

# JOHNNY'S TREE SERVICE



**A.B.N.** 86 231 393 235

Arboricultural Consultant  
Diploma of Arboriculture

Barwon Heads, Vic. 3227

Ph. 0421 888 431

[johnnybtree@yahoo.com.au](mailto:johnnybtree@yahoo.com.au)

## **Tree Survey & Impact Assessment**

### **Wathaurong Aboriginal Co-operative**

**July 2022**

Commissioned by:

Location:

**62 Morgan St, North Geelong**

## Contents

1.0 Overview .....	3
2.0 Site.....	3
3.0 Methodology.....	4
4.0 Retention Value / Summary of Findings.....	5
5.0 Recommendations.....	5
Tree retention.....	5
High retention trees .....	5
Medium retention trees .....	5
Low retention trees .....	6
6.0 Appendix.....	7
6.1 Tree Data .....	7
6.2 Site Map.....	14
6.3 Photos.....	17
High retention trees (examples).....	17
Medium retention trees .....	18
Low retention trees .....	18
6.4 Glossary of Terms.....	19
6.5 TREE DESCRIPTORS.....	21
TREE DESCRIPTORS (continued).....	22
TREE DESCRIPTORS (continued).....	23
6.6 References.....	24

## 1.0 Overview

This report has been commissioned by Rob Davis in regard to a preliminary tree survey for a development proposal for the Wathaurong Aboriginal Co-operative at 62 Morgan St, North Geelong. Information required includes a tree retention survey with calculated T.P.Z & S.R.Z. This report is concerned with trees that may be affected by the proposed development.

Trees have been numbered and included on the site map with approximate locations (page 14).

**Tree Protection Zones have been applied to trees as per;**

AS 4970-2009, Protection of trees on development sites. (see Data Page 7)

## 2.0 Site

The site contains facilities and infrastructure for the Wathaurong Aboriginal Co-operative that provides health services for Aboriginal and Torres Strait Islander people. Vegetation includes a mix of large Red Gums and other native trees, mostly part of boundary wind row to the south and scattered through the south west of the buildings. These trees are all suspected to

Only trees within proximity to proposed developments were assessed.

**The site is not subject to any planning overlays regarding tree controls.**

*Information sourced from Vicplan  
<https://mapshare.vic.gov.au> › vicplan*

### 3.0 Methodology

An onsite inspection took place by myself John Saunders on the 29<sup>th</sup> June where relevant data was collected to be collated back in our office.

The trees were assessed for the following;

- Species identification
- Approx. age of the tree
- Stem diameter at 1.4 metres above ground level (DBH)
- Diameter above root buttress
- Origin of the species
- An estimation of the height and width of the tree canopy
- Structure of the tree
- Health of the tree
- Retention value of the tree to the site
- Tree Protection Zones as per (AS 4970 – 2009)

**Note:** Small trees and shrubs with a D.B.H of less than 10cm are not subject to this report.

Trees within 4 meters into neighbouring properties were included in this report.

Photos of tree retention examples have been included (see appendix page 17)

Tree descriptors are provided for tree age, health, structure, retention value (see appendix page 21)

## 4.0 Retention Value / Summary of Findings

There are;

- 53 trees in total.
- All 53 trees are all on-site
- 41 are indigenous to the area (Non remnant)
- 9 trees that are planted natives.
- 4 trees that are dead
- 17 trees are of high retention
- 24 trees that are of medium retention.
- 12 trees that are of low retention.

(See data Pg. 7)

## 5.0 Recommendations

### Tree retention

Tree retention data can be utilised throughout planning to determine suitable trees to be retained that are in good condition or that are of significant size and age. (see Data Pg. 7 ) (see photos page 17 )

### High retention trees

There are a number of large mature River Red Gums to the south of the proposed envelopes, with a few scattered within the area. These high retention trees are in ideal condition with good health and structures.

Although noted as indigenous, All trees are suspected to planted within the last 30 years and not remnant vegetation.

T.P.Z data (expressed as a radius) from this report should be included on plans in order to determine minimal overlap of proposed development footprint and T.P.Z's.

Trees given a high retention value have potential to positively contribute to the site for many years with an acceptable level of risk, and should be retained throughout the development.

The large Scar Tree that has been installed on south west side of the buildings has been included in data collection. General arboricultural methods are not applicable to the tree as it has been installed with engineered footings.

### Medium retention trees

These trees are not of a significant species nor of a significant size or age. These trees should not be seen as a restraint to proposed development. These trees can be replaced and offset with new plantings if required.

### Low retention trees

Some trees were documented as low retention due to being in poor condition or easily replaced trees. These trees offer little in terms of contributing to the future landscape and should not be seen as a restraint to proposed development. These trees could be considered for removal.

***Recommendations for the removal of any vegetation does not give permission for the removal of any vegetation.***

***Penalties for removal of vegetation without the correct permissions may apply in some municipalities***

TPZ and S.R.Z data should be included on site plan and overlaid with surveyed tree locations in order to determine the most efficient way to achieve minimal encroachments to tree protection zones (T.P.Z) throughout design and planning.

<10% T.P.Z encroachment from proposed development is seen as tolerable as per AS 4970-2009, Protection of trees on development sites.

If >10% is to occur, construction methods could be implemented in order to encroach development further into T.P.Z's with minimal impact to retained trees, for example - above grade construction, pier and beam construction, and screw pile footings.

If major encroachment to any T.P.Z is determined, a further impact assessment and tree management plan could be required.

## 6.0 Appendix

### 6.1 Tree Data

Retention Value:

High



Medium



Low



No.	Botanical Name	Common Name	Age	Height(m)	Width(m)	Health	Structure	Origin	DBH(cm)	TPZ(m) radius	SRZ	Retention Value	Onsite / Offsite	Comment
1	<i>Eucalyptus viminalis</i>	Manna Gum	Mature	5	5	Fair	Fair	Indigenous (Planted)	26	3.1	1.9	Medium	On-site	1.5m from driveway edge
2	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	10	5	Good	Fair	Indigenous (Planted)	32	3.8	2.1	High	On-site	2m from driveway edge
3	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	10	4	Good	Good	Indigenous (Planted)	28	3.4	1.9	High	On-site	4m from driveway edge
4	<i>Acacia pycnantha</i>	Golden Wattle	Mature	6	3	Good	Good	Indigenous (Planted)	14	1.7	1.4	Low	On-site	3m from driveway edge
5	<i>Bursaria spinosa</i>	Sweet Bursaria	Mature	4	3	Good	Good	Indigenous (Planted)	12	1.4	1.4	Medium	On-site	1m from driveway edge
6	<i>Eucalyptus Sp.</i>	Gum	Mature	6	4	Dead	Poor	Planted Native (AUS)	20	2.4	1.7	Low	On-site	1.5m from driveway edge

7	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	11	6	Good	Good	Indigenous (Planted)	22	2.6	1.8	High	On-site	4m from driveway edge
8	<i>Eucalyptus viminalis</i>	Manna Gum	Semi Mature	6	3	Fair	Fair	Indigenous (Planted)	16	1.9	1.5	Medium	On-site	1.5m from driveway edge
9	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	8	5	Good	Good	Indigenous (Planted)	26	3.1	1.9	Medium	On-site	
10	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	7	5	Good	Good	Indigenous (Planted)	24	2.9	1.8	Medium	On-site	
11	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	9	6	Good	Good	Indigenous (Planted)	26	3.1	1.9	Medium	On-site	
12	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	9	6	Good	Good	Indigenous (Planted)	38	4.6	2.2	High	On-site	
13	<i>Melaleuca lanceolata</i>	Moonah	Semi Mature	5	5	Good	Fair	Indigenous (Planted)	25	3.0	1.8	Medium	On-site	Multi stemmed
14	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	10	5	Good	Fair	Indigenous (Planted)	38	4.6	2.2	High	On-site	
15	Scar Tree	Scar Tree	N/A	5	1	Dead	Good	N/A	100	N/A	1.0	High	On-site	Scar tree has been relocated and installed in current location

16	<i>Eucalyptus leucoxylon 'Rosea'</i>	Red Flowering Yellow Gum	Mature	12	10	Good	Fair	Planted Native (SA)(VIC)	53	6.4	2.5	Medium	On-site	
17	<i>Casuarina cunninghamiana</i>	River She Oak	Mature	12	4	Good	Good	Planted Native (NSW)	20	2.4	1.7	Low	On-site	Weed species 0.5m from path edge
18	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	10	8	Good	Good	Indigenous (Planted)	34	4.1	2.1	High	On-site	3m from path edge
19	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	12	6	Good	Good	Indigenous (Planted)	32	3.8	2.1	High	On-site	
20	<i>Acacia melanoxylon</i>	Blackwood	Mature	8	6	Good	Good	Planted Native (VIC)	21	2.5	1.7	Medium	On-site	Within water easement 5m from building
21	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	12	6	Good	Fair	Indigenous (Planted)	42	5.0	2.3	High	On-site	Within water easement 7m from building
22	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	12	10	Good	Good	Indigenous (Planted)	48	5.8	2.4	High	On-site	Within water easement
23	<i>Hakea Sp.</i>	Hakea	Mature	5	5	Good	Poor	Planted Native (WA)	14	1.7	1.4	Low	On-site	Multi stemmed 8m from building

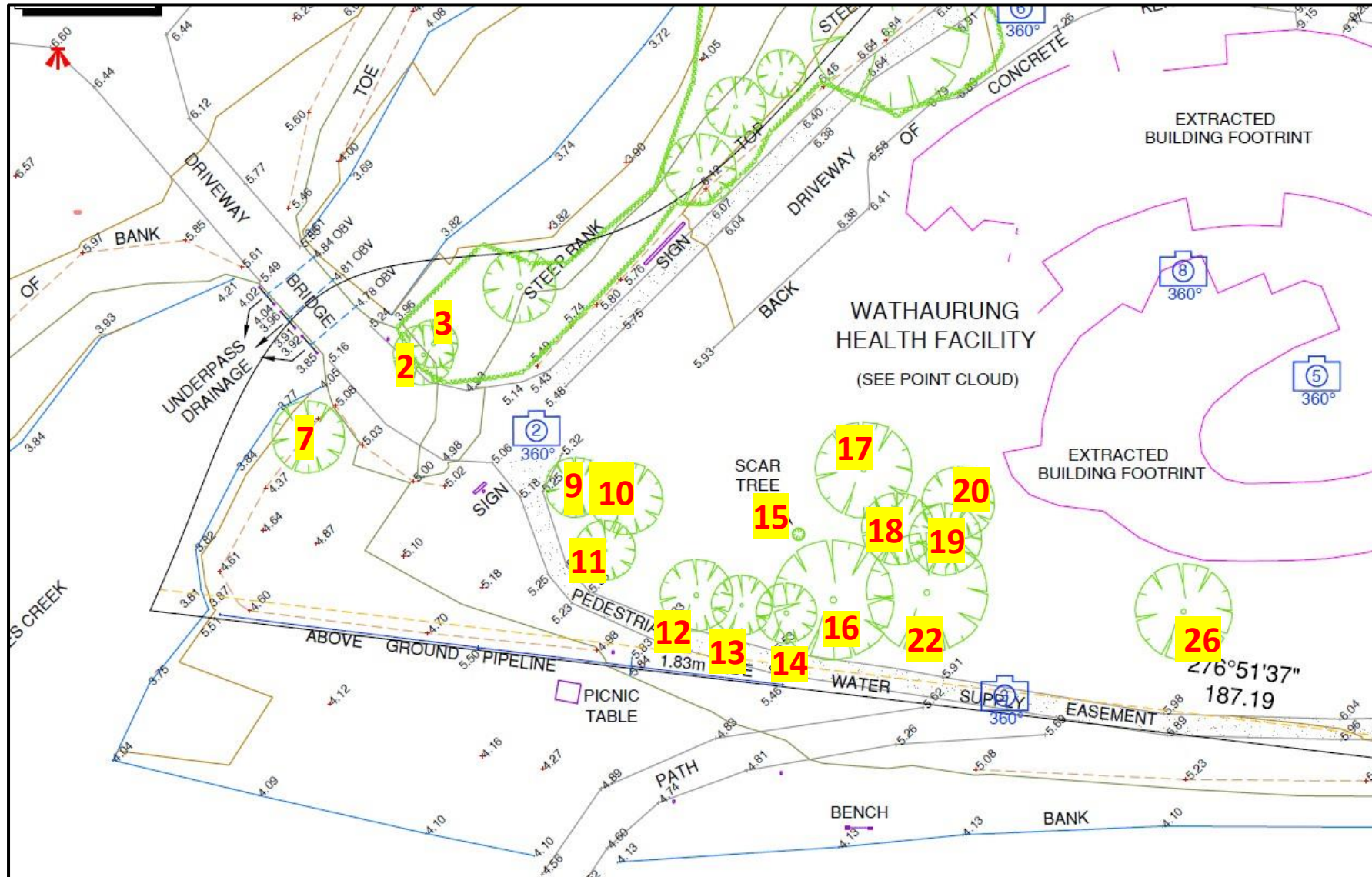
24	<i>Melaleuca armillaris</i>	Honey Myrtle	Mature	4	4	Good	Good	Planted Native (NSW)	15	1.8	1.5	Low	On-site	Weed species
25	<i>Melaleuca armillaris</i>	Honey Myrtle	Mature	6	6	Good	Poor	Planted Native (NSW)	22	2.6	1.8	Low	On-site	Weed species 7m from building
26	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	8	8	Good	Fair	Indigenous (Planted)	40	4.8	2.3	High	On-site	4m from building
27	<i>Callistemon viminalis</i>	Bottlebrush	Mature	3	3	Good	Poor	Planted Native (NSW)	15	1.8	1.5	Medium	On-site	3m from building
28	Dead tree	Dead tree	N/A	6	3	Dead	Fair	N/A	15	1.8	1.5	Low	On-site	Dead tree 3m from building
29	Dead tree	Dead tree	N/A	6	2	Dead	Fair	N/A	15	1.8	1.5	Low	On-site	Dead tree 3m from building
30	<i>Dodonaea viscosa</i>	Sticky Hop Bush	Mature	3	3	Good	Fair	Indigenous (Planted)	10	1.2	1.3	Medium	On-site	Near entry ramp
31	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	11	6	Good	Fair	Indigenous (Planted)	50	6	2.5	High	On-site	
32	<i>Bursaria spinosa</i>	Sweet Bursaria	Mature	4	3	Good	Good	Indigenous	20	2.4	1.7	Medium	On-site	

								(Planted)						
33	<i>Melaleuca lanceolata</i>	Moonah	Semi Mature	6	4	Good	Good	Indigenous (Planted)	15	1.8	1.5	Medium	On-site	
34	<i>Melaleuca lanceolata</i>	Moonah	Semi Mature	6	2	Good	Good	Indigenous (Planted)	14	1.68	1.4	Medium	On-site	
35	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	15	6	Good	Good	Indigenous (Planted)	36	4.32	2.2	High	On-site	
36	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	14	5	Good	Good	Indigenous (Planted)	28	3.36	1.9	Medium	On-site	
37	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	13	4	Good	Good	Indigenous (Planted)	23	2.76	1.8	Medium	On-site	
38	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	17	13	Good	Good	Indigenous (Planted)	70	8.4	2.8	High	On-site	Large specimen 1m from path edge
39	<i>Eucalyptus leucoxylon</i>	Yellow Gum	Mature	18	6	Good	Good	Indigenous (Planted)	37	4.44	2.2	Medium	On-site	
40	<i>Melaleuca lanceolata</i>	Moonah	Mature	4	5	Good	Good	Indigenous (Planted)	12	1.44	1.4	Medium	On-site	

41	<i>Acacia pycnantha</i>	Golden Wattle	Mature	5	5	Good	Good	Indigenous (Planted)	14	1.68	1.4	Low	On-site	Small tree near building
42	<i>Acacia pycnantha</i>	Golden Wattle	Mature	10	7	Poor	Poor	Indigenous (Planted)	23	2.76	1.8	Low	On-site	Multi stemmed
43	<i>Melaleuca lanceolata</i>	Moonah	Mature	3	6	Good	Fair	Indigenous (Planted)	10	1.2	1.3	Medium	On-site	
44	<i>Acacia pycnantha</i>	Golden Wattle	Mature	9	3	Poor	Good	Indigenous (Planted)	12	1.44	1.4	Low	On-site	
45	<i>Acacia pycnantha</i>	Golden Wattle	Mature	8	4	Poor	Good	Indigenous (Planted)	12	1.44	1.4	Low	On-site	
46	<i>Melaleuca lanceolata</i>	Moonah	Mature	5	3	Good	Fair	Indigenous (Planted)	15	1.8	1.5	Medium	On-site	
47	<i>Acacia pycnantha</i>	Golden Wattle	Mature	8	4	Fair	Fair	Indigenous (Planted)	13	1.56	1.4	Medium	On-site	
48	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	18	5	Good	Good	Indigenous (Planted)	35	4.2	2.1	High	On-site	
49	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	18	5	Good	Good	Indigenous (Planted)	45	5.4	2.4	High	On-site	

50	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	18	10	Good	Good	Indigenous (Planted)	60	7.2	2.7	High	On-site	
51	<i>Acacia implexa</i>	Lightwood	Mature	12	6	Good	Good	Indigenous (Planted)	30	3.6	2.0	Medium	On-site	
52	<i>Eucalyptus camaldulensis</i>	River Red Gum	Mature	12	5	Fair	Good	Indigenous (Planted)	23	2.76	1.8	Medium	On-site	
53	<i>Corymbia maculata</i>	Spotted Gum	Mature	15	7	Good	Fair	Planted Native (NSW)	48	5.76	2.4	Medium	On-site	

6.2 Site Map





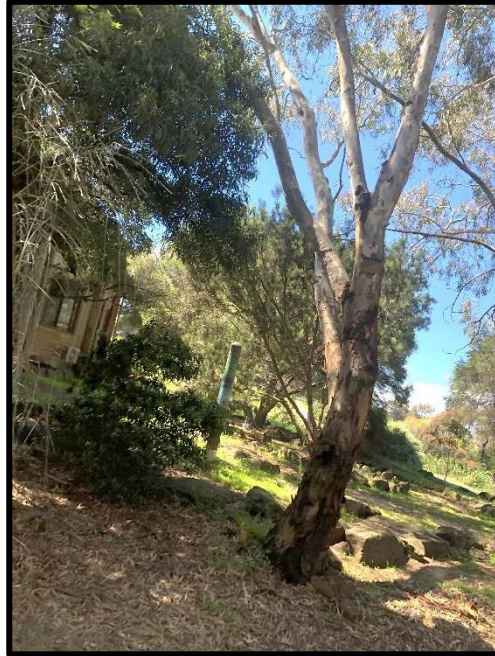


### 6.3 Photos

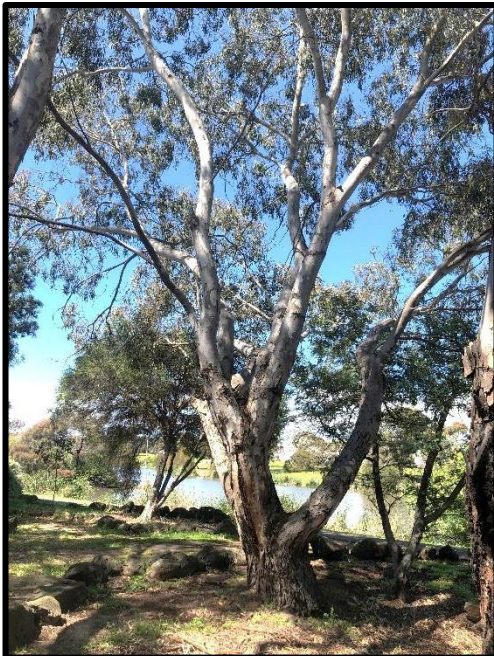
#### High retention trees (examples)



**Trees 9, 10, & 11**



**Tree 21**



**Tree 22**



**Tree 26**

These are examples of a high retention indigenous trees that present with good health and structure.

Medium retention trees



**Tree 5**



**Tree 27**

These are an example of a medium retention trees that are not of significant species or size although still offer some beneficial attributes that may benefit the site and could be considered for retention if possible.

Low retention trees



**Tree 6**



**Tree 24**

These are an example of a low retention trees that offer little in terms of contributing to the future landscape. These trees could be considered for removal.

## 6.4 Glossary of Terms

**Bi-furcation** - the division of something into two branches. Weak unions can be identified by an included bark bi-furcation.

**Branch collar** - Where branches meet the trunks of most trees. Each year two new collars will form. One collar is a trunk tissue and the other a collar which is made up of branch tissues. This is a target for correct pruning.

**Brown Rot** - cellulose digested in wood leaving lignin altered. A parasitic fungus that can weaken trees health and structure.

**Callus** - a soft, non-woody tissue that forms about the edges of fresh wounds. Callus is undifferentiated, meristematic tissue, which has very little lignin. Good callusing can indicate good tree health.

**Cambium** - is a cell generator that is between the wood or xylem and inner bark. The cambium is responsible for producing trees annual rings.

**Canker** - is defined as a localized lesion; a dead spot. Fungal pathogen restricting tree from healing over.

**Co-dominant stems** - two or more stems which are competing in size and competing for the sun.

**Compartmentalization of Decay** - the tree's defence process where boundaries form that resist spread of infections.

**Decay** - a process where highly ordered substances become disordered. Decay can cause structural weakness in trees.

**Decline** – turning to poor health. Trees showing signs and symptoms of decline.

**Defects** - dead wood, cracks, weak branch unions, decay, cankers, root problems

**Dieback** - a condition in trees or woody plants in which parts are killed, either by pathogens, parasites or due to drought

**Energy Production** - energy from photosynthesis from light energy formed by fusion on the sun

**Energy Storage** - storage of energy in xylem cells

**Epicormic Branch** - branch developed from an epicormic bud. Trees rapid response to replace canopy.

**Epicormic Bud** - dormant buds lying beneath the bark. Epicormic sprouts can start from meristematic points.

**Hazard Trees** - loosely defined as a tree with structural defects likely to cause failure of all or part of the tree, which could strike a target.

**Health** - the ability to resist strain. Key to trees longevity.

**Included Bark** - forms is when the branch bark ridge turns inward. Sign of a weak branch union.

**Kino** - the name of the plant gum produced by various plants and trees, particularly Eucalyptus, in reaction to mechanical damage.

**Leader** - the vertical stem at the top of the trunk. Ideal to maintain a healthy leader.

**Limb Drop** - shedding of limbs from trees. Trees drop limbs due to excess loads or defects.

**Lopping** - the cutting of branches or stems of a tree between the branch unions. Lopping can encourage/stimulate a rapid flush of epicormic growth.

**Pathogen** - a bacterium, virus, or other microorganism that can cause disease. Pathogens enter trees via wounds and cracks.

**Phloem** - a transport tissue located just inside the bark and just outside the cambial zone.

**Probability & Potential** - Probability is the extent to which something is likely to happen or be the case. Potential is having or showing the capacity to develop into something in the future.

**Pruning** - the selective removal of certain parts of a plant, such as branches, buds, or roots.

**Reaction Wood** - Reaction wood is wood that forms as a response to localised stresses. It is an example of self-optimisation and the axiom of uniform stress in trees.

**Risk** - a situation involving exposure to danger. Trees presenting high risk should be assessed by a qualified arborist.

**Signs & Symptoms** - A symptom is any subjective evidence of disease, while a sign is any objective evidence of disease. Proper treatment for any tree problem starts with the recognition of signs and the understanding of symptoms

**Soil Compaction** - compaction is just that, compaction of the soil. Compaction destroys the micro cavities. It reduces the oxygen content. Many mycorrhizae grow in micro cavities in the soil.

**Tree Condition** - The state of health of a tree.

**Vigour** - capacity to survive when threatened and resist strain. A tree with good vigour can outgrow minor pest damage.

**White Rot** - Fungai that digests cellulose and lignin. This can weaken trees making them hazardous.

**Wound Response** - Wound wood is a very tough, woody tissue that grows behind callus and replaces it in that position.

**Wound Wood** - a very tough, woody tissue that grows behind callus and replaces it in that position.

**Xylem** - Xylem is a transport tissue in vascular plants. It transports free water and substances dissolved in it, from absorbing non-woody roots to leaves. When xylem is lignified it is then correctly called wood.

## 6.5 TREE DESCRIPTORS

### AGE

Young	Juvenile or recently planted approximately 1-7 years.
Semi Mature	Tree actively growing.
Mature	Tree has reached expected size in situation.
Over Mature	Tree is over mature and has started to decline. (Senescent)

### HEALTH

**Good;** Foliage of tree is entire, with good colour, very little sign of pathogens and of good density. Growth indicators are good i.e., Extension growth of twigs and wound wood development. Minimal or no canopy die back (deadwood).

**Fair;** Tree is showing one or more of the following symptoms;

< 25% dead wood, minor canopy die-back, foliage generally with good colour though some imperfections may be present. Minor pathogen damage present, with growth indicators such as leaf size, canopy density and twig extension growth typical for the species in this location.

**Poor;** Tree is showing one or more of the following symptoms of tree decline; > 25% deadwood, canopy die back is observable, discoloured or distorted leaves. Pathogens present, stress symptoms are observable as reduced leaf size, extension growth and canopy density.

**Dead or dying;**

Tree is in severe decline; > 55% deadwood, very little foliage, epicormic shoots, minimal extension growth.

### STRUCTURE

**Good;** Trunk and scaffold branches show good taper and attachment with minor or no structural defects. Tree is a good example of the species with a well-developed form showing no obvious root problems or pests and diseases.

**Fair;** Tree shows some minor structural defects or minor damage to trunk e.g., bark missing, there could be cavities present. Minimal damage to structural roots. Tree could be seen as typical for this species.

**Poor;** There are major structural defects, damage to trunk or bark missing. Co-dominant stems could be present or poor structure with likely points of failure. Girdling or damaged roots obvious. Tree is structurally problematic.

**Hazardous;** Tree is an immediate hazard with potential to fail, this should be rectified as soon as possible.

### ORIGIN

**Indigenous;** plants that are native to a particular area.

**Planted Native;** native to Australia, although not native to the particular area.

**Exotic;** of foreign origin or character; not native; introduced from abroad, but not fully naturalized or acclimatized.

### HAZARD

**Low;** Tree appears to be structurally sound, healthy with no signs of pests or disease, good vigor and is clear of any hazards.

**Medium;** Tree displays signs of structural problems, evidence of pests or disease, signs of low vigor, deadwood, decay, may be growing into an area that could create a hazard.

**High;** Tree is an immediate hazard with the potential to fail, this should be rectified as soon as possible.

TREE DESCRIPTORS (continued)

**RETENTION VALUE**

**Low;** Trees that offer little in terms of contributing to the future landscape. Should be considered for removal.

**Medium;** Trees with some beneficial attributes that may benefit the site. Could be considered for retention if possible.

**High;** Trees with the potential to positively contribute to the site. Should be considered for retention if possible.

**USEFUL LIFE EXPECTANCY – ULE.**

**LONG ULE;** Trees that appears to be retainable with an acceptable level of risk for more than 40 years.

1. Structurally sound trees located in positions that can accommodate future growth.
2. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery.
3. Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

**MEDIUM ULE;** Trees that appear to be retainable with an acceptable level of risk for 15 to 40 years.

1. Trees that may only live between 15 and 40 years.
2. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals.
3. Trees that may live for more than 40 years but would be removed during the course of normal management for safety and nuisance reasons.
4. Storm damage or defective trees that can be made suitable for retention in the medium term by remedial work.

**SHORT ULE;** Trees that appear to be retainable with an acceptable level of risk for 5 to 15 years.

1. Trees that may live for 5 to 15 years.
2. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals.
3. Trees that may live for more than 15 years but would be removed during the course of normal management for safety and nuisance reasons.
4. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.

**REMOVE;** Trees with a high level of risk that would need removal within 5 years

1. Dead trees.
2. Dying or suppressed and declining trees through disease or inhospitable conditions.
3. Dangerous trees through instability or recent loss of adjacent trees.
4. Dangerous trees through structural defects including cavities, decay, included bark, wounds, or poor form.
5. Damaged trees that are considered unsafe to retain.
6. Trees that will become dangerous after removal of other trees for the above reasons.

## TREE DESCRIPTORS (continued)

### **TREE PROTECTION ZONES**

The T.P.Z. applied is AS 4970-2009 'Protection of trees on development site'. AS 4970-2009 uses a multiplication method to determine the T.P.Z. based on T.P.Z. radius being 12 times stem diameter measured 1.4 meters above ground.

i.e., T.P.Z. radius = DBH x 12

### **STRUCTURAL ROOT ZONE**

The S.R.Z. applied is AS 4970-2009 'Protection of trees on development site'.

The SRZ is the area required for tree stability. A larger area is required to maintain a viable tree.

SRZ radius =  $( D \times 50 )^{0.42} \times 0.64$

## 6.6 References

1. Australian Standard AS4373-2007, Pruning of Amenity Trees, 2007, Sydney
2. AS4970 – 2009 Protection of trees on Development sites
3. Planning Maps Online - <http://services.land.vic.gov.au/maps/pmo>.
4. Alex L. Shigo, (1986) A New Tree Biology. USA
5. Matheck C., (2015) The Body Language of Trees
6. Costermans L (2015), Native Trees And Shrubs of South-Eastern Australia
7. Brooker M & Kleining D (2006), Field Guide to Eucalypts
8. Weeds Of The Surf Coast Shire - [www.surfcoast.vic.gov.au](http://www.surfcoast.vic.gov.au)