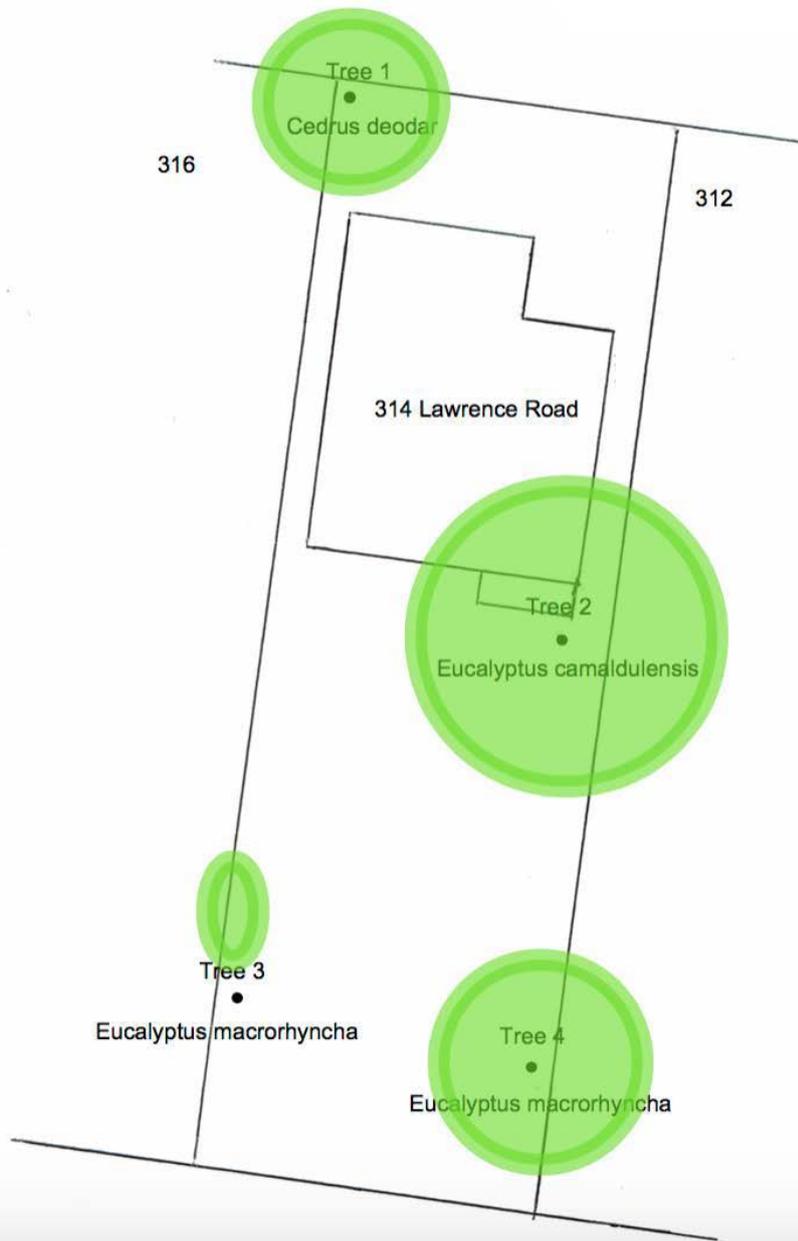


Attachment 1: 314 Lawrence Road, Mount Waverley

APPENDIX - Plan of 314 Lawrence Road, Mount Waverley



ARBORIST REPORT

Assessment of five trees

314 Lawrence Road, Mount Waverley

Report commissioned by
Carrie Hong

Prepared by

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Diploma in Horticulture
(Arboriculture)

Date: 29th March 2018

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1. Introduction

1.1 Report brief

Engaged to undertake a visual tree assessment of five canopy trees on a rental property at 314 Lawrence Road, Mount Waverley.

The report is to provide tree data including health and structure, tree defects and the likelihood of failure. Report is to accompany permit application for removal of any identified tree(s).

1.2 Overview

This property is heavily vegetated with canopy trees, immature specimens of trees, shrubs, palms and herbaceous perennials.

The five trees subject to this report include one conifer located at the front (west) of the property and a large Eucalypt adjacent to the rear deck of the residence which are of concern to the property owner and resident due to their close proximity. The remaining subject trees are at the rear of the property.

Inspection indicated that one tree at the rear of the property is of very poor structure and is recommended for removal. The large Eucalypt has one defective primary limb which should be removed but the tree is otherwise sound. The remaining three trees are of structure and health which does not require removal or lopping. One tree located in a raised garden bed at the rear of the property requires future monitoring to ensure the current lean is not progressive.

1.3 Documents and information provided

Brief instructions were received from the owner by telephone to inspect a "pine" tree at the front of the property which concerned the resident and of a very large tree and three others at the rear of the property. The owner was of the opinion that a "large tree" was guyed in the canopy by a cable.

On the day of the inspection the owner's regular gardener/tree lopper was present at the commencement of the inspection for access and identification of the five subject trees.

The resident was interviewed about his concerns which were the lateral and vertical movement of the stem and branches of the conifer in moderate to strong wind events. He did not express any concern regarding the Eucalypt adjacent to the rear deck.

2. Scope

2.1 Methodology

On 21st March from 2:30 pm a visual tree inspection was performed in fine weather conditions with wind speed of approximately 20 km/h and the following data collected:

- Tree genus

- Health
- Structure
- Tree height and canopy width (estimated)
- Circumference/diameter at breast height (DBH)
- Circumference/diameter at base above root flare
- Angle of lean
- Position of trees fixed in relation to boundaries

1. The inspection was limited to visual examination of the exterior only of the subject trees from the ground without dissection, excavation, probing or coring. No internal inspections or tests were carried out and no tests or samples have been taken other than collection of leaf and seed capsules for identification purposes.

2. No examination (below ground level) of the tree roots was made.

3. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree may not arise in the future.

4. Without further detailed tests and examinations, I am unable to comment conclusively on the structural integrity of the inspected trees.

5. Due to the ever-changing environment and circumstances in which trees grow, no tree can be considered absolutely safe (regardless of a condition report) and therefore, where there is a risk of damage or loss to property and / or life, the trees should be re-inspected at least every three years.

6. Unless stated otherwise, the trees in question were free of external signs of defects at the time of inspection. This is not to say that defects may not develop in the future and three yearly inspections are recommended.

2.2 Description of the subject property and adjacent properties

Allotment Lot 155/LP30039, number 314 Lawrence Road, Mount Waverley is located on the eastern side of Lawrence Road, 115 metres north of the Scotchman's Creek Reserve. It is occupied by a large split-level dwelling. The elevation of the property is 93 metres with a gentle slope to the east of approximately 6.75 %. The Immediate neighbourhood is comprised entirely of residential dwellings.

2.3 Planning controls

The property is located within the VPO (Vegetation Protection Overlay) of the City of Monash Planning Scheme.

Vegetation Protection Overlay - Schedule 1 (VPO1) requires a permit under Clause 3.0 for removal of trees which have a trunk circumference greater than 500 mm (160 mm diameter) at 1200 mm above ground level, and height of greater than 10 metres.

The five trees subject to this report meet the criteria for the permit requirement.

2.4 Vegetation on subject property

The property has a small front enclosed garden which has a *Cedrus deodar* as a feature tree. The rear enclosed garden has ten canopy size trees of the genus *Eucalyptus*, *Ficus* and a large *Brachychiton acerifolius*. The margin has two sections of closely spaced young *Waterhousia* cultivars.

In addition to the canopy sized trees there are a good number of shrubs, palms and herbaceous perennials of which the following were noted:

Archontophoenix, *Cordyline*, *Cotoneaster*, *Monstera*, *Pittosporum*, *Prunus*, *Syagrus romanzoffianum*.

3. Assessment

3.1 Tree identification

Five trees were examined and identified of which one was discounted as in such good health and structure as not requiring further consideration in this report. This was a *Ficus macrocarpa* (Moreton Bay Fig) to the rear of the property on near level ground well clear of any structure.

The five remaining subject trees will be referred to in this report as Tree 1 to 4:

Tree 1.	<i>Cedrus deodar</i>	Himalayan Cedar
Tree 2.	<i>Euycalyptus camaldulensis</i>	River Red Gum
Tree 3.	<i>Eucalyptus macrorhyncha</i>	Red Stringybark
Tree 4.	<i>Eucalyptus macrorhyncha</i>	Red Stringybark

3.2 Health

Inspection of the four trees did not reveal any particular, individual health issues which require separate treatment in this report.

All four trees showed no signs of poor health or stress. Their canopies were full, with no evidence of poor growth levels or foliage loss. Bark was entire and good wound wood was present on past pruning and wounds. No fungal fruiting bodies were observed and foliar pest damage on the Eucalypts is considered within normal limits.

Overall, health on these trees is considered good.

3.3 Structure

3.3.1 Tree 1 Himalayan Cedar

The cedar did not exhibit any major structural defects. There was no evidence of branch failures and past pruning is in evidence. The top of the crown is truncated due to the removal of the tip some time past for reasons unknown.

The tree has lean in excess of 10 degrees to the northeast. There is no correction to the vertical, but this would not normally be expected in a conifer. The lean is the reciprocal of prevailing southeast winds. The resident described seeing the tree swaying in strong winds. On the day of assessment, the wind speed was up to 20 km/h and no movement was observed in the lower stem and little movement in the crown.

The soil around the base of the trees was examined which no compaction, cracks, loss or build-up either on the side of lean or the tension side. The tree did not have circling roots so without subsurface examination it is assumed it has a normal root plate.

It is noted that the tree is being enveloped by English Ivy which has extended to a small tree on the adjacent property where the fruiting bodies of the vine were present.

3.3.2 Tree 2 River Red Gum

This tree has a lean of approximately 10 degrees with no correction to the vertical. Examination of the surrounding surface area of the base revealed no abnormalities. The pavers on the southern side of its base show no upward distortion.

A cylindrical stem has its first branch junction at approximately 3.5 metres with five primary branches all with satisfactory branch unions and junctions. These extend to a symmetrical crown with no overextended branches. There is no evidence of included bark or fungal fruiting bodies exhibited by conks and/or bracket fungi.

A previous secondary branch failure is in evidence (see Photo 6).

The first primary branch (see Photo 4, 5) is suspect. It has an extensive area of bark cracking, wound wood and rot is present in several sections confirmed by physical probing although no core samples were taken.

This species is regularly described as an unpredictable branch dropper and is often recommended for removal due to this anecdotal evidence. There is no empirical scientific evidence to document this as consistent to the species. No database exists which indicates the objective causes of the failure as opposed to any spontaneous limb drop as a stress reaction in drought conditions which is a proposed theory.

The only tree failure data base for this species was conducted in the Adelaide area in 2005 and does not include documented causation of the failures. [1]

3.3.3 Tree 3 Red Stringybark.

This tree can be described as having **Poor structure** which is described by the following:

- Standing in a sloping confined garden bed bounded by a dry scoria boulder wall of depth x breadth of 0.4 m x .92 m.
- The stem leans at 60° away from the sloping bed for 3 metres (confirmed by measurement and trigonometry) before extending a further 4 metres at an estimated 45° before reaching its narrow asymmetric canopy.
- From centre of base to outer edge of canopy is a measured 9.8 linear metres with an estimated height of 8 metres
- The tree has no counterbalancing branch development (see Photo 7).

3.3.4 Tree 4 Red Stringybark

This tree is situated within the same sloping garden bed as described in 3.3.3.

The tree leans approximately 12 degrees to the south with a cylindrical trunk with one counterbalancing secondary branch at 6 metres above ground level. It has a symmetrical compact crown and is free of any observed defects in the trunk or branch structure.

3.4 Tree Data

Tree 1. <i>Cedrus deodar</i> (Himalayan Cedar)	Exotic
Position	Front of property, southwest corner
Height	9 m
Trunk diameter at 1.4 m (DBH)	0.47 m
Trunk diameter (above root flare)	0.56 m
Crown spread	7.0 m
Lean	12° to east
Health	Good
Structure	Fair
Safe Useful Life Expectancy (SULE)	15-30
Retention value	Moderate
Recommendation	Retain

Tree 2. <i>Euycalyptus camaldulensis</i>	Locally endemic
Position	Front of property, southwest corner
Height	15 m
Trunk diameter at 1.4 m (DBH)	0.78 m
Trunk diameter (above root flare)	0.84 m
Crown spread	13.7 m north-west 19.1 m east-west
Lean	>10° to northwest
Health	Good
Structure	Fair
Safe Useful Life Expectancy (SULE)	15-30
Retention value	Moderate
Recommendation	Retain

Tree 3. <i>Eucalyptus macrorhyncha</i>	Locally endemic
Position	Rear of property, 9.16 m from rear boundary, 0.42m in from southern boundary.
Height	8.0 m
Trunk diameter at 1.4 m (DBH)	0.39 m
Trunk diameter (above root flare)	0.47 m
Crown spread	6 m x 2.5 m
Lean	60° to west
Health	Good
Structure	Poor
Safe Useful Life Expectancy (SULE)	5-15
Retention value	Low
Recommendation	Remove

Tree 4. <i>Eucalyptus macrorhyncha</i>	Locally endemic
Position	Rear of property, 7.85 m from rear boundary, 0.96 m in from northern boundary.
Height	19.0 m
Trunk diameter at 1.4 m (DBH)	0.61 m
Trunk diameter (above root flare)	0.65 m
Crown spread	9.7 m
Lean	12° to south
Health	Good
Structure	Fair
Safe Useful Life Expectancy (SULE)	15-30
Retention value	Moderate
Recommendation	Retain







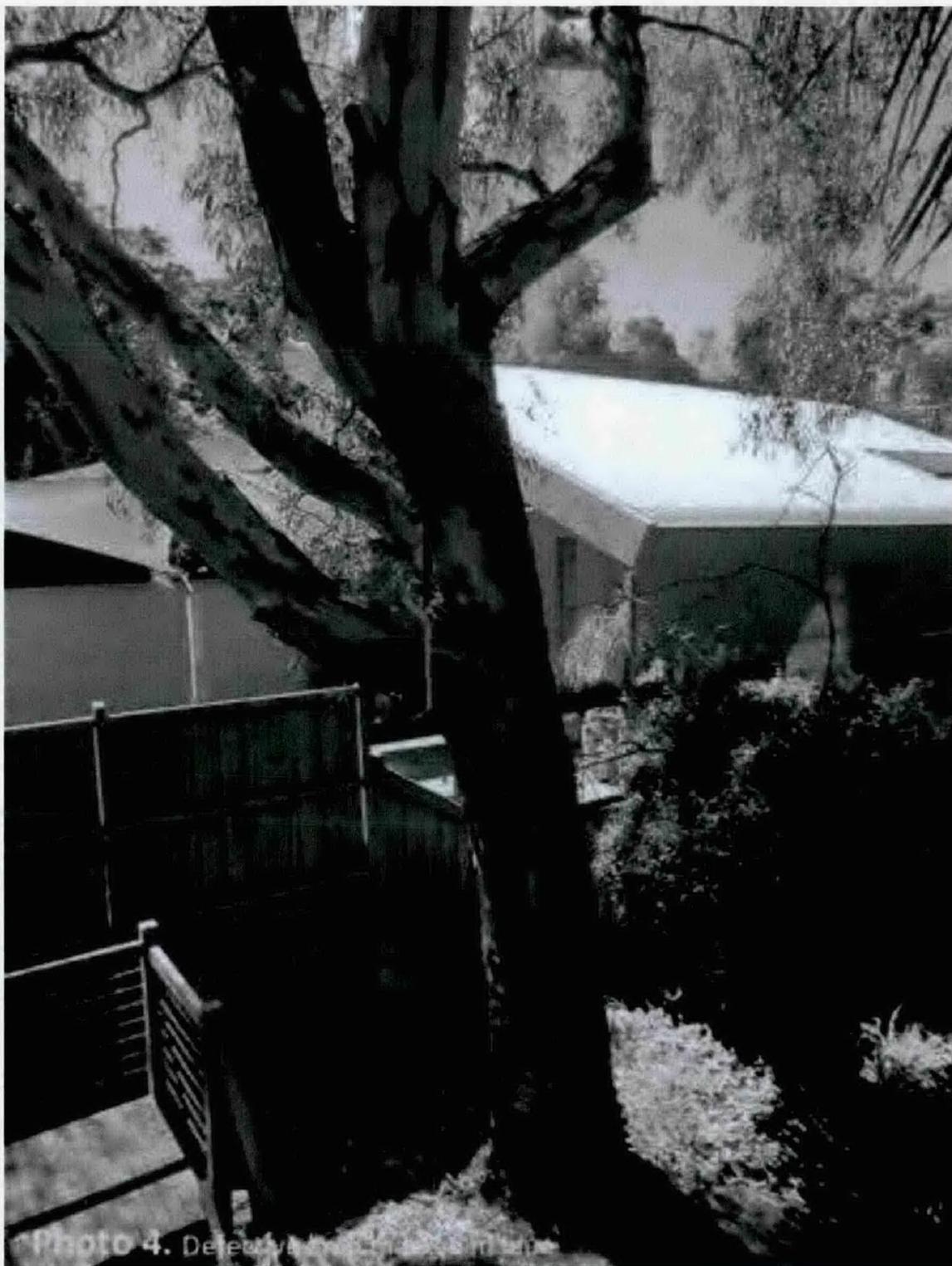


Photo 4. Deletable photo of the tree.





Photo 6.



Photo 7. Tree 3

Slope of raised garden bed



4. Risk Analysis

It was assessed on site that a risk analysis was not necessary as the variables of likelihood of failure and likelihood of impacting target would result in unlikely consequence of failure and impact on target.

In a risk analysis a severe consequence would be the impact on a person on an unprotected site. Impact on the roof of a structure is considered a protected site.

The following factors were considered:

1. Target area of Tree 1 is the roof of the dwelling.
2. Target area of primary limb failure of Tree 2 is clear of rear stairway, additionally the deck is not used on a regular basis.
3. Target area of a failure of Tree 3 is open space in subject property used infrequently and a roofed structure on the adjacent side of 316 Lawrence Road.
4. Tree 4 in the event of a failure would fall in open space infrequently used. Target area of a possible branch failure on adjacent property No. 312 is the roof of the dwelling.

5. Recommendations

1. Tree 3 has an excessive lean and it is recommended that this tree be removed.
2. This property has an adequate number of canopy trees and recent plantings and it is not considered necessary to replace it with a similar class of tree. Its present location in a sloping raised bed is not considered a suitable location for trees with the potential to achieve large size.
3. Tree 2 has a defective primary branch as indicated in Photograph 4. This should be removed at a point adjacent to the branch bark and ridge collar (swollen area).
4. Tree 4 has a lean of over 10 degrees and is planted in a sloping garden bed. This requires future monitoring to ensure the lean is not progressive.
5. Tree 1 has lateral branches which conflict with two cables and may also come into contact with the house structure during strong wind events. The lower branches on the side of lean and in the direction of the cables should be pruned by cutting outside the branch bark and ridge collar without leaving protruding stubs.

English Ivy enveloping the trunk of Tree 1 should be destroyed by cutting off the vine from its roots by removal around the circumference of the trunk to at least waist level.

Treatment of the cuts at ground level with herbicide will be effective follow up.

References:

1. Lodge, Marcus., 2005, 'A Tree Failure Data Base', Treenet.
https://www.treenet.org/wp-content/uploads/2017/06/07TS_A-TREE-FAILURE-DATA-BASE_MarcusLodge.pdf2.

Glossary:

Bifurcated: Where two trunks or branches of near equal diameter emerge from a single point on a tree.

Cambium layer:

The *cambium* cell layer is the growing part of the trunk. It annually produces new bark and new wood in response to hormones that pass down through the phloem with food from the leaves. These hormones, called "auxins," stimulate growth in cells.

Crown class:

Symmetrical: For the most part canopy received light from all four sides and has to potential for even foliage distribution. Canopy may or may not be symmetrical but is not suppressed.

Asymmetrical: Canopy is shaded or suppressed with one or more sides and dominant when compared to the remainder of the tree. Also includes crowns damaged by previous shading.

Intermediate: Canopy is only receiving light from top, and while shape may be even the upper portions of the canopy dominate over the lower.

Suppressed: Canopy is completely shaded by surrounding vegetation, buildings etc.

Regrowth: Canopy comprised of regrowth. This can be from the base, but also includes branches covered with small, stress related epicormics.

Trained: Canopy has been specifically trained. This may include trees that are pollarded, coppiced or espaliered.

Trees may exhibit a combination of the characteristics above (e.g. a symmetrical canopy of basal regrowth) or may fall between two categories. The characteristic listed is considered to be the best fit at the time.

DBH: The tree's trunk Diameter at Breast Height (1.4m above ground) unless specified as having been taken lower. This can be either estimated or measured as specified in the report.

Dieback: Tips of branches exhibit no signs of life due to age or external influences. Decline may progress, stabilise or reverse as the tree adapts to its new situation.

Health: The tree's health is rated as **Good, Fair** and **Poor** as listed below. Tree ratings of Fair-Good and Fair-Poor indicate that the tree falls between the two categories. Dead trees are not given a rating but are listed as Dead. Ratings generally meet the following descriptions:

Good: *Tree is showing no obvious signs of poor health or stress* with a dense canopy that is free of dieback. Rot or pathogens are not obvious or are not considered to be a threat to the tree. Growth rates are acceptable.

Fair: *Tree is showing signs of reduced health or stress.* This is apparent through moderate foliage density, minor dieback, moderate stress response growth, minor to moderate rot, moderate pathogen infestation, stunted growth or a combination of the above symptoms.

Poor: *Tree is showing signs of poor health and/or severe stress.* This is apparent through either low foliage density, moderate to large scale dieback, severe stress response growth, severe rot, severe pathogen infestation, failure of wounds to heal, overall tree decline, or a combination of the above symptoms.

Included bark:

The condition occurs where the angle of branch connection to a trunk or where bifurcated trunks join, is so acute as to prevent a sound biological union of the two sections. The resulting union can become unstable and could fail in moderate storms.

Phloem: The vascular tissue in plants which conducts sugars and other metabolic products downwards from the leaves. The Phloem is located in a layer below the bark.

Retention value:

Tree retention values are represented below by four categories, High, Moderate, Low and None. The values are based on a number of factors that relate to the health, structure, tolerances, botanical, cultural, ecological or historical significance. The higher a tree performs against the below criteria the more worthy of retention it becomes.

Some allowance needs to be given for the removal of trees that rate high or moderate if replacement planting is possible within the site. When replanting it is very important that good quality trees are purchased and correctly maintained and planted in locations that support their long-term development and contribution to the site and surrounding area.

Tree Retention Value	Rating	Description
1	High	A tree that is good in health and structure and has a useful life expectancy of greater than 30 years. It is significant and prominent within the landscape and able to tolerate changes to its environment. It could have botanical, cultural, ecological or historical significance.
2	Moderate	A tree that is good to fair in health and structure that has a useful life expectancy of between 15-30 years. It is reasonably significant and

3	Low	<p>prominent within the landscape and able to tolerate some changes to its environment.</p> <p>A tree that is fair to poor in health and structure that has a useful life expectancy of between 5-15 years. It is insignificant within the landscape and could not reasonably tolerate changes to its environment.</p>
4	None	<p>A tree that is poor health and structure that has a useful life expectancy of less than 5 years. It is small, young or insignificant within the landscape and could not tolerate changes to its environment.</p>

Senescence or biological aging is the gradual deterioration of function characteristics that on the level of the organism increases mortality after maturation. Plants have both stress-induced and age-related developmental aging.

Structure: The tree's structure is rated as Good, Fair and Poor. Tree ratings of Fair-Good and Fair-Poor indicate that the tree falls between the two categories.

As a general rule, the structure rating is based on the tree's likelihood of failure. However, it must be noted that this is not a full hazard or failure assessment of the tree.

Good: Tree has no obvious structural defects and is therefore not considered likely to fail.

Fair: Tree has at least one obvious structural defect, but this is considered to be manageable and of only moderate failure risk or the piece likely to fail may be small. Structural defects that may contribute to a fair rating are as follows:

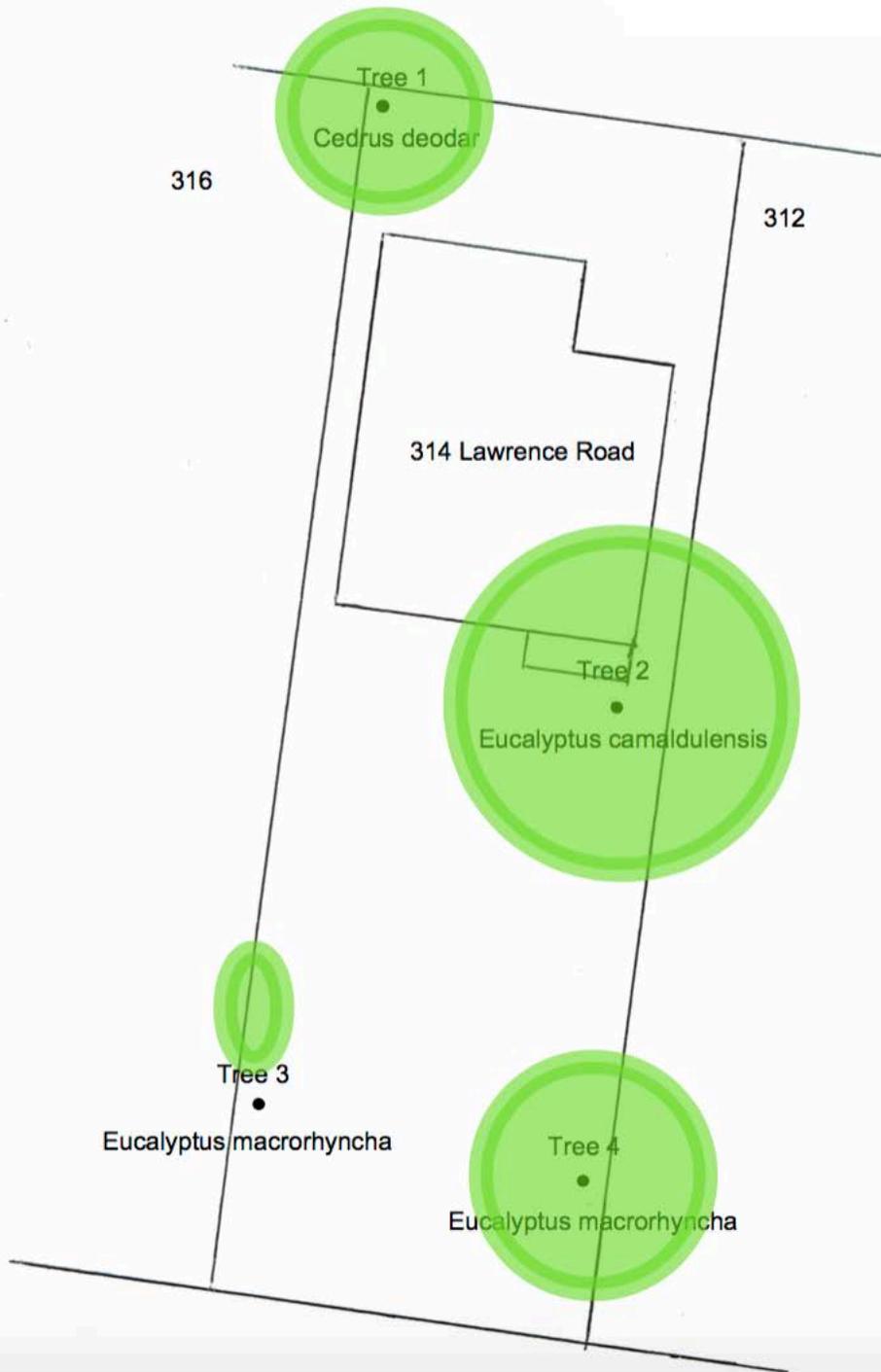
- Poor branch attachment (including deadwood and large epicormics);
- Bifurcated, but with a join that is considered to be solid;
- Moderate trunk lean but without other defects;
- Minor damage to the trunk base;
- Rot or other damage starting to compromise the structure;
- History of shedding minor branches.

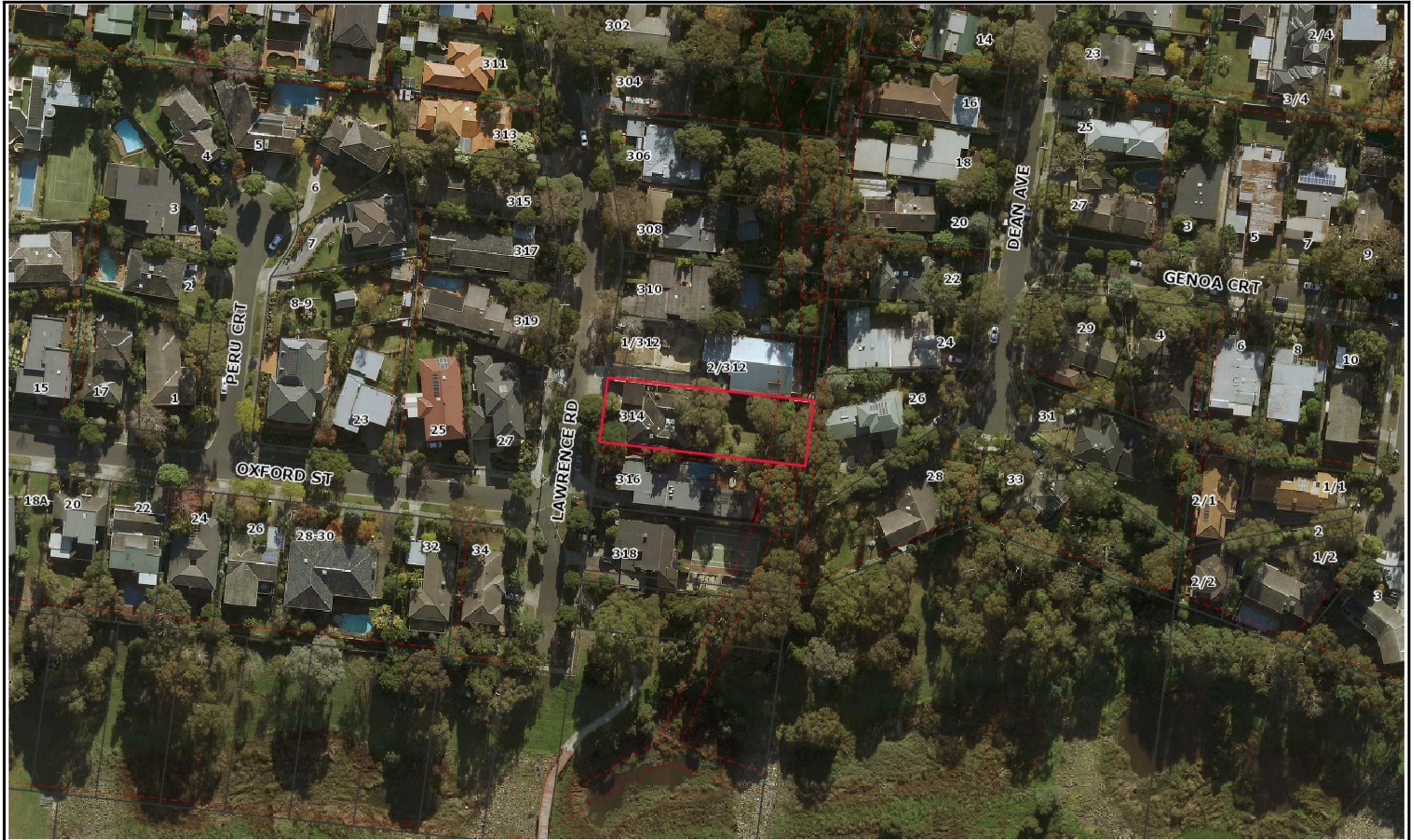
Poor: Tree has at least one structural defect that is severe and considered to have a relatively high risk of failure. If targets are present then defect(s) require treatment, or alternatively the tree should be removed. In some cases removal may be the only option for these trees. Structural defects that may contribute to a poor rating are as follows:

- Poor branch attachment (including deadwood and large epicormics);
- Bifurcated with swelling and/or included bark;
- Severe trunk lean associated with other defects such as injury in the plane of lean or root plate lift;
- Major damage to the trunk base or root system;
- Rot or other damage severely compromising the structure;
- History of shedding large branches.

Safe Useful Life Expectancy (SULE)

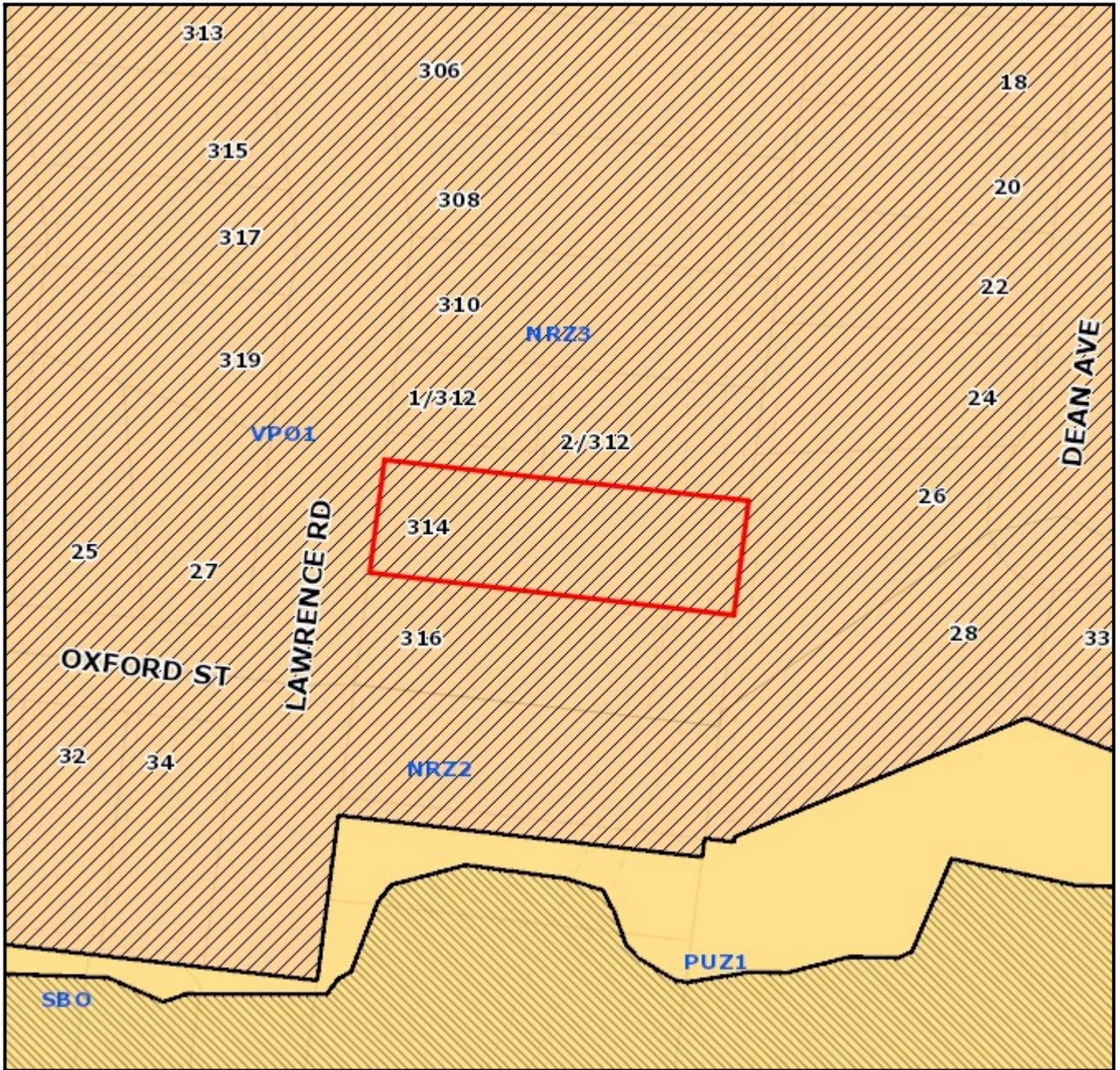
SULE is the length of time that the arborist assesses an individual tree can be retained with an acceptable level of risk based on the information available at the time of inspection. It is a snapshot in time of the potential an individual tree has for survival in the eyes of the assessor. SULE is not static; it is closely related to tree condition and the surrounding environment. Alterations in these variables may result in changes to the SULE assessment.







Planning Overlays and Zones



Legend

Planning Zones

C1Z	GRZ1	GRZ9	PCRZ	PUZ3	PUZ7	RGZ4	SUZ5
C2Z	GRZ2	IN1Z	PPRZ	PUZ4	RDZ1	SUZ2	SUZ6
CA	GRZ7	MUZ	PUZ1	PUZ5	RGZ1	SUZ3	UFZ
CDZ1	GRZ8	NRZ1	PUZ2	PUZ6	RGZ2	SUZ4	

Planning Overlays

LSIO / SBO	DDO	DPO
NCO	VPO	PO
PAO	HO	
EAO	IPO	

1:1000

Address

314 Lawrence Road MOUNT WAVERLEY VIC 3149

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