

RETENTION AND PROTECTION OF EXISTING TREES

In addition to their heritage and environmental attributes, remnant and existing trees contribute significantly to the landscape amenity of an area and provide instant visual appeal in new developments. Where possible, existing trees shall be retained, protected and incorporated into the design of new developments. The retention of juvenile trees is considered equally as important as the preservation of mature specimens.

Tree Protection Zones

Tree protection zones (TPZ's) are exclusion zones designed to protect all trees and stags identified for retention in a development. No works are to be undertaken within tree protection zones. Boring for the provision of services/utilities will only be acceptable subject to proof of feasibility.

Calculating Tree Protection Zones

Tree protection zones are defined by a circle, whose centre point is the centre point of the tree at ground level and whose radius is equal to half the height of the tree or half the crown width (whichever is the greatest) plus the tree canopy plus one metre (refer to **SDL.2.01**). Tree protection zones shall be determined by a consulting arborist and pegged on site by a licensed surveyor.

Tree Protection Zone Fencing

Temporary tree protection fencing (refer to **SDL.2.02**) shall be erected around the perimeter of all tree protection zones and shall be inspected by a Council representative prior to any buildings, works or demolition commencing on a lot, open space and/or road reserve.

Tree protection zone fencing shall comprise:

- Treated pine posts with a minimum height of 1.8 metres (total post length) at every corner or at a maximum interval of 9.0 metres. These posts shall be sunk 450mm into the ground. Concrete may affect the soil pH level and shall not be used to secure posts.
- Treated pine stays shall be fixed to all corner posts.
- Steel star pickets with a minimum height of 1.8 metres (total picket length) shall be installed between the treated pine posts at a maximum interval of 3.0 metres. These pickets shall be sunk 450mm into the ground and shall include high visibility safety caps.
- Ring lock wire mesh fencing with a minimum height of 1.2 metres shall be securely fixed at each post with wire ties. The fence shall completely enclose the tree protection zone.
- High visibility hazard marker tape shall be securely fixed to the top of the ring lock mesh fencing with wire ties.
- Signage shall be attached to the fence at regular intervals. Signage shall read "TREE PROTECTION ZONE. NO ENTRY EXCEPT TO AUTHORISED PERSONNEL. FINES

SHALL BE IMPOSED FOR REMOVAL OR DAMAGE OF FENCING AND/OR TREES”
(refer to **SDL.2.03**).

Tree protection zone fencing shall be regularly maintained and shall only be removed after the landscape pre-commencement meeting has occurred or until such date as is approved by the responsible authority in writing.

With the agreement of the responsible authority, tree exclusion zone fencing may not be required where permanent fencing is introduced prior to construction. The specification of the permanent fencing must be to the satisfaction of Council.

Enhanced Growing Environment within Tree Protection Zones

The area within the tree protection zone shall be modified to enhance the growing conditions and to help reduce stress or damage to the tree as a direct result of adjacent construction works.

Specific improvements might include one or a combination of the following:

- Ground surfaces within tree protection zones shall be left intact and a Glyphosate based herbicide mixed in accordance with the manufacturer’s recommendations used to remove any weeds or unwanted vegetation.
- The area within the exclusion zone shall be mulched with wood chips to a depth of 150mm.
- If required or as directed by the responsible authority, trees are to receive supplementary water. The amount of water is to be determined by the consulting arborist and will be determined by the amount of disturbance the tree has sustained and/or climatic conditions.
- Where severing of roots (greater than 50mm in diameter) is required directly adjacent to tree protection zones, the roots shall be cleanly cut. Where possible this is to be completed at the beginning of the development of the site. Roots are not to be left exposed, they are to be back filled or covered with damp Hessian.

The health of retained trees will be recorded prior to the commencement of works and periodically monitored by the consulting arborist and the responsible authority.

Tree Protection Zone Induction

Prior to any works commencing in proximity to tree protection zones, the consulting arborist shall induct all personnel involved in construction in close proximity to and/or involved in works that may impact tree protection zones.

Construction personnel shall be advised:

- Unless authorised by the consulting arborist or as directed by the responsible authority, no party shall enter into a tree protection zone or modify the tree protection zone fencing in any way.
- No buildings or works (including loading and unloading, storage of materials, dumping of waste, vehicle access and parking or other construction activity) are to occur in the tree protection zone without the written consent of and to the satisfaction of the responsible authority.
- The storing or disposal of chemicals or toxic material shall not be undertaken within 10 metres of any exclusion zone. Where the slope of the land suggests that these materials may drain towards an exclusion zone, the storing or disposal of these materials is strictly forbidden.
- Any trees that are to be removed next to exclusion zones are to be done so manually under the direct supervision of the consulting arborist (ie. cut not pushed). Stumps are to be ground and not excavated to prevent damage to trees in close proximity.

Tree Protection Bond

Prior to commencement of the subdivision, a bank guarantee for the amount of \$100,000.00 (or in accordance with the planning permit) shall be submitted to the responsible authority as a security deposit for the satisfactory completion of the requirements in relation to tree preservation and to ensure that trees are not damaged during the construction phase.

Upon completion of the subdivision works to the satisfaction of the responsible authority, the bank guarantee will be returned to the developer.

Where it is determined to the satisfaction of the responsible authority that a tree covered by a tree protection zone has been damaged as a result of buildings and works by the applicant or its contractors, to an extent that it affects detrimentally the life, health and appearance of the tree or its contribution to the landscape, financial damages will be paid by the applicant with all monies to be used to purchase trees for planting on the land or to prune or otherwise rehabilitate existing trees, all to the satisfaction of the responsible authority. The extent of damages must be established through the appointment of an independent suitably qualified person at the applicant's expense.

Variation of a Tree Protection Zone

Tree protection zones can only be varied if it can be determined that the works proposed within the zone will not adversely impact or damage any part of the tree including canopy, branches, trunk and roots or the variation is required to minimise risk to the public and/or property. All variations to tree protection zones must be approved by the responsible authority in writing.

Works within Tree Protection Zones

There shall be no works or encroachment into tree protection zones except for "no dig" footpaths, mulching and limited soft landscaping. Lighting, drainage works and structures within

tree protection zones will only be accepted in exceptional circumstances and shall be considered on a case by case basis.

All footpaths shall be pegged on site and confirmed by the responsible authority prior to construction and all works shall be undertaken by hand to minimise disturbance to surface roots. Boring for services through tree protection zones is discouraged and only permitted when all other alternative alignments have been investigated and determined unfeasible.

Planting below existing trees shall be designed to act as a physical barrier to deter pedestrian access into the tree protection zone when the temporary fencing has been removed, to minimise weed establishment, encourage habitat values and generally improve the visual amenity. Alternative permeable mulching (ie oversized gravel) below existing trees shall be considered on a case by case basis.

All works within tree protection zones shall be documented in the civil infrastructure drawings and landscape plans, or is subject to the written approval of the responsible authority.

All works located in or in close proximity to a tree protection zone shall be supervised by a suitably qualified and experienced consulting arborist.

Hazard Reduction Pruning

Prior to the issue of the landscape Certificate of Practical Completion, all trees that are to be retained shall be hazard reduction pruned by a suitably qualified and experienced arborist to ensure the tree does not present an unreasonable risk. If necessary, pruning works shall include:

- Removal of all dead and diseased branches. Specifically, dead branches greater than 40mm in diameter (measured at the base of the branch) shall be removed from the canopy unless they contain hollows that are clearly being used for habitat. Due care shall be given to ensure the integrity of the tree as habitat for native fauna is not compromised (larger material shall be left on site for its habitat value).
- Weight reduction and canopy thinning (especially for branches overhanging trafficable areas and fixed infrastructure). No live branches greater than 200 mm in diameter shall be removed from the tree without authorisation from the responsible authority. Remove no more than 20% of live foliage from any tree.
- Removal of epiphytic plant material, wire and any attached debris/rubbish.

Prior to any pruning works being undertaken, the arborist engaged to undertake the works shall arrange a site meeting with a representative from Council's Parks and Open Space Department.

All pruning works shall be to approved arboricultural practices and have regard to AS4373 - 2007.

Tree Removal

Unless a tree presents an unacceptable safety risk or is a weed species, wherever possible the tree should be protected, retained and incorporated into the design of the open space, road reserve or lot.

No native vegetation, other than that approved for removal on the endorsed plan, shall be destroyed, felled, lopped, ringbarked or uprooted without the consent of the Responsible Authority.

Where tree removal is unavoidable, the following conditions apply:

- Each tree nominated for removal shall be suitably marked prior to its removal and an inspection arranged with an appropriate Council Officer to verify that the tree marked accords with the permit and/or endorsed removal plan.
- Prior to removal, the subject tree shall be inspected by an appropriately qualified and experienced zoologist to determine the presence of any native animals living or nesting in the tree. Should any native animals be detected they must be caught and relocated to a site deemed appropriate by the zoologist.
- The project manager is to ensure that tree removal is carried out in a safe manner.
- The project manager is to locate all services either above or below ground prior to the commencement of any works.
- Stumps and any surface roots are to be ground down below ground level. Ground and chipped material to a depth of 50mm is to be removed from site at the direction of the project manager. The project manager shall supply and place suitable topsoil and seed the area making certain that the reinstated ground surface is level, even and safe.
- All stumps not removed immediately after removal of the tree are to be paint marked with a suitable bright yellow reflective marking paint.
- Stumps shall be removed within 14 days of removal of the tree.
- Where ever possible and appropriate, native trees to be removed should be retained for use in core conservation areas for habitat purposes or reused in open space as urban art, park furniture and/or other use determined appropriate by the responsible authority.
- After a tree has been fallen, the tree shall be protected from firewood harvesting via temporary fencing and signage to the satisfaction of Council until such time as the tree has been relocated for habitat or mulched.
- All timber greater than 300mm in diameter that cannot be reused as habitat, furniture or another use determined appropriate by the responsible authority shall be hammer milled and shredded for reuse as mulch within the subject site.
- All timber less than 300mm in diameter and branch/leaf material shall be shredded for reuse as mulch within the subject site.

AS4970 - 2009 Tree Protection Zones on Development Sites

Council's tree protection zone guideline shall supersede AS4970 – 2009 and/or any other tree protection zone standard/calculation. In this regard, Council's guideline considers both the on-going health of the tree and has been developed to protect people, infrastructure and property (ie the shape considers the impact of falling limbs and delineates a pedestrian exclusion zone) whereas AS4970 – 2009 only considers the impact of works on the on-going health of the tree.