CITY OF
TEA TREE GULLY
Naturally Better

Tree Management Procedures

Updated August 2024

Contents

1. Workflow 4

1.1 Workflow Diagram 4

2. Delegation, Reporting, Reference Sources & Organisational Charts 5

2.1 Delegations & Sub - Delegations 5

2.2 Quarterly Reporting 5

2.3 Reference Information 5

3. Zone Pruning Tree Assessment Considerations & Checklist 6

3.1 Tree Assessment - Desktop 6

3.2 Tree Assessment – Physical Inspections 6

4. Footpath & Road Vegetation Clearance 7

4.1 Footpath Vegetation Clearances 7

4.2 Road Vegetation Clearances 9

5. Tree Planting Guidelines 12

5.2 Street Tree Planting Guidelines 13

5.3 Landscape Trees and Plant Stock Supply 15

5.4 Unsatisfactory Plant Stock 16

5.5 Advanced and Semi Advanced Trees and Planting 16

6. Tree Pruning Guidelines 19

6.1 General Pruning 19

6.2 Veteran Tree Management 20

6.3 Root Control and Pruning 21

6.5 Protective Fencing 24

6.6 Vegetation Encroaching on Private Land 25

7. Tree Removal Guidelines 26

7.1 Definitions and Interpretations 26

7.2 Delivery of Works and Record Management 27

7.3 Tree Removals – Contractor 28

7.4 Stump Treatment and Site Remediation 29

8. Nuisance Tree Roots 30

8.1 Direct Root Damage 30

8.2 Root Entry into Sewer and Stormwater Pipes 31

8.3 Indirect Root Damage 32

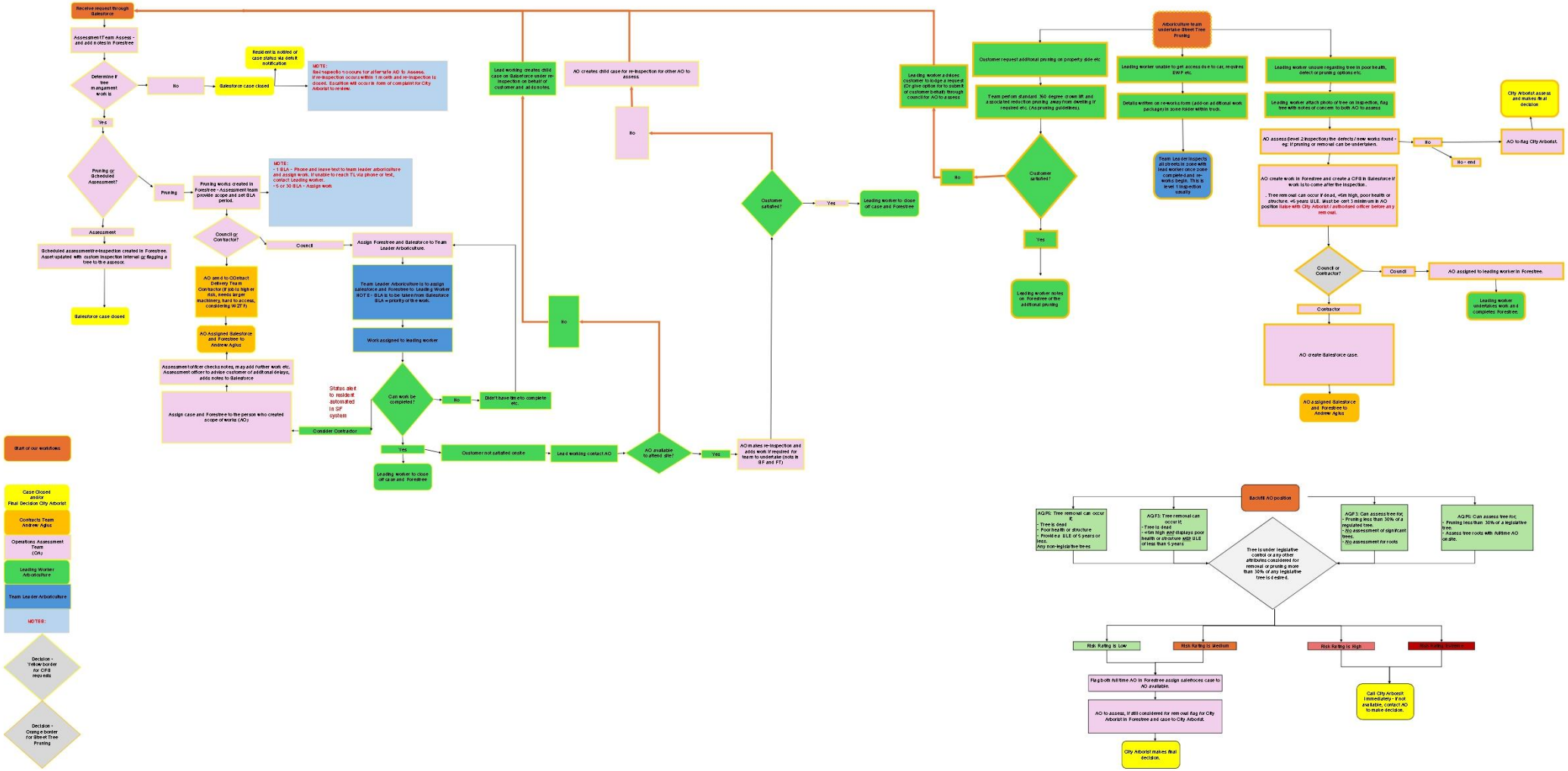
8.4 Investigation of Indirect Root Damage 32

8.5 Mitigation Measures for Root Damage 33

9. Tree Inspections 34
9.1 Definitions and Interpretations 34
9.2 Risk Assessment 35
9.3 Council Responsibilities 36
9.4 Tree Assessment 36
9.5 Tree Risk Assessment Matrix 38
9.6 Specific Individual Tree Management Plans 40
9.7 Customer Complaints and Internal Review of a Council Decision - Section 270 Review 41
Appendix 1 : DIT Roads within Tea Tree Gully 42
Appendix 2 : Guidelines and Australian Standards Referenced 43

1. Workflow

1.1 Workflow Diagram



2. Delegation, Reporting, Reference Sources & Organisational Charts

2.1 Delegations & Sub - Delegations

Council acknowledges that the Chief Executive Officer may sub-delegate matters related to this Procedure to staff or other persons employed or engaged by council.

Various sub-delegations are in place across the organisation relating to Tree Management at the City of Tea Tree Gully and these can be perused by staff and the community via Council's website at https://www.teatreegully.sa.gov.au/__data/assets/pdf_file/0024/1613922/delegations_register_-_june_2021.pdf

2.2 Quarterly Reporting

Data and statistics on both incoming enquiries and outgoing deliverables are collected, collated and reported to the CEO and Elected Members on a quarterly basis. The following data sets are to be reported:

- Total tree related queries received through CFS
- Requests for tree removals through CFS
- Complaints about trees through CFS
- Requests for case reassessment through CFS
- Resolution of abovementioned
- Section 270 Requests & Outcomes
- Number of trees added to Forestree
- Trees pruned within routine cyclic program
- Quantity of street trees planted by Tree Establishment Team
- Total plants installed by Horticulture & Biodiversity Teams (tube stock)

2.3 Reference Information

PIRSA Weed Control Handbook

https://pir.sa.gov.au/__data/assets/pdf_file/0020/232382/weed-control-handbook.pdf

City of Tea Tree Gully Pest Plant and Animal Policy

https://www.teatreegully.sa.gov.au/__data/assets/pdf_file/0028/1613854/pest_plant_and_animal_control_policy.pdf

South Australian Power Networks Approved Tree Species List

https://www.sa.gov.au/topics/energy-and-environment/safe-energy-use/powerline-safety/vegetation-clearance-near-powerlines/list-of-trees-that-can-be-planted-near-powerlines

Legal Services Commission of South Australia Legal Reference Handbook – Trees and the law

https://lsc.sa.gov.au/resources/TreesandtheLawBooklet.pdf

Enviro Data SA Urban Heat Mapping Viewer and Data

https://data.environment.sa.gov.au/Climate/Data-Systems/Urban-Heat-Mapping/Pages/default.aspx

3. Zone Pruning Tree Assessment Considerations & Checklist

3.1 Tree Assessment - Desktop

The following considerations are to be taken prior to physical tree assessments.

1. Delineation of Council boundary ownership of the tree to be assessed.
2. Revision of notes, past comments, actions to be undertaken from:
    a) prior inspections or assessments
    b) CFS cases and notes
    c) Forestree
    d) Content Manager
    e) Relevant service authority
4. Alerts on properties (GIS)
5. Councils responsibilities in line with LGA Section 244 & 245 and Councils Tree Management Policy

3.2 Tree Assessment – Physical Inspections

The following considerations are to be taken while undertaking site tree inspections:

1. Step back to ensure site and the tree is safe to assess.
2. Confirm delineation of Council boundary.
3. Confirm the ownership of the tree.
4. The target.
5. Customer information if the assessment is a result of a CFS case.

6. Condition report on crown, trunk, any visible roots.
7. Defects or cambium decay.
8. Fungal growth or signs of pathogen attack.
9. Hollows.
10. Crossing or rubbing branches.
11. Hanging branches.
12. Dead wood (dead wood above 40mm diameter to be removed where required).
13. Required pedestrian and roadway clearances.
14. Pest or disease attack.
15. Undertake Risk Assessment
16. Schedule works in accordance with the identified risk
17. Appropriate photos and notes added to (TAMS)

4. Footpath & Road Vegetation Clearance

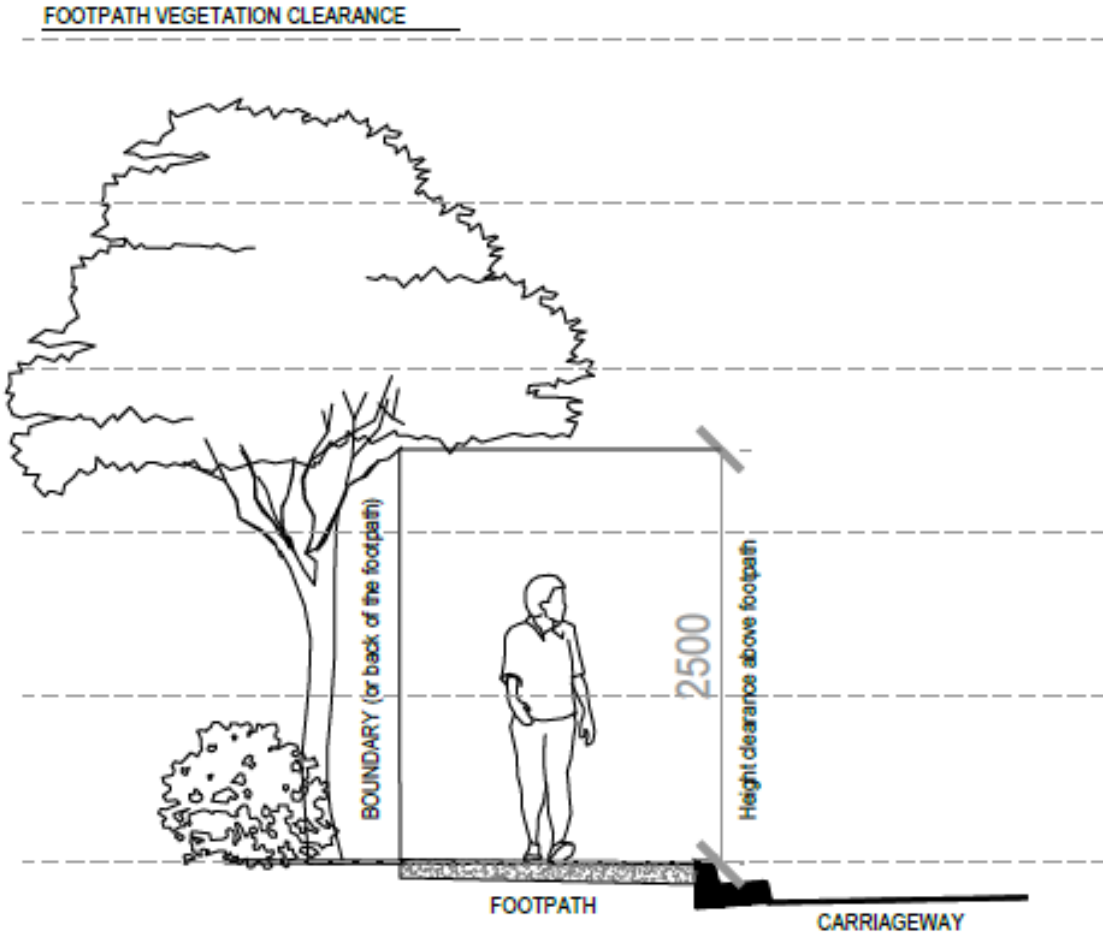
4.1 Footpath Vegetation Clearances

The following guidelines and methodologies shall apply to road and footpath clearance throughout the City of Tea Tree Gully.

Council vegetation clearances are as follows:

1. Pedestrian footpaths to be maintained with a 2.5m height clearance and lateral clearance as wide as the pavement surface or a minimum of 1.2m where no pathway is present.
2. Standard roadways to be maintained with a 5.0m overhead clearance envelope with lateral clearances in line with kerb or road shoulder.
3. Roadside furniture and signage must have a 1.0m clearance zone on all sides.
4. Restricted clearance roadways (rural and hills roads) where existing mature vegetation makes it impossible to achieve standard overhead clearances, a Restricted Clearance approach applies.

Figure 1 Footpath Vegetation Clearances



4.2 Road Vegetation Clearances

Sealed Roadways

Refer Figure 1 and Figure 2 over page.

Council supports the principle that all legal dimensioned vehicles should be able to travel along all types of roads without obstruction from overhanging vegetation. This may mean that in locations where lines of site are reasonable, higher vehicles may not always be able to drive as near to the left-hand side of the roads as would otherwise be the case.

Council will maintain clear height clearances on roads within the relevant carriageways where there is some form of centreline delineation which would make crossing the delineation illegal, i.e. solid centreline, centre median, centre of road safety bar treatment.

On roads where the preferred height clearance cannot be maintained a minimum height clearance of 5m will be maintained to assist with the safe travel of at least a standard passenger car, which will include a standard 4x4 passenger vehicle.

Unsealed Roadways

Refer Figure 3 over page.

Unsealed roads are typically within rural settings and therefore not subject to high volumes of traffic. Council recognises that unsealed rural roads are at times used by larger and slower farm plant and machinery requiring a minimum of 5m height clearance. Due to the low volume of traffic using these roads and the presence of significant roadside vegetation, clearing of vegetation from edge to edge of the defined surface is not possible.

In instances such as this, a minimum of 5m and maximum of 6m height clearance will be maintained throughout a 4m wide corridor in the centre of the roadway.

Figure 1 Sealed Roadway – No Centreline Delineation

Examples: Clyde Street, Modbury & Victoria Drive, Modbury

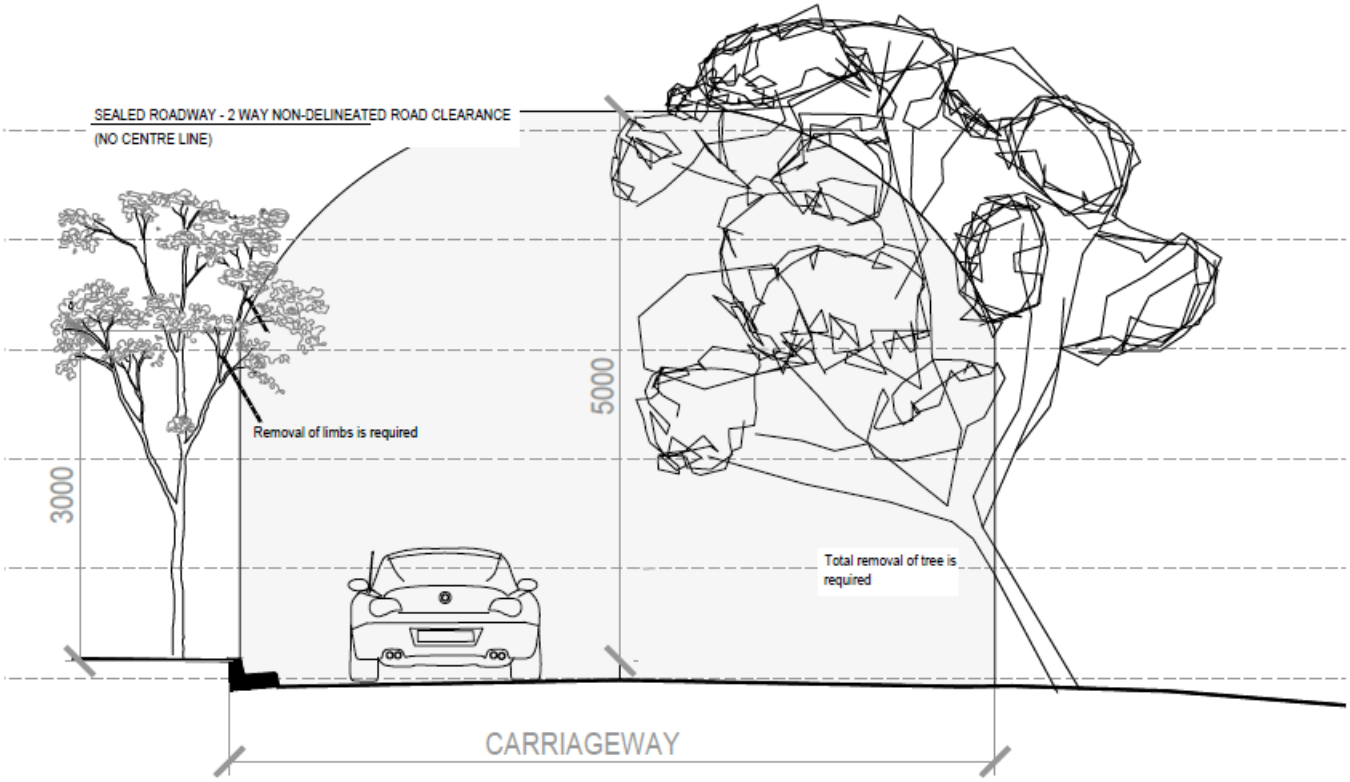


Figure 2 Sealed Roadway – Delineated Centreline

Examples: Milne Road, Ridgehaven & Smart Road, Modbury

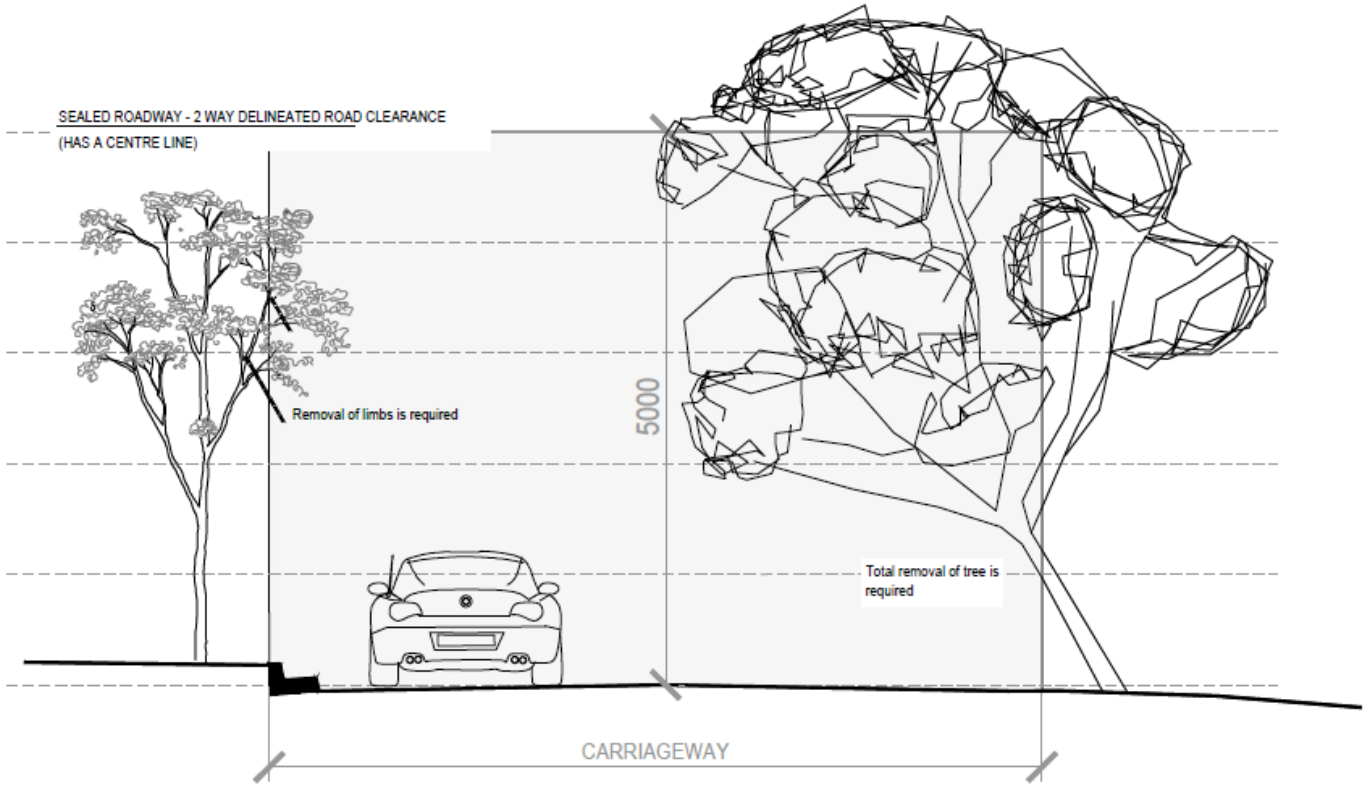
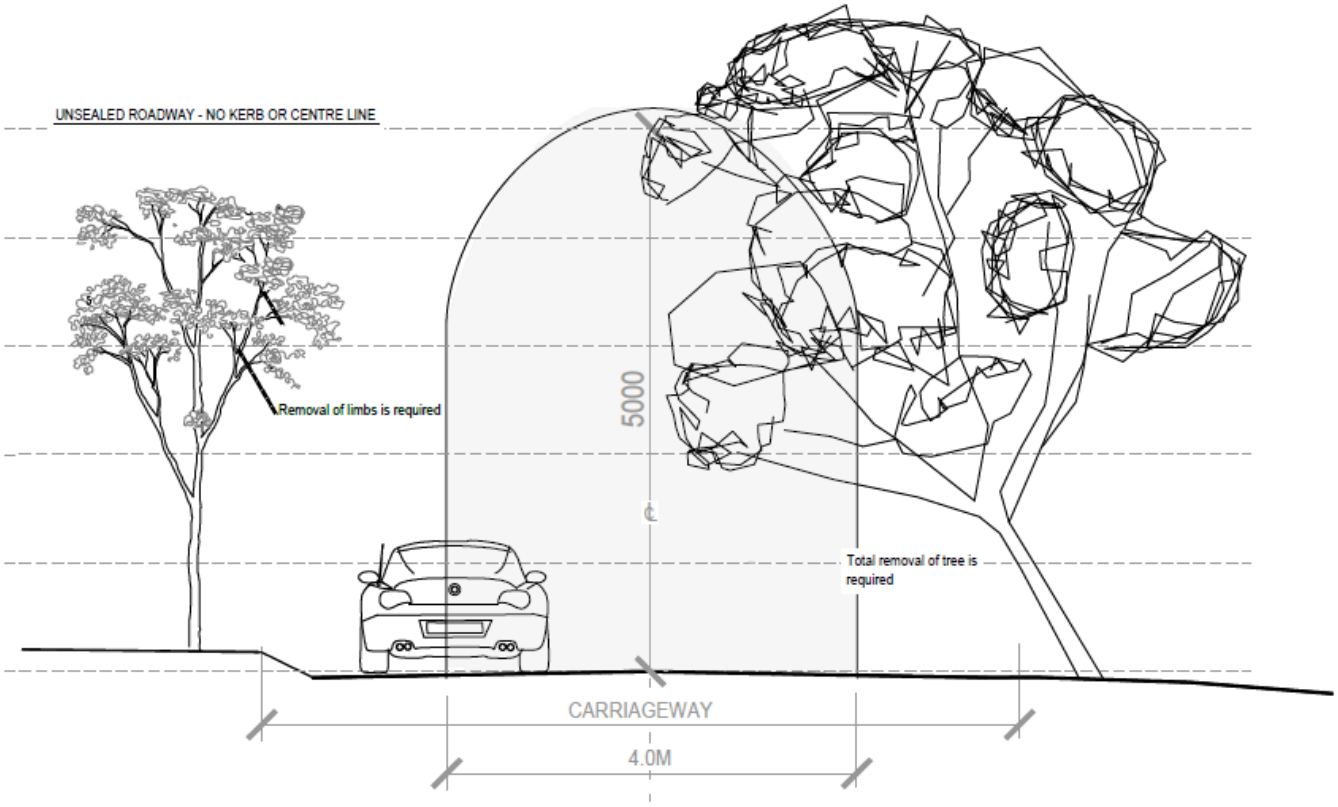


Figure 3 Unsealed Roadway

Examples: Hannaford Hump Road, Gould Creek & Black Top Road, One Tree Hill



5. Tree Planting Guidelines

To manage ageing street tree populations that are in a state of decline, a phased re-planting program is required to maintain street character throughout the City. Roadside open space, reserves, parks and areas of significant aesthetic value will also be considered for advanced and semi – advanced tree plantings to lift the visual appeal of the space and meet targets on canopy cover.

When community consultation strongly supports the introduction of new street planting or trees are specifically requested by residents, Council will consider and address such requests accordingly. Generally, Council aim for at least one tree to be planted in front of each property on any street or where deemed desirable by Council in accordance with the Street Tree Planting guidelines. Council may consider not planting trees in front of a residence upon written request to the CEO, or delegate, where the trees may cause restrictive access, allergies etc. Each case will be assessed on its own merit.

5.1 Street Tree Species Selection

Council will make every effort to plant trees where the surrounding environment allows the tree to grow to its maximum potential, providing both aesthetic appeal and desired canopy cover. The palette of tree species planted within Tea Tree Gully is determined through a careful selection process considering a number of physical, geographical and biological factors.

1. The likely size at maturity with larger areas of open space warranting larger tree species.
2. Its potential to affect neighbouring landowners.
3. Its suitability and spacing within the given environment e.g. soil type, size of verge in relation to spacing, type of existing planting, level of amenity and environmental value.
4. Its tolerance to drought, pests and diseases, weather conditions.
5. The preferences of the local community based upon suitable options where discretion is available.
6. Any historic tree planting patterns with the use of endemic species wherever possible.
7. Its contribution to urban biodiversity on surrounding open space and its potential to extend natural corridors providing connectivity.

5.2 Street Tree Planting Guidelines

1. Street tree planting shall consider the requirements of Council's Footpath Policy in relation to footpath alignment, with new plantings to consider existing and future footpath placement in consultation with Councils relevant asset/infrastructure Officer.
2. Where grassed or gravel verges are *less than 800mm* in width, **no** tree shall be planted.
3. Street trees shall be positioned symmetrically (as best as possible), with the allotment and consider the façade of the residential property and existing trees. It is recommended that trees are not planted directly in front of front doors where possible.
4. Large trees *on private allotments and properties shall be utilised* to enhance the streetscape. Where the space does not exist for a street tree to be planted on the verge, the existing private tree should be utilised and considered suitable tree coverage for that allotment / property.
5. Trees shall be planted in front of undeveloped allotments, taking into consideration potential future cross over requirements (if known)
6. When using tall tree species,(trees with a mature height of 15m+) only one (1) shall be used per standard allotment or property.
7. Street trees shall be spaced according to tree species and maximum mature heights.
8. Trees shall not be planted where sight distances of street signs and traffic devices will be obscured.
9. At minor street intersections trees shall be set back *8-10 metres from the tangent of the intersection*, on both roads.
10. At major road intersections trees shall be set back to allow *safe sight distances*. For Department for Infrastructure and Transport roads refer to Operational Instruction for Trees in Medians and Roadsides in the Urban Environment.
11. Trees shall be planted minimum *2 metres from driveways*.
12. Street tree planting shall continue along the frontages of council reserves. The layout of these trees may not be symmetrical.
13. All street trees shall be planted *minimum 4 metres* either side of power poles, light poles etc.
14. All street trees shall be planted *minimum 1.5 metres* from domestic stormwater pipes.
15. All street trees adjacent SA Water Infrastructure shall be planted as per SA Water guides in relation to class 1 or 2 trees.
16. All street trees shall be planted *minimum 1.5 metres from Telstra pits, inspection pits and service markers*.
17. All street trees shall be planted *minimum 5 metres*; either side of bus stops or *so adequate sight distance is achieved*.

18. All street trees shall be planted *minimum 1 metre* from the edge of footpaths, where possible. In cases where the verge is only 1 metre wide the tree will be to be centred.
19. Where no footpath exists, street tree planting will need to consider the future construction of a footpath and the planning for new street tree planting shall be undertaken in consultation with an Infrastructure Planner.
20. Tree establishment and initial maintenance will be undertaken by Council for a period of 3 years. Tree establishment includes supplementary watering events, pest and disease control, formative pruning, removal of tree stakes and water wells.
21. Ongoing tree maintenance will be covered by the cyclic tree inspection and maintenance program.
22. Any tree that has died or been vandalised will be removed and replaced by Council in the following tree planting season. The tree establishment period will commence at this time for a further 3 years.

5.3 Landscape Trees and Plant Stock Supply

The designated Corporate Leader, Project Manager or contractor is responsible for the source and supply of all plants nominated in the planting schedules supplied and must comply with AS2303: Tree stock for landscape use.

Plants shall be:

1. Tube stock, pot or bag sizes as per supplied project documentation.
2. Healthy, high quality, vigorous stock.
3. True to species and variety.
4. Free from pests and disease.
5. All trees to be self-supporting (once stakes are removed whilst in bag or pot).

And shall not exhibit:

1. Girdling, “J-rooting” or kinking of root systems
2. Pot bound root systems, nor evidence of recent re-potting (root ball easily separated from surrounding soil)
3. Any condition which will prohibit the plant from becoming fully and successfully established.

Prior to taking delivery of stock, contractors shall provide the Council a representative sample of all plant and tree species for approval. This inspection may take place at the nursery or via photographic record. Accepted samples shall become the minimum acceptable standard. Any stock which does not meet this standard will be rejected.

No planting shall take place until the Council Representative has accepted stock.

No plant shall be substituted without the Council Representative written approval.

The designated Project Manager or contractor is responsible for liaising with the nursery to co-ordinate availability of the plants to satisfy the program of works as well as co-ordinate collection of and delivery of plants to site.

5.4 Unsatisfactory Plant Stock

Plants that are diseased, have been allowed to dry out and/or which have suffered damage prior to planting shall be rejected.

Trees that are not self-supporting will be rejected. To be deemed to be self-supporting, a tree must retain an upright position in its pot when all stakes and ties are removed.

All rejected stock shall be replaced with the same species as specified at no cost to Council. The total costs of replacements shall be borne by the Contractor.

All failing or poor performing plants will be replaced by the Contractor at their expense, as per contractual requirements.

5.5 Advanced and Semi Advanced Trees and Planting

The Project Manager or contractor shall source and supply all advanced and semi advanced trees as specified within the supplied design documentation and associated Planting Schedules.

All trees shall be single, straight stem (with no included bark) and self-supporting; and all tree stock to must be compliant with Australian Standard AS2303:2018 – Tree stock for landscape use.

All tree pits are to be backfilled with ‘natural soil’ (unless imported topsoil is specified) and firmed progressively, to a level which allows the top of the root ball, to be ‘at grade’ with the finished soil level. Any soil conditioners, compost, gypsum etc must be either incorporated through the backfill material or as otherwise specified.

A 75mm high brim, with a diameter of approximately twice the root ball diameter is to be created around the tree to form a watering basin.

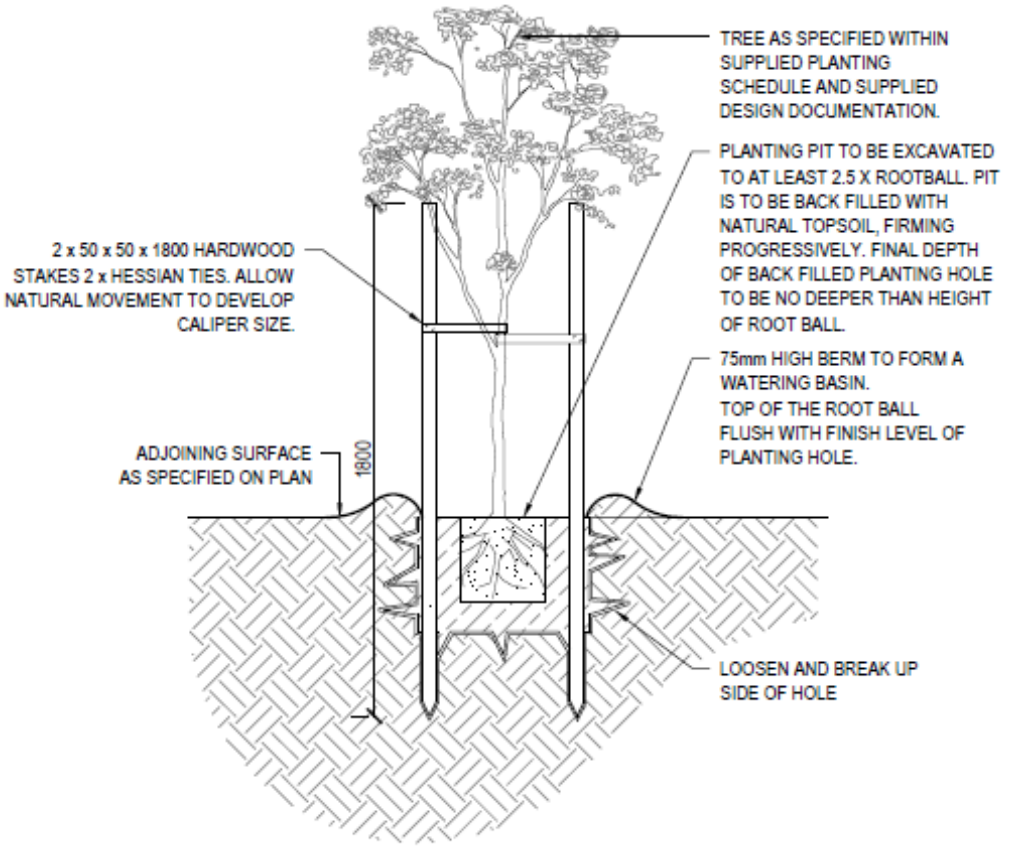
All advanced trees shall be planted with two 50mm x 50mm x 1800mm hardwood stakes with a minimum of two 50mm wide hessian or poly guys.

Poly guys are to be fixed to the stake and positioned on the tree to still allow natural movement to develop calliper size. All trees must be staked and guys installed the same day as they were planted.

All trees shall be watered immediately after planting with a minimum 20 litres of clean water and any soil subsidence repaired.

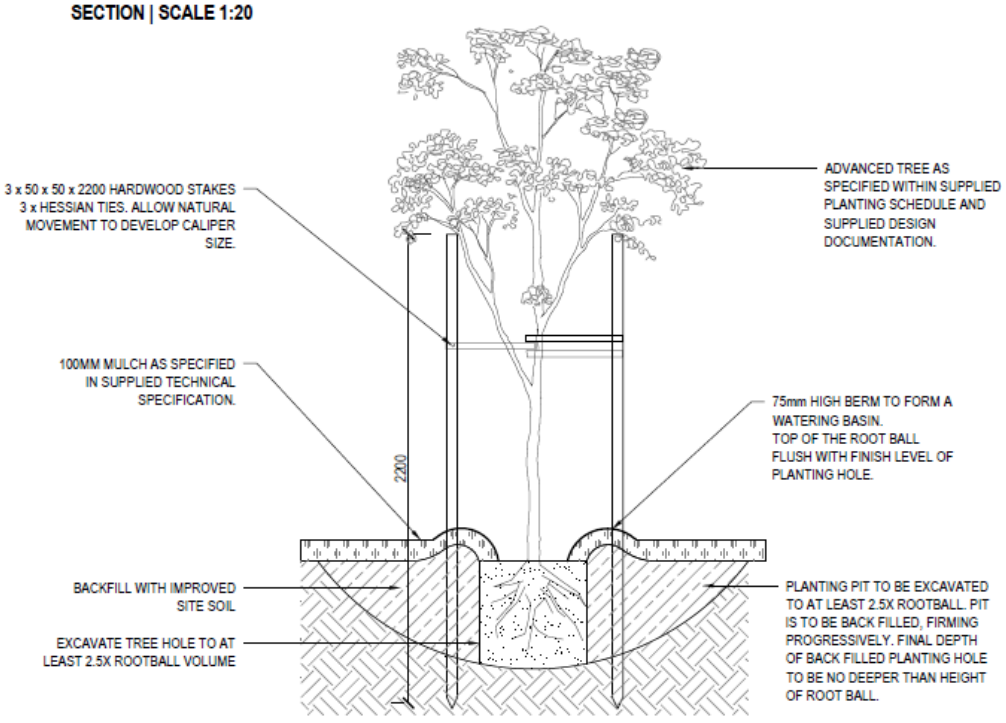
SLSD01 TYPICAL TREE PLANTING

SECTION | SCALE 1:20



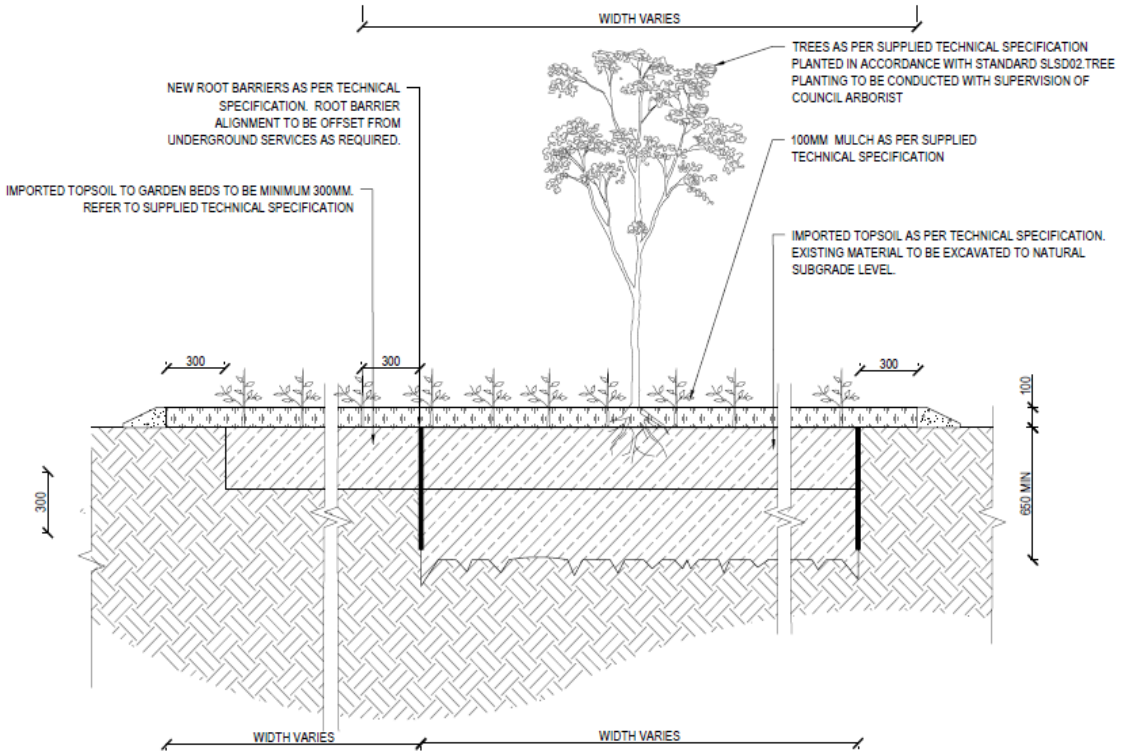
SLSD02 ADVANCED TREE PLANTTNG

SECTION | SCALE 1:20



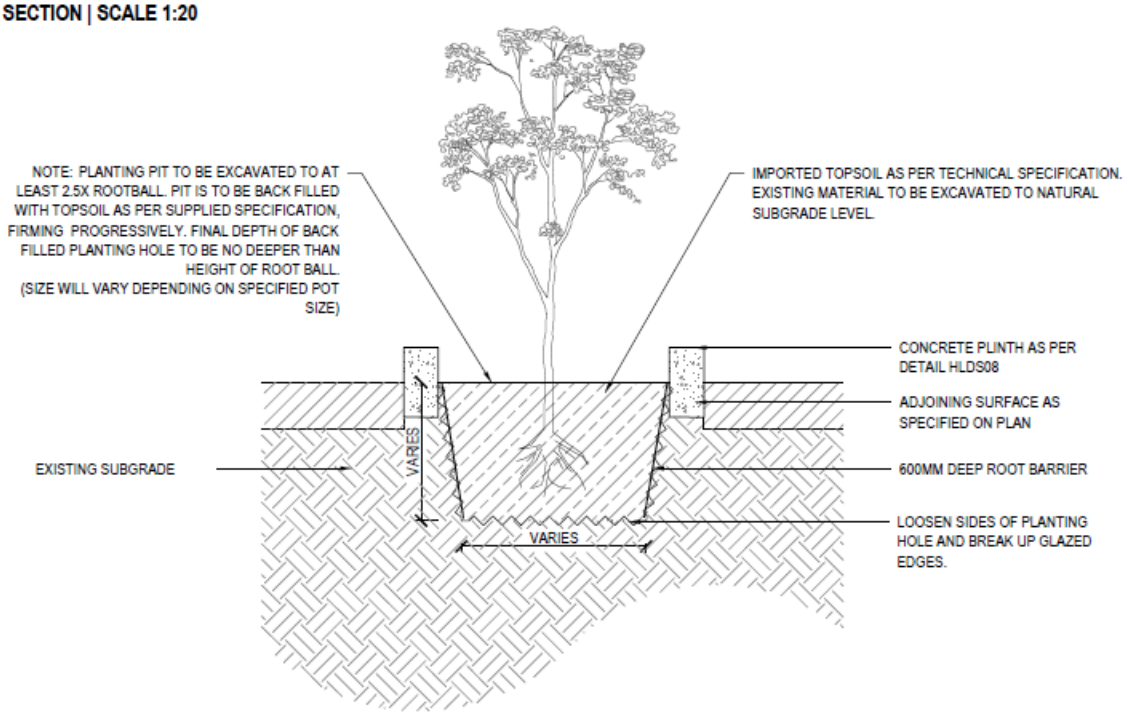
SLSD08 MEDIAN TREE PLANTING TRENCH

SECTION | SCALE 1:20



SLSD09 TREE WELL PLANTING

SECTION | SCALE 1:20



6. Tree Pruning Guidelines

The following technical guidelines and methodologies shall apply to tree pruning throughout the City of Tea Tree Gully using the following standards:

- Australian Standard (AS4373–2007) – Pruning of Amenity Trees
- Arboriculture Australia (2019) – Tree Pruning MIS30B

In general, pruning should be minimised and applied holistically based on a 5 – year cycle to cover all street trees, significant trees and regulated trees within reserves. Pruning can damage trees and when done incorrectly, reduce its life expectancy, increase Council resource requirements and increase risk of failure. Pruning should only be undertaken to establish and maintain trees in a manner that minimises risks, maximises social, environmental and economic benefits and promotes long-term retention.

To achieve this, Council will prune trees to industry standards where practicable through the application of Australian Standard 4373 – Pruning of Amenity Trees.

All staff associated with tree management will have the necessary knowledge and skills and/or be adequately supervised. As a minimum, at all times on site whilst pruning is occurring, there must be a staff member with a Level 3 Certificate in Arboriculture.

6.1 General Pruning

Council will undertake both proactive and reactive tree pruning to meet tree management requirements recognising resource constraints and prioritising work demand.

Proactive pruning is forward planned pruning whilst reactive is any pruning outside of planned pruning such as tree pruning in response to a storm event, fire or similar.

All pruning will be undertaken after considering the following tree attributes:

1. Ecological considerations such as hollows or habitat retention or creation
2. Species type
3. Age
4. Health and condition
5. Structure
6. Shape and form
7. Impact to fauna

Pruning will not be undertaken for the following objectives:

1. For the purposes of reducing leaf fall or debris
2. To reduce shade through pollard, reduction or thinning pruning
3. Removal of deadwood that does not present a risk
4. Because a low branch overhangs an asset where risk has been identified as low.

Residents cannot prune public trees without written consent from Council and on the condition that a suitably qualified and experienced arborist undertakes the work.

Pruning priority will be given to the following:

1. For the purposes of mitigating a recognised risk
2. Trees in high public use areas such as streets, car parks and playground areas
3. To establish trees (formative pruning)
4. To retain Significant and/or Landmark trees.

6.2 Veteran Tree Management

A veteran tree can be identified as a tree that is of interest biologically, culturally or aesthetically because of its age, size or condition.

Veteran trees go through a process of reducing their mass to allow the reducing energy levels to provide for a smaller, more compact tree. The process starts by the tree closing down the branch extremities and producing epicormic growth on the large, lateral and scaffold branches closer to the main stem. This allows the trees to reduce the size of its mass thus reducing the among of energy required to maintain the entire tree system.

Veteran tree management (VTM) aims to retain and prolong the ultimate life span of the tree whilst reducing its potential to continue to decline and ultimately reduce its potential to drop large limbs. VTM pre-empts what the tree will ultimately try and achieve through natural processes.

The purpose of veteran tree management is to reduce the large, lateral limbs and leaders to an extent and form that can be both adequately managed in the future and which reduces the potential for large limb failure to prevent significant impact on the targets surrounding it, and ultimately cause significant damage to the trees.

The tree's ability to respond to the pruning and produce new growth must be considered and closely monitored after any pruning events.

6.3 Root Control and Pruning

Root pruning is generally discouraged as a method of alleviating damage to adjoining property, such as infrastructure uplift or service line disturbance. This is because the long-term implications of sustained and heavy root pruning are unknown.

Root pruning will only be undertaken when an obvious, positive outcome can be achieved without any long-term harm to the tree. Council will perform root pruning on any tree for as long as practical before removal is considered.

Where appropriate, and preceding any potential damages claim, Council will undertake repair to the pedestrian footpath, and in exceptional circumstances the driveway crossover sections, where damage can be attributed to a street tree located on a road reserve where no remedial options are available to remove the root issue. Where possible and relevant, Council staff will inspect the damage to the pavement and undertake the following:

1. Lift all bitumen and/or block paving within the root zone of the tree (without damaging any secondary roots).
2. Clean cut roots with a diameter of less than 40mm back to the nearest nodal point of the root, or to an extent that removes the offending section of root.
3. Cleanly cut roots with a diameter greater than 40mm after inspection by and approval from the Council's Technical Officer Arboriculture.
4. Consider if, in the opinion of the Council's Technical Officer Arboriculture the root can be removed without affecting the health or stability of the tree, an alternative option, e.g. regrading the pavement to suit can be implemented.
5. Refrain from cutting roots when the overall health and stability of the tree in question and instead consider when the extent of root intrusion or disturbance is significant, the removal of the tree.

Requests for the installation of root cut trenches or root control barriers are to be made in writing. Documented evidence that a tree under the care and control of Council is the major contributor to property damage is required before such installations are considered. The City Arborist is responsible for assessing the suitability of installing such devices.

6.4 Tree Protection Zones, Root Protection Zones & Structural Root Zones

A **Tree Protection Zone (TPZ)** as per Australian Standard AS4970-2009 – Protection of trees on development sites is an area set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development. Typically expressed as a radius in metres that defines a circle with the trunk / stem at its centre.

TPZs for non-regulated trees shall be determined on an as needs basis by the City Arborist or as described in this Procedure or on any official supplied design documentation.

TPZs for non-regulated trees are generally considered to extend to the dripline of the tree plus 1 metre TPZs for regulated and significant tree are to be determined by the City Arborist in accordance with Section 3 of AS 4970-2009 – Determining the Protection Zone of Selected Trees.

No works, including but not limited to mechanical trenching, ripping, tracking of plant and equipment or otherwise, is to take place within TPZ(s) without written permission from the City Arborist or suitably delegated Council representative.

Any work that is required to be completed within TPZ(s) must be completed in strict accordance of the written direction issued by the City Arborist.

Where trenching, ripping or other works are required within TPZ(s) alternative alignments and or work methodologies must be allowed for.

Alternative methodologies must be selected to minimise any potential tree damage.

Calculations are as follows:
The TPZ is the combination of the root area and crown area requiring protection.

TPZ = (12 x DBH) + any need for crown protection

The radius of the TPZ is calculated by

TPZ = DBH x12,

where DBH is measured 1.4m above ground level

The TPZ should not be less than 2m nor greater than 15m, except where crown protection dictates

A **Root Protection Zone (RPZ)** as per Australian Standard AS4970-2009 - Protection of trees on development sites is the area immediately beneath the tree and extends just beyond the extent of its original or present crown or drip line.

There are no calculations to determine the RPZ of any tree, visual inspections and historical records of the tree will provide the extent of the RPZ based on canopy cover.

The RPZ of any tree is the area to be excluded directly beneath the canopy which is required to maintain the trees vigour and long-term health as determined by a suitably qualified horticulturalist.

A **SRZ: Structural Root Zone (SRZ)** is the minimum area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright, so the entire profile (depth) of the root zone is included in the structural root zone. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres. This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which is usually be a much larger area (RPZ).

Determine SRZ radius from the trunk diameter (measured immediately above the root buttress) using the following formula:

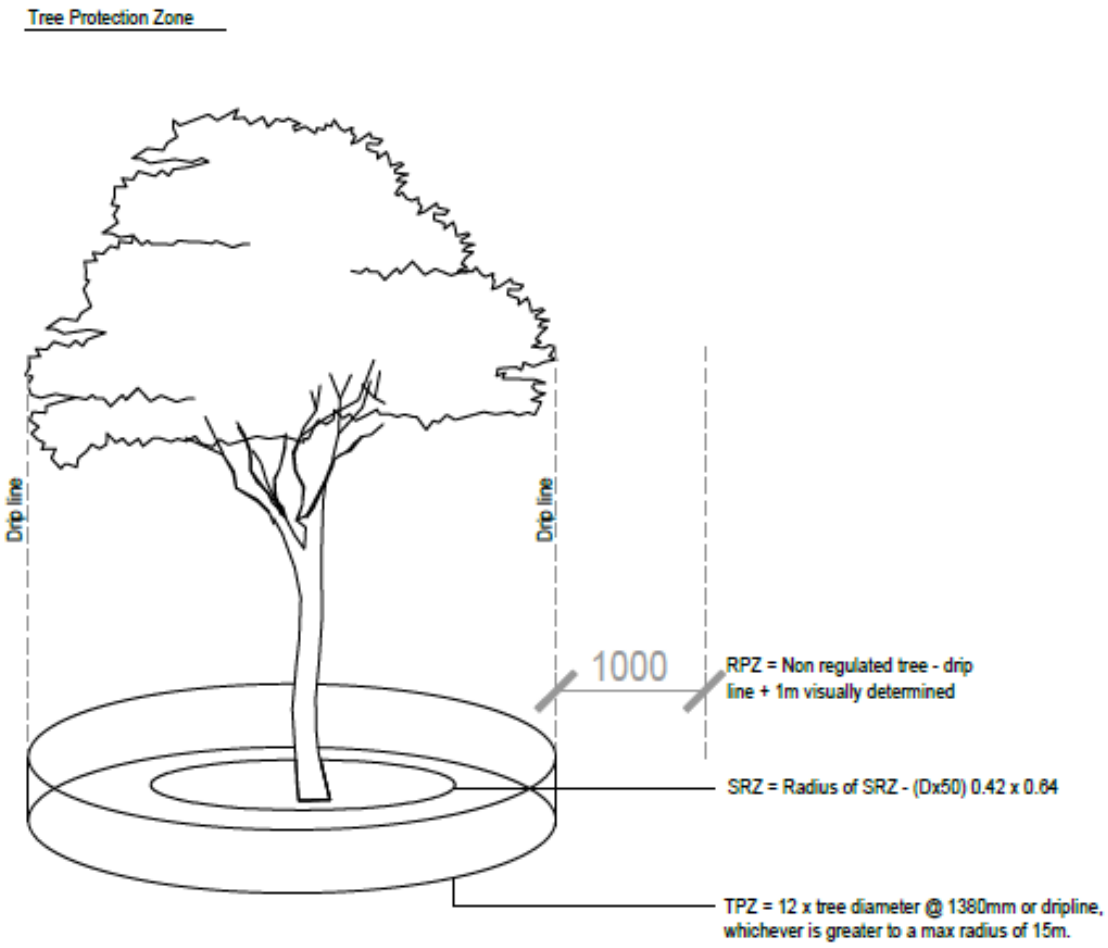
R_{srz} = Radius of SRZ = $(D \times 50)^{0.42} \times 0.64$,

Where:

D = trunk diameter (metres), measured above the root buttress

NOTE: The SRZ for trees with trunk diameters less than 0.15 metres will be 1.5 metres

The SRZ formula does not apply to pachycauls (thick – stemmed tree eg Boab)
This does not apply to trees with asymmetrical root systems.



6.5 Protective Fencing

Any regulated or significant trees within the vicinity of construction or earth works must have the TPZ suitably fenced off with panel style temporary fencing in accordance with AS4970-2009 for the duration of the works.

For all non-regulated trees either bunting or safety barrier mesh shall be installed to define a TPZ or as directed by the City Arborist.

Once erected, protective fencing must not be removed or altered without approval by the City Arborist.

Existing perimeter fencing and other structures may be used as part of the protective fencing.

6.6 Vegetation Encroaching on Private Land

Council will not automatically ensure that Council trees do not encroach onto private land, but will act to inspect upon notification of any reported encroachment.

The following minimum vegetation clearances will be maintained where, unless the adjoining resident has specifically requested a lesser clearance:

1. 500mm clearance above any boundary fence with adjoining Council maintained land
2. 1m clearance from any roof on private property.

An inspection and maintenance program will be followed to ensure that all street trees are inspected and maintained on a regular cycle. The frequency of this program will not be less than one inspection every five years.

Systems will be maintained to facilitate inspections with necessary intervening action to occur whenever a street tree concern is brought to Council's attention.

Any pruning undertaken or identified will be recorded on Council Tree Management Systems.

7. Tree Removal Guidelines

7.1 Definitions and Interpretations

Term	Definition
Arborist	The person to be qualified to a minimum AQF Level 3 qualification or equivalent in Horticulture (Arboriculture) that enables the person to perform the takes required by AS 4373.
Councils Tree Management System	An interactive web based, geospatial Asset Management Tool, used to manage Councils Urban Forest. Contractors must have a mobile device connected to the internet. onsite access to access Councils Tree Management System.
Climber	An arborist, skilled, qualified, and experienced in the safe access of a tree using rope and harness. A climber usually is skilled in the safe use of hand saws and chainsaws in the crown of a tree, and the removal of material from the tree's crown.
JSEA (Job Safety and Environmental Analysis)	A site-specific risk assessment that is to be completed by the contractor prior to the start of each job. A copy of the JSEA is to be given to Council upon request.
Consulting Arborist	A professional Arborist in a private practice providing a broad range of information and report services to clients regarding trees, usually in urban environments, including tree care, hazard assessment, scientific testing, research, planning, inventories, maintenance and management, building development, human issues and specialist Arboriculture advice and multi-discipline support to other professions. The consulting arborist will be suitably experienced and competent in arboriculture, having acquired through training, qualification (minimum AQF level 5 (Diploma) in Arboriculture) and/or equivalent experience, with the knowledge and skills enabling that person to perform the tasks required by AS4970.
SOP (Standard Operating Procedure)	Step by step instructions complied by an organisation to help workers complete specific and routine operations.

7.2 Delivery of Works and Record Management

Council Staff and Contractors will need to be proficient in the use Councils Tree Management System software.

Urgent – Email and/or phone call confirmation. The individual Tree ID will be provided and assigned to the User in Councils Tree Management System. If the subject tree is not registered in Councils Tree Management System the contractor or staff member must enter tree details prior to or at the completion of works.

Reactive - Email and/or phone call confirmation. The individual Tree ID will be provided and assigned to the User in Councils Tree Management System. If the subject tree is not registered in Councils Tree Management System the contractor or staff member must enter tree details prior to or at the completion of works.

Programmed – All trees requiring works through Programmed Works will be assigned to the contractor or staff member as a 'Project' in Councils Tree Management System.

All works undertaken must be updated in Councils Tree Management System on the day the works are completed. If the subject tree is not registered in Councils Tree Management System the contractor or responsible staff member must enter tree details prior to or at the completion of works.

The update must include notes indicating works undertaken, and a photo of the completed works.
Any notable defects or unidentified risks, such as hanging branches, or split branches, must be reported to Councils representative.

If the risk is considered high and urgent action is required, contractors must contact Council.
If additional works are required due to identified elevated risk such as splits or cracked branches, contractors must alert Councils representative Team immediately for further direction.

All works are to be undertaken during Councils operating hours from 7 am to 5pm, Monday to Friday unless otherwise agreed upon between both parties and must be requested in writing to Councils Representative and approved at the Councils discretion.

Requests or requirements to complete on weekends or public holidays must be made in writing to the Council and will be approved at the Council's discretion.

Pruning may be performed with hand tools or chainsaws.

All works must be undertaken in accordance with *AS 4373 – 2007 'Pruning of amenity trees'*, unless directed by the Council.

7.3 Tree Removals – Contractor

Whilst tree removals may be allocated to contractors through programmed works in Councils Tree Management System, no removal is to proceed without written confirmation from Council representative. The confirmation will include the Tree ID number and timeframes for the removal. If no confirmation has been provided, the tree is to be flagged in Councils Tree Management System for further instructions.

When undertaking a tree removal, the tree is to be severed at no higher than 300mm above ground level. Stump is to be poisoned using appropriate herbicide. The stump is to be marked with a highly visible orange spray paint.

All tree removal work must be undertaken by a fully trained, qualified and competent arborist to safely and adequately perform the work specified. Other staff may undertake removal operations only under the direct supervision of the arborist.

Council staff and contractors shall ensure that the felling of any tree does not damage any service (either above ground or below ground), structure, road or footpath.

If the Contractor is not responsible for the removal of the stump the Council will be notified within 24hr that the tree has been removed.

The removal of a Council tree without consent from Councils representative may be grounds for a written warning through the Contractor Performance and Evaluation Form.

7.4 Stump Treatment and Site Remediation

The service to be provided is the removal of a stump(s) or the prevention of re-growth from the stump of a felled tree. The work may be required on one or multiple stumps.

The work may include:

- Ground with a proprietary machine (which may be either self-powered or driven from a power take off shaft), to a minimum depth of 200mm below ground level (where not stated), this includes the removal of all surface roots.
- Removal of debris.
- Reinstatement of the area in keeping with the surrounds (or as specified by the Council's representative)
- Herbicides shall only be applied to specified stumps at Council's direction. The Contractor shall use herbicides in accordance with the manufacturer's labelled instructions.

The Contractor who is to perform the grinding is responsible for locating all underground services prior to undertaking the works. The contractor will be responsible for any costs associated with damage to private or public infrastructure.

Reinstatement of the area in keeping with the surrounds including reinstating the grinding hole with good quality 60/40 loam or similar (including surplus to allow for settling) and leaving the area impacted by stump grinding clean and presentable.

Reinstatement is to occur immediately after the removal of the stump mulch to prevent trip hazards. No empty grinding holes are to be left open unless no option is available.

If a grinding hole is to be left open and exposed overnight or when the Contractor is not present on site, will require the area to be protected with the use of barrier mesh at the expense of the Contractor for the duration of the exposure.

The disposal of any excess spoils will be the responsibility of the Contractor at their expense.

8. Nuisance Tree Roots

Tree and root growth is opportunistic and will proliferate wherever moisture, aeration, nutrition and soil structure is favourable which is strongly influenced by both the above and below ground soil conditions. Tree root growth in the urban environment is highly modified and is not governed by property boundaries. Tree root damage to private property can be classified as either direct damage or indirect damage. The type of damage will dictate the investigation methods and management strategies employed by the City of Tea Tree Gully.

Where a claim of damage is made, Council will only take action where there is an actual or reasonably foreseeable risk of damage. Council will not take any action in response to a theoretical or assumed risk of damage.

If the private built structure, such as a crossover, stormwater pipe or fence, requires works on Council land such as excavation or repair, approval must first be received by Council in accordance with section 221 of the *Local Government Act 1999*.

8.1 Direct Root Damage

Direct damage is the distortion of built structures. This may occur as tree roots grow and exerts pressure. This type of damage is usually limited to light-built structures such as pavements and low walls. Direct damage may further affect buildings of sub-standard footings and underground pipes.

The City of Tea Tree Gully will investigate all claims of direct tree root damage from public trees that are under the care and control of Council.

As part of the request process, the following Information must be provided to Council prior to investigating direct root damage to property:

1. Contact details for the person reporting the damage so as to arrange further information and/or to arrange a site inspection
2. Location of the alleged damage
3. Location of the tree(s) alleged to have caused the damage
4. Details of any known past root management works undertaken by Council
5. Photos of the alleged damage.

The City of Tea Tree Gully should always be given the opportunity to inspect the alleged damage on site. Council may also request the claimant to supply an engineering report or excavate/ expose the affected areas to support alleged root damage.

8.2 Root Entry into Sewer and Stormwater Pipes

Tree root entry into sewer and storm water pipes occurs following the failure of a pipe. Leaking pipes (typically as a result of poor construction, old earthenware, cracked and faulty joints and degradation) create a moisture gradient that encourages tree root growth, leading to entry into the pipe. Once the root has entered the pipe, the roots can proliferate in the ideal growing conditions.

In most cases, the failure and subsequent leak of the pipe occurs before root entry. In some rare situations, root movement of the pipe may initiate a fracture through direct damage.

The property owner is responsible for the maintenance, repair and replacement of the pipe to the legal point of discharge (stormwater) or the connection point (sewer). The stormwater legal point of discharge is usually an underground drain or street channel outside the property. The sewer connection point is usually near the property boundary.

The City of Tea Tree Gully will not remove trees for unjustified claims of pipe damage from tree root activity.

The following Information must be provided to Council prior to investigating direct root damage to pipes:

1. Details of the damaged pipe. This should include location and construction type
2. Copies of photographs or drain inspection footage recording the claimed damage
3. In situations where the origin of the roots is unclear, root identification by a suitably qualified person may also be required.

The City of Tea Tree Gully should always be given the opportunity to inspect pipes and any offending tree roots prior to repair works being undertaken.

8.3 Indirect Root Damage

Tree damage to buildings may occur due to indirect damage causing foundation movement. Foundation movement in built structures may be caused by the following:

- Settlement, which may be a result of excessive loading or defective material below the foundations
- Subsidence as a result of clay shrinkage, soil instability and fluctuations in soil moisture.

Tree root activity is sometimes implicated in persistent soil moisture deficits, which can cause shrinkage of reactive soils. Chronic soil drying and shrinkage can also be caused by prolonged drought conditions. Heave as a result of rehydrated and expanding soils with increases in soil moisture due to heavy rainfall events or defective plumbing or drainage.

Often there are multiple factors contributing to foundation movement. For this reason, claims of indirect tree root damage must be comprehensively investigated and the City of Tea Tree Gully will not remove trees for unjustified claims of property damage from tree root activity unless it has been proven that tree roots are the primary cause of the damage and there are no alternative measures available to mitigate further damage.

8.4 Investigation of Indirect Root Damage

Council will investigate claims of indirect tree root damage where a geotechnical or structural engineering report identifies that public trees under the care and control of Council are the primary contributor to the damage.

Where a technical report is provided to Council the report should include the following:

1. Location of the tree/s or shrub/s that are identified as being responsible for the claimed damage
2. Details of the damage and the likely progression of such damage
3. Details of the history of the site
4. Details of the building, its construction method and a determination of the foundation depth and type
5. Details of site topography and drainage
6. Details of site soil profile from boreholes. Soil moisture levels and any fine root growth should be recorded
7. Recommendations for remedial action.

In many cases, extended building level monitoring can also be useful as it indicates where there is seasonal influence of tree root activity on structures.

8.5 Mitigation Measures for Root Damage

The City of Tea Tree Gully will seek practical solutions to reduce the risk of damage to private property from public trees under Councils care and control taking into consideration to cost and benefits of such actions. These measures may include:

1. Root pruning
2. Root pruning and the installation of tree root barriers.

Tree removal for direct or indirect property damage will only be considered where no practical arboriculture or engineering solution can be implemented to address the conflict whilst retaining the tree. Every effort will be taken to ensure that any replacement trees will not themselves result in similar future conflict.

9. Tree Inspections

9.1 Definitions and Interpretations

Term	Definition
Level 1 Visual Tree Assessment	This is the assessment process of a tree or group of trees undertaken from the ground. The assessment must be undertaken by a trained arborist (AQTF Cert 3 or greater) competent in determining tree type, structural integrity, health, growing environment and environmental benefits or impacts the tree may present, and determining suitable methods for managing the tree and impact it may have on its immediate surrounds. The assessment is limited to those attributes observe on the day of assessment.
Level 2 Visual Tree Assessment	Includes those measures used in a Level 1 Tree Assessment but also includes additional resources to undertake assessment such as the use of tools for investigation purposes. These tools may include a sounding hammer, probe or other equipment.
Level 3 Visual Tree Assessment	This is an advanced assessment to provide detailed information about specific tree parts, defects, targets, or site conditions. This may be done after or in conjunction with a Level 2 VTA and may include assessments using resistograph or other invasive tools available. The assessment is limited to those attributes observed on the day of assessment. Aerial imagery and tree history records may also be used to help determine site changes.
Aerial Assessment	This is undertaken from above ground level to provide closer examination of aboveground parts of a tree, especially those not visible from the ground, including upper trunk and upper surfaces of stems and branches. An aerial assessment can include techniques from a Level 2 & 3 Assessment. An aerial assessment would only be undertaken if requires based on findings of a Level, 1, 2 or 3 Visual Tree Assessment. The assessment is limited to those attributes observed on the day of assessment.

9.2 Risk Assessment

Tree risk assessments are part of tree management programs designed to help identify high-risk hazards before harm or damage occurs and to allocate finite resources available to manage tree assets. Risk assessment is not the same as predicting an outcome or removing all risk in all situations.
A consistent approach to tree assessments will allow Council officers to accurately identify and record information to help make informed decisions to manage risk.

To achieve this all tree assessments will be based on the Arboriculture Industry Visual Tree Assessment process. The VTA process considers determining factors that may include tree biology and mechanics, location, site and or tree history and other relevant factors. A VTA is based on helping Council officers to accurately identify, record and manage actual or foreseeable risk in the urban environment.

When assessing a tree, the initial assessment will typically be a level 1 VTA the assessment may however determine further investigations are required.

1. A Level 1 VTA is a visual assessment of the tree from the ground.
2. A Level 2 VTA includes tools such as a sounding hammer.
3. A Level 3 Advanced Assessment, this can include an aerial assessment, decay testing, cavity inspections, lean tests, load testing or other measures to determine tree management options.

Only an appropriately qualified Arborist (AQTF Level 3 minimum) shall carry out the VTA and determine the level of assessment required.

Regulated tree assessments and root inspections require an Arborist with AQTF level 5 qualifications as a minimum to carry out the VTA and determine the level of assessment required.

Where private trees present a risk to the public and a request has been made to Council, the trees will be assessed and if its determined that an unacceptable public risk is present then Council may adopt implementation of Section 299 of the Local Government Act (CEO to be notified).

9.3 Council Responsibilities

The City of Tea Tree Gully will undertake an assessment of all Public Street trees and trees located in high traffic reserves and public spaces and record these findings. As part of this assessment process a Visual Tree Assessment (VTA) will be undertaken. The VTA process is based on the International Society of Arboriculture Tree Risk Assessment.

Trees located within parks and reserves will be inspected on an as need basis, including assessment requests and as required by unforeseen activities, such as major storm events or public events scheduled for specific parks or reserves. It is impractical to assess and document every individual public tree so priority will be given to those trees located within high traffic areas (A class reserves, sporting clubs ETC) and or via assessment of grouped or stands of trees; where this approach can be practicably applied.

The Customer First Solution system (CFS) is the principal method of receiving tree related requests from residents and internal staff. This system records the request location and initiates an assessment by the relevant Technical Officer.

All tree related requests should be allocated against the specific tree asset number recorded in Council Tree Asset Management System (TAMS) and key customer communications and relevant findings recorded on the CFS system.

The timeframe from receiving a request to time of assessment will be dependent on the request received and urgency of request.

9.4 Tree Assessment

All tree assessments can be initiated through a proactive or reactive process as described below. The level of assessment will be determined based on the initial assessment and mitigation measures applied (if required) and these actions recorded.

Proactive assessment can occur on a cyclic basis or occur as part of the annual inspection programs or during tree maintenance activities such as formative pruning, general maintenance or road and footpath vegetation clearance.

The proactive VTA assessment forms part of these works to ensure that each street tree is inspected at least once every 5 years and risk identified and managed.

A qualified Arborist will inspect the tree for any maintenance works and identify any defects which may impact the trees structural integrity. All mitigation works undertaken will be recorded in TAMS.

Reactive assessment occurs when Council is notified of:

1. An incident related to an insurance claim;
2. A report of an issue by the community; or
3. Identification of an issue by a Council employee.

Urgent tree requests, received by the Customer First Solution System, will be assessed within 1 business day, all other tree requests assessed within 5 business days. In the event that Council receives a request in relation to a public tree, this request will be recorded in CFS and allocated to the relevant authorised officer.

The Authorised Officer will undertake a VTA in accordance with this technical guideline and Industry Standards and where practicable apply mitigation activities to reduce the identified risk and these actions recorded in TAMS. Following on from the assessment, should urgent works be required the appropriate officer should clearly detail the works required to manage the risk. If there are works required on a regulated tree fulfil the requirements of Division 3 (136) in relation to the notification process to the Planning Department.

9.5 Tree Risk Assessment Matrix

The implementation of the risk assessment methodologies is essential to ensure Council accurately record and detail potential risks associated with the management of trees in the urban environment. This will ensure compliance with the provisions of the Local Government Act and the LGAMLS Risk Management Guidelines for Local Government.

Where Council receives a customer request to assess a tree for risk (identified through Councils CFS System), the Authorised Officer appropriately qualified to undertake the assessment (AQTF 3 minimum) will undertake a risk assessment of the tree(s) using the methodology adopted from the International Society of Arboriculture (ISA) tree risk assessment process and utilising the procedure as detailed in this technical manual.

The following tables outline the A, B, C, D process that is to be followed to obtain the final tree risk rating.

Table One – Likelihood of a tree Failure Impacting a Target

(A) Likelihood of Failure	(B) Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent/almost certain	Unlikely	Somewhat Likely	Likely	Very Likely
Probable/likely	Unlikely	Unlikely	Somewhat Likely	Likely
Possible/likely	Unlikely	Unlikely	Unlikely	Somewhat Likely
Improbable/unlikely	Unlikely	Unlikely	Unlikely	Unlikely

- Table One estimates ‘A’ - the likelihood of failure and then ‘B’ – the likelihood of impacting the target.
- The rating ‘C’ is calculated by intersecting ‘A’ with ‘B’
- Once the C rating has been identified this is used in Table Two

Table Two – Level of Risk is a Combination of C Likelihood of a Tree failing and Impacting a Specified Target, Combined with D the Severity of Associated Consequences

(C) Likelihood of Failure and Impact	(D) Consequences			
	Negligible	Minor	Significant	Severe
Very Likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat Likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

- Using the rating identified in Table One to identify the rating allocated to the likelihood of failure and impact(C) then estimates the consequences in section 'D'.
- The Final Risk Rating is identified at the point at which category 'C' intersects with the category assigned to 'D'.

This final Risk Rating should be formulated in consultation with the outcomes of the VTA to identify the potentially highest risk associated with the tree structure in combination with an assessment of the target area.

The overall risk rating allocated shall help guide the timescales with regard to any risk mitigation activity. This action shall consider a proportional response to effectively manage trees within the urban environment whilst maximising the benefits they provide communities. For example, risk scores resulting in Extreme or High shall be mitigated immediately, this immediate action may include tree pruning/removal or public exclusion from target areas. Moderate or low risk may include pruning or monitoring or other arboriculture action deemed appropriate by Council Arborists and in line with Councils tree management policy.

9.6 Specific Individual Tree Management Plans

In the event of a specific tree requiring long term or indefinite management, the following options may be undertaken on behalf or by the City Arborist:

1. Independent Tree Assessment undertaken by contractor arborist.
2. Expert advice from consultants
3. Long Term crown management plans
4. Planned conservative tree deconstruction
5. Veteran tree management.
6. Increased VTA's
7. Lean tests
8. Agronomy
9. Tomography.
10. Pest monitoring and ongoing treatment.
11. Poisoned tree: Protection, supplementary water, mulch, liquid fertiliser and additive treatments.

9.7 Customer Complaints and Internal Review of a Council Decision - Section 270 Review

Customers may request a reassessment of a denied tree removal or tree pruning request via Council's Customer Request System. Any reassessment will be undertaken by Council's City Arborist or independent contractor, depending on available resources.

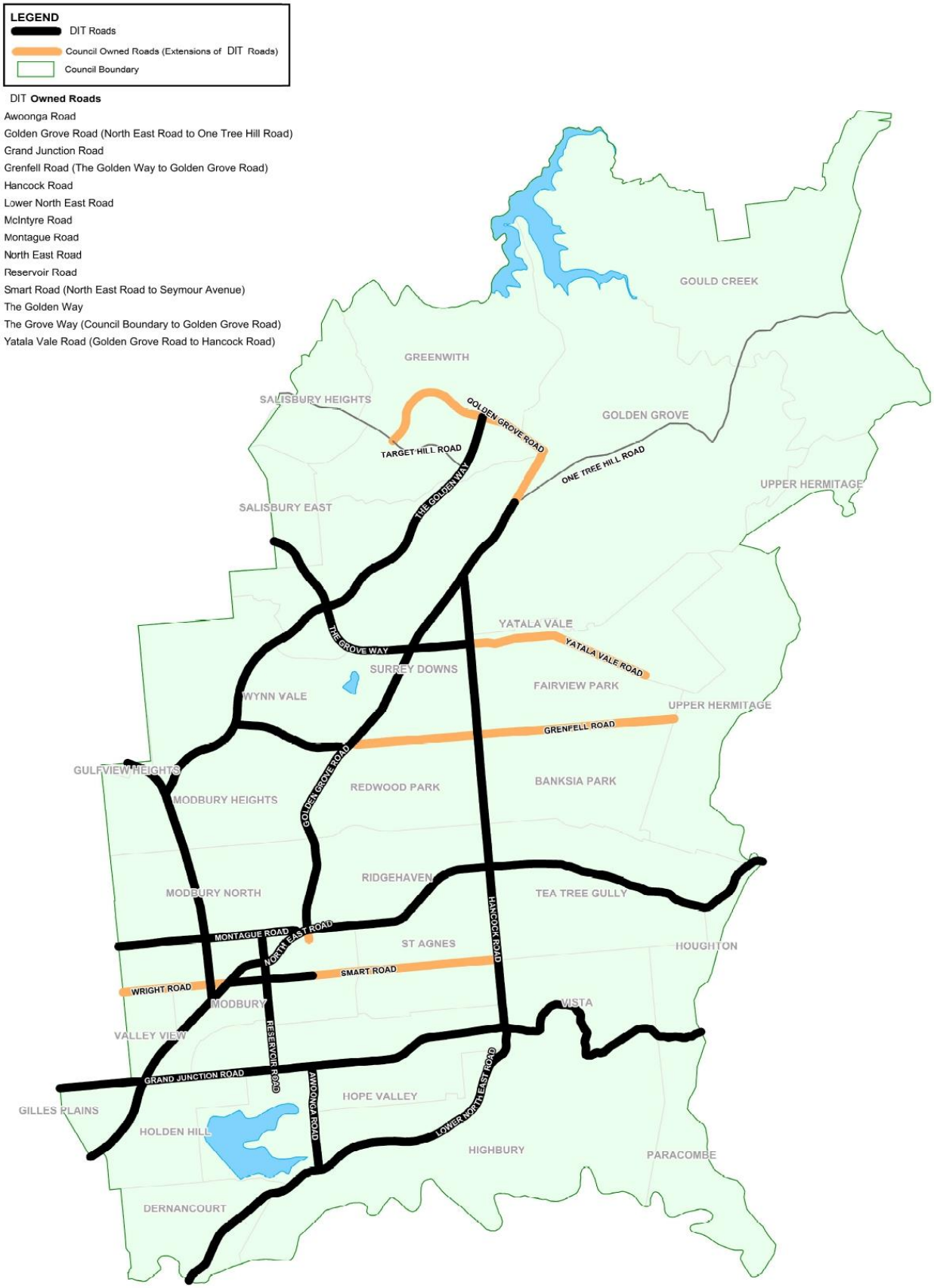
Should the original assessment outcome be upheld, the customer may then submit a request for an **Internal Review of a Council Decision (Section 270 review).**

The table below provides guidelines on how to deal with formal requests for internal reviews of Council decisions under section 270 of the Local Government Act 1999 (the Act) and the respective responsible officer. This is a procedure established by legislation (section 270(1) and (2) of the Act), that enables the decision making process to be reconsidered, taking into account all the evidence relied on to make a decision, including new evidence if relevant. This procedure will only apply in those instances where a formal request has been made.

A decision that has already been reviewed under section 270 will not be subject to further review unless determined by the CEO on a case by case basis.

Customers who wish to proceed with an Internal Review of a Council Decision are to adhere to the request process via Council's Website at https://www.teatreegully.sa.gov.au/contact-us/contact-details-for-council/application-to-review-council-decision

Appendix 1 : DIT Roads within Tea Tree Gully



Appendix 2 : Guidelines and Australian Standards Referenced

1. Planning Development and Infrastructure Act 2016
2. Australian Standards AS4970-2009 Protection of trees on development sites
3. SA Power Networks - Power Friendly Trees Reference Guide
4. Australian Standard AS4373 Pruning of Amenity Trees
5. Arboriculture Australia (2019) – Tree Pruning MIS30B
6. Tree Risk Assessments
7. Arboriculture Industry VTA process
8. International Society of Arboriculture
9. Local Government Act and the LGAMLS Risk Management Guidelines for Local Government.