Species selection

Species are to be selected from relevant species palettes for the locality with consideration given to selecting the right tree for the site considering amended soil profiles (including inverted or fill soils, contamination or structural damage, soil biology and fertility, and drainage), existing themes as well as the over-arching street tree planting strategy for the locality.

The palettes are considered to be 'live' and will therefore be reviewed and updated from time to time to allow for new species to be included as an outcome of greater availability, successful performance in street tree trials, the release of new cultivars, or as an outcome of emerging research. Species may also be removed as an outcome of community engagement and preference, pest and disease outbreaks, changes in invasive status, toxicity or other advances in the understanding of a species.

Where existing themes allow, species dominance should be reduced wherever possible. The implications of monoculture plantings of the same species or genus and increased vulnerability to pest and disease (and Council's goal of achieving greater street tree species diversity) should also be considered.

See Part A: *Street tree master plan report - Species selection guidelines* for over-arching species recommendations and region-wide street tree lists (including further detail regarding target species for reduced use/dominance as well as species recommended for wider use).

For specific species traits, including expected dimensions and preferred growing conditions, see the *Sunshine Coast Open Space Landscape Infrastructure Manual - Palettes - Planting - Planting index*.

Stock selection

The selection of street tree stock should be in accordance with AS 2303:2018 *Tree stock for landscape use*. Where timeframes for planting are known and lead times are sufficient, trees should be contract grown or ordered in advance to ensure quality stock is procured. Local provenance ecotypes are recommended for use in natural character in plantings aimed at promoting biodiversity however a diversity of genetic material (within species variation) is encouraged with a range of ecotypes to be sourced depending on the function of the planting to promote species resilience (for example the Whitsunday Islands form of the hoop pine – *Araucaria cunninghamii* is more desirable in coastal locations).

In standard planting situations 25 litre trees are recommended although 45 litre trees are also acceptable so long as they do not exceed conventional root to shoot ratios.

Where instant landscape impact is required, in areas of high vandalism, or where clear stems are required for site lines, larger stock is recommended (100 litre or greater). Pruning to achieve clear stems for sight lines should consider whether the amount of canopy remaining will be sufficient. In some cases it may be better to delay removal of young tree branches until the canopy of the tree has further developed.

Advanced tree planting technique

For the Sunshine Coast Council's standard advanced tree planting detail see the *Sunshine Coast Open Space Landscape Infrastructure Manual - Embellishments - Planting - Landscape - Technical drawings*.

Particular attention should be given to:

- soil structure (including drainage) and amelioration requirements
- ensuring tree stakes are the right height for the tree
- attaching stakes to the tree in the right location (if they are attached too low they can restrict stem movement which is necessary for the development of good stem taper and the ability for a tree to be self-supporting)
- digging or ripping an area of soil greater than the diameter of the pot/bag (digging a planting hole three times as wide as the root ball is recommended although the depth should be no greater than the depth of the root ball)
- keeping the mulch layer to the recommended depth of 100mm

Young tree maintenance

While most trees are generally self-sufficient within twelve months of planting (and should be self-supporting by this time), it may take up to two years for a young tree to become fully established.

The *Street Tree Master Plan* recommends that all street tree plantings are maintained for a minimum period of twelve months following planting. See the *Sunshine Coast Open Space Landscape Infrastructure Manual - Embellishments - Planting - Landscape - Specifications* for recommended young tree maintenance frequencies and treatments.

Planting setbacks

In standard situations it is preferable that new street trees are planted centrally between the kerb and footpath (as opposed to footpath and property boundary). For specifications for planting setbacks (including to kerb and channel, pathways, driveways, street lights and underground services) see the *Sunshine Coast Open Space Landscape Infrastructure Manual - Embellishments - Planting - Landscape - Specifications - Table 7: Positioning of trees*.

See also the *Ausroads Guide to Road Design and DTMR Road Landscape Manual* for setback requirements according to road speed (clear zones) and the *Sunshine Coast Planning Scheme 2014, Part 9: Development codes, 9.4.2 Landscape Code*.

The width of the verge, specifically the available soil volume, as well as how well the species is matched to the soil type will have the greatest impact on the mature dimensions, longevity and general health of a street tree throughout its life. For basic tree biology and tree growth requirements (including required soil volumes) see the *Sunshine Coast Open Space Landscape Infrastructure Manual - Preliminaries - Vegetation Management*.

Planting spacing

Spacing between plantings should be selected according to the expected size of the tree on maturity, the design intent of the planting and the type of street in question. In identified heat-exposed locations, where shade is a priority for well used footpaths, it is recommended that street trees are planted at 6m intervals (see *Sunshine Coast Planning Scheme 2014, Part 9: Development codes, 9.4.2 Landscape Code*).

Where overhead power exists, the plan recommends planting small trees or large shrubs at closer centres. In these situations a street tree may be located every 5m.

In local streets the standard recommended distance between street tree plantings is 8m (see Figure 1: *Sketch showing standard planting intervals in residential streets*). Where large trees are being planted, for example as a part of the rural road network, larger centres may be considered appropriate, for example 10 to 15m centres may be suitable (see Figure 2: *Sketch showing larger lots and wider planting intervals in rural streets*).

Commercial centres and shopping precincts should contain a higher degree of street tree embellishment with the primary shade tree canopy supplemented by smaller plantings at closer centres (see Figure 3: *Sketch showing street tree layouts in centres or shopping precincts*).

Street tree configurations

With respect to street tree configurations and mixed or formal planting themes, the plan recommends that in the first instance existing themes are followed. This is especially important when infill planting formal avenues of trees on major thoroughfares (where plantings are traditionally configured symmetrically, see Figure 5: *Sketch showing formal street tree layouts for major avenues*). Naturally if the existing species is not performing, species changeover should occur. Where diversification of existing formal avenues is desirable, opportunity to retain a formal, symmetrical configuration and introduce new species in block plantings, where natural breaks occur, is recommended.

Where no planting themes exist, mixed species and informal (asymmetric) layouts may be favoured to optimise a diversity of tree species in the street tree network and consequently improve resilience to pest and diseases outbreaks and changes in growing conditions. It is important however to ensure that clumped plantings consider the mature dimensions of the species used and allow enough space between each tree for proper structural development. It is also important that the planting layout does not affect the potential for the planting to achieve its intended outcome. Where streets interface with natural areas, more naturalistic planting configurations should be used (see Figure 4: *Sketch showing informal street tree layouts adjacent to natural areas*).

Evenly spaced, continuous plantings for example are best for the delivery of unbroken shade to footpaths. Clumped plantings with large spaces provide only intermittent shade to footpaths.

Gateway and feature plantings at intersections and within centre medians occurring on major thoroughfares provide good opportunity for multi-layered, sub-tropical style planting arrangements and the use of a mixed species palette. A sub-tropical planting outcome can also be achieved through the use of under-plantings.

See Table 1: *Matrix of street tree planting configurations by planting palette and type of planting* adjacent for street tree layout and species palette recommendations according to the type of street planting (including descriptions).

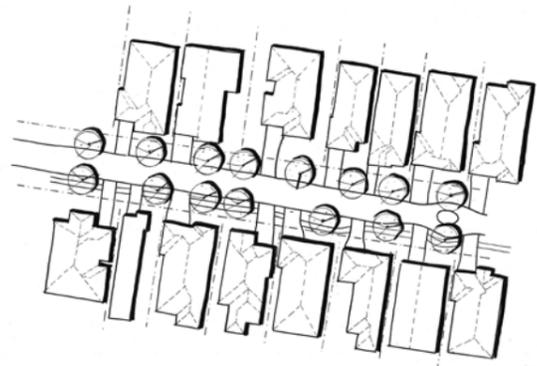


Figure 1: Sketch showing standard planting intervals in residential streets.

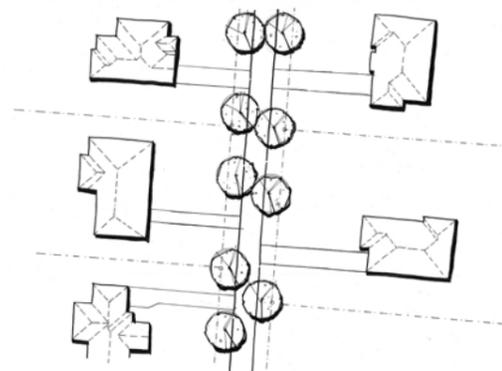


Figure 2: Sketch showing larger lots and wider planting intervals in rural streets.

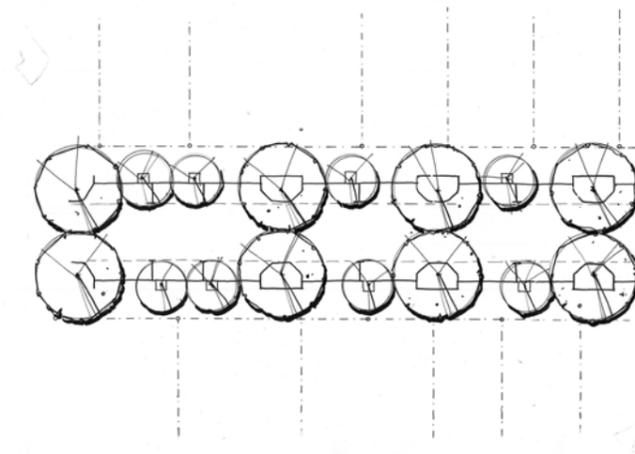


Figure 3: Sketch showing street tree layouts in centres or shopping precincts.

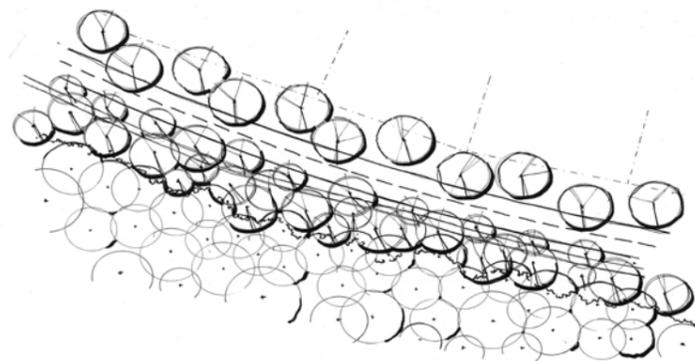


Figure 4: Sketch showing informal street tree layouts adjacent to natural areas.

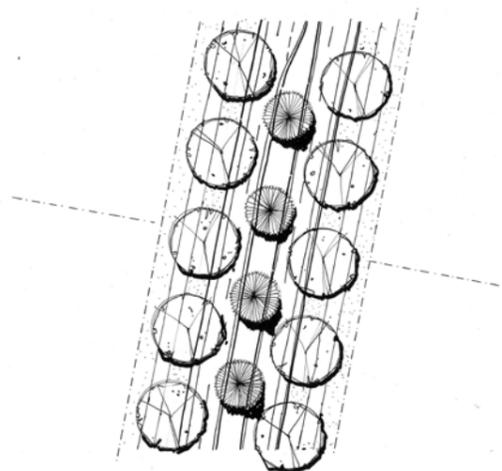


Figure 5: Sketch showing formal street tree layouts for major avenues.

Table 1: Matrix of street tree planting configurations by planting palette and type of planting

Planting type	Description	Intent of planting	Planting style/configuration				Planting palettes for use		
			Formal layout	Informal layout	Even spacing	Uneven spacing	Signature trees	Natural character trees	Trees for local streets
Feature node – singular planting	Gateways, focal points, major intersections, headlands, roundabouts, corner trunkations (whether street trees are specimen or group plantings should be a function of space, character and purpose)	Build canopy, promote and reinforce SC and local character, highlight entries with specimen tree (landmark) plantings.	n/a	n/a	n/a	n/a	✓		
Feature node – group planting (layered plantings)		Build canopy, promote and reinforce SC and local character, highlight entries with group plantings, enhance biodiversity values of appropriate sites.	n/a	n/a	n/a	n/a	✓	✓	
Major avenue	Arterial routes, sub-arterials with major road corridors	Improve the amenity of major travel routes, emphasise lead-ins through uniformity and visual continuity, reinforce local character.	✓		✓		✓		✓
High use footpath	Major pedestrian routes between town centres, recreational and community facilities, schools and aged care facilities	Provide shade, amenity and a visual edge to the road carriageway.	✓		✓		✓		✓
Park-street interface	Streets abutting recreational parkland	Build canopy, enhance population diversity, increase visual amenity, enhance biodiversity values, emphasise landscape character.	✓	✓	✓	✓	✓	✓	
Natural area-street interface/forested edge	Roads abutting bushland or coastal strand reserves	Buffer edges of conservation reserves, build canopy, extend or create habitat, enhance biodiversity values.		✓		✓		✓	
Local residential street (urban footprint)	Suburban streets, low speed environments	Increase visual amenity, minimise future conflicts through use of compact tree palettes.	✓	✓	✓	✓			✓
Local rural street	Rural residential roads	Build canopy, promote biodiversity.	✓	✓	✓	✓	✓	✓	✓
Major centre or precinct area	Business centres, tourist zones, town centres (high density, greater conflict potential, awnings etc.)	Place making, encourage visitation through embellishment and the provision of shade.	✓	✓	✓	✓	✓	✓	
Scenic Route	Roads with view lines	Frame or compliment borrowed landscapes (i.e. water or mountain views).		✓		✓			✓
Urban buffer	Back of lots, fencelines, buffers to industrial areas	Build canopy, screen and soften built edges, increase visual amenity.	✓	✓	✓	✓	✓	✓	✓