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25th March 2021

City of Melville
10 Almondbury Road,
Booragoon WA 6154

RE: ARBORICULTURAL REPORT – 3A Bolas Court, Myaree

With reference to the above, please find my report attached regarding the *Agonis flexuosa* (Weeping Peppermint) situated within the Local Authority verge adjacent the above property.

If you require clarification of any point please contact me.

Yours sincerely

Zana Sheary



Professional Advice • Arboricultural Reports • Digital Tree Mapping Services • Tree Risk Assessments



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Arboricultural Inspection Report for City of Melville

Date inspected: 24th March 2021
Location: 3A Bolas Court, Myaree
Tree species: *Agonis flexuosa* (Weeping Peppermint)

1. Reason for Assessment

- 1.1. In accordance with your instructions, I confirm that you have employed this consultant to carry out an inspection of the *Agonis flexuosa* (Weeping Peppermint) situated within the Local Authority verge adjacent the above property due to concerns regarding the health and condition of the tree and suitability for retention due to the planned redevelopment of the adjacent property.
- 1.2. The purpose of this report is to assess the tree's current health and mechanical structural condition, to identify potential hazards in relation to the targets beneath the tree, and provide recommendations accordingly and including an estimation of the tree's current useful life expectancy.
- 1.3. This consultant confirms that a site visit to inspect the tree situated at the above location was carried out on the 24th of March 2021.

2. Tree Observations

- 2.1. This late mature *Agonis flexuosa* (Weeping Peppermint) is located under low voltage power lines and has a clinometer height reading of 6.1m, with a canopy spread of 7.5m north/south & 8.5m east/west and a trunk diameter of 141cm measured at a height of 1.4m above ground level (Figure 1).
- 2.2. The base of the tree is 2.0m from the roadway and approximately 1.8m from the boundary of the adjacent property.

3. Ground level Inspection

- 3.1. An examination at ground level found the base of this tree to remain predominantly sound with no evidence of significant decay or the development of cavities (Figure 2).
- 3.2. There was no evidence of soil lifting or displacement at the base of the tree and no evidence of bark loss indicative of root decay.
- 3.3. Surface roots were not visible and there was no evidence of damage to adjacent hard infrastructure.

4. Trunk Inspection

- 4.1. This tree displays a splayed, multi-stemmed form supporting upper limbs and epicormic re-growth in response to periodic pruning typical of mature trees of the species located under power lines (Figures 3 & 4).
- 4.2. The trunk displayed a spiral growth pattern with stem sections appearing to independently extend before separating at a height of approximately 3.0m to form the crown structure.
- 4.3. Prominent 'ribs' of secondary growth were evident and provide additional support to the trunk and major limbs and was considered indicative of a persisting vitality of the tree.
- 4.4. Resonance assessment was indicative of some internal decay and/or some separation of stem sections, however no major cavities or significant separation of stems was visible.
- 4.5. The stub of lower lateral limb previously removed from the north eastern displays visible decay.
- 4.6. Fungal fruiting bodies were not evident and there was no evidence of previous or current termite activity within the supporting stem structure or major limbs.
- 4.7. There was, however, evidence of borer damage within the trunk and major limb sections and current borer activity was evident with 'frass' visible.

5. Crown Inspection

- 5.1. The crown of this tree displays a reduced epicormic form due to maintenance pruning under LV powerlines and a suitable cover of healthy foliage consistent with the form and age of the tree (Figures 5 – 7).
- 5.2. Healthy recent extension growth throughout most the canopy was considered indicative of a healthy and actively growing root system while there was visible decline of a section of the canopy on the south western side.
- 5.3. Major limbs appeared soundly attached with no evidence of splitting or separation while previous limb failure from the south western side appears due to a mid-stem break and consistent with storm damage.
- 5.4. Crowded and somewhat conflicted epicormic re-growth support most of the live canopy cover and this growth appears soundly attached and is predominantly not of a size or weight to represent a hazard.
- 5.5. Minor deadwood is held in lower canopy sections and a small amount of deadwood of a size and weight to represent a hazard is associated with the declining south western limb.

6. Conclusions

- 6.1. This consultant's inspection of this late mature *Agonis flexuosa* found the tree to be in good health and predominantly sound structural condition consistent with the age of the tree and ongoing management practices.
- 6.2. **Based upon the current health and structural condition of the tree and the characteristic persistence of the species, I consider this tree to have a useful life expectancy of 20 – 30 years.**
- 6.3. The factors that may substantially reduce this expectation are the potential for root and canopy damage associated with planned re-development of the adjacent property and the impact of borer, which the tree appears to be resisting at this time.
- 6.4. The retention of this tree is recommended, however suitable consideration of the tree within the project design process and the appropriate management and protection of the tree during construction will be required to minimise development impacts.
- 6.5. This tree was calculated to have a structural root zone (SRZ) radius of 3.9m and a tree protection zone radius (TPZ) of 15.0m based on AS4970 -2009 *Protection of trees on development sites*.

7. Recommendations

- 7.1. To retain this tree in a viable and sound condition planned re- development of the adjacent property needs to include:
 - Building design and location of minor structures and services to minimise, but preferably prevent, excavation within the 3.9m SRZ radius of this tree.
 - Temporary fencing of a significant area of the verge to protect the tree canopy and roots by excluding all construction and related activities.
 - Tree management practices including supplementary watering and other measures to compensate for root damage /disruption.

8. Method of Assessment

This consultant has made recommendations based upon the following criteria.

- The characteristics of the species.
- The existing health and structural condition of the tree.
- The level of risk that the tree represents to property and to persons.
- The aesthetic quality and amenity value that the tree provides to the surrounding streetscape.



*Andrew Morrissey - Arboricultural Consultant
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Limitation of liability

Trees can be managed, but they cannot be controlled. To live or work near a tree involves a degree of risk. This report only covers identifiable defects present at the time of inspection. Paperbark Technologies accepts no responsibility and cannot be held liable for any structural defect or unforeseen event/situation or adverse weather conditions that may occur after the time of inspection. Paperbark Technologies cannot guarantee that the tree/s contained within this report will be structurally sound under all circumstances, and is not able to detect every condition that may possibly lead to the structural failure of a tree. Paperbark Technologies cannot guarantee that the recommendations made will categorically result in the tree being made safe. Unless specifically mentioned this report will only be concerned with above ground inspections, as such all observations have been visually assessed from ground level. Trees are living organisms and as such cannot be classified as safe under any circumstances. Trees fail in ways that the arboriculture industry does not fully understand. The recommendations are made on the basis of what can be reasonably identified at the time of inspection therefore Paperbark Technologies accepts no liability for any recommendations made. All care has been taken to obtain information from reliable sources, however Paperbark Technologies can neither guarantee nor be responsible for the accuracy of information provided by others. In the event that reinspection of the tree/s is recommended it is the client's responsibility to make arrangements with Paperbark Technologies.

9. Photos



Figure 1 Displaying the late-mature *Agonis flexuosa* within the verge adjacent no. 3A Bolas Court, Myaree.



Figure 2 Displaying the base of the tree viewed from the south eastern side.

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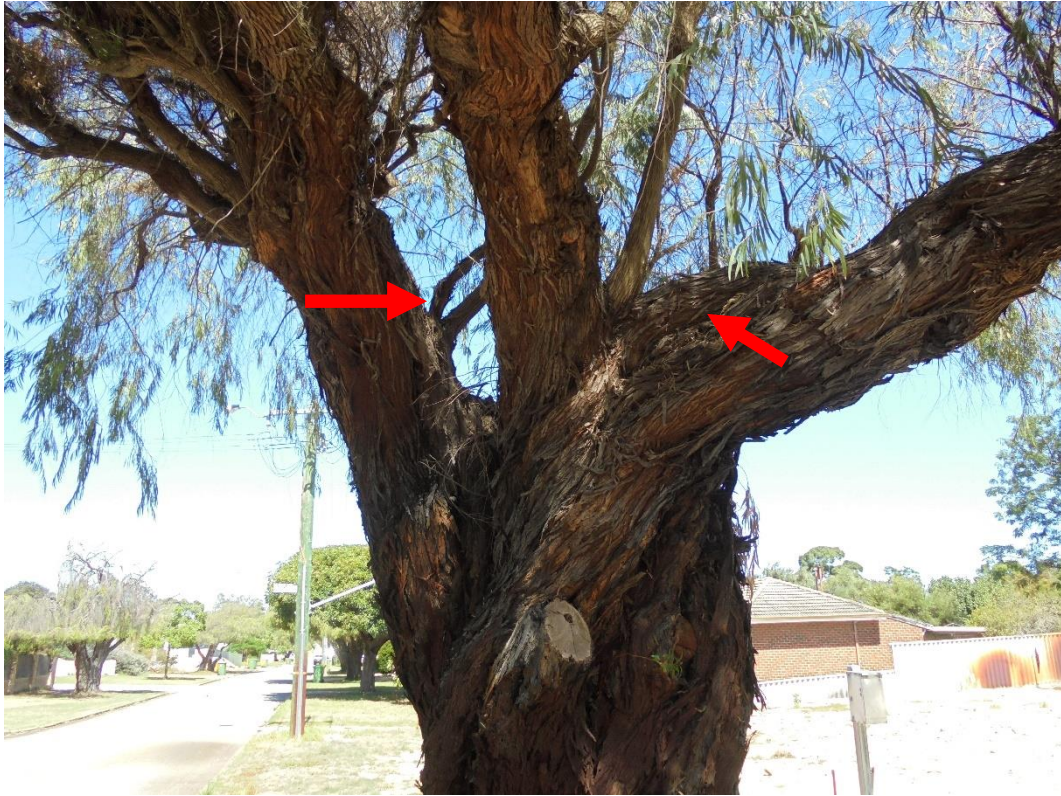
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Figure 3 Displaying the trunk and attachment of main limbs viewed from the south west side and indicating evidence of previous limb failure.



Figure 4 Displaying the trunk and attachment of main limbs viewed from the south west side and indicating evidence of previous lower limb removal.



Figures 5 & 6 Displaying the crown structure viewed from the both the northern (above) and southern sides (below) with prominent active secondary growth supporting the trunk and major limbs and predominantly minor epicormic re-growth forming the canopy.

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Figure 7 Displaying the crown of the tree viewed from the northern side

10. Glossary

Branch attachment	The structural union of a lateral limb to the trunk or another branch.
Branch bark ridge	Enlarged area of bark tissue on the upper side of a branch junction; a normal pattern of development.
Branch collar	Wood which forms around a branch attachment, frequently more pronounced below the branch.
Canker	A localised area of dead tissue on a stem or branch, caused by fungal or bacterial organisms.
Cavity	An open wound, characterized by the presence of decay and resulting in a hollow.
Central leader	The main stem of the tree.
Chlorotic	Lacking chlorophyll, typically yellow in colour.
Codominant	Equal in size and relative importance, usually associated with either the trunks/stems or scaffold limbs/branches in the crown.
Crack	Longitudinal split in the stem, involving bark, cambium and xylem; may be vertical and horizontally oriented.
Crotch	The point at which two branches (or branch and leader) meets.
DBH	Diameter breast height. Diameter of the trunk, measured at breast height - 1.4 m above ground level.
Decay	Process of degradation of woody tissues by fungi and bacteria through the decomposition of cellulose and lignin.
Decurrent	Referring to the growth habit of the tree being rounded or spreading.
Defect	Any structural weakness or deformity.
Dieback	Progressive death of twigs and small branches, generally from tips.
Dripline	The width of the crown, as measured by the lateral extent of foliage.
End Weight	The concentration of the foliage at the distal ends of branches.
Epicormic shoot	Shoot that arises from latent or adventitious buds that occur on stems and from poorly pruned branches.
Excurrent	Tree growth habit with pyramidal crown and a central leader.
Flush cut	Pruning technique where both branch and stem tissue are removed; Flush cutting usually is a poor practice.
Fork	Bifurcation of branches, usually equal in size and occurring at a narrow angle.
Girdling roots	Roots that grow around the trunk in a circular manner, constricting other roots or restricting trunk growth.

Growth crack	Longitudinal split in the bark due to normal expansion of cambium and xylem; not considered a defect.
Hanger	Both partially attached (but clearly broken) and unattached, lodged branches in the crown.
Heart rot	Decay in the centre (heartwood) of a branch, trunk, or large root.
Included bark	Pattern of development at branch junctions where bark is turned inward and embedded in a crotch between branches or stems causing a weakened structure.
Lion tailing	The removal of excessive number of inner laterals and foliage. This practice displaces foliar weight to the ends of the branches and may result in sunburned bark tissue, water sprouts, reduced branch taper, weakened branch structure and breakage from wind exposure.
Necrotic	Localised death of tissue in a living organism.
pH	A measure of the acidity or alkalinity of a soil. pH of 7.0 is neutral, acidic soil has a pH less than 7.0, and alkaline soil is greater than 7.0.
Pollard	Pruning technique where young trees or branches are initially lopped, then re-lopped on an annual basis without disturbing the callus.
Scaffold limb	Primary structural branch of the crown.
Structural Root Zone (SRZ)	The area required for tree stability. The SRZ radius is calculated by the diameter at root flare using the following formula $(D \times 50)^{0.42} \times 0.64$.
Stub	Short length of branch remaining following pruning or limb failure.
Suppressed	Trees which have been overtopped by adjacent trees and whose crown development is restricted from above.
Topping	Pruning technique to reduce a tree's height, heading of large branches. Generally considered poor practice.
Tree Protection Zone (TPZ)	The tree protection zone is the principal means of protecting trees on development sites. It is an area isolated from construction disturbance, so that the tree remains viable. The radius of the TPZ is calculated for each tree by multiplying its DBH x 12.

11. References

Mattheck, C & Breloer H, (1994) *The body language of trees, a handbook for failure analysis*. London TSO (The Stationery Office)

Lonsdale David, (1999) *Principles of Tree Hazard Assessment and Management*. London TSO (The Stationery Office).

Mattheck, Claus, (2007) *Updated Field Guide for Visual Tree Assessment*. Karlsruhe, Karlsruhe Research Centre.

Hayes, Ed (2007) *Evaluating Tree Defects, second edition*. Safetrees Rochester.

Australian Standard 4373-2007 *Pruning of amenity trees*.

Australian Standard 4970-2009 *Protection of trees on development sites*.