

STRATHBOGIE SHIRE COUNCIL **URBAN TREE MANAGEMENT PLAN**



Avenue of Elm Trees – Kirkland Avenue West, Euroa

GENERAL

Trees are an important and highly visible asset within Strathbogie Shire's urban streets, parks and reserves. They not only improve the liveability of the Shire, but characterise the place and provide enjoyment for people. No other infrastructure element can so dramatically transform the character of a neighbourhood at so little cost.

Some of our trees are culturally important and some have heritage importance.

Council's aim is to retain trees where appropriate and to manage their well-being so that they continue to contribute to the quality of the urban environment.

As trees are an asset, they need to be managed appropriately and in accordance with the concepts of the Council's Asset Management Policy to achieve the best return for the community. Like all assets, urban trees require management to ensure they are still appropriate for the changing natural and built environment in which they are located. Emphasis needs to be placed on selecting the right tree for the right position. We need to be aware of how the tree will perform and what types of management it will require.

Tree management shall include risk analyses and life-cycle costing analyses

This management plan outlines the Strathbogie Shire Council's approach to the total management of its urban tree asset.



Bunya Bunya tree – Jacobsens Outlook, Nagambie

POLICY STATEMENT

Key Principle:

- 3.1 *All tree removal, maintenance, management and/or planting must have council's approval prior to the works being undertaken*

Control of the road reserve vests with Council, therefore all works within the road reserve requires Council approval, as these works will affect Council's risk profile, and subsequent insurance requirements and premiums.

Council will consider requests from landowners for the planting of new trees in road reserves, and decisions will be made in accordance with this management plan. No trees will be planted without the written approval of Council.

If a tree is planted without the written approval of Council, on Council controlled land, the adjacent landowner will be requested to remove the tree and rectify the area. If the required works are not undertaken the Council will remove the tree, and return it to the adjacent landowner. All costs associated with the removal and rectification works shall be borne by the relevant landowner.

1. Tree Removal Authorisation

All decisions regarding removal of Council managed trees will be made in accordance with the provisions of this Management Plan.

A written report must be prepared prior to any tree removal and signed off by the Director. In the case of emergencies the report will be prepared after removal.

Native vegetation shall not be removed, pruned or lopped until the necessary approval process has been completed.

2. Tree Removal Procedure

Removal of a Tree

Only Council, or its appointed contractor, will remove urban trees on Council managed land. Persons undertaking such works must be suitability qualified and experienced.

Hazardous Trees

Any tree which is deemed to pose an immediate hazard, and which cannot be alleviated through means other than removal, will be removed forthwith by Council.

Other Trees

Dead or dying trees, trees in poor condition, and/or not suited to their location may be removed.

Key Principle:

- 3.2 *New trees will be planted in the Shire of Strathbogie to maintain and enhance the canopy cover in a planned and programmed manner.*

Trees to be planted will be chosen in accordance with this management plan to ensure that the correct fit between the tree and the proposed environment is maintained, ie the correct tree in the correct location.

Council will develop an annual program for new plantings and replacement plantings.

The program will be developed by March each year for inclusion in the budget consideration.

Key Principle:

- 3.3 *Trees provide both environmental and aesthetic benefits to the community. Council will consider opportunities to increase the number of trees in urban areas. Tree Planting Programs, including Precinct and Park plans will be developed to provide the direction to future planting programs.*

Council will establish street tree planting programs to improve the streetscape of selected urban streets.

The Council will seek the cooperation and agreement of adjoining landowners to maintain a watering and maintenance regime for the newly planted advanced growth in the young trees. If the adjacent landowners agree to the Council's required maintenance regime, the Council will provide, and plant, an advanced growth tree in front of their property.

The benefits will be:

- uniformity of streetscape
- street 'ownership' of trees
- improved tree management practices through uniform species.

Key Principle:

- 3.4 *Excellent tree management practices will be maintained at all times. These management practices include:*
- *Planning processes, including risk management considerations*
 - *Compliance with relevant legislation*
 - *Development of tree management systems*
 - *Inspection regimes*
 - *Tree maintenance standards*
 -

Tree management practices will include the following activities:

- An urban tree inventory will be established and maintained. Development of the inventory has commenced.
- Requests for tree planting will be considered as part of the annual program
- The planting program will generally be undertaken from July to August of each year, after the budget is adopted. Planting at this time is recommended to maximise the success of the plantings. (See – Appendix 2 – Tree Planting and After Care)
- Strathcon will arrange for the purchase, delivery, planting and after care of the trees
- Strathcon will develop a maintenance schedule for each annual planting to ensure the ongoing watering requirements of the trees as outlined in Appendix 2 – Tree Planting and After Care)
- Inspections: Tree inspection schedules and levels of inspection are given in Council's Parks and Reserves Maintenance Plan, and in Appendix 5 of this document.

Inspecting trees for defect will be a careful and systematic process. The entire tree must be inspected. Inspections should be done in accordance with the Inspection Schedule in the Maintenance Plan.

Inspections are best conducted during the leaf-off season to facilitate observation and inspection. Inspections should also be undertaken after storm events.

Identification and correction of structural defects such as weak branch attachments, leaning, cracks, wounds, dead wood and decay may reduce failure potential (and therefore, reduce risk to property and injury to people).

Records of the inspections shall be kept for future reference. The inspection report shall include not only when (date and time) the inspection was undertaken, and by whom, but also details of the tree, its location and the results of the inspection and any recommended actions. The inspection system shall also have the facility to record when recommended actions were undertaken, and by whom.

Key Principle:

- 3.5 *A diverse range of native and exotic tree species appropriate to the Shire's urban areas will be maintained*

The Council currently has a range of native and exotic trees throughout the urban areas. It is intended that a range of tree species will continue to be planted and maintained. However the range/mix that currently exists will be altered due to consideration of tree physiological and environmental factors.

The need to amend our range of trees has been highlighted recently by the arrival of the elm leaf beetle (ELB) in the municipality. Further, other physiological characteristics such as leaf fall quantities, seed and fruit drop all affect the management costs of the urban trees.

Tree selection will generally be from the Tree Selection List – See Appendix 4 which takes into consideration a number of factors including:

- overhead powerlines and other services
- underground services
- tree root vigour and eventual tree size
- existing and proposed infrastructure
- adjacent public and private assets

Key Principle:

- 3.6 *Planting programs will be developed with community and stakeholder consultation. Planting programs will consider a number of factors including, as appropriate; preservation of the historic character of particular areas, strengthening of existing themes and the introduction of more contemporary landscaping.*

Key Principle:

- 3.7 *Tree species will be selected for planting after consideration of a number of factors including:*
- *Risk management considerations*
 - *Physical management requirements*
 - *Potential for attack by pests or disease*
 - *Suitability and appropriateness for the proposed planting site*
 - *Potential to contribute to the landscape*
 - *Tree behavioural characteristics (including leaf fall volume and propensity to drop limbs)*
 - *Potential effect on existing Council and private assets (including footpaths and fences)*

Risk Management factors to be considered:

A number of factors will be considered in determining tree selection for planting in Council's urban areas including:

- Proposed location
- Proximity to public and private physical infrastructure
- Site geology
- Tree behavioural characteristics
- Tree physiology
- Tree management requirements

The Council will select trees that will minimise risk and general management requirements.

Physical Management Requirements

Pruning will be undertaken in accordance with AS 4373 (1996) – Pruning of Amenity Trees.

Pruning will be performed by people trained or under the guidance/instruction of people trained in appropriate pruning techniques.

Pest & Disease Control

The current mix of trees has left Council with the legacy that we are exposed to a number of pests and diseases attacking some of our mature tree stock.

Of particular concern is the Elm Leaf Beetle (ELB). The Council has a number of elm tree avenues, together with isolated trees throughout the shire. As well, this is a popular and widely dispersed tree on private land. The ELB does not respect property boundaries and moves through the elm tree population.

The ELB treatment program commenced in 1998, and until 2003 has cost Council approximately \$40,000. This cost will increase if Council continues to attempt to control the ELB.

Details of the ELB are given in Appendix 3

Council will remove the current ELB prone elm tree stock over a 10 year period. The estimated age of these trees is 80 – 100 years. Advanced trees will be planted between the current elms within avenues to allow for the progressive removal of the existing elms. The suggested replacement is *Zelkova serrata*, the Japanese *Zelkova* or Japanese Elm, or the Chinese Elm (*Ulmus parviflora*) which are not

susceptible to the ELB. Removal of the elms will begin in 2008, to be completed by 2013, unless in the interim, individual trees are assessed as being unsafe they will be removed.

Stands of elm suckers on Council managed land will be identified, and progressively removed from 2004.

Treatments for the control of ELB for trees on Council managed land in urban areas will be borne by Council. Council, in attempt to control the ELB, has been treating elm trees on private land in recent years. This practice will cease this year, 2003. Council will encourage private landowners to treat their own elm trees on their land for the control of ELB.

Treatments for the control of ELB on Council managed land will cease in 2010, as part of the replacement program outlined above.

Tree Behaviour Characteristics

Tree selection will also include physical characteristics such as leaf fall volume, leaf break-down, tree vigour and eventual size, root behaviour and the tendency for root damage.

To this end, Council will progressively remove tree types that present the greatest risk to community and where appropriate replace them with a more suitable tree. Wherever it is possible practical the replacement tree will be planted prior to removal of the designated tree to allow for a reduction of the impact of the removal of the designated tree.

Tree root barriers and similar technologies and processes will be used as appropriate to manage the movement of tree root systems.

Effect on Other Assets

The wrong tree in the wrong place has a detrimental effect on other assets, resulting in overall increased management costs.

Council has avenues of trees, and isolated trees, and other physical assets which, because of their proximity, conflict with one another. Examples include : the elms in Kirkland Avenue West and Binney Street Euroa, the plane trees in Anderson Street Euroa and the plane trees in High Street Nagambie conflicting with footpaths and kerb and channel.

Trees also impact on private and other authorities assets, eg sewer pipelines, buildings, fences.

Overhead Wires

Trees are often planted too close to powerlines. When branches reach the "clearance zone" around the overhead powerlines, they must be pruned or trimmed. This is a costly, and on-going practice which could be lowered by planting only appropriate sized trees near overhead powerlines.

Council is currently spending approximately \$30,000 per year on tree powerline clearance activities. Council will, through the measures outlined in this plan progressively move to reduce the number and/or mix of trees that are planted near powerlines, to ensure that long term powerline vegetation management costs are reduced.

It is best to plant trees as far away from powerlines as possible. This will allow a greater variety of trees to choose from.

Key Principle:

- 3.8 *The urban tree canopy will be maintained with the implementation of a strategic replacement program in accordance with developed tree programs.*

Key Principle:

- 3.9 *Council will consider existing trees when considering applications for new development. Where appropriate, trees will be protected from development and other activities that threaten their health.*

This is a principle that must be considered from two points of view:

- New development will affect existing Council urban trees
- Developer wants to hand over trees to Council

In the first instance, if considered appropriate by Council, it will assess the potential impact on the tree by the proposed development and place requirements on the developer so as to prevent damage to the tree. Such requirements may include:

- Performance guarantee/bond by developer in favour of Council,
- Barricading the tree from the works area
- Special maintenance requirements whilst development proceeds to minimize stress on the tree

In the second instance, the Council shall consider the potential impact of the proposed new additions to its urban tree asset base as it would any other asset. The developer shall undertake a needs analysis, a risk analysis and a life-cycle costing analysis. These analyses shall be undertaken by a fully qualified arborist. The developer shall provide this information to Council for consideration. Council will only accept new trees on to its asset base if the tree is considered appropriate, and meets the criteria of the other sections of this document.

Key Principle:

- 3.10 *The conflicting requirements of trees and infrastructure (eg roads, footpaths and kerb and channel) will be minimised where possible. Council will consider a number of options including; the relocation or reconfiguration of infrastructure and removal of the tree to reduce the need for excessive pruning.*

Key Principle:

- 3.11 *The community will be educated, consulted and informed about major tree management projects, and the need to effectively manage trees.*

Key Principle:

- 3.12 *Historically Significant trees will be managed as far as practical to ensure preservation.*

Historically significant trees will be managed, as far as practical, to ensure their preservation.

Arboricultural advice will be sought when undertaking, or proposing to undertake significant tree management activities on these significant trees

Key Principle:

- 3.13 *Catchment management principles will be considered in the management of remnant urban bushland.*

APPENDICES:

1. Tree Assessment Criteria
2. Tree Planting and After Care
3. Elm Leaf Beetle
4. Tree Species Selection
5. Parks and Reserves Maintenance Management Plan – Trees: Inspection Schedules

1. Tree Assessment Criteria

Requests for the removal/replacement of a Council tree will be assessed on the tree condition, suitability, landscape value and significance. The assessment will be undertaken by an experienced and qualified person.

1.1 Assessment of condition will be based on :

- health and vigour
- form
- useful life expectancy
- safety
- damage caused

1.2 Assessment of suitability will be based on :

- compatibility with surrounding streetscapes or landscapes
- potential to cause damage
- potential to cause nuisance
- suitability of species to growing space and conditions
- potential for weed invasion

1.3 A tree will be considered to have important landscape value if it :

- has a major impact on the streetscape or landscape
- forms part of an avenue or boulevard
- has outstanding visual appearance
- is one the locally rare species
- provide habitat for native fauna
- is a remnant specimen

1.4 Significant trees :

A significant tree is one that is listed (or nominated for listing) by Heritage Victoria, the Register of the National Estate, National Trust of Victoria, or Strathbogie Shire Council's Planning Scheme. Significant trees require a permit from the responsible authority prior to removal

2. Tree Planting and Aftercare

Successful planting and after-care maintenance programs that lead to thriving landscapes conveys to the general community a sense of commitment by the managing body.

Transport

During transport trees should be tied securely to the truck so they do not roll around. Trees should be irrigated prior to transport.

Root balls are fragile and should be handled carefully. Trees should always be carried by the root ball. Never pick up a tree by the trunk, or drop a tree. This will disrupt contact between fine roots and soil. *Roots must be in intimate contact with soil to absorb water.*

Holding area at the planting site

It is best to plant trees the day they arrive. If this cannot be done they should be irrigated as soon as they are unloaded from the truck. Trees left out and not planted can deteriorate quickly when not properly cared for.

If trees cannot be planted on the day they arrive, they should be kept in a holding area. The holding area should be as shaded as possible and away from the wind. The roots of trees exposed to direct sunlight can die in a matter of hours. Bare rooted trees should be covered with moisture holding material and also kept out of the wind and sun.

Irrigation

Trees grown in containers are watered twice a day in nurseries over summer and daily during the cooler months. When trees leave the nursery they should continue to receive the same amount of water at the same frequency, unless they are placed in a shaded location. Trees not watered for several days during warm weather could die.

Planting the Tree

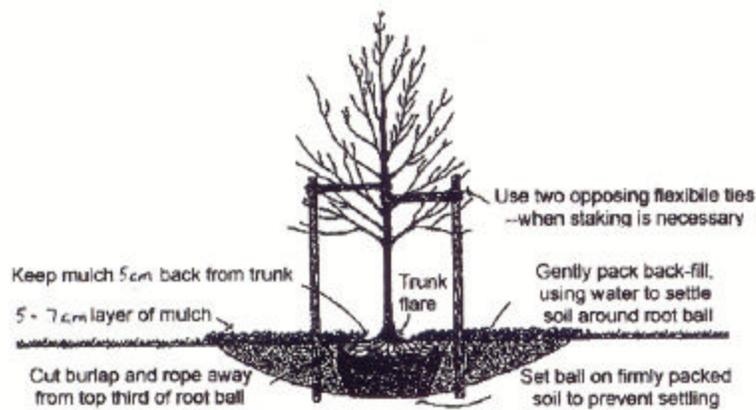
Before you begin planting the tree, be sure to have all underground services located prior to digging.

Newly planted trees exhibit, to varying degrees, what is known as **transplant shock** (TS). TS is indicated by slow growth and reduced vigour after transplanting. Proper site preparation before and during planting, coupled with good follow-up care will reduce the amount of time the plant experiences TS and allow the tree to quickly establish in its new location.

Carefully follow eight simple steps and you can significantly reduce the stress placed on the plant at the time of planting.

“It’s better to put a \$100 tree in a \$200 hole than to put a \$200 tree in a \$100 hole.”

1. **Dig a broad planting hole.** Make the hole wide, as much as three times the diameter of the root ball, but only as deep as the root ball. It is important to make the hole wider because the tree roots on the newly established tree must push through surrounding soil to establish. Breaking up the soil in a large area around the tree provides the newly emerging roots room to expand into loose soil to hasten establishment.
2. **Identify the trunk flare.** The trunk flare is where the roots spread at the base of the tree. This point should be partially visible after the tree has been planted (see diagram).



3. **Place the tree at the proper height.** Before placing the tree in the hole, check to see that the hole has been dug to the required depth, and no more. The majority of the roots on the newly planted tree will develop in the top 30cm of soil. If the tree is planted too deep, new roots will have difficulty developing due to lack of oxygen. To avoid damage when setting the tree in the hole, always lift the tree by the root ball, and never by the trunk.
4. **Straighten the tree in the hole.** Before you begin backfilling have someone view the tree from several directions to confirm the tree is straight. Once you begin backfilling it is difficult to reposition.
5. **Fill the hole, gently but firmly.** Fill the hole about 1/3 full and gently but firmly pack the soil around the base of the root ball. Fill the remainder of the hole, taking care to firmly pack soil to eliminate air pockets that may cause roots to dry out. To avoid this problem, add a few cm at a time and settle with water. It is not recommended to apply fertiliser at the time of planting.
6. **Stake the tree, if necessary.** If the tree is grown and dug properly at the nursery, staking for support is not necessary in most landscape situations. Studies have shown that trees will establish more quickly and develop stronger trunk and root systems if they are not staked at the time of planting. **However, protective staking may be required on sites where lawn mower damage, vandalism or windy conditions are concerns.** If staking is necessary for support, two stakes used in conjunction with a wide flexible tie material will hold the tree upright, provide flexibility, and minimise injury to the trunk. Remove support staking and ties after the first year of growth. Leave protective staking in place as long as necessary.
7. **Mulch the base of the tree.** Mulch is simply organic material applied to the area at the base of the tree. It acts as a blanket to hold moisture, protect against harsh soil temperatures, both hot and cold, and reduces competition from grass and weeds. Some good choices are leaf litter, pine straw, shredded bark, peat moss, or wood chips. A 50 to 100 cm. layer is ideal. More than 100 cm may cause a problem with gas exchange. When placing mulch, care should be taken so that the actual

trunk of the tree is not covered. This may cause decay of the living bark at the base of the tree. A mulch-free area 25 to 50 cm at the base of the tree, is sufficient to avoid moist bark conditions and avoid decay.

- 8. Follow-up care.** After-care maintenance in general needs to be prioritised and appropriate resources allocated in order to ensure the success of the planting.

All tree planting should be followed up with a vigorous after care maintenance program. Recent plantings should be inspected regularly, tree performances recorded and alterations to the program carried out if required.

If planting trees in grassed areas, a weed free area of at least 1 metre around the tree should be maintained. This should be achieved with a combination of correctly applied weed control and reapplying mulch. This is vitally important for the success of the planting as it reduces competition from turf.

Proper watering is the most important maintenance task. Monitoring of altering requirements is necessary to ascertain plant needs and watering frequency. This can be dependent on climatic and site conditions.

Frequent watering after planting establishes roots in the surrounding soil quicker and allows the tree to become tolerant of drought sooner than those trees only receiving periodic watering (say once every seven to ten days).

Root balls dry out far quicker than the surrounding soil. Moisture will not move from surrounding soil into the root ball unless soil is saturated. Roots need to first penetrate into surrounding soil before they can take advantage of the moisture in it.

New root growth is most prominent on trees where soil is kept constantly moist and does not undergo regular drying out. The objective is to establish a program that keeps soil in the root ball moist.

Water needs to be applied slowly to avoid runoff and directly to the root ball at the rate of 6 - 8 litres per 30mm trunk caliper. A tree with a caliper <60mm should be watered every day for 2 weeks after planting and every other day for 2 months and then weekly until established. A tree with a caliper between 60 - 120 mm should be watered every day for 2 weeks after planting and every other day for 3 months and then weekly until established.

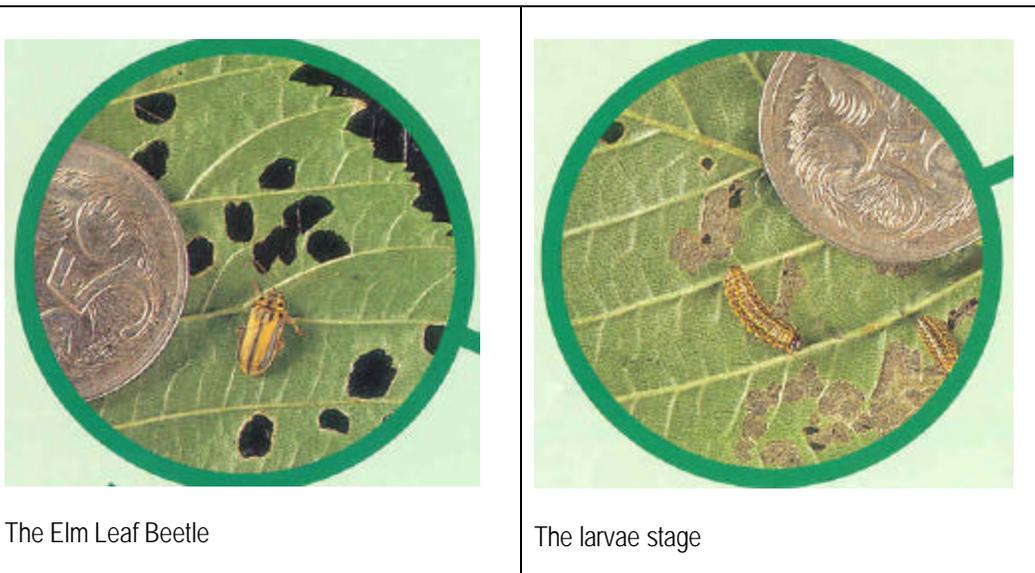
Watering should extend into autumn.

A program of after care maintenance should extend for 2 years after planting trees. Formative pruning, pest and disease control and stake maintenance should also be carried out in this time.

3. Elm Leaf Beetle (ELB)

Elm leaf beetle is present throughout the shire. Council has treated the beetle for the past four years.

Comparisons of elm trees infested with ELB that are treated with the spray program, compared to those elms that are not treated indicated the program has been very successful. Trees infested that have received no control measures are virtually defoliated, distressed and extremely unattractive.



Treatment Methods

Council's Elm Leaf Beetle management program has been developed to progressively monitor and control the beetle, in a cost effective manner. Treatment methods include foliage spraying and soil injection with low toxicity insecticides (Pyrethrum and Confidor).

Timing

Soil injection will be undertaken in September, to enable the insecticide to be taken up by the tree before leaf burst. Canopy spraying will occur in November when the trees have come into full leaf.

Suckers

Horticultural practices that will assist in beetle control will include the removal of suckering Elms, sucker growth from the base of elms, and the removal of deadwood from the canopy. These are sites that are known for harbouring large populations of the beetle

Future Plantings

Existing Elms will be progressively removed between 2008 and 2013. Other varieties such as the Chinese Elm (*Ulmus parviflora*) or the Japanese Elm (*Zelkova serrata*) or other suitable shade trees are to be planted.

4. Tree Species Selection

The success of a planting program, both in the short and long term, relies on appropriate tree selection. Some consequences include of poor selection are :

- excessive damage to infrastructure
- excessive maintenance requirements
- nuisance to customers

In order to select appropriate species, the following criteria need to be considered:

Plant Characteristics

- transport ease
- post transplanting vigour
- suckering potential
- pest and disease resistance
- life span
- root growth characteristics
- potential to self seed and colonise
- litter potential (leaf, twig & fruit)
- poisonous species.

Utilities

Wherever possible, trees shall not be planted where they may possibly interfere with underground or overhead services; however, Council may plant trees in such locations if there is no other appropriate site and planting of a tree will provide a benefit to the community.

Soil Conditions

Trees shall not be planted at a site if:

- There is insufficient root space for healthy and stable tree growth
- Underground services will interfere with planting
- The soil is saturated
- The soil is affected by gas or disease
- The soil is otherwise unsuitable

Planted Trees

Trees which to be planted as street trees shall conform to the following requirements –

Size

All new street tree planting stock must be at least 500mm high, measured from soil level, and be in a container suitable for healthy root formation for a tree of its size.

Tree Form

- Trees shall have a single central leader with a dominant apical bud
- Trees shall not have codominant stems, but shall have a number of evenly spaced lateral branches along the length of the central leader
- Branches shall not rub against each other or the central leader and shall not cross each other in a pattern that may lead to rubbing at a later time
- The shape of the tree should be consistent with and typical of its species
- The ratio of leaf cover should be consistent with and typical of each species
- The ratio of stem diameter to tree height should be consistent with and typical of each species

Root Structure

- the tree shall have a radially arrayed, fibrous root system that is evenly distributed throughout the container

Suitable Nature Strip Trees:

Smaller **deciduous** trees suitable for planting under powerlines and narrow road reserves :

- Prunus varieties – Flowering plums
- Malus varieties – Crab Apples
- Pyrus varieties - Ornamental Pears – Manchurian, Aristocrat, Chanticleer etc
- Lagerstroemia varieties – Crepe Myrtles
- Acer buergerianum – Trident Maple
- Robinia pseudoacacia ‘Mop Top’
- Fraxinus ornus ‘Meczek’ – Designer Ash
- Nyssa sylvatica – Tupelo Tree

Smaller **evergreen** trees suitable for planting under powerlines and narrow nature strips

- Callistemon varieties – Bottlebrush
- Smaller Eucalypt varieties – ficifolia (Red flowering Gum), scoparia
- Acacias – wattles – smaller varieties eg Acacia floribunda – Gossamer Wattle, Acacia longifolia – Sydney Golden Wattle
- Hakeas – laurina – Pin Cushion Hakea, petriolais – Sea Urchin Hakea,
- Leptospermum – Tea Trees
- Melaleuca – Paperbarks – smaller varieties
- Grevilleas

Larger **deciduous** trees – no powerlines / larger nature strips

- Acer negundo – Box Hedge Maple
- Acer saccharinum – Silver maple
- Acer saccharum – Sugar Maple
- Quercus varieties – Oaks, Pin Oak, Scarlet Oak, Red Oak
- Tilia varieties
- Zelkova serrata ‘Green Vase’ Japanese Elm
- Ulmus parviflora – Chinese Elm

Larger **evergreen** varieties

- Casuarinas – River sheoak etc
- Eucalypts – maculata (Spotted Gum), citiodora (Lemon Scented Gum), leucoxyton ‘rosea’ (Yellow Gum), sideroxyton ‘rosea’ (Ironbark)
- Angophora costata – Smooth Barked Apple
- Kurrajong
- Grevillea robusta – Silky Oak
- Pinus patula – Mexican Pine, Pinus pinea – Stone Pine
- Cedrus deodara – Indian Cedar

Unsuitable Nature Strip Trees:

Tree Variety	Reason
Elm varieties	Elm Leaf Beetle
Liquidamber	Invasive Roots
Ash – Claret & Dessert Ash	Root damage, Dieback
Fig	Root damage, fruit drop
Plane trees	Not near kerb & channel
Red Gum & Yellow Box	Too large, shed limbs

5. Parks and Reserves Maintenance Management Plan –Trees: Inspection Schedules

Individual trees may appear to be permanent fixtures of our environment. However, all trees, no matter how long-lived, will eventually collapse and decompose, leaving no trace that they ever existed. Trees die from a myriad of causes including disease, insect attack, drought, uprooting, and catastrophic stem failure in high winds, or from combinations of factors working together. Some trees die and later collapse as their stems and branches decay, and some begin to break up while they are still green. While any large tree poses a risk of failure in high winds, in situations where people and trees must live together in close proximity it is important to identify where a tree has become an unacceptable risk.

A tree risk management plan provides a systematic approach to accurately identify moderate to high risk trees, and initiate the timely removal or corrective treatment of hazardous trees.

The two guiding principles of tree management programs are:

- increase public safety
- promote tree health and sustainability

A tree management plan enables a community to prevent, assess, and correct structural defects in trees, before they endanger public safety or tree resource health.

Tree risk zone categories, parks and reserves classifications, and inspection schedules, and levels of inspections are given below:

Category:	Class:	Example:	Inspection Frequency:
High Hazard	A	<ul style="list-style-type: none"> • Emergency access routes • Preschool playgrounds • BBQ's & shelters • High use areas of public parks • Public toilets • Public seating • Halls and Buildings 	Council staff: 3 mthly Arborist: 12 mthly
Moderate Hazard	B	<ul style="list-style-type: none"> • Moderate use public parks • Picnic areas • Bus stops • Off-street Parking Areas • CBD street trees 	Council staff: 6 mthly Arborist: 24 mthly
Low Hazard	C	<ul style="list-style-type: none"> • Other street trees • Low use parks 	Council staff: 12 mthly Arborist: 36 mthly