Technical Guideline: Street Trees

MoES 2025

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- This technical guideline provides guidelines for future tree plantings to enhance landscapes and streetscapes with appropriate species that minimise maintenance requirements and Council's liability. This guideline applies to all trees on public roads, under the control of Maitland City Council.
- Unless directed otherwise by Council, all new road reserves are to be landscaped with street trees as per this Technical Guideline.
- Council's policies including the Development Control Plan and its associated Appendix for Canopy Cover, the Environmental Sustainability Strategy and the Manual of Engineering Standards may provide additional requirements for planting or other supplement background information.
- For new streets, the design approach shall prioritise the creation and preservation of an effective tree canopy. Infrastructure and utility policies should focus on maximising both above ground and underground space to support and protect urban street trees.
- Subdivision creating new street or lots shall be designed with appropriate soil volume and space to support healthy tree growth. To achieve this, utility services should be consolidated into shared trenches, and power lines should be placed underground.
- One of the main challenges in planting public trees is ensuring adequate space for their growth at maturity. The key to creating a resilient and aesthetically pleasing urban forest lies not just in planting more trees, but in planting the 'right' trees in the 'right' locations, where they can become established and thrive. Therefore, no tree should be 'shoehorned' into an impractical or inadequate planting space simply to meet targets.

1. Approved Species Matrix

1.1 Street trees are to be selected from Council's Tree Species List (available on Council's website) and should complement the existing streetscape. Council has an approved list of species ensuring that their expected mature size is appropriate for the available footway space. Preference shall be given to tree species that occur naturally in Council's local environment.

1.2 Greenfield subdivisions and other developments are to provide a landscape plan prepared by an experienced landscape designer and be approved by Council. Minimum requirements for a landscape plan are provided in Appendix A: Application Requirements – Other Development of Council's DCP.

1.3 The landscape designer shall use a variety of species in the designs. Variations to approved species would generally be for a feature tree such as in a roundabout, or due to supply issues of other approved species. Any species not included in the approved list must be preapproved in writing by Maitland City Council. This will be at the discretion of Council and based on its

suitability, safety, maintenance, and liability.

2. Pot Size

2.1 Ideally, small street trees should be chosen that reach a mature height of 10 to 15 metres and be able to be undercut to a specified height for safe sightlines for pedestrians and vehicular traffic. When mature, street trees must be of a size that will sustain foliage undercut to a minimum height of 2 metres. Where shrubs are provided, they shall be of a kind able to be maintained through trimming below a height of 1.2 metres. Greater consideration is required for trunk roads and any overhang into trafficable lanes.

2.2 For street tree planting in the verge, a minimum pot size of 45 litres (L) is required, however 75L or 100L pots may be provided if preferred by the Proponent.

2.3 For trees planted in pavement areas, such as central landscape medians and roundabouts, a minimum pot size of 100L is required. Council is required to be consulted with in these circumstances to confirm any specific requirements. *Note: Tree pits in pavement areas must be constructed with concrete and as an integrated structure into the road pavement.*

3. Soil Volume

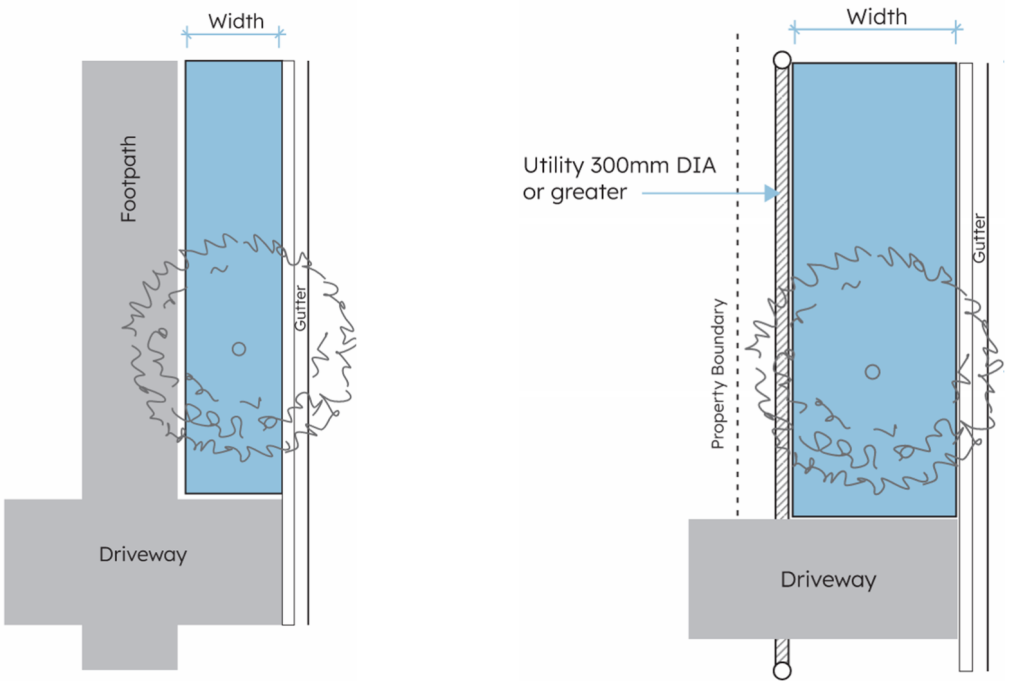
The following terms and requirements are used in defining the available area and volume for plantings:

3.1 **Soil Volume (Unobstructed root area)** – the available volume for root to spread. Obstructions up to 300mm in diameter such as a utility crossing (conduit) or reticulated water main (located behind kerb) are permitted within the volume but must be positioned toward the outer edges of the soil volume, away from the tree trunk. Unless otherwise specified, when multiple trees share the same soil volume, the required volume may be reduced to 66.7% of the individual requirement per tree. This reduction does not apply to imported soil volumes.

3.2 **Imported Soil Volume or Improved Soil Volume –** a smaller volume within the unobstructed root area that consists of either imported soil or existing soil that has been improved (improved soil) to enhance and support healthy root growth.

3.3 **Planting Width** – an unpaved area with mulch and/or grass that allows surface water and irrigation to penetrate the soil. A planting width of 1.5m is used between the footpath and the kerb to simplify calculations. This allows the width of the kerb including the kerb track to be included within the 1.7m setback from the face of kerb to the footpath.

In confined spaces such as larger carparks and commercial areas, where wider footpaths or pavements are required, the planting width may be reduced to 1.0m only if the soil volume, and ability to get moisture into that volume, is achieved under the footpath through the use of structural cells or structural soils. In these circumstances, passive watering systems are required.



Planting Width confined by aboveground hardstand wider than 1.2m

Planting Width confined by underground Utility of 300mm

Figure 1: Planting Width

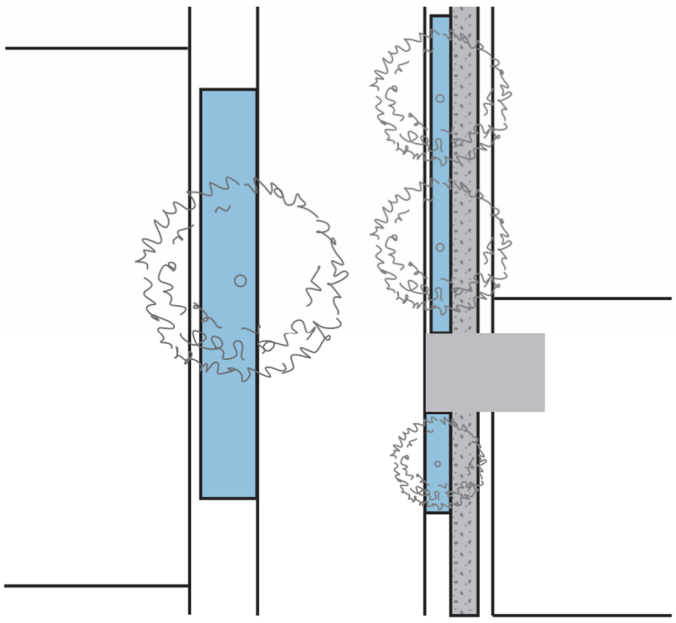


Figure 2: Soil Volume and Canopy Cover on Local Roads with Footpaths

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4. Design

Planting Width (minimum width of unobstructed root volume)	1.5m minimum width *(back of kerb to footpath)* *1.0m in approved commercial areas if structural soils or structural cells are placed under footpath/concrete to achieve 1.5m or greater soil volume width.*
Soil Volume (Unobstructed Root Volume)	Soil volumes specific to each species are provided in Council's Tree Species List.
Max depth for Soil Volume calculations	1m depth for calculations *Tree roots typically grow within the top 500-600mm of soil depth and occasionally to a greater depth. Soil volume below 1m depth is not included in any calculations.*
Imported soil volume (improved soil volume)	See MoES Standard Drawing.
Planting (pot) sizes for DA requirements – Litres (minimums)	• Street trees in verge: 45L minimum pot size, with the option for 75L or 100L pot size. • Medians, Roundabouts, Sealed tree pits: 100L minimum pot size.
Offsets behind face of kerb	<u>Greenfield Subdivision</u> • 1.2m for road reserves with footpaths (small trees) • 1.7m for road reserves with no footpath on Local Streets (Small/Medium trees) <u>Existing Streets</u> • 1.2m ideally for small trees. Utility locations and potential footpath locations shall be checked.
Offsets to footpath (i.e. footpath parallel to kerb)	See MoES Standard Drawings (SD049, SD001, SD002) minimum 500m for small tree between footpath
Offsets to driveways (perpendicular to kerb)	2m
Offsets to street lighting	4m (minimum) or outside matured tree canopy

Offsets to electricity and communication poles	4m
Offsets to intersections	10m measured from the face of kerb of the adjoining street

5. Canopy Cover Targets in Roads

Council's Canopy Cover Guidelines, which is appended to Council's DCP, provides methods to assist in achieving canopy cover targets for different Land uses, including certain road reserves, mainly within towns and Urban Release Areas. To achieve these targets, it may take a couple of actions to get to the ultimate coverage. For example, it may be a multi-phase implementation program: being at the greenfield subdivision, additional planting by muti-dwelling approvals, and then supplementary planting programs by the community or Council.

For greenfield subdivision, the majority of driveway locations have not yet been determined, so a lesser canopy cover may be required in locations where driveways will not be located.

Greenfield Subdivisions will be required to plant the following as a minimum:

5.1 1 tree in the middle of each proposed and/or registered lot frontage to the maximum size allowable.

5.2 1 small tree on every second common (side) boundary. Utility crossing can be restricted to every second lot corner. A small tree should have sufficient volume even if future driveways are close to both sides of the tree.

5.3 Within new Laneways provide 1 small tree on every common (side) boundary (e.g. for new medium density lots).

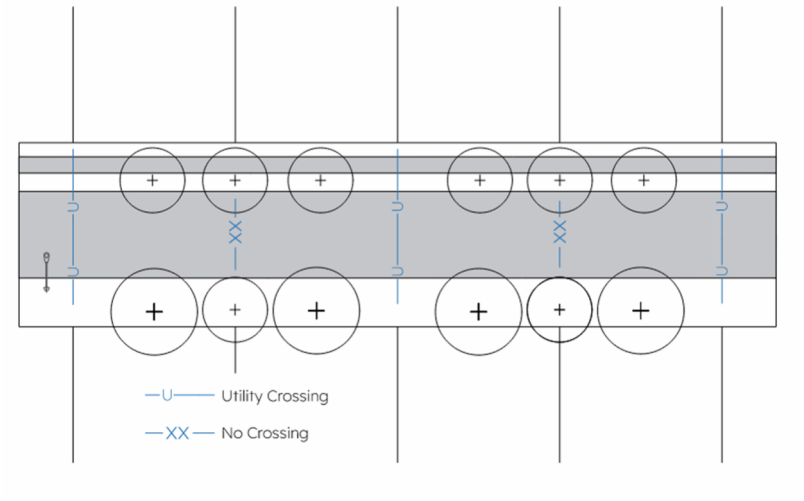

Figure 3: Indicative Planting at Greenfield Subdivision (driveway locations unknown)
Note: Additional trees on alternate side boundary lines are subject to utility crossings.

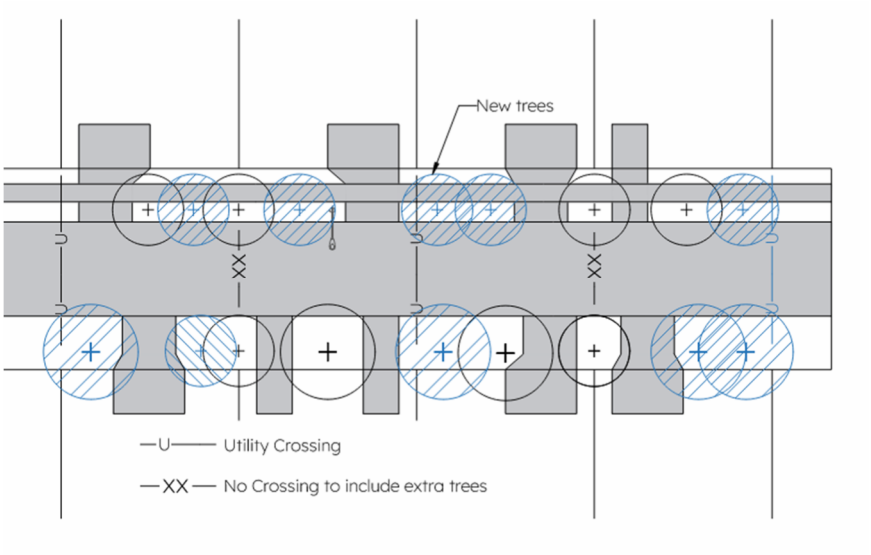

Figure 4: Indicative Infill Planting (once driveway locations are confirmed or built)

Additionally, the following design criteria for canopy cover is to be followed:

5.4 Maximise canopy in local street intersection blisters (See example below).

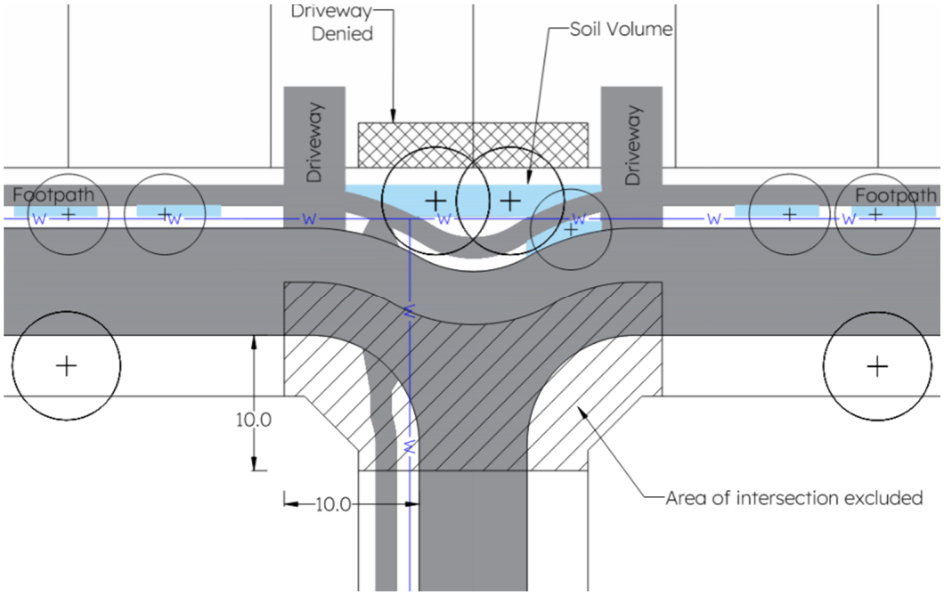

Figure 5: Indicative Planting at Intersection Blister
Note: Driveways must be located outside the blister by an 88b restriction.

5.5 Maximise coverage (by soil volume) in all lots where driveways are pre-determined including access denied (vehicle) frontages.

5.6 Maximise coverage (by soil volume) to non-residential lots and access denied frontages. e.g. reserves, access denied, public land.

The following additional considerations apply to the above:

5.7 Utility plans and civil plans (utilities above and below ground including streetlights, civil plans including stormwater pits pipes, pathways, structures) will need to be overlayed on landscape plans to demonstrate consideration and conflicts.

5.8 Trees are to be located with sufficient spacing from relevant utilities.

5.9 Utilities will be located to maximise tree canopy coverage.

5.10 The applicant is to provide indicative locations for the DA and detailed plans for construction approvals (e.g. SWC).

5.11 Bushfire areas subject to flame zone are excluded from achieving the full target and will provide the upper limit specified by RFS GTA's. Generally, this will be one tree in the centre of the proposed and/or registered lot frontage at a maximum size to meet council soil volume, and the applicable RFS bushfire canopy limit.

5.12 The location of trees in the footway (verge) should consider street intersection sightlines, utilities, and street furniture, and are not to impede personal surveillance or public safety. *Note: This includes items such as stormwater pits, pedestrian ramps, power & street light poles, driveways, utility services.*

5.13 Trees shall be planted and located in the footway in accordance with Standard Drawings SD001, SD002, and SD049 (subject to satisfying standard "clear zone" requirements).

5.14 Prior to any excavation work commencing, the existence and location of any underground services must be established.

5.15 Where overhead power supply mains exist, consideration must be given to the location of the trees and the mature height of proposed trees, such that the street infrastructure is not affected.

5.16 Tree planting locations should be complementary to street lighting to optimise pedestrian safety. Planting locations should be planned around light locations.

5.17 Tree-guards (other than supporting stakes) are not encouraged when infilling residential areas where driveways are already established.

5.18 Tree-guards are required in new subdivisions and will generally be required to be removed by the developer at the end of the maintenance period of the final stage of the development.

5.19 Shrubs, if approved, must satisfy sightline and CPTED requirements. Hedges are not permitted in the road reserve.

5.20 Designs must provide sufficient deep soil to support an urban tree canopy. For the purpose of calculating deep soil at least 1.5 metres width of clear deep soil is required. The following can be included in the width/volume:

- A path, access ramp, or paved area with a maximum width of 1.2 metres.
- Essential services infrastructure (e.g., stormwater pipes) with a maximum diameter of 300 mm.
- Landscape structures (e.g., lightweight fences, light poles, or seating) that require a footing

with a maximum size of 300 mm x 300 mm in cross-section.

5.21 Certification by a qualified arborist or a qualified landscape designer/architect confirming that street trees and landscaping have been completed in accordance with the approved plans and Council's specifications, may be required for subdivision works and development projects at the discretion of Council.

6. Tree Establishment

6.1 Mulching to a depth of 50-75mm over the root zone is required to help retain moisture, inhibit weeds, and reduce damage from mowers and whipper snippers. This is particularly importance for establishing younger trees.

6.2 New plantings need to be thoroughly watered at the time of implementation. For the first two (2) months, watering should occur weekly, then fortnightly for the next three (3) months during summer, or monthly for three (3) months in other seasons. Watering of new plantings is required for a minimum of five (5) months.

7. Grasses

7.1 In cases where disturbed areas require coverage or new grass is provided and will be maintained by Council, Couch (Cynodon dactylon) must be used. Such areas may include drainage reserves, public reserves, and road reserves adjacent to those public land reserves. Other turf grasses such as buffalo and kikuyu are optional for lot frontages and areas outside of perimeter roads.

8. Maintenance

8.1 Council's approval must be obtained for pruning and removal of public trees.

8.2 Performance bonds may be required as security for completed public trees and landscape features.